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RELATIONS OF THE ECONOMIES
OF EASTERN EUROPE

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LETTERS OF TRANSMITTAL

AUGUST 15, 1974.

To the members of the Joint Economic Committee:

Transmitted herewith for use by the Joint Economic Committee, the Congress, and the interested public is a factual and interpretative assessment of the policy and performance of the East European economies at home and abroad entitled, "Reorientation and Commercial Relations of the Economies of Eastern Europe." This is a compilation of invited papers designed to meet the interests of the committee and the Congress in an up-to-date body of data and interpretative comment on the domestic and foreign economic relations of the countries of Eastern Europe, primarily Bulgaria, Romania, Hungary, Czechoslovakia, Poland, the German Democratic Republic (G.D.R.), and Yugoslavia.

Throughout history, the Middle European States have been buffeted by Great Power politics from the East and West. Their soil often has been the field of conflict for their more powerful neighbors. In the post-World War II period the political-military struggles of the cold war have been centered on this region. Now the emerging détente among the Great Powers, increases the possibilities Eastern European states may be permitted to play a larger role in the world economy.

It is hoped, that this volume, drawing on research of United States and Canadian academic specialists as well as professionals in the U.S. Government will serve as an aid and a stimulus to scholarship on this subject. The committee is deeply indebted to the scholars who gave so generously of their time and expertise. They are listed in the executive director's memorandum to me, and I would like to express on behalf of the committee our gratitude for their invaluable efforts.

Finally, we wish to take this opportunity to express our gratitude to the Congressional Research Service for making available the services of John P. Hardt, who helped to plan the scope of the research and coordinated and edited the contributions for the present study.

It should be understood that the views contained in this study are not necessarily those of the Joint Economic Committee nor of individual members.

WRIGHT PATMAN,
Chairman, Joint Economic Committee.

AUGUST 12, 1974.

HON. WRIGHT PATMAN,
*Chairman, Joint Economic Committee,
U.S. Congress, Washington, D.C.*

DEAR MR. CHAIRMAN: Transmitted herewith is a volume of materials on the economies of Eastern Europe entitled, "Reorientation and Commercial Relations of the Economies of Eastern Europe." The study contains papers written by scholars and specialists who, as rec-

ognized authorities on Eastern Europe, were invited to contribute. The specialists in question have been drawn from the ranks of various universities here and abroad, private research institutes, several departments of the Federal Government, and the Library of Congress. The papers they have submitted, in response to our request, cover the broad range of topics dealing with the recent performance of East European economies. Included among these topics are economic policy, the defense burden, agriculture, industry, population, manpower, education, technology, chemical and petroleum industries, commercial relations, the balance of payments, industrial cooperation, and tourism.

The Joint Economic Committee released a predecessor volume to this entitled, "Economic Developments in Countries of Eastern Europe," in 1969. The committee has in recent years followed a pattern of periodic assessments of the economies of socialist states: "People's Republic of China: An Economic Assessment" in 1972, and "Soviet Economic Prospects for the Seventies" in 1973.

Encouraged by expanding commercial relations with the West, but buffeted by the prospect of rising raw materials prices and reduced deliveries from the Soviet Union, the East European economic planners are striving to steer a course between balance-of-payments deficiencies with the West and runaway raw material prices from the East.

The contributors to the study have been most considerate of our needs and generous in giving of their time and expertise to provide not only basic information but also an essential analytical perspective. The individual scholars who have participated in the preparation of the present study are:

Thad P. Alton	Harold Lent
Elizabeth M. Bass	Mona F. Levine
Lawrence J. Brainard	Paul Marer
R. V. Burks	Ivan Matusck
J. T. Crawford	J. M. Montias
Laszlo Czirjak	Paul F. Myers
Andrew Elias	Egon Neuberger
Zbigniew M. Fallenbuchl	Patrick J. Nichols
Michael Gamarnikow	Bonnie M. Pounds
David Granick	Marjory E. Searing
John Haberstroh	Edwin M. Snell
Gregor Lazarcik	John W. Tilley
J. Richard Lee	

In addition, the committee received the wholehearted cooperation from the following private organizations and Government agencies:

- Bureau of Intelligence and Research, Department of State
- Office of Economic Research, Central Intelligence Agency
- Department of History, Wayne State University
- Department of Economics, University of Windsor (Canada)
- International Development Research Center, University of Indiana
- Economic Analysis Section, Radio Free Europe (Munich, Germany)
- Economic Group, Chase Manhattan Bank
- Department of Economics, University of Wisconsin (Madison)
- L. W. International Financial Research, Inc. (New York, N.Y.)

Foreign Demographic Analysis Division, Department of
Commerce
Bureau of East-West Trade, Department of Commerce
Department of Economics, State University of New York (Stony
Brook)
Department of Economics and Management Sciences, State Uni-
versity College of Arts and Sciences (Geneseo, N.Y.)
Department of Economics, Yale University

It should be clearly understood that the views expressed in these papers are those of the individual contributors and do not necessarily represent the position of their respective government, or nongovernment institutions, the Joint Economic Committee, individual members thereof, or the committee staff.

The Library of Congress made available the services of John P. Hardt, senior specialist in the Congressional Research Service, who bore major responsibility for planning the scope of the research, and coordinating and editing the contribution. He also wrote the summary for the present study. Dr. Hardt was assisted by George D. Holliday, also of the Library staff.

JOHN R. STARK,
Executive Director,
Joint Economic Committee.

CONTENTS

REORIENTATION AND COMMERCIAL RELATIONS OF THE ECONOMIES OF EASTERN EUROPE

	Page
Letters of Transmittal.....	iii
Summary—John P. Hardt.....	1
PART I. POLICY AND PLANNING	
Eastern Europe: The Political Context—Ivan Matusek.....	17
Survey of Economic Policy Issues in Eastern Europe: Technology, Trade, and the Consumer—J. T. Crawford and John Haberstroh.....	32
The Political Hazards of Economic Reform—R. V. Burks.....	51
East European Integration: Comecon—Zbigniew M. Fallenbuchl.....	79
Soviet Economic Policy in Eastern Europe—Paul Marer.....	135
Balance Sheet on Economic Reforms—Michael Gamarnikow.....	164
Policy Cycles in Socialist Economies: Examples from Czechoslovak Agri- culture—Lawrence J. Brainard.....	214
Variations in Management of the Industrial Enterprise in Socialist Eastern Europe—David Granick.....	229
PART II. PERFORMANCE AND RESOURCE ALLOCATION	
Economic Growth and Resource Allocation in Eastern Europe—Thad P. Alton.....	251
Military Expenditures in Eastern Europe: Some Alternative Estimates— Thad P. Alton, Gregor Lazarcik, Laszlo Czirjak, and Elizabeth M. Bass..	299
Agricultural Output and Productivity in Eastern Europe and Some Com- parisons With the U.S.S.R. and U.S.A.—Gregor Lazarcik.....	328
East European Chemical Production and Trade—Harold Lent.....	394
Petroleum Supply Problems in Eastern Europe—J. Richard Lee.....	406
Population and Labor Force in Eastern Europe: 1950 to 1996—Paul F. Myers.....	421
Education and Economic Growth: The Postwar Experience in Hungary and Poland—Marjory E. Searing.....	479
PART III. COMMERCIAL RELATIONS	
Legislative, Industrial, and Negotiating Aspects of United States-East European Trade and Economic Relations—Bonnie M. Pounds and Mona F. Levine.....	531
Commercial Relations Between the United States and Eastern Europe: Options and Prospects—Paul Marer and Egon Neuberger.....	556
A quantitative Assessment of U.S. Constraints on Trade With Eastern Europe and the U.S.S.R.—Andrew Elias and Marjory E. Searing.....	599
The Structure of Comecon Trade and the Prospects for East-West Exchanges—J. M. Montias.....	662
Eastern Europe's Trade and Payments With the Industrial West— Edwin M. Snell.....	682
Western Investment in Eastern Europe: The Yugoslav Example— Patrick J. Nichols.....	725
Tourism—Paul Marer and John W. Tilley.....	744

SUMMARY

By JOHN P. HARDT

U.S. interest in Eastern Europe has been heightened in the past by Soviet military actions designed to assert political control over the affairs of the area, for example, the Berlin blockade in 1948, the 1956 Hungarian uprising, the 1968 Soviet invasion of Czechoslovakia. More recently, however, American attention has been directed to Eastern Europe because it represents a potentially new and expanding market. Payment requirements for financing expanding shopping lists of high technology Western products promise to open the East European economies to East-West industrial cooperation and tourism. Thus, satisfaction of currently felt economic needs promises to replace military and political confrontation with a more Western reorientation of the countries of Eastern Europe. The commercial opening of the Soviet market to the West has gone far toward reducing the pressures for continued economic isolation of the economies of COMECON¹ from the world market. Even less constrained by Soviet influence, Yugoslavia has gone farther and faster toward developing economic interdependence with the West.

In 1969 the Joint Economic Committee released its first volume on Eastern Europe, *Economic Developments in Countries of Eastern Europe*. Since then the prospects have been enhanced for reorientation of the economies of Eastern Europe toward more domestic concern with technological change and satisfaction of consumer needs. These domestic requirements, in turn, have rekindled East European desires for economic ties with the West. As the economic planners begin the formulation of their new plans for the 1976-80 period, they are troubled not only by the proliferating domestic resource claimants and onerous Western balance-of-payments deficits, but by sharply rising raw material costs from the Soviet Union, especially for oil and natural gas.

In the 22 chapters in this compendium, some 25 specialists from governmental and academic institutions in the United States and Canada have assessed East European economic policy, performance, and prospects for the future. Special attention is given to changes in East European priorities and economic institutions, especially as they relate to commercial relations with the West. While the countries of COMECON provide the central focus of the compendium, little attention is given to Albania, Mongolia, or Cuba, and Yugoslavia—not a full member of COMECON—is given considerable emphasis. The German Democratic Republic (G.D.R.),² Poland, Czechoslovakia, Hungary, Romania, and Bulgaria form the core nations of COMECON. The U.S.S.R. is dealt with only to complete a frame of reference for analyzing policy and performance.

¹ COMECON, or the Council of Mutual Economic Assistance, is also abbreviated CMEA or CEMA in various papers of this compendium.

² The German Democratic Republic is commonly called East Germany.

The chapters have been divided into three sections: Policy and Planning, Performance and Resource Allocation, and Commercial Relations. The authors have provided their own summaries and the reader may wish to make up his own mind on differences of professional viewpoints. The following are some of the major questions raised by the papers with an indication of answers and where in the volume the appropriate analysis may be found.

1. Is the post-World War II division of Europe coming to an end? Does the Soviet Union now feel that a degree of disengagement from Eastern Europe is desirable? And, has the quality of Eastern control and East-West competition shifted from political security to economic affairs?

Although qualitative changes are taking place in the politics of Eastern Europe, loosening of economic control may be offset in some cases by tightening of ideological directives.

The postwar division of Europe may be coming to an end. But the process has been sporadic and the progress registered thus far confined largely to the normalization of foreign relations, increasing trade, and tourism. At the same time, Communist ideological constraints have been stiffening, and the chances that exchanges of people, ideas, and information will be allowed on any major scale seem distant at best.

While no longer the "iron curtain" of more than two decades ago, the dividing line between the East and the West, rooted in a different world outlook, an incompatible system of rule, and an adversary foreign policy in many parts of the world, still remains formidable (Matusek, p. 17).

Whether the new emphasis on economic factors will lead to Soviet disengagement or reassertion of control in a new form is not clear.

The Soviet Union and East Europe constitute a relatively closed system facing a modernization crisis of special severity. For the Soviet Union the problem is compounded by subtle but real challenges to its imperial power. Russia's military and political role in East Europe is threatened by economic, social, and intellectual forces not susceptible to the controls which have proved effective in the Soviet Union. These forces include growing nationalism; youthful populations with significant anti-establishment elements and ideas; an intellectual and philosophical vacuum, as Marxism-Leninism is seen as less and less relevant for solving contemporary problems; and the example of the economic vitality of Western Europe, from which East European societies are no longer isolated because of tourism, other forms of travel, and over varieties of communication. * * *

What effect would expanded U.S.S.R.-West trade have on Soviet-East European relations? At first glance it appears that détente offers a permissive framework for political changes within East Europe. But détente and increased contracts with the West also stimulate centrifugal forces within the bloc. Given the way such pressures are handled domestically in the U.S.S.R., countering policies by the Soviet Union vis-a-vis East Europe may also be expected. Furthermore, if the Soviets gain larger markets for their primary-product exports in the West and new opportunities to import machinery from the West, this may further weaken East Europe's commercial bargaining power with the U.S.S.R. Whether this will prompt significant changes in trade patterns will depend largely on how the Soviets view the tradeoff between the economic cost of continuing heavy commercial involvement in East Europe and the political gain from such involvement through the "influence" effect (Marer, pp. 159-160).

2. How do East European leaders and planners see the economic issues facing them in the current (1971-75) and prospective 5-year plans (1976-80)? What political costs and benefits are related to their perceived alternative courses of action?

Mr. Crawford and Mr. Haberstroh provided a survey of economic issues and policy in Eastern Europe drawing on the subject areas of many of the other papers (pp. 32-50). Mr. Burks, in turn, assessed some of the political pitfalls in the new economic strategies (pp. 51-78).

As the 1970's began, a new pragmatism settled over the economic policymakers in Eastern Europe. Most of them had finally shelved the all-out growth philosophy of the 1950's and were beginning to come down from the highly touted but largely disappointing economic reforms of the 1960's. In the wake of the Czech crisis in 1968 and then of the Polish worker riots in 1970, the leaders were looking for stability, hoping to find it in a return to more central controls on the economy—and on overzealous reformers.

Four years into the 1970's, the leaders have achieved considerable stability but they still face the dilemmas of the 1960's—the hard choice between investment in upgrading industrial efficiency or in raising the standard of living, and the crossfire between pressures for economic integration within Comecon and the growing role of imports from the West in sustaining East European development. And like the West, Eastern Europe has an energy question to answer. * * *

If the fuel import bill is as large as expected, some programs, especially for petrochemicals and possibly for autos and imports of consumer manufacturers, will have to be scaled down or suspended in the upcoming plan period. As of March 1974, Romania, not dependent on Soviet oil, was the only country to have said anything concrete about the next plan period and it was hinting at reduced growth rates in 1976–80.

These problems may detour but not derail the planners from the track laid out for this decade and beyond. By the 1980's they can begin counting on a payoff from investment in Soviet materials, and they certainly will take pains to keep the flow of Western technology coming. The same industries that have led growth since the mid 1960's—autos, chemicals, electronics—ought to be back at the top of the list in the 1981–85 plan (Crawford and Haberstroh, pp. 32, 49–50).

Political hazards also must be considered by East European planners in any change in resource allocation and reform in planning and management.

From the Communist point of view a principal difficulty with economic reform is that it inevitably involves some degree of decentralization. This is true regardless of the type of reform, whether it would mean some reliance on market forces, as in the case of Hungary, or whether, as in East Germany, only such matters as the organization of trusts are under consideration. Any important step toward decentralization of the economy constitutes a threat because it brings with it some loss of political control. Given the narrow base of popular support which the East European regimes possess, and the limited degree of positive popular response they can expect, any major reduction of central control must be taken seriously by the leadership. * * *

Thus the opening of the domestic market to Western competition, an inevitable accompaniment of marketization, can have political side effects which, from the viewpoint of the regime, are highly deleterious. There lurks in such a situation the possibility of a reduction or even a loss of control. There is, moreover, another sense in which the autonomous firm operating in a semimarket situation may bring with it a diminution of political control. For insofar as there is competition, so that the consumer has the possibility of choice, and insofar as prices are related to scarcities, so that consumer choices have an impact upon production, the Party will have given hostages to the consumer and will have abdicated that immediate control of economic processes which has become the heart of Marxism-Leninism. * * *

Finally, there is the fact that enterprise autonomy tends to point in the direction of trade union autonomy. If basic decisionmaking authority is vested in the enterprise manager, and the manager is to measure his success by the amount of profit his enterprise earns, then assuredly an easy way to increase returns are to hold wages down, reduce expenditures for safety devices, speed up assembly lines, and the like. Such practices can be pursued with relative ease when all unions are controlled by the Party, the Government, or management itself. A Socialist state which permitted the working class to be gouged by autonomous management would soon find itself in political trouble. Consequently, if autonomy is given to the managerial class, it follows that the regime will probably find itself under pressure to grant some form of autonomy to the unions, in order that the workers may defend their interests (Burks, pp. 51, 65).

3. Is the much discussed policy of reform of the East European economies a dead issue? Has the manager of the East European enterprises gained any more stature or influence since the Stalinist days?

The East European leadership appears to accept the need for change in planning and management. However, they have apparently rejected both a return to the Stalinist command economic system of the 1950's and the grandiose economic reform programs of the 1960's.

The most apparent reason for this increasingly critical approach was the growing realization that the traditional command economy system has outlived any economic usefulness it ever had. * * *

Having accepted the need for change, the understandable reaction of East European ruling elites has been a tendency to contain the unavoidable economic reforms within the existing political and economic system. Although the objective economic conditions put them into the position in which they had no alternative but to initiate substantive changes in the methods of planning and management, the party establishments have shown every intention to control both the scope and the momentum of economic reforms in order to preserve the orthodox political and economic institutions which insured their monopoly of power. They did not really want a new economic model, but would have been perfectly satisfied with a more efficient and rational version of the old one. * * *

When all is said and done, only a qualitatively different system of planning and management can meaningfully improve both the productive performance and economic efficiency of East European economies. Gamarnikow, pp. 164, 165-166, 212).

Moreover, in enterprise management there are quite different reactions of the leadership to economic pressures. David Granick in his survey of managerial variations in Eastern Europe found the manager in Romania and the G.D.R. still operating in a centrally controlled environment, while their counterparts in Hungary and Yugoslavia operated in a market-type system (Granick, pp. 229-247).

4. Have the recent steps toward integration of the East European economies in Comecon been beneficial to their economic performance? May we now expect a Common Market-like development in terms of specialization, mobility of labor and capital, and performance?

Comecon has changed from a group of individual economies emulating the Soviet Stalinist pattern with primarily bilateral connections to the center, to a more specialized, multilaterally trading, integrated group of nations. However, it does not appear likely to emulate the spirit of the Treaty of Rome or the characteristics of the West European Common Market.

It is doubtful that this will be an efficient integration, certainly no more efficient than the dominant economy with which gradually smaller economies will be integrated. It will not, therefore, contribute much toward the establishment of an "intensive pattern of development" throughout the bloc, but it will probably keep costs relatively low because of economies of scale inherent in producing for the bloc as a whole, a certain degree of specialization and cooperation in production, established mainly through administrative measures "from above" rather than through microeconomic decisions of enterprises "from below," and some division of responsibilities in scientific and technical research.

It will not be a socialist economic integration through the market, as many East European economists have been hoping. Nevertheless, there will be a movement toward establishing one economy, which will be directed by the strongest partner, although for political reasons smaller partners may continue to receive many concessions (Fallenbuchl, p. 134).

5. How have the economies of Eastern Europe performed in recent years? Is economic growth retardation a major current issue in East Europe? Has economic instability or cycles become an East European problem?

Economic growth in Eastern Europe has not been the problem it was a decade ago.

Judged on the basis of comparative rates of growth, the economies of Eastern Europe on the whole more than held their own in the second half of the 1960's as compared with the first half. Performance in 1971, 1972, and 1973, to the extent that results have been published, has been somewhat uneven, but on the whole, the tempos of the 1965-70 period have been maintained. Bulgaria shows some signs of slight slackening of its rate of growth in 1971-72, but is still growing at a fast rate. Czechoslovakia has eased the pace but is growing faster in 1971-73 than in 1960-65. East Germany in 1971-72 seems to have maintained the average rate of the preceding half decade; Hungary does likewise in 1971-73. Poland and Romania in 1971-73 are apparently enjoying an economic boom in comparison with either half of the decade of the 1960's. The six countries of Eastern Europe as a whole grew about as fast as the European Economic Community (EEC) during the 1960's, but one might expect them to have grown somewhat faster in view of their lower level of development. If Bulgaria and Romania are excluded, the average performance of the remaining four countries of Eastern Europe is below that of the EEC (Alton, pp. 283-284).

Future continuation of the current growth rates is more problematic :

What are their future prospects? Their problems are numerous: growing labor scarcities; unsatisfactory rates of growth of labor productivity, despite the high rates of investment; obsolescent technology; misdirected investment allocations of the 1950's and 1960's, inconsistent and conflicting elements in their systems of planning and management; apathy on the part of employees; rising expectations of consumers confronting governments that are less able than in the past to ignore them in favor of increased investments; inefficiency in production and stagnation of technological progress induced by sheltered markets at home and in the socialist Council of Mutual Economic Assistance (CMEA) bloc; limited possibilities for wider participation in world trade because of dependence on Soviet sources of raw materials (iron ore, oil, gas, cotton, etc.); pressures to shorten the workweek to catch up with such reductions achieved much earlier in other countries; anticipated rising costs for protecting the environment from pollution; and rising costs of imported raw materials, to name some of the more immediate ones (Alton, p. 284).

The East European economies have been subject in the past to agricultural investment, and policy cycles (Brainard, pp. 214-228). As they expand their industrial exports to world markets and become exposed to world pricing in raw materials, even more economic instability may be their lot.

6. What priority resource claimants now command East European output? Has the burden of defense on output and manpower been reduced?

Modernization of East European industry and improvement in consumer income have led to more emphasis on sophisticated industries, such as chemical production, and traditional economic sectors, such as agriculture.

Chemical production in Eastern Europe tripled between 1960 and 1972. Investment and growth followed the example set by the United States. Western Europe, and Japan in emphasizing synthetic fibers, plastics, and fertilizers. Per capita output of a few products like fertilizers now equals or exceeds output in Western Europe, although in most lines of production, Eastern Europe has a long way to go to catch up.

The development of East European chemical industries in the 1960's was based to a large degree on technology and equipment imported from the United States, Western Europe, and Japan. Most of the imported technology supported expanded production of fertilizers, synthetic materials, and intermediate chemicals derived from petroleum and natural gas. In addition, the chemical industries relied heavily on raw material supplies from the U.S.S.R.—especially oil, natural gas, and apatite concentrate.

Requirements for chemicals and chemical production in Eastern Europe generally have grown faster than production. Imports from non-Communist countries in particular exceed exports by a far larger margin than a decade ago. Eastern Europe has, however, developed a substantial export balance in fertilizer trade with the West (Lent, pp. 394-395).

Agricultural output, in turn, will depend on a continuation of past priorities for investments and importation of critical goods such as feed grains.

Progress in mechanization of agriculture has been very impressive in Eastern Europe, but its level, except in Czechoslovakia and East Germany, is still significantly behind that of Western Europe. Yugoslavia and Romania have the lowest level of mechanization. However, the application of commercial fertilizers is in general closer to the Western European level, and in Czechoslovakia, East Germany, and Hungary the use of fertilizers per hectare of land is higher than in Western Europe as a whole.

The introduction of higher-yielding varieties of wheat, corn, barley, rye, and oats along with the increased use of fertilizers brought about rapidly increasing yields per unit of land in all the Eastern European countries, especially during the last 8 to 10 years.

Considerably greater emphasis has been placed on animal output in recent years in order to better satisfy rapidly increasing demands for products of animal origin in all the Eastern European countries. Yields per unit of livestock have increased significantly in the last 10 years.

All the East European governments are putting increasingly stronger emphasis on increasing agricultural output and the productivity of land and labor. To effect this, they are channelling more resources into agriculture in the form of increased investment in machinery and equipment, better technology on farm, technical education, more flexibility and incentives to managers of farms, and pricing systems more responsive to changing scarcities, especially as shown in sharply increased prices paid to farmers.

An international comparison of agricultural outputs showed that Eastern Europe as a whole, excluding Yugoslavia, accounted for about 45 percent as much output as the U.S.S.R. and about 39 percent as much as the United States in 1970. * * * In terms of per capita levels of agricultural output, the United States ranks the highest followed by Hungary, Poland, East Germany, Bulgaria, the U.S.S.R., Czechoslovakia, and Romania in descending order. * * *

The outlook for East European agriculture seems to be good through 1975. * * * Prospects for the 1976-80 period will depend heavily on the determination of the East European governments to continue to provide and increase production incentives to farmers. Most likely there will be continuing emphasis on livestock production in view of the increasing demand for meat products caused by rising incomes of the population. However, the domestic feed base is now inadequate to sustain the current rates of growth of animal output (Lazarek, pp. 385-386).

In spite of increasing claims for resources for modernization and consumer program, the defense share was not diminished.

Based on valuations in dollars, defense spending grew at approximately the same rate as GNP. In most of the countries, defense spending grew at a slower rate in the 1960-67 period than in the 1967-73 period. For Eastern Europe as a whole, the average annual rate in the latter period (10.6 percent) was double that in the former (5.3 percent).

In all Eastern European countries, the nonpersonnel and R. & D. costs grew at substantially higher rates than personnel costs. The high annual percentage rates of growth of nonpersonnel costs that occurred in Bulgaria, East Germany, Hungary, and Romania in the last 6 years apparently indicate rapid progress in mechanization and modernization of their armed forces.

Comparison of Eastern Europe with the U.S.S.R. shows that the rate of growth of GNP was the same in 1960-75 in both countries, and, likewise, the rate of growth of defense spending was the same in both. * * *

In the last 6 years the average annual rate of growth in military spending has been higher in Eastern Europe than in the U.S.S.R.

Comparison with the United States, however, shows distinct differences. The average annual rate of growth of defense spending in current dollars from 1960 to 1973 has been significantly lower in the United States than in the U.S.S.R. or in Eastern Europe. The contrast is greatest for the 1967-73 period, when the U.S. GNP grew at an average annual rate of 8.4 percent, while the military expenditures grew only at 1.5 percent. The respective percentages for the U.S.S.R. were 8.9 and 7.9, and for Eastern Europe, 11.6 and 10.6 (Alton et al., p. 50).

7. What resource constraints inhibit East European efforts to improve economic performance? In which countries will manpower con-

straints be major economic problems? How does the investment in education help improve the labor quality? What may the inflation in raw material prices and limitations on supply do to the economies of East Europe?

The labor supply problems vary widely from country to country :

At present, the six countries differ markedly in the degree to which there is a labor shortage or labor surplus. Both Czechoslovakia and East Germany are severely short of labor and have been for some years. The labor supply situation in Bulgaria and Hungary is somewhat ambiguous. It has been reported from Bulgaria that there are shortages of experienced manpower in many sectors, that there are seasonal shortages in agriculture and permanent shortages in construction, and that shortages of qualified manpower are acute in construction, transportation, and mining. At the same time, it is acknowledged that agriculture can still supply sufficient workers. Reports from Hungary indicate alternatively that there is a serious manpower shortage, that the alleged manpower shortage is highly exaggerated, and that manpower shortages and surpluses exist side by side. * * * Poland and Romania appear to have abundant manpower, and the primary labor problem, especially in Poland, is the creation of enough jobs for new workers entering the labor force (Myers, p. 453).

Labor mobility or migration is a logical development but it would be a new development in East Europe.

There have been numerous reports of various numbers of foreign workers in Czechoslovakia and East Germany, but the only reliable data are for Czechoslovakia where 18,000 foreigners were reported to be working in 1972. Western newspaper stories give the numbers of foreign (mainly Polish) workers in East Germany as ranging from 20,000 to 100,000; the exact numbers have never been published. Whatever the numbers are, they are relatively small and there is a great reluctance to increase them in any of the labor-short countries because of ethnic differences, the costs involved, the shortage of housing, and the many social problems that may be anticipated based on Western European experience. There is also the political-economic argument against migration of labor between the Socialist countries in that these countries are supposed to be able to provide employment to all who require it, and consequently there is no need to move to another country to find work. Whether or not these and other considerations rule out large-scale international labor migration as a viable proposition is open to question at this time. This writer expects, however, that manpower supply and demand will be so out of balance in Czechoslovakia, East Germany, and Hungary that these countries will feel compelled to import the labor necessary to meet their needs. It may very well be that such labor could come from such countries as Greece, Italy, Spain, Turkey, and Yugoslavia, all of which have been exporting labor to Western Europe. This would seem to be a much more drastic step, however, than rationalizing labor supply and demand among the member countries of the Council for Economic Mutual Assistance (CEMA) themselves. Precedents for future labor migration on a relatively large scale have been established, this solution to labor imbalances is being discussed more and more openly in the various countries, and it would seem to be only a matter of time and acute need before bilateral or CEMA-wide agreements are reached in this regard (Myers, pp. 453-454).

Other authors express more skepticism on the potentiality of large scale worker migration (Marer and Neuberger, pp. 574-575).

Investment in professional or job-oriented education is more extensive in East Europe than the West. Effective educational investment may reduce labor supply imbalance (Searing, pp. 480-486).

Raw materials—oil, gas, metals, grain, etc.—have all become scarce, high cost products for the East European economies. And in most cases the Soviet Union has been their primary supplier. Now, however, the U.S.S.R. has indicated that the East European countries must look elsewhere for some of their supplies and expect higher prices :

By 1980, Eastern Europe might have to get as much as 40 percent of its oil imports—perhaps 50 million tons—from the Middle East and North Africa.

The U.S.S.R. is now selling oil to Eastern Europe at about \$2.50 per barrel, about one-fourth of the world market price. According to present trade agreements this Soviet price is fixed through 1975, so that the bulk of East European oil supplies will be provided considerably below world market prices. Thus, most of the East European countries will be relatively immune from large increases in their oil import bills through 1975. Although the Soviets would like to take advantage of higher prices and sell more oil to the West to earn badly needed hard currency, they are unlikely to renege on their commitment to deliver oil to Eastern Europe.

East Europeans anticipate that Soviet oil and gas prices will rise significantly during the next plan period (1976-80). To pay the higher prices these countries will have to export more manufactured goods to the U.S.S.R. and/or invest heavily in developing Soviet fuels and raw materials. For example, a CEMA agreement concluded in February 1974 calls for joint development of natural gas deposits in the Orenburg region of the U.S.S.R. and construction of a pipeline to Eastern Europe for increased gas deliveries. * * *

A staggering import bill for oil faces the East European countries unless major barter arrangements can be made for the future. If as much as 50 million tons of crude oil were purchased for hard currency from Arab countries in 1980 at present prices—about \$10 per barrel—the increased import bill for oil alone could reach more than \$2.5 billion. This would add some 15 percent to total estimated hard currency imports from the West* in 1980. Any oil obtained in barter deals would, of course, reduce these hard currency expenditures. However, imports of more than 15-20 million tons per year by 1980 on barter arrangements are unlikely as countries that could be major oil suppliers, such as Iraq and Libya, probably will be seeking hard currency rather than East European goods and services. Even with barter or other special arrangements, some countries in Eastern Europe will find it difficult to avoid increasing balance of payments problems (Lee, pp. 415-416).

8. What new strategy of commercial relations with the West has evolved in East Europe? What are the potential levels of trade between the countries of East Europe and the United States?

In order to secure expanding new markets in East Europe it must be profitable trade, and ways must be found to finance U.S. exports.

U.S. firms are continually searching for new, relatively undeveloped markets. Despite the rise in U.S. sales to EE during recent years, this region still represents one of the untapped market areas of the world. While the domestic markets of individual EE countries are small by West European standards, this is counterbalanced to some extent by two considerations. First, as one advantage of dealing with state organizations, a Western firm has a good opportunity to capture a large share of the total imports of an EE country. More importantly, marketing in a single EE country can often be the entering wedge into the other EE countries, and perhaps more importantly, also to the much larger Soviet market. Among the potential benefits to U.S. firms are gains of expertise and marketing economies of scale in dealing with state-trading countries, enhanced by the "demonstration effect" on other CEMA countries of a Western partner being successful in EE. * * *

Given the expectation that both the U.S. and the EE countries will wish to increase the flow of goods from the U.S. to EE, what are the options for financing this flow?

The most obvious option to consider is a potential increase in EE exports to the U.S. In this connection, we examine the impact of the prospective granting of MFN by the U.S. to the EE countries that do not now receive this treatment. We find that East Europeans place great stress on this issue as a precondition for engaging in the massive costs of entering the U.S. market. Another factor that might bring about an increase in the level of EE exports is economic reforms in EE. However, there is insufficient evidence, at this point, to forecast the potential impact of such reforms on the level of EE exports to the U.S.

The second option is the increase in EE exports of invisibles. There appears to be small likelihood of EE countries following in the footsteps of Yugoslavia where the remittances of Yugoslav workers abroad play a major role in financing Yugoslav imports. On the other hand, increased earnings of hard currencies from Western tourists, represent a large potential source of financing of commodity imports from the West.

A third option for financing imports from the United States is to utilize foreign exchange earned from potential export surpluses of commodities or invisibles to third countries. * * * Our analysis of EE trade with individual OECD countries indicates that there does not exist a strong possibility that, even if payments are multilateral, EE would have surpluses large enough to provide an important means for financing imports from the United States, particularly since some of these surpluses would be needed to repay past credits. This conclusion is seconded by the assessments provided by our East European respondents.

The fourth, and perhaps most significant, option is to be found in the capital account. The nature of U.S. exports, with capital equipment accounting for a large proportion of present and future exports to EE, requires that the United States grant credit facilities. It is customary in international trade to sell capital equipment on credit and our competitors have used credit terms as an effective competitive weapon. * * * A primary factor behind the increase in recent U.S. exports to CEMA has been the change in U.S. Government policy on credits. All of our EE respondents have stressed the importance of U.S. Government action in removing restrictions on credits, as well as tariff and nontariff barriers. The forecasts of future levels of U.S. trade with EE have also shown that a major expansion is tied to the simultaneous removal of export controls on high technology items and the granting of credit facilities to finance their exports. * * *

The fifth option closely connected with credits, is the provision to EE of Western capital, technology, organizational know-how, as well as marketing facilities, by means of industrial cooperation agreements and joint ownership (Marer-Neuberger, pp. 587-588).

From this assessment the U.S. trade with East Europe would exceed \$1 billion and perhaps reach as high as \$1.5 billion by 1980.

An especially difficult choice for the East European countries is whether to import manufacturers from other CEMA countries or from Western sources.

For several members of the bloc, including particularly the GDR and Bulgaria, loyalty to the Soviet Union, to COMECON, or to both must influence these decisions. For Romania, on the other hand, it may well be that enlightened self-interest is the only guide to the choice of suppliers. But, for all members, it is evident that the ability to generate hard currencies must have something to do with the decision to import from advanced capitalist countries. Hard currency credits represent one source of purchasing power in the West. Another consists of "hard goods"—raw materials, semifabricated goods—that are readily saleable on Western markets. A country's potential earnings of hard currencies will then in part be determined by its surplus in hard goods with the world as a whole. When this surplus increases (or the deficit in hard goods decreases), a CMEA member is capable, if it wishes, to sell more hard goods to and buy more manufactured goods from "advanced capitalist states" than would otherwise be possible. But it may feel its loyalty to COMECON hinders it from taking advantage of this opportunity.

These arguments suggest the following hypothesis. The percentage share of machinery and equipment or of finished manufactures (machinery plus industrial consumer goods) varies positively with (1) Western credits and net earnings in the West from tourism and other services; (2) the differences between total exports and total imports of hard goods in trade with the entire world; and (3) loyalty to the Soviet bloc (Montias, pp. 672-673).

9. If the tariff restrictions were reduced, that is if Most-Favored Nation treatment were extended to the nations of East Europe by the United States, how much might the exports from East Europe be increased? What other legislative and institutional barriers to increased commercial relations might be removed?

Although in the very short run extension of MFN and other steps to normalize trade between the United States and Eastern Europe might have modest effect, the changes during the next planning period (1976-1980) might well be significant.

The total dollar value loss of socialist countries' exports to the U.S. due to U.S. trade restrictions on imports discussed in this study was estimated to have

been \$321 million in 1966 and \$524 million in 1971, with more than one-half of the 1966 total loss and about one-third of the 1971 loss borne by the U.S.S.R. Of the above totals, it is estimated that \$124 million in 1966 and \$292 million in 1971 were caused by the tariff differential (lack of MFN) and the remainder by other factors such as quotas or embargoes. * * * In dollar figures, however, the increase would have been largest for the Soviet Union (\$174 million), Czechoslovakia (\$111 million), Romania (\$90 million), and Hungary (\$74 million). Large as these estimated increases appear, when compared to U.S. imports from the traditional trading partners, they are still relatively small. For instance, our actual imports from Belgium-Luxembourg in 1971 were about 25 percent larger than the estimates of our "normalized" imports from the total of all six socialist countries for that year.

The commodity group that would have ranked first from Eastern Europe and the U.S.S.R. was iron and steel. It is estimated that, under "normalized" conditions, in 1971 we would have imported about \$92 million of this commodity from all six countries. This would have represented slightly less than 3.4 percent of our actual iron and steel imports in 1971.

The second ranked group of our "normalized" imports from the socialist countries, in terms of value, would have been petroleum and petroleum products, primarily (88 percent) from the Soviet Union, followed by clothing, meat and meat preparations, nonferrous metals, and miscellaneous manufactured articles. * * *

Assuming that the trade relations between the United States and the six socialist countries will be normalized in the near future, our imports from this area may reach \$946 million in 1976, and \$1,183 million in 1980. These projected volumes are probably conservative in view of the increase in the formation of joint ventures and the expansion of production for the U.S. market that are expected to occur in Eastern Europe and the U.S.S.R. with the normalization of our trading relationships.

The fastest growth in exports to the United States between 1973 and 1976 is expected to be achieved by Bulgaria, closely followed by the German Democratic Republic, and Hungary. During the 1976-80 period, Romanian exports to the United States are expected to grow most rapidly—80 percent, followed by an increase in shipments from Hungary and Czechoslovakia—around 27 percent each; U.S.S.R.—23 percent; German Democratic Republic—22 percent, and Bulgaria—17 percent. In terms of the dollar increase of U.S. imports from the socialist countries under "normalized" conditions, the Soviet Union ranks first and Bulgaria last during both the 1973-76 and 1973-80 periods (Elias-Searing, pp. 601-603).

Government financing, export controls, and exchange of information continue among the legislative and negotiating issues affecting commercial relations between East European countries and the United States (Pounds-Levine, pp. 531-555).

10. Financing increased commercial relations poses both unique and common problems for the countries of East Europe. How have they dealt with their balance-of-payments problems? How critical has short, medium, and long-term credit been to the trade levels of the countries of East Europe?

Their balance of payments with the West has become the touchstone for East European planners in projecting commercial relations and, indeed, formulating their domestic plans. Financing payment deficits, in turn, has become a critical bottleneck for insuring plan fulfillment.

From 1960 to 1971, while trade with the West tripled (from some \$3 billion to nearly \$10 billion), indebtedness to the West rose to almost six times the original level (from less than \$1 billion to well over \$5 billion). * * *

Since the mid-1960s, if not before, East European leaders have made their decisions about trade with the West in the balance of payments context, considering not only trade balances but earnings and expenditures on invisibles and scheduled repayments on outstanding debt. * * *

About 25 percent of Eastern Europe's outstanding indebtedness represents medium- and long-term suppliers' credits, the greater part backed by Government guarantees. More important since the mid-1960's has been indebtedness of East European banks to commercial banks in the West, under even more flexible arrangements. A considerable amount is financed by short-term supplier credits

(sometimes running longer than 1 year), which have become quite acceptable for discounting by commercial banks. The rest is accounted for by special sources, including State instrumentalities (notably U.S. deliveries to Poland under Public Law 480 through 1964), swing credits (mainly in intra-German trade), Euro-dollar bonds and borrowing by CEMA banks, which have since become significant, scarcely figure in the period through 1971 (Snell, pp. 682, 685).

11. Is East-West industrial cooperation a solution to the domestic efficiency and balance of payments problems of East Europe? Have the extension of rights of equity participation in management, and favorable tax arrangements materially increased the level of industrial cooperation?

In order to stimulate trade with the West and increase domestic economic efficiency many East European countries have resorted to East-West industrial cooperation. In this development Yugoslavia is the pathfinder.

Romania, Hungary, and presumably Poland have essentially emulated the Yugoslav format for investment. Nonetheless they present the investor with a considerably different investment equation. First, their economies are more stable than is Yugoslavia's and second, the enterprises in all these countries are subject to more central control and red tape; it may prove to be just as hard to insulate investors in these countries from bureaucratic frustrations as it has been to isolate them from the impact of inflation and confusing policy changes in Yugoslavia. Aside from these basic obstacles, however, the future of foreign investment in Eastern Europe will depend to a large extent on how these countries react to the lessons of Yugoslav experience.

At a minimum, the limited response of Western firms to the opportunity of operating in the relatively open environment in Yugoslavia ought to have made the East Europeans more realistic about foreign investment. They now should expect that most Western firms will be intent on making sales, investing a minimum of equity, and marketing as little of the venture output in the West as practicable.

To counter this problem and attract more productive and rational investment, the CEMA countries—and Yugoslavia—might well recast their investment laws in the light of import substitution rather than export promotion. After carefully determining industrial priorities, governments could allow foreign companies to set up joint ventures which rest upon an adequate raw materials base and use locally produced inputs to make products for domestic consumption (Nichols, p. 742).

12. Will the significant earnings from tourism and foreign workers in the Yugoslav balance of payments with the West provide a guide for other East European countries? Are the political costs of tourism likely to offset the economic benefits in the view of the East European leadership?

Faced with persistent balance-of-payments deficits the East European COMECON nations have explored the Yugoslav solution: large-scale tourism and foreign workers. Many countries are committed to an expansion of tourism. Worker migration has not yet begun.

East Europe has emerged during the last decade as one of the most dynamic new tourist areas of the world. * * *

The average annual growth rate of visitor arrivals in the five CEMA countries from 1965 to 1972 was 13 percent. During this same period visitor arrivals in 13 OECD countries which also record according to frontier arrivals increased only 9 percent per annum.

During this 7-year period the number of arrivals increased more than fourfold in Romania, about threefold in Bulgaria and Hungary, and twofold in Yugoslavia. Relatively small increases were registered by Czechoslovakia and Poland, and no information is available for East Germany. * * *

We find that East European countries are far behind West Europe and Yugoslavia. In 1972 Spain led all West European countries with \$2.6 billion tourist revenue—70 percent of its commodity exports—followed by Austria, the United Kingdom, and Switzerland. The five CEMA countries and Yugoslavia combined

earned less revenue than Switzerland alone, suggesting in a rough and ready way, that tourism is still an infant industry in Eastern Europe (Marer-Tilley, pp. 752, 767-768).

DATA AND STATISTICAL RELIABILITY

More information is now being published on the economies of East Europe. An annual statistical handbook for the member countries of COMECON is now being published. Moreover, considerably more information is being provided through international media, such as the ECE, bilateral government commissions, and private Western commercial and financial channels. However, the data disclosed still falls far short of that commonly available among Western trading nations. This lack of data raises the cost and risk for Western corporations dealing in Eastern markets. Especially important for governmental and commercial banking institutions is better information on the balance of payments, outstanding debts (especially in hard currency areas) and financial assets. If other East European countries join the International Monetary Fund (IMF), some of this financial information common to the world economic community may become available. Romania joined the IMF in December 1972, and other East European nations are said to be considering the move. This is not to suggest that Western practice need be accepted by the East European nations in toto. Rather, they should provide reliable data to answer the legitimate questions of commercial and financial interests in the West:

- (1) What are the current and future market prospects?
- (2) How much is owed to other creditors by a debtor nation?
- (3) What are the debtor nation's other assets if deliveries cannot be made as agreed?

In assessing economic performance in East Europe, there are still differences in methodology. Western concepts of national accounting require adjustment of data reported by the statistical agencies in East Europe. The methodology used in this compendium by Thad P. Alton and associates builds on that of Maurice Ernst (in his studies of East European accounts) and Abram Bergson (in work on Soviet accounts). The necessity to estimate for missing data and to make subjective judgments precludes the development of a fully defined, objective set of accounts. However, the reconstruction of Thad Alton and associates probably best parallels those national accounts compiled by Western economists for the Western industrial nations. As the statistical reporting of the East European nations improves in coverage and comparability, more reliance may be placed on the primary source data.

PROBLEMS AND PROSPECTS

The proliferation of economic claimants for goods and services runs well ahead of the ability of the output increases to satisfy demands. Modest economic growth in the face of rising expectations is not unique to East Europe. However, the options for improved performance are especially limited, and the mixture of costs and benefits, particularly complex. For example:

- (1) Imports from the West may facilitate improvement in the quality of output and generate exports capable of earning hard currency.

However, levels of imports are sharply restricted by balance of payments deficits, and exports compete with orders from the Soviet Union and their own domestic economy.

(2) Increased priority to agriculture and consumer goods output may provide incentives for higher labor productivity and increasing real income for political stability. However, investment resources may not be easily shifted from defense and export industries to modernize and expand consumer related activities. Likewise, modest economic growth limits the incremental resource supply to be shared among the various resource claimants.

(3) Tourism earnings may provide more hard currency needed to expand Western imports. However, investment in tourist facilities may compete with needed domestic programs, and conspicuous tourist expenditures may increase consumer dissatisfaction even though real incomes are rising.

The above litany of "rob Peter to pay Paul" type choices presents too pessimistic a picture of East European economic prospects. Although the economies of East Europe are small, have insufficient raw materials and human resources, suffer from a technology lag with their Western neighbors, and must satisfy a revolution in rising consumer expectations, they do have assets. Many of their current leaders and planners are pragmatic and flexible. Many of their economists, statisticians, bankers, and managers are ingenious and highly professional. Middle or Eastern Europe has always survived by persistence, ingenuity, and determination when surrounded by superior political and military powers. In spite of its precarious position between economic colossuses—the Soviet Union in the East, with its raw material monopoly, and the Common Market, Japan and the United States in the West with their formidable technological leadership—East Europe may not only survive, but prosper.

Part I. POLICY AND PLANNING

EASTERN EUROPE: THE POLITICAL CONTEXT

By IVAN MATUSEK

The postwar division of Europe may be coming to an end. But the process has been sporadic and the progress registered thus far confined largely to the normalization of foreign relation, increased trade, and tourism. At the same time, Communist ideological constraints have been stiffening, and the chances that exchanges of people, ideas, and information will be allowed on any major scale seem distant at best.

While no longer the "iron curtain" of more than two decades ago, the dividing line between the East and West, rooted in a different world outlook, an incompatible system of rule, and an adversary foreign policy in many parts of the world, still remains formidable. Concurrently, the nuclear parity of the two superpowers and the conceded futility of thinking in terms of mutual annihilation should confrontations become intractable, continue to provide impetus for a new, more rational East-West relationship. Most notably, Stalin's old dream of a constantly expanding Soviet bloc, autarkic in natural resources and indigeous manufactures, has stalled in a one-way street of technological backwardness, consumer disillusionment, and world interdependence in face of shrinking resources.

The area of what is commonly called Eastern Europe—composed of the eight countries¹ athwart the U.S.S.R.'s western boundary—is a revealing weathervane in the détente process. Initially nothing more than a group of satellites doing Moscow's bidding and representing on its scale of values an important geographical buffer needed to protect it from any future Western incursion, the area has soon become one of Moscow's major headaches because of the resurgence of national aspirations and of a life of its own.

Embracing countries with well developed and varied national cultures, the area has had long experience with foreign domination, be it Hun, Ottoman, Germanic, or Russian. Some of the East European peoples were under various types of foreign domination for almost 1,000 years and did not gain national independence until the beginning of the 20th century. National survival under such conditions creates not only an inborn resilience in conditions of adversity, but a pronounced tenaciousness in clinging to national heritage. The imposition of Soviet tutelage and of its Communist system following the defeat of the Nazi war machine by Soviet armies on their territory was greeted with resentment if not downright hatred on the part of most East Europeans. They remain to this day preponderantly anti-Soviet and anti-Communist in outlook. Resented was not only the initial

¹ These include from north to south: Poland, East Germany, Czechoslovakia, Hungary, Romania, Bulgaria, Yugoslavia, and Albania.

feudal nature of the Soviet domination, but the suppression of personal liberties and of the right to political expression which—in contrast to conditions in the U.S.S.R.—were the accepted norm in most of Eastern Europe in the interwar period. The severance of virtually all contacts with the West, whose culture has always been closer to the East European than to the Soviet way of life, was another major grievance. No wonder then that the resentment of Soviet hegemony and of the artificially imposed Communist system welled up periodically in the area.

In 1948 Yugoslavia broke with the Soviet bloc to pursue an independent foreign policy, and a domestic path more permissive toward its citizenry than any now in existence in the area; at the same time the economic structure borrowed from the West to create a hybrid of “market socialism.” In 1961 Albania defected to join China in the Sino-Soviet conflict in another defiance of Soviet supremacy. The 1956 national upheavals in Hungary and Poland were similarly motivated but did not result in defections from the Soviet bloc. In Hungary, because of the Soviet military intervention. In Poland, because the dismal economic conditions of the worker rather than the Soviet-Polish inequities were the paramount grievance. In 1968, another assertion of national aspirations by Czechoslovakia was considered a threat to the Soviet system and crushed by the force of arms.

Two years later the Polish workers’ riots once again highlighted the plight of the population under the Communist system. But there was no Soviet intervention since the events had but few anti-Soviet overtones. The less spectacular but very effective defiance of Soviet overlordship by Rumania—particularly since 1964—involved the Communist leadership, rather than the population, and earmarked Rumania as the only Warsaw Pact² country with an independent foreign policy but an orthodox internal system.

Given the instability of the alliance one is forced to ask what if anything Moscow has done to forestall further dissent and upheaval. Has it in effect remained completely insensitive to recurrent evidences of discontent? The answer is an ambiguous yes and no. Of the three Soviet leaders faced with the problem, Stalin remained the least flexible, given to brutal, bullying reactions. Khrushchev appears to have been the most responsive, while Brezhnev falls somewhere in the middle. In attempting to reshape Stalin’s feudal approach to Eastern Europe, Khrushchev seemed to be the most farsighted and inspired. This despite the setbacks some of his initiatives suffered and despite the fact that he was at least in part responsible for the crushing of the 1956 Hungarian revolt and for the 1961 erection of the Berlin wall. His 1955 apology to Tito and the concessionary Belgrade declaration he signed foreshadowed the eventual acceptance of “different roads to socialism” by Brezhnev 10 years later. Khrushchev’s October 30, 1956, Soviet Government declaration which invited the East Europeans to

² Includes all East European countries except Yugoslavia and Albania.

discuss their economic grievances, unequal treatment, and the presence of Soviet advisers and troops on their territory, not to mention the 1958 withdrawal of Soviet troops from Romania, represented major innovations in policy, many of which still remain to be accepted by the successor Brezhnev regime. One wonders how much of Khrushchev's subsequent backtracking on these issues was the result of his own second thoughts and how much was due to pressures from dogmatic elements in the Soviet and East European leaderships. It is no wonder that a number of East European leaders considered Khrushchev's ouster a real personal loss.

Following Khrushchev's ouster in 1964 most of these innovations were quickly forgotten. For instance, the October 30, 1956, government declaration is never referred to, and the 1955 Belgrade declaration was reaffirmed only belatedly and with reluctance. Soviet troops were introduced into Czechoslovakia in 1968 without Prague's approval, and Romania has been for a decade avoiding Warsaw Pact maneuvers on its territory to forestall a similar fate. On the other hand, the Soviet-East European terms of trade appear no longer replete with crass inequities, and the 1971 Council of Mutual Economic Assistance (Comecon) complex program seems to concede the principle of East European sovereignty in economic decisionmaking for which Romania has fought for so long. Compared to the 1950's, Eastern Europe's uphill battle for a greater amount of say-so in their own affairs has on the whole registered more gains than losses.

While anti-Soviet sentiment prevails among the populations and crops up here and there in the leaderships there are also centripetal forces which induce the area's adherence to Moscow. Among these are the common basic ideology, the similarity of the party and government systems, the economic dependence on the U.S.S.R. as a source of raw materials and a market for the area's often substandard manufactures,³ and—most importantly—the reality of Soviet geographic proximity. As a result the East European regimes have over the years vacillated between a subservience to Moscow as a guarantor of their continuation in power and the desire to assert greater independence in response to national or popular aspirations. Yugoslavia, which demonstrated that a Communist regime can survive despite Moscow's non-support and outright hostility, served to rationalize the latter course.

Shortly after the post-World War II installation of Communist regimes in East Europe, largely on the Red Army's bayonets, each of the eight countries dismantled existing political institutions—be they a form of democracy or monarchy—and replaced them with a political and economic structure which was a close replica of the Soviet model. This happened not only because the new Communist leaderships lacked experience, or were not willing to experiment, but

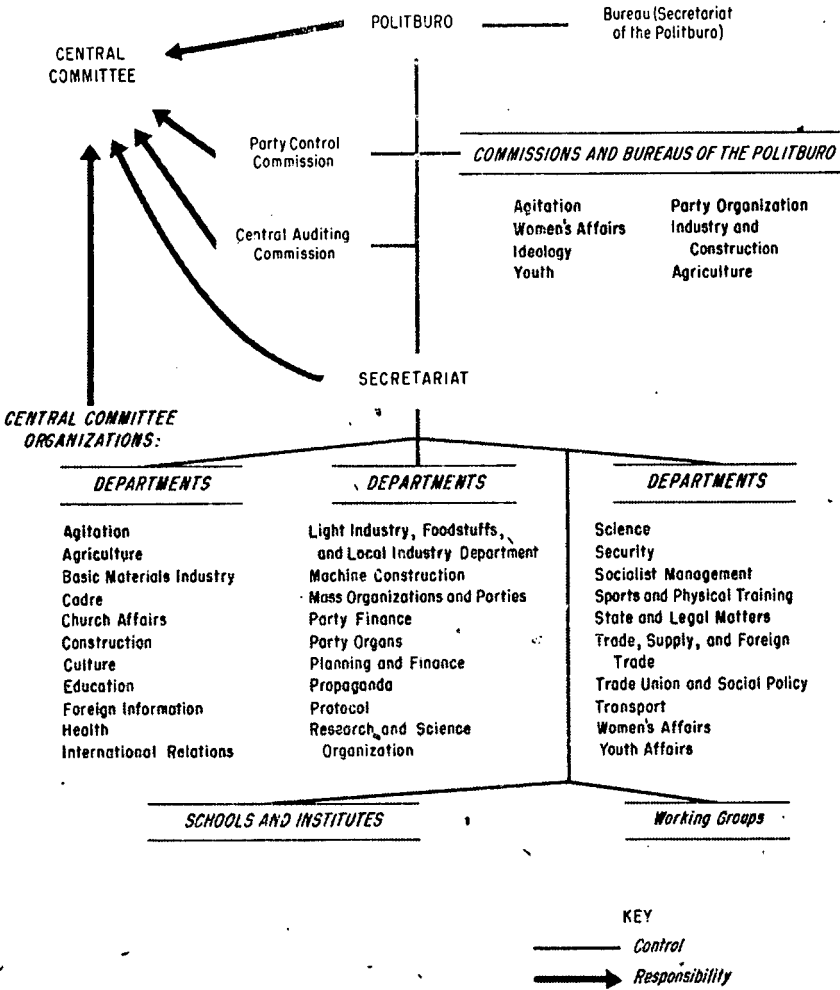
³ The U.S.S.R. provides its allies in Eastern Europe with some 75 to 90 percent of their imports of crude oil, iron ore, pig iron, lumber, and wheat, and over 50 percent of their imports of coal, coke, and cotton. Eastern Europe supplies some 75 percent of Soviet imports of machinery and equipment.

rather—and primarily—because Moscow insisted that this be done in order to facilitate its control. In each country Moscow originally installed a number of Soviet “advisers” who in effect directed and supervised the most important national institutions. It was only following the death of Stalin in 1953 that the dismantling of the crassest aspects of Moscow’s control system began, culminating in 1956 in response to the shock of the upheavals in Hungary and Poland. The Communist Information Bureau (Cominform), which until then served as a multilateral control mechanism over all other Communist parties also became a casualty. From then on Moscow had to rely on bilateral party contacts and on its domination of the two remaining multilateral organizations: the Warsaw Pact and the Council of Mutual Economic Assistance (Comecon) for asserting its—by now diminished—political, military, and economic control over the area.

The ideological underpinnings for Soviet domination are provided by its concept of “socialist—or proletarian—internationalism” which in essence demands the subordination of national interests to those of the Communist movement—that is, Moscow’s. The so-called Brezhnev doctrine of “limited sovereignty” makes essentially the same demand. Both concepts foster and rationalize Moscow’s hegemony over other parties in the area. Despite the theory, however, Moscow’s influence over Eastern Europe has come to rest increasingly on a relationship of mutual advantage, rather than the dictate of force. It would also appear that Moscow has become progressively more willing—possibly because of a lack of feasible alternatives—to reach compromises which take into account some of the East European aspirations and/or needs.

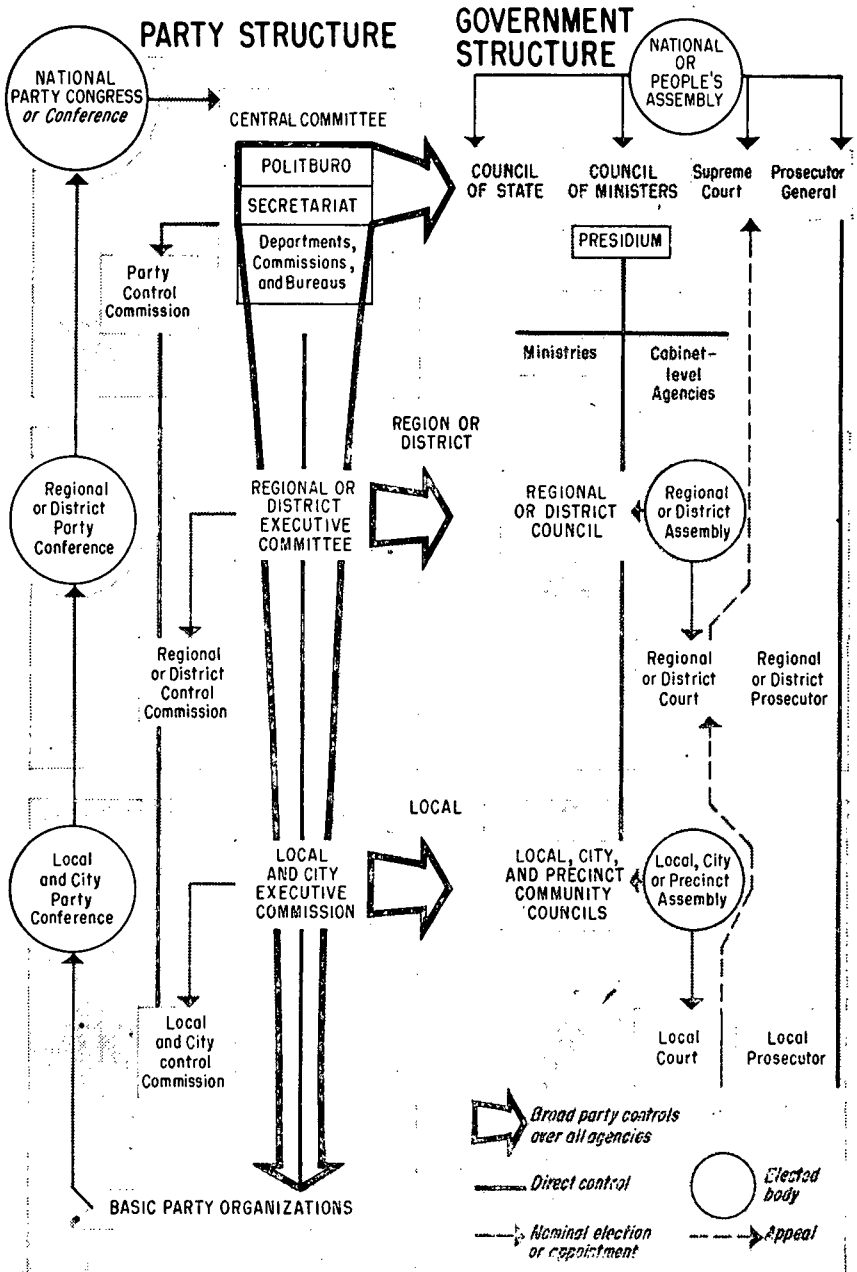
All policymaking power in Eastern Europe, as in the U.S.S.R., rests with the Communist parties whose organizational structure, despite some differences in terminology, is practically identical with that of the U.S.S.R. (see fig. 1). Through an intricate system of cells reaching down to individual city blocks, factories, and offices the party not only exerts its influence over most of the daily life, but also maintains its hand on the pulse of the society. At all administrative levels it actually maintains a shadow government which from behind the scene leads

FIGURE 1. TYPICAL PARTY HIERARCHY



ministries, drafts laws, and hands down court sentences long before the responsible legislative, executive, or judiciary organs address the subject (see fig. 2). In some cases the party men actually hold both

FIGURE 2. TYPICAL PARTY AND GOVERNMENT STRUCTURE



positions: behind the scene in the party, and in full public view as the President, the Prime Minister, or the Chairman of the Parliament. Some countries—for example Romania, Poland—have attempted to streamline the structure by merging a number of party and government bodies below the national level.

The approximately dozen full members and about half-a-dozen candidate members of the Politburo (or Presidium) represent the highest party authority and are the real policymakers in such varied fields as foreign or military affairs, economic matters, cultural policy, et cetera.

The somewhat smaller Secretariat supervises the execution of their decisions, directs the party's current work, and controls the movement of members up or down the party ladder. The First (or General) Secretary heads both the Politburo and the Secretariat and is in effect the most powerful man in the party and the country. All of the Politburo and Secretariat incumbents are also members of the some 100-member strong central committee—a sort of party parliament which by statute is the highest party authority when the party congresses (held each 4 or 5 years) are not in session. In practice, the central committee plenums usually serve no other role than to rubberstamp Politburo decisions. However, whenever factional infighting develops in the party hierarchy, the central committee assumes crucial importance in that it decides the political survival or demise of one or the other warring Politburo or Secretariat factions. (For instance, the Czechoslovak Party Central Committee decided in 1968 to oust First Secretary Novotny and to replace him with Dubcek; the 1970 replacement of Gomułka with Gierek in Poland was similarly the result of a central committee action.) The statutory responsibility of the central committee or of the party congress to elect the Politburo or the Secretariat members are thus at times actually discharged. For the most part, however, decisions of this type are usually made by the Politburo itself and rubberstamped by the party parliaments.

The Council of Ministers, composed of a prime minister, some half a dozen deputy premiers, and 10 to 35 ministers is according to the constitution the "supreme organ of state administration." Actually, it is no more than the executor of party policies and instructions. According to the constitution, the Council of Ministers is appointed or recalled by the national parliaments or the state president. In fact, the selection of incumbents is made by the party long before the parliament acts upon them. According to the constitution, the individual ministers "direct" specific branches of state administration, while the Council of Ministers can "rescind an order or regulation" issued by a minister. In practice, the unwieldy Council of Ministers hardly ever acts as a body, leaving this function to its Presidium (or Bureau) composed of the Prime Minister and his deputies.

The parliaments, known as National or People's Assemblies are for the most part unicameral bodies (in Yugoslavia the parliament has 5 chambers, in Czechoslovakia 2) composed of some 250 to 400 deputies. The latter are elected usually for a 4- or 5-year term on a single national front slate. The slate includes some independents and puppet party candidates—where noncommunist parties exist—but in every instance the Communists retain a majority on the slate, despite the fact that the nonparty candidates are handpicked and no less reliable

than authentic party members. While according to the constitution the parliaments are the "highest organ of state authority" they are in fact the lowest, and, except in Yugoslavia, simply ratify legislation drafted by the party.

The principle of parliamentary representation is carried down the ladder of territorial organization in a way of that of the party. Thus, on the regional, district, and local levels there is a system of local government made up of what are in essence miniaturizations of parliaments and Councils of Ministers under such names as Peoples Councils, National Committees, and so forth. These are usually elected at the same time as national parliaments.

Each Council exercises government authority over the area of its responsibility and each lower level reports and is responsible to its immediately superior level and ultimately either to the parliament or to the Council of Ministers.

Under the principle of no separation of powers and despite the constitutional claim that all judges are independent and subject only to the provisions of the law, the judiciary in Eastern Europe is nothing more than an extension of the authoritarian party rule.

The purpose of this system is to provide the regimes with the most varied control over the population which, since the Communist take-over, has been an unwilling captive of the system. The institutional framework of the system is designed to provide close supervision of each individual by government and party agencies and is further augmented by an extensive network of secret and regular police, informers, mass organizations (trade unions, youth unions, and so forth), and a system of indoctrination by public media and schools.

Yugoslavia, which broke with the Soviet bloc some 25 years ago, is a notable exception to this system. While it also does not allow opposition parties, it has evolved since 1948 a system of rule which, while institutionally similar to the one described above (see figures 3 and 4), is significantly more decentralized, permissive, and responsive to public opinion pressure—especially from the half a dozen constituent nationalities. Apart from a total rejection of Soviet hegemony and a pursuit of a "nonaligned" foreign policy the most notable departures from the Soviet-type system are the "guiding" rather than "directing" role of the Party; a system of "workers' management" which gives workers in each enterprise a voice in managerial decisionmaking, including a dismissal or the appointment of a manager; and an economic system which assigns the market forces, profit, and the individual manager a substantially greater degree of influence than anywhere else in Eastern Europe. Another earmark of the system is the markedly greater willingness to experiment with existing institutions and to make frequent changes in the political and economic structure on a trial-and-error basis. Over the years, but especially since Khrushchev's conciliatory 1955 Belgrade Declaration conceding that there are "separate roads to socialism" these Yugoslav practices have attracted a number of imitators elsewhere in Eastern Europe (notably in Poland, Czechoslovakia, and Hungary). Most of these, however, proved rather shortlived, once they ran into Moscow's opposition.

Considering the similarities of the political structure the extent to which the various East European nations differ is surprising—to say the least. Some—particularly Hungary and Poland—have been, despite

FIGURE 3. STRUCTURE OF THE LEAGUE OF COMMUNISTS OF YUGOSLAVIA, 1973

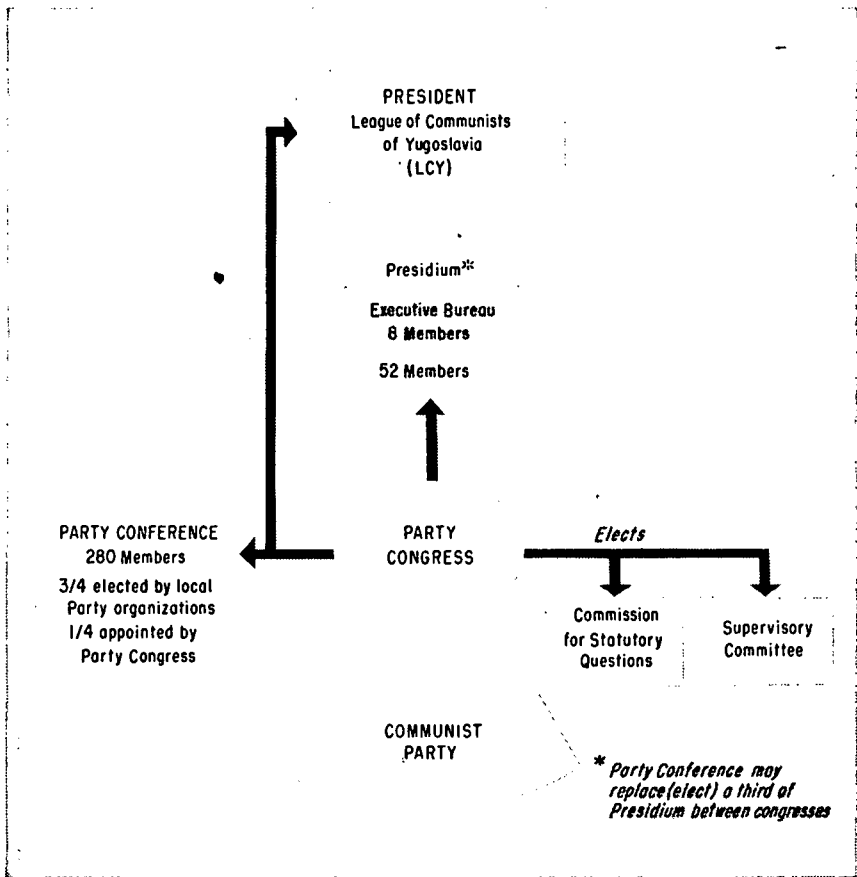
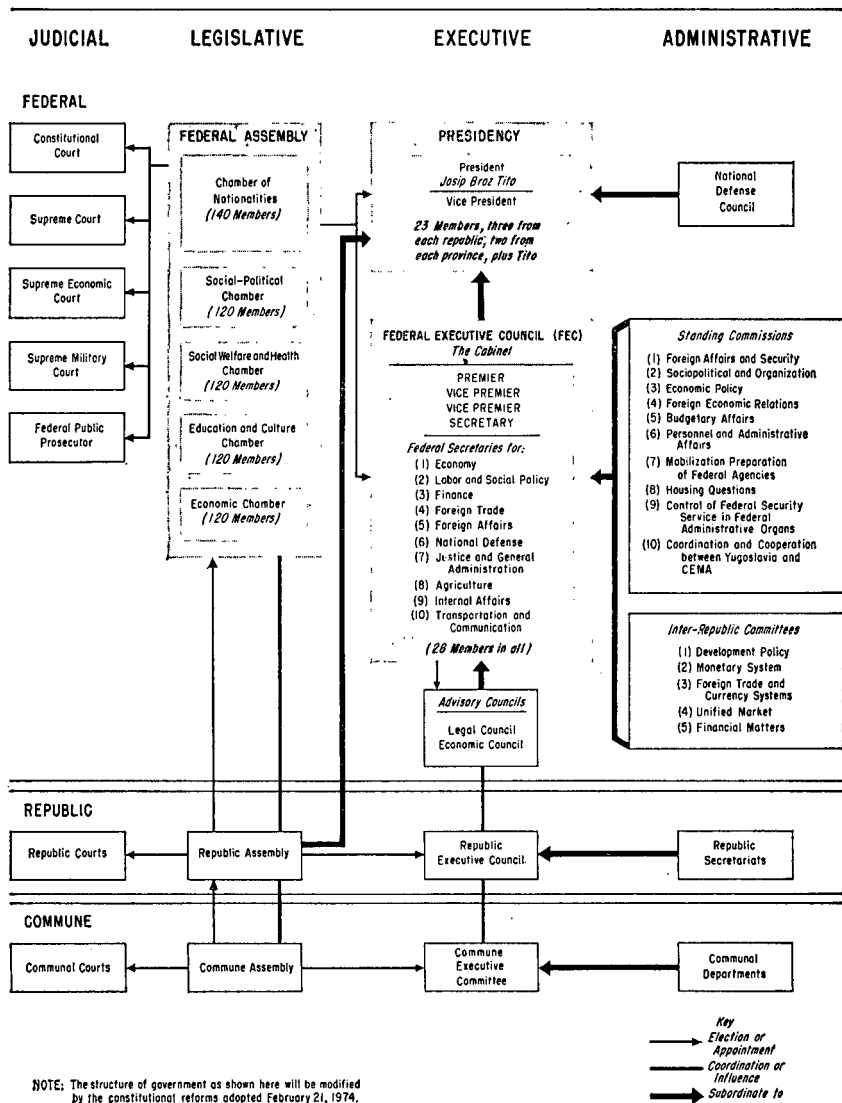


FIGURE 4. YUGOSLAV GOVERNMENT STRUCTURE, 1973



notable exceptions, considerably more permissive in the treatment of their citizens. In Poland, agriculture is still primarily the domain of the private farmer and the Polish Catholic Church has never lost its adherents or its backbone. Hungary's New Economic Mechanism (NEM) reform, which allows limited operation of market forces, has decentralized decisionmaking in the economic structure to a greater degree than in any other Warsaw Pact country. There has been, however, some retrenchment over the years, and recent reshuffles in the party hierarchy affecting NEM's exponents have raised questions as

to NEM's future course. Poland, Hungary, and Czechoslovakia—the three countries most plagued by assertive and dissident popular and intellectual currents—have in recent years promoted consumerism which caters to material needs of the population to a degree not matched anywhere in the Warsaw Pact area. On the other hand, Romania, which pursues an orthodox and spartan domestic course, has especially since 1964 indulged in an independent foreign policy exemplified by deviations from the Soviet line unimaginable in Stalin's times. It has refused to support Moscow in the Sino-Soviet conflict or to acknowledge Soviet leadership in the Communist movement. Bucharest established relations with the FRG long before U.S.S.R. and Poland normalized their relations with Bonn, it defied Warsaw Pact's wishes by not breaking relations with Israel after the 1967 six-day war, and refused to participate in the 1968 invasion of Czechoslovakia.

At the maximum extremes of nationalistic assertiveness vis-a-vis Moscow are the two geographically most remote countries: Yugoslavia and Albania. Yugoslavia has since 1948 withstood threats, ostracism, as well as blandishments of Moscow and its allies and pursued an independent domestic and foreign course while hoping for Moscow's friendship on its own terms. Albania has since the early 1960's associated itself with People's Republic of China and maintains an unflinchable hostility toward Moscow.

The imposition of the Soviet system also brought with it a number of typically Soviet characteristics. Most prominent among these is the cumbersome bureaucratic structure with its pronounced drag on the economy. Party meddling in economic affairs, managerial inefficiency, and low labor productivity have traditionally plagued the economy of the East European countries in very much the same manner as in the U.S.S.R. No wonder then that the desire to acquire admired technology and managerial skills from the West is strongly in evidence.

To justify and protect the system the regimes of Eastern Europe—with the notable exception of Yugoslavia and lately of Romania—have consistently assumed a posture of hostility toward the West. Party propaganda has belabored the evils of alleged Western imperialism and the decadence of capitalist institutions. To deter its generally pro-Western populations from too much contact with Westerners and their ideologically subversive culture the regimes have prostrayed the West, and the United States in particular, as the main enemy. The importation of Western newspapers and publications is either prohibited or carefully curtailed to a selected few in the political or technocratic elite. The importation of Western films, TV programs, or the translation of Western books and plays is limited to those which are ideologically tolerable. Exchanges in the academic and artistic fields are in most countries similarly circumscribed.

While the signal for détente, highlighted by President Nixon's 1972 meeting with Secretary General Brezhnev in Moscow, penetrated the area and raised the hopes and expectations of populations eager for greater contact with the West, it also evoked in the regimes new fears of ideological contamination and new efforts for internal strengthening of the system. At the same time, the prospect of greater trade exchanges, of importation of coveted Western technology, and of various forms of production or marketing cooperation have been welcomed. The fear that the U.S.S.R. will prefer to trade with the

West at the expense of Eastern Europe has become an openly voiced concern, impelling a number of East European countries to a determined scrambling for a larger share of Western trade and a search for cooperative ventures as a method of entry into difficult and unfamiliar Western markets. The effort has been strong enough to leave its imprint in statistics, and the regional distribution of East European trade is beginning to show a new trend toward a greater East-West balance.

TABLE 1.—NONCOMMUNIST WORLD'S SHARE OF EAST EUROPE'S TRADE, 1965-73

	[Percent of turnover]				
	1965	1970	1972	1973	1974 plan
Yugoslavia.....	65	75	71	73	.....
Romania.....	35	44	49	46	50
Poland.....	35	34	38	43	.....
Hungary.....	32	35	32	34	.....
Czechoslovakia.....	27	30	29	32	41
East Germany.....	26	28	29	31	.....
Bulgaria.....	23	22	19	20	.....

¹ Estimate.

Source: East European national statistical handbooks.

During 1973 Eastern Europe's trade with the United States has recorded particularly marked increases. In several countries the 1973 trade volume with the United States approximately doubled the 1972 levels, due to a major increase in imports of technology and agricultural products. The difficulties that Eastern Europe has continued to experience in penetrating the U.S. market, however, persisted and accounted for the sizable East European trade deficits that accumulated in 1973.

TABLE 2.—VOLUME OF U.S. TRADE WITH EASTERN EUROPE

	[Turnover in millions of U.S. dollars]			
	1965	1970	1972	1973
Poland.....	101.3	167.9	252.8	531.9
Yugoslavia.....	211.0	264.1	318.8	420.5
Romania.....	8.2	79.8	100.9	172.3
Czechoslovakia.....	44.4	46.4	78.0	107.3
Hungary.....	11.4	34.5	35.3	49.4
East Germany.....	19.0	42.6	27.8	38.5
Bulgaria.....	5.3	17.7	6.4	11.0
Albania.....	.1	.2	.7	.7
Total.....	400.7	653.2	820.7	1,313.6

Source: U.S. Department of Commerce.

Most of the growth in East-West trade was financed by short and medium-term credit. As a result, the cumulative indebtedness to the West grew noticeably, particularly in Romania, Poland and Bulgaria, ranging up to 40 percent of the annual volume of exports. The current debt servicing ratios for the area as a whole, however, remain at manageable levels.

The progress in the trade field was matched by an improvement in political relations with the West. Following protracted negotiations a Polish-FRG treaty was concluded and diplomatic relations established in 1972. Thereafter, a treaty normalizing relations between FRG

and Czechoslovakia was signed in November 1973, after a compromise was reached on the nullity of the Nazi-imposed 1938 Munich agreement. By the end of 1973 the FRG established diplomatic relations with Czechoslovakia, Hungary, and Bulgaria. This left Albania as the only country in Eastern Europe with which Bonn has not restored relations.

The signing of the Quadripartite agreement on Berlin and the conclusion of FRG's basic treaty and other agreements with East Germany during 1972 set the framework for improvements in another troublesome area. Most importantly, the Berlin wall and the East German territory was opened to the long-prohibited visits of West German relatives and friends. According to official East German claims close to 7 million West Germans and West Berliners visited East Germany in 1972—more than double the 3 million in 1971. East German travel to the FRG—mostly by pensioners—was only about one-sixth of this figure, and in gross disproportion to the 13 million who visited Poland and Czechoslovakia. Both West and East Germany were admitted to the United Nations in 1973 and East Germany gained recognition by some 70 non-Communist countries shortly after the basic treaty was concluded.

Elsewhere in the area, progress was also marked in the development of economic ties with the West. Romania and Hungary joined GATT (General Agreement on Trade and Tariffs) leaving only East Germany, Bulgaria, and Albania outside the framework of this institution. Romania took a major step in joining the International Monetary Fund (IMF) and the International Bank of Reconstruction and Development (IBRD), the first Warsaw Pact member to do so. Bucharest also requested and obtained a preferential tariff status from the Common Market—another first for a Warsaw Pact country. Romania has thus come to resemble Yugoslavia more and more in its independent and varied ties with the West. The financial authorities in Hungary floated several bond issues in the Eurodollar area, maneuvering skillfully in a "capitalist" environment usually treated with distrust and reservation by most Warsaw Pact nations.

Unfortunately progress registered in East-West relations remained largely restricted to activities of the officialdom and devoid of broader human relations content which is so crucial in giving meaning to relations between nations. While the flow of Western tourists into the area continued to expand, visits from Eastern Europe to the West remained a fraction of this number. The barriers the East has erected to the flow of individuals, ideas and information remained in place and official statements and propaganda branded West's efforts to promote such exchanges in the CSCE discussions as an "interference in domestic affairs." There were also pronounced efforts to bolster East Europe's ideological and internal security defenses against the feared vulnerability of the communist systems. While it is difficult to gage attitudes on this issue, the fearfulness of some East European regimes appeared to exceed that of the U.S.S.R.

Saddled with the disadvantage of having been branded the main enemy, the United States has traditionally lagged behind the other Western nations in developing its relations with Eastern Europe. Shortly after the Communist takeovers, and reacting to the mounting hostility which accompanied the outbreak of the war in Korea, the United States during 1951 withdrew the most-favored-nation tariff

treatment (MFN) from the East European countries. Yugoslavia, which by then had been excommunicated from the Communist movement and subject to harsh Soviet bloc attacks and pressure, was the only exception. To this day, MFN continues to be denied to the area except for Poland which had it restored in October 1960, following the emergence of a more independent posture in that country. The withdrawal of MFN has since that time become one of Eastern Europe's major grievances. The outpouring of propaganda on this issue assumed a specific anti-United States character because Eastern Europe's major trading partners in Western Europe, as well as Canada and Japan, extend MFN treatment to East European imports. The attitude reflects the belief that the 7- to 30-percent higher duty assessed on East European exports reduces their competitiveness and/or earnings in U.S. markets. While their ability to export to the United States would be only marginally affected by the granting of MFN the attitude is of considerable importance in the present period when East Europeans are deciding how and where to purchase desired Western technology.

From the U.S. point of view the question of restoring MFN to Eastern Europe is only one of the many issues to be resolved in the mutual search for an eventual normalization of relations. While relations with some countries have already advanced significantly toward this goal, there are others where a number of hurdles remain to be overcome. No diplomatic relations exist with East Germany and Albania. There has been as yet no settlement of nationalization and financial claims with Czechoslovakia, East Germany, or Albania. And Bulgaria, Czechoslovakia, Hungary, and Romania have yet to reach a settlement with private U.S. holders of pre-World War II bonds of these countries. Practically everywhere the lack of access or communication with Eastern Europe's closed societies remains a problem. Similarly, the plight of divided families still beclouds relations with a number of countries.

Nevertheless, following two decades of cold war, U.S. relations with Eastern Europe have already registered considerable progress. While President Johnson's effort in October 1967 to move relations from sterile coexistence to peaceful engagement met with deep suspicion and was aborted by the 1968 military suppression of the "Prague Spring," changing conditions by 1969 made a new approach to the area feasible. In August 1969 President Nixon visited Romania—the first visit by a U.S. President to a Warsaw Pact country—stating that "we stand ready to reciprocate the efforts of any country that seeks normal relations with us." Relations with nonaligned Yugoslavia, which the President visited in 1970, had been, of course, "normal" and "friendly" for many years.

In his 1970 report to the Congress, the President again extended a hand to Eastern Europe stating that:

We are prepared to enter into negotiations with nations of Eastern Europe looking to a gradual normalization of relations. We will adjust ourselves to whatever pace and extent of normalization these countries are willing to sustain.

The East European response to this message was cautious and with the exception of Romania awaited a signal from Moscow.

The President's 1972 Report to the Congress amplified the earlier concept to a definition of U.S. posture under conditions of détente:

As the forces of change have begun to loosen postwar political rigidity, new expectations and aspirations have arisen in both Western and Eastern Europe.

The benefits of relaxation must extend to both. The Soviet Union has a right to its own security. But neither a durable peace nor an era of cooperation in Europe can be built on principles that divide the continent and violate the sovereignty of its nations and the freedom of its people. * * * Every nation in Europe has the sovereign right to conduct independent policies and therefore be our friend without being anyone's else's enemy. * * * The use or threat of force by the Soviet Union in East Europe can only lead to European crises. It is therefore incompatible with détente in Europe and détente in United States-Soviet relations.

In May 1972 President Nixon visited the U.S.S.R., initiating a major breakthrough in relations with that country. On his return journey, he visited Poland, reaching an understanding with Warsaw on a number of basic economic and commercial issues. These provided for an interim settlement for U.S. holders of pre-World War II Polish bonds, extension of Export-Import Bank facilities to assist in financing exports to Poland, reciprocal establishment of trade centers, commercial representation of U.S. firms in Poland, third country arbitration of trade disputes, and the establishment of an American-Polish Joint Trade Commission.

There followed a near floodtide in the improvement of relations with Eastern Europe. In January 1973 United States and Yugoslavia signed an agreement on guarantees for U.S. private investment in Yugoslavia, backed by the Overseas Private Investment Corporation (OPIC). A similar agreement was signed with Romania in April. In March, Hungary settled outstanding U.S. financial claims, while similar negotiations were begun with Czechoslovakia in September. In July, former Secretary of State Rogers visited Prague to sign a consular convention with Czechoslovakia. A consular convention with Bulgaria was initialed in December, while conventions with Poland, Hungary, and Romania had already been signed in 1972. In August the United States began preliminary discussions with East Germany which could lead to eventual establishment of diplomatic relations. And in December Romanian President Ceausescu repaid President Nixon's 1969 visit, signing a joint statement of principals on relations between states and a joint statement on economic, industrial, and technical cooperation, in which the United States restated its commitment to seek MFN authority for Romania. The only negative note was the failure of Albania to respond to U.S. interest in the normalization of relations with Tirana, signaled in an April 1973 speech by Deputy Secretary of State Kenneth Rush.

For the first time in 25 years U.S. relations with Eastern Europe seemed to be making major strides toward normalization.

SURVEY OF ECONOMIC POLICY ISSUES IN EASTERN EUROPE: TECHNOLOGY, TRADE, AND THE CONSUMER

By J. T. CRAWFORD and JOHN HABERSTROH

CONTENTS

	Page
Introduction	32
Technological Change and Economic Reform.....	32
Increased Dependence on the West.....	37
Continued Reliance on the East.....	40
Progress Toward Integration.....	42
The Energy Question.....	45
The Consumer.....	46
Hard Planning Ahead.....	49

INTRODUCTION

As the 1970's began, a new pragmatism settled over the economic policymakers in Eastern Europe. Most of them had finally shelved the all-out growth philosophy of the 1950's and were beginning to come down from the highly touted but largely disappointing economic reforms of the 1960's. In the wake of the Czech crisis in 1968 and then of the Polish worker riots in 1970, the leaders were looking for stability, hoping to find it in a return to more central controls on the economy—and on overzealous reformers.

Four years into the 1970's, the leaders have achieved considerable stability but they still face the dilemmas of the 1960's—the hard choice between investment in upgrading industrial efficiency or in raising the standard of living, and the crossfire between pressures for economic integration within Comecon and the growing role of imports from the West in sustaining East European development. And like the West, Eastern Europe has an energy question to answer. This paper will look at the main legacy of the last decade—the overlay of Western technology on the old blueprint for East European development—and its implications for policies governing growth, trade, and the consumer in the remainder of the 1970's.

TECHNOLOGICAL CHANGE AND ECONOMIC REFORM

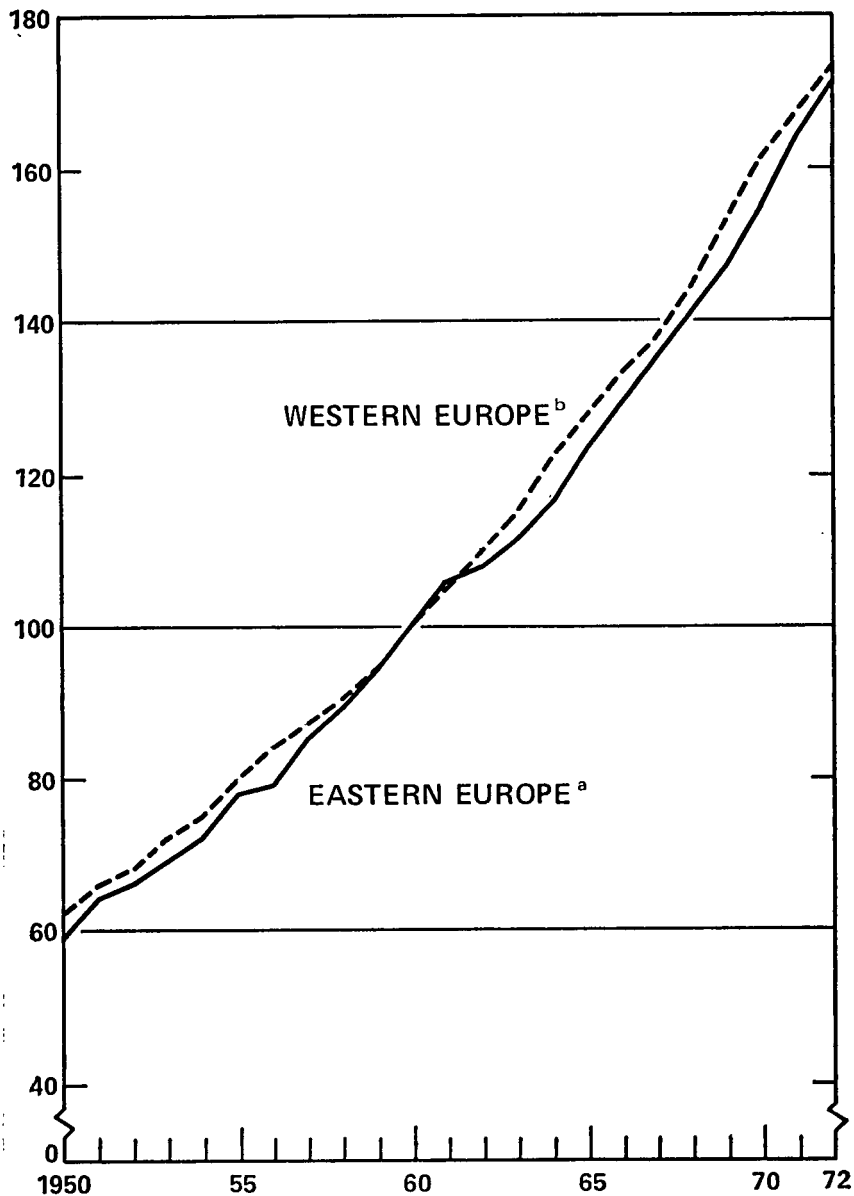
The so-called “scientific-technical revolution” began to hit Eastern Europe with full force about 1960. Policymakers began to realize that catching up with Western levels of output and efficiency would involve much more than simply increasing output of the standard industrial products, or even “chemicalization.” The stress on heavy industry was making the East Europeans more and more dependent on the U.S.S.R. and less competitive with the West while at the same time leaving them with greater appetites for Western machinery and stronger consumer

resistance to the goods and services turned out domestically. Growth was rapid but expensive—investment costs in terms of resource use were much higher and labor productivity lower than in Western Europe. And early in the 1960's, even the growth rate in most countries began to slip behind Western Europe (see the graph). Estimated GNP by country is given in table 1.

The slowdown gave both the reformers and the "technocrats" their chance. Technological change—and the institutional adjustment needed to accommodate it—was a way for the leaders to regain rapid growth, satisfy growing demand for new and better product lines, and make headway in increasing economic efficiency. Some idea of the extensive structural change that was involved can be seen in table 2, which clearly shows the rapid ascendancy of the newer industries—electrical equipment, synthetic materials, aluminum, and automobiles during the 1960's.

Growth of Gross National Product, 1950-1972

(In Constant Prices, 1960 = 100)



^a Including Yugoslavia.

^b European OECD members except Yugoslavia.

Calculations from U.S. Department of Commerce, Bureau of East-West Trade, Selective USSR and East European Data, June, 1973 p. 48.

TABLE 1.—EASTERN EUROPE: ESTIMATED GROSS NATIONAL PRODUCT AT MARKET PRICES

[In billions of 1970 U.S. dollars]

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1972 per capita GNP
Eastern Europe.....	124.0	131.0	134.0	138.0	144.0	152.0	160.0	167.0	175.0	182.0	192.0	203.0	212.0	1,670
Bulgaria.....	6.1	6.2	6.6	6.8	7.2	8.2	9.0	9.5	10.1	10.9	11.8	12.7	13.5	1,570
Czechoslovakia.....	25.2	26.1	26.6	26.1	26.1	26.9	28.1	29.5	30.5	31.3	32.7	34.0	35.2	2,430
East Germany.....	27.5	28.5	29.7	30.0	30.9	32.3	33.5	35.0	36.4	38.2	39.8	41.4	43.3	2,540
Hungary.....	11.0	11.3	11.8	12.3	12.8	13.3	14.0	14.5	15.0	15.4	16.0	16.7	17.2	1,655
Poland.....	29.1	31.9	31.4	33.2	34.6	37.5	39.6	41.1	42.8	44.2	46.2	48.6	52.0	1,565
Romania.....	13.7	14.9	15.5	16.3	17.5	18.1	19.7	20.9	22.0	23.3	24.2	26.6	28.8	1,395
Yugoslavia.....	11.1	11.8	12.2	13.5	15.0	15.3	16.4	16.8	18.0	18.7	19.9	21.2	22.0	1,060

Source: U.S. Department of Commerce, Bureau of East-West Trade, "Selected U.S.S.R. and East European Economic Data," p. 48.

TABLE 2.—EASTERN EUROPE: LEADING AND LAGGING SECTORS OF INDUSTRIAL OUTPUT IN THE 1960's

	Percentage rates of growth	
	1961-65	1966-70
Leading sectors:		
Oil products.....	65	53
Aluminum.....	26	91
Synthetic ammonia.....	81	114
Synthetic fibers.....	194	94
Electronic equipment.....	154	149
Automobiles.....	62	71
Lagging sectors:		
Coal.....	18	11
Cement.....	39	33
Rolled steel.....	29	33
Textile fabrics.....	16	14
Leather footwear.....	36	28
Metalworking equipment.....	-2	19
Total industrial output.....	43	46

Curiously it was the U.S.S.R. that made it feasible for the East Europeans to adopt the Western blueprint for industrial development by beginning early in the 1960's to deliver more crude oil and less traditional materials like coal, ferrous metals, cotton and wool, and wood. This shift in supply immediately increased the need for expensive new kinds of investment goods—especially for petroleum refining and petrochemical equipment. As the leaders recognized, a rapid change in economic structure would not only threaten a growing dependence on the West, it would enormously complicate planning and management, increase the difficulty of asserting political control over the economy, and raise the probability of errors in judgment. On each of these counts, the East Europeans ran some risk of strains in relations with the U.S.S.R.

Nevertheless, all of the East European countries in the 1960's undertook economic reforms, generally designed to scrap stifling bureaucratic controls, to introduce some domestic market influences, to improve the structure of output, investment, and prices, and to open the economies more fully to the world market. The reforms involved cutting the number of plan targets, putting more authority for plant operations in the hands of managers, injecting profit-type incentives for management and workers, and revamping the structure of prices—trying to bring them closer to those on world markets.

A key feature in most reforms was the creation of super-enterprises or industrial associations. These large units, a step down from the industrial ministries, were intended to be both sensitive to the day-to-day operating problems of enterprises and loyal to national policy objectives. The Hungarians avoided this middle step—giving more power to individual enterprise managers and relying on financial controls by the ministries and banks to keep firms from subverting national priorities.

The highly publicized reforms that passed through Eastern Europe during the 1960's did not leave much to remember them by. At the beginning of the 1970's, Hungary was the only CEMA country carrying the banner of genuine reform and even its program had been tightened up because investment and imports ran out of control in 1970-71. East Germany, the first in 1963 to decentralize management decisions, restored the industrial associations in 1970, and under Erich Honecker has nationalized many of the private enterprises which Ulbricht had

tolerated and even supported. Virtually nothing is left of Alexander Dubcek's reform program in Czechoslovakia, which aroused the U.S.S.R. when it encroached upon the political and Party sphere. Poland's Gomulka, who had balked at reform during most of the 1960's, in December 1970 belatedly gave in to controversial proposals for higher consumer prices and a new incentive pay plan for workers. These reform plans triggered demonstrations by shipyard workers and housewives in several Polish cities and quickly forced Gomulka's resignation. His successor Edward Gierek, rolled back the prices, abandoned the labor plan, and understandably has been less concerned with efficiency-minded reforms than with the need for practical improvements in the standard of living. In Bulgaria and Romania, where experiments continue with larger economic units such as Bulgaria's agro-industrial complexes, the main accent still is on strong central economic controls.

The reforms that have survived, most importantly those that unraveled part of the redtape of detailed planning, have made the existing system of output and allocation run more smoothly. Moreover, a kind of counter reformation, combining decentralization with more sophisticated techniques for planning, management, and government economic control have helped the process of absorbing new technology. On the other hand, little ground has been gained toward the main goals of these reforms. Instead of catching up with Western levels of development, Eastern Europe has begun to catch up with Western problems, such as inflationary worker demands for higher wages, industrial pollution, and even traffic congestion. The technological revolution has left Eastern Europe with three main issues—how to handle its balance of payments with the West, insure the necessary flow of imported raw materials, and provide for a population which not only aspires to automobiles and imported luxuries but is increasingly vocal about the amount of resources that has been channeled to longer term essentials such as housing.

INCREASED DEPENDENCE ON THE WEST

Eastern Europe has spent billions of dollars for Western technology, going heavily in debt in the process. Paced by a chronic excess of imports, East European trade with the developed West expanded from \$3 billion in 1960 to \$12 billion in 1972 (table 3). As shown below, a cumulative trade deficit during the same period of \$6 billion had to be financed—some of it by receipts from transport, tourism, and other invisibles but most of it by Western credit.

TABLE 3.—CUMULATIVE TRADE DEFICIT WITH THE INDUSTRIAL WEST, 1960-72

	Amount (million)	Percent of exports
Bulgaria.....	\$719	30
Czechoslovakia.....	726	10
East Germany.....	1, 188	13
Hungary.....	805	17
Poland.....	699	8
Romania.....	1, 830	37
Total.....	5, 967	16

Source: East European statistical yearbooks.

One of the impacts of the growing debt to the West has been the rapid expansion and increasing complexity of financial and other economic arrangements with the West. Indeed, this process has been as impressive as the gain in trade itself. Straight credit purchases have been augmented by bank consortia loans, elaborate switch trading deals,¹ co-production agreements, and, in the case of Yugoslavia and Romania, direct Western investment—all with an eye to promoting Eastern Europe's exports or otherwise easing its debt burden.

In spite of the new arrangements, Eastern Europe has a number of old problems to complain about. The East Europeans still are paying premium prices for Western machinery and other manufactures while exporting their own industrial products only at substantial discounts. Moreover, the new machinery, and most of the joint ventures, have not yet generated much of a return in the form of increased exports, except to the less demanding Communist market. Agricultural products and crude materials still account for about one-half of East European exports to the industrial West (see table 4). There has been some gain in sales of consumer manufactures and a flourishing two-way exchange of semimanufactures such as steel products, but exports from such high priority industries as machine building and chemicals have remained at less than 20 percent of exports throughout the last decade.

TABLE 4.—EASTERN EUROPE: COMMODITY STRUCTURE OF TRADE WITH THE WEST, 1960, 1965, 1970-71

(In percent; dollar amounts in millions)

	1960	1965	1970	1971
Exports.....	\$1, 472	\$2, 297	\$3, 791	\$4, 474
Food, beverages, vegetable oils.....	29	32	22	25
Raw materials, except fuels.....	12	15	13	11
Fuels.....	21	12	12	11
Chemicals.....	8	7	7	6
Semimanufactures.....	15	16	22	22
Machinery and transport equipment.....	6	7	11	11
Consumer and miscellaneous manufactures.....	9	11	13	14
Imports.....	\$1, 705	\$2, 625	\$4, 751	\$5, 318
Food, beverages, vegetable oils.....	16	18	11	11
Raw materials, except fuels.....	13	11	9	6
Fuels.....	(1)	(1)	2	2
Chemicals.....	11	15	14	14
Semimanufactures.....	34	25	27	28
Machinery and transport equipment.....	21	26	32	33
Consumer and miscellaneous manufactures.....	5	5	5	5

¹ Insignificant.

Source: OECD data for commodity breakdowns (Standard International Trade Classification SITC). Total values for exports and imports are from East European data as in table 3.

What is more, the import of Western technology has not led to an effective program of import substitution. Newer industries such as chemicals and electronics require not only Western machinery but often high quality Western industrial inputs, such as special steels, base chemicals and plastic chemicals. In 1970-71, as shown in table 4, chemicals made up 14 percent of imports, industrial semimanufactures about 28 percent, and machinery about one-third. And imports of Western consumer manufactures have kept pace with the growth of

¹ Arrangements in which an intermediary (switch trader) finds third party buyers for products bartered between two enterprises or countries. The simplest case, if an Austrian firm concluded a cooperation venture involving steel products in return for Polish coal and miners' helmets, it might well employ a trader to "switch" the helmets for a product it could use from some other country.

total imports, adding to Eastern Europe's dependence on the West.

The degree of dependence in fact is considerably greater than the share of the West in total East European imports would indicate. The industries dominating East European growth are leading the way in imports from the West. In table 5, data covering the 1965-72 period for total East European industrial output and industrial imports are set against data for output and supporting imports in leading industrial sectors.

TABLE 5.—EASTERN EUROPE: GROWTH OF IMPORTS FROM THE WEST AND OUTPUT, 1965-72

	Annual rate of growth, percent			
	Industrial output	Industrial imports	Leading sectors	
			Output ¹	Supporting imports ²
Eastern Europe.....	5-12	8-20	8-20	9-22
Bulgaria.....	10	8	15-18	9
Czechoslovakia.....	7	11	8-10	14
East Germany.....	6	18	8-10	18
Hungary.....	5	16	8-12	18
Poland.....	9	20	12-14	22
Romania.....	12	16	16-20	17

¹ Machinery and equipment, especially electrical and transport; chemicals; steel (Bulgaria); nonferrous metals (Czechoslovakia), and metal products (Romania).

² Machinery, finished steel, nonferrous metals, and chemicals.

Only in Bulgaria, almost totally dependent on trade with the U.S.S.R., has output outpaced imports from the West, while in Hungary, East Germany, and Poland, imports have run well ahead of domestic production. A fairly elaborate study for Hungary, by Ostvan Orszagh, indicates that dollar imports as a share of total inputs into final demand rose from 6.4 percent in 1959 to 9.5 percent in 1968.² Orszagh projects a 11.6 percent share in 1975, which, however, has already been exceeded. Hungarian dollar imports rose by about 75 percent between 1968 and 1972 and final demand increased by about one-third which would push the share of imported inputs in 1972 to over 12 percent.

The share of the developed West in total East German imports has increased from 22 percent in 1960 to 26 percent in 1972. Most of the increase has taken place since the late 1960's reflecting rapidly growing purchases of industrial materials and agricultural products. Interzonal trade with West Germany accounted for most of the growth until 1970 when Belgium, Holland, Japan, Switzerland, and the United Kingdom began to grant substantial medium term credits for East German purchases of materials. East Germany currently relies on the developed West for nearly all of its imports of synthetic rubber and fibers, two-thirds of imported plastics, four-fifths of alumina, and one-third of copper, dyestuffs, and nitrogen fertilizers. Oil, coal, coke, and steel still largely come from the U.S.S.R. and other CEMA countries.

Poland always has been one of the most dependent on Western industrial products, receiving one-third or more of its imports of metals, light industrial products and machinery, one-half of chemicals, and

² Ostvan Orszagh, "A Gazdasag Importigenyesegerol" (Import Demands of the Economy) Kulgasdasag, No. 5, 1972, pp. 336-346.

four-fifths of plastics from Western suppliers. For most product groups, the degree of reliance has not changed much since the 1960's. The main exception is purchases of Western machinery, which rose from 15 percent of all imported equipment in 1965 to 31 percent in 1972, most of the jump in fact coming in that year.

The spread between imports and output is less sharp in Czechoslovakia—reflecting generally conservative trade and growth policies—and in Romania—which apparently is dependent enough on the West to have output and imports run more closely in tandem. The share of the West in Romanian imports jumped from 23 percent in 1960 to 40 percent in 1972. Czechoslovakia, with 23 percent of its imports coming from the West, is on the lower end of the scale in Eastern Europe.

All of the East European countries, again save Bulgaria, have been expanding hard currency imports of consumer manufactures at an average clip of 22 to 25 percent a year since 1965. The increase was 36 percent in 1971, reflecting the impact of the Polish riots on trade and consumer policy throughout Eastern Europe. Consumer manufactures still are a small part of total imports from the West—6 to 8 percent for most countries—but these supplies are rapidly becoming a regular feature of the trade. Moreover, Eastern Europe has purchased large numbers of Western automobiles, and assembly plants have been set up by Fiat in Poland and by Renault in Romania. Imports of consumer manufactures, together with fairly consistent purchases of feed grains and large emergency orders of wheat in bad agricultural years, adds up to a significant Western input to the East European standard of living.

Growing hard currency indebtedness might make the East Europeans more selective in their imports from the West during the remainder of the 1970's. This will hardly do anything to offset the continuing need for Western machinery and materials and the increasing desire for other products. Still, it has been a factor in Eastern Europe's new look at the Council for Mutual Economic Assistance (CEMA). A much greater effort now is underway to make the most of CEMA's possibilities for pooling investment funds, sharing research and development costs, and exchanging technology. Integration, a dead issue in the 1960's, has come to life.

CONTINUED RELIANCE ON THE EAST

The growth of East-West trade has by no means lessened Eastern Europe's dependence on the U.S.S.R. and other CEMA countries for import requirements and export markets. If anything, Eastern Europe has become more tied to intra-CEMA trade in the 1970's and is now being drawn into cooperation ventures in an effort to secure raw material supplies, reduce duplication of production, and lower the cost of research and development.

As shown in table 6, intra-CEMA trade has remained at nearly two-thirds of Eastern Europe's total trade since 1960. Bulgaria—conducting about three-quarters of its trade with CEMA countries—is the most dependent upon Communist markets, Romania—less than half—is the least.

TABLE 6.—EASTERN EUROPE: TRADE WITH CEMA, 1960-72, SELECTED YEARS

[Dollar amounts in millions]

	1960	1965	1970	1971	1972	Percent of total trade	
						1960	1972
Bulgaria:							
Turnover.....	\$966	\$1,713	\$2,836	\$3,210	\$4,014	80	80
Imports.....	506	825	1,327	1,566	1,998	80	80
Exports.....	458	889	1,509	1,644	2,017	80	80
Czechoslovakia:							
Turnover.....	2,374	3,618	4,767	5,202	6,295	63	66
Imports.....	1,154	1,806	2,333	2,543	3,036	64	65
Exports.....	1,220	1,812	2,435	2,659	3,258	63	66
East Germany:							
Turnover.....	2,967	4,062	6,319	6,734	8,098	67	67
Imports.....	1,454	1,898	3,191	3,232	3,710	66	63
Exports.....	1,513	2,163	3,128	3,503	4,388	69	71
Hungary:							
Turnover.....	1,154	1,962	2,995	3,497	4,133	62	64
Imports.....	620	968	1,558	1,881	1,978	64	63
Exports.....	534	993	1,438	1,616	2,154	61	65
Poland:							
Turnover.....	1,591	2,744	4,493	4,867	6,052	56	59
Imports.....	865	1,434	2,361	2,579	3,082	58	58
Exports.....	725	1,309	2,133	2,288	2,970	55	60
Romania:							
Turnover.....	909	1,315	1,866	1,968	2,396	67	46
Imports.....	439	616	942	967	1,166	68	45
Exports.....	490	698	924	1,000	1,229	66	47
Total Eastern Europe:							
Turnover.....	9,961	15,414	23,276	25,478	30,988	65	64
Imports.....	5,038	7,547	11,712	12,768	14,970	65	62
Exports.....	4,920	7,864	11,567	12,710	16,016	65	66

Source: East European statistical yearbooks.

Deficient in raw material resources, the East Europeans have traditionally relied upon deliveries from the U.S.S.R. to meet their total requirements. More than one-half of East European imports from the U.S.S.R. are accounted for by fuels, raw materials, and semi-manufactures. Although Soviet supply constraints in recent years have forced the East European countries to turn to non-Communist sources, the U.S.S.R. still provides more than 90 percent of total East European imports of crude oil, pig iron, iron ore, about 75 percent of requirements for petroleum products, rolled metals, phosphate fertilizers, and lumber and more than 60 percent of cotton, coal, manganese ore, and wheat.

At the same time, the U.S.S.R. still is the main market for East European machinery, much of which is designed for Soviet consumption and has little salability elsewhere. One-half of total East German and Czechoslovak production of rolling mill equipment is shipped to the Soviet Union as well as one-half of total Hungarian production of buses and diesel trains. In all, the Soviet market absorbs more than 60 percent of total exports of machinery and equipment from Bulgaria; 50 percent or more from Hungary, Poland, and East Germany; about 40 percent from Czechoslovakia; and nearly one-third from Romania. The growth and structure of East European-Soviet trade is provided in table 7.

TABLE 7.—EASTERN EUROPE: GROWTH AND STRUCTURE OF TRADE WITH U.S.S.R., 1960-72, SELECTED YEARS
1960=100

	1960	1965	1970	1971	1972	Percent of total	
						1960	1972
East European exports:							
Machinery and equipment.....	100	175	244	257	340	43	44
Fuels and related materials.....	100	91	70	84	106	7	2
Ores and concentrates.....	100	142	156	157	203	4	2
Metals and manufactures.....	100	136	157	143	152	3	2
Chemicals.....	100	268	474	569	708	3	6
Consumer goods.....	100	177	290	335	389	24	28
Food.....	(100)	(178)	(232)	(266)	(316)	(6)	(6)
Other and unspecified.....	100	163	216	233	345	16	16
Total.....	100	167	237	260	333	100	100
East European imports:							
Machinery and equipment.....	100	202	362	424	525	13	25
Fuels and related materials.....	100	179	246	284	339	13	17
Coal and coke.....	(100)	(155)	(141)	(165)	(191)	(6)	(4)
Petroleum and products.....	(100)	(196)	(287)	(321)	(388)	(8)	(11)
Ores and concentrates.....	100	131	159	166	192	7	5
Metals and manufactures.....	100	160	225	232	257	19	18
Chemicals.....	100	194	328	355	398	2	3
Wood and wood products.....	100	186	321	347	377	3	5
Textile raw materials.....	100	114	120	109	116	9	4
Consumer goods.....	100	75	98	118	40	18	3
Food.....	(100)	(72)	(88)	(112)	(19)	(16)	(1)
Other and unspecified.....	100	160	272	252	344	16	20
Total.....	100	148	220	236	265	100	100

Source: Soviet Foreign Trade Yearbooks.

The machinery-for-materials trade pattern came under Soviet attack in the 1960's. Unhappy with its terms of trade and the high cost of raw materials exploitation the U.S.S.R. began pushing the East Europeans to take more machinery, deliver more consumer goods, and aid in the costs of resource development. By 1972, machinery was accounting for 25 percent of Soviet exports to Eastern Europe, up from 17 percent in 1965, and imports of consumer manufactures were booming, rising by 14 percent a year during 1971-72. At the same time Soviet shipments of raw materials began to level off and the East Europeans began signing new agreements to invest in the U.S.S.R. in return for future deliveries.

To the East Europeans, the increased Soviet demands were still better than scrambling in the world market for the bulk of their raw materials in addition to their requirements for Western technology. And once they had agreed in addition to step up trade in machinery and consumer goods, the faded objectives of intra-CEMA cooperation, specialization, and plan coordination began to take on some color.

PROGRESS TOWARD INTEGRATION

East European investment in Soviet resources is not new, but there has been a dramatic increase in the size and number of projects underway and under consideration. The East Europeans are providing equipment, manpower, technical assistance, and in some cases even hard currency, in return for guaranteed future deliveries of materials.

In the late 1950's and early 1960's, there was a spate of credit extensions against future materials deliveries within CEMA. The East Germans provided equipment for Polish lignite production, several countries assisted Romania in the building of a cellulose combine, and

Czechoslovakia extended 115 million marks in machinery in return for East German potassium salt. There was a noticeable lack of significant cooperation ventures until 1967 when the Czechoslovaks agreed to supply \$550 million in goods to the U.S.S.R. in return for oil; aside from these arrangements, most of the 20 joint investment projects signed by the end of the 1960's were small, typically bilateral, and mainly designed to increase the capacity of already functioning enterprises.

In the 1970's, however, two huge multilateral projects have been negotiated—a cellulose combine and an asbestos combine, both in the U.S.S.R. Moreover, about 30 additional projects, involving billions of rubles, are at various stages of negotiation. These projects, nearly all in the U.S.S.R., include a 10–12 million ton iron ore metallurgical combine at Kursk and a huge natural gas pipeline from Orenburg, as well as other projects for the production of oil, pig iron and steel ingots, ferroalloys, copper, nickel and titanium dioxide, ammonia phosphate, yellow phosphorus, and isoprene rubber. Agreement on the natural gas pipeline from Orenburg is imminent, according to an announcement by CEMA Secretary Fadeyev in February 1974. The U.S.S.R. also is proposing a project outside the raw materials area—the construction of a truck plant in the U.S.S.R. As yet, the only major joint projects slated for the other East European countries are facilities in Poland for the development of coal, copper, and zinc production.

Under the investment agreements with the U.S.S.R., the East Europeans provide credit at a 2 percent annual interest rate and receive payment in deliveries from production of the completed project. The East European credits not only are low interest, but often are very long term. For example, Poland has agreed to deliver metal structures, pipes, railroad cars, cables, and other equipment to the Soviet Union during 1974–78 in return for annual deliveries of 50,000 tons of asbestos during 1980–92. And East Germany is sending structural steel, electronic equipment, lab equipment, and consumer goods during 1973–78 in return for cellulose deliveries during 1979–90.

While direct East European investments have been targeted primarily on Soviet raw materials, the CEMA International Investment Bank (IIB) has focused its efforts mainly on joint projects for producing finished goods outside the U.S.S.R. The IIB, founded in 1971, is chartered to provide long-term financing of projects beneficial to two or more members. Total capitalization of the bank, to be paid in by members, is 1,052 million transferable rubles (TR's), of which 30 percent is in convertible currency. Interest rates run 4–6 percent on TR loans and follow world market rates for hard currency loans.

During its first 2 years of operation (see table 8), the IIB granted credits for 279 million TR's, more than one-half for the machinery and car industries and another 25 percent for chemical industries. In 1973 another 272 million TR's were granted, reportedly including the first credit for the U.S.S.R. Thus far, the most favored recipient has been Romania—the last and most reluctant to join. The Romanians in fact are the only East Europeans to have received credits exceeding their dues to the bank.

The other CEMA bank, the International Bank for Economic Cooperation (IBEC) has been in business since 1964. Its main mission has been to facilitate multilateral clearing of CEMA barter trade. Moreover, in 1972, IBEC began borrowing in the West, presumably to bail out members with hard currency debts.

Joint investments and the CEMA banks have fostered closer cooperation but have not done much to undermine bilateralism—integration's main enemy. Recipients of IIB loans are not able to use these credits freely but must select equipment from lists submitted by other members. For joint investment projects, the general multilateral agreements of intent are always followed by protracted bilateral negotiations in order to specify the goods, services, and conditions involved. IBEC has smoothed the barter trade system but has by no means achieved multilateral clearing of balances. A paper trade surplus with one country can supposedly be spent for goods elsewhere but the only desirable commodities are usually committed so that surplus countries must resort to correcting imbalances bilaterally.

TABLE 8.—INTERNATIONAL INVESTMENT BANK CAPITAL AND CREDITS (1971-72)

	Total capital		Hard currency portion, million ² dollars	Credits, 1971-72 total		Hard currency portion		
	Million TR ¹	Percent		Million TR	Percent	Million TR	Percent	Million dollars
U.S.S.R.....	399.3	38	145.5	0	0	0	0	0
G.D.R.....	176.1	-----	64.1	25.1	7.3	-----	-----	8.8
Czechoslovakia.....	129.9	12	47.3	77.5	28	25.3	22	30.4
Poland.....	121.4	12	44.3	35.2	13	26.7	24	32.0
Bulgaria.....	85.1	8	31.1	14.5	5	14.5	13	17.4
Hungary.....	83.7	8	30.6	47.6	17	6.4	6	7.7
Romania.....	52.0	5	18.9	78.8	28	32.6	29	39.1
Mongolia.....	4.5	(³)	1.7	0	0	-----	-----	0
Total.....	1,052.0	-----	383.5	278.7	-----	112.8	-----	135.4

¹ Transferable rubles.² Converted at 1.2 rubles per dollar.³ Insignificant.

Source: Compilation from East European finance journals.

Movement toward multilateralism will depend on progress in achieving realistic exchange rates and some sort of currency convertibility within CEMA, and in restructuring and reconciling domestic prices. Hungarian Central Committee Secretary Reszo Nyers sees the narrowing of price differences as a matter "not for the mid-1970's but perhaps for the end of the 1970's or the 1980's."³

In the meantime, to assist with allocation problems, CEMA has been creating new organizations and expanding the membership of existing institutions like Agromash and Intermetall.⁴ Three new organizations, Interelektro, Interatomenergo and Intertextilmas were established in December 1973. Interelektro is to coordinate electricity production within CEMA; Interatomenergo is to organize cooperation for production of nuclear plant equipment; and Intertextilmas will oversee cooperation and production specialization in textile machinery. In addition to CEMA-wide organizations, several bilateral organizations have been established such as the Polish-Hungarian Interkomponent which began operation on January 1, 1974, to sponsor cooperation in the field of electronic components.

In addition to improving the distribution of key commodities within CEMA, these organizations were expected to lead to increased production specialization. A number of new specialization agreements have

³ Eastern Europe, Budapest Domestic Television Service, June 14, 1973, p. F7.⁴ For more information on CEMA integration and institutions see Z. M. Fallenbuchl, pp. 79-134, in this volume.

been signed, such as for the output of numerically controlled machine tools, herbicides, containerization facilities, trucks, and computers.

But as Hungarian Premier Jeno Fock complained in June 1973: "duplication of production has increased instead of lessening" and agreement for specialization of many products has been "impossible to reach."⁵

Although integration and specialization still are largely at the talking stage, Eastern Europe's concern for raw materials supplies has produced a distinct step forward in intra-CEMA plan coordination. In the summer of 1973, the East European Premiers paraded to Moscow, apparently to agree on the need for detailed plan coordination, especially with the U.S.S.R. Since then, a multilateral CEMA integration plan for 1976-80 has been drawn up. As of March 1974, however, little was yet being said on the linchpin of the 1976-80 plans—Soviet oil supplies and prices.

THE ENERGY QUESTION

So long as they could count on Soviet oil and low Middle East prices, the East Europeans had no serious energy crisis. In 1970, oil made up less than 20 percent of total energy consumption in Eastern Europe, ranging from a low of only 10 percent in Poland to a surprising 45 percent in Bulgaria. Imports make up nearly all of crude oil requirements except in Romania—a net oil exporter—and Hungary—which produced 30 percent of its own needs in 1970.⁶

The East Europeans have known since at least the late 1960's that they would have to look more and more to Western sources to meet increased oil needs in the 1970's. Under the 1971-75 trade agreements with Eastern Europe, Soviet crude oil deliveries were to rise from 34 million tons in 1970, nearly 90 percent of East European oil imports, to about 60 million tons in 1975, down to 80 percent of requirements. These shipments—currently running on schedule—are assured through 1975 at the prices fixed in the trade agreements.

To fill out their projected consumption needs in 1975, Eastern Europe will have to import some 17 million tons of Western crude oil at substantially higher prices. Oil imports could run as high as \$1.2 billion if average spring 1974 prices were to prevail through 1975. Romania will more than offset its imports by sales of oil products in West; such exports will make up part of the import bill in the other countries, except Bulgaria.

Some strains will be put on the balance of payments—especially in Bulgaria—but the East Europeans should experience no serious energy problems through 1975. Relatively minor rationing programs and lower speed limits were put into effect in all countries in November-December 1973 and some took steps at the same time to conserve consumption of electricity. Gasoline prices were hiked sharply in Poland, Czechoslovakia, and Romania and perhaps in other countries.

But it is beyond 1975 that has the planners worried. With its own production problems, rising consumption, and perhaps hard currency export objectives, the U.S.S.R. cannot increase oil deliveries at anything like the 12 percent annual rate of the 1971-75 period. Moreover,

⁵ Rudapress Bulletin, vol. XII, No. 24, June 13, 1973, p. 5.

⁶ For a discussion of the oil situation in Eastern Europe see J. R. Lee, p. 406 in this volume.

most East Europeans probably expect Soviet oil prices to go up to world market levels in the next plan period. A Polish article in January 1974, for example, concluded that in the long run oil prices in trade among the Socialist countries cannot differ greatly from prices on world markets.⁷ And Hungary's National Bank President Andor Laszlo in a press conference left only a small ray of hope when he said intra-CEMA trade will follow such world price trends as are judged to be permanent in nature.

In effect, higher prices would mean a sharp boost in Soviet imports, probably of more consumer manufactures and processed foods. Payment terms also might involve more East European investments in the U.S.S.R., perhaps even stretching into manufacturing industries which are low on Eastern Europe's list of joint ventures involving repayment in kind. Any direct investments in Soviet oil probably will not begin to pay off until the 1980's; thus far joint projects in oil development are still at the proposal stage.

Although special payment arrangements could ease the burden of importing Soviet oil, Eastern Europe by 1980 could have to obtain as much as two-fifths of its oil imports from the Middle East. Even at today's prices, planners face a staggering import bill unless major barter agreements can be worked out in the Middle East. In one recent deal, Libya agreed to supply Romania with 84 million barrels of crude oil through 1977 in return for Romanian assistance in building a Libyan refinery and in the development of agriculture and housing.

Even with barter or other special arrangements, it is hard to see how Eastern Europe can avoid mounting balance-of-payment pressures, cutbacks in imports and in domestic growth, and large internal price subsidies during the last half of the 1970's. And as in all countries, the heaviest price is apt to be paid by the consumer, just at the time when it seemed his hour had come in Eastern Europe.

THE CONSUMER

During the last half of the 1960's, personal consumption slid as a share of national income in Eastern Europe, investments were focused on heavy industry more than on consumer goods production, and housing conditions generally improved only slowly. It was somewhat of a new story after the Polish riots in 1970. One lesson was to tread carefully on price reform, in spite of the obvious need to reduce subsidies by boosting food prices and to cut unrealistic profits by lowering prices of manufactures. Gomulka inconceivably announced such a reform as Polish housewives began to lay in food for the holiday season. Undoubtedly reflecting Gomulka's fate, Hungary's Janos Kadar backed out of a scheduled rent hike in early 1971 and the leaders throughout Eastern Europe began to rethink their programs for the public.

All of the 1971-75 plans came out for the consumer. Investments were shifted toward the light and food industries. Hungary planned a wholesale restoration of its textile industry, from new machinery to new fashions. Bulgaria and Romania began putting a significantly higher share of resources into agriculture and all of the countries invested more in food processing to upgrade the quality of supplies both for the consumer and for exports.

⁷ Wieslaw Szyndler-Glowacki, "Czyliak Moze Nas Dotyczyć Kryzys Naftowy," *Zycie Gospodarcze*, Jan. 6, 1974, p. 12. "Does the Oil Crisis Pertain to Us, and If So, How."

More investment also was channeled into housing but plans by and large called for about the same gains as achieved in the last plan period. For Poland, an extreme case, the 1.1 million new units planned would fall 600,000 short of housing the expected additional population by 1975, considering replacement needs. About all that could be done was to lay the groundwork for future increases in housing construction—Czechoslovakia, for example, planned to greatly expand the output of building materials, at least partly in support of housing. Otherwise, the regimes have had to simply explain the housing predicament to the public and seek out quick-return ways of improving the lot of the consumer—increased wages and fringe benefits, improved health insurance and higher family allowances, and larger imports of consumer durables (autos, stoves, and refrigerators).

Eastern Europe made some progress in raising personal incomes and improving consumer supplies during the first 3 years of the current 5-year plan period (see table 9). Gains in real personal incomes were moderate—3–5 percent annually except in Poland where back-to-back increases of over 10 percent were achieved in 1971 and 1972. In Bulgaria, real workers salaries sagged from a 5 percent annual growth rate in 1966–70 to only a 2-percent rate in 1971–72. Hungarian real wages—depressed by a 3 percent yearly increase in consumer prices—grew by only 2.5 percent a year in 1971–73 compared with a 3.5 percent annual rate in 1966–70.

TABLE 9.—EASTERN EUROPE: THE CONSUMER SINCE THE MID-1960'S¹

[Average annual growth (percent)]

	Bulgaria		Czechoslovakia		East Germany		Hungary		Poland		Romania		Yugoslavia	
	1966-70	1971-73	1966-70	1971-73	1966-70	1971-73	1966-70	1971-73	1966-70	1971-73	1966-70	1971-73	1966-70	1971-73
Personal consumption.....	8	² 6	6	5	4	5	6	5	5	8	³ 5	³ 8	6	² 6
National income.....	9	² 7	9	5	6	4	7	6	6	11	8	11	6	7
Light industry.....	8	6	6	6	5	5	5	7	7	10	10	11	6	9
Heavy industry.....	15	13	7	7	8	7	7	7	9	10	13	12	6	8
Imports of consumer manufactures.....	11	15	18	3	9	3	24	8	7	19	8	8	14	16
Total imports.....	9	14	7	10	11	6	11	8	9	22	13	14	17	16

¹ Data calculated from statistical handbooks, yearbooks, and monthly publications of the East Europe central statistical offices. Data for 1973 are estimated on the basis of 9-11 month results for light and heavy industry and consumer imports; 1973 data for national income, consumption, and imports were reported in the East European press.

² 1971-72.

³ Real incomes of the population.

Some countries, especially East Germany and Czechoslovakia, were able to narrow the rates of growth of personal consumption and total national income. The gap grew in Poland and Romania but both countries significantly stepped up the growth rate for personal consumption compared with the 1966-70 plan period. Personal consumption continued to lag slightly behind the growth of national income in Bulgaria and Hungary.

The gap in growth rates for light and heavy industries was reduced in nearly all countries, except in Bulgaria where a huge spread persisted. Hungary, Poland, and Yugoslavia achieved the largest gains in production of consumer goods—9 to 11 percent a year during 1971-73. Increases of 5 to 6 percent were recorded in the other countries.

In addition to light industry, Eastern Europe moved ahead rapidly with automobile production programs. Output of passenger cars, including Yugoslavia, has jumped from less than 250,000 in 1965 to more than 520,000 in 1972. Poland has the most active program with two new Fiat plants at Bielsko-Biala and Tychy. Czechoslovakia, one of the only East European countries that can claim no waiting lists for autos, has plans to double output at the Skoda works to 300,000 units by 1980. Output in Yugoslavia is running ahead of demand at present and may even decline unless producers can find new export outlets or make it possible for low-income groups to buy cars.

Romania has stayed with its fairly small scale plant at Pitesti, built with the help of Renault in 1968 and slated to reach a capacity of 40,000 passenger cars when fully equipped. Bulgaria has had only moderate expansion plans, based on assembly of Soviet vehicles and East Germany also has relied largely on existing facilities for boosting output. Hungary has no immediate plans for its own auto industry, preferring outright imports and cooperation ventures involving Hungarian production of parts and accessories in return for cars.

Eastern Europe will go on with its automobile boom at least through 1975 and enough investment is already in place to keep output rising into the 1976-80 plan period. Energy problems and the general uncertainty facing policymakers, however, undoubtedly will hold back some projects still under discussion, such as a joint East German-Czechoslovak automobile factory.

HARD PLANNING AHEAD

The uncertainty of the materials and fuel situation beyond 1975 is a severe setback for any East European planners who were trying to get a head start on the 1976-80 medium-term plan. The plans in fact will have to stay on the drawing board until deliveries of Soviet raw materials—and the price of these materials—can be pinned down. If the fuel import bill is as large as expected, some programs, especially for petrochemicals and possibly for autos and imports of consumer manufactures, will have to be scaled down or suspended in the upcoming plan period. As of March 1974, Romania, not dependent on Soviet oil, was the only country to have said anything concrete about the next plan period and it was hinting at reduced growth rates in 1976-80.

These problems may detour but not derail the planners from the track laid out for this decade and beyond. By the 1980's they can begin counting on a payoff from investment in Soviet materials, and they

certainly will take pains to keep the flow of Western technology coming. The same industries that have led growth since the mid-1960's—autos, chemicals, electronics—ought to be back at the top of the list in the 1981–85 plan. And the planners can no longer afford to ask consumers to take all of the bumps caused by energy shortages, import controls, and strains on investment resources. Indeed, the consumer conceivably could come out ahead by the 1980's if Eastern Europe is obliged to bolster light industries for the Soviet market.

The main impact on long-term planning will be the greater need to adjust to the mounting dependence on trade with both East and West. Trade with the West, never easy to plan, has consistently run ahead of expectations, quickly filling whatever slack there was in the system to accommodate “that extra machine” or “that type of steel” overlooked in the CEMA trade agreements. In order to cope with its growing debt to the West, Eastern Europe probably will continue to loosen policy toward joint ventures, equity investment, and participation in Western financial and trade organizations. Western creditors in turn will become even more flexible in arranging long-term credit, consortia loans, and other devices, such as Hungary's Eurodollar bond floats in the West in the early 1970's. The East Europeans will continue to hedge on the issue of Western business penetration and the West will still balk at unpalatable barter arrangements and giveaway credit terms. Despite liberalization, hard bargaining will remain a key feature of the trade.

On the other hand, faced with the need to invest heavily in Soviet resources, the planners will have to build more than lipservice to Comecon integration into their calculations. Plan coordination which formerly amounted to agreeing on bilateral trade lists has suddenly become essential, and the next 5-year plans for the first time are to have special sections devoted to CEMA integration and specialization objectives. The technological revolution that drove the East Europeans to the West in the 1960's is taking them back to the East as well in the 1970's.

THE POLITICAL HAZARDS OF ECONOMIC REFORM*

By R. V. BURKS

CONTENTS

I. Introduction	Page 51
II. The Question of Price Reform.....	52
III. The Formation of Industrial Trusts.....	54
IV. Enterprise Autonomy.....	55
V. Reform in Agriculture.....	67
VI. Reform Substitutes.....	69
VII. Tourism	70
VIII. Industrial Cooperation.....	73

I. INTRODUCTION

From the Communist point of view a principal difficulty with economic reform is that it inevitably involves some degree of decentralization. This is true regardless of the type of reform, whether it would mean some reliance on market forces, as in the case of Hungary, or whether, as in East Germany, only such matters as the organization of trusts are under consideration. Any important step toward decentralization of the economy constitutes a threat because it brings with it some loss of political control. Given the narrow base of popular support which the East European regimes possess, and the limited degree of positive popular response they can expect, any major reduction of central control must be taken seriously by the leadership.

Public opinion polls regularly taken by Western institutes among travelers from the East (most of them on regime business and regime oriented in their outlook) indicate widespread belief that, in the highly improbable event of free elections, the Communist Party would receive less than 10 percent of the vote cast.¹ Observers often wonder why

*I am indebted to Michael Gamarnikow, Gregory Grossman, Paul Marer, Gertrude Schroeder, Edwin Snell, and Harry Trend for having read and criticized a first draft of this essay. Hanus Hayek and Carlo Kovats have provided useful factual material.

¹At four different times between 1968 and 1972 independent public opinion research institutes in six West European countries interviewed a total of 6,148 Czech and Slovak, 5,070 Hungarian and 5,110 Polish travelers in Western Europe and asked how, in the event of free elections in their native countries, they would vote. The choice given the travelers lay among five parties: a Communist, a Democratic Socialist, a Christian Democratic, a Peasant and a National Conservative. The average responses were as follows:

[In percent]

	Czechoslovak travelers	Hungarian travelers	Polish travelers
Would vote for—			
Communist Party.....	6	7	3
Democratic Socialist Party.....	40	33	31
Christian Democratic Party.....	22	28	32
Peasant Party.....	5	13	9
National Conservative Party.....	7	4	7
Did not express a preference.....	20	15	18
Total.....	100	100	100

Note: This would seem to indicate that in all three countries the Communist electorate is less than 10 percent of the total. Cf. two publications by RFE Audience and Public Opinion Research Department, viz., *Attitude Toward Communism and Party Preference in East Europe*, January, 1973, 32 pp. and *Hypothetical Free Elections in East Europe (1968-1972) (A Consideration of Scope and Limits)*, March, 1973, 18 pp. RFE's sponsorship of these surveys was not made known to the respondents. To compensate for skewed samples RFE has developed and applies a comparative and continual sampling method. In the case of the Czechs and Slovaks five surveys were made rather than four.

Warsaw makes so much fuss about economic reform and does so little in the way of its implementation. In part the answer lies in the small number of reliable party cadres which the Gierek leadership has at its disposal.

What the regimes fear is political landslide, such as took place in Czechoslovakia in 1968 or threatened to occur in Poland in 1970. That is, they fear a situation in which well-meant and even well-designed efforts at economic reform undergo a sudden transmutation, reappearing as a political snowball veering perilously out of control. The entire political structure is abruptly threatened with collapse and only the overt and massive use of force will serve to hold "Humpty Dumpty" together. Beginning with Evsei Liberman's article in *Pravda*, September 1962, there transpired conscious and widespread experimentation with economic reform. No regime, not even the Albanian, remained unaffected. The Soviet occupation of Czechoslovakia in August 1968, however, was followed by a marked decline in such experiments. Save for Hungary and Yugoslavia, both of which represent special cases, the reform movement appears to be played out.

II. THE QUESTION OF PRICE REFORM

It is also true, of course, that totalitarian systems, like any other, acquire over time a set of vested interests and that some of these come to stand in the way of reform. This comes most clearly to the fore in respect to price reform. Under Socialism prices tend to possess a high correlation with neither production costs nor relative scarcities. In part this is because prices are usually fixed by central authority with a view to influencing the industrialization process, and in part because of the methods of cost calculation employed. On the whole prices do not determine either the allocation of resources or the assortment of production; they serve primarily as accounting units.

Reformers have been inclined to argue that, in the interests of greater efficiency, all prices should at least cover production costs and, in addition, give the producer a reasonable return on his investment. So far the question of demand, and its effect on value, has been played down, although reformers do talk about differences in use value as an additional basis for price determination at the retail level. While there has been some improvement in the relationship of prices to demand and supply throughout the area, the relationship is still heavily skewed.

In the immediate sense, reform of wholesale prices is probably more important than reform of retail prices. Over the years distortion of wholesale prices has become severe. The Czech reformers revealed that a ton of coal at the pithead in Moravska Ostrava costs in fact 386 crowns, whereas the wholesale price was fixed at 202.6 crowns.² The Czech example points to the political problem. Steel producers naturally prefer cheap coal. In the Socialist economies there has been a traditional bias in favor of steel producers and other components of heavy industry in order to hasten the growth of that branch. The heavy industrial interest has become intertwined with that of the military, a major component of the Socialist regime, partly because of the requirement of control. Khrushchev often referred to his opponents "the steeleaters." Thus wholesale price reform will adversely

² *Rude Pravo* (Prague), Apr. 9, 1968, p. 6. Citation courtesy of Hanus Hayek.

affect, at least in the immediate sense, two of the most powerful interests under socialism.

Such wholesale price reforms as Eastern Europe has experienced have raised most the prices of producers' goods, precisely because these prices were most out of line. It is true that increases in the prices of inputs are easily passed on to consumers, in the Socialist system as elsewhere. Nonetheless, wholesale prices appear to be an issue of some importance since realistic prices make a vested interest more vulnerable to criticism than prices which disguise high costs. It seems to the present writer probable, for example, that every ton of steel produced at the great Romanian steel works at Galați is produced at a loss and that if the true costs at Galați were translated into prices there would likely follow some considerable reordering of priorities throughout the Romanian economy. This helps explain the failure of Bucharest to implement the wholesale price reform it announced in 1967. We also note the battle which the Czech reformers had to wage on the issue of wholesale prices.

But retail prices also offer a political problem. Throughout the Socialist area both food prices and rentals are heavily subsidized by the state, Yugoslavia constituting a notable exception.³ This of course means that the typical wage bill at the factory is lower than it should be, which in turn means that factory prices are unrealistic by that much. This is a delicate problem because under socialism a typical working-class family spends between 40 and 50 percent of its budget for food. At the same time the working-class family is provided with semifree housing which, although in short supply and often in poor repair, has been the propaganda pride of the regime.

Efficiency requires that rents go up while food prices climb. In the short term, however, these increases cannot be compensated by wage hikes, else the purpose of the reform will be defeated. The working class must draw in its collective belt. It is not easy to persuade the workers to do this. They regard themselves, and quite properly, as the darlings of the regime. They are well aware that, after substantial early increases above the harsh Stalinist plateau, living standards have tended to stagnate. And they are skeptical of promises made by the party and the government.

Understandably, even reform-minded Communist leaderships have been slow to grapple with the problem of retail prices. Their stratagem has been a lateral approach. They are forcing the middle class to buy at substantial prices the government-owned and rather rundown apartments they now live in, or to join cooperatives in order to acquire new housing, thus soaking up some of the excess purchasing power which has accumulated in savings accounts. (Under Stalin these savings would have been confiscated by a sudden conversion of the currency.) At the same time rents are being raised little by little, though with some increase in wages. As far as food prices go, only selective increases have been regarded as possible. In Hungary the Government has been forced by the unions to agree that, as long as wage increases are not possible, there will be no increases in the price of basic foods, which of course blocks an important reform measure. Budapest now proposes that consumer prices should cover costs by 1980.

³ For an account of Hungarian food prices see Kálmán Kazareczki, "Special Regulators in Food Economy," in Ottó Gadó (ed.) *Reform of the Economic Mechanism in Hungary. Development 1968-71* (Budapest: Akadémiai Kiadó, 1972), pp. 233-256.

But the Hungarian Government has proved wiser than the Polish, which attempted to introduce a number of stiff price increases of basic foodstuffs (presumably offset by price reductions in manufactured consumers' wares, which were in oversupply) on Christmas Eve, 1970. The result was a severe bout of rioting among the workers in the shipyards, who are the best paid, and generally along Poland's Baltic coast, where the population was more aware of what was available to workers in the West, and particularly to Swedish workers. One effect of the rioting was to topple the Gomulka leadership, an event the significance of which was probably not lost on party members generally throughout the Socialist Commonwealth.

III. THE FORMATION OF INDUSTRIAL TRUSTS

While vested interests, whether those of heavy industry or of the industrial proletariat, tend to stand in the way of price reform and thus preserve and perpetuate the economic inefficiency of the past, it is the decentralization and control syndrome that constitutes the party's chief preoccupation. In its mildest form decentralization involves a reduction in the size and jurisdiction of the industrial ministries which, under Stalin, typically managed entire sectors of the national economy. These functions and responsibilities of the ministries, as well as much of their personnel, are shifted to what the Communists usually refer to as industrial centrals or associations, but which, in American English, are more accurately denominated by the word "trust."

Under socialism a typical trust normally combines within its jurisdiction all enterprises manufacturing a similar product, automotive transport, for example, or textiles, or petroleum products. As a rule, Socialist trusts are horizontal, not vertical.⁴ From the Socialist point of view the advantages of such an organizational arrangement are several. The decisionmaking process is brought closer to actual day-to-day operations.⁵ The R. & D. institutes in the given field are placed under the supervision of the trust and given a contractual relationship to the enterprises, thus presumably creating a more effective junction between the two. Furthermore, the trust will often be authorized to deal directly with foreign firms, thus bypassing the highly centralized state trading organizations and bringing trust management into direct confrontation with market conditions in the West. Indeed, the trust is conceived of as a unit large enough to stand up to the multinational corporations which have appeared in the West.

There is no question that trusts make for greater efficiency, if they are properly organized and managed, as compared with the traditional ministerial system, because they lead to better use of resources within their jurisdictions (although probably at the expense of greater autarky on the trust level). There is also no question that the gains in efficiency come at the expense of the command and control function of the center. In effect, a new organizational entity has been echeloned in between the enterprises and the ministry.

Nonetheless, there are problems. One of the more important is personnel. Many trusts are located in cities other than the national capital.

⁴ In Bulgaria, however, vertical trusts have been introduced under the name of industrial complexes, with representatives of various ministeries making up a board of coordinators or directors. In Bulgarian agriculture such vertical trusts are known as agricultural-industrial complexes. Complexes are also making their appearance in the Soviet Union.

⁵ Expansion of capacity remains highly centralized, however.

Their establishment therefore requires a fairly massive shift of engineers, accountants and economists from the center to the provinces. Most of the persons affected object rather strenuously to the transfer. They make use of whatever influence they possess to remain in the capital city, transferring to positions which pay less but confer the right of residence in the capital. Given the prevailing circumstances, such behavior is not arbitrary or unreasonable. When virtually all important decisions are made in one place, the national capital, the living standard becomes substantially higher there than elsewhere, quite apart from the natural concentration of entertainment facilities in such a place. To put the matter bluntly, if there are any oranges to be had in Rumania they are to be found in Bucharest. The top-flight surgeons are to be found there also, and the best in schools and universities.

Furthermore, transfer to the provinces often threatens family unity. In Socialist Europe most wives work; up to 75 percent of eligible adult females are gainfully employed. Such employment is necessary if families are to make ends meet. The husband or the wife may be faced with transfer; rarely are both subject to transfer and appointed to the same town. Most families end up avoiding separation, but the strain is considerable. The effect of all this is that the trusts located in the countryside tend to be understaffed, or provided with second-rate professionals. This helps reduce the efficacy of the reform, as it increases the number of mistakes committed by the provincial trusts, and justifies the skepticism of the industrial ministries, who have secretly opposed the reform all along.

IV. ENTERPRISE AUTONOMY

The difficulty with trustification, Socialist style, is not that the political consequences are dangerous, although they are undoubtedly unpleasant and promotive of other kinds of inefficiency, but rather that trustification does not produce sufficient gains in efficiency. The truth is that all East European Socialist governments, with the exception of the Yugoslav and the Hungarian, have gone over to the trustification of their central planning systems, yet their needs for import of machinery and equipment from capitalist countries is greater than ever, while their hard currency payment difficulties have reached crisis proportions⁶ and their living standards have tended to stagnate. (Yugoslavia and Hungary, however, constitute partial exceptions to these

⁶ The Polish case is extreme as the figures for the average annual growth of Polish foreign trade, expressed in percentages, suggest.

	1966-70	Plan 1971-75	1971-72	1st half 1973
Exports.....	9.44	9.02	10.86	15.5
Imports.....	9.02	9.85	17.96	28.3
Imports from the West.....	10.14	.....	33.97	60.4

Source: From an unpublished paper by Michael Gamarnikow, "Polish Economy Between East and West," p. 21. Such an increase in imports does much to explain the improvement in living standards under Gierk, following the stagnation which characterized Gomulka's last years. Under Gierk real wages have risen 19 percent for industrial workers and even more for the peasantry. *Ibid.*, pp. 1-2. Poland's hard currency indebtedness is now over the billion dollar mark (*ibid.*, pp. 23-25) while Rumania, with a population of little more than 20,000,000 people and a per capita income of \$620 now appears to have a hard currency debt on the order of \$2,000,000,000. The crisis created by the fact that the debt is so large that Western creditors are becoming skittish about making additional loans. Thus the Poles have in effect suspended the emigration of ethnic Germans, promised under earlier treaty arrangement until the West Germans agree to grant government subsidized credits in large amounts.

generalizations, whereas in Poland the Gierek leadership has brought improved living standards at the cost of a sharp deterioration in Poland's balance of payments.)

To cope with such problems, what the Socialist countries of Eastern Europe require is a more thoroughgoing decentralization, one which does more than tinker with the central planning system, one which in effect, if not in theory, abandons central planning in favor of a hybrid which has come to be called market socialism. There are various definitions of this innovation, but its essential feature is the combination of state ownership of the instruments of production with some play of market forces. Whereas in trustification the decision-making process devolves upon the trust which operates within a centrally determined price system (hopefully reformed to take more realistic account of costs), under market socialism decisionmaking is vested in the individual enterprise which must function successfully within a price system which reflects both production costs and relative scarcities. The operational unit would be the state-owned enterprise which would have to show a profit or close down.

With enterprise autonomy the political hazards of economic reform loom rather large. To begin with there is the problem of unemployed *apparatchiki*. In Hungary the marketizing reform reduced the role of the local party man. In the days of central planning this worthy performed a vital interstitial function. If deliveries of coal from mines in another district fell behind, the local *apparatchik* used his party connections to remedy the matter. If one plant within his jurisdiction hoarded expensive machinery he would arrange a swap with a hoarder somewhere else. If the center imposed targets which were unreasonably high, off went our *apparatchik* to the national capital to reason with the men who could change the decision. The local party official had the greater influence because he was responsible for the *nomenklatura*, the list of key positions in his district, and for appointment to these positions.

But with enterprise autonomy in Hungary, it was the manager who made most of the decisions, those which had formerly been made by the industrial ministry as well as those taken by the local party man. The *apparatchik* was deprived of his fief. His advice continued to be asked by the manager when appointments were made, but it was the manager who decided. Furthermore, the *apparatchik* had to obtain permission of the manager if he wished to hold a party meeting, or an assemblage of workers, within the factory precincts. The general rule now was that the party worker must be careful not to interfere with production by holding meetings; old style agit-prop was now forbidden. In Yugoslavia the existence of party cells within plants or factories has been forbidden for some time.

All this has rather a negative impact on the party apparatus, the key decisionmaking body in post-Stalinist society. Historically considered, the prime task of the apparatus has been forced-draft industrialization. To disassociate the ruling body from most of its economic responsibilities, particularly at the provincial level, is demoralizing and disorienting. Such disassociation certainly does not improve the party's ability to recruit the young and the able, and it only accentuates the slow but steady rise in the average age of party

members. More immediately, disassociation creates a high-level unemployment problem. As a rule, *apparatchiki* do not excel in competitive situations. Their strength lies in unwavering loyalty, automatic orthodoxy, and unlimited obedience. They are not often people of outstanding talent,⁷ as the careers of such people as Władysław Gomułka and Todor Zhivkov will suggest. What is to be done, in other words, with deserving and loyal men who now become unemployable? A Ranković may be given a luxurious villa overlooking the Adriatic Sea at Dubrovnik, but under enterprise autonomy the ordinary party bureaucrat comes to constitute a political problem.

The regular state bureaucracy provides a related problem; in some respects the two bureaucracies are intertwined. By Western standards the state bureaucracy is enormously swollen in size; this as a consequence of its major role, under the direction of the party, in the day-to-day management of the national economy. Even under marketization the state bureaucracy would probably remain sizable, as the instruments of production would remain state-owned, and the social security system extensive. And while many bureaucrats would be transferred to autonomous enterprises, there is no question but that large sections of the new middle class created by the regimes would suffer losses in living standards as well as in prestige and perquisites.⁸ Economic reform finds few friends in the state bureaucracy.

There is, however, another unemployment problem created by marketizing reform, no less difficult, perhaps, but much more visible. If enterprises are to operate on a profit-and-loss basis then surely some of them are going to find themselves regularly in the red and in the end will have to close down. Among Communist leaders this presumption is no doubt strengthened by a growing awareness that many of the factories they have brought into existence should, if the principles of cost accounting are rigorously applied, never have been created to begin with.⁹

Thus marketization would be accompanied in the short or middle run by pools of ordinary unemployment. For rather fragile regimes, one of whose principal justifications has been the all-time abolition of unemployment, the prospect of open (as distinguished from hidden) unemployment is difficult to face.

In fact, neither of the marketizing governments has yet faced it fully. Hungarian industry continues to operate on the basis of average, as opposed to marginal, cost. In any given industrial branch cost calculations for all units are based on the average for the branch, not on the costs of the more efficient firms. Despite the existence of semi-market prices, the center siphons off the profits of those firms and uses these returns to subsidize the less efficient enterprises, those which would normally have to close, and this despite a rather acute shortage

⁷ Cf. Lewis S. Fener, "The Intelligentsia in Opposition," *Problems of Communism*, XIX (November-December 1970), p. 2.

⁸ In preparation for the introduction of the New Economic model in Hungary the staff of the Ministry of Heavy Industry was to be cut by 40 percent; of the Ministry of Light Industry by 30 percent; and of the Ministry of Building and Urban Development by 43 percent. "Reorganization of Three Economic Ministries," RFE Research: East Europe: Hungarian Situation Report, June 27, 1967.

⁹ In 1972 the Hungarian Government had to intervene directly to prevent the total collapse of six of Hungary's largest enterprises. Barnabas Buky, "Hungary: One Year After. Part II: the Economic Scene," RFE Research: East Europe, December 10, 1973, 15 pp.

of labor in the country.¹⁰ Nor has the Yugoslav Government been willing to close down its clearly unprofitable firms, although the immediate effect of the 1965 reform was a notable increase in unemployment.¹¹

There is, for example, iron and steel works at Niksić, in Montenegro. Its iron ore and its coking coal must be brought by sea to the Adriatic port of Bar and then hauled over a narrow gauge railway some distance into the mountains; the finished product must be exported from Bar north along the Adriatic to Rijeka, and thence by rail east and south into the interior of the country. It has been calculated that Niksić loses \$20 on every ton of steel it produces.¹² Today, when market forces have a certain play, such a plant would no longer be located in the mountains of Montenegro. The enterprise is a survival from the Stalinist period. Yet the reluctance of the Yugoslavs to close Niksić is understandable, since in addition to the approximately 1 million Yugoslav workers currently employed in the capitalist countries of Western Europe there are another 300,000 unemployed within the country, not to speak of perhaps another million underemployed. Even so wealthy a country as the United States is moving toward the position that unemployment of more than 5 percent of the labor force is politically unacceptable. We cannot be too critical of the Yugoslavs, therefore, since their level of unemployment, if we exclude most of the migrant workers, is on the order of 10 percent.¹³

In addition to unemployed bureaucrats and unemployed proletarians, the marketizing regime must also cope with a mushrooming corruption. This evil becomes widespread in Socialist societies generally once people are no longer terrorized by the security police. Thus in the late sixties, Bulgaria witnessed a scandal in her maritime transport trust apparently so severe as to require dissolution of the trust as well as the imposition of prison sentences. But it is the marketizing society which is most vulnerable to corruption because the relaxation of central control is so much greater, and today it is Hungary which faces the most onerous problem of this kind.

Of course, some of the activities classified as corrupt by Communists are not so by Western standards. Thus in Budapest one hears complaints regarding a class of brokers which has sprung up in the fruit and vegetable business. These men move constantly between the rather broadly scattered peasant markets of the metropolis, buying where these commodities are cheap and selling where they are dear. But corruption by Western standards also exists, and on a goodly scale. Even in the early sixties, during the reorganization which preceded the reform of 1968, the police broke up a ring which provided hostesses from the Hungarian airline as callgirls and government dachas as weekend houses for managerial magnates from foreign

¹⁰ The regime argues that the older plants should not be penalized simply because their ability to reinvest was reduced in order to build the newer plants and that, given these adverse circumstances, the older plants may be considered efficient.

¹¹ *Socijalistička Federativna Republika Jugoslavija. Savezni Zavod za Statistika, Statistički Godišnjak Jugoslavije 1969* (Beograd, 1969), pp. 93, 105.

¹² F. E. Ian Hamilton, Yugoslavia. *Patterns of Economic Activity* (New York: Praeger, 1968), pp. 238, 252.

¹³ William Zimmerman, "National-International Linkages in Yugoslavia: the Political Consequences of Openness," paper presented at the annual meeting of the American Political Science Association, New Orleans, 1973, pp. 10-14; Institut Fédéral de la Statistique, *Petit Manuel Statistique de la Yougoslavie 1972 (XVIII Année)* (Beograd, mai 1972), pp. 10, 14, 30-31, 33, 39. If we add to the number of unemployed the number of those who were unemployed prior to migration, or were public charges, the percentage of unemployed rises to something like 15 percent.

countries. Perhaps the chief outward sign of corruption today is the feverish building of luxury dachas on the shores of Lake Balaton, Hungary's principal resort area. Curious travelers are told that the new owners are not so much Central Committee members or factory managers as they are gynecologists (the number of abortions in Budapest is roughly equal to the number of live births), drivers of gasoline tankers, and elevator repairmen. Of these last-named worthies, there are in Budapest only a few dozen, and they must attempt to cope with literally hundreds of elevators which refuse to function or are in dangerous disrepair. The repairmen are able to charge substantial fees for their services, illicitly of course. As far as the state is concerned, the greatest loss from corruption is probably that incurred as a consequence of factory workers selling tools and raw materials in the black market as a supplementary source of income. The Kádár leadership is much concerned by such goings-on. Corruption is difficult for a marketizing regime to deal with because in the immediate sense it can only be contained by a return to the rigid controls which it is the intermediary objective of the reform to dismantle. Only if and when the reform has been fully implemented, significant gains in efficiency achieved, and these translated into improved living standards will the problem be reducible to standard proportions.¹⁴

The spread of corruption has contributed to the emergence of a political threat on the left, a threat which, although small at present, is regarded by the regime in Budapest as potentially serious.

To put it in a nutshell (with the usual risk of oversimplification), the introduction of the economic reform, the new wage-incentive system, the criterion of profitability, and the stress on expertise which favored the leading cadres and managers touched off a wave of dissatisfaction among ordinary workers and revived the old slogans of egalitarianism. Almost inevitably, the reform also opened the door to a certain amount of speculation, corruption, and money grubbing; in a word, to rapid enrichment. At the same time, East-West contacts were broadened, facilitating foreign tourism, trade, and intellectual exchange. Many people became interested in the good life, to the exclusion of everything else.¹⁵

As the reform progressed, displaced or downgraded apparatchiki attempted to capitalize on the dissatisfaction of many workers by appealing to the spirit of egalitarianism and by attacking reform measures as a sellout to consumerism. The apparatchiki also charged that as a consequence of the incentive system and the pressure for expertise, the dictatorship of the proletariat had given away to the dictatorship of the technical intelligentsia. The revolution had in fact been betrayed, it was asserted. This kind of talk no doubt sounded dangerous to Kádár and his advisers because the largely new urban proletariat, in Hungary as in other Socialist states, had come to occupy a relatively privileged if not a pampered position. Marketing reform, as we have explained earlier, meant some undoing of these privileges; and in a Socialist regime, worker opposition was not to be ignored, particularly with the Soviets looking over one's shoulder, so to speak.

Moreover, a second element was soon involved in the elaboration of new left doctrines, one perhaps with an even greater potential for

¹⁴ The above observations are based in good part on 9 months' residence and travel in the European Socialist states, except in Albania and Czechoslovakia, during 1972 and 1973. This undertaking was made possible by grants from the National Endowment for the Humanities and the International Research and Exchanges Board.

¹⁵ Charles Andras, "The New Left in Hungary," RFE Research: East Europe, January 16, 1974, 28pp. Citation on p. 6. The paragraphs below which deal with the new left in Hungary are largely based on this paper.

upsetting the delicate political equilibrium which Kádár had so artfully established. Regime personalities spoke of the new element as the third generation, a reference to the prominence in it of the sons and daughters of the leading cadres who, in the 1950's and 1960's, had taken over command from the revolutionary generation represented by the Rakosis and the Gerós.

These youngsters were much influenced by the teachings of Lukács, who deplored the bureaucratization of socialism in power, which he read as the decline of Marxism. Lukács believed that the liberalization of socialism from the grip of etatization was the priority task of true revolutionaries, and he asserted that only the intelligentsia could provide leadership to this end. "We have no choice but to introduce class consciousness into the working class from the outside," he said. "And I think that the intelligentsia of today, the radical intelligentsia, are facing the great task of working out the principles and methods" of this new strategy.¹⁶ Nor, during his life, did the Marxist ideologue hide his dissatisfaction with the new economic model.

In line with the teaching of Lukács, the youngsters of the third generation argued that the Socialists were building the same industrial society that the capitalists had already constructed, making of the social order a consumer-oriented, bureaucratic welfare state. The student and poet Miklos Haraszti submitted for publication a manuscript entitled "Piece Work" in which he argued that "there is no difference between the condition of workers in a capitalist country and that of those in a Socialist country."¹⁷ The regimes are building refrigerator socialism, asserted the third generation. Merely transforming the conditions of ownership is not revolution, for true revolution presupposes the transformation of man's way of life. It is precisely here that East European Socialists have failed.

By themselves, the third generationists are not dangerous. But the Kádár leadership worries lest they infect university students and younger intellectuals, particularly those resident in the capital. These students and intellectuals tend to find Socialist reality boring. They long for a more colorful and eventful life, for a feeling of adventure for which they sense little prospect under Kádár. They do not belong to the new left, even in an informal way; but because of their disillusionment and their constant search for new solutions, they could easily fall prey to its appeals, or at least so the regime believes.

Against these potential sources of danger, the downgraded apparatchiki and the third generation, Kádár has proceeded with caution. Party spokesmen have demanded that steps be taken against the spread of corruption. A high standard of public morality must be reestablished, they assert, and the road to unjustified enrichment barred. The Hungarian equivalent of the Komsomol has been enjoined to integrate the third generation within its ranks. Andras Hegedus, Rakosi's long-time Prime Minister, has been deprived of his position at the head of

¹⁶ Cited in *ibid.*, p. 3.

¹⁷ Cited in *ibid.*, p. 20. When the censors rejected the manuscript, Haraszti circulated it privately.

a research institute and expelled from the party. Haraszti has been tried but so far not convicted. But to date, the main reliance of the leadership has so far not been on administrative measures but on counterpropaganda.

To those who have asserted that the leading role of the proletariat has given way to the leading role of the technical intelligentsia, the Hungarian leadership has retorted that the new experts are largely recruited from the proletariat, so that the dividing line between blue collar and white collar has become blurred and the character of the working class has changed. Additional workers will be promoted to responsible posts so soon as their general education and professional qualifications make that possible. The leadership also rejects the charge of refrigerator socialism, asserting that the goal of raising living standards accords with the basic principles of socialism. Only if consumption is taken as an end in itself is there danger of deviation.

Regime representatives have also taken great care to point out that the record of the new left in Western Europe, from which the third generation has evidently derived many of its ideas, is far from praiseworthy. The new left has in fact made more difficult the position of the Western parties and prolonged their march to power. Time and again Hungarian media have "unmasked" the Western new left as purveyors of an eclectic, unscientific ideology and branded it as cheap, irresponsible, and petty bourgeois. (The role of György Lukács in all this has hardly been mentioned.) Furthermore, the Government has argued that Socialist revolution is not a single overwhelming act but consists of the pursuit of revolutionary activity in everyday life. "Everyone who carries out his duties is a revolutionary."¹⁸ Under existing conditions, the process of revolution is advanced by good deeds in support of (marketizing) reform, an undertaking which offers genuine scope for heroism and adventure.

But marketization brings with it other hazards than those we have lumped together under the rubric of the Hungarian new left. In the long run, for example, marketization signifies greater dependence upon trade with the West. The advanced technology which is required to raise living standards and create a more affluent society is the invention and the possession of the Western market economies. To raise the level of Socialist efficiency, this technology must be imported in massive doses. The technology gap between the two parts of Europe has, if anything, been growing.

And this Western technology must be paid for. At present, most East European manufactures are not technologically or qualitatively competitive in the West. At existing exchange rates, they must be sold at a loss; in other words, dumped. During the Czechoslovak thaw, the reformers published figures to show that a typical Czech manufacture, when sold in the Common Market in 1964, brought only about half what a similar good would bring when it had been made in EFTA, the European Free Trade Association. In 1959, East German

¹⁸ Cited in *ibid.*, pp. 24-25.

exports to market countries sold at a discount of about 40 percent.¹⁹ The purpose of marketizing a Socialist economy must in the first place be the achievement of a level of efficiency at least in some industries such as will permit the profitable export of manufactured wares, so that hard currency earnings will not have to be taken out of the domestic living standards, as they are now, but will represent a genuine profit, and will be quantitatively substantial enough to avert an unreasonable escalation of hard currency debt. Greater efficiency would, of course, have an even greater impact on the domestic economy.

But it is not possible to open the domestic market to competition in one product only, such as trucks. There must be a variety of goods for which Western purchasers are willing to spend their lei, their forint, or their zloty. And these currencies must in the long run be freely exchangeable with Western currencies; in other words, the currency of the marketizing country must in the long run be convertible, that is, hard. Convertibility may be even more important as a prod to the efficiency of Eastern traders and producers, since their local monopolies would be destroyed and they would have to withstand the competition of goods freely bought by Eastern populations on the world market. The Yugoslavs have openly proclaimed their intention of making the dinar convertible and have made sufficient progress so that their currency may properly be characterized as semihard. The Hungarians, who must be much more discrete, have quietly established a double forint for accounting purposes. In bookkeeping, it is exchanged for dollars at a not unreasonable rate, whereas the rate given to the ruble is about 1.75 times less favorable, if compared to the official ruble/dollar rate.

Whatever the instrumentalities of transition, and however long they take, the consequence must be a considerable integration of the Socialist economy with those of Western countries by way of trade. The percentage of total trade exchanged with Socialist countries will decline, while the percentage exchanged with the capitalist countries will increase.²⁰ This will not necessarily be to the liking of the men in Moscow, who will have to consider whether the marketizing country is not preparing to change sides. At present, the typical East European Socialist country trades 25 percent with hard currency markets

¹⁹ Edwin M. Snell, "Economic Efficiency in Eastern Europe," "Economic Development in Countries of Eastern Europe. A Compendium of Papers Submitted to the Subcommittee on Foreign Economic Policy of the Joint Economic Committee, Congress of the United States" (hereinafter cited as "Economic Development") (Washington, D.C.: U.S. Government Printing Office, 1970), pp. 240-280. These appear to be extreme cases, however, as Alan A. Brown and Paul Marer, "Foreign Trade in East European Reforms," in Morris Bornstein (ed.), *Plan and Market, Economic Reform in Eastern Europe* (New Haven: Yale University Press, 1973), pp. 153-206, estimate that manufactured goods are sold by Eastern exporters to the West at prices between 10 and 30 percent lower, and primary products between 5 and 20 percent lower, than prices obtained by Western exporters for similar products. Whatever the correct discount, it is clear that the ability of the Socialist countries to market machinery and transport equipment in the West is not improving rapidly. Whereas Western exports of such equipment to the Comecon countries rose from 21 percent of total exports in 1955 to 34 percent in 1970, Comecon exports of such equipment to the West as a percentage of total Comecon exports moved from 7 to 9 percent in the same period. "Table 54: East-West Trade in Machinery and Transport Equipment, 1955-70," in J. Wilezynski, "Technology in Comecon" (to be published in London by Macmillan in late 1974).

²⁰ For a detailed analysis see P. Marer, and E. Neuberger, in this volume, *infra*, pp. 556-598, and Alan A. Brown and Paul Marer, "Foreign Trade in East European Reforms," in Morris Bornstein (ed.), *Plan and Market, Economic Reform in Eastern Europe* (New Haven: Yale University Press, 1973), pp. 153-206. Such a decline has already begun in Hungary and Poland (in 1972-73). Forty percent of Poland's foreign trade was conducted with the hard currency area in 1973. Z. M. Fallenbuchl, "Croissance économique et échanges extérieurs de l'Union Soviétique et de l'Europe de l'Est, 1971-75," *Revue de l'Est*, IV (1973), pp. 27-46 presents a table on p. 36 which shows that between 1961 and 1970 intra-Comecon trade declined as a percentage of world trade.

and 75 percent in clearing (a form of barter), primarily with other Socialist states but to some extent also with developing countries.²¹ (Romania is an exception here. Forty percent of her commerce is concentrated on hard currency countries. But Romania also has one of the highest hard currency debts per capita.) In Yugoslavia, the proportion has been roughly reverse; 75 percent with the market countries, 25 percent with the Socialist.

It will be difficult for the marketizing country to convince Moscow that it is not preparing one day to jump ship. One of the many factors which brought Soviet troops into Czechoslovakia in August 1968, was the negotiations the Czechs had been carrying on with the Federal Republic of Germany concerning a huge loan to be expended for the modernization of Czechoslovak plant and equipment. To repay the loan Czechs and Slovaks would probably have had to switch a significant proportion of their trade to the West. This would have created an uneasy situation. Trading with both sides on a roughly equal basis is likely to set up considerable tension within the marketizing country. It is much easier to sell to Socialist states. They have a need for almost anything that can be produced and they are not choosy when it comes to quality (although Soviet buyers are becoming more demanding). That is the difficulty. Firms that trade primarily with the East are put under less pressure and so their ability to compete in the West declines. The economy is inevitably pulled in two contrary directions and there would be considerable danger that the marketizing East European state would, in the end, find it necessary to opt for the West.

But there is another aspect of the problem of partial commercial integration with the West. If a society opens its gates to the manufactured wares of the West it will be more difficult to keep out Westerners and Western ideas. The three are difficult to separate. To do business on any scale, Western firms must open offices in the Socialist country with all that that implies: regular access to the Western press, freedom of movement about the country, the right to employ local citizens on a long-term basis. So far most Socialist regimes have taken great care, and spent considerable sums of money, to prevent all kinds of contacts, for they believe East-West contacts tend to have a destabilizing effect which they cannot tolerate. Thus many, that is, Czechoslovakia, jam electronically Western broadcasts; all maintain a pervasive censorship; all limit the ingress of Western films, plays, books, and periodicals, not to mention newspapers; some take measures to limit contact between the native population and Western tourists. In addition, of course, the movement of their own populations across frontiers is rather severely restricted, the Berlin wall being the most dramatic example of such restriction. For the most part, however, Yugoslavia constitutes an exception to all this; she constitutes a breach in what Churchill once called the Iron Curtain.

These restrictions upon the flow of communications are not without justification, that is, they make it possible for the regimes to retain control. The regime could not, for very long, withstand the open criticism of even a loyal opposition; it has some difficulty coping with the shortwave transmissions of Western radio. The limiting of communications flow is also important as a means of keeping popular

²¹ "Table 20, Foreign Trade of Six East European Countries and the Soviet Union, by main regions, 1967-71," Economic Commission for Europe, *Economic Bulletin for Europe*, XXIV (No. 1, 1973), pp. 27-28.

aspirations within realistic bounds. It is one thing for the average Pole to realize that Polish living standards are not as high as those in the Federal German Republic, but quite another for him to know precisely how great the difference is. We should not lose sight of the fact that the Polish riots of 1970 were concentrated in the Baltic coastal towns which were both resort areas, visited by Swedes in particular, and ports through which shipments from the West arrived. When problems are either too severe or too numerous government must cope by suppressing some and ignoring others; whence the need for limiting the flow of communications.

Now partial integration with the Western markets by way of competitive efficiency and convertible currency constitutes an opening up of communications and magnifies the political problems with which the party and government must cope. Yugoslavia is the only state thus far to launch out upon this path. She has opened her frontiers both to those who wish to enter and those who want to leave. On the one hand she has permitted worker migration to the Common Market countries, on the other hand she has, more than any of her Socialist neighbors, taken measures to develop the tourist trade. Worker remittances are her single largest source of hard currency and tourist revenues the second largest. Indeed, without these two sources of hard currency the Yugoslav economy would have foundered long ago. Censorship of the press has been retained, but it is much less rigid than elsewhere. Western films make up the bulk of the movie diet; most cities have at least one house which specializes in cowboy pictures, of which the Yugoslavs are inordinately fond. There are even German and Italian filmmakers who specialize in the production of such pictures for the Yugoslav market because the American supply is inadequate. Any traveler to Eastern Europe will agree that the atmosphere in Yugoslavia is much the most relaxed and tolerant of that prevailing in any Socialist country.

The hard fact remains, however, that all this has brought with it a revival of the nationality problem, raising the question of the survival of the federation after Marshall Tito's departure from the scene. A virtually free flow of communications is by no means the only factor in this revival but it has been a powerful one. The Yugoslav Party has, in fact, become six parties, each in control of a separate republic, and the country is governed by continuing negotiation between the different party leaderships, with Tito serving as supreme arbiter. The immediate difficulty is that the efforts to create an institutional successor to Tito have so far not met with success, but the more fundamental problem is that of reconciling the Croats and the Slovenes to cohabitation with the much less sophisticated populations in the south.²² To be sure the national problem would not have been solved had the country continued to be ruled by Stalinist principles, but it would in a fashion have been contained or, perhaps more accurately, suppressed, and the party would have remained united and cohesive; the passing of the Marshal would have been only a dramatic incident, not the possible onset of a federal crisis. The other Communist leaderships will watch developments in Yugoslavia after Tito

²² For a detailed analysis, see R. V. Burks, *The National Problem and the Future of Yugoslavia* (Santa Monica, Calif.: the RAND Corp.), October 1971, 87 pp. For a more recent presentation see Gary K. Bertsch, "Currents in Yugoslavia: the Revival of Nationalism," *Problems of Communism*, November-December 1973, pp. 1-15.

argus-eyed. The collapse of socialism in that country, or the breakup of the federation, could only convince them that the hardfisted approach is the only safe one, if indeed they need to be convinced of that.

Thus the opening of the domestic market to Western competition, an inevitable accompaniment of marketization, can have political side effects which, from the viewpoint of the regime, are highly deleterious. There lurks in such a situation the possibility of a reduction or even a loss of control. There is, moreover, another sense in which the autonomous firm operating in a semimarket situation may bring with it a diminution of political control. For insofar as there is competition, so that the consumer has the possibility of choice, and insofar as prices are related to scarcities, so that consumer choices have an impact upon production, the party will have given hostages to the consumer and will have abdicated that immediate control of economic processes which has become the heart of Marxism-Leninism. In market economies there is such a thing as consumer sovereignty. In socialist markets there is modified consumer sovereignty, but to the extent that this exists the party has surrendered its direct control of the economic future. The aims it wishes to achieve will have to be reached by such indirect devices as taxation, control of interest rates, currency issue, tariffs, direct subsidies and other devices familiar to bourgeois governments. Within this framework the consumer will undoubtedly have his say.

Finally, there is the fact that enterprise autonomy tends to point in the direction of trade union autonomy. If basic decisionmaking authority is vested in the enterprise manager, and the manager is to measure his success by the amount of profit his enterprise earns, then assuredly an easy way to increase returns are to hold wages down, reduce expenditures for safety devices, speedup assembly lines, and the like. Such practices can be pursued with relative ease when all unions are controlled by the party, the government or management itself. A socialist state which permitted the working class to be gouged by autonomous management would soon find itself in political trouble. Consequently, if autonomy is given to the managerial class, it follows that the regime will probably find itself under pressure to grant some form of autonomy to the unions, in order that the workers may defend their interests.

The Hungarian Party has dealt with this problem by giving the unions a suspensive veto. The manager is required by law to inform the union representatives step by step of his various decisions. Should the union object to a particular action or line of policy, implementation is held up until an appeal can be carried to the appropriate ministry. If the minister rules in favor of the manager, the union must comply. Party organs complain that insufficient use is made of this right of suspensive veto and, indeed, the Hungarian manager tends to dominate his enterprise in a fashion reminiscent of 19th century Britain. In Yugoslavia, on the other hand, workers are in theory protected from exploitation by the existence of elective workers' councils in which the management of the enterprise is supposedly vested. Historically, these councils were an ideological device which camouflaged the autonomy of the manager, who was the appointee of the party, and shielded the system from the propaganda barbs of the Cominform. Yet it is nonetheless true that the elected council has been

influential enough to keep wages high and in many instances higher than was justified by productivity. The role of the workers' council has been one of the factors inhibiting Western investment in Yugoslavia within the framework of the joint company, which the Yugoslavs invented for that purpose.

To protect their interests, Yugoslav workers also resort to the strike. Such action is not organized by the unions, which remain under the control of the party. Rather Yugoslav strikes are illegal, wildcat affairs, as a rule not enduring for more than a day or two. They are tolerated by the regime on the ground that the workers would not misbehave in this fashion if their grievances were unjustified.²³ More often than not the strikers have their way, management panicking in the face of the evident dissatisfaction of the proletariat. There has even been some talk in Yugoslavia of legalizing strikes, but in present circumstances this is unlikely.

The right to strike nevertheless appears to be a necessary complement to enterprise autonomy. If the manager is freed of central control then in the longer run labor will likely be liberated also. For without the ultimate sanction of the strike, labor would have difficulty in protecting (not to speak of advancing) its interests. Furthermore, striking unions would need access to the public media, otherwise they could not get their side of the story to decisionmaking elites. Such access would, in turn, limit the authority of the censors.

Thus enterprise autonomy would tend to promote the pluralization of society. This would be so not alone because of the domino effect we have just described but for a more fundamental reason as well. Conceding a right to strike would involve, by implication at least, admission of the existence within socialist society of conflicting interests.²⁴ The orthodox view is that the party embodies the will of the proletariat, that the proletariat is destined by the forces of history to build a new and perfect society, and that the interest of every human being lies in the fulfillment of that goal. As *Planovoe khoziaistvo* once put it: "Given a correct economic policy, in a socialist society there are, and can be, no groups of workers [kollektivny] whose material interests lie in contradiction to the objectively necessary planned management of the economy on the part of the state. Hence, the economic activity of the enterprise can be defined only by society's purposes."²⁵ The interests of the party, the state, the proletariat, and society are identical. Any allegation to the contrary is likely to be treated as a manifestation of hostility.

Only in countries where economic reform has reached the marketizing stage do we find admission of conflict of interest. Thus we find a secretary of the Hungarian Workers' Party explaining to a representative of the French Communist press that—

The march forward creates new situations in which the interests of classes, sectors, or individuals can be divergent. It is natural that contradictions should arise; it is mistaken to believe that they can be resolved only by laws and administrative decisions. To know how to discern the contradictions and how

²³ More technically, strikes are not illegal when they are intended to assure the legality of management activity.

²⁴ For a detailed analysis see R. V. Burks, "The Political Implications of Economic Reform," in Morris Bornstein (ed.), *Plan and Market. Economic Reform in Eastern Europe* (New Haven: Yale University Press, 1973), pp. 373-402.

²⁵ As cited in Gregory Grossman, "The Solidary Society: a Philosophical Issue in Communist Economic Reforms" in Gregory Grossman (ed.), *Essays in Socialism and Planning in Honor of Carl Landauer* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970, pp. 205-206.

to inspire the right methods for overcoming them is perhaps the most important task of a ruling party.²⁰

For societies as distraught as those of Eastern Europe, and for regimes with such a narrow base, the hazard of pluralism is very real. In this respect the Hungarian regime possesses an advantage which is not widely understood; the traumatic experience of 1956 left both the Soviet patron and the Hungarian people with vivid awareness of those limits which it would be dangerous to transgress.

V. REFORM IN AGRICULTURE

In two of our eight countries, in Poland and in Yugoslavia, agriculture is not now collectivized. The vast bulk of the arable land lies in private hands. Ideologically, this fact constitutes a liability for the regimes for it taints their claim to the construction of socialism and creates doubts in the minds of Marxist-Leninists everywhere as to the purity of regime intentions. Thus Warsaw has so far refused to undertake the manufacture of one-cylinder garden tractors such as would be suitable for the cultivation of the narrow and scattered strips into which Polish farms have traditionally been divided. Instead Warsaw turns out the kind of heavy-duty tractor appropriate to the working of huge collective fields, and has attempted to persuade the farmers to organize so-called agricultural circles for the collective purchase and use of the machines. The peasants, of course, remain defiant, lavishing care on their horses, which have become a symbol of their independence from the government and which, it is often said, are better looked after than their wives. (The regime, incidentally, does produce horse-drawn implements for sale to the peasantry.) The fodder requirements of the horse population, however, are very large. It is not an exaggeration to say that the horses are in direct competition with the human population for food supply. The requirements of Polish horses depress the Polish living standard. Yet the regime hesitates to surrender on the issue of one-cylinder tractors for fear that all parties to the dispute, the peasants as well as Moscow, will take this concession as a signal that in Poland the socialization of the countryside has been definitively abandoned.

The ideological stigma associated with private agriculture deepens with the passage of time. As industrialization and urbanization proceed the requirements placed on agriculture, both for domestic consumption and for export, increase, giving hostages to the private peasantry. The growing need for increased output per hectare can be satisfied only by further concessions. In order to improve the food situation in Polish cities, the Gierek leadership, itself brought to power by severe rioting occasioned by an increase in food prices, has had to abandon obligatory deliveries. Previously the peasant had always been required to sell a given proportion of his crop to the Government at prices substantially below those prevailing in the market.

In Yugoslav agriculture, market prices have prevailed for some time. The consequence has been a significant improvement in peasant income, so that the peasantry has become the envy of the urban worker, and so that some urban migrants have returned to the village in search of employment. Indeed, the main question in Yugoslav agriculture

²⁰ As cited in Kevin Devlin, "French Communist Picture of 'Liberal' Hungary," "RFE Research: Free World," Oct. 5, 1973, four pages.

today is whether the upper limit of 10 hectares (approximately 25 acres) should be breached. In Yugoslavia the policy of forcible collectivization was first pursued with great vigor (1949-50) and then abandoned. At the time of reprivatization (1952-53) Belgrade ruled that private holdings could not exceed 10 hectares. Now the more successful peasants are pushing for a higher limit. In terms of efficiency the peasants clearly have the right of it and the controversy has become a constitutional issue. Under private agriculture, and with the help of American agricultural technology, Yugoslavia has achieved virtual self-sufficiency in foodstuffs. The tradeoff has been increased output per hectare in exchange for fewer Socialist controls. Further increases in output can be anticipated if the maximum size of the holding is increased, but the emergence of a kulak class can also be expected.²⁷

But there are also problems with collectivized agriculture. Much has been done to improve the situation and the motivation of the collective farmer. He has been given greatly increased quantities of fertilizer. He has been granted social security benefits more or less comparable to those of the urban proletariat. Above all the regimes have abandoned the traditional *trudoden*, or workday, under which the peasant had only a residual claim against the crop, the Government satisfying its various requirements first, so that the peasant had had to absorb the whole loss of poor crop years in hunger and suffering. Now, all regimes have replaced the *trudolen* with fixed guaranteed wages as a minimum. All these measures have brought about substantial increases in per hectare output in recent years.

Yet output has by no means kept pace with demand. Urban population has increased by leaps and bounds, the dietary expectations of the public have risen, while the requirements for hard-currency-earning exportable foodstuffs have multiplied. In Bulgaria, Romania, and Poland, not to mention the Soviet Union, more than half of the caloric intake is still made up of bread and potatoes. Throughout the area as a whole the diet is badly balanced, at least by Western standards, low on protein, fresh fruits and vegetables and high in carbohydrates and animal fats. And while there has been visible, even remarkable, improvement in the output of collective farms the regimes with collectivized agriculture are still very dependent upon the private plots for such hard-to-get items as meat, dairy products, and vegetables, that is, for labor-intensive crops. For all the improvement in the collectivized sector the regimes must be aware that in relation to the growing needs of their populations the situation in agriculture remains unsatisfactory.

Of the states with collectivized agriculture only Hungary has taken significant experimental steps in the fields of material incentives and ancillary activities. Taken together, the dozens of schemes for awarding material rewards constitute an important, perhaps even a decisive, modification of the collective principle in favor of individual enterprise, so much so that Budapest plays down these schemes in the public media²⁸ in order to excite people in Moscow unnecessarily. As for

²⁷ The average size of the private farm in Poland is 6.7 ha, a figure which is expected to increase to 11-15 ha in the next 15-20 years. R. Manteuffel, "Polish Panorama. A Revival of Agriculture's Importance," *Zycki Warszawa*, Sept. 30-Oct. 1, 1973 as translated in Polish Press Survey #2431, RFE Research: East Europe, Oct. 31, 1973, 6 pp.

²⁸ Fred E. Dohrs, "Incentives in Communist Agriculture: the Hungarian Models," *Slavic Review*, XXVII (1968), 23-35 provides a survey based on direct observation.

ancillary activities, Hungarian collectives are now permitted to engage in nonagricultural pursuits, including some kinds of manufacturing, and to hire their own members for this purpose. The trucks which supply Budapest with foodstuffs are in some considerable part owned and operated by collectives, for example, and most rural road repair and construction is carried out by collective farms. A collective in southern Hungary which specializes in chicken breeding is also allowed to manufacture the necessary equipment both for domestic sale and for export. Such activities permit collective farms to give their members full employment in the winter months and to supplement their agricultural incomes year round with factory wages. In Hungary these incomes may now exceed those of the urban proletariat.

The impact of these changes on village life in Hungary is visible even to the casual observer. Except for Yugoslavia, there is more new housing under construction in the Hungarian village than anywhere else in Eastern Europe. But the changes described raise political questions of some complexity. The law permitting collectives to engage in road repair and construction was enacted, repealed, then reenacted. The involvement of collective farms in nonagricultural ancillary activities implicitly threatens the priority normally accorded the urban proletariat. But surely more important is the damage done to the collective principle, which is partially abandoned in the name of material incentives.

The media of the other Socialist countries have largely ignored the systems of material incentives worked out in Hungary. Politically, collective farming is a highly sensitive institution. The human cost of collectivization was very high, a fact not soon forgotten, and nowhere was it higher than in the Soviet Union itself where at least 3 million peasants died in the civil conflict and the great famine which attended the first collectivization campaign, not to mention millions more who drew assignment to corrective labor camps. Collectivized agriculture has since that day been treated by the regimes as a pillar of Socialist construction. Forcible collectivization in Eastern Europe was by no means as cruel a process, nor as rapid, as it was in the U.S.S.R. But it was bitterly resented. If collectivized agriculture should at some future time be abandoned the question would inevitably be raised whether the high human cost of forcible collectivization has really been necessary. This could have a destabilizing effect on both parties and regimes.

VI. REFORM SUBSTITUTES

To repeat, improved central planning is not fraught with political risks, although it does create problems of its own, but at the same time it does not provide sufficient gains in efficiency to permit meaningful progress to be made with the technological gap. Without, in other words, some reliance on market forces and greater integration with the world market, the economies of Socialist Eastern Europe will not acquire the earning power which is prerequisite to any influx of Western machinery and equipment, which is what they badly need.²⁰ It is marketizing reform which is politically risky. So far only independent Yugoslavia and Kádár's Hungary have ventured out onto this stormy

²⁰ Cf. R. V. Burks, "Technology and Political Change in Eastern Europe," in Chalmers Johnson (ed.), *Change in Communist Systems* (Stanford, Cal.: Stanford University Press, 1970), pp. 265-312.

sea. The fate of the Czechoslovak reform has been taken by all the others as a warning.

As the Hungarian and Yugoslav cases demonstrate, however, it would be easy to overestimate the efficiency gains that might come from marketizing reform. Much depends upon what kind of marketizing reform it would be and how thoroughly it could be implemented. It seems unlikely that in the Eastern Europe of today such reform would not be hedged about with a series of social safeguards: full employment, minimal economic insecurity for the individual, minimal shaking up of party cadres and state bureaucrats, and so on. In the present worldwide inflationary situation there would probably also be a continuance of price control. The gains in efficiency, at least to begin with, might be quite moderate by Western standards. Nevertheless, viewed *à la longue*, marketizing is probably the only approach to any basic improvement in the functioning of these economies and would mark a watershed in the history of the regimes.

On the other hand, failure to raise substantially factor productivity is also a risky business, particularly since the official adoption of consumerism as regime policy. Stagnant living standards produce apathy and indifference, which the regimes can ill afford, and invite disorders and even riots which could precipitate political landslides. To be sure it is possible to resort to repressive measures but these have also proved counterproductive in the past. Theoretically, if the Soviet Union took the lead, the East European parties could even return to Stalinism, with its extensive reliance upon the systematic use of terror, its antisemitism and its xenophobia. But there is the question whether today this kind of retreat is a practical alternative and, in any case, the Communist elites are well aware that terror easily gets out of hand, that its employment cannot be limited to the masses of the population. The elites are not prepared, it seems, to give up the personal security they have enjoyed since Khrushchev's secret speech in February, 1956.

How can the requirements of political stability be reconciled with those of economic efficiency? This is the basic dilemma which the regimes face. In their anxiety they have searched for substitutes for economic reform. So far they have found two: the promotion of Western tourism, which earns hard currency, and increasing reliance upon what is called industrial cooperation, a device for importing Western technology on a combined credit and barter basis. The regimes are already learning, however, that tourism has its political costs and, in the view of the present writer, they will in due time also discover that industrial cooperation is by no means free of political liability.

VII. TOURISM

Tourism is already an important source of hard currency earnings for the regimes. The case of Yugoslavia is, of course, exceptional. In 1971 Yugoslav tourist revenues were 19.8 percent of total exports and 36.9 percent of hard currency exports. But even in Bulgaria tourist revenues in 1971 were 13.5 percent of hard currency exports, whereas in Romania and Hungary the comparable figures were 7.8 and 7.4 percent.³⁰ Furthermore, the turnaround time for investments in the

³⁰ From a paper dealing with the tourist trade in the Socialist countries presented to the 1973 meeting of the American Economics Association at New York City by Alan Brown, Paul Marer and Egon Neuberger. Transmitted by Paul Marer to R. V. Burks, Feb. 11, 1974.

tourist industry is much shorter than for other branches, and the results more predictable. At the same time it seems doubtful that the other Socialist countries would or could accept so heavy a dependence on tourist earnings as Yugoslavia has.

For the Yugoslav experience suggests that it is difficult to build up a tourist industry without reprivatization of services. Over time Belgrade has been forced to permit the renting of rooms in private homes, the opening of private restaurants and bars (the number of employees not members of the owner's family is limited by law), the operation of private taxi cabs and truckers and even the sale of sea front property on the Dalmatian coast to Westerners for recreational purposes. So far the experimentation of other regimes has been limited to putting tourists in private homes, but as the Socialist capitals try for increased tourist earnings the pressure for privatization will probably mount. Centrally planned economies cope with service problems only indifferently.

Besides reprivatization there are other political costs. These are illustrated by what we may call the Orbis hotel. We use the Polish name, although the institution we have in mind has an appellation which varies with the country. In Romania it is the O.N.T. hotel, in East Germany the Interhotel, in Bulgaria the Balkan Tourist hotel, and so on. Every city is likely to contain one such hotel, while the capital will house several. From the regime's point of view the difficulty with the Orbis hotel is that it ends up as an enclave of Western influence, as much used by the local population, particularly in the off-season, as it is used by the westerners. Typically, the Orbis hotel has the best restaurant in town, and the best orchestra. It is the "in" place, to which courting couples repair in preference. The prestigious westerners are to be seen and contacted in these hotels, as well as those natives who have the gift of western tongues. If western newspapers are available, they are to be had in this hotel. More importantly, the Orbis hotel contains, as a rule, the dollar shop, where the local population can purchase, for hard currency, such scarce items as western cigarettes (which continue to serve as a kind of currency throughout the area), pantyhose, West German transistor radios, French perfumes, and all other items which convey the message that living conditions are much better in the West and thus contribute to a rising level of expectation in the Socialist countries. (On the other hand, the availability of such goods, even though on a limited basis, may also serve as a safety valve, as an incentive to work harder in order to be able to procure such items.) It is even possible to buy a locally-produced automobile for hard currency in the dollar store. Thus in the G.D.R. a Wartburg normally costs 60,000 Ostmark and the wait is 9 years. But for \$2,400, or its equivalent in West German marks, one can obtain through the dollar store a Wartburg within 2 weeks! Our Orbis hotel may also contain the Cepelia shop (Polish prototype), a store which sells local handicraft products for local currency, but in selections and varieties not obtainable elsewhere.

In off-season four-fifths or more of the guests at an Orbis hotel will be natives, and another substantial proportion, travelers from neighboring Socialist countries. This is only partly due to the need for keeping the rooms occupied. It is also a concession to a growing demand for travel, any kind of travel, which the regimes attempt to

satisfy with tours organized collectively for the personnel of this office or that factory. A related pressure is that for private automobiles, to which the regimes are gradually and reluctantly giving way, since private motorization makes control more difficult. The rising demand for travel not only reflects improved living standards; it is probably also a surrogate political claim: if there cannot be freedom of speech then at least there ought to be freedom of travel. We note the reluctance of the regimes to make any concessions on the issue of personal contact at Helsinki.

With the exception of Yugoslavia, the Socialist states take measures to limit the impact of Western tourism. Typically they undersubscribe the Western press in order to reduce the quantity of Western newspapers which become available to the local population by way of the hotel room waste basket or as a consequence of personal contact. Governments attempt to concentrate foreign tourists in resort areas which, in turn, can be relatively isolated from the population at large. In Poland tourists may not sublet private rooms. On the Bulgarian Black Sea coast each nationality is lodged in its own hotel, with the East German facility at one end of the beach, and the West German at the other. The Bulgarian Government also conducts a campaign each spring designed to convince the public that unnecessary contact with tourists is contrary to the best interests of the country. The staff at the Varna beach facility undergoes special training so as to prevent it from losing perspective or developing false values. Everywhere in Eastern Europe, with the exception of the more advanced republics in Yugoslavia, the average citizen knows that he must be careful what he says to a foreigner.

Furthermore, once a major commitment to tourism has been made, as it has in all the countries of Eastern Europe with the exceptions of the German Democratic Republic, Czechoslovakia, and Albania, there necessarily emerges a powerful new interest grouping. Orbis, or ONT, or Balkan Turist are major enterprises. In Yugoslavia there are now competing tourist agencies, some of which are, in fact if not in name, undertakings of the individual republics. Orbis operates hotels and motels by the dozen, owns fleets of cars for rental purposes, manages garages to service the cars, builds ski lifts and dispatches steamships. In addition to all this, huge sums are spent for archeological excavations—although this would probably be true in any case—for the restoration of churches and monasteries—the latter are given populations of regular clergy to make them more attractive and to help maintain them—and for the development of roads and airports.

Moreover, account must be taken of the innumerable young ladies who make a career of guiding and interpreting. As often as not they come from well-placed families, for the Orbis career, interestingly enough, is a prestigious one for females. On crucial issues these girls may exercise some inadvertent influence in high places. Nor should we underestimate the impact of the hundreds of thousands of personal contacts between natives and tourists by way of currency dealings and black market sales of commodities such as cigarettes, used clothing, and the like. These and other East-West contacts, for example, between members of the intelligentsia, will be more numerous and carry greater weight wherever there is widespread local knowledge of the English and German languages. Once a Socialist country has been opened to

tourism it would not be an easy task to close it off again, even if what the regimes regard as its negative effects acquired such dimensions as to make it desirable to do so.

We should also point to the potential impact of intrabloc tourism. Russian tourists to Hungary, for example, may be powerfully influenced by the higher living standards and greater personal freedom which they find there, especially since these are enjoyed under socialism. In its early days the Gierek leadership, attempting to improve living standards at a rapid rate, arranged with the G.D.R. for free exchange of zloty and Ostmark within certain limits, thus promoting a flow of tourists from Poland to the G.D.R. But in a few months the experiment came to an unhappy end. The Polish tourist bought out the East German shops, which were laden with foodstuffs and textiles not available in Poland. The reaction of the East German public was negative, even bitter. Relations between Poles and East Germans were not improved by the experiment. Differences in living standards within the bloc are still sufficiently great to create undesirable political consequences if there is freedom of movement across frontiers.

VIII. INDUSTRIAL COOPERATION

Tourism, however, even without these negative effects, does not get at the fundamentals of the East European problem. It is a good hard currency earner, particularly in countries with labor surpluses, and it helps in the development of the badly neglected service industries, but it does not affect directly the technology gap nor, to put the same proposition in other terms, does it in and of itself raise labor productivity by very much. What the Socialist countries need above everything else is a mammoth injection of advanced western technology and capital. The question is how to bring this about.

Doctrinally this requirement creates difficulties, Marxism-Leninism is a system for the industrialization of backward countries without the massive importation of foreign venture capital, foreign capital meaning—in the Communist view—not only economic exploitation but ultimately the loss of political independence. Doctrinally, the central planning system should not only permit the borrowing of western technology by a process of imitation but it should also release creative forces which would produce a rate of technological innovation and a level of labor productivity far beyond anything capitalism is capable of. Said Khrushchev to the 21st Soviet Party Congress in 1959:

Bourgeois economists contend that at a certain point the industrial development rates in the U.S.S.R. are bound to "slacken." What they are trying to do is to apply the capitalist economic yardstick to socialism. Capitalism does indeed erect insuperable barriers to the development of the productive forces and its rates of industrial growth do begin to drop off. Socialism, on the other hand, creates every condition for a continuous expansion of the productive forces. [Or again:] High rates of growth are a general objective law of socialism, now confirmed by the experience of all the countries of the Socialist camp.²¹

Such thoughts as these underlay the ill-fated Soviet 7-year plan, launched in 1959, and the East European plans which were coordinated

²¹ N. S. Khrushchev, "Target Figures for the Economic Development of the Soviet Union 1959-65: Report to the Special 21st Congress of the Communist Party of the Soviet Union, Jan. 27, 1959, and Reply to Discussion" (London: Soviet Booklet No. 47, 1959), pp. 48, 50.

with it. The failure of the 7-year plan explains the spate of economic reform which began in 1962.³²

Once it turned out, however, that the kind of reform which would produce substantial increases in efficiency was politically risky—and here the watershed is the military occupation of Czechoslovakia in 1968—then increasing recourse was taken to industrial cooperation, so-called. Some consideration was given to the device known as the joint company. As mentioned earlier, this was an invention of the Yugoslavs who, having abandoned the notion of self-sufficient industrialization in 1965 and having accepted integration with the world market in principle, were seeking some means for encouraging an inflow of Western venture capital which would not threaten their independence. Venture capital would supplement loan capital, or credit, and not require repayment within a short period, although profit rates would be higher than interest rates. And venture capital would mean continuing injections of new technology, preferred by the Yugoslavs over license purchase as a means of staying technologically current. Belgrade's notion was that two companies, one Yugoslav and one Western, would create a third enterprise on Yugoslav soil for the manufacture of some commodity which would be sold on the world market. The Yugoslavs would provide the labor and the plant, the foreign investor the technology, together with the managerial know-how. The foreigner could own up to 49 percent of the capital of the joint company. This Yugoslav innovation was a bold and imaginative step, for it made possible the entrance of Western venture capital into the Socialist domains while at the same time giving the last word in the management of such capital to the Yugoslavs, more specifically to the workers' council in the joint enterprise.

Nonetheless, the joint company can hardly be regarded as the solution to the East European problem. The quantities of venture capital it has brought to Yugoslavia have so far been very disappointing;³³ Western capitalists are not inclined to risk their wealth in a foreign country where the native partner has the final say. The other Socialist states, furthermore, have been slow to adopt the Yugoslav device. Romania has finally done so,³⁴ while Hungary has until very recently permitted the organization of joint companies only for the purpose of foreign trade or of manufacturing operations not based on Hungarian soil. In July 1973, economists of all the European Socialist countries met in Budapest and emerged from their deliberations with the conclusion that the time for the joint company had not yet come. Perhaps the ideological concession involved is more than the regimes can stomach.

³² According to W. Brus, "Some General Remarks on the Changes in the System of Planning and Management," "Gospodarka Planowa" (Warsaw), 1 November 1966, the average annual rate of growth during 1961-65 in Czechoslovakia was 1.8 percent, as compared to 7 percent in the previous five-year period, while in the GDR the analogous figures were 2.8 percent and 8.1 percent respectively. Cited by Michael Gamarnikow on p. 11 of an unpublished MS concerning economic reform in Eastern Europe. Czechoslovakia and the GDR were the two worst cases since they were the two most mature countries from the standpoint of economic development. For Western estimates of Soviet and East European growth during this period cf. Thad P. Alton, "Economic Structure of Growth in Eastern Europe," "Economic Development in Countries of Eastern Europe. A Compendium of Papers Submitted to the Subcommittee on Foreign Economic Policy of the Joint Economic Committee, Congress of the United States (Washington: U.S. Government Printing Office, 1970), pp. 41-67."

³³ Miodrag Sukijasović, "Yugoslav Foreign Investment Legislation at Work: Experiences So Far. Second Edition" (Belgrade: Institute of International Politics and Economics, 1970), passim.

³⁴ Cf. Al. Detesan, "Societăți Comerciale—Societăți Mixte, Formă Eficientă de Cooperare Internațională" (Bucharest: Viața Economică, 1972), particularly pp. 171-172.

At any rate, industrial cooperation, which offers ownership difficulties to neither partner, has very much come to the fore in the last 5 years or so. Under this arrangement, for example, an East European enterprise, let us say a maker of trucks, contracts with a Western manufacturer for the license to produce, on Eastern soil, a Western vehicle or parts thereof. The Westerner provides the machinery and equipment; his engineers and technicians supervise their installation and the initial runs, instructing the Eastern labor force in the details of the operation. All these deliveries are made and services rendered on credit, preferably, from the Socialist point of view, at interest rates lower than commercial. In exchange, the Western entrepreneur receives, once production of the truck has begun in the East, a steady flow of selected parts, differentials let us say, which he can install in his own product. Over a period of time the flow of differentials is sufficient to amortize the credit. Meantime, hopefully, the two firms have become involved in additional agreements for industrial cooperation.

Under such arrangements—a barter deal in which Western technology and know-how are exchanged for standard parts provided as an input to the manufacturing process of the Western firm—the Westerner assumes only the risk that the flow of parts will falter or not reach the required standard. The Western partner has an interest in such deals because they provide him with labor which is cheap and well-disciplined. Except for Yugoslavia, and even in Yugoslavia they are exceptions, strikes are virtually unknown. The Westerner is also interested because he senses the possibility of a major and long-term increase in East-West trade, and he would like to get in on the ground floor. As for the Eastern partner, the problem of ownership, the risk of admitting foreign capital to the sacred soil of Socialism, is obviated. The risk of the Easterner lies in the possibility that, given a recession in the West, the Western partner may be forced to curtail imports from Eastern Europe because of the political problem created by domestic unemployment.

At present, production under conditions of industrial cooperation amounts only to a pinch. Hungary has probably gone further with the contrivance than any other Socialist country, yet Budapest claims only that 3 percent of its foreign trade reflects agreements for industrial cooperation. It is rather that a vast expansion of such trade is contemplated. The Soviet Union, which has a special problem in the extractive industries, is leading the way. The intent of the Communist leaders, it appears, is to expand industrial cooperation to that point at which economic reform will be made unnecessary by the augmentation of efficiency achieved. This policy is properly referred to as Brezhnev's gamble, since Brezhnev is the titular head of the European system of Socialist states and since he is a leading advocate of this line. For both Eastern Europe and the Soviet Union the policy represents a gamble in two respects. It assumes that the West will be willing and able to provide industrial cooperation to the extent desired and on favorable; that is, noncommercial terms—at least for some years. And it assumes, in the second place, that a huge influx of Western technology and know-how by way of industrial cooperation will in fact significantly affect the overall efficiency of the central planning system.

The reaction of the West to Eastern proposals for industrial cooperation on a grand scale is a subject which does not fall within the scope of this essay, but the second of the two assumptions which underlie the Brezhnev gamble is both a legitimate and an intriguing object of concern. The first observation to be made is that Socialist Europe has been importing Western technology on a grand scale for many years now. If we include the Soviet Union in our purview we are talking of half a century. The pertinent question is why the Communist leaders have any reason, other than considerations of political expediency, to believe that the transfer of technology through industrial cooperation will lead to a more propitious result than the forms of technology transfer previously relied upon.

The new elements in industrial cooperation are three: (1) Extensive Western credit on favorable terms, assuming for the moment that this becomes available; (2) a heavier participation of Western businessmen and engineers in the process of technology transfer than heretofore; and (3) some guarantee that the finished product will be marketable in the West at market prices. Of the three the third is probably the most important. For political reasons the second is viewed by the Socialists as a disadvantage of some considerable proportion, whereas the first will necessarily entail a foreign policy of compromise and even cooperation with the West. The third is decisive not only because it offers the prospect of a hard-currency earning power not based on the export of fuels and raw materials but above all because it offers a degree of positive integration of the Socialist economies with the world market. This should provide a continuing flow of new technology, since the Western partner cannot afford to incorporate obsolescent parts in the finished product.

Two kinds of factors would appear to militate against Brezhnev's gamble, those inherent in the situation of any developing country, which would not apply of course to the German Democratic Republic or Czechoslovakia, and those which appear to characterize the central planning system of the Marxist-Leninist type. In the first category stands the fact that most of Eastern Europe does not possess a labor force structure appropriate to the absorption of new technology. There exists a surplus of cheap, unskilled labor which can be more effectively employed at the existing level of technology. The introduction of more advanced equipment would only mean a higher ratio of on-the-job unemployment which already may run as high as 25 percent of the work force in the People's Republic of Poland. There is also the second fact that the recipient countries, save for the exceptions named, do not possess an infrastructure appropriate to receive and nourish advanced technology. These obstacles, however, can be overcome with fairly substantial quantities of time. In many areas labor is scarcer than it was, while the pool of agricultural workers which can still be tapped has shrunk.

The principal weakness of the Socialist command economy, however, appears to be inherent and not subject to the erosive action of time. This weakness is a low rate of technological innovation as compared with the market economy. Indeed, the Socialist system penalizes innovation, despite the claims of its proponents to the contrary. The Socialist system has a built-in bias toward unlimited production runs and a regular abhorrence of model changes. The institutional reasons

for the noninnovative character of the centrally planned economy, Marxist-Leninist version, I have attempted to explain elsewhere.³⁵ One factor, however, which may have been seriously undervalued in this and other analyses of the Socialist innovational problem is the inherent tendency of Marxist-Leninist planning to create an institutionalized seller's market in which the consumer must buy what is offered him or do without. Thus the absence of consumer sovereignty is a crippling element.

Suffice it here to say that this technologically static system is placed by history in competition with another which is technologically dynamic. As Arnold Toynbee once expressed it, the West puts itself through one technological revolution after the other while the Socialist East can respond only by resorting to one forced march after the other. It is a remarkable fact, not frequently enough alluded to, that not one of the world's breakthrough inventions since the introduction of the first 5-year plan in 1928 has originated under Socialism, so that the Socialists have been obliged to import ever-new technologies as well as the industries that go with them. Synthetic fibers, television, xerography, nuclear energy, computers, transistors are among the principal examples. The fact that the Socialists started far behind and have made great, even astonishing, industrial progress in comparison with their point of departure should not obscure for us the fact that in the 1970's they are no longer narrowing the technological gap, although they have staked their future on their ability to do so.

On the face of it a guaranteed flow of new technology through industrial cooperation does not appear adequate to the task. There will undoubtedly be an improved rate of growth in Socialist labor productivity as long as cooperation continues, but the new technology will remain, so to speak, as nonreproductive as the old, for there will be no basic change in the central planning system itself. In a way, the Communist leaders themselves recognize this fact, since they view industrial cooperation as a device for shielding their economies against mounting pressures for fundamental restructuring. Thus the likely effect of large-scale industrial cooperation will be to tide the Socialist regimes over for a few years, until it becomes evident to everyone, but more particularly to the Socialist elites, that the Brezhnev gamble has failed.

Meantime industrial cooperation will probably have turned out to have its own political cost. The introduction of Western business offices, placing Eastern employees under the supervision of Western bosses in a semipermanent relationship, as well as increased commercial and technological intercourse, may well have some of the same effects as tourism, especially at elite levels; that is, additional leakage of information concerning the true conditions prevailing in the West, a further raising of the level of expectation, and some elevation of the public flash point, the juncture at which serious disorders break out without much in the way of provocation. In addition, there would be a demonstration effect of no small proportion: large numbers of influential East Europeans would over a long period be brought face to face with the pervasive technological superiority of the West, raising doubts in their minds as to the inherent superiority of Socialism.

³⁵ Burks, "Technology and Political Change," *loc. cit.*

Finally, Eastern Europe might well find itself to some degree in that kind of dependency on the West, the avoidance of which is the *raison d'être* of autarkic industrialization. A very sizable hard-currency debt would probably accumulate. Western businessmen might insist on exercising more extensive control over the Eastern partner-plant. Western politicians might bring pressure to bear for political concessions in order to justify, before their national parliaments, continued subsidization of industrial cooperation agreements. There is already a current of expert opinion in Poland which holds that that country has gone as far as prudent in incurring debt to the West. But there is also the other side of the coin, particularly as regards the Soviet Union, which may well acquire a leverage on Western creditors (and their governments), anxious to safeguard the security and profitability of their investments. This could become a major political problem in the event of large U.S. investments in the U.S.S.R., contributing to a potentially dangerous flaccidity of American public opinion.

EAST EUROPEAN INTEGRATION: COMECON

By ZBIGNIEW M. FALLENBUCHL

CONTENTS

	Page
I. Twenty-Five Years of the Evolution of Comecon.....	79
1. The first stage (1949-61).....	79
2. The second stage (1962-70).....	87
3. The third stage (1971-74).....	96
II. The Mechanism of Integration.....	107
1. Coordination of plans.....	107
2. Collaboration in production.....	116
3. International mobility of factors of production.....	122
4. Scientific and technical collaboration.....	128
5. Market forces.....	132

I. TWENTY-FIVE YEARS OF THE EVOLUTION OF COMECON

1. *The First Stage (1949-61)*

In 1974 the Council for Mutual Economic Assistance—Comecon—celebrates its 25th anniversary. It was born at a conference of representatives of Bulgaria, Czechoslovakia, Hungary, Poland, Romania, and the U.S.S.R. which was held in Moscow on January 5-8, 1949. A brief communiqué, signed by the delegates at the end of the conference, served as the only legal basis for the newly established institution until it received its charter 10 years later in 1959—ratified in 1960. The communiqué simply stated the decision to create the Council, based on equal representation of the participating countries, for the purpose of exchanging experience in economic matters, extending mutual technical assistance and granting mutual aid in the form of raw materials, machines, industrial equipment, etc. It also stipulated that (1) the Council would be an open organization which might be joined by other European* countries which accept the same principles and would like to participate in a wide economic cooperation with the member countries; (2) the decisions would be taken only with the approval of the interested country; and (3) the meetings would be held periodically in the capital of each of the member countries in turn under the chairmanship of the representative of the country in whose capital the session takes place.¹

The laconic form of the communiqué, the lack of a charter and only a very brief and vague description of the envisaged operations of the Council suggest that this was a sudden decision and that the institutional framework was not regarded as very important at the time.

*This geographical limitation was removed in 1962.

¹B. W. Reutt, "Podstawowe dokumenty RWPG i organizacji wyspecjalizowanych" (Fundamental Documents of CMEA and of Specialized Organizations), Warsaw 1972, pp. 13, 14.

Indeed, the establishment of Comecon was a hasty reaction to some developments outside as well as within the bloc, which had just been established by the Soviet Union and probably was still regarded by its leaders as very fragile. While consolidation of Western Europe was rapidly advancing with the assistance of the United States, political relations between the Soviet Union and the Western Allies were deteriorating. CMEA was established as, above all, a response to the Marshall plan, and as a compensation, particularly for the two ex-allied nations, Poland and Czechoslovakia, who were forbidden by the Soviet Union to participate in it and were asked to withdraw from the World Bank and the International Monetary Fund, of which they had been charter members. The communiqué explicitly mentions the Marshall plan as the reason for the establishment of the Council:

The conference noted * * * that the governments of the United States, England, and some other West European countries are boycotting trade with the countries of people's democracy and the Soviet Union because these countries do not consider it possible to submit themselves to the dictates of the Marshall plan, which violates national sovereignty and interests of national economies. Taking this situation into consideration, the conference discussed a feasibility of organizing a wider economic cooperation of the countries of people's democracy and the Soviet Union.²

But there were also some other reasons. There was Yugoslavia's defection and a potential danger that some other countries might follow her example. Comecon was to be an additional instrument of Soviet control over the countries of the region. Moreover, it could prevent any other forms of economic cooperation among East European countries which would exclude the Soviet Union.

Immediately after the war there was in Eastern Europe an equally strong interest in economic and political cooperation as in Western Europe and there were many manifestations of this interest. Following the war-time negotiations between the governments-in-exile of Czechoslovakia and Poland, a considerable degree of cooperation between these two countries was envisaged, although the post-war political situation required scaling down the original plans. On July 4, 1947, an agreement was signed to promote industrial development and progress in both countries and to avoid unnecessary investments. A permanent Czechoslovak-Polish Council of Economic Cooperation was established with a large secretariat to implement the agreement and the Council became a very active body.³ In May 1947, Hungary and Yugoslavia concluded an agreement on cooperation in the field of bauxite and aluminum production. In July and November of the same year, negotiations took place between Yugoslav and Bulgarian Government committees and a pact of friendship and mutual assistance was concluded. Its objective was "to enhance economic cooperation, to strengthen and widen mutual activity, to coordinate planning, to accelerate the realization of a custom union."⁴ In January 1948, Romanian-Bulgarian negotiations took place as another step in the direction of a comprehensive economic integration among the Balkan countries.

² *Ibid.*, p. 14.

³ D. Fikus, "Rada Wzajemnej Pomocy Gospodarczej" (The Council for Mutual Economic Assistance), Warsaw 1967, p. 14.

⁴ As quoted by I. T. Berend, "The Problem of Eastern European Economic Integration in a Historical Perspective" in I. Vajda and M. Simal (eds.), "Foreign Trade in a Planned Economy," Cambridge 1971, p. 12.

Under the Soviet pressure all these plans were abandoned and even political contacts between neighboring Communist regimes in Eastern Europe were at a minimum.⁵ The Czechoslovak-Polish Council of Economic Cooperation was liquidated and the Balkan federation was stopped after Stalin had criticized it openly. An editorial in *Pravda* explained that: "in these countries the problem to be solved is to protect and to strengthen their sovereignty and independence by organizing and mobilizing internal democratic forces and not to think out some federation, confederation, or a customs union."⁶

The establishment of Comecon closed the door to any such proposals. This fact is now recognized in Eastern Europe. For example, a distinguished Hungarian economic historian has pointed out that whatever hopes for integration might have existed in the preparatory period, "when the activities of CMEA started, no such schemes were mentioned in its published programmes and documents, nor did it advocate them in its advisory dealings."⁷ Similarly a Polish economist explains that for Stalin "every direct contact between socialist countries involved a danger of schism" and "paradoxically, during the 1950's direct economic links among individual countries of people's democracy were weakening rather than strengthening."⁸ For this reason the pattern of economic relations which emerged in Eastern Europe at that time was not that of a developing regional integration:

The newly established model of relations among socialist countries had a "radial" character. The center was located in Moscow. There was the main source of inspiration. There was, therefore, a close link between the center and each country separately, but there were no closer links among the people's democratic countries.⁹

Before WW II all East European countries were oriented toward trade with the West, and trade with the Soviet Union represented only an insignificant proportion of their total trade. In 1950 the share of CMEA in total trade was 54.5 percent in Czechoslovakia, 58.4 percent in Poland, 61.4 in Hungary, 72.3 percent in G.D.R., 83.2 percent in Romanian, and 88.4 percent in Bulgaria. In Poland and in Hungary the share of trade with the Soviet Union was smaller than the share of trade with the rest of CMEA. In Czechoslovakia, the two shares were almost equal. In G.D.R., Romania and Bulgaria, trade with the Soviet Union exceeded that with the rest of Comecon (see table 1).

⁵ Z. K. Brzezinski, "The Soviet Bloc," New York rev. ed., 1960, pp. 122-23.

⁶ *Pravda*, Jan. 30, 1948, as quoted by Berend, op. cit., p. 14.

⁷ Berend, op. cit., pp. 14-15.

⁸ Pikus, op. cit., p. 14.

⁹ *Ibid.*

TABLE 1

A. INTRA-COMECON TRADE (PERCENTAGES OF TOTAL TRADE, CURRENT PRICES)

Country	1950	1955	1960	1965	1970	1971
Bulgaria with—						
Total CMEA.....	88.4	87.2	80.4	73.0	74.1	75.4
U.S.S.R.....	67.1	49.0	52.8	51.1	52.5	53.7
Rest of CMEA.....	21.3	38.2	27.6	22.9	21.6	21.7
Czechoslovakia with—						
Total CMEA.....	54.5	63.7	63.8	68.1	63.9	64.2
U.S.S.R.....	27.4	34.5	34.4	36.4	32.4	32.8
Rest of CMEA.....	27.1	29.2	29.4	31.7	31.5	31.4
G.D.R. with—						
Total CMEA.....	72.3	64.0	67.7	69.4	68.3	67.4
U.S.S.R.....	39.7	38.3	44.9	45.5	39.0	38.3
Rest of CMEA.....	32.6	25.7	22.7	23.9	29.3	29.1
Hungary with—						
Total CMEA.....	61.4	54.4	63.1	65.4	61.9	63.9
U.S.S.R.....	26.8	22.0	31.1	35.6	34.5	34.1
Rest of CMEA.....	34.6	32.4	32.0	29.8	27.4	29.8
Poland with—						
Total CMEA.....	58.4	59.3	56.6	60.5	62.0	61.9
U.S.S.R.....	26.8	32.1	31.2	33.0	36.4	35.7
Rest of CMEA.....	31.6	27.2	25.4	27.5	26.5	26.2
Romania with—						
Total CMEA.....	83.2	79.4	66.9	60.7	49.1	47.2
U.S.S.R.....	55.4	61.5	39.7	38.6	26.9	24.8
Rest of CMEA.....	27.8	17.9	27.2	22.1	22.2	22.4
U.S.S.R. with total CMEA.....	57.4	51.6	53.0	58.0	55.6	56.2

Sources: G.U.S. Kraje RWPG: ludnosc, gospodarka, kultura (The CMEA Countries: Population, Economy, Culture), Warsaw 1972, pp. 73-75. CMEA Secretariat, "A Survey of 20 Years of the Council for Mutual Economic Assistance," Moscow 1969, pp. 89-90. L.S. "XXVII Sesja RWPG" (the 27th Session of CMEA), Gospodarka planowa (Warsaw), p. 634.

B. SHARE OF THE MEMBER-COUNTRIES IN INTRA-COMECON TRADE (PERCENTAGES)

Country	Export			Import		
	1950	1960	1970	1950	1960	1970
CMEA.....	100.0	100.0	100.0	100.0	100.0	100.0
Bulgaria.....	4.2	5.6	8.1	5.7	6.2	7.0
Czechoslovakia.....	16.5	15.0	13.1	15.0	14.2	12.5
G.D.R.....	11.1	18.6	16.8	13.7	19.4	17.3
Hungary.....	8.3	6.6	7.7	8.7	7.6	8.4
Mongolia.....		.8	.4		1.2	1.2
Poland.....	13.8	8.9	11.5	17.9	10.9	12.6
Romania.....	7.3	5.8	5.0	7.6	5.3	5.1
U.S.S.R.....	38.8	38.7	37.4	31.4	35.2	35.9

Source: M. Bogacka, I. Cieniuch, T. Leszek, "Rozwoj handlu wzajemnego w ramach RWPG" (Development of Intra-Comecon Trade), Handel zagraniczny (Warsaw), No. 11, 1973, p. 376.

Between 1950 and 1960, the share of trade with the Soviet Union increased in all countries except Bulgaria and Romania where, however, the share was still the largest and the third largest among all East European countries. In the G.D.R., Poland and Hungary, the share of trade with the Soviet Union increased, while the share of trade with the rest of CMEA declined. In Czechoslovakia both shares increased but trade increased more rapidly with the Soviet Union than with other CMEA partners. In 1960 Hungary was the

only country which had a smaller share of trade with the Soviet Union than with the rest of CMEA (31.1 and 32.0 percent respectively). In other countries the two shares were as follows: Poland 31.2 and 25.4 percent, Czechoslovakia 34.4 and 29.4 percent, Romania 39.7 and 27.2 percent, G.D.R. 44.9 and 22.7 percent and Bulgaria 52.8 and 27.6 percent.

The first session of CMEA was held in Moscow in April 1949. It established a Bureau, consisting of representatives from each country, and a small technical staff headed by the Secretary of the Council. The second session took place in Sofia in August of the same year. It accepted the principle of the exchange of technological documentation without payment and recommended that the member-countries should sign long-term agreements in addition to annual commercial agreements. The third session, held in Moscow in October 1950, concentrated its attention on mutual supplying of commodities which were essential for the fulfilment of the first industrialization plans.¹⁰ Once established, Comecon, which was enlarged by the entry of Albania in 1949 and of the newly created German Democratic Republic in 1950, had a very limited role. Both the expansion of trade within the bloc and the exchange of technical documentation, and so forth were based on bilateral agreements; Comecon's role was limited to some attempts to coordinate the process. Although created as a response to the Marshall plan, CMEA was never envisaged as an instrument for transfer of capital from the U.S.S.R. to its East European partners. Both Soviet aid and various transfers from Eastern Europe to the Soviet Union were arranged bilaterally. It has been calculated that, even when cancellation of reparations from the ex-enemy countries to the Soviet Union are included as Soviet aid, the net flow of resources from Eastern Europe to the Soviet Union during the period 1945-60 is of the same order of magnitude as the flow from the United States to West Europe under the Marshall plan which amounted to about \$14 billion.¹¹

At the time when CMEA was established the Soviet system of planning and management and the Soviet development strategy were introduced in all East European countries with only minor variations. The interaction of the system with this particular strategy resulted in a more or less uniform pattern of industrialization. According to the current Communist terminology this was the "extensive pattern of development." Growth depended on increases in employment in the nonagricultural sectors of the economy, above all in heavy industry, and a rapidly expanding capital stock. The role of improvements in the productivity of labor and capital was relatively unimportant. The stress was on the mobilization of resources and allocating them to those branches of industry which produce producers' goods in accordance with some rigidly defined priorities.¹² These were the objectives which

¹⁰ *Ibid.*, p. 15; W. Iskra, H. Kistiel, *RWPG Integracja Gospodarcza*, Warsaw, 1971, p. 136.

¹¹ P. Marer, "The Political Economy of Soviet Relations With East Europe: 1945 to Present," a paper presented at the panel Testing the Theory of Economic Imperialism of the annual meeting of the International Studies Association, New York, March 1973, preliminary draft, pp. 15-16. Information on Soviet aid to Eastern Europe and transfers from Eastern Europe to the Soviet Union can also be found in M. I. Goldman, *Soviet Foreign Aid*, New York 1967 and J. Horvath, "Grants Elements in Intra-Bloc Aid Programme," *ASTE Bulletin*, v. XIII, No. 3, 1971, pp. 1-17.

¹² Z. M. Fallenbuchl, "Some Structural Aspects of the Soviet-type Investment Policy", *Soviet Studies* (Glasgow), No. 4, 1965, pp. 432-47.

the highly centralized Soviet-type system of planning and management was able to achieve relatively well.¹³ High rates of growth were enforced but the cost of the process was enormous. Increases in labor productivity were achieved by heavy investment outlays. The capital-labor ratios were increasing and, with high capital-output ratios, large volumes of investable funds were required. High rates of accumulation (that is, saving) were, therefore, necessary and consumption had to be kept at a low level.¹⁴

Until the middle of the 1950's international trade performed a subsidiary function. The strategy of development was based on import substitution. Attempts were made to achieve a relatively high degree of self-sufficiency for every country in industrial products—both producers' and consumption goods. The expansion of the "domestic raw material base" was regarded everywhere as an important objective, whatever the cost involved. Trade was needed at first to supply the necessary investment goods and, later, raw materials for the newly established industries if no sufficient domestic sources could be developed. Imports dominated the scene. Exports were simply needed to secure foreign exchanges to finance those imports which could not be avoided. They consisted mainly of some temporary surpluses which were often achieved at the expense of the domestic level of consumption.¹⁵

An almost identical industrialization drive taking place at the same time in all countries of Eastern Europe, based on import substitution and on the principle of the priority development of the same industries, producing the same producers goods, and often made according to the same blueprints, resulted in the establishment of competitive rather than complementary industrial structures. This process can be described, using the words of a Hungarian economist, as follows:

In Czechoslovakia, the German Democratic Republic and Hungary * * * several branches of industry were created or expanded to many times their former capacity in accordance with the needs of the Soviet market. Later, however, the industrially less advanced countries embarked on a road of development designed to save imports, building up the capacity of manufacture products they had earlier imported from other countries. Unfortunately, the technical development of the industrially more advanced countries was not adopted in time to these changed circumstances, and this involved the appearance of parallel capacities. These later turned out to be serious obstacles to a sound growth of international trade.¹⁶

The countries of the bloc found it exceedingly more difficult to trade among themselves in the products of newly developed industries and were competing for the same raw materials and for the export markets for the same products.¹⁷ Serious shortages of raw materials appeared within the bloc. The Soviet Union was the main supplier. In 1955 fuels

¹³ Z. M. Fallenbuehl, "How Does the Soviet Economy Function Without a Free Market?", *The Queen's Quarterly* (Kingston, Ontario), No. 4, 1964, reprinted in M. Bornstein and D. F. Fustfeld (eds.), *The Soviet Economy*, Homewood, Ill., 1966, 1970, and 1974 editions.

¹⁴ Z. M. Fallenbuehl, "The Communist Pattern of Industrialization," *Soviet Studies*, No. 4, 1970, pp. 458-84.

¹⁵ Z. M. Fallenbuehl, "Growth Through Trade in the Socialist Economies," in W. D. G. Hunter (ed.), *Papers and Proceedings of the Conference on Current Problems of Socialist Economies*, Hamilton, Ont., 1970 (mimeographed). A. A. Brown and E. Neuberger, "Foreign Trade of Centrally Planned Economies: An Introduction" in A. A. Brown and E. Neuberger (eds.) *International Trade and Central Planning*, Berkeley 1968, pp. 3-28.

¹⁶ J. Bognar, "A Contemporary Approach to East-West Economic Relations", *The New Hungarian Quarterly*, (Budapest), No. 34, 1969, p. 30.

¹⁷ S. Góra, Z. Knyziak, *Miedzynarodowa specjalizacja produkcji krajów RWPG* (International Specialization of Production of the CMEA Countries), Warsaw 1971, pp. 33, 37, 88, 89.

and raw materials represented 42 percent, and foodstuffs another 15 percent of total Soviet exports to Eastern Europe. Poland increased the excess of export over import of fuels and raw materials more than five times between 1950 and 1956 and became the second largest net exporter of this group of commodities. However, in 1957 the first trade deficit appeared, and a growing deficit in fuels and raw materials has become a permanent feature of the Polish economy. Bulgaria shifted from a small deficit in 1950 to a surplus of approximately the same size in 1955. Since 1957, however, it has become another net importer of fuels and raw materials. Romania increased its net export of this group of commodities almost four times between 1950 and 1955, but the surplus appeared for the last time in 1961. Since 1962 even Romania, with her rich deposits of oil, has been a net importer of that group of commodities. In the meantime, the net import of fuels and raw materials was rapidly increasing in Czechoslovakia, G.D.R. and Hungary, the three countries which had been the net importers of this group of commodities at the beginning of their postwar development.¹⁸

In all East European countries, the stress on the construction of new plants for the production of producers' goods, particularly iron and steel, heavy machinery and basic chemicals, resulted in the expansion of relatively material-intensive industries without sufficient domestic raw materials. In this way, the application of the Soviet pattern of industrialization in Eastern Europe, together with the inefficiency in the use of materials stimulated by the system of planning and management,¹⁹ resulted in a very rapid growth of the import of raw material. This growth, a feature which can be regarded as normal in advanced countries, appeared at the time when the traditional exports were experiencing considerable difficulties, caused partly by the shortage of investment resources. Moreover, the potential new export industries had not achieved sufficient progress to face competition in the world market. Others, it was becoming obvious, would never be competitive, even in the long run, as they had been constructed to meet domestic needs, whatever the cost. It was necessary to find markets within the bloc for all those industries which could not compete in the world markets. The problem of markets "became at that stage one of the most important factors in linking together the economy of the U.S.S.R. and the countries of people's democracy."²⁰

Already "during the realization of the first multiyear plans for the development of national economy, disproportions in the growth of various sectors appeared in individual countries," including "the disparity between the rapid expansion of the manufacturing industry and the underdevelopment of the domestic raw material base" and the lag between the growth of industry and agriculture. The solution of these difficulties made it necessary "to coordinate the efforts of these countries."²¹ Such economic concepts as the size of the market and comparative advantages had to be "rediscovered" by the Marxist economists in order to support a switch from the old autarkic policies to an international division of labor within the bloc. The following appraisal

¹⁸ Fallenbuehl, "Growth Through Trade . . ." op. cit.

¹⁹ O. Sik, "Plan and Market under Socialism," White Plains, N.Y., 1967, p. 74.

²⁰ I. Silyanov, "Rada Wzajemnej Pomocy Gospodarczej i etapjrozwoju" (The Council for Mutual Economic Assistance and Stages of Its Development), "Gospodarka planowa" (Warsaw), No. 8, 1962, p. 3.

²¹ *Ibid.*

of the situation represents a widely accepted view among the East European economists:

The significance of international specialization among the Socialist countries began to be appreciated only at the time when, after the completion of the first stage of industrialization, the lack of such specialization was resulting in the wastage of resources and productive capacities of individual countries. The lack of specialization and cooperation among the socialist countries on a wide scale started, quite clearly, to hamper their further economic development. In the whole period 1950-60 no visible reduction in the pace of development of the socialist countries appeared, but the maintenance of the pace was achieved only at the expense of high outlays and without full utilization of existing possibilities and, in consequence, with some restriction of the standard of living of the population. With a more rational specialization and cooperation in production among the socialist countries it would have been possible to achieve a similar pace of growth with lower outlays and with more rapid increases in the standard of living in the socialist countries, or an additional acceleration in the pace of economic growth.²²

By the middle of the 1950's, it became clear that the maximum expansion of trade, which was possible without a more effective international institutional framework, had been reached. Therefore, a period of accelerated organizational activities followed. The 6-year period of stagnation. At the sixth (December 1955) and seventh (May 1956) sessions the main lines of intrabloc cooperation in the most important sectors were discussed, and some recommendations were made for inclusion in the plans for 1956-60. The eighth session (June 1957) approved coordination of work for the preparation of the perspective development plans for 10 to 15 years. A conference of the party leaders took place in Moscow in 1958 and agreed on the necessity to expand multilateral links and specialization and cooperation in production among the member countries. Consequently, 1958 is usually regarded by East European economists as the beginning of a shift from cooperation of trade to cooperation of production;²³ a lengthy process which so far has not been fully successful.

Four sessions were held in 2 years (June and December 1958 and May and December 1959), during which some decisions were reached on the main lines of coordination of the plans for 1961-65, particularly on specialization and cooperation in the production of fuels, energy and raw materials. The new role of Comecon, development strategy, the perspective plans for the period until 1980 and the longrun specialization of individual countries were discussed, causing considerable friction among the CMEA countries at two conferences of party leaders and chiefs of governments which were held in 1960 and at three sessions of the council which took place in 1960 and 1961.²⁴

These sessions also devoted time to effect an institutional restructuring of CMEA. In order to secure coordination of the activities of the member countries in various fields, standing commissions were devised. The first 10 were established at the seventh session (in 1956). Commissions on foreign trade, ferrous metallurgy, and geology were located in Moscow, on the engineering industry in Prague, on the chemical industry in Berlin, on the coal industry in Warsaw, on nonferrous metallurgy and the timber and cellulose industry in Budapest, on the oil

²² J. Soldaczuk, "Strukturalne przeobrażenia we współczesnej gospodarce światowej" (Structural Changes in the Contemporary World Economy) in Z. Kamecki, J. Soldaczuk, W. Sierpiński, *Międzynarodowe stosunki ekonomiczne* (International Economic Relations), Warsaw 1964, p. 84.

²³ Fikus, op. cit., p. 15.

²⁴ M. Kaser, *Comecon*, London-New York-Toronto, second edition 1967, p. 92.

and gas industry in Bucharest, and on agriculture in Sofia. In 1958, commissions on geology and on the timber and cellulose industry were abolished, while five new commissions were added to deal with economic problems (Moscow), construction (Berlin), electric power (Moscow), the light and food industries (Prague) and transport (Warsaw). In 1960 a standing commission on peaceful use of atomic energy was established in Moscow. The approval of the charter of the council in 1959 prepared the ground for a major reorganization.

2. *The Second Stage (1962-70)*

The second stage in the evolution of CMEA was introduced again as a reaction to various developments within and outside the bloc. In addition to economic difficulties which were experienced by all CMEA countries and the increasingly pressing need to increase the role of international economic relations in the process of economic development, there was also the political situation within the bloc.

In the Soviet Union a period of relative instability followed the death of Stalin and lasted until the end of the decade. Riots in Berlin in 1953, in Poznan in June 1956 and, above all, the "Polish October" and the Hungarian uprising in October 1956 endangered Soviet military and economic control of the area. Soviet relations with China became strained in 1959 and Soviet technicians were recalled in 1960.²⁵ Albania ceased to participate in the activities of CMEA in 1961. A deterioration in East-West political relations was clearly visible. Increased Soviet activity in the Middle East, the U-2 incident, the Berlin crisis and the erection of the wall in August 1961 and, finally, the Cuban crisis in October 1962 were the main manifestations of the mounting pressure. In this situation a further consolidation of the bloc was necessary. A more active CMEA was expected to strengthen the economic basis of the military and political power of the Warsaw Treaty Organization. Moreover, stronger economic ties were supposed to replace, to a considerable extent, the military factor as the main cementing element of the bloc. This latter concept survived only 6 years until it was shattered by the Czechoslovak crisis.

The reorganization of Comecon was also necessary because of the accelerated process of economic integration in Western Europe. The European Common Market was established in 1957, and the European Free Trade Association in 1960. The two regional organizations extended various tariff concessions to each other, while rejecting the Soviet claim that, under the most-favored-nation rights, the participating countries should grant the same reductions of tariffs to Soviet goods. With the prospect of new barriers to trade with Western Europe, the importance of the CMEA market increased.

The major institutional reorganization of Comecon took place in 1962. After the Soviet proposal to create a supranational planning body which could prepare a joint development plan had been rejected, the new structure was established. It represented some institutional strengthening of Comecon, without changing its fundamental nature. The Executive Committee, consisting of representatives at the rank of vice premier of all member countries, was created in Moscow to

²⁵ Both Kaser and Schlesinger see the strengthening of Comecon at that time mainly as an attempt to isolate China. Kaser, *op. cit.*, p. 70; R. Schlesinger, "The Sino-Soviet Dispute"; *Science and Society*, summer 1963, p. 281.

direct the work of Secretariat of the Council and of the standing commissions, to prepare materials for sessions of CMEA, and to execute their decisions. The Bureau on Generalized Problems of Economic Plans and standing commissions on statistics, on coordination of scientific and technological research and on currency and finance were established in Moscow, and a commission on standardization in Berlin. In the following years a standing commission on the radio engineering and electronic industry was added (Budapest), the commission on the light and food industries was divided into two separate commissions (Prague and Sofia respectively), and the commission on geology was reestablished and located in Ulan Bator, the capital of Mongolia (a member of Comecon since 1962). In addition, some other specialized agencies were established in Moscow: the Institute of Standardization, the Conference of Heads of CMEA Water Conservation Bodies, the Conference of Freightage and Shipping Organizations, and the United Electric Power Distribution Centre, all in 1962, and the Chartering Coordination Bureau and the Railway Wagon Pool, in 1963.

The executive was authorized to guide "the work of coordinating national plans, of specialization and cooperation in production" and to organize "the elaboration of the main trends of the rational division of labor in major sectors." The main tasks of the Bureau on Generalized Problems of Economic Plan, which consisted of vice chairmen of central state planning agencies, were to prepare for the executive committee proposals on coordination of the national development plans for the member countries and to assist in arranging all-round cooperation among the national central planning agencies in these matters.²⁶

This new institutional structure was expected to facilitate the shift from the coordination of trade to the coordination of production. The set of policies which were to effect this shift was outlined in "The Principles of International Division of Labour Among the CMEA Countries." This document, first of the two general policy programs published during the 25 years of CMEA existence, was discussed at the 15th session of the Council in December 1961 and was agreed upon at the conference of the party leaders and chiefs of state in June 1962. It embodied the results of controversial discussions on the new role of Comecon, on development strategy and on specialization of the member countries, which had dominated the sessions of the Council, official conferences, and unofficial meetings of party leaders during the preceding 4 years. Every country wanted to have a "progressive" industrial structure and wished to continue priority development of the engineering, iron and steel, and chemical industries. None wanted to undertake the role of the supplier of raw materials. These were very sensitive issues which involved some serious conflicts of interest. They were particularly difficult because of the dominant position of the Soviet Union and vivid memories of Stalinist policies, as well as the differences in the levels of economic development of member countries. They were further complicated by the acceptance of the view that the Soviet example should be followed faithfully as the only valid way of building socialism and communism. Until that time, the view that

²⁶ CMEA Secretariat, "A Survey of 20 Years of the Council for Mutual Assistance," Moscow, 1969, p. 23.

every east European country must follow the Soviet policy of industrialization, with its particular priorities and its overall autarkic bias had prevailed and had resulted in scaled-down copies of the Soviet industrial structure.²⁷

The program outlined in "The Principles" was a compromise. It reiterated that "in the socialist camp no one has, or may have, any special rights or privileges" and that "in every socialist country national development plans are prepared on the basis of specific conditions of that country and political and economic goods as defined by the communist or workers' party, taking into consideration the needs and the possibilities of all socialist countries."

At the same time, however, it made it clear, that the existence of separate national plans is only a transitional phenomenon, applicable at the present stage of development of the international Socialist system but not in the future. It expressed the hope that "the strengthening and widening of economic ties among the Socialist countries will promote the realization of an objective tendency which was outlined by V. I. Lenin: the creation in the future of a world Communist economy directed by the victorious masses of the proletariat according to one plan."²⁸

The program also states the need for "joining together the efforts aiming at the development of the national economy of every Socialist country with the general efforts to strengthen and to widen economic cooperation and mutual help." This goal was to be achieved by: (1) coordination of national economic plans; (2) specialization and cooperation in the main sectors of the economy (production of fuel and energy, metallurgy, the chemical, engineering, and consumption goods industries and agriculture); (3) international trade among Socialist countries; (4) mutual extension of credit; (5) scientific and technological cooperation; and (6) joint investment projects and joint utilization of natural resources. The goal of reducing the differences in the levels of economic development is accepted, but, at the same time, a warning is given that "the equalization of the level of development of various countries does not imply the elimination of all differences which are determined by specific natural resources, climatic conditions, and specific structure of consumption and the way of life." Although some assistance for the less-developed countries of CMEA was to be available, the main stress would be put on domestic policies and the efforts of the individual countries, including "maximum mobilization of domestic resources, and relatively higher levels of accumulation allocated for production purposes."²⁹

Perhaps the most important decision, from the immediate point of view, was the compromise which was reached on the issue of specialization versus comprehensive development of all sectors of the economy. The program stated that "in the world socialist economic system favorable conditions exist not only for consistent and planned deepening of the division of labor among countries but also for the creation of a rational complex of interlinked and complementary sectors of national economy," which meant "the creation of a multi-

²⁷ J. Kleer, *Przez sześć krajów (Across Six Countries)*, Warsaw 1967, pp. 86-87.

²⁸ "Podstawowe Zasady międzynarodowego socjalistycznego podziału pracy" (The Principles of the International Socialist Division of Labour), Reutt (ed.), op. cit., pp. 57-59.

²⁹ *Ibid.*, p. 58.

sector structure of the national economy of socialist countries.”³⁰ In practice this combination of international specialization with the comprehensive and complex development of every country was to be achieved by all countries continuing to develop all branches of industry but agreeing to specialize in certain products within each branch.

This compromise never worked. Despite great efforts of various organs of the Council, in 1968 trade in those commodities which were subject to the specialization agreements still represented only about 10 percent of the total turnover among the countries belonging to the organization.³¹ The reasons were obvious. As has been pointed out by a Polish economist, “every socialist country accepts the wisdom of specialization” but “the difficulties appear when it comes to making actual specialization agreements * * * all socialist countries select, as a rule, the same or similar directions of specialization.”³² There was the belief that the machine industry should be given priority in every country in order to secure as many domestically produced machines as possible for the investment program.

There was also an acute shortage of raw materials. Each country was, therefore, attempting to expand the export of the manufactured products, especially those of the machine building industry, which have a relatively high degree of processing, a considerable contribution of labor, and a minimal contribution of raw materials. At the same time, there was a tendency to increase imports of raw materials and semifinished products. In this situation, a Polish economist observed, “Against the economic interests of the cooperating countries, autarkic tendencies are born, or an irrational specialization appears, which is based on an attempt to force exports in the direction of the capitalist countries by reducing prices.”³³

All East European countries needed some specialized machines from the West for their investment projects. In some years it was also necessary to import foodstuffs from that source. In most cases, the only commodities which could be expanded to earn hard currency were raw materials and foodstuffs. Attempts were made to save these commodities for export to the capitalist countries and to sell machines and manufactured goods, for which it was difficult to find markets in the West, to other Socialist countries.³⁴ This tendency increased the shortage of raw materials in Eastern Europe and created a buyers’ market for the “soft goods” within the bloc.

The seventh session of CMEA in 1956 stressed the need to accelerate the development of the fuel and raw material base in order more fully to utilize the newly created productive capacities of the manufacturing

³⁰ *Ibid.*, p. 71.

³¹ B. W. Reutt, “Formy planowych powiązań krajów RWPG” (The Forms of the Planned Links Among the CMEA Countries), *Gospodarka planowa*, No. 9, 1968, p. 63.

³² Z. Knyziak, “Zasada nakładów komparatywnych w rachunku ekonomicznym współpracy gospodarczej krajów socjalistycznych” (The Principle of Comparative Costs in the Economic Calculations of the Economic Cooperation Among the Socialist Countries), *Gospodarka planowa*, No. 3, 1970, p. 1.

³³ *Ibid.*, p. 2.

³⁴ J. M. Montias, “Socialist Industrialization and Trade in Machinery Products: An Analysis Based on the Experience of Bulgaria, Poland, and Rumania,” in Brown and Neuberger (ed.), *op. cit.*, pp. 130–159 and *Economic Development in Communist Romania*, Cambridge, Mass., 1967.

industries.³⁵ At several other sessions and in the "principles," the importance of expanding the domestic raw material base in all member countries was stressed. As a result of the Council's pressure, at the beginning of the 1960's, a new investment drive started throughout the region with a large part of investment outlays allocated for the expansion of capacities to produce fuel and raw materials, often of very low quality. These projects had a high degree of capital intensity, long gestation periods, and low efficiency. In this way the Council directly contributed to the lowering of rates of growth of industrial production and national income which appeared in the first half of the decade.³⁶

The countries which expected large imports of these commodities in the future were also asked to participate in financing investment projects necessary for the expansion of the production of raw materials in those countries which had some underdeveloped reserves. These joint investments took place at that time mainly, but not exclusively, in the Soviet Union.³⁷

In order to stimulate intrasector specialization and cooperation, two international organizations were established in 1964: Intermetall in Budapest for cooperation in the iron and steel industry and the Organization for Cooperation in the Ballbearing Industry in Moscow.

It was realized that any further expansion of trade would be difficult without a shift from a mainly bilateral to a multilateral basis. To facilitate the multilateralization of trade and payments, the International Bank for Economic Cooperation was established in Moscow in 1964. In the same year, the Commission on Foreign Trade prepared "The Procedure Governing the Conclusion of Agreements on Mutual Deliveries of Goods * * * Under the System of Multilateral Settlements in Transferable Rubles," an arrangement which required conclusion of annual trade protocols on a bilateral or multilateral basis with "additional deliveries of commodities to be agreed in the course of multilateral trade negotiations."³⁸

With the system of highly centralized planning and management of the economy, including international trade, and with distorted prices and arbitrary and unrealistic exchange rates, a multilateral pattern of trade and settlements was simply impossible. Without multilateralization, however, no significant expansion of mutual trade could take place. The CMEA share of world trade, which had been increasing during the 1950's, started to decline in the early 1960's. The share of world import increased from 6.1 percent in 1950 to 9.9 percent in 1960 and reached its highest level of 11.4 percent in 1961. However, it was only 10 percent in 1965 and 9.4 percent in 1970.

The share of world export increased from 7 percent in 1950 to 10.3 percent in 1960, and reached its highest level of 11.5 percent in 1962. It declined to 10.7 percent in 1965 and 10.1 percent in 1970 (see table 2). The average rate of growth of international trade of CMEA

³⁵ Iskra and Kistiel, *op. cit.*, p. 137.

³⁶ A. Karpiński, *Polityka uprzemysłowienia Polski w latach 1958-68*, Warsaw 1969, pp. 28-29, 389-392.

³⁷ O. Bogomolov (ed.), *Ekonomicheskaya effektivnost' mezhdunarodnogo sotsialisticheskogo razdeleniya truda* (Economic Efficiency of the International Socialist Division of Labour), Moscow 1965; Polish edition Warsaw 1967, pp. 213-214.

³⁸ CMEA Secretariat, *op. cit.*, pp. 91-92.

countries declined from 10.3 percent in 1955-60 to 9.9 percent in 1962-65. Even more unsatisfactory from the CMEA point of view was the performance of trade within the bloc. The average rate of growth of trade within the CMEA area was the same as the rate of total CMEA trade in 1955-60, i.e. 10.3 percent. The growth rate of intra-CMEA trade, however, declined more steeply than total CMEA trade. It was 8 percent in 1960-62, and 6.9 percent in 1962-65. Both rates increased in the second half of the decade but trade within the area expanded again at a lower rate than total CMEA trade: 8.3 and 9 percent respectively (see table 3). Between 1960 and 1970, the share of trade with other CMEA countries increased only in GDR (from 67.6 to 68.3 percent), Poland (from 56.6 to 62.9 percent), and in the U.S.S.R. (from 53 to 55.6 percent). It remained approximately the same in Czechoslovakia (63.8 and 63.9 percent), and declined in Bulgaria (from 80.4 to 74.1 percent), Hungary (from 63.1 to 61.9 percent), and Romania (from 66.9 to 49.1 percent) (see table 1).

The institutional strengthening of the CMEA structure and the introduction of various policies outlined in The Principles failed to accelerate trade within the bloc to any significant extent. At the same time, a considerable deceleration of economic growth appeared throughout the region. The average growth rates of national income (Marxist definitions, official data) in all countries, except Hungary, were lower in 1956-60 than in 1951-55. They declined again in 1961-65 in all countries except Romania (see table 4). This was not only the result of difficulties in agriculture, often regarded as a perennial problem of the Soviet-type economies; the average rates of growth of industrial production also declined in all countries, except Romania, between 1956-60 and 1961-65.

TABLE 2.—CMEA SHARE OF WORLD TRADE

[In percent]

	1950	1955	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Import	6.1	7.6	9.9	11.4	11.1	10.9	10.9	10.0	9.6	9.7	9.6	9.3	9.4	9.1	9.7
Export	7.0	8.7	10.3	10.8	11.5	11.2	10.9	10.7	10.4	10.8	10.5	10.3	10.1	9.8	10.0

Sources: G.U.S., "Rocznik statystyczny handlu zagranicznego" (Statistical Yearbook of International Trade), Warsaw 1971, p. 90. L.S., "XXVII Sesja RWPG," p. 634.

TABLE 3.—AVERAGE RATES OF GROWTH OF TOTAL CMEA TRADE AND INTRABLOC TRADE

[In percent]

	1950-60	1961-65	1966-70	1971	1972
Total trade:					
Export		10.4	8.6	9.2	11
Import		10.8	8.3	9.0	10.4
Trade within CMEA:					
Export		12.3	9.4	9	10.2
Import		13.0	9.4	8.6	

¹ Export plus import.

Sources: M. Bogacka, I. Cieniuch, T. Leszed, "Rozwoj handlu wzajemnego w ramach RWPG" (Development of Intra-Comecon Trade), "Handel zagraniczny", No. 11, 1973, pp. 374-5.

TABLE 4.—AVERAGE ANNUAL RATES OF GROWTH OF INVESTMENT AND NATIONAL INCOME (MARXIST DEFINITIONS, OFFICIAL DATA, CONSTANT PRICES)

[In percent]

Country	1951-55	1956-60	1961-65	1966-70	1971-72
Bulgaria:					
Investment.....	13.3	18.3	8.7	12.5	1.4
National income.....	12.2	9.6	6.7	8.7	8.2
Czechoslovakia:					
Investment.....	9.4	13.5	2.2	7.3	6.6
National income.....	8.1	7.0	1.9	7.0	5.5
G.D.R.:					
Investment.....	18.2	14.6	5.0	9.9	1.5
National income.....	13.2	7.4	3.5	5.2	5.0
Hungary:					
Investment.....	1.2	13.1	4.7	10.5	9.0
National income.....	5.7	6.0	4.5	6.8	6.4
Poland:					
Investment.....	11.2	8.7	7.0	8.3	16.4
National income.....	8.6	6.6	6.2	6.0	8.5
Romania:					
Investment.....	18.2	13.5	11.3	11.2	10.8
National income.....	14.2	6.6	9.0	7.6	8.5
U.S.S.R.:					
Investment.....	12.4	12.9	6.3	7.6	7.1
National income.....	11.3	9.2	6.6	7.8	5.0

SOURCES

G.U.S. "Rozwoj gospodarczy krajow RWPG 1950-68" (Economic Development of the CMEA Countries 1950-68), Warsaw 1969, pp. 44, 46.

B. Zielinska, M. Golebiowski, "Rozwoj krajow socjalistycznych i kapitalistycznych w r. 1972 i prognozy na r. 1973" (Development of Socialist and Capitalist Countries in 1972 and forecasts for 1973), "Gospodarka planowa" (Warsaw), No. 4, 1973, pp. 241, 242.

A. Lubowski, "Kraje RWPC: rok 1972" (The CMEA Countries: 1972), "Zycie gospodarcze" (Warsaw), No. 12, 1973, p. 14.

It was increasingly more difficult to continue to rely on the strategy of extensive development because the sources of extensive growth were almost exhausted.³⁹ The rate of growth of industrial employment declined in all countries, except Poland, Romania, and U.S.S.R., between 1956-60 and 1961-65, and during the latter period it was below the 1951-55 level in all countries. Everywhere, except in Poland, the rate of industrial investment declined in 1961-65 in comparison with 1956-60. It was difficult to increase the share of investment in national income, as the rates were already high. There was a backlog of unsatisfied investments in other sectors of the economy, such as the nonproductive sphere, that is, in housing, social sciences, health, education, and city and rural development.

At the time when only limited increases in the quantity of factors of production were possible, improvements in productivity became of utmost importance. Labor productivity in industry declined, however, except in Bulgaria, between 1956-60 and 1961-65. When it was increasingly more difficult to secure high rates of growth of productive investment (that is, investments in those sectors of the economy which produce material output), the efficiency of investment declined considerably. The ratio of increase in national income to productive investment in previous year (Marxist definitions, official data, constant prices) declined in all countries except Hungary between 1950-55 and 1956-60, and it declined again in all countries in 1961-65 (see table 6).

³⁹ G. Kohlmei, "From Extensive to Intensive Economic Growth," *Czechoslovak Economic Papers* (Prague), No. 6, p. 24.

TABLE 5.—AVERAGE ANNUAL RATES OF GROWTH OF GROSS INDUSTRIAL PRODUCTION AND LABOR PRODUCTIVITY IN INDUSTRY (MARXIST DEFINITIONS, OFFICIAL DATA)

[In percent]						
Country	1951-55	1956-60	1961-65	1966-70	1971	1972
Bulgaria:						
Production.....	13.7	15.9	11.7	10.9	9.1	8.3
Productivity.....	8.1	5.2	6.8	5.9	6.2	5.9
Czechoslovakia:						
Production.....	10.9	10.5	5.2	6.7	6.9	6.4
Productivity.....	7.1	7.3	3.5	5.3	6.4	5.8
G.D.R.:						
Production.....	13.8	9.2	6.0	6.5	5.6	6.3
Productivity.....	7.8	7.8	5.6	5.7	5.0	5.0
Hungary:						
Production.....	13.2	7.6	7.5	6.1	5.0	5.6
Productivity.....	3.9	4.1	4.9	3.6	5.3	6.5
Poland:						
Production.....	16.2	9.9	8.5	8.3	8.3	10.8
Productivity.....	9.2	7.8	5.1	4.9	4.9	6.0
Romania:						
Production.....	15.1	10.9	13.8	11.9	11.7	11.7
Productivity.....	9.9	8.2	7.8	7.3	4.6	7.0
U.S.S.R.:						
Production.....	13.2	10.4	8.6	8.5	7.7	6.5
Productivity.....	8.3	6.5	4.6	5.8	6.3	5.2

SOURCES

G.U.S., "Rozwoj gospodarczy krajow RWPG 1950-68" (Economic Development of the CMEA Countries 1950-68), Warsaw 1969, pp. 47, 49.

G.U.S., "Kraje RWPG" (The CMEA Countries), Warsaw 1972, pp. 17, 19.

B. Zielinska, M. Goiebiowski, "Rozwoj krajow socjalistycznych i kapitalistycznych w r. 1972: prognoza r. 1973" (Development of Socialist and Capitalist Countries in 1972 and Forecasts for 1973), "Gospodarka planowa" (Warsaw), No. 4 1973, pp. 238-9.

TABLE 6.—RATIO OF INCREASE IN NATIONAL INCOME TO "PRODUCTIVE INVESTMENT" IN PREVIOUS YEAR (MARXIST DEFINITIONS, OFFICIAL DATA, CONSTANT PRICES)

Country	1950-55	1956-60	1961-65	1966-69
Bulgaria.....	0.62	0.61	0.29	0.24
Czechoslovakia.....	.54	.44	.10	.31
G.D.R.¹.....	.78	.37	.17	.24
Hungary.....	.31	.45	.22	.22
Poland.....	.48	.38	.29	.24
U.S.S.R.....	.83	.62	.41	.31

¹ Total investment.

Source: E. D. Lidwin-Piotrowska, "The Coefficient of Effectiveness of Investment in the CMEA Countries in the Years 1950-69" "Problemy ekonomiczne" (Krakow), No. 3, 1971, p. 10.

Toward the end of the first stage in the evolution of Comecon the importance of the size of the domestic market, international specialization and comparative costs was discovered. In the middle of the 1960's, three additional factors were added: (1) the importance of international trade for achieving high rates of technological progress; (2) the necessity of substantial changes in the industrial structure in order to reduce capital intensity and to increase productivity; and (3) the need for at least some modification of the system of planning and management in order to increase its efficiency.⁴⁰ This was the time when the full extent of the technological gap was realized. Statements appeared emphasizing the importance of international trade during

⁴⁰ The author has discussed this problem and the conflict between these objectives in Z. M. Fallenbuch, *Croissance économique et échanges extérieurs de l'Union Soviétique et de l'Europe de l'Est. 1971-1975*, *Revue de l'Est*, v. 4, No. 1, 1973, pp. 27-46 and, with reference to Polish experience, in Industrial structure and the Intensive Pattern of Development in Poland, *Jahrbuch der Wirtschaft Osteuropas* (Munich) v. 4, 1973.

the period of a rapid scientific and technological revolution.⁴¹ There was increasing emphasis on two channels of technology transfer—the import of machines and equipment from the most advanced countries and the use of licenses acquired from the most advanced producers. It became increasingly difficult to export machines and equipment to other CMEA countries, as they all had a strong preference for obtaining the technologically more advanced machines from the West.⁴² Indeed, the use of relatively inefficient and obsolete machines was accepted as one of the factors behind the deceleration of growth throughout the region.⁴³ The old Soviet complaint about the excessively large share of raw materials in Soviet exports to Eastern Europe,⁴⁴ was supplemented by new complaints about the quality of imports and the services offered by the East European exporters.⁴⁵

Specialization in the production of a limited number of products, such as standardized components for machines and plants built on a multinational basis, was suggested as a new approach. This new type of specialization and cooperation among several enterprises, which could be located in different countries, required substantial changes in the industrial structure of all countries and increased decentralization of decisionmaking.⁴⁶ The industrial structure which had been created in the early stages of industrialization drive became one of the main obstacles to more efficient international specialization and cooperation. The difficulties were, according to one observer, the result of the directions of development which had been accepted in the past, when the necessity of expanding specialized production for export * * * [had not been] realized to a sufficient extent.⁴⁷

Restructuring of the economy and economic reforms were introduced throughout the region in the second half of the 1960's. The extent of the reforms differed widely from one country to another; only in Czechoslovakia and Hungary were they pushed sufficiently to promise significant improvement in efficiency. A serious conflict appeared between the objective of restructuring of the economy from above, which would require a new investment drive in order to be effected quickly, and the objective of reducing the strains and stresses in the economy and increasing the output of consumption goods, which were considered prerequisites for the reforms.⁴⁸

At first glance, the results of the 1966–70 plans were quite satisfactory. The average rates of growth of national income (see table 4)

⁴¹ For example: I. Medvedkov, *The Scientific-Technical Revolution and Economic Collaboration Among Socialist Countries*, *Mirovata ekonomika i mezhdunarodnye otnosheniia* (Moscow) No. 12/1969; English translation in *Problems of Economics*, July 1970; L. Zacher, *Zewnętrzne aspekty polityki przemian strukturalnych w gospodarce* (External Aspects of the Policy of Structural Changes in the Economy), *Gospodarka planowa*, No. 12, 1969; J. Bognar, op. cit.

⁴² S. Polaczek, *Istotne czynniki integracji krajów socjalistycznych* (Essential Factors in the Integration of Socialist Countries), *Gospodarka planowa*, No. 7, 1968, pp. 19–20.

⁴³ For example: Karpiński, op. cit., pp. 105, 400.

⁴⁴ J. Sarnacki, *Ekonomiści radzieccy o nowym podejściu ZSRR do współpracy gospodarczej z zagranicą*, (Soviet Economists on the New Approach to International Economic Relations), *Gospodarka planowa*, No. 8–9, 1966, p. 106.

⁴⁵ Medvedkov, op. cit., pp. 44–45.

⁴⁶ Z. Kamecki, *Problemy integracji gospodarczej krajów RWPG* (Problems of Economic Integration of the CMEA Countries), *Gospodarka planowa*, No. 10/1968, pp. 5–6.

⁴⁷ J. Soldaczuk, J. Glezgala, *Integracja krajów RWPG: metody i środki jej przyspieszenia* (Economic Integration Among the CMEA Countries: Methods and Means of Its Acceleration), *Gospodarka planowa*, No. 11, 1968, p. 3.

⁴⁸ Z. M. Fallenburg, *From the Extensive to the Intensive Strategy of Economic Development in the Soviet Union and Eastern Europe*, a paper presented at the Annual Meeting of the Michigan Academy of Arts, Sciences and Letters in April 1970 and *The Strategy of Development and Gierek's Economic Manoeuvre*, *Canadian Slavonic Papers*, No. 1–2, 1973, reprinted in A. Bromke and J. Strong (eds.), *Gierek's Poland*, New York 1973.

were higher during that period than in 1961-65 in all countries, except Poland and Romania. Only in Romania and Bulgaria were the planned rates not reached. This improvement was, however, associated with considerable increases in investments. The rates of growth of investment were higher than during the 1961-65 period in all countries, except Romania where the 1961-65 rate was the highest among all CMEA countries. The actual rates of growth of investment exceeded the planned rates in all countries except Bulgaria and Romania. In 1966-70, the average rates of growth of gross industrial production were below the rates which had been achieved in the preceeding 5-year period in all countries, except in Czechoslovakia and the GDR (the two countries with the lowest rates in 1961-65). Only in the U.S.S.R. were the planned rates not reached. Again, the performance seemed to be moderately satisfactory. However, the rates of growth of labor productivity in industry were lower in 1966-70 in Bulgaria, Hungary, Poland, and Romania, and the planned rates were achieved only in Czechoslovakia, Poland and Romania.⁴⁹ Clearly, this was not an intensive pattern of development. The rates of growth still depended heavily on extensive factors.

Diverging interests emerged within Comecon, and the solution of political problems required considerable efforts.⁵⁰ As the Soviet proposal to prepare a joint development plan had been rejected, the Eighteenth Session in Moscow in July 1963 and a conference of the party and government leaders, which took place at the same time, agreed on the coordination of plans for 1966-70 on the basis of a time-consuming process of negotiations and agreements. The Twenty-first Session in December 1967 approved a program for the coordination of plans for 1971.

This task was particularly difficult because of the uneven path of economic reforms, which resulted in considerable differences among the member countries, and mounting political pressures within the bloc. There was no session of the Council in 1968, the year of the Czechoslovak crisis, but activities accelerated again in 1969. Closer links among the member countries were discussed at the 22d session in January. In April the 23d session began preparations for the elaboration of a program of Socialist integration and a further institutional strengthening of the CMEA structure. In the same year another international organization, *Interchim*, was created to coordinate developments in the chemical industry. The 24th session held in May 1970, created the International Investment Bank as one of the main tools of envisaged integration, prepared ground for the reorganization of the International Bank of Economic Cooperation in order to stimulate credit transactions and multilateral clearing, and established the International Institute for the Study of Economic Problems of the World Socialist System, a research agency of the Council financed from the budget of the Secretariat.

3. The Third Stage (1971-74)

A new stage in the evolution of Comecon represents a movement "from cooperation to integration" in Eastern Europe. It began when

⁴⁹ Fallenbuchl, *Croissance* . . . op. cit. pp. 29-32.

⁵⁰ Diverging interests in the years 1961-66 are discussed in detail in Kaser, op. cit., pp. 92-129. For the period 1967-71 see H. W. Schaefer, *Comecon and the Politics of Integration* New York, 1972.

the 25th session, which was held in Bucharest in July 1971, approved the "Comprehensive Program for the Further Intensification and Improvement of Collaboration and the Development of Socialist Economic Integration of CMEA Countries" and effected a reorganization of the institutional structure of CMEA. Like the establishment of the Council in 1949 and the introduction of the second stage in 1962, this event was also a reaction to some pressing developments within and outside the bloc. In addition to difficulties encountered by all countries in their attempts to introduce the "intensive pattern of development" and relatively unsatisfactory economic progress, there was the problem of internal cohesion of the bloc.

Economic reforms undermined the old methods of cooperation. It appeared that some other more flexible but still untried methods would have to be introduced and that they could result in loosening the links among the member countries. Political unity and stability was endangered by the relatively independent foreign policy of Romania, the Czechoslovak crisis of 1968 and riots in Poland in 1970. The continuation of the conflict with China created ideological and political dangers for the Soviet position in East Europe.

The Soviet policy of *détente* with the West also created problems in Eastern Europe. The Moscow-Bonn treaty opened the door for trade arrangements for other CMEA countries. Some of them joined GATT, the World Health Organization and the Food and Agriculture Organization.⁵¹ Warnings appeared in Eastern Europe about the dangers of the Western "policy of building bridges" and the "policy of softening socialism." A greater degree of vigilance in every member country and ideological and political consolidation of the bloc were recommended.

The advance toward economic integration in Western Europe also had an impact. The EEC was progressing very rapidly through the sixties. The member countries enjoyed high rates of growth, which were stimulated by very high rates of export. In 1968 the EEC Commission was expanded to a 14-member supranational body. A definitive plan for financing future operations, which would make the Community activities less dependent on individual governments, was accepted. Various possible extensions of economic cooperation within the Community were discussed, including a common currency, or at least a system of national currencies with stabilized rates of exchange, and the chartering of industrial enterprises on a "European" basis. Negotiations for admitting four new members began in 1970.

A number of countries outside the Community gained an associate status, and it was expected that the EFTA countries which would not join the Community would enter into an agreement with it to eliminate tariffs. There were signs that bilateral trade with Eastern Europe would be replaced by a common policy. The example of successful economic integration, particularly impressive at the end of the sixties when some serious difficulties had not yet appeared, coupled with the fear that the Eastern countries would find themselves practically excluded from the rich, dynamic and geographically close markets, generated considerable dissatisfaction with CMEA arrangements.

⁵¹ These developments are discussed by L. A. Fischer, *The Comecon: Past, Present and Future*, *Annals of Public and Co-operative Economy*, No. 4, 1971, pp. 375-377 and "Comecon and the Brezhnev Doctrine," *East Europe*, No. 10, 1972, pp. 2-7.

The "Comprehensive Program," a lengthy document which presents the goals, principles, and methods for achieving economic integration by stages over a period of 15 to 20 years, was again a compromise between different conflicting positions of the member countries. It states that "the continuous intensification and improvement of the economic and scientific-technical collaboration of CMEA member nations and the development of Socialist economic integration, as well as the development of their economic and scientific-technical relations with the remaining Socialist countries," are necessary because of the level of development achieved by the CMEA countries, the need to effect "major structural changes in the production and consumption sphere," the "urgency of the tasks entailed in implementing the scientific and technological revolution," the need for accelerating technical progress, increasing "effectiveness of social production" and improving the standard of living, and "the demands of the class struggle against imperialism." Socialist economic integration among the CMEA countries is defined as "a process that entails the international Socialist division of labor, the unification of their economies, and the formulation of a modern, highly effective structure of their national economies; the gradual merging and equalizing of the levels of their economic development; the formation of deep and lasting ties in the major branches of the economy, science, and technology; the expansion and strengthening of the international market of these countries; and improvement in commodity-monetary relations."

It is expected to create "conditions favorable to the more effective utilization of the nations' resources and to the broader development of the scientific and technological revolution which, as an important prerequisite to the development of Socialist society, has become one of the main factors in the historical competition between capitalism and socialism."⁵²

Economic integration is, therefore, unavoidable. It is in the best interest of every member country and in the interest of the bloc as a whole for both economic and political reasons. The program makes it clear, however, that the member countries are not forced into it by political pressure and should not be afraid that they might be dominated by any country or group of countries within CMEA. It states:

* * * further intensification and improvement and the development of the Socialist integration of CMEA-member nations will be carried out in accordance with the principles of Socialist internationalism and on the basis of respect for national sovereignty, independence, and national interest, of nonintervention in the internal affairs of nations and of total equality, mutual advantage, and comradesly reciprocal aid * * * Socialist economic integration is carried out on an entirely voluntary basis and is not accompanied by the creation of supranational organs, nor does it affect matters pertaining to internal planning or the financial and cost-calculating activities of organizations.⁵³

These assurances are similar to those which were included in the 1962 program of Socialist international division of labor. Coming so soon after the invasion of Czechoslovakia and the proclamation of the Brezhnev doctrine, they have to be taken with a considerable dose of skepticism. The fact that no supranational authorities are envisaged

⁵² Comprehensive Program for the Further Intensification and Improvement of Collaboration and the Development of Socialist Economic Integration of CMEA Member Nations, *Ekonomicheskaiia gazeta*, No. 33, 1971; English translation *Soviet and East European Foreign Trade, Fall-Winter 1971-72*, pp. 187-189.

⁵³ *Ibid.*, p. 190.

represents a major victory for the Romanians and all those who are afraid that such authorities would, in effect, become an extension of the Soviet central planning bodies. Not only because of historical experience but also because of the complete lack of proportion between the economic, political, and military potential of the Soviet Union and that of its partners, the situation in Eastern Europe differs considerably from a relatively balanced situation within the European Economic Community, where the potential of the strongest partner does not exceed the combined potential of other partners.

A very important provision is the principle that each country can decide whether to participate in a given project on the basis of calculations of the benefits of the project to its own economy and of the profits which participating production and trade organization would gain. Nevertheless, the member countries are reminded that "the gradual merging and equalizing of levels of economic development of nations in the Socialist commonwealth are an objective historical process in the development of the world Socialist system" and that "the urgency of the task * * * is intensified by the demands of the scientific and technological revolution and by the demands for the further intensification and improvement in collaboration and in the development of Socialist economic integration." Like its predecessor, the new program states that "the principal avenues to the gradual merging and equalization of the levels of economic development of Comecon member nations are first and foremost the maximum mobilization and effective utilization of the nations' own efforts and resources, as well as the utilization of the advantages of the international Socialist division of labor." It reconfirms that the member countries may develop comprehensive industrial structures, but it qualifies this right in the following way:

For CMEA member nations, especially the less industrially developed ones, an exceptionally important problem is that of defining the major future directions in the formation of the optimal national economic complex of each CMEA member nation. The creation of such a complex under the conditions of the current scientific and technological revolution presupposes effective foreign economic ties and the development and intensification of international specialization and cooperation in the realm of production.⁵⁴

A whole section of the program is devoted to provisions for eliminating differences in levels of development between member countries—a politically sensitive problem, particularly to Romania. Less developed members will be allowed to select certain new lines of production for specialization, in order to promote their further industrialization, as long as the products which they produce are of sufficiently high quality and technological sophistication. More advanced members will extend assistance and will also help less developed members to participate fully in research and development activities.⁵⁵

Since the comprehensive program created no supranational planning authorities, other measures had to be devised to coordinate efforts aiming at cooperation and integration. They include, first of all, reciprocal consultations on the basic questions of economic and scientific-technical policy on a multilateral basis within the framework of CMEA, as well as on a bilateral basis between interested countries which are expected to conclude these consultations on the

⁵⁴ *Ibid.*, p. 195.

⁵⁵ *Ibid.*, p. 196.

chosen questions by adopting appropriate agreements, protocols, or other joint documents.

Collaboration in planning is accepted as the basic method of organizing collaboration and intensification of the international socialist division of labor. This collaboration includes: (a) elaboration of forecasts in the most important fields, (b) coordination of long-range plans for the most important sectors of the national economy and branches of industry, (c) improving coordination of 5-year plans, (d) joint planning of individual branches of industry by interested countries, and (e) exchange of experience on improving the system of planning and management of the economy.⁵⁶ This is the most important part of the program.

Science and technology is another field to the coordination to which particularly great importance is attached. The agreed upon measures include consultations on scientific and technological policy, the elaboration of scientific and technological forecasts for 10 to 15 years, joint planning and cooperation in research, joint research projects, exchange of scientific and technological knowledge and collaboration in the training of scientific personnel.⁵⁷

Other parts of the program deal with collaboration in foreign trade, increasing the role of the collective currency (transferable ruble), introduction of economically substantiated exchange rates and other financial matters, collaboration in the field of standardization and in legal matters. Objectives of cooperation in industry are discussed in great detail. They include: (1) the attainment of the highest scientific and technical level of production which would insure higher labor productivity; (2) the development of a rational structure of the national economy of the member countries, which would insure the total utilization of their natural resources; (3) the intensification of international specialization and cooperation; and (4) the introduction of progressive forms of the organization of production. Measures to strengthen cooperation in agriculture and the food industry, transport, construction, and water management are also listed.

In order to strengthen the institutional structure of the CMEA in two important areas, parallel committees of the Council were established by the 25th session: a Committee for Collaboration in Planning and a Committee for Scientific-Technical Collaboration. The Committee for Collaboration in Planning represents a considerably stronger institutional setup than the former Bureau for Integrated Planning Problems. It is placed at a higher level of organizational hierarchy (see table 7), and it enjoys much greater prestige. It also has much wider range of duties. The member countries are represented by chairmen of their state planning agencies. The committee has to meet at least twice a year, and the meetings are chaired by every member on a rotation basis. It has a permanent Bureau which, like the former Bureau for Integrated Planning Problems, is composed of the representatives of the member countries at the rank of deputy chairmen of the planning agencies.

⁵⁶ *Ibid.*, pp. 206-208.

⁵⁷ *Ibid.*, pp. 214-215.

Table 7.—Organization of OMEA (after 25th session, July 1971)

Session of the Council.

Executive Committee.

Council Committees:

- (1) For Collaboration in Planning.
- (2) For Scientific and Technical Collaboration.

Secretariat.

Standing Commissions:

- (1) Statistics.
- (2) International Trade.
- (3) Currency and Finance.
- (4) Electric Power.
- (5) Peaceful Use of Atomic Energy.
- (6) Geology.
- (7) Coal Industry.
- (8) Oil and Gas Industry.
- (9) Chemical Industry.
- (10) Nonferrous Metallurgy.
- (11) Ferrous Metallurgy.
- (12) Machine-building Industry.
- (13) Radio-engineering and Electronics Industry.
- (14) Light Industry.
- (15) Food Industry.
- (16) Agriculture.
- (17) Construction.
- (18) Transport.
- (19) Communications.
- (20) Standardization.

Conferences:

- (1) Heads of Water Management Agencies.
- (2) Representatives for Legal Matters.
- (3) Heads of Patent Offices.
- (4) Representatives of Freightage and Shipping Organizations.

Scientific institutions:

- (1) Institute for Standardization.
- (2) International Institute for Economic Problems of the World Socialist System.

International organizations:

- (1) Interconnected Power System.
- (2) Common Wagon Pool.
- (3) Intermetall.
- (4) Organization for Cooperation in the Ball-bearing Industry.
- (5) Interchim.
- (6) Interatomicinstrument.
- (7) International Bank for Economic Cooperation.
- (8) International Investment Bank.
- (9) Centre for Scientific and Technical Information.

SOURCE: B. W. Reutt, "RWPG: Cele-Zasady-struktura" (CMEA: Goals-Principles-Structure), *Zycie gospodarcze* (Warsaw), No. 26, 1972, p. 5.

It is authorized to create various working groups and to organize conferences of planning officials and other personnel from the member countries and Comecon international organizations and agencies. Its tasks include: (a) working out comprehensive solutions of the most important problems of cooperation in the major sectors of the national economy, above all in the production of fuels and raw materials and in the introduction of advanced technology in the most important branches of engineering and transportation, (b) consultations on the main problems of economic policy, (c) coordination of the national economic plans and work on improving the forms of this coordination, (d) preparation of proposals for collaboration in the construction of the investment projects in which the member countries express

interest, (e) cooperation in forecasting, (f) joint planning of individual branches of industry and in the production of particular products, (g) exchange of experience on improving the systems of planning and management, and (h) any other problems of collaboration in which the member countries may express interest.⁵⁸

The establishment of this committee is regarded by East European economists as one of the most important events in the institutional evolution of the Council as the committee serves now as the general staff of CMEA, the main task of which is the supervision of the realization of economic integration.⁵⁹ It is a strong committee. Its terms of reference are much wider than those of other organs of the Council and it has the right to give directions to other organs.⁶⁰

The fact that the Committee for Scientific-Technical Collaboration is raised to the same rank as the Committee for Collaboration in Planning is the best indicator of the high priority given to the development in this field. Each member country is represented by the head of the central body in charge of science and technology, who has the rank of minister or often vice premier. The Committee has to meet, at least twice a year and the meetings are also chaired on a rotation basis. Its tasks include: (1) organization of multilateral consultations on the basic policy matters in the field of science and technology, (2) organization of multilateral coordination in connection with those scientific and technological aspects of the 5-year and long-term economic plans in which the member countries express interest, (3) coordination of research in the fields which are important for the long-run development of the national economy, (4) preparation of proposals concerning the introduction of the newest scientific and technical achievements and leading industrial experience into production processes in the member countries, (5) organization of the studies of world scientific and technological progress in some selected fields, (6) organization of joint planning by the interested countries in connection with the stimulation of scientific and technological progress in selected fields, (7) organization of collaboration in the training of scientific and technical personnel, (8) control over the activities of specialized international organizations which are established by the Council, and coordination of their activities with its own activities; (9) organization of cooperation in the production of scientific instruments and equipment, (10) supervision of the fulfillment of commitments accepted by the member countries in the field of scientific-technical collaboration.⁶¹

All supranational activities of the two committees are limited to those aspects of planning or scientific and technological development coordination in which the member-countries express an interest; every country has the right to abstain from joining a particular agreement or joint activity by declaring the lack of interest. In this way, the majority cannot force its decisions upon any member-country and, at the same time, the minority cannot veto the establishment of joint

⁵⁸ RWPG: Wyspecjalizowane organa (CMEA: Specialized Organs), *Zycie gospodarcze* (Warsaw), No. 26, 1972, p. 7.

⁵⁹ L. S. XXVI Sesja RWPG o postepach w realizacji programu socjalistycznej integracji gospodarczej. (The Twenty-sixth session of CMEA on the Realization of the Program of Socialist Integration), *Gospodarka planowa*, No. 12, 1972, p. 743.

⁶⁰ J. Ptaszek, Postepy wspolpracy (The Progress of Cooperation), *Zycie gospodarcze*, No. 38, 1972, p. 5.

⁶¹ RWPG: Wyspecjalizowane organy, p. 7.

programs of action by the majority. However, the fact that no supra-national institutions have been created, and the member-countries retain the right to refuse to participate in any project, does not necessarily prevent a real advancement toward integration, as some Western observers believe.⁶²

First of all, there is a political pressure which can be exerted at the conferences of party leaders and bilateral talks. As the example of Romania's independent position shows, a country is able to resist it for some time within certain limits. The pressure is, however, very real. As Professor Wiles has pointed out, the main weakness of the formal structure of Comecon is that it is a state and not a party organ, and to be fully effective it would have to be supra-party rather than supra-national.⁶³ But this informal supra-party organization exists, despite some serious differences and conflicts of interest, and it can be quite effective, as it was at the time of the Czechoslovak crisis of 1968.

In the economic sphere, two factors—consultations and coordination in planning, and joint planning in selected areas and the emergence of integrated industries—will have long-run effects. Mutual consultations, joint forecasting and the coordination of the plans before they are formulated represent new features in the process of collaboration in planning which the comprehensive program has introduced.⁶⁴ If the main lines of development are agreed upon in this matter, the freedom of maneuver left for the national planning bodies will be considerably limited in practice. This is what at least some East European economists expect to happen:

It is, therefore, a coordination of the strategy and the tactics of development—in a new multilateral, systematic, and binding manner. Taking into consideration the intentions of its CMEA partners, each country has a possibility to formulate correctly its development plans. The intentions, presented during consultations and included in the consultations protocol, have in a certain way an obligatory character. The partners have a concrete basis for the formulation of their conclusions from these intentions and they can, therefore, determine the profile of the development of their countries accordingly.⁶⁵

In the process a certain industrial structure will be created in each country. Just as the creation of particular industrial structures during the industrialization drive in the early 1950's determined the lines of development during the subsequent years, the restructuring taking place at present as the result of consultations and coordination in planning may predetermine the lines of development in the future. It may reduce the possibility of withdrawing from the integrated complex of national economies without considerable losses.

Joint planning is envisaged in some selected fields. It is expected to encompass all stages, including forecasting of demand, preparatory activities, the production process, and the distribution of output among various markets over an agreed period of time. The stress will be on specialization in the production of parts rather than finished products, with a close direct link among the enterprises located in various countries and a system of severe financial penalties for non-fulfillment of contracts. The comprehensive program puts special

⁶² For example: P. Knirsch, *Bemühungen um eine Wirtschaftsintegration in Osteuropa*, *Europa Archiv*, January 1972.

⁶³ P. J. Wiles, *Communist International Economics*, Oxford 1969, p. 314.

⁶⁴ L. Skibiński, *Kompleksowy program socjalistycznej integracji gospodarczej krajów RWPG* (The Comprehensive Program of the Socialist Economic Integration of the CMEA Countries), *Gospodarka planowa*, No. 11, 1971, p. 647.

⁶⁵ J. Drewnowski, "O programie integracji krajów RWPG" (On the Integration Program of the CMEA Countries), *Zycie gospodarcze*, No. 14, 1972, p. 10.

emphasis on collaboration in production, including joint investments and the establishment of multinational enterprises or associations which group enterprises of all or some CMEA countries. All essential decisions in major industrial sectors would then be made within the integrated industries, and only subsequently would they be incorporated into the national plans of the member states. The need to establish supranational planning authorities would be reduced. Since the Soviet Union is by far the largest trade partner, its State Planning Commission would, in effect, control the integrated industries through its decisions to purchase industrial output, to ask for changes in the type of products and their quality, and to provide essential raw material inputs.⁶⁶

After the economic reforms had been introduced in the second half of the 1960s, hopes were raised, particularly among Hungarian and Polish economists, that CMEA integration would be based on the market mechanism and that in this way, it will in turn, stimulate further reforms.⁶⁷ Although the comprehensive program envisages some liberalization of trade it does not go very far in this direction. Trade in the most important raw materials, fuels, machines and equipment, and even some foodstuffs and manufactured consumer goods, is to be governed by rigidly defined quotas specifying quantities, delivery dates, and other matters. For a second group, composed of less essential commodities, the only quota established will be a figure for the total value of goods exchanged. A relatively small third group is expected to be free of any quota limitations and will not have to be bilaterally balanced. Although the comprehensive program includes a part dealing with improvements in the field of exchange rates and strengthening of the transferable ruble, it is clear that its main stress is not on the market mechanism, but on the collaboration in planning, coordination of scientific and technological progress and infraindustry coordination in production. Instead of increasing the role of market forces and promoting decentralization of decisionmaking, this approach to integration may have an opposite effect. The integrated industries will become international socialist cartels or socialist multinationals enjoying a monopolistic position within the CMEA market. They may easily be highly centralized, although the degree of centralization would probably vary from one industry to another, and run by administrative decisions. Nevertheless, profitability, modernization and technical efficiency would, undoubtedly, be stressed. In the absence of the market forces, it is doubtful, however, that the price mechanism would work better in the future than it has been working until now. It would continue to be difficult to find whether particular operations are really profitable or not, or in the words of a Polish economist:

* * * Because of the autonomous system of domestic prices in each country, an automatic and purely internal character of the monetary system and arbitrary official rates of exchange which do not reflect relative values of currencies, it is impossible to compare prices and costs of production of particular commodities in different countries.⁶⁸

⁶⁶ Z. M. Fallenbuehl, "Comecon Integration" *Problems of Communism*, March-April 1973, pp. 38-39.

⁶⁷ See for example: S. Ausch, *Theory and Practice of CMEA Cooperation*. Budapest 1972 and P. Bozyk, "RWPG: Ekonomiczny mechanizm wspolpracy" (CMEA: The Economic Mechanism of Collaboration), Warsaw 1970.

⁶⁸ Z. Kamecki, J. Soldaczuk, W. Sierpinski, *Miedzynarodowe stosunki ekonomiczne*. (International Economic Relations), Warsaw, 2d ed. 1971, p. 242.

The first international industrial association, based on economic calculations (i.e., on profit and loss accounting) is *interatominstrument* which was established by the executive committee in 1972, as the result of a Polish initiative, on the basis of an agreement signed by Bulgaria, Czechoslovakia, G.D.R. Hungary, Poland and U.S.S.R. The association, which is located in Warsaw, is composed of enterprises, industrial associations and other economic organizations, and scientific research institutes in the member countries which specialize in the production of instruments and equipment for nuclear physics, engineering and medicine. It is expected to eliminate duplication through specialization and cooperation, to reduce the number of products (which exceeded 1,000 in all CMEA countries taken together), reduce costs, improve quality and stimulate mutual trade among the member-countries in this field.⁶⁹ It is significant that Romania signed an agreement establishing an international team of scientific and technical specialists in atomic physics at the Hungarian Academy of Science in Budapest at the same time, but declined to join the international industrial association. This is one of the indications that, despite the acceptance of the comprehensive program, Romania is still not prepared to move as far as other CMEA countries in the direction of economic integration.⁷⁰

The 26th session took place in July 1972 and examined progress achieved during the first year after the adoption of the comprehensive program. In the field of scientific and technological collaboration, 18 agreements were signed concerning coordination in research, and 20 coordinating centers, 7 scientific committees, and 2 international scientific teams were established. A number of joint investments in fuel and raw materials production were agreed upon, and a decision was reached to expand the joint electric power distribution system and the natural gas and oil pipeline system. Multilateral consultations on the basic directions of socio-economic development in the years 1976-80 were conducted. The session asked the member countries and Comecon agencies to prepare the plans for that period in the years 1972-74 in order to secure enough time for all the long-term agreements which would have to be signed.⁷¹

As a form of joint planning in selected branches of production, a number of agreements were signed concerning specialization and cooperation in the engineering and chemical industries. The agreements took into consideration all stages, from the division of tasks in research and development to the allocation of production responsibilities and distribution of final products. A gradual extension of these methods of collaboration is regarded as one of the main duties of the standing commissions responsible for various sectors of the economy, especially because progress which has so far been achieved in the field of specialization and cooperation in production, particularly in the engineering

⁶⁹ L. S. "Nowe organy i organizacje gospodarcze RWPG" (New Organs and Organizations of CMEA), *Gospodarka planowa*, No. 7, 1972, p. 443.

⁷⁰ Schaefer has reached the same conclusion: For Romania the situation and the issues had not changed all that much with the adoption of the integration program, and there was no immediate sign of any modification in her established policy of fighting for principle while cooperating in new projects and in new approaches when she deemed it beneficial. Schaefer, *op. cit.*, p. 176.

⁷¹ J. G. "XXVI Sesja RWPG: Praktyka socjalistycznej integracji" (The twenty-sixth session of CMEA: Socialist Integration in Practice), *Zycie gospodarcze*, No. 30, 1972, p. 2; L. S. "XXVI Sesja * * *," pp. 742-3.

industry, cannot be accepted as satisfactory despite some recent improvements.⁷²

Not all decisions concerning specialization and cooperation were satisfactory. In some cases there was no reduction in the number of producers and this situation "is not conducive to the utilization of the latest achievements of science and technology." The accepted recommendations "were not always taken into consideration at the stage of the coordination of economic plans among the member-countries." Not enough attention was given to the specialization and cooperation in respect to the production of parts and intermediate products. There are also difficulties created by excessively lengthy discussions and slow work within various Comecon bodies.⁷³ This last point is particularly important. After rejecting integration through the market, the comprehensive program is attempting to effect integration through basically administrative methods. There are, however, no reasons to assume that these methods would be more efficient and less bureaucratic at the international level than they have been when applied within countries. On the contrary, they may work even less satisfactorily as co-ordination is even more difficult and complicated and conflicts of interest more clearly visible.

Yugoslavia, which on the basis of an agreement signed with Comecon in 1964 has been participating in some sessions and other activities, was represented at the 26th session by a strong delegation. This was interpreted as a sign of real interest in CMEA integration. The session also admitted Cuba as a full member.

The 27th session met in June 1973. It discussed, above all, the co-ordination of national plans for 1975-80 and, in some selected fields, for a longer period. The supply of raw materials was given top priority. Again some joint investments in this field were studied and agreed upon, mainly in the Soviet Union. Decisions were made about specialization and cooperation in the engineering industry. They will be taken into consideration during the preparation of national economic plans and are expected to influence the future lines of the development in this industry in the region as a whole. Considerable attention was also given to the expansion of the industries producing consumption goods, to the acceleration of technological progress and, for the first time in the history of CMEA, to ecological problems. Intensification of joint aid to Mongolia and Cuba, further expansion of cooperation with Yugoslavia and the new agreement of cooperation between Finland and CMEA were also discussed.^{74 75 76}

No progress, however, has been achieved so far as the extension of international trade is concerned. Both the CMEA share of world import and the share of world export declined in 1971 to its lowest level since 1960 (9.1 and 9.8 percent respectively). The share of import increased somewhat in 1972 to the level which it had reached in 1967 (9.7 percent). The share of export in that year was, however, the second lowest since 1960 (10 percent) (see table 2). Although the average rates of growth of export increased in 1971-72 in comparison with

⁷² Ptaszek, "Postępy współpracy," p. 5.

⁷³ Ibid.

⁷⁴ L. S. XXII Sesja RWPG: Program socjalistycznej integracji gospodarczej w działaniu (the 27th session of CMEA: The Program of Socialist Economic Integration in Action), *Gospodarka planowa*, No. 9, 1973, pp. 633-6.

⁷⁵ Ibid., p. 635.

⁷⁶ Comecon: Little more than a name, *Economist* (London), Mar. 2, 1974, p. 59.

1966-70 in all countries, except Bulgaria and the Soviet Union, and the average rates of growth of import everywhere, except the G.D.R., Hungary and Romania, trade within the bloc grew again less rapidly than total trade of the CMEA countries (see table 3).

No acceleration of economic growth was visible in the region as a whole. The average rates of growth of national income declined in 1971-72 in comparison with 1966-70 in all countries except Poland and Romania, reflecting a decline in the rates of growth of investment which, except in Poland, were below the 1966-70 level (see table 4). Similarly, the rates of growth of gross industrial production were lower in 1971-72 than in 1966-70, except in Poland where there was an increase and in Czechoslovakia where they were at the same level. This decline reflected a decline in the rates of growth of employment, an insufficient improvement in labor productivity in Bulgaria, Hungary, and the Soviet Union, and a decline in the rates of growth of labor productivity and an insufficient increase in the rate of growth of employment in the G.D.R. and Romania. Only in Poland, and to a smaller extent in Czechoslovakia, was there some evidence of an intensive pattern of growth.

TABLE 8.—Sessions of CMEA

First session, Moscow, April 26-28, 1949.
Second session, Sofia, August 25-27, 1949.
Third session, Moscow, November 24-25, 1950.
Fourth session, Moscow, March 26-27, 1954.
Fifth session, Moscow, June 24-25, 1954.
Sixth session, Budapest, December 7-11, 1955.
Seventh session, Berlin, May 18-25, 1956.
Eighth session, Warsaw, June 18-22, 1957.
Ninth session, Bucharest, June 26-30, 1958.
Tenth session, Prague, December 11-13, 1958.
Eleventh session, Tirana, May 13-16, 1959.
Twelfth session, Sofia, December 10-14, 1959.
Thirteenth session, Budapest, July 26-29, 1960.
Fourteenth session, Berlin, February 28-March 3, 1961.
Fifteenth session, Warsaw, December 12-15, 1961.
Sixteenth session, Moscow, June 7, 1962.
Seventeenth session, Bucharest, December 14-20, 1962.
Eighteenth session, Moscow, July 25-26, 1963.
Nineteenth session, Prague, January 28-February 2, 1965.
Twentieth session, Sofia, December 8-10, 1966.
Twenty-first session, Budapest, December 12-14, 1967.
Twenty-second session, Berlin, January 21-23, 1969.
Twenty-third session, Moscow, April 23-26, 1969.
Twenty-fourth session, Warsaw, May 12-14, 1970.
Twenty-fifth session, Bucharest, July 27-29, 1971.
Twenty-sixth session, Moscow, July 10-12, 1972.
Twenty-seventh session, Prague, June 5-8, 1973.

II. THE MECHANISM OF INTEGRATION

1. *Coordination of Plans*

Under the centralized model of planning and management of the Socialist economy, the mechanism of integration was composed of mainly administrative measures with only a limited role being played by market forces. The basic tool was the coordination of economic plans of the member-countries on the basis of the so-called material

balances, which after 1956 were prepared for some selected commodities, both raw materials and final products, for CMEA as a whole. At first the problem was limited to registering surpluses and shortages of various commodities and to allocating the surpluses among those member-countries which needed them. In this way the cooperation of the 5-year plans for 1956-60 and 1961-65 was effected. A serious disadvantage was that in both cases the process took place after the national plans had already been prepared and approved by the appropriate authorities of the member-countries. At this stage the plans were difficult to adjust and the suggestions made by the Comecon bodies usually encountered an inflexible response from the national central planning agencies.⁷⁷

This was, in effect, the coordination of trade on the basis of bilateral consultations. As international trade had only one function at that time, the removal of short-run bottlenecks, these consultations had very little impact on the industrial structure of individual countries. The production profiles were constructed "without economic calculations as the result of the tendency to achieve maximum economic self-sufficiency of individual countries."⁷⁸

During the break between the coordination of plans for 1961-65 and those for 1966-70, attempts were made to coordinate the long-term prospective plans up to 1980. In practice, however, it was impossible to go beyond some bilateral consultations which took place in 1961-63. Only a few particularly important sectors, such as fuel and electric power production, were balanced on a multilateral basis. It was discovered that the methods which were used for the coordination of the 5-year plans could not be used for the coordination of the long-term plans, and the exercise collapsed because of the lack of proper methodology. Some results of discussions, however, were apparently useful for the preparation of the subsequent 5-year plans.⁷⁹

At the beginning of the 1960's the existing system of coordination of plans was recognized as being inadequate, time consuming, and cumbersome. The coordination could only advance to the extent to which all partners were willing to go, and their interest was usually limited to insuring supplies which were needed for the fulfillment of their economic plans. In 1962, Khrushchev proposed the system of joint planning for CMEA as a whole.⁸⁰ The 12th Congress of the Communist Party of Czechoslovakia, which was held at the end of that year, accepted the proposal and some Czechoslovak and East German economists supported it in their writings.⁸¹ However, the proposal was rejected, because planning at that time was understood as the administrative-command system and "the concept of international planning for CMEA as a whole was accepted to imply the

⁷⁷ B. Miroschnichenko (ed.). *Problemy koordinatsii narodnokhoziaistvennykh planov stran SEV* (the "Problems of the Coordination of National Economic Plans of the CMEA Countries"), Moscow 1968, pp. 97-108; M. Guzek, *Problemy integratsii gosudarstvennykh planov sotsialisticheskoych.* Poznan, 1964, pp. 72-73.

⁷⁸ S. Gora, Z. Knyziak, *Współpraca krajów RWPG a rachunek ekonomiczny* (Cooperation of the CMEA Countries and Economic Calculations), Warsaw 1966, p. 150.

⁷⁹ M. Denciszczuk, K. Derbin, *Koordinacja planów gospodarczych krajów RWPG* (the "Coordination of the Economic Plans of the CMEA Countries"), Warsaw 1972, p. 103.

⁸⁰ N. Khrushchev, "Aktualne zagadnienia rozwoju światowego systemu socjalistycznego" ("Current Problems of the Development of the World Socialist System"), *Problemy pokoju i socjalizmu*, No. 9, 1962.

⁸¹ For example: J. Novozamsky, *Vyrovnávání ekonomické urovnězemí* ("Reduction in the Differences in Eastern Development"), Prague, 1964, pp. 194-156; W. Kunz *Grundfragen der internationalen Wirtschaftszusammenarbeit der Länder des Rates für gegenseitige Wirtschaftshilfe* ("Principal Problems of the International Economic Cooperation Among the CMEA Countries"), Berlin 1964, p. 18.

necessity to create an international planning agency for CMEA which would have the right to make economic decisions which would become compulsory for individual countries and which would, therefore, effectively limit the scope and the possibility of making independent economic decisions by individual countries.⁸²

The proposal had its merits. The existing system was not satisfactory and no alternative solution could guarantee much improvement. It had, however, great political risks for the parties in Eastern Europe. It also had economic disadvantages, particularly for less-developed member-countries:

This concept was an attempt to overcome in a radical manner all the difficulties which the development of socialist integration encountered under the conditions which required considerably more effective methods than those which had been used in the past. It should be added that the apparent attraction of this idea was that it implied the unification of economic methods and planning devices (for example the introduction of a uniform currency in all CMEA countries), without which it would not be possible to prepare a joint economic plan. Without trying to evaluate this concept, it is enough to say that it would tend to petrify the existing international division of labor, and this would mean a limitation of sovereignty of individual countries in respect of their ability to develop their economies in accordance with the national interests.⁸³

The only acceptable solution was improvement in the methods of international coordination of plans, which in effect became even more complicated and bureaucratic. These starting points were bilateral consultations among the member countries. The central planning agencies submitted to the Comecon secretariat information on their plans, including the planned quantity of production, the expected requirements and the size of a surplus or a deficit. The sector departments of the secretariat collected this information for a particular sector and prepared the balances for the bloc as a whole. The results were submitted to the standing commissions for discussion. The final balances were then submitted to the executive committee. As some shortages and surpluses were still present at the end of the first stage (consultations), during the second stage (coordination proper), bilateral discussions again took place on the basis of the suggestions prepared by the executive committee. The results were sent to the secretariat for a new exercise in balancing which involved again both the sector departments of the secretariat and the standing commissions.

The executive committee examined the final product and bilateral commercial agreements were signed by the member-countries for the 5-year period which incorporated decisions on planned exchange of commodities. Attempts were made to balance bilaterally not only the total volume of trade but also the major groups of commodities, machines, and equipment, raw materials and fuels, basic foodstuffs and manufactured consumption goods. The bilateral agreements on export and import quotas of very detailed nature were, of course, a logical extension of the material balances method of detailed balancing of all major commodities in real terms which was used for the construction of economic plans in each of the member-countries.⁸⁴

As very little coordination is possible in practice after investment decisions have been made, and even less when a certain industrial struc-

⁸² J. Słodaczuk, "Handel międzynarodowy a rozwój gospodarczy w socjalizmie" ("International Trade and Economic Development Under Socialism"), Warsaw 1970, p. 150.

⁸³ P. Gilkman, "Rachunek ekonomiczny we współpracy krajów RWPG w dziedzinie inwestycji" (Economic Calculations in the Cooperation of the CMEA Countries in Investment), Warsaw 1970, pp. 51-2.

⁸⁴ Bożyk, op. cit., pp. 35-7.

ture has already been created, the coordination of investment plans was accepted as the most important measure. A similar mechanism, including a stage of consultations and a stage of coordination proper, has been used for the coordination of the overall plans. The starting point is the collection of information in the form of indicators and the list of proposed investment projects, including the construction of new and enlargement or modernization of existing plants, which are connected directly with the international division of labor. On this basis, consultations take place, first bilateral and subsequently multilateral, in the sector standing commissions, in the sector departments of the secretariat and, finally, at the executive committee. The accepted decisions are then embodied in the 5-year plans, commercial agreements and joint investments.⁸⁵ Again, the process is extremely complicated, lengthy, and inflexible.

The coordination of investment was attempted on a large scale during the coordination of plans for 1966-70. Several hundred projects were presented by the state planning agencies. In accordance with the previously accepted principles, decisions were to be made on several matters: cancellation of a particular investment project in one country if identical productive capacity was not fully utilized or was planned to be constructed in another; changes in the timing of construction of some investment projects; the priority which should be attached to various projects; specialization in the production of particular commodities according to the type, size, et cetera, in the case when several similar plans would be constructed in more than one country, in order to achieve economies of scale; and the collaboration and mutual assistance in the construction of some projects of particularly great importance for several countries. This coordination of investments had "only a very limited effect" because there was "the lack of a sufficiently precise instrument which could be used to compare investment outlays in different countries and to bring them to a common denominator. It was simply impossible for the national planning agencies and for the Comecon bodies to make calculation of the efficiency of proposed investment projects and to choose from among alternative projects located in different countries."⁸⁶

The tendency to cover the widest possible range of commodities and to examine the greatest number of details, which had been present during the first two attempts to coordinate the 5-year plans (for 1956-60 and 1961-65) was recognized as a mistake, and, during the preparation of plans for 1966-70, the range of coordination was reduced and the process became less detailed.⁸⁷

The coordination of plans for 1971-75 was started 3 years before their beginning, to make sure that its results are incorporated in the national plans. The main stress was put on a relatively limited number of the most important problems for which the coordination process was strengthened to achieve a higher degree of specialization. Special attention was given to the coordination of production with the help of international sectoral organizations such as *Intermetall* and standing sectoral commissions. In every country a determined effort was made to adjust direction of development in the selected sectors to the requirements declared by its partners. The creation of a number of links

⁸⁵ Deniszczyk, Derbin, op. cit., p. 107.

⁸⁶ *Ibid.*

⁸⁷ M. Guzek, *Miedzynarodowa integracja gospodarcza w socjalizmie* (International Economic Integration Under Socialism), Warsaw 1971, p. 124.

was planned which were basically of an autarkic nature, taking CMEA as a whole. Priority was given to the creation of international links in the production of fuel and raw materials, where "the supply of main products was fully secured from intra-bloc sources for all countries" and in the engineering industry, as the result of which "the main investment needs of the CMEA countries for machines and equipment were met by supplies from the member countries."⁸⁸

Despite some improvements, this was basically the same bilateral system of coordination of plans which had previously existed.⁸⁹ Writing in 1969, a Polish economist pointed out that the system stressed mainly the creation of planned forms for the mutual collaboration among the member-countries which would help them to fulfill their national plans, rather than to achieve the optimal utilization of economic resources of these countries through the widest possible specialization and coordination. Instead of concentrating on the coordination of the main directions of economic development and on the creation of a basis for mutual trade, attempts were made to determine particular types and quantities of mutual deliveries of goods. In effect, the coordination of plans was simply an introductory stage for the negotiations of commercial agreements.

It influenced the coordination of the directions of development of individual countries only indirectly and rarely in a durable way, because the types and quantities of deliveries were subject to considerable change from one planned period to another. The practice of limiting the coordination to the 5-year plan periods tended to create discontinuity, and it was responsible for the fact that the coordination decisions were strongly influenced by existing short-run situations and current needs. Moreover, the coordination decisions were not always secured by any binding agreements, and this created a real danger that they might not be carried out. The coordination was taking place almost exclusively on a bilateral basis and this tendency for bilateralism was further strengthened by the difficulties which were experienced by individual countries in obtaining required imports and, in some cases, in finding foreign markets for commodities which they produced.⁹⁰

In practice, during the first stages in the evolution of Comecon, the coordination of plans was applied fully only for the production of fuel and most important raw materials, and, to a lesser extent in the engineering industry. Its application to all products of the manufacturing industry, particularly to consumption goods, proved impossible:

The feasibility of balancing in physical units is determined by the degree of homogeneity of products. As it is well known, this condition can be met more readily in the case of such products as electric power, fuels, mineral raw materials, or such mass commodities as grain. On the other hand, the collection and processing of information for non-homogeneous products require aggregation in value terms. Even in respect to the domestic economies of the individual CMEA countries this problem is not easy to solve. Difficulties are even greater in the analysis on the scale of the whole group of countries as, in addition, there is

⁸⁸ Bożyk, op. cit., p. 42.

⁸⁹ A. Shulman, "Koordynacja planów stran SEV" (The Coordination of Plans of the CMEA Countries), *Vneshnaya Torgovlia* (Moscow), No. 4, 1971.

⁹⁰ Z. Kamecki, "Kierunki zmian w systemie koordynacji planów krajów RWPG" (Directions of Changes in the System of the Coordination of Plans of CMEA Countries), *Gospodarka planowa*, No. 10, 1969, pp. 1-2.

the problem of comparability of monetary units, the matters of standardization, differences in statistical methods and processing of planning data.⁹¹

The economic reforms introduced in the second half of the 1960's made the existing method of international coordination of plans obsolete and even less workable than before. They introduced some changes in the nature of national plans by reducing the number of directives, reduced the degree of centralization, and put a greater stress on economic as opposed to administrative measures. The national central planning agencies cannot make the same commitments as before. The national plans are less detailed, and they are formulated to a greater extent than before in aggregative value terms. The reforms made it necessary to modify the international coordination of plans. Plans had to be less detailed, less rigid, and representing to a greater extent only the main directions of development or a general framework within which specific decisions would be made by economic units of a lower level.

At the same time, the reforms opened up possibilities for the application of new methods of international coordination. In the past, decisions were made in physical units at the central level and were transferred down to the enterprises in the form of commands. A really effective international coordination required, therefore, a supranational planning office. However, when the enterprises acquire some freedom to make decisions on the basis of profit-and-loss considerations, they need prices as parameters for their calculations. While in the past, prices did not supply any information to the enterprises, they must be more meaningful now. All CMEA countries effected price reforms in the years 1967-70, and, although the new prices still do not correctly reflect the supply and demand conditions, they are more reliable than the old prices. There is, therefore, room now for forms of international planning other than those based on the direct commands of the international planning office.⁹²

One possible modification of the international coordination of plans would be the acceptance of the suitable market mechanisms, such as prices, rates of exchange, and an international-bloc currency. The advocates of this approach among the East European economists are stressing that "no system of coordination of plans, if it is expected to give real results, can be regarded as a substitute for the market mechanism," and that "the wide utilization of the market mechanism would make it possible to concentrate during the process of the coordination of plans on real and direct coordination of the directions of economic development," which should be established as "long lasting linking of production and scientific and technical activities" among the member-countries.⁹³

This approach is regarded as a necessary precondition not only for strengthening integration, but also for a successful switch from the extensive to the intensive pattern of development:

The functions of the mechanism which regulate mutual coordination must correspond to the specific conditions under which the CMEA countries are, at present, moving toward the intensive stage of development. In comparison with the situation which existed in the past there must be a change in the role of both

⁹¹ Guzek, op. cit., pp. 129-130.

⁹² M. Guzek, "Modele międzynarodowej intergracji gospodarczej w socjalizmie," (Models of International Economic Integration Under Socialism), *Ekonomista*, (Warsaw), No. 5, 1968.

⁹³ Kamecki, op. cit., p. 2.

institutional and market factors. The institutional factors, continuing to play active functions, cannot now and will not be able in the future to determine all possibilities and directions of mutual trade and specialization in production in a detailed way. For this reason the market forces must, to a certain extent, play an active role in the process of determining mutual trade and specialization. With such a change it would not be possible to bring individual enterprises into a direct participation in the determination of the international division of labor.”⁹⁴

In other words, the volume, direction, and composition of international trade, and the corresponding specialized industrial structure, are determined, within the overall framework established by the central planning authorities, by microeconomic decision of enterprises dealing directly with enterprises in other countries.

However, the leading Soviet specialist in the field of CMEA integration, O. Bogomolov, has not accepted this view. He admits that the previous forms of cooperation were not sufficient in the second half of the 1960's, and that “the stage of intensive economic development, into which the CMEA countries enter, requires a wider field for an international maneuver with material, financial, and human resources; some specific forms of the unification of economic and scientific and technical potentials; concentration of joint efforts for the solution of the basic problems of socialist and Communist construction * * *”⁹⁵ Discussing various forms and methods of integration, he stresses that the most important theoretical and practical problem of the establishing of real mechanism of economic integration is that of finding a golden mean between the state-political and economic methods of regulating the process. Bogomolov rejects the market mechanism, pointing out that “the Socialist ownership of the means of production makes it possible to adjust the economic structures of individual countries not through the spontaneous fluctuations of the market but in a much simpler and more effective manner on the basis of the adequate regulation of the activities of the states.” For him “the state plan is the most effective lever of the process of integration” although “the acceptance of the primacy of the planning over market instruments does not, of course, mean that the role and the importance of the latter is underestimated.”⁹⁶

Bogomolov's proposals represent the concept of adjusting the industrial structure of the member-countries “from above” through direct coordination of plans by administrative methods which would be improved and which could utilize some economic instruments. However, despite considerable efforts, by 1970 “no effective forms and methods of the coordination of the plans for economic development of CMEA countries had been found.”⁹⁶

The comprehensive program, approved in the following year, was supposed to introduce a significant modification of the system. It has accepted Bogomolov's approach. It stresses the coordination of overall economic policy in addition to the coordination of long term, 5-year and annual plans. More responsibility is given to the Comecon by creating the Committee for Collaboration in Planning, composed of the chairmen of the state planning agencies. Plans for 10–20 years, which outline basic trends in the development of the key sectors of the econ-

⁹⁴ Bożyk, op. cit. p. 96.

⁹⁵ D. Bogomolov (Problems of the Economic Integration of Socialist Countries), *Problemy Mira i Sotsializma* (Moscow), No. 11, 1970; Polish translation in *Gospodarka planowa*, No. 1, 1971, pp. 61–2.

⁹⁶ Soldaczuk, op. cit., p. 151.

omy, are to be coordinated by bilateral and multilateral consultations of the representatives of planning agencies of the member-countries, with the participation of the CMEA bodies dealing with foreign trade and scientific-technical cooperation, and appropriate sector departments of the Secretariat and standing sector commissions. On this basis, the member countries are expected to conclude long term multilateral and bilateral collaboration agreements, which would include "reciprocal obligations, terms, measures for their fulfilment, material liability of the parties for their nonfulfilment or improper fulfilment." Priority is given to the coordination of long-term plans for: (1) the fuel and energy base, including nuclear energy, (2) the raw material base for ferrous and nonferrous metallurgy, for the chemical pulp and paper and light industries, including geological prospecting works, (3) the key types of industries in ferrous and nonferrous metallurgy, (4) the petrochemical and associated industries, and (5) the integrated system of machines and instruments that determine the development of the scientific and technological revolution.⁹⁷

The stress in the long-term cooperation among the member-countries is on those sectors producing producers' goods which have always been given top priority in Eastern Europe. They include fuels and raw materials, because of relative shortage of these commodities, and those industries in which most of unnecessary duplication of investment and parallel development occurred in the past. At least some of these products are also relatively homogeneous. The inclusion of the CMEA bodies in the process of coordination of the long-term plans is the closest substitute for supranational joint planning which is acceptable to all member-countries at present.

One of the first activities of the newly established Committee for the Collaboration in Planning was the preparation of a list of the main problems of the development of the national economy and the types of production which should be coordinated for the period up to 1985 and in some cases even 1990. Concrete methods and a timetable for multilateral and bilateral works in this field have also been accepted. In accordance with the comprehensive program, the coordination of the long-term plans will be based on jointly prepared forecasts of the development of production of the most important products.⁹⁸

The comprehensive program states that the coordination of the 5-year plans takes place at the time of the preparation of the national plans, before the drafts are submitted for approval by the appropriate national authorities. They are coordinated on a bilateral and a multilateral basis for those problems in which the member countries express an interest in joint solutions. The process of coordination is finalized by the signing of protocol by the heads of the central planning agencies of the member countries. Four types of problems are specifically mentioned as requiring coordination: (1) basic directions in scientific and technical progress, (2) the development of specialization and cooperation in production with the aim of organizing a rational production scale based on more sophisticated technologies, (3) the coordination of capital investments which are of mutual interest, especially for the expansion of the fuel and raw material base for the key

⁹⁷ "Comprehensive Program . . ." pp. 206-8.

⁹⁸ L. S. "Rozwój współpracy w dziedzinie planowania" (The Development of Cooperation in Planning), *Gospodarka planowa*, No. 11, 1973, pp. 780-2.

branches of industry, and (4) the output and deadline for reciprocal supply of goods and services.⁹⁹

The program of work in this field for the plans for 1976-80 was prepared by the Committee for Collaboration in Planning during 1972, and it was approved by the Executive Committee. The program assumes an active participation by various Comecon bodies. In 1963, standing commissions were coordinating plans for their respective sectors for the years 1976-80 and for the longer periods. It is expected that the member-countries will be able to sign commercial agreements on the basis of the coordinated decisions in the first half of 1975.¹⁰⁰

In accordance with the stipulations of the "comprehensive program," there were also consultations on the main problems of economic policy and exchanges of information on the experience of various member-countries in the field of improving the planning and management system.¹⁰¹

The cursory examination of both the relevant parts of the "comprehensive program" and the information on currently conducted work on the coordination of plans indicates that, although the methods have been elaborated in greater detail and a wider range of problems have been included, no major change has occurred in this field. Most of the objections which were made against the coordination of plans in the past remain valid, and no great improvement in results can be expected. Particularly striking is the great degree of bureaucratization of the process. It absorbs considerable human and other resources and, because of various delays at the international level, may tend to make national planning even less flexible than it was in the past. To this extent, the Comecon activities may represent a real burden for the member-countries. The greatest benefit of further elaboration of methods seems to be the increased knowledge of the situation, current aims, policies, and other economic activities in other member-countries. This may be an important factor from the point of view of the Soviet Union as it may help to anticipate some potentially explosive developments, which in the past seemed to come as a surprise for the Soviet leaders.

Although the coordination of national plans by the supranational bodies, as it exists at present, does not yet represent supranational planning, it reflects some supranational preferences, and in the long run it may lead to such planning. At present, "the introduction of supranational planning *sensu stricto* is still very difficult, because if the decisions about the allocation of resources for specific purposes in sectoral and geographic aspects were based on an international system of economic calculations, they could, in many cases, hamper the national interests of individual Socialist countries."¹⁰²

It seems that without the introduction of the "market instruments" at the international level, this difficulty will never be eliminated and no real progress could be achieved, although the frequent meetings of the planning officials from the member-countries, which are attended by the Comecon officials, and the enhanced role of the Comecon agencies may create more favorable conditions for supranational planning in the future.

⁹⁹ "Comprehensive Program . . ." pp. 208-210.

¹⁰⁰ L. S. "Rozwój * * *," p. 782.

¹⁰¹ *Ibid.*

¹⁰² A. Marszałek, "Planistyczno-Instytucjonalne metody integracji ekonomicznej krajów socjalistycznych" (Institutional Planning Methods of the Economic Integration of Socialist Countries), *Gospodarka planowa*, No. 11, 1972, p. 694.

2. Collaboration in Production

Since 1962, when the Soviet proposal concerning supranational planning was rejected, it has become clear that the progress of East European integration must proceed gradually and that, in effect, it will be a lengthy process. Although the creation of a supranational planning body and the introduction of joint general plans for the economic development of CMEA as a whole has been retained as a long-term objective,¹⁰³ the coordination of national plans has been accepted as an "objective necessity at the present stage of the development of international relations among the CMEA countries."¹⁰⁴ At the same time, it was realized that the coordination of plans should be supplemented by the development of other institutional links. The fact that in the past insufficient attention had been paid to this matter and that, "because of the political-systemic similarity of the CMEA countries, the coordination of plans was regarded as a sufficiently strong institutional link" was accepted as a mistake.¹⁰⁵

During the 1960's, the Comecon was searching for some suitable forms of integration in production. There were, first of all, attempts to improve specialization and cooperation agreements based on the recommendations of the executive committee and standing commissions. These recommendations were, at first, limited to defining the products, or groups of products, in which individual countries should specialize. Subsequently, they became more detailed and included the date when the production and deliveries should start, the quantities which should be delivered, quality, et cetera. However, "the progress of specialization on the basis of the recommendations by the Comecon bodies was unsatisfactory." The recommendations were not creating necessary conditions for their implementation. They "did not include technical, economic, and legal elements which would act as incentives and obligations for both the producers and the buyers of specialized products."¹⁰⁶

In 1967, the CMEA countries and Yugoslavia accepted the "Effective Method of Improving Specialization and Cooperation in Production" as a basis for contracts between direct producers. This new approach was recognized as being far superior to the use of "recommendations" which, because of their nature, had to be vague and inconclusive. The contracts between direct producers cover a whole complex of problems, including research and development, production, and marketing. They stipulate the responsibilities of partners, penalties for failure to meet contractual obligations, and determine prices "which in the final analysis decide about the economic results of international cooperation in production which are achieved by each partner." The new approach has been accepted as an important step forward as "every contractual agreement concerning specialization and coordination in production, which solves the whole range of prob-

¹⁰³ G. Sorokin, Soviet delegate, at an international symposium on "International Economic Integration of the Socialist Countries" held in Warsaw in January 1969, *Handel zagraniczny* (Warsaw), No. 4, 1969.

¹⁰⁴ Miroshchenko, op cit., pp. 36-7.

¹⁰⁵ M. Denszczuk, "Międzynarodowy podział pracy a integracja ekonomiczna krajów RWPG" (International Division of Labour and Economic Integration of the CMEA Countries), *Handel zagraniczny*, No. 7, 1971, p. 217.

¹⁰⁶ B. W. Reutt, "Międzynarodowe formy specjalizacji produkcji krajów RWPG" (International Forms of Specialization in Production of the CMEA Countries), in P. Rożyk (ed.), *Integracja ekonomiczna krajów socjalistycznych* (Economic Integration of the Socialist Countries), Warsaw 1970, p. 159.

lems in a given sector of production in the long-run sense, becomes a new stone in the edifice of the integrated international socialist economy."¹⁰⁷

The "comprehensive program" asks the member-countries to create appropriate economic prerequisites for the development of direct ties "between their ministries, agencies, and other government organs, and between economic, scientific research, and planning and design organizations." These ties should be established when there is mutual interest of the parties in the elaboration of specific measures on a cooperative basis. They should be established "with due regard to the systems of planning and management employed in the given nations, as well as to the rights and authority held by the parties within the framework of these systems," and with the understanding that "each party involved in direct ties coordinates its activities within the nation in accordance with the system of planning and management existing in a given nation." Thus, direct ties should not weaken the autonomy of each member-country in respect to planning and management, and cannot be used as an instrument of pressure for effecting any systemic changes or preventing changes envisaged by an individual country. The contractual agreements will be utilized to formalize the reciprocal obligations of parties. They should include effective guarantees and material responsibility of the parties for the nonfulfilment, or improper fulfilment, of their obligations. Various Comecon agencies will retain their right to give recommendations on direct ties among the member-countries, but these ties can also be established in response to recommendations issued by bilateral intergovernmental commissions or at the initiative of those organizations, presumably including industrial enterprises, "which are empowered to establish them."¹⁰⁸

In the second half of the 1960's, some Soviet economists formulated a new concept. In addition to improving the coordination of perspective (long-term), multiyear, and annual general plans for the development of national economies, the member-countries should also introduce joint planning for the development of some selected branches of industry in order to insure specialization and coordination.¹⁰⁹

This is an attempt to promote integration gradually on a selective basis, starting with some key sectors such as the chemical, electronics, and engineering industries. In these sectors, technological progress plays a particularly important role; and they, in turn, determine the level of technique in an economy which mainly depends on its own production, or that of its bloc partners, for the supply of capital goods. These are, at the same time, highly capital-intensive sectors, which require large outlays on research and development, and have large potential economies of scale. None of the CMEA countries, except the Soviet Union, has sufficient resources to construct modern and efficient plants in these sectors and, what is even more difficult, to constantly modernize them in order to keep them abreast of the world technological progress. Moreover, none of these countries has a suf-

¹⁰⁷ J. Kormnov, "Miedzynarodowa socjalistyczna kooperacja produkcji" (International Socialist Cooperation in Production), *Gospodarka planowa*, No. 5, 1969, p. 31.

¹⁰⁸ "Comprehensive program * * *," pp. 241-243.

¹⁰⁹ G. Sorokin, "Problemy ekonomicheskoi integratsii stran sotsializma" (Problems of the Economic Integration of Socialist Countries), "Voprosy Ekonomiki," No. 12, 1968, p. 86; O. Bogomolov, "Nekotorye problemy spetsializatsii i kooperatsii proizvodstva mezhdu stranami S. E. V." (Some Problems of Specialization and Cooperation of Production Among CMEA Countries), *Mirovaia Ekonomika i Mezhdunarodne Otnosheniia* (Moscow), No. 5, 1967, pp. 78-80.

There is a general agreement among Soviet and East European economists that the development of joint enterprises has been hampered by various features of the economic system of socialist countries, such as the lack of uniform prices, correct exchange rates, convertibility, and an appropriate monetary system, and that "without solving the question of market and monetary problems there will be no possibility to solve complicated problems of joint enterprises."¹²³

Because of the still strong presence of administrative-command features in the planning and management system of the CMEA countries, the enterprises in one country are not interested in mutual contacts and specialization or in cooperation arrangements with enterprises in other member countries. The system does not provide sufficient incentives for action in this direction and there are even many disincentives.¹²⁴ For this reason, even the purely coordinating international organizations, such as "Intermetall" and "Organization for Cooperation in the Ballbearing Industry" have been playing only a relatively minor role and they are not fully utilizing the rights given to them by their charters:

This is, above all, a consequence of the fact that these organizations cannot have a wide field of activities in the system of planning and management which has been in existence so far in the individual countries. However, with acceleration of economic reforms, their ability to act effectively should increase. They would then be able to accept new functions and could be transformed from cooperative organizations into industrial organizations which would directly determine size, product mix and the allocation of production tasks among the national industrial organizations and enterprises.¹²⁵

The "Comprehensive Program" puts considerable emphasis on the expansion of direct ties between various national and Comecon agencies and organizations. It also envisages improvement in the operation of existing international economic organizations in production, trade and other fields, as well as establishment of new ones. Moreover, it expects that the international economic associations, a higher stage of development than the purely coordinating organizations, would be established "to coordinate the activities of the participating nations in collaboration and cooperation, and to manage jointly their economic activity in individual branches of production, technical development, foreign trade, et cetera."¹²⁶

In the light of the previously quoted views about the conditions which must be fulfilled before the coordinating international organizations could become effective, it will be interesting to watch the progress of "Interatominstrument," the International Company for Nuclear Instruments, which started its operations in Warsaw in March 1972. This is the first international industrial association which groups one Bulgarian, two Czechoslovak, three GDR, two Hungarian, one Polish, and two Soviet industrial and trade enterprises, which specialize in this field. It operates on a commercial basis and has the right to establish a plant, a research laboratory or its own branch office in each of the cooperating countries. However, the enterprises and organizations which belong to it do not lose their autonomy or their present organizational links in their own countries, although they are obliged to carry

¹²³ I. Frisch, Hungarian delegate, at the international symposium on "Economic Integration of the Socialist Countries," which was held in Warsaw in January 1969. *Handel zagraniczny*, No. 4, 1969, p. 152. Also Clamaga, op. cit., p. 325.

¹²⁴ Soldaczuk, op. cit., p. 165.

¹²⁵ *Ibid.*, p. 166.

¹²⁶ "Comprehensive program . . ." p. 247.

out the decision of the board of directors of the association. The association is "an open organization." New members, even from outside CMEA, are free to join it any time. There are some indications that similar international associations may be established in other fields.¹²⁷ However, it is not clear how all the difficulties which had appeared in connection with the operation of "Haldex" have been solved.

Since the introduction of the "Comprehensive Program," collaboration in production has been accepted as one of the main activities of CMEA. Its importance was again acknowledged by the 27th session as "the main stream of the processes of Socialist economic integration" with "specialization and cooperation forming a material basis for the integration of CMEA on which rest all other forms and methods of scientific and technical, economic and commercial cooperation."¹²⁸

Following the recommendations of the program, the first multilateral agreements concerning specialization and cooperation were signed in 1971. They dealt with the automotive, glass, and ceramics industries. In 1972, further multilateral agreements were signed which covered a wide range of production, including shipbuilding and production of shipping equipment, tractor and agricultural machines, and some chemical, metallurgical and engineering products.¹²⁹ A large number of studies have been completed, the results of which will be taken into consideration in the coordination of national plans for 1976-80 and included in bilateral and multilateral agreements.¹³⁰ Although the multilateral nature of agreements is a new factor, it seems that otherwise all these activities belong to the traditional method; nothing has been reported about direct contractual agreements among enterprises.

There has been some activity in the field of joint planning. In 1972 Bulgaria, Czechoslovakia, the GDR, Hungary, Poland, Romania and the U.S.S.R. signed an agreement concerning joint planning in the production of various metalworking machines. Another agreement was signed on joint planning in container transportation.¹³¹

Except for the establishment of "Interatominstrument," the approval by the executive committee of a document regulating the establishment and operation of international economic organizations in January 1973 and commencement of work on a further, more detailed, document which is expected to be completed in 1975,¹³² nothing has been reported on joint enterprises or international industrial associations.

It may be significant that in discussing the future of international economic organizations recently, a leading Soviet specialist stressed that these organizations do not have to assume the form of joint enterprises, as this particular form could in many cases prove to be less efficient than a transfer of resources, in the form of credit granted for the development of specialization and cooperation, to an enterprise located in another Socialist country. He felt that, in order to improve

¹²⁷ A. Nalecz-Jawecki, "Interatominstrument," *Zycie gospodarcze*, No. 28, 1972, pp. 10-11.

¹²⁸ T. Leszek, "Problemy kooperacji produkcji w ramach RWPG" (Problems of Cooperation in Production in the CMEA Countries), *Handel zagraniczny*, No. 9, 1973, p. 283.

¹²⁹ *Ibid.*, pp. 284-85.

¹³⁰ L. S., "XXVII Serije * * *"

¹³¹ L. S., "Rozwój współpracy w dziedzinie planowania," p. 781.

¹³² J. Sarnacki, L. Zabkowiec, "RWPG: Wspólne przedsiębiorstwa" (CMEA: Joint Enterprises), *Zycie gospodarcze*, No. 31, 1973, p. 9.

efficiency of production, credit may be more useful than a joint ownership in the form of international economic associations.¹³³

Probably even more significant, is the fact that it was noted recently that a number of obstacles which hampered the development of specialization and cooperation in the past are still present. They belong to two groups: difficulties caused by the different levels of development and the existing specific industrial structure in the member-countries; and difficulties connected with the system of international cooperation within CMEA which are related to the defective systems of planning and management of national economies.¹³⁴

It seems that the sections of the "comprehensive program" which deal with direct contractual agreements among enterprises of different countries, with the establishment of jointly owned enterprises, with international associations, and perhaps even with joint planning in selected sectors, depend on the further progress of economic reforms in the member countries and radical improvement in the financial system of CMEA cooperation. In the absence of such reforms, collaboration in production will be a very imperfect instrument of integration.

3. *International Mobility of Factors of Production*

Until the middle of the 1950's movements of capital among the CMEA countries were limited to credits advanced at 2 percent per annum in order to enable the recipient country to finance imports from the creditor country.¹³⁵ Between 1945 and 1957, the Soviet Union granted the following credits to Eastern Europe: \$31 million to Czechoslovakia, \$153 million to Albania, \$223 million to Romania, \$313 million to Hungary, \$334 million to Bulgaria, \$448 million to GDR, \$498 million to Poland (excluding the amount of \$500 million which was canceled by the Soviet Union in 1956 as a compensation for the loss suffered by Poland as the result of coal exports at special low prices in the years 1945-53). The loans, according to the calculation of a Polish economist, amounted to approximately 27 percent of total investment outlays which Bulgaria made during that period, 6 percent in the case of Romania, 4 percent in Hungary and 2 percent in Poland.¹³⁶ They, presumably, included cancellations of reparations and of some payments for assets of joint companies which the Soviet Union had acquired in the ex-enemy countries at the end of the war. Hence, a small figure for Czechoslovakia, which as an ex-allied country did not pay reparations, and a relatively high figure for the G.D.R. The other CMEA countries advanced the following credits during the same period: Hungary, \$9 million; Poland, \$10 million; Bulgaria, \$18 million; Romania, \$24 million; Czechoslovakia, \$171 million; and the GDR, \$280 million.¹³⁷

In the second half of the 1950's credits for investment purposes became even less significant, and the less developed CMEA countries

¹³³ J. Kormnov, "Mezhdunarodne ekonomicheskie organizatsii i ikh rol' v sotrudnichestve stran CEV" (International Economic Organizations and Their Role in the Cooperation of the CMEA countries), *Planovoe khoziaistvo* (Moscow), No. 4, 1973, pp. 54-63.

¹³⁴ Leszek, op. cit., p. 285.

¹³⁵ K. Pecl, "Zagadnienia koordynacji planów inwestycyjnych krajów RWPG" (Problems of the Cooperation of Investment Plans of the CMEA Countries) *Gospodarka planowa*, No. 6, 1964, p. 39.

¹³⁶ A. Bodnar, *Gospodarka europejskich krajów socjalistycznych* (The Economy of the European Socialist Countries), Warsaw, 1962, pp. 42-43.

¹³⁷ *Ibid.*

had to depend to a larger extent on their domestic accumulation (saving). As a Polish economist observed in the early 1960's: "the main problem for the Socialist Countries now is not the problem of obtaining credits for the stimulation of economic development, but securing the supplies of raw materials in exchange for the export of manufactured goods."¹³⁸

During the industrialization drive of the early 1950's, many Soviet-designed plants had been assembled in other member-countries. Their operations were based on the import of Soviet raw materials, and their output was directed partly for import substitution and partly for export to the Soviet Union. The most glaring example is provided by the commission-work agreements in the textile industry, under which cotton was supplied by the Soviet Union, which then received the final product at special price below the world market level.¹³⁹

When more sophisticated economic calculations were introduced, it was discovered that from the Soviet point of view it was not really rational to send raw materials to other CMEA countries in order to receive back products of exactly the same type as those that were produced in the Soviet Union. Soviet manufacturers were closer to the sources of raw materials and to the end users, and the costs of transporting goods from Eastern Europe were in some cases alarming. The average length of railway haulage was 1.7 to 2 times as large in the cases of goods entering international trade as those produced for the domestic market. In addition, there was an agreement among the CMEA countries that to a product's price, which was determined on the basis of the world prices, the cost of transportation was added at 50 percent of the cost which the importer would have paid if he imported this commodity from a major exporter outside CMEA. So, for example, to the price of iron ore imported by Poland from the Soviet Union, half of the potential cost of transportation if iron ore from Sweden to Polish Baltic ports was added.¹⁴⁰ However, transportation from the Soviet Union was more expensive in reality because of the distances involved and the use of railways, which are an overcommitted carrier in the Soviet Union. The cost of transporting raw materials in the Soviet Union to the Western frontier represents about 14 percent of the cost of production of coke, 26 percent for manganese ore and rolled steel, 28 percent for pig iron, and 90 percent for iron ore.¹⁴¹

Moreover, while the world price of iron ore, a particularly important commodity for the East European countries in view of the very rapid expansion of their steel industry, declined between 1956 and 1966 and the average c.i.f. price of iron ore imported by Western Europe declined by 40 percent, the cost of producing iron ore in the Soviet Union increased. It became necessary to use gradually less efficient deposits, and, between 1957 and 1965, the average content of

¹³⁸ *Ibid.*, p. 45.

¹³⁹ Ausch, *op. cit.*, pp. 91-94.

¹⁴⁰ Bogomolov, *Ekonomicheskata* * * * pp. 1950-2000; cf. Ausch, *op. cit.*, pp. 82-84. Bogomolov states that (a) in Czechoslovakia during the period 1953-59 the average length of railway haulage was increasing by 2.9 percent per annum, but in the case of commodities which were subject to international trade this increase was 7 percent; (b) in Hungary during the period 1953-60 the annual increase in the length of railway haulage in connection with goods produced for the domestic market was 4.4 percent but this increase was 36.6 percent in the case of imports.

¹⁴¹ *Zasoby a współpraca międzynarodowa* (Resources and International Cooperation), Warsaw, 1970, p. 350.

iron declined from 48.1 to 41.6 percent of the produced ore.¹⁴² The cost of producing coke in the Donetz basin is about 17 percent higher than the average for that industry because of unfavorable geological conditions, while in the case of the deposits in the eastern regions, where about 79 percent of the known coal is located, the cost of transportation is very high.¹⁴³ The Soviet Union is also a relatively high-cost producer of oil. This is particularly true in the case of new oilfields in the Eastern regions, which have to be expanded to meet the rapidly growing needs of the Comecon countries. While investment outlays necessary for the creation of 1 million tons of oil per year are \$4 million in Saudi Arabia, \$9 million in Iran, \$12 million in Kuwait, and \$56 million in the new oilfields in the North Sea, the corresponding figures for the Soviet Union are \$34 million in the old oilfields and \$80 million for the new oilfields.¹⁴⁴

Capital intensity in the Soviet extractive industry was three times higher than that of total industry at the beginning of the sixties. Investments in this field have long gestation periods and, to the extent to which the growing demand has to be met by the development of new deposits in the remote areas, require additional investments in providing transport facilities and socio-economic infrastructure. In the second half of the fifties, the Soviet Union had already started to complain about its role as the exporter of raw materials to other Comecon countries in exchange for manufactured products. These complaints increased in the first half of the sixties.¹⁴⁵

The problem was additionally complicated by the use of world prices, which reflected different scarcity relations than those existing within the bloc, as a basis for intrabloc transactions. While the world terms of trade were against the producers of primary products after the end of the Korean boom, in CMEA there was a relative scarcity of raw materials and overproduction of many manufactured products.¹⁴⁶ There was little incentive to expand the export of raw materials to other member-countries, despite the fact that, in bilateral transactions within the CMEA, the countries buying raw materials were prepared to offer higher prices in order to receive higher prices for some finished products. Consequently, "the 1963 intra-CMEA price level of raw materials was, on the average, 15-percent higher than the corresponding world price level of 1957-61."¹⁴⁷

In this situation, the so-called cooperation in the construction of plants, or "joint investments" was devised in the form of long-term credits for specific purposes. These were considered consistent with both "modern conditions of international Socialist division of labor" and "the principle of economic sovereignty of a Socialist country," and "full ownership of the means of production which are located on their territory."¹⁴⁸ Its essence was described by a Soviet economist in the following way:

¹⁴² J. Gwiaździlński, *Hutnictwo żelaza i stali krajów RWPG* (Steel and Iron Industry in the CMEA Countries), Warsaw, 1972, p. 122.

¹⁴³ *Ibid.*, pp. 107-08.

¹⁴⁴ L. Bednarz, "Karbochemia" (Carbo-chemistry), *Zycie gospodarcze*, No. 21, 1973, p. 11.

¹⁴⁵ Sarnacki, "Ekonomiści radzilecy * * *" pp. 106-07; O. Bogomolov, G. Pekeshev, "Zasady i perspektywy międzynarodowego podziału pracy i współpracy międzynarodowej" (Principles and Perspectives of International Division of Labour and International Cooperation), *Gospodarka planowa*, No. 8, 1962, p. 10.

¹⁴⁶ Ausch, *op. cit.*, pp. 86-103. Cf. P. Marer, "Postwar Pricing and Price Patterns in Socialist Foreign Trade (1946-71)", Bloomington, Ind., 1972.

¹⁴⁷ Ausch, *op. cit.*, p. 87.

¹⁴⁸ Bogomolov, "Ekonomicheskala * * *," p. 212.

[It represents] a "transfer" of investment resources from a country which lacks a given raw material (capital intensive) to a country which has favorable conditions for the development of its production, but lacks the necessary investment resources. This makes possible a greater concentration and a higher effectiveness in the utilization of investment outlays in the system of CMEA countries and a more rapid liquidation of a temporary deficit of raw materials and fuels. The expansion of the production of raw materials and fuels takes place with the minimization of investment and current costs and with the safeguarding of economic interests of individual countries.¹⁴⁹

Joint investments in the production of raw materials in resource-rich countries were accepted as the only alternative to the development of the "domestic raw material base" in those countries which had some poor resources available. During the 1950's, these countries were encouraged by CMEA to expand some extremely poor and inefficient deposits. This policy led "to the reduction of investment resources which, as it became clear later, could have been utilized for more effective purposes." The plants for enrichment of poor iron ores were built in Czechoslovakia, G.D.R., and Poland, and they all were closed down at the end of the 1960's.¹⁵⁰

The size of the credits corresponds to a share of the total cost of the construction, or expansion, of a plant, which is equal to the share of output in which the creditor is interested. They are advanced, usually for a period of 10-15 years, in the form of exported machines and equipment, building materials, and consumption goods, representing an equivalent of the wages paid in connection with the construction of the plant. The cost of construction should include all investments, including those in transport, power, water, and social infrastructure.¹⁵¹

The repayment of credits takes place in the form of the export of a part of output of that plant, or the branch of industry, which has been constructed with the help of these credits. The agreements concerning cooperation in the construction or enlargement of plants include a long-term commitment by the recipient country "to supply specific quantities of the product in the course of normal international trade transactions."¹⁵² Even as late as the early 1970's, the rate of interest was 2-3 percent per annum. Some East European economists feel that the low-interest rate is one of the main obstacles for the development of this form of international cooperation, particularly because for domestic investments, all countries use the "normative period of recoupment of 5-6 years which corresponds to 12-15 percent interest per annum after the 5 percent rate of amortization has been deducted."¹⁵³ These economists suggest that, in order to stimulate participation in foreign investment, the rate of interest should be at least 6 percent.¹⁵⁴

The first project of this nature was the credit advanced by GDR in 1957 to Poland for the expansion of mining of brown coal for the generation of electricity for export to the GDR.¹⁵⁵ In the years 1957-62, 16 agreements on joint financing of plants were signed by the CMEA countries. They included five projects in Poland, four in the Soviet Union, and the rest in GDR Romania, Bulgaria, and Hungary.

¹⁴⁹ Ibid.

¹⁵⁰ Gwiazdzinski, op. cit., pp. 84-85.

¹⁵¹ Ibid., pp. 132-33; Bogomolov, op. cit., pp. 214-15.

¹⁵² Bogomolov, "Ekonomicheskaja * * *," p. 213.

¹⁵³ S. Polaczek, *Integracja gospodarcza krajów socjalistycznych a handel zagraniczny Polski* (Economic Integration of the Socialist Countries and International Trade of Poland), Warsaw, 1971, pp. 140-41.

¹⁵⁴ Gwiazdzinski, op. cit., p. 133.

¹⁵⁵ Kazer, op. cit., p. 78; Iskra, Kistel, op. cit., p. 87.

About 60 percent of total credits were advanced by Czechoslovakia and 20 percent by the GDR.¹⁵⁶ During that period, Czechoslovakia advanced about 200 million foreign exchange rubles to Poland for the expansion of mining of copper, sulfur, and coal and participated in the construction of an electric power station in Romania, a copper mine in Bulgaria, and in the extraction of potash in the GDR. Czechoslovakia, Poland, Hungary, and Romania jointly financed the construction of a cellulose factory in Braile, Romania. The Soviet Union received from Czechoslovakia "substantial credits for the development of mining facilities to expand the production of iron ore, copper, zinc, lead, and bauxite," 70 million foreign exchange rubles from Poland for the expansion of potash mines in the region which until World War II had formed part of Poland, and credits from Bulgaria, Hungary, GDR, Poland, and Czechoslovakia for the construction of phosphate mines in Estonia.¹⁵⁷

The construction of an international electricity grid and the "friendship" pipeline were major joint investment ventures which, however, did not involve international flows of capital, since each country was responsible for its own section.¹⁵⁸ Another joint investment of this type is the construction of the gigantic hydroelectric power station at the Iron Gate on the Danube, which was started by Romania and Yugoslavia in 1964 and is expected to be completed in 1977.¹⁵⁹

The shortage of raw materials remained a serious problem in the second half of the 1960s, and the International Bank of Economic Cooperation was criticized for not taking an initiative in financing "joint investment programs in individual countries, which would serve the strengthening of the international division of labor."¹⁶⁰ The International Investment Bank was established for this purpose on January 1, 1971, by Bulgaria, Czechoslovakia, the G.D.R., Hungary, Mongolia, Poland, the Soviet Union, and Romania (which, at first declined, joined in 1972). It advanced credits for 5 to 15 years in transferable rubles or exchangeable non-CMEA currencies for investments concerned with the development of specialization and cooperation, the expansion of the raw materials base, and the construction of plants in which all member-countries are interested, especially joint projects. The rate of interest is 4 to 6 percent for loans advanced in the rubles, and the current rate of interest in the world money markets for loans in non-CMEA currencies. The first recipient of credit was Hungary, which received a loan of 12.7 million transferable rubles repayable in 8 years for the enlargement and modernization of a bus factory, 20.5 million, payable in 10 years, for the electrification and modernization of railways and 11.2 million for the enlargement of cotton textile mills. The largest credit, 78 million rubles including 25 million in convertible currencies, was received by Czechoslovakia for the modernization of a truck factory. Poland received 14.6 million rubles, including 10 million in convertible currencies, for the expansion of three engineering factories (electronic calculators, small electric motors, and automotive

¹⁵⁶ V. Lubimov, "Sovremennye mezhdunarodnye ekonomicheskie otnosheniia," (Contemporary International Economic Relations), Moscow 1964, pp. 108-22.

¹⁵⁷ Bogomolov, *op. cit.*, pp. 213-14; Kaser, *op. cit.*, pp. 79-80, 127.

¹⁵⁸ D. Fikus, "RWPG Fakty" (The CMEA Facts), Warsaw, 2d ed., n.d., pp. 111-15, 139-46.

¹⁵⁹ *Ibid.*, pp. 146-48.

¹⁶⁰ M. Deniszcuk, "Problemy integracji socjalistycznej w dyskusji polskich ekonomistów" (Problems of Socialist Integration in the Discussions of Polish Economists), *Handel zagraniczny*, No. 12, 1963, p. 468.

parts).¹⁶¹ All these credits were advanced for projects closely connected with intra-CMEA trade.

The "Comprehensive Plan" not only stresses the importance of joint investments for the advancement of integration, but lists several projects which should be examined in the near future. They are mainly connected with the expansion of production of fuels and ferrous and nonferrous metallurgy: oil, natural gas, iron ore, and a steel mill in the Soviet Union; coal, phosphorus, copper, tin, and molybdenum in Mongolia; manganese in Bulgaria; coal, copper, and tin in Poland.¹⁶²

Implementing the program, the representatives of Bulgaria, the GDR, Hungary, Poland, Romania, and the Soviet Union signed an agreement at the 26th session in 1972 to build a cellulose factory in Ust-Ilim in the Soviet Union with an annual capacity of 500 tons of cellulose. At the 27th session in 1973 a similar agreement was signed to construct jointly an asbestos mine in Kimbavev in the Soviet Union with an annual capacity of 500 tons of asbestos.¹⁶³ Other projects which are considered for implementation in the Soviet Union include the construction of a steel mill in Kursk with an annual capacity of 12 million tons of rolled steel products and the expansion of production of nickel and titanium products.¹⁶⁴

It has been pointed out that, as both the advancement of credit and its repayment are in the form of the supply of commodities, the benefits for the creditor, and the debtor depend not only on the rate of interest and the length of the repayment period, but also on the prices of goods which are supplied in connection with granting credits, as well as those which represent repayment.

In addition, the size of the credit and the share of output committed for export to the creditor country as both repayment and normal export are important.^{165 166} In connection with these matters, there are opinions that the existing arrangements "do not guarantee the elimination of the conflict of interest between the countries which export raw materials and those which import them." The essence of the conflict is that "the latter group of the countries receives high quality raw materials and pays for them with processed goods for which the world prices are high, although their quality of technological and economic parameters are often low in comparison with the average world standards." This conflict has not been eliminated:

The problem of harmonization of the interests of various countries at the present stage in the field of cooperation in the satisfaction of demand for fuels and raw materials far exceeds the boundaries of traditional commercial methods * * *. This problem is not solved by the mutual advancement of credit, which is the practice widely used in the cooperation among the CMEA countries. The credit relations are in their essence a specific type of commercial transaction: buying of raw materials at a future point of time as the repayment of credit with interest in the form of the deliveries of necessary raw materials. The creditor does not participate directly in the production of raw materials and has no influence on the effectiveness of the use of resources which have been

¹⁶¹ L.S., "Miedzynarodowe banki krajow RWPG" (International Banks of the CMEA Countries), *Gospodarka planowa*, No. 10, 1972, p. 631.

¹⁶² The "Comprehensive Program * * *," pp. 257-62.

¹⁶³ L. S., "Rozwój współpracy w dziedzinie planowania," v. 781.

¹⁶⁴ L.S., "Udział Polski w realizacji części programu integracji gospodarczej" (Poland's Participation in the Program of Economic Integration), *Gospodarka planowa*, No. 1, 1973, p. 48.

¹⁶⁵ Gora, Knyzlak, op. cit., p. 177.

¹⁶⁶ J. Belyaev, "O natsionalnykh ekonomicheskikh interesakh v usloviakh sotsialisticheskoi integratsii" (On National Interests Under the Socialist Integration), *Voprosy ekonomiki* (Moscow), No. 4, 1973, pp. 70-79.

invested in a given project, and this fact reduces, of course, interest in expanding these investments.¹⁶⁷

It seems, therefore, that this instrument of integration also has some serious limitations, at least under the present system of intra-CMEA price determination, methods of advancing credits and repayments, and the determination of the rate of interest.

While there has been some international mobility of capital within CMEA, the movements of labor have been only marginal. They exist in the regions close to the Polish-Czechoslovak and Polish-GDR borders. In the GDR, where there has been serious shortage of labor, a few thousand Polish workers are employed and a somewhat larger number of Hungarian workers find seasonal employment. A specific form of international labor movements are the construction contracts accepted by Polish firms in Czechoslovakia and the GDR. The Polish firms use their own construction workers. In effect Poland, which has relatively plentiful labor, specializes in the labor-intensive types of construction, reconstruction, or modernization work which is performed in countries experiencing labor shortage.¹⁶⁸

Although the Czechoslovak and East German representatives have often raised the matter of international labor movements, "in the majority of the member-countries there are some doubts about international mobility within CMEA for economic reasons." Apparently the countries feel that they should utilize at home the benefits of the training of human resources and, for this reason, the countries who could export labor expect to be reimbursed for their expenditures. It is felt that "the problem of international labor movements requires finding a solution in the sphere of economic calculations which would permit a proportional allocation of benefits among the partners who participate in the transaction".¹⁶⁹ The acceptance of this solution would not only be an entirely new approach to international labor movements, but would also imply the state ownership of workers.

Until now international factor movements have not been strong. They seem to be encountering serious obstacles, and it is doubtful that they can play a more effective role under the present system of international payments within Comecon.

4. Scientific and Technical Collaboration

Mutual technical assistance was mentioned in the 1949 communique as one of the main objectives of the proposed Council. The second session, which was held in Sofia later the same year, created a basis for an exchange of technical documentation. Bilateral transfers were the main form of scientific and technical collaboration during the 1950's. There were also reciprocal training arrangements and short-term assignments of specialists. However, this last form was seriously discredited by the presence of a large number of Soviet advisers in all East European countries during the Stalinist period, whose role exceeded that of normal foreign advisers.¹⁷⁰ For some time afterward, this remained a sensitive point. Although the first joint research insti-

¹⁶⁷ *Ibid.*

¹⁶⁸ Iskra, Kistej, *op. cit.*, p. 56.

¹⁶⁹ *Ibid.*, pp. 56-57.

¹⁷⁰ I. Agoston, "Le Marche Commun Communiste," Geneva, 1965, pp. 29-30; Fischer, *op. cit.*, pp. 370-71.

tute was created in 1956 (the Joint Institute for Nuclear Research in Dubna in the Soviet Union), this form of collaboration did not develop on a larger scale during that period. Joint interstate committees or commissions were established for bilateral collaboration.

On the basis of the "Sofia principles" the Soviet Union transferred more than 21,000 complete technological documents to other CMEA countries and accepted about 36,000 East European specialists for training, consultations, or short visits to research institutes, industrial enterprises, or government departments. During the same period, other CMEA countries transferred more than 11,000 complete documents and provided training for 18,000 Soviet specialists.¹⁷¹

Until 1955, the transfer of documentation from the Soviet Union, the assignment of Soviet specialists, and training in the Soviet Union, dominated the scene. Afterward, there was two-way traffic of a more balanced nature. As a Hungarian economist has pointed out, these arrangements did not give the CMEA countries an access to the highest and most modern technology in the early period.

Of the nonmilitary industrial products of the Soviet Union, only a few (though highly important) kinds of productive equipment approached the world standards of the time. The technical level of Soviet products, however, became extremely important for the CMEA countries when, in a few years, the greater part of their foreign trade became dependent on the Soviet Union, the "dominant economy" of CMEA, by its relatively low technological level (in spite of high performances in several branches) had an adverse influence on their economy.¹⁷²

In 1962, as a part of general efforts to increase the "international Socialist division of labor," the decision was made to prepare an overall plan of scientific and technological research of all member countries, and a standing commission for coordination of scientific and technical research was established in Moscow. The commission prepared an "Interim Methodology of the Organization of Collaboration Among the Interested Countries in the Field of the Coordination of Important Scientific and Technical Research." The executive committee approved this document in 1964, and all member countries and Yugoslavia (which started to participate in some activities of CMEA in that year) accepted it as a basis for multilateral collaboration. The main purpose was to eliminate unnecessary duplication in research. Because of the similarity in development strategies, the number of identical research projects included in the national plans was very large, and considerable benefits could be achieved for each country by a division of labor and narrowing down of the national "research front." The second objective was the concentration of scarce personnel and resources on the most crucial problems of economic development.¹⁷³

METHODOLOGY

The "Interim Methodology" outlined in an approach to the coordination of research which is still in force. During the first stage, proposals are prepared by the participating countries on the basis of their national plans for scientific and technical research.

¹⁷¹ J. Metera, Z. Ziśkowski, "Współpraca naukowo-techniczna Krajów RWPG" (Scientific and Technical Collaboration Among the CMEA Countries), Warsaw, 1972, pp. 162-63.

¹⁷² Aush, op. cit., p. 36.

¹⁷³ Metera, Ziśkowski, op. cit., pp. 42-44.

They are subsequently discussed in bilateral and multilateral consultation. During the second stage, the standing commission for coordination of scientific and technical research, and, since 1971, the Committee for Scientific-Technical Collaboration, prepares, after consulting with various sectoral standing commissions, a proposal on "the main direction of research" and presents it to the executive committee for approval. During the third stage various commissions elaborate proposals for the coordination of research. The plan is, in effect, a list of national proposals which have been approved and formulated as firm commitments by the participating countries. It includes sectoral plans, which are prepared and approved by the appropriation sectoral standing commissions, which subsequently act as the coordinating bodies for their respective parts of the plan. The overall summary plan is approved by the executive committee. It is now controlled by the Committee for Scientific-Technical Collaboration (previously by the standing commission which it replaced). The plan is divided into the 5-year and annual, or "operative," plans of research activities.¹⁷⁴

On this basis, the plans were prepared for 1964-65, 1966-70, and 1971-75. The first summary plan included 154 research projects. The Soviet Union participated in 139 of them, the GDR in 125, Czechoslovakia in 123, Poland in 122, Hungary in 101, Bulgaria in 97, and Romania in 69. The second plan included 185 projects. The Soviet Union participated in 169, the GDR in 155, Poland in 153, Czechoslovakia in 150, Bulgaria in 124, Hungary in 118, and Romania in 66. The third plan included 217 projects.¹⁷⁵

This highly bureaucratic and time- and resource-consuming process of coordination only partly succeeded. Because of the conflicts of interest and the difficulty in establishing a fair share of expenditure for each participating country, the member-countries often preferred to go ahead with their own research rather than participate in a complicated coordinated program.¹⁷⁶ There was also a lack of a joint center for documentation and scientific and technical information. Some East European economists believed that, for this reason, the flow of information among the CMEA countries was not sufficient, and that there was "duplication of their efforts and waste of financial and other resources".¹⁷⁷

In the middle of the 1960's, the extent of the technological gap between the advanced capitalist countries and CMEA became apparent. Until then the member countries were not particularly interested in the purchase of licenses from the West. However, in 1965 alone, the Soviet Union, Czechoslovakia, Poland and Romania each purchased about 20 licenses, and interest has been growing since. For example, Hungary, which between 1950 and 1968 bought only 75 licenses for her engineering industry, envisaged the purchase of 100 licenses for that industry in the plan for 1971-75.¹⁷⁸

In 1965, the coordination of license purchases was inaugurated, and a gradual process of integration of research activities began.¹⁷⁹ In all

¹⁷⁴ Ibid., pp. 44-45, 93.

¹⁷⁵ Ibid., pp. 89-90.

¹⁷⁶ Ibid., p. 184.

¹⁷⁷ P. Bozyk (ed.), *Integracja ekonomiczna krajów socjalistycznych* (Economic Integration of the Socialist Countries), Warsaw, 1970, p. 75.

¹⁷⁸ B. Zielińska, "Plany pięcioletnie krajów RWPG (1971-75)" (The 5-Year Plans of the CMEA Countries for 1971-75), *Gospodarka planowa*, No. 9, 1971, p. 523.

¹⁷⁹ Meterna, Ziolkowski, op cit., pp. 60-61, 162.

CMEA countries, the percentage of national income allocated for research and development increased considerably between 1960 and 1968: from 2.7 to 3.6 percent in the Soviet Union, from 2.4 to 3.3 percent in Czechoslovakia, from 1.8 to 3.0 percent in the GDR, from 1.7 to 2.4 percent in Hungary, from 1.3 to 2.2 percent in Poland, and from 1.1 to 1.4 percent in Bulgaria. Romania planned to allocate 1.0 percent in 1970.¹⁸⁰

A symposium was organized in Moscow in 1968 which was devoted to the discussion of methods needed to increase the effectiveness of scientific and technical collaboration. Speaking at the symposium, N. Fadeyev, the Russian secretary-general of Comecon complained about a number of weaknesses of the existing practice: the lack of decisiveness as to the topics assigned and the parties who were expected to fulfill specific tasks; delays in the completion of research; the lack of "complete and operative" exchange of information; insufficient contacts among the researchers and the scientific institutes; and the failure to elaborate a system of economic calculations among the cooperating research units.¹⁸¹

A year earlier the 30th meeting of the executive committee approved a system of payments for the received results of research, whenever these results included original inventions or represented the standard of technology equal to the world standards which would make it possible to sell the products in the advanced capitalist markets.¹⁸² The decision was an inevitable development that was closely connected with the purchases of licenses from the West. It also represented a recognition that financial incentives are necessary in order to achieve progress in research. The 23d session, held in 1969, admitted that while such forms of collaboration as consultations, visits by scholars, training, conferences, et cetera, functioned well, the results of all cooperation in research were much less satisfactory, particularly for the key problems which determine technological progress, large-scale methods and reduction of costs at present and in the future. The methods of cooperation used by the CMEA agencies were criticized as "inflexible, nonoperative, and involving too many stages".¹⁸³

The session also recommended the establishment of new joint research units and the creation of direct links between the national units on the basis of special agreements and contracts. In 1970, the executive committee, implementing the decisions of the 23d session, issued five documents which supplemented the "Methodology" with some new regulations on the functions, rights and obligations of the coordinating agencies, the nature of agreements and contracts, the establishment and operation of joint research units, and payments for the results of research.¹⁸⁴ The "Sofia principles" have been retained only for the exchanges of some relatively unimportant technological documentation.

It has, however, been noted that the acceptance of the principle of payments for the results of research has not accelerated exchanges among the member countries. Among the reasons given are such factors

¹⁸⁰ J. Kleer, *Wzrost intensywny w krajach socjalistycznych* (An Intensive Growth in the Socialist Countries), Warsaw, 1972, p. 185.

¹⁸¹ J. Metera, *Współpraca naukowo-techniczna krajów RWPG* (Scientific and Technical Collaboration Among the CMEA Countries), Warsaw, 1969, p. 130.

¹⁸² Metera, Ziółkowski, op. cit., p. 184.

¹⁸³ Ibid., pp. 170-1.

¹⁸⁴ Ibid., pp. 46-47.

as: the difficulty of establishing the cost of research on which reimbursement is based, and of recalculating it into transferable rubles because of unrealistic exchange rates; the lack of the comparability of prices in different countries; and "spontaneous increases in the costs of projects" during the implementation of contracts because of delays in their completion.¹⁸⁵

A number of joint organizations were established at that time: an International Laboratory of Low Temperatures and Strong Magnetic Fields in Wroclaw, Poland, in 1968; an International Center of Scientific and Technical Information in Moscow in 1969 and an International team of scientists at the Institute of Administration in Moscow, in 1970.¹⁸⁶

The "Comprehensive Program" attaches great importance to scientific and technical collaboration and enumerates a wide range of measures, which include mutual consultations on the national policies for science and technology; preparation of long-term forecasts on future scientific and technological developments; joint planning and joint implementation of research, exchange of information and cooperation in training of scientists and technicians. Special emphasis is put on the work of the coordinating centers, organized on the basis of bilateral and multilateral agreements, and on international teams of scientists, international laboratories at the national institutes, international institutes, and international associations which would be involved in both research and development and production.¹⁸⁷

Commenting on the program, a Polish economist has expressed the following opinion:

The success of the joint efforts of the CMEA countries in the field of scientific and technical collaboration depends, to a considerable extent, on the solution of a number of financial and legal problems and on the organization of the flow of information. Some steps in this direction have been made. The principle has been accepted that the transfer of the results of research can take place, depending on a given agreement, either without payment or on the basis of a financial recompensation.¹⁸⁸

It seems that the future scientific and technical collaboration within CMEA depends not only on the sufficiently strong financial incentives but also on the unification of methods which are used for the calculation of prices and on the introduction of realistic exchange rates. It is doubtful that any significant improvement in the situation, which is regarded as unsatisfactory in many respects,¹⁸⁹ can take place in the absence of a major reform of the CMEA system of cooperation and further economic reforms in the member-countries.

5. Market Forces

In a free enterprise economy integration is effected mainly through the mechanism of international trade, which may be associated with international factor movements and the coordination of economic and

¹⁸⁵ Ibid., pp. 184-85.

¹⁸⁶ Ibid., pp. 123-29.

¹⁸⁷ "Comprehensive Program," pp. 214-21.

¹⁸⁸ Skłibiński, "Kompleksowy program * * *," p. 649.

¹⁸⁹ J. Ptaszek, "Współdziałanie w ramach RWPG" (Cooperation within CMEA, *Zycie gospodarcze*, No. 30, 1971, v. 7).

social policies. This may also happen in a socialist market economy. However, in a socialist system in which central planning plays a dominant role, and market forces operate within a relatively narrow range, international trade cannot lead the process of integration. It is an outcome of planned decisions, not only in the field of international trade, but also in other sectors of the economy.

In CMEA, the mechanism of integration is provided by the coordination of plans, collaboration in production with some limited factor movements, and scientific and technical collaboration. International trade follows the development in these areas. The system of planning of international trade as it existed in the past, with an almost complete separation of the domestic market from the outside world, created some additional obstacles for the progress of integration. Some improvements in the planning and administration of international trade have been introduced in all CMEA countries. Differences among individual countries in this respect are now quite considerable, but it is the trading partner which has made the smallest advance that determines the pace for the trading bloc as a whole. In the small countries, the role of international trade is relatively important, and they have a strong inducement to increase its efficiency.¹⁹⁰ In the Soviet Union, trade represents only a small fraction of total production. It is, therefore, doubtful that the country which dominates intra-CMEA trade would be particularly anxious to liberalize its international trade mechanism. It is quite likely that it will be the slowest partner. For this reason it is impossible to expect much trade liberalization within the bloc although the "comprehensive program" envisages some movement in this direction.

The measures which are mentioned in the program include the creation of a certain proportion of trade which would not be limited by quotas, and balancing of trade on a multilateral basis. However, the main stress is put on reciprocal deliveries of goods based on long-term agreements and annual protocols which "will promote the fulfillment of national economic plans and the planned formation of proportions in the development of the national economies of CMEA nations".¹⁹¹ International trade will, therefore, continue to have a supporting role. It will be more than simply "an instrument with the help of which the national economy could be supplied with necessary commodities which were in short supply," as it had been described until the middle of the 1950's.¹⁹² It can be used to reduce social outlays which are necessary to achieve a planned level and structure of national income¹⁹³ and can even be recognized as "a powerful supplementary factor in the growth of income."¹⁹⁴ It will not, however, be accepted as a determinant of the rate of growth and of the structure of the economy as both are determined by the planners.

¹⁹⁰ Z. M. Fallenbuchl, "The Role of International Trade in the Czechoslovak Economy," *Canadian Slavonic Papers*, No. 4, 1968.

¹⁹¹ "Comprehensive Program," p. 233.

¹⁹² J. Wierzbowski, "Z problemów socjalistycznej polityki handlowej" (On the Problems of the Socialist Trade Policy. *Handel zagraniczny*, No. 10, 1964, p. 476.

¹⁹³ W. Trześciakowski, *Metody wyznaczania kursu granicznego i uproszczone metody analizy efektywności handlu zagranicznego* (Methods of the Determination of the Marginal Rate of Exchange and of the Simplified Analysis of the Effectiveness of International Trade), "Prace i materiały Zakładu Badań Konjunktury i Cen Handlu Zagranicznego," No. 3, 1963, p. 5.

¹⁹⁴ Medvedkov, op. cit., p. 51.

The "comprehensive program" also has a section dealing with "improvements in monetary and financial relations" which includes measures to strengthen the role of the CMEA collective currency (convertible rubles), changes in the exchange rates of national currencies, and expansion of multilateral payments. It will be interesting to see how much progress will actually be made. Without convertibility of commodities, the quantities of which are determined by the plans, the convertibility of currencies is impossible. On the other hand, it is quite likely that the exchange rates will be made more consistent with one another within the bloc.

Although the prices will not fully reflect the supply and demand conditions in the member countries and in the bloc as a whole, they most probably will at least be based on similar principles in all CMEA countries. Credits may play a greater role, and the rates of interest may well be increased in the future to encourage "joint investment" in other CMEA countries.

The integration process will probably advance gradually and slowly as the result of the coordination of plans, joint planning of selected sectors, joint international associations, firms, and scientific and technical institutes. Even with the difficulties created by the lack of free operation of market forces, a considerable degree of integration may be achieved, as has been pointed out above, on the sectoral basis without any supranational planning agency. Conflicts of interest, resulting from impossibility of calculating costs and benefits in various joint ventures, will remain, but they will probably be resolved on a political level by the process of bargaining in which various economic and non-economic advantages will be balanced against disadvantages in a sort of give-and-take process.

It is doubtful that this will be an efficient integration, certainly no more efficient than the dominant economy with which gradually smaller economies will be integrated. It will not, therefore, contribute much toward the establishment of an "intensive pattern of development" throughout the bloc, but it will probably keep costs relatively low because of economies of scale inherent in producing for the bloc as a whole, a certain degree of specialization and cooperation in production, established mainly through administrative measures "from above" rather than through microeconomic decisions of enterprises "from below," and some division of responsibilities in scientific and technical research.

It will not be a socialist economic integration through the market, as many East European economists have been hoping. Nevertheless, there will be a movement toward establishing one economy, which will be directed by the strongest partner, although for political reasons smaller partners may continue to receive many concessions. The extent of these concessions may depend on the bargaining power of each member country, in the widest sense, including political factors, and diplomatic skills and cunning of its leaders.

SOVIET ECONOMIC POLICY IN EASTERN EUROPE

By PAUL MARER*

CONTENTS

	Page
I. Introduction	135
II. Capital Transfers	138
Reparation-type transfers	139
East Germany	139
Poland	139
Hungary, Romania, and Bulgaria	140
Soviet-East European joint enterprises	141
Background	141
The special case of uranium	141
Operation and dissolution	142
Soviet aid to East Europe	143
Toward a balance sheet of East European subventions and Soviet aid	143
Subvention	144
Soviet aid	144
Balance of aid and subvention	145
III. Terms of Trade	145
Background and interpretation	145
Price determination in CEMA	145
Interpretation	146
Empirical evidence	147
Terms of trade	147
Gains from trade	149
IV. Commodity Composition	151
The first postwar decade	151
Developments since the mid-fifties	154
The precarious supply of oil	155
V. Conclusions	159
Appendix tables	161

I. INTRODUCTION

The most significant general factor in the relations between the Soviet Union and the countries of Eastern Europe (Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Romania) is the large disparity between the population, territory, resource endowment, and military power of the U.S.S.R. and those of the countries of East Europe, individually and collectively. Given these differences, and given Soviet policy, intrabloc relations involving the U.S.S.R. are

*This study represents a substantial revision and expansion of an essay presented at the International Studies Association Conference in New York, March 15-16, 1973, whose proceedings will appear in Steven Rosen and James Kurth (eds.), "Testing Theories of Economic Imperialism (Lexington, Mass.: DC Heath & Co., 1974). The author is grateful for permission to use materials from that earlier version. I am indebted to Gregory Grossman and John P. Hardt for valuable suggestions, to Robert W. Campbell and William J. Siffin for detailed comments on a draft version, to John W. Tilley for research assistance and to Edward A. Hewett and Vaclav Holesovsky for permission to cite from their unpublished work. Responsibility for errors and opinions is solely the author's. The International Development Research Center of Indiana University has supported the research.

inevitably asymmetrical. They are, in the most general terms, marked by the dominance of a superpower and the dependence of six relatively small client states.¹

Any such relationship of asymmetrical interdependence offers opportunities for the strong to take advantage of the weak. In the political-military sphere the East European nations have certainly been subordinated to the Soviet Union. An interesting question is, therefore: has the Soviet Union also asserted its power to dominate the East European countries economically? Has the Soviet Union exploited its political-military position for its own economic advantage?

The logic of the situation would seem to support an unhesitating affirmative, as do the well-documented cases of economic coercion by the Soviets under Stalin, and of Soviet military intervention in East Germany in 1953, in Hungary in 1956, and in Czechoslovakia in 1968.

Recent research, however, reveals some rather surprising evidence on this matter. It shows that the economic relationship between the Soviet Union and East Europe after Stalin has changed substantially, so much so that it is no longer to the advantage of the dominant power. Evidence indicates that there is a net cost to the Soviet Union which is measurable, large, and increasing—so that these costs now constitute a significant pressure for some type of economic disengagement by the Soviets from East Europe.

This paradoxical relation between the political and economic aspects of the Soviet-East European relationship has been noted by a few observers, among them David Granick, J. Michael Montias and John Hardt.² This study presents new systematic evidence on the subject, based on the author's own work and on recent scholarship by others, including Edward A. Hewett.³ Some of these new findings have not yet appeared as part of mainstream scholarship.

Our principal findings show that—

Until after Stalin's death in 1953, the Soviet Union's political domination of East Europe was accompanied by conventional types of economic extraction. The size of the unrequited flow of resources from East Europe to the Soviet Union was approximately equivalent to the flow of resources from the United States to West Europe under the Marshall Plan.

Since the mid-1950's, the Soviet Union has not obtained unrequited resource transfers from East Europe. In fact, the U.S.S.R. is paying an increasingly steep price for the continued dependence of the East European countries on the Soviet Union. This net cost to the Soviets is reflected in adverse and deteriorating terms of trade. One form of that disadvantage is a highly

¹ Yugoslavia is excluded from the study because its relationship with the Soviet Union since the Stalin-Tito break has differed in substance from that of the European members of the Council for Mutual Economic Assistance.

² David Granick, "Economic Relations With the U.S.S.R.," in N. J. G. Pounds and N. Spulber, *Resources and Planning in Eastern Europe*, Bloomington: Indiana University Publications, 1957, pp. 129-148; J. Michael Montias, "Obstacles to the Economic Integration of Eastern Europe," *Studies in Comparative Communism*, No. 314, 1969, pp. 38-60; and John P. Hardt, "East European Economic Development: Two Decades of Interrelationships and Interactions with the Soviet Union," in *Economic Development in Countries of Eastern Europe*, a compendium of papers submitted to the Subcommittee on Foreign Economic Policy of the Joint Economic Committee, U.S. Congress, Washington, D.C.: U.S. Government Printing Office, 1970.

³ Edward A. Hewett, "Foreign Trade Prices in the Council for Mutual Economic Assistance." London: Cambridge University Press, 1974.

unfavorable commodity composition of that trade. The costly flow of Soviet exports to East Europe forces the U.S.S.R. to forgo purchases of urgently needed machinery and other commodities from Western countries, while East European countries are unable to supply them.

These findings fail to accord with the distribution of political power within the bloc. They also run counter to the logic one would expect to find, on the basis of supply and demand considerations, within the Council for Mutual Economic Assistance (CEMA). At prevailing CEMA prices there are within the bloc acute shortages of primary products and large surpluses of manufactures, particularly machinery, much of it not modern. Within the bloc the Soviet Union is the only net supplier of primary products and the principal net importer of machinery and other manufactures, which should reinforce the strong potential bargaining power inherent in its superpower status.

The paradox can only be explained by considering the economic and political costs and benefits of intrabloc relations as interacting factors and joint products. A framework for explaining how a power-oriented nation can use commercial policy to advance its ends was developed three decades ago by Albert Hirschman. In this view foreign trade has two principal effects upon the power position of an imperialist country. First, economic gains from trade increase the economic power of the dominant country. Hirschman calls this the supply effect. Second, foreign trade becomes a direct source of power if other countries become economically dependent on the dominant country and thus provide it with an instrument of coercion. Hirschman calls this the influence effect. The power to interrupt or redefine commercial relations with any country is the root cause of the influence, or power position which the dominant country acquires over other nations.⁴

The influence effect requires that the dependence of the trade partners must be greater than that of the dominant power. In such a situation dependent countries will very likely grant the dominant country certain economic, political, and military advantages in order to maintain stable trade relations. Such dependency is enhanced to the extent that the smaller countries cannot dispense with trade with the dominant country, or replace it as a market and source of supply. In the case of CEMA, the larger difficulties lie with the smaller countries. Their ability to divert trade to other countries is limited by monopolistic and monopsonistic trading conditions: "Country A may try to change the structure of country B's economy so as to make it highly and artificially complementary to A's own economy * * * [creating] what might be called exclusive complementarity."⁵ This dependence was created during the early postwar period. For the more developed East European countries, it lies primarily on the export side; for the less developed East European countries, it is primarily on the import side.

In addition to creating exclusive complementarities, there are also price considerations. Hirschman argues:

If by some preferential treatment A induces B to produce a commodity for export, A becomes B's only market, and the dependence of B upon A thus created

⁴ Albert O. Hirschman, "National Power and the Structure of Foreign Trade." Berkeley: University of California Press, 1945.

⁵ *Ibid.*, p. 81.

may be well worth to A the economic cost involved in not buying in the cheapest market. In general, any attempt to drive the prices of exports from trading partners above world prices * * * will fit in with the policy of increasing their dependence [pp. 31-32].

One final point, again citing Hirschman :

Is there any means of extending [export dependence] to imports as well? The policy of bilateralism is perfectly fitted to take care of the problem. Indeed, a real impossibility of switching exports induces a technical impossibility of switching imports. In this way the device of bilateralism is seen to be an important link in the policies by which the aim of maximum power through foreign trade may be attained [p. 33].

Bilateralism is a principal feature of intrabloc trade. Several East European countries are seeking institutional reforms which would promote multilateral arrangements, yet the bilateral trading framework continues to be advocated by the Soviet Union.

This study examines the evolution of certain aspects of Soviet-East European economic relations during the postwar period. Three related topics are discussed: the size of unrequited capital transfers during 1945-60, the terms of trade, and the commodity composition of exports and imports. These topics do not exhaust the relevant issues, but they are among the most important.

II. CAPITAL TRANSFERS

The probable Soviet objectives in East Europe during the first post-war decade were military: to deny the area to Germany (whose re-emergence was a potential long-term threat), and later, to potentially hostile Western powers; political: to insure that individual countries would not be controlled by Governments hostile to the U.S.S.R.; and economic: to use the resources of the area for Soviet reconstruction and industrialization via reparations and other forms of economic extraction. To be sure, reparations-type deliveries by the ex-enemy countries of East Germany, Hungary, Bulgaria, and Romania must be viewed in the light of the destruction inflicted on the Soviet Union during the war.⁶

This section presents a cumulative balance sheet of (a) reparations and other forms of subvention transfers from East Europe to the U.S.S.R. and (b) Soviet foreign aid to these countries. The year 1960 was chosen as a dividing line, as probably the last year by which transfers related to the war were settled.⁷ Until 1955 resources flowed primarily from East Europe to the U.S.S.R. In the second half of the 1950's, there was a reverse flow which can be viewed as partial compensation for earlier extractions. Thus it is proper to discuss both flows in the same context. The frequency and importance of subvention- and aid-type transfers have diminished considerably since 1960.

In this balance sheet, no account is taken of several types of transfers, potential or foregone, conditioned by dependence on the U.S.S.R. These include the sacrifice of Marshall plan aid, the aid that East

⁶ Zbigniew K. Brzezinski, "The Soviet Bloc: Unity and Conflict." New York: Praeger, 1961, pp. 4-5.

⁷ The year 1960 is the last year in which the U.S.S.R. cancelled debts incurred right after the war, 1959 the last year in which it cancelled reparations obligations, 1958 the last year in which "joint" companies in East Europe were released and perhaps the last year in which ex-enemy countries contributed significantly to the support of Soviet troops on their territory.

Europe has been obliged to provide to other socialist countries and to the third world, the net value of blueprints and licenses provided free of charge, the subsidies that might be involved in a cumulative trade surplus, and the implicit subsidies that may result from discriminatory noncommercial exchange rates used in settling invisible transactions.⁸

Reparation-Type Transfers

East Germany.—The Soviet Union demanded \$10 billion of reparations at prewar prices. In the absence of an agreement with the Allies, it proceeded unilaterally to collect from the Eastern zone. Reparations took the form of (1) "official" dismantling of industrial installations (as well as conscription of much timber and livestock in six waves from 1945 until the spring of 1948), whose rough order of magnitude is estimated at \$4 billion in 1955 prices, representing one quarter or more of East Germany's postwar industrial capacity;⁹ (2) reparation deliveries to the Soviet Union from current production until the end of 1953 which, though reduced twice, are estimated as over \$6 billion in current prices; (3) deliveries to the Red army stationed in Germany until the end of 1958, estimated at about \$4 billion in current prices; and (4) other deliveries, such as uranium (1946-60) and inventory depletion of expropriated German companies just before they were returned in 1952-53, for an estimated combined total of more than \$4 billion in current prices.¹⁰

East Germany's total reparation-type deliveries to the Soviet Union are thus estimated to have amounted to about \$19 billion (most estimates range between \$10 and \$25 billion), which represented from one-fifth to one-third of East Germany GNP during the first 8 years after the war.¹¹ This is a large enough transfer to be important to the U.S.S.R. According to one calculation, East Germany reparation deliveries in 1950 amounted to about 3 percent of Soviet national income,¹² although the percentages during the early postwar years were probably higher. East Germany of course lost much more than the Soviet Union gained because of wasteful dismantling of installations.

Poland.—Although not an ex-enemy country, Poland made two transfers to the U.S.S.R. in connection with German reparations. First, even though according to an agreement signed in Moscow on August 16, 1945, the Soviets renounced all claims to German property in Poland, including those located on former German territory, much industrial and transport equipment and livestock were removed from the new Polish territories both before and after the signing of the agreement, as revealed by a Polish publication in 1957.¹³ Second, according to the agreement, German reparations to Poland amounting to 15 percent of total German reparations to the U.S.S.R. were to be handled by the

⁸ See Paul Marer and John Tilley, "Tourism," section III. In this Compendium.

⁹ Heinz Köhler, "Economic Integration in the Soviet Bloc." New York: Frederick A. Praeger, Inc., 1965, pp. 11-17; and Edwin M. Snell and Marilyn Haiper, "Postwar Economic Growth in East Germany: A Comparison with West Germany," in *Economic Developments in Countries of Eastern Europe*, op. cit.

¹⁰ H. Köhler, op. cit., table 1.

¹¹ H. Köhler, op. cit., pp. 33-35.

¹² P. J. D. Wiles, "Communist International Economics." New York: Frederick A. Praeger, Inc., 1969.

¹³ The Polish publication is cited in a Jan Wszelaki, "Communist Economic Strategy: The Role of East-Central Europe." New York: National Planning Association, 1959.

Soviet Union. In return for this service, Poland agreed to deliver to the U.S.S.R. each year for the duration of the reparations large quantities of coal at a special low price, \$1.25/ton, somewhere in the neighborhood of one-tenth of the world market price. [Why the U.S.S.R. should have been compensated by Poland for German reparations to Poland is not clear.] Even during the early years, apparently, Soviet deliveries of German reparations to Poland amounted to much less than the agreed 15 percent,¹⁴ and deliveries stopped altogether in 1948. Nevertheless, Polish coal deliveries at concessionary prices continued, apparently until the mid-1950's. After the autumn 1956 upheavals in Poland, the Soviet Government acknowledged "past relations of inequality among Socialist states" and in November 1956 agreed to a \$626 million reimbursement, in the form of canceling Poland's debt to the Soviet Union.¹⁵ This amount, however, reportedly represented less than half of Poland's claim on the U.S.S.R. on the reparations account.¹⁶ But perhaps the real issue to Poland was that by 1956 coal was no longer in short supply on the world market so that whatever chance Poland had earlier to earn hard currency had passed, and for this reason too the compensation seems inadequate.

Hungary, Romania, and Bulgaria.—The Soviet Union also required reparations from Hungary and Romania¹⁷ in the form of (1) deliveries from current production: \$200 million from Hungary (mainly metallurgical products) and \$300 million from Romania (mainly crude oil and derivatives), with actual deliveries subsequently reduced to \$134 and \$266 million, respectively.¹⁸ The amounts were fixed in gold dollars, that is, in goods valued at 1938 prices. Together with especially low accounting prices during the early years, this made the value of deliveries at current prices perhaps double the nominal dollar amount.¹⁹ (2) Payments to the Soviet Union of debts incurred by these states to Germany during the war (while their claims on Germany were canceled): \$200 million was claimed from Hungary alone, of which \$45 million was delivered.²⁰ (3) Additional deliveries to compensate for equipment and objects removed from Soviet territory and for supplies consumed by troops in their zone of occupation during the war; more than \$500 million was originally claimed from Romania alone, of which almost \$200 million was delivered.²¹ (4) Until at least the latter half of the fifties, supplying the Soviet Army stationed in these countries. In addition, during the early years there was considerable dismantling of industrial property (as well as the usual "trophy campaign" by troops). A very rough estimate would place the value at \$1 billion in Romania and Hungary each.²²

¹⁴ J. Wszelaki, op. cit., p. 70.

¹⁵ Marshall I. Goldman, "Soviet Foreign Aid," New York: Frederick A. Praeger, Inc., 1967, p. 7.

¹⁶ J. Wszelaki, op. cit., p. 70.

¹⁷ Reparations were also levied on Hungary payable to Czechoslovakia and Yugoslavia (\$50 million each) and on Bulgaria payable to Yugoslavia and Greece (\$25 and \$50 million), stated in 1938 gold dollars [Nicolas Spulber, "The Economics of Communist Eastern Europe," Cambridge, Mass., and New York: The Technology Press of M.I.T., and John Wiley & Sons, Inc., 1957, p. 39].

¹⁸ N. Spulber, op. cit., p. 167.

¹⁹ Reparations deliveries represented a substantial portion of budget expenditures in early postwar years, absorbing 26.4 percent of the Hungarian and 37.5 percent of the Romanian budgets in 1946-47 and 17.8 percent and 46.6 percent, respectively, in the following year [N. Spulber, op. cit., p. 179].

²⁰ N. Spulber, op. cit., p. 172.

²¹ N. Spulber, op. cit., p. 176.

²² J. Wszelaki, op. cit., p. 69.

No formal reparations were requested by the Soviet Union from Bulgaria, and no industrial equipment was removed from that country. According to one source, however, Soviet transfers took the form of forced exports of foodstuffs and the profits of Soviet-Bulgarian joint companies, which are discussed next.

Soviet-East European Joint Enterprises

Background.—Before and during the war one aspect of Germany's strong economic penetration eastward was its acquisition of substantial financial and operating assets in east central Europe. At the end of the war the Allied countries, Czechoslovakia, Poland, and Yugoslavia, recovered these assets while in the ex-enemy countries the German assets were transferred to the Soviet Union and became the basis for joint Soviet-Hungarian, Soviet-Romanian, and Soviet-Bulgarian enterprises. The Soviets contributed the assets formerly owned by German interests and subsequently some investment goods, while the bloc partner delivered additional capital and most of the labor and material inputs (although each party supposedly contributed half of current outlays), with *de facto* management firmly in Soviet hands. In 1946-47 Yugoslavia voluntarily agreed to participate in two joint companies with the Soviets in river navigation and civil aviation.

The joint navigation company, Juspad, in competition with the wholly Yugoslav-owned State River Shipping Co., entered into shipping agreements with Soviet and other joint Soviet-East European shipping companies, charging, over the strong objection of the Yugoslav partner, extremely low rates. Moreover, by the time of Juspad's liquidation in 1949, the Soviet partner had invested less than 10 percent of the nominal capital it was supposed to, whereas the Yugoslavs contributed 137 of the best craft they had, which represented 76 percent of the capital they were obligated to invest. Juspad's capital stock was owned 50-50 by the two partners, and profits were also distributed evenly.

These joint companies gave the U.S.S.R. controlling positions at some key economic points in the four countries, with the relative importance of these enterprises the greatest in Romania, somewhat less in Hungary, and smaller in Bulgaria and Yugoslavia.²³ In East Germany, 213 enterprises originally earmarked under reparations to be shipped to the Soviet Union, mostly in basic and metal-working industries, were transferred to Soviet ownership and operated in Germany as Soviet enterprises,²⁴ in many respects similarly to the joint enterprises in other bloc countries.

The special case of uranium.—An important special case is Soviet exploitation of the uranium resources of East Germany, Czechoslo-

²³ In Romania about 400 commercial and industrial enterprises (mainly in oil prospecting, drilling and processing, coal mining, air and river transport, metalworking, and banking and insurance) were taken over and consolidated into approximately 15 joint companies. In Hungary about 200 companies (mainly in bauxite mining, processing and related operations, oil and other minerals, and air and river transport) were organized into half a dozen joint companies. In Bulgaria joint partnerships were established in mining, civil aviation, shipbuilding, and construction [N. Spulber, *op. cit.*, pp. 185-194].

In 1948, exclusively Soviet and Soviet-Hungarian firms employed just under 4 percent of Hungary's total gainfully employed in manufacturing [Ibid., p. 189].

²⁴ H. Köhler, *op. cit.*, p. 17.

vakia, and Hungary. In East Germany the prospecting and mining of uranium was started by a Soviet company, Wismut, in 1945. Until the end of 1953, all ore deliveries were credited (at an unknown price) to the reparations account. In 1954 Wismut became a joint Soviet-German enterprise (as far as it is known to me it still is) with the total output being shipped to the Soviet Union.²⁵

In Hungary and in Czechoslovakia (not an ex-enemy country), the uranium mines have been operating as joint companies.²⁶ We obtain some insight about how the Soviet Union handled these transactions, at least under Stalin, from the testimony of Czechoslovakia's Deputy Minister of Foreign Trade, frequently in charge of his country's trade negotiations with the Soviet Union until 1949. He relates that even though the general principle was to conduct intrabloc trade at world market prices, for uranium the Soviets were willing to pay only the much lower price of cost plus 10 percent. Of the November 1947 negotiations he writes:

My argument was that we paid world market prices for wheat and for [iron] ore from Krivoi Rog [U.S.S.R.] and that I could not see why we should accept other than the world market prices for what was practically our only natural wealth. After the war the price of uranium was very high and thus considerable sums were involved. Price was all the more important at this juncture, as we were being expected to increase the amount we mined. * * * [After February 1948] the whole uranium question was taken over by Gottwald's presidential chancellery and * * * after that the subject of uranium ore became taboo and [discussion of it] even the cause of criminal action.²⁷

Operation and dissolution.—From all available evidence, the Soviet-owned and the mixed companies were run to provide maximum benefit to the Soviet economy at the expense of local interests. The Soviet advantage derived from arbitrary high valuation of its contribution, the enterprises' preferential legal, tax, foreign exchange, and material supply status, and discriminatory pricing in favor of Soviet customers.²⁸ These enterprises thus represented a visible burden imposed on these countries by the U.S.S.R., although the resulting resource transfer is very difficult to quantify.

After Stalin's death the Soviets made the political decision to relinquish these highly profitable enterprises (except uranium) by selling their share to the respective countries—a decision no doubt designed to reduce pent-up popular dissatisfaction throughout the bloc which erupted in the June 1953 East German riots. Most of the agreements were signed in 1953–54, and in many cases the resulting financial obligation was converted into loans payable with goods in installments over a period of years.²⁹ After the Polish and Hungarian revolts of

²⁵ *Ibid.*, p. 23.

²⁶ M. Goldman, *op. cit.*, p. 19.

²⁷ Eugene Loebel, "Sentenced & Tried: The Stalinist Purges in Czechoslovakia," London: Elek Books Ltd., 1969.

²⁸ N. Spulber, *op. cit.*, pp. 182–223; M. Goldman, *op. cit.*, pp. 10–22; and "White Book on Aggressive Activities by the Governments of the U.S.S.R., Poland, Czechoslovakia, Hungary, Rumania, Bulgaria and Albania toward Yugoslavia." Belgrade: Government Printing Office, 1951.

²⁹ In East Germany nearly half of the plants, but apparently not including the most important ones, were returned in 1947, the rest in stages by 1953. Those returned before 1952 were paid for by East Germany in cash or equivalent; the remaining ones were turned over free of charge after the 1953 riots [H. Köhler, *op. cit.*, p. 47].

The Soviet-Yugoslav companies were liquidated on Yugoslav initiative in 1949. Yugoslav charges concerning Soviet exploitation through these companies contributed significantly to the conflict between the two countries during the late 1940s [White Book, *op. cit.*; and Robert O. Freedman, "Economic Warfare in the Communist Bloc." New York: Praeger Publishers, Inc., 1970, Chapter 2].

1956 the Soviets cancelled unpaid debt obligations. These remissions along with successive reductions of the amount of reparations levied, constituted a significant part of Soviet foreign aid to the bloc, in the last half of the fifties.

Soviet Aid to East Europe

CMEA sources interpret as economic assistance provided by the Soviet Union: (a) loans; (b) cancellation of debts arising from earlier deliveries; (c) cancellation of reparations; and (d) release of joint stock companies. Of these, (a), (b) and (d) represent a real transfer of resources, while (c) can be considered either a gesture or a real sacrifice, depending upon how just and realistic the initial demands were, about which opinions are likely to differ. The timing and composition of U.S.S.R. assistance to individual East European countries have been recently compiled from Western and CEMA sources.³⁰

With respect to timing and purpose, U.S.S.R. aid can be divided into: (1) immediate postwar loans to provide relief of troubled situations of one kind or another (about \$50 million, plus food loans, plus debt and reparations cancellations of about \$260 million); (2) consolation loans in 1947-48 to countries pressured into rejecting the Marshall Plan (\$450 million to Poland and smaller loans to Czechoslovakia, Romania, and Bulgaria); (3) loans and concessions following the death of Stalin and the Berlin eruption thereafter, mainly to East Germany (a loan of \$125 million and other concessions); and (4) the comprehensive aid program of 1956-58 following the Polish and Hungarian revolts. The 1956-58 program stands apart with respect to size and composition from previous aid programs: it involved total aid amounting to about \$3.6 billion, comprised of \$1.4 billion in loans, close to \$1 billion in debt cancellations, and more than \$1 billion (claimed value) in free transfer of joint stock companies, whereas the big-ticket items before 1956 had been reparations cancellations.

Toward a Balance Sheet of East European Subventions and Soviet Aid

To arrive at some tentative conclusions about the direction and size of uncompensated resource transfers during 1945-60, East European subventions and Soviet aid flows are brought to a common denominator by calculating their grant equivalent, which measures the unilateral transfer component of each transaction. The application of this approach to intrabloc transactions was pioneered by Janos Horvath (see footnote 30); here we attempt to fill in the details with documented estimates and assumptions that in some cases differ from those of Horvath. Because reliable information is scarce, no more can be attempted than to estimate rough orders of magnitudes, subject to corrections as more accurate information becomes available.

The balance sheet excludes Albania and Yugoslavia, the former because information on Soviet aid is not available and because the benefits it received from the U.S.S.R. under Stalin would have to be balanced against losses due to Soviet economic pressure after 1960,³¹

³⁰ Janos Horvath, "Grant Elements in Intra-Bloc Aid Programs," *ASTE Bulletin XIII*, No. 3 (Fall 1971), pp. 1-17.

³¹ R. Freedman, *op. cit.*, Chapter 3.

which is outside the scope of this analysis, and Yugoslavia, because we would have to quantify the cost of Stalin's economic blockade and other pressures, which is again outside our scope.

Subvention.—The grant equivalent of East European countries' subventions to the U.S.S.R. is calculated in appendix table 1. For some subvention items the donor's sacrifice is not identical to the recipient's gain: in the case of reparations dismantlings, the wastefulness of the operation made the donor's sacrifice considerably greater than the eventual gain realized by the U.S.S.R.; in the case of joint stock company assets transferred to the U.S.S.R., these were previously expropriated by or sold to foreigners (except in East Germany), so the Soviet's gain may not be an equivalent loss to the bloc countries; and in the case of profits from these companies, the Soviet gain is assumed here to be a sacrifice only to the extent that the earnings were unfairly distributed.

On balance, we find that the cumulative grant equivalent of East Europe's estimated sacrifice during 1945-60 was \$23.2 billion, the corresponding gain to the U.S.S.R. \$19.2 billion. These figures do not include uranium shipped by Czechoslovakia and Hungary and the maintenance of Soviet troops in Hungary and Romania for which no estimates are known to the author, and do not take account of unfavorable prices on commercial exports during the early postwar years, except on Polish coal. The largest burden by far was shouldered by East Germany: its \$19.5 billion sacrifice represents almost seven-eighths of the East Europe total, although its share would be reduced somewhat if estimates of comparable completeness were also available for the other countries. The next largest burden was on Romania (\$1.7 billion), then Hungary (\$1.3 billion), followed by Poland (\$626 million). Among the ex-enemy countries, Bulgaria apparently received preferential treatment, at least relative to that of other countries.

Soviet aid.—The grant equivalent of Soviet economic assistance to East Europe is estimated in appendix table 2 in two versions: one which excludes, realistically we believe, reparations cancellations, and the other which includes this item at full value (the approach followed by CEMA sources). The grant equivalent of loans to East Europe has been calculated by assuming, following Horvath (pp. 2-6), that all Soviet loans were for 12 years, at $2\frac{1}{2}$ percent interest, with a 2-year grace period, a 10 percent opportunity rate of discount, fully delivered, and that aid tying represented a 10 percent cost to the recipient as compared to aid that could have been spent freely on the world market. The calculation is based on Horvath's formula, which yields a grant ratio of .26 to the face value of the loan.³²

$$g = \left[1 - \frac{i}{q} \right] \left[1 - \frac{e^{-\alpha M} - e^{-\alpha T}}{\alpha(T-M)} \right] - g_1$$

where

- g = ratio of grant equivalent to the face value of the loan;
- i = interest rate charged;
- q = opportunity rate of discount;
- T = maturity in years;
- M = moratorium (grace period) in years;
- e = base of natural logarithm, 2.718;
- g_1 = grant element of aid tying.

³² The grant rate g is a fraction stating the grant equivalent as a proportion of the face value of a loan. The grant equivalent of a loan can be obtained by deducting the present value of the stream of repayments from the face value of the loan. For computational facility, it is convenient to express the ratio as:

On balance we find that the cumulative grant equivalent of Soviet aid during 1945-60 was \$2.6 billion excluding reparations cancellations and \$9.4 billion including this item. According to the first version, all countries benefited, in amounts ranging from \$16 million for Czechoslovakia to \$842 million for Poland, with the composition of aid varying from country to country. According to the second version, more than two-thirds of the aid benefited East Germany because the Soviet Union claims to have lightened the country's reparations burden by almost \$7 billion.

Balance of aid and subvention.—The net balance of the foregoing estimates is shown in the last four columns of appendix table 2. If reparations cancellations are excluded, the six East European countries have provided, on balance, approximately \$20 billion subvention to the U.S.S.R. (corresponding gain to the Soviet Union, about \$17 billion). If reparations cancellations are also included, the net subvention estimate declines to below \$14 billion (with the corresponding gain about \$3 billion less). The size of this flow of resources from East Europe to the U.S.S.R. is of the same order of magnitude as the flow of resources from the United States to West Europe under the Marshall Plan, which amounted to about \$14 billion. The distribution of this large subvention (or what may be called coerced grant) has been most uneven, however, because East Germany accounted for more than nine-tenths of the total. Significant amounts were also provided by Romania and Hungary, whereas Bulgaria, Czechoslovakia and Poland are shown to have been net beneficiaries in small amounts.

It cannot be emphasized enough that these figures should be interpreted with a great deal of caution, not only because of the roughness of the component estimates but also because the above calculations take account of only some of the most highly visible capital transfer items. Other important considerations are the terms of trade and the commodity composition, issues to which we turn next.

III. TERMS OF TRADE

Background and Interpretation

Price determination in CEMA.—The technique of intra-CEMA price determination has been shrouded in secrecy. Prices are said to be based on those on the world market because such prices represent alternative opportunities to CEMA buyers and sellers and also because, given arbitrary domestic prices, CEMA countries have been unable to come up with an alternative to world prices acceptable to all members. There is no question, however, that considerable bargaining does take place on prices, if for no other reason than that "world market price" is too ambiguous a concept to serve even as a starting point. Furthermore, world prices are said to be adjusted to eliminate the influence of speculation and monopoly and to take into account CEMA demand and supply.

CEMA literature offers only limited insight into how world prices are translated into CEMA prices. The only definite point is that certain formal principles have been agreed upon as to which historical period's prices should be used by negotiators as a base.

During 1945-50, prices were reportedly based, at least formally, on current capitalist world market prices. The period 1951-53 was the era of "stop prices," when negotiators used prices agreed upon prior to this period in order to avoid the distorting influence of inflation due to the Korean war. During 1954-57, selected "stop prices" were adjusted to eliminate the greatest discrepancies between these and current world prices. A situation existed whereby "stop prices," their adjusted version, and current world market prices for newly traded products existed side by side, causing frictions that came more and more to the open rather than remaining repressed as under Stalin.

A major landmark, the ninth session of CEMA (Bucharest, June 1958) adopted comprehensive new rules to the effect that: (1) average 1957-58 world market prices would be introduced (with exceptions which were not clearly defined); (2) prices would remain fixed for several years, except for new and improved products whose prices would be currently negotiated; (3) certain specific documents would become acceptable documentation of world prices in bilateral negotiations; and (4) the principle of "half-freight" charge would be introduced; that is, one-half of the hypothetical charge would be added to the world market price to establish the documented negotiating base price. Prices continued to be determined bilaterally; the new element was the multilateral agreement on rules to be followed in bilateral negotiations.

Recognizing that by the early 1960's, CEMA prices had deviated from current world market prices, an agreement was reached during the mid-1960's that introduced a new 1960-64 world market price base, implemented during 1956-67 in several stages. At the beginning of the current (1971-75) 5-year plan a new, average 1968-69 world market price base was introduced.

Interpretation.—It is important to note in connection with interpreting empirical studies of CEMA prices that individual commodity prices and quantities traded are determined not by single buyers and sellers in relative isolation from the prices of other commodities, as in the West, but by government agencies which bargain over a whole range of export and import prices at once. Bargaining power in such a situation may be exerted through prices (obtaining high prices for exports and paying low prices for imports) and also through quantities (supplying small or zero quantities of goods whose prices are disadvantageous and forcing the trade partner to supply specified kinds of goods in specified quantities if prices are advantageous). It is for this reason that if a Western observer finds, say, the price of a particular commodity high or low relative to current world prices, this may be because the CEMA price has remained fixed while the world price has changed or, alternatively, because the price that is "out of line" may be compensated by offsetting deviations in the prices of other export and import items.

As to the benefits, or "gains" from trade, it is useful to distinguish between static and dynamic considerations. The issue with respect to the static gains from trade is whether or not CEMA countries trade according to their short-run comparative advantage. A substantial part of CEMA trade within the bloc is probably not according to this criterion because opportunity costs are not fully known due to

inadequacies in their system of determining domestic prices, but also because foreign trade decisions are often made on the basis of second- or third-best considerations, forced upon each country by the institutional shortcomings of bargaining within CEMA, as discussed in section IV. But let us suppose that trade is in equilibrium within the bloc. One characteristic of this is that there are no disparities in cost ratios among countries. If then the cost ratios within the CEMA market are different from those on the world market, as appears to be the case, then there are unrealized gains from further trade; that is, from opening up the bloc as a whole. There indeed appear to be such large unrealized gains, suggested in the first instance by the extremely high proportions of total trade conducted with CEMA partners. Somebody must bear these opportunity costs. CEMA can be viewed as a sort of customs union in which members give to each other, in Holzman's phrase, "an excessively large preferentiality"; that is, members voluntarily channel a portion of their trade to bloc partners even when more profitable opportunities are available on the world market.³³ Evidence presented below indicates that this type of cost tends to fall disproportionately heavily on the U.S.S.R.

With respect to dynamic gains from trade, benefits are forgone if the preferential or "sheltered" CEMA market absorbs for a long time poor-quality goods and obsolete equipment, thereby reducing the incentive to innovate and produce "for the market," causing the exporter to fall more and more behind its competitors. This is the cost which appears to fall disproportionately heavily on the smaller and relatively more advanced CEMA countries like East Germany, Czechoslovakia, and Hungary.³⁴ The importer of shoddy goods and equipment loses potential productivity gains too; yet it might not be able to resist buying such goods if its own producers are dependent upon the same CEMA suppliers for their export market. This is why in a bilateral, state-trading framework terms of trade considerations cannot be divorced from the commodity composition of trade, discussed in the next section. But now let us summarize some of the principal findings on prices and the terms of trade involving price considerations only.

Empirical Evidence

Terms of trade.—Statistical information on CEMA prices before 1955 is scarce and episodic. What there is suggests strongly that the Soviet Union under Stalin used every chicanery in the book to obtain favorable prices. We have already mentioned the case of low prices for Hungarian and Romanian reparations goods, Polish coal, and Czech uranium. Circumstantial evidence is offered also by the Stalinist purges of senior Communist leaders in Bulgaria (Kostov in 1949) and in Czechoslovakia (Slansky and Loebel in 1952), who during their

³³ Franklin D. Holzman, "Soviet Foreign Trade Pricing and the Question of Discrimination," *Review of Economics and Statistics*, XLIV (May 1962), p. 146; and Robert W. Campbell, "Some Issues in Soviet Energy Policy for the Seventies," in *Soviet Economic Perspectives for the Seventies*, Joint Economic Committee, U.S. Congress, Washington, D.C.: U.S. Government Printing Office, 1973, pp. 15-16.

³⁴ Thus, an important objective of Hungary's comprehensive economic reforms introduced in 1968 is to expose the country gradually to genuine international competition, as discussed in Alan A. Brown and Paul Marer, "Foreign Trade in the East European Reforms," in Morris Bornstein (ed.), *Plan and Market: Economic Reform in Eastern Europe*. New Haven and London: Yale University Press, 1973, p. 20.

trials were charged with having asked too high and offered too low prices in trade negotiations with the U.S.S.R. and trying to maintain commercial secrecy during the negotiations.

Numerous other cases and episodes are also listed in the specialized literature.³⁵ It would be very difficult, however, to quantify the extent of price discrimination by the Soviet Union during this early period. Until additional systematic evidence becomes available, we must stay with the vague conclusion that, until 1953 at least, prices were most probably heavily slanted in favor of the Soviet Union.

The period 1954-58 was one of upheavals, retrenchment by the Soviet Union, and a movement toward putting many aspects of intra-bloc commercial relations on a more stable and equitable basis. Covering the period since the mid-1950's, statistical evidence and interpretive studies suggest the following:³⁶

(1) The dollar or other hard-currency prices in which intra-CEMA transactions are contracted before their conversion to settlement (devisa) rubles are on the average substantially higher than world market prices. During 1958-64, the gap between CEMA and world price levels is estimated to have been about 20 percent, ranging between 20 to 40 percent for major groups of manufactures and between 0 to 20 percent for groups of primary products. Since 1965, the price-level gap narrowed to about 10 percent, but the just-noted differences between manufactures and primary products persisted. Contributing to the emerging and persistence of high CEMA prices have been:

(a) The sellers' market at CEMA which places all exporters in a position to charge the highest world market price which can be documented. In a centrally planned economy the buyer's domestic costs or profitability do not provide an effective price limit on imports. And since most export and import prices are simultaneously determined, high-cost imports can be compensated by charging high prices on exports.

The world market price range which emerges during the "battle of documentation" between buyers and sellers tends to be narrow for primary products and wide for manufactures. Thus, given the tendency of CEMA prices to gravitate toward the upper end of a documented price range, the wider the range, the larger the margin by which CEMA prices, on the average, exceed world prices.

(b) The overvaluation of domestic currencies of CEMA countries according to official exchange rates, which result in high world market prices whenever prices charged are determined partly or fully on the basis of domestic costs.

³⁵ E. Loebel, *op. cit.*, passim; Frederic L. Pryor, "The Communist Foreign Trade System," Cambridge, Mass.: The MIT Press, 1963, pp. 136-139; P. J. D. Wiles, *op. cit.*, Chapter 9; and J. Wszelaki, *op. cit.*, Chapter 7.

³⁶ In addition to my own calculations, these findings are based on studies by CEMA economists (the most informative ones are Sándor Ausch, "A KGST-együttműködés helyzete, mechanizmusa, távlatai" [CEMA Cooperation, Situation, Mechanism and Perspectives], Budapest: Közgazdasági és Jogi Könyvtár, 1969, and Adám Márton, "Price Developments in Hungary's Foreign Trade: 1949-70," Working Paper No. 10, Bloomington: International Development Research Center, Indiana University, 1972), and on Western calculations (the most comprehensive one is Edward A. Hewett, "Foreign Trade Prices in the Council for Mutual Economic Assistance," Unpublished Ph. D. dissertation, University of Michigan, 1971), all discussed in Paul Marer, "Postwar Pricing and Price Patterns in Socialist Foreign Trade," Bloomington: International Development Research Center, Report No. 1, 1972, whose summary exposition is followed closely in the next two paragraphs.

(c) The hypothetical freight charge, which is added to the basic contract price in addition to actual freight costs.

(d) Bilateralism, under which it is easiest to obtain compensation for high import prices in the form of high export prices, which is why it is essential to examine jointly both import and export prices.

Except for (c), the enumerated causal factors affect manufactures more than primary products.

(2) Price fluctuations, both in the sense of variations from uniformity and changes from year to year, were much greater before 1959 than after. For example, during 1954-57 prices fixed in intrabloc trade agreements before the Korean war ("stop prices"), their adjusted version, and current world market prices for newly traded products existed side by side. The resulting confusion is characterized by a CEMA source:

* * * the bilateral adjustment of prices has upset the unity of socialist world market prices and opened up plenty of opportunities to take unfair advantage of the situation by both sides.³⁷

Prices become somewhat more uniform, underscoring the importance of the first CEMA-wide revision of prices in 1958, although recent empirical work shows that the rule of "uniform price for the same commodity" is not always observed so that significant price dispersion for the same commodity still persists.³⁸

(3) With respect to the movement of prices over time, the two price adjustments, in 1958 and in 1965-67, reduced prices on balance, particularly those of raw materials and industrial consumer goods, bringing these prices closer to actual world prices. Since the U.S.S.R. is the largest supplier of raw materials to the rest of CEMA (absolutely as well as in terms of percentage of trade volume), these adjustments have led to a deterioration (roughly 20 percent) in Soviet (net barter) terms of trade with CEMA between 1957 and 1970. During the same period, the terms of trade of Czechoslovakia, East Germany, and Hungary with all socialist countries as a group improved. This finding does not imply anything about the level or equity of Soviet-CEMA prices during the mid-1950's. The point is that the Soviet Union's export prices have fallen relative to import prices so that the Soviet gains (losses) from trade are now relatively lower (higher) than they were during the mid-1950's.

Gains from trade.—The actual distribution of gains and losses in Soviet-CEMA trade in 1960 and in 1970 was estimated by a Western scholar, Edward Hewett.³⁹ His calculations are based on statistical evidence compiled for a different purpose by a group of CEMA experts working at the Hungarian Academy of Sciences. This research group revalued the input-output tables (cca. late 1950's) of individual CEMA countries, estimating the total (direct plus indirect) factor

³⁷ József Gara and Iván Schweltzer, "A Tökés Világpiaci Árak és a Szocialista Világpiaci Jelenlegi Szerződéses Árak [Current Contract Prices of the Capitalist and Socialist World Markets]. A compilation of papers and reports by Economic Institute of the Hungarian Academy of Sciences, appearing in *A szocialista Világpiaci ár [Socialist World Market Prices]*, Budapest: Kossuth Könyvkiadó, 1965, p. 94.

³⁸ J. Hewett, *op. cit.*, p. 204.

³⁹ Edward A. Hewett, "Prices and Resource Allocation in Intra-CEMA Trade," paper prepared for a conference on The Consistency and Efficiency of the Socialist Price System, University of Toronto, March 8-9, 1974.

requirements for producing a million settlement rubles through exports. Defining gains from trade as the ratio of the estimated resource cost of exports to the potential resource cost of full import substitution, Hewett used these Hungarian studies to calculate the gains from trade between the U.S.S.R. and individual CEMA countries.

Under ordinary circumstances, when two nations engage in trade both partners are expected to benefit, even though the distribution of gains from trade may not be equal. Hewett found, however, that trading with CEMA actually results in a loss for the Soviet Union. That is, by these calculations, in 1960 it cost the U.S.S.R. 38 percent more resources to export to CEMA than it would have cost to substitute domestic production for imports from CEMA. In contrast, all CEMA countries except Romania were able to save anywhere from 3 to about 30 percent of the resources they would have had to expend had they been forced to produce domestically the commodities imported from the Soviet Union (Romania "lost" 19 percent).

By 1970, both CEMA foreign trade prices and the commodity structure of Soviet-CEMA trade had changed. Assuming that only prices changed (i.e., that the commodity composition in 1970 would have remained the same as it was in 1960), Hewett calculates that the Soviet loss on trade with CEMA would have increased to 67 percent. The actual loss was only 28 percent because of changes in the structure of trade: by 1970 a larger proportion of Soviet exports to CEMA was comprised of machinery than a decade earlier. In spite of changes in the commodity composition, CEMA countries had increased their gains from trading with the Soviet Union by 1970 as compared with 1960 (gains for Poland remained about the same).

Because of data problems and the simplifying assumptions which had to be made, these numerical results should be interpreted only as broad trends rather than precise measurements. Indeed, Hewett himself claims no more than that the results are general indications of orders of magnitude that might be involved. Although these findings tend to confirm what is claimed by the Russians and generally acknowledged by the East Europeans, we must await additional evidence before accepting with full certainty that Soviet export and import decisions are so poor that they result in a large net transfer of resources to their trade partners in CEMA.

One interesting aspect of these findings is that they bear at least a superficial analogy to the controversial Prebisch-Singer thesis, as pointed out by Janos Horvath.⁴⁰ Prebisch and Singer argue that trade between rich and poor countries tends to redistribute income from the exporters of primary products to the exporters of manufactures via deteriorating terms of trade for the producers of primary products. The findings here are consistent with the Prebisch-Singer hypothesis, although, we hasten to add, they should not be invoked in support of it because the terms of trade between the Soviet Union and East Europe are the outcome of a combination of factors, only one of which is the relationship between the prices of primary products and manufactures on the world market.

⁴⁰ Janos Horvath, "The Cost of Soviet Aid," *Problems of Communism*, May-June 1972, p. 76.

IV. COMMODITY COMPOSITION

The First Postwar Decade

It is almost a cliché to state that after postwar reconstruction had been completed by 1948-49 (later in East Germany), the development strategy of all East European countries appeared to have followed the Soviet model: increasing the share of investment in national income to very high levels, mostly at the expense of consumption, and concentrating investment in industry, and within industry on machine building and metallurgy. As a result, these countries have achieved good-to-spectacular growth rates, with fluctuations, but at the same time created serious imbalances, inefficiency, and a host of other problems.

Each East European country's development strategy determined the changes in the economic structure, which in turn was reflected in the new geographic and commodity composition of trade. The question we would like to pose, therefore, is whether the adoption of the extreme version of the "Soviet model" by national Communist leaders was voluntary or imposed from without. If the latter, did this serve Soviet economic interests? In particular, did it result in economic extraction by the Soviet Union and, if so, in what form and for how long? We do not as yet have complete enough factual information to provide unqualified answers; below some viewpoints are presented, and a tentative interpretation is offered.

Much of the Western literature would answer the above series of questions by indicting the Soviet Union. To quote from one well-documented study:

The direction and structure of [postwar] East European trade has been designed primarily to accord with Soviet economic and strategic priorities, at considerable cost to East Europe's own economic development * * *. The Soviet-dictated policy of broad industrial diversification fell more heavily on the more developed Czechoslovak and East German economies than on the other East European economies.⁴¹

Yet this conclusion has not been found fully convincing by all because of an apparent contradiction between presumed Soviet economic interests on the one hand and the parallel industrialization patterns and the structure of Soviet-East European trade on the other. For example, Granick observes that furtherance of military security of the U.S.S.R. in the cold war atmosphere of the early 1950's would not appear to have required a program of rapid expansion of heavy industry in East Europe. On the contrary, he argues, one could make a strong case on grounds of relative susceptibility to attack for the concentration of the Soviet Bloc's expansion of producer-goods production within the borders of the U.S.S.R.⁴²

Be that as it may, countless eyewitness accounts testify to the decisive role Soviet advisers and shopping lists played in choosing development strategies in East Europe during 1948-53, and perhaps beyond. Such Soviet actions can be explained also in terms of the

⁴¹ J. Hardt, *op. cit.*, p. 41.

⁴² David Granick, "The Pattern of Foreign Trade in Eastern Europe and Its Relation to Economic Development Policy," *Quarterly Journal of Economics*, XLVII, No. 3 (August 1954), pp. 377-400.

U.S.S.R.'s desire to assure the dependency of these countries on the Soviet Union, as can also its refusal to push for regional economic integration when CEMA was established. In attempting to go beyond generalizations, a useful approach might be to examine Soviet-East European relations on a country-by-country, case-by-case basis rather than to deal with all of heterogeneous East Europe combined.

To understand the role of indigenous versus foreign influences in postwar development strategies, Czechoslovakia is very important: after the war it was already a relatively highly developed country whose industrial base had not been destroyed, the country had an influential indigenous Communist party, as well as alternative economic development programs. Postwar economic events in Czechoslovakia have been reconstructed by Holesovsky, a source on which the following account is based.⁴³

During 1947-48, a significant debate about development strategy took place between proponents of what Holesovsky calls the Swiss strategy, stressing balanced growth, diversification, and specialization in products with low import content and high domestic value added, and the Communist-advocated machine shop strategy, emphasizing specialization in heavy industrial machinery and metallurgical products, with trade gradually oriented toward the Soviet bloc. (Some elements of this debate are reminiscent of the industrialization debates in the U.S.S.R. during the 1920's.) Advocates of the machine shop strategy foresaw a stable, long-term demand for investment goods from industrializing East Europe and expressed confidence that regional cooperation and central planning would prevent trade-induced fluctuations, which had been one of the main worries of Czech economists remembering the Great Depression. The crucial points, carefully documented by Holesovsky, are, first, that the machine shop strategy as originally advocated contained elements of the Swiss strategy and, second, that it posited a realistic rate of growth so that rising investment would not be at the expense of consumption. But then came the double *coup d'état*: that of the Communist Party over parliamentary democracy and that of the Moscovite faction over the rest of the Party, which was immediately followed by two successive, very large, and crucially important revisions in the draft of the original first 5-year plan (1950-55). To explain what prompted these revisions, Holesovsky invokes the testimony of an economics text published in Prague in 1969:

[The first revision] arose to a large extent from the content of long-term contracts with member states of the CEMA * * *. For Czechoslovakia, the treaty with the Soviet Union for 1950-55 was the most important one. These agreements raised the demands upon Czechoslovak heavy industry, in particular upon the production of heavy machinery and equipment * * *. These articles were highly material-intensive and required the construction of new capacities, or a reconstruction of existing ones.⁴⁴

As to the second revision in 1951:

Demands addressed to Czechoslovakia, which had a developed armaments industry in the past, were considerable, and the entire economy was subordinated to them. However, these tasks were no longer integrated into a modified plan but represented a plan of their own.⁴⁵

⁴³ Vaclav Holesovsky, *The Czechoslovak Economy in Transition*, unpublished manuscript.

⁴⁴ Rudolf Olsovsky and Vaclav Prucha, eds. *Strucny hospodarsky vyvoj Ceskoslovenska do roku 1955*. Prague: Svoboda, 1969, p. 397, as cited in Holesovsky, *op. cit.*, p. 32.

⁴⁵ *Ibid.*

Citing the same source, Holesovsky finds that the planned growth of industrial output was changed from 10 to 20–25 percent per annum, total requirements of the military with respect to industry quadrupled during 1950–52, and armaments production increased sevenfold from 1948 to 1953.

We now turn to postwar foreign trade data released by the U.S.S.R. in 1967 to gain another perspective on the events. No systematic information is available on the commodity composition of Czechoslovak-Soviet trade from Czechoslovak sources prior to 1958, but we have Soviet data from 1946 on. Appendix table 3 shows the growth of U.S.S.R. imports from Czechoslovakia and East Germany for 1948–55; the figures probably do not include defense items. We find that between 1948 and 1953 not only did total imports increase rapidly (particularly from East Germany where many goods supplied under reparations until 1948 became commercial exports thereafter), but that the share of machinery and metallurgical products increased steadily until it reached more than four-fifths of total exports to the U.S.S.R.

Important for the completeness of the argument that the early postwar development strategy in these countries was dictated by Soviet priorities is the issue whether in East Germany, as in Czechoslovakia, there was disproportionate investment in the machine building and other branches whose products were exported to the Soviet Union. Snell and Harper show that in East Germany, war destruction and dismantling by the Russians in metallurgy and in the chemical and engineering industries left the country's manufacturing capacity predominantly in light and food industry and light machine building. Yet while these latter industries were often operating below capacity because of supply shortages, and in 1958 were still producing far below 1939 levels, branches founded or expanded to produce for Soviet export (shipyards, railroad equipment plants, precision machinery, electrical machinery, and heavy industrial equipment) were operating above 1939 levels.⁴⁶ The data and other information, therefore, are consistent with the hypothesis that at least in Czechoslovakia and East Germany, postwar development strategies were significantly influenced by Soviet strategic priorities.

A Hungarian economist arrives at a similar conclusion for Hungary:

Decisions which shaped the economic structure of individual countries were based on bilateral economic relations, primarily the relations with the Soviet Union. This was so not only because the Soviet Union had a decisive share in each country's foreign trade but also because only Soviet industry was able to produce or to share the technical documentation of large metallurgical and machine-building projects and to supply the basic raw materials; and also because its prestige and experience served as an example to every socialist country. However, given the known distortions of Stalinist policy, this [approach] frequently resulted in one-sided decisions even in questions of detail.⁴⁷

We tentatively conclude that during the first postwar decade the U.S.S.R. was instrumental in forcing the development of high-cost industrial branches in East Europe, and probably for several inter-related reasons. First, the Soviets probably did believe that their own pattern of industrialization was ideologically correct and did have

⁴⁶ Edwin Snell and Marilyn Harper, *op. cit.*, pp. 567–70.

⁴⁷ Sándor Ausch, *op. cit.*, pp. 42–43.

universal applicability for the new socialist states. Second, this model also had the beneficial political ramification of placing limits on the East European states' interaction with one another, at least more so than regional specialization would have, and thereby heightened each state's dependence on the Soviet Union. Third, this dependence was beneficial to the Soviet Union as a means of supplementing its requirements for investment goods from the more advanced, and for other products from the less industrialized East European countries, during the Western embargo.

Between 1949 and 1953, Soviet imports of machinery from CEMA each year increased faster than its exports of machinery to CEMA so that East Europe's share in total U.S.S.R. machinery imports climbed from 43 to 85 percent during this period.⁴⁸ The main suppliers were East Germany and Czechoslovakia, and, to a lesser extent, Hungary. By the mid-1950's, however, the specific U.S.S.R. objectives and the nature of Soviet-East European relations had been radically transformed, as outlined next.

Developments Since the Midfifties

During the second postwar decade (approximately 1956-65), the U.S.S.R. must have realized that the political cost of economic extraction probably exceeded the economic benefits gained, hence extraction was discontinued in most cases. Also, as the embargo was relaxed and as the more developed East European trade partners gradually fell behind Western technological standards, the U.S.S.R. probably attached less and less economic importance to imports from East Europe. It is conceivable that during this period the U.S.S.R. had no definite policy on what commodity composition could provide maximum benefits from intrabloc trade. To be sure, large and very useful bloc-wide projects had been completed. Much discussion was also heard of the need for improved bloc-wide specialization and integration, but, as far as is known to me, the U.S.S.R. has not specified the economic content of these broad objectives.

As a consequence of East Europe's development strategy, poor endowment of natural resources, and wasteful use of materials, net import needs of raw materials and energy grew rapidly during the 1960's. The smaller countries absorbed an increasing share of their total output of primary products domestically and redirected some raw material exports to the West. The U.S.S.R. became a large supplier of their needs, to the extent of about \$2.5 billion worth of raw materials and energy by 1970. Today, the Soviets import mainly machinery and equipment (about \$3 billion in 1970) and industrial consumer goods (about \$1.5 billion) but complain that these are not up to world standards.

Since the beginning of the third postwar decade (1966 to present), the U.S.S.R. has come to the conclusion, judging from its position in CEMA debates, that the exchange of raw materials for manufactures is disadvantageous because it limits its ability to import technology and other goods from the West for which it must pay predominantly with primary products, chiefly raw materials and fuels.

⁴⁸ Paul Marer, "Soviet and East European Foreign Trade, 1946-69": Statistical Compendium and Guide. Bloomington: Indiana University Press, 1972, series III.

The Precarious Supply of Oil

More than any other commodity, oil illustrates some of the key issues in Soviet-East European relations: the dilemma of the Soviet Union and some of the current problems and anxiety concerning the future source and cost of this vital commodity in East Europe.

In 1972, the six European members of CEMA imported about 50 million metric tons of crude oil and petroleum products from the Soviet Union, in 1973 approximately 57-60 million tons.⁴⁹ In 1972 this amount represented 47 percent of total Soviet export tonnage of crude oil and petroleum products, sold to CEMA at approximately \$14 to \$16 per ton,⁵⁰ the price originally agreed upon for the duration of the 1971-75 trade agreements. The sharp rise in oil price in the West during 1973-74, to over \$100 per ton, illustrates vividly the very high opportunity cost to the Soviets of supplying this oil to CEMA, a cost that is compounded by the poor quality and high price of the goods with which CEMA countries pay for oil and other primary products.

With respect to oil, the following are the principal unresolved issues in Soviet-East European relations: (1) Will the Soviets have large quantities of oil to export after meeting domestic requirements, say, by 1980? (2) How much of their projected total exports will they be willing to ship to CEMA? (3) On what terms will these exports be supplied? (4) What alternatives are available to East Europe to cover the deficit which remains?

(1) According to a recent Hungarian estimate, by 1980 the Soviet Union will consume more crude oil than it will produce: 650 million tons versus estimated production of 625 to 645 million tons. The author of the article still projects substantial oil exports to CEMA, evidently assuming that Soviet production will be supplemented by imports.⁵¹ This assumption is by no means unrealistic; Becker concludes that it is not at all unlikely that the U.S.S.R. does have a serious economic interest in importing oil and gas from the Middle East, for its own use, and possibly for East Europe or for resale for hard currency.⁵² According to the usually optimistic official estimates, production by 1980 will be 611 million tons, consumption only 500 million tons, thus leaving 111 million tons for exports to all destinations.⁵³

Important factors in any evaluation of future Soviet export possibilities, according to Robert Campbell, are:⁵⁴

(a) How rapidly will reserves be proven and brought into production? This in turn will be influenced by the world prices of oil that will prevail during the near future and Soviet estimates as to what prices might be in the long run. Campbell points out that the Soviets are certainly aware of the possibility that present high prices will evoke so powerful a supply response that oil prices will

⁴⁹ Data for 1972 from the Soviet foreign trade yearbook, 1973 data from *The Economist*, Dec. 1, 1973, p. 40.

⁵⁰ Unit values, calculated from Soviet foreign trade yearbook.

⁵¹ István Dobozi, "Energy Sources in the CEMA Economy," *Valóság* (Budapest), January 1973, pp. 18-27.

⁵² Abraham S. Becker, "Oil and the Persian Gulf in Soviet Policy in the 1970's," *Rand Corp. Paper P-4743*, Santa Monica, Calif., December 1971.

⁵³ *The Economist*, Dec. 1, 1973, p. 40.

⁵⁴ Robert W. Campbell, "Siberian Energy Resources and the World Energy Market," paper presented to a Round Table on the Natural Resources of Siberia at NATO, Brussels, Feb. 1, 1974.

come down substantially from current levels. Another factor here is Western participation in exploring, drilling, and producing Soviet oil, which is now uncertain at best.

(b) The degree of substitution of coal for oil and gas in the Soviet Union, of which there are good possibilities. Once again, the future world price should influence the desirability and speed with which this substitution might take place.

(c) The rate of growth of domestic demand, which will determine the level of consumption by 1980, but this cannot be estimated accurately.

During the rest of the decade domestic demand will probably increase faster than the just over 5-percent tempo during the 1960's, as the truck factory at Kama when completed will turn out 150,000 vehicles a year which will need fuel, as the combined output of the 3 major Soviet car factories will be over 1 million units a year by 1975, and as household consumption of energy rises as appliances proliferate and housing space expands.

(2) There are no firm figures on Soviet oil commitments to the six European CEMA countries for 1976-80. According to a Hungarian expert, the Soviet Union can be assumed to limit its annual crude oil exports to CEMA to no more than 100 million tons by 1980.⁵⁵ Assuming that the share of Cuba and Mongolia in this total in 1980 remains the same as it was in 1972, the six European members of CEMA will receive a maximum of about 88 million tons from the U.S.S.R. Since these countries will produce only about 20 million tons and their consumption is estimated as about 160 to 165 million tons, they will need at least 52 to 57 million tons from non-Soviet sources. This is a minimum estimate. A few years ago a Polish economist put the gap to be covered by 1980 from non-Soviet sources at 70 to 80 million tons.⁵⁶ Some observers do not believe it unrealistic to assume that during 1976-80 the Soviets will not increase the level of their shipments beyond the present 60 million tons, which would leave the CEMA six about 80 million tons to obtain from non-Soviet sources.

(3) A new CEMA price base will be established by 1976, and CEMA experts agree that the price of oil and that of a good number of other Soviet export products will be substantially higher than now. My view is that regardless of the period chosen as the new world market price base, the new price of Soviet oil to CEMA will not be higher than what the world price will be just immediately prior to the signing of the new agreement, primarily for political reasons, as the Soviets probably do not wish to be left open to the charge that they extract a higher than world price from their client states in East Europe. It is conceivable, however, that the Soviets might be unwilling to sign a fixed-price agreement for 5 years, preferring a shorter period to protect against potentially large losses, should the world price rise again by a substantial margin.

In addition to the higher price, the Soviets will surely demand additional compensation also because: (a) producing oil and other raw materials is highly capital intensive and, given the current CEMA

⁵⁵ István Dohozl, op. cit.

⁵⁶ Gospodarka Planowa, April 1967.

price of oil, the Soviets do not wish to export capital; ⁵⁷ (b) most new oil fields and mineral resources are in the Asian regions, so transport costs to East Europe are very high; and (c) the growing technological gap between the manufactures exports of CEMA members and those originating in the West.

Methods of compensation to the Soviets currently discussed, in some cases already implemented, are:

(a) A move toward practicing "commodity bilateralism"—a network of tied exports and imports—under which machinery imports are increasingly linked to machinery exports. This bargaining strategy has been practiced heretofore primarily by Bulgaria, Romania, and Poland in their trade with Czechoslovakia, East Germany, and Hungary. Thus, according to plan figures for the 1971-75 5-year plan, the U.S.S.R. succeeded in negotiating a pattern in which total exports to CEMA will increase by 50 percent and fuel and raw materials by only 27 percent, but machinery exports will jump by 100 percent.⁵⁸

(b) The granting of special purpose credits to the U.S.S.R. for developing new sources to supply East Europe. The commodity realization of these credits need not be limited to the types of resources required directly for the oil fields but can include machinery and consumer goods acceptable to the Soviets. Czechoslovakia has already granted various types of such credits in exchange for future deliveries of oil. The principal issues of contention are related to the type of machinery and manufactures that are acceptable to the Soviets and to the low interest rates customary in CEMA, usually 1 to 2 percent, which are considered much too low by the potentially large creditors of the Soviet Union. But because the other proposals face even greater difficulties of implementation, the granting of special-purpose credits to the U.S.S.R. may very well become an important compromise solution.

(c) Establish jointly-owned and managed extractive enterprises in the U.S.S.R. There are formidable pricing, legal, and organizational problems. A variant of this proposal is that the Soviets use construction and equipment enterprises, and also labor, supplied by the oil importer country, but this faces problems similar to those of jointly-owned enterprises.

(d) Soviet writers suggest the long-term leasing of fields in the U.S.S.R. to CEMA partners, for a lease fee and an extraction charge.⁵⁹ East European sources complain, privately, that the sites offered by the Soviet Union are often not those which would be the most profitable to exploit.

⁵⁷ According to Soviet figures, 5 rubles of capital need to be expended for each additional ruble of value in crude oil output capacity versus 0.54 rubles in fixed assets per ruble of output in industry. More generally, the amount of capital invested by the U.S.S.R. to produce the exchange equivalent in raw materials and fuels it exports to CEMA is about 3-3.5 times as much as the capital invested by the U.S.S.R. to produce the machines they export to the Soviet Union. Since CEMA countries pay for two-thirds of Soviet raw materials with machines, the investment burden imposed by this trade on the Soviet Union is greater than for the rest of CEMA [Dobozl, op. cit.].

⁵⁸ M. Loshakov, "Epoch-Making Success, Good Prospects," *Foreign Trade* (Moscow), November 1971, pp. 3-6. A counselor at the Soviet Embassy in Prague writes in a Czechoslovak publication:

We want our partners in the socialist countries to understand that if their markets are not opened to Soviet machinery and equipment, the Soviet Union will not be in a position to expand economic relations, because our ability to supply fuel and raw materials is limited. The continuation of this rising trend is impossible if the present structure and pace are maintained [I. I. Semyonov in *Svoboda*, Sept. 13, 1972].

⁵⁹ Dobozl, op. cit.

(e) CEMA countries should improve the quality and modernity of the manufactures they export to the U.S.S.R. A Soviet spokesman writes:

We shall under no circumstances be customers for an assortment of goods which cannot be sold on other markets. The goods [supplied to us] must be of first quality, and must meet the needs of the Soviet Union. A proportion of them must consist of products made from import materials or under foreign license. If Czechoslovakia saves an enormous sum through its purchase of raw materials in the U.S.S.R., it is only right, in my opinion, that it investigate the possibility of spending some of this profit on the purchase of goods or licenses useful to the Soviet Union.⁶⁰

At the root of the problem of poor quality and obsolescence of manufactures is the systemic nature of central planning, so the solution is partly in the hands of the Soviet Union itself: will it allow, if not encourage by word and deed, the East European countries to undertake comprehensive reforms?

(4) One solution the Soviets propose, specifically in the case of oil, is that East European countries turn more and more to the Middle East and North Africa for additional supplies. Since the late sixties, there has been a shift in that direction. The heaviest involvement of East Europe appears to be with Libya and Iraq (where Czechoslovakia is active) with Iran, Algeria and other Arab sources also supplying oil to several East European countries. To provide logistic support for oil deliveries from the southern Mediterranean, several CEMA countries have been negotiating with Yugoslavia about participation in building the Adriatic pipeline, connecting the Adriatic with the Danubian Basin. The project is targeted for completion in 1976 or 1977, with an initial throughput capacity of 17 million tons per year, which is to be doubled by 1980. The pipeline will start on the island of Krk in Yugoslavia. One line will branch north to Hungary and Czechoslovakia, another south and then northeast to Pancevo near Belgrade.

The Adria project has been on and off again since 1964 when it was first discussed.⁶¹ Even though Hungary and Czechoslovakia are now firmly set to cooperate in its construction and financing, the Yugoslavs consider Western participation essential. The total cost is estimated at \$300 million, including seven pumping stations. A substantial loan from the World Bank and supplies and credit from Western, including U.S. sources are being explored.

By 1980 Yugoslavia expects to receive 24 million metric tons, Hungary and Czechoslovakia 5 million metric tons each. During the last year Poland has expressed a renewed interest in participating in the project, although as the matter now stands, the pipeline will not be large enough to accommodate all Czechoslovak, Hungarian, and Polish purchases of Middle East oil.⁶²

⁶⁰ Semyonov, op. cit. The hard-currency import content of intrabloc exports is an important bargaining point in CEMA trade (and is an issue to which practically no attention has been paid so far in the West). This is because CEMA countries find it difficult and costly to earn hard currencies, so goods that contain substantial direct or indirect inputs obtained for convertible currencies have a scarcity value generally not reflected in CEMA's trading prices.

⁶¹ Croatian and Serbian oil refineries could not agree on the pipeline route until the middle of 1973, and participation by CEMA countries was off again, on again for a variety of reasons. Domestic investment problems in Yugoslavia also added to the delays.

⁶² These countries, therefore, are also exploring participation in a proposed Trieste-Vienna-Budapest pipeline.

Some of the oil imports by East Europe from the Mideast are spot purchases for hard currency: for example, in December 1973, Bulgaria, Hungary, and Poland (no information on the other CEMA countries) participated in oil auctions in Libya and purchased substantial quantities at over \$100 per ton—more than six times the price they are currently paying to the Soviet Union. Other oil imports are purchased under long-term bilateral agreements, such as Czechoslovakia has with Libya, Iraq, and Iran, with machinery and installations supplied by the CEMA country on long-term credit and at highly subsidized interest rates of 2 to 2½ percent.

Regardless of what the world price will be a few years hence, it seems certain that in view of the projected deficits the oil bill for the CEMA six from non-Soviet sources will be immense. The Hungarian authority previously cited, writing just before the current oil crisis, assumed that by 1980 CEMA would have to import 50 million tons of crude from non-Soviet sources, at \$20 per ton, costing a total of \$1 billion. There is no reason to assume that even if prices do come down from current levels, an oil bill of two or three times that amount might not have to be paid.

While oil is the single most important commodity for which East Europe has been relying primarily on the U.S.S.R., there are many other essential imports purchased from the Soviet Union for which there are or might be similar problems in prospect, for example, for coking coal, gas, ferrous and nonferrous metals and products, synthetic rubber, timber and products, cotton, grain, and some other agricultural products. How East European countries can pay for the substantial cost of oil and other primary products they will have to import from non-Soviet sources is an issue on which relatively little research has been done so far in the West.

V. CONCLUSIONS

The principal economic objectives of the U.S.S.R. in East Europe since World War II appear to have been to establish and maintain the economic dependence of these countries, and to derive maximum economic benefit from the relationship, subject to certain political constraints. The economic dependence of these countries is probably seen by the U.S.S.R. as the ingredient that helps cement the political cohesiveness of the bloc. The aim of maintaining dependence gives a degree of continuity and coherence to Soviet policy.

The Soviet Union and East Europe constitute a relatively closed system facing a modernization crisis of special severity. For the Soviet Union the problem is compounded by subtle but real challenges to its imperial power. Russia's military and political role in East Europe is threatened by economic, social, and intellectual forces not susceptible to the controls which have proved effective in the Soviet Union. These forces include growing nationalism; youthful populations with significant anti-establishment elements and ideas; an intellectual and philosophical vacuum, as Marxism-Leninism is seen as less and less relevant for solving contemporary problems; and the example of the economic vitality of Western Europe, from which East European societies are no longer isolated because of tourism, other forms of travel, and other varieties of communication.

Soviet options to meet these various economic and political challenges include:⁶³

- Establish a socialist "commonwealth" which would absorb some or all states of East Central Europe. For obvious political reasons, this is most unlikely.
- Transform CEMA into a supranational organization of reformed and unreformed economic system. This would also be most difficult politically because of fears that the Soviet Union would dominate such a body and because the national interest of each of the states of East Europe differs substantially from those of the others, so they cannot easily be treated as a bloc.
- Permit or promote economic reform along Hungarian lines. Apart from the unresolved question of whether the Hungarian reforms will survive the replacement in March 1974 of some of the principal architects and supporters of the reform at the highest party levels, there are other reasons too why this solution is also unlikely. As in the Soviet Union, comprehensive reforms are opposed in many East European countries by party bureaucrats who would lose power and therefore view reforms as politically dangerous. So long as those in power perceive comprehensive reforms as a threat to their control, the party will not push reforms with the vigor required to implement them.

Increase substantially trade with the West, and encourage new forms of commercial contact, such as joint ventures. Soviet leaders realize that increased trade would lead not only to new contacts and ideas, but possibly also to pressures for economic reform in order to produce the kinds and quality of goods and services required to pay for increased Western imports and repay credits.

The implicit political danger of increased commercial intercourse with the West is much greater for the small and densely populated East European countries which are poor in resources and thus will have to pay increasingly with manufactures, than for the more sparsely populated and natural resource-rich U.S.S.R., where it might be possible to create enclaves of Western technology, although the very isolation of technological imports would tend to limit their economic impact.

For the future one can make predictions only tentatively at best. With respect to the Soviet-East European trade pattern, it seems that the Soviet disengagement will be gradual and limited, in the sense that various types of parallel attempts will be made to reduce the economic burden, but not to try to eliminate it all at once through drastic measures. The most likely attempts will be those elaborated above when discussing East Europe's precarious supply line of oil. These are, briefly:

Soviet encouragement for East Europe to turn to alternative sources to supplement but not to replace Soviet supplies.

Price adjustments which on balance will benefit the U.S.S.R.

Various direct compensation measures, such as credits to the U.S.S.R. at interest rates subsidized by East Europe.

What effect would expanded U.S.S.R.-West trade have on Soviet-East European relations? At first glance it appears that détente offers

⁶³ Robert F. Byrnes, "Russia in Eastern Europe: Hegemony Without Security," *Foreign Affairs*, 49, July 1971, pp. 682-97.

a permissive framework for political changes within East Europe. But détente and increased contacts with the West also stimulate centrifugal forces within the bloc. Given the way such pressures are handled domestically in the U.S.S.R., countering policies by the Soviet Union vis-a-vis East Europe may also be expected. Furthermore, if the Soviets gain larger markets for their primary-product exports in the West and new opportunities to import machinery from the West, this may further weaken East Europe's commercial bargaining power with the U.S.S.R. Whether this will prompt significant changes in trade patterns will depend largely on how the Soviets view the trade-off between the economic cost of continuing heavy commercial involvement in East Europe and the political gain from such involvement through the "influence" effect.

APPENDIX

TABLE 1.—SUBVENTION TRANSFERS TO THE U.S.S.R. FROM EAST EUROPEAN COUNTRIES, CUMULATIVE 1945-60

[In millions of current dollars]

Conveyor country	Plant dismantlement		Reparations-type payments			Favorable prices on commercial exports
	Sacrifice	Gain to U.S.S.R. ¹	Direct to U.S.S.R.	To Red Army	Uranium and other	
	(1)	(2)	(3)	(4)	(5)	
East Germany ²	³ 4,000	1,333	⁴ 6,471	⁵ 4,210	⁶ 4,382	NA
Bulgaria.....						NA
Czechoslovakia.....					(⁷)	NA
Hungary.....	⁸ 1,000	333	⁹ 269	NA	(¹⁰)	NA
Poland ¹¹						¹² 626
Romania.....	¹³ 1,000	333	¹⁴ 453	NA	¹⁵ 187	NA
Total.....	6,000	2,000	7,193	4,210	4,569	626

Joint stock companies

Conveyor country	Assets		Profits		Grant equivalent	
	Sacrifice	Gain	Sacrifice	Gain	Sacrifice	Gain
	(7)	(8)	(9)	(10)	(11)	(12)
East Germany ²	¹⁶ 453	¹⁸ 453	(¹⁷)	(¹⁷)	19,516	16,849
Bulgaria.....	(¹⁸)	¹⁹ 6	NA	NA		6
Czechoslovakia.....						
Hungary.....	(¹⁹)	²⁰ 150	²¹ 60	²¹ 180	1,329	²² 977
Poland ¹¹					626	626
Romania.....	(¹⁹)	²³ 200	²¹ 80	²¹ 240	1,720	1,413
Total.....	453	809	140	420	23,191	19,871

¹ Following Horvath op. cit., p. 14, assumed to be $\frac{1}{3}$ of the sacrifice, due to very large waste during the transfer.

² The value of all reparations-type payments was calculated by Köhler, op. cit., table 1, pp. 25-28, based mostly on East and West German documents, in domestic currency which cannot be translated into dollars at the official exchange rate. Dollar values shown here were estimated on the basis of implicit devisa-ruble/DM exchange rates calculated by Köhler op. cit., table 28, p. 272 since 1950, with devisa-ruble values converted to dollars at the official pre-1961 rate of \$1=4 rubles. Dollar values for 1945-49 were obtained on the basis of index numbers constructed for values shown in Köhler op. cit., table 1, linked to 1950 dollar values as obtained above.

³ Snell & Harper op. cit., p. 566.

⁴ 1945-53 Köhler op. cit., table 1.

⁵ Including direct and indirect deliveries, 1945-58 Köhler op. cit., table 1.

⁶ Estimated uranium ore deliveries 1946-60 (\$4,000,000,000) and inventory depletion of SAG firms 1952-53 (\$260,000,000), Köhler op. cit., table 1.

⁷ Should include loss on uranium ore exports to U.S.S.R. (see text).

⁸ Estimate cited in Wszelaki op. cit., p. 69.

⁹ 1945-52: \$134.3 "gold" dollars, Spulber, op. cit., p. 167, multiplied by a factor of 2 to take account of price increases since 1938 and especially low-accounting prices (noted in Spulber op. cit., p. 170) during the early years.

¹⁰ Should include (a) uranium ore deliveries on reparation account and possible loss on commercial uranium exports, as is known to have been the case for East Germany and Czechoslovakia and (b) payment, if any, for objects removed from Soviet territory during the war, Spulber, op. cit., pp. 39-40.

¹¹ Even though industrial and transport equipment was removed from the newly acquired Western parts, these may be viewed as affecting Germany's lost territories rather than Poland. Bierut estimated the value of plant dismantlement up to the Potsdam agreement as \$500,000,000 "Rzeczpospolita," Aug. 24, 1945, as cited in Alfred Zauberman, "Economic Imperialism—The Lesson of Eastern Europe." London: Ampersand, Ltd., 1955, p. 11.

¹² Amount of Polish debts canceled as compensation for low prices paid for coal during 1946-56, Spulber op. cit. pp. 176-77 and Goldman, op. cit. p. 7.

¹³ Author's estimate: same as Hungary. The order of magnitude is supported by John M. Montias, "Economic Development in Communist Romania," Cambridge, Mass.: The M.I.T. Press, 1967, pp. 17-18, fns. 40 and 41 and Wszelaki op. cit. p. 69; the estimates cited by both sources are higher than this author's. Speaking of economic disruption after the war, Ceausescu, without directly mentioning the Soviets, stated: "The war reparations Romania had to pay and the other material losses totaled \$1,000,000,000" Nicolae Ceausescu, "The Romanian Communist Party—Continuer of the Romanian People's Revolutionary and Democratic Struggle, of the Traditions of the Working Class and Socialist Movement in Romania," Bucharest: Ager Press, 1966, p. 65.

¹⁴ 1945-52: \$226.5 "gold" dollars, Spulber, op. cit., p. 167, multiplied by a factor of 2 (see note above and Spulber, op. cit. p. 173).

¹⁵ Restitution for goods and materials taken by Romanian troops from the U.S.S.R. during the war, Spulber, op. cit., pp. 175-6.

¹⁶ In the case of East Germany, enterprises were expropriated and subsequently returned, first against payment and later free of charge. From East Germany's point of view, subvention was involved (other than operating profits foregone shown in the next columns) only when the firms were repurchased. The amounts are shown by Köhler, op. cit., p. 47, here converted to dollars through the implicit devisa-ruble/DM exchange rates calculated by Köhler, op. cit., Table 28, p. 272 and the official pre-1961 rate of \$1=4 rubles.

¹⁷ Operating profits were included under reparations-type payments. See Köhler, op. cit., pp. 46-47, fn. 22.

¹⁸ For Bulgaria, Hungary, and Romania no subvention is assigned because to the extent that they made partial payment (mostly during 1954-56 until the debt was canceled) they were acquiring assets previously owned by foreigners.

¹⁹ Spulber, op. cit., p. 194.

²⁰ Spulber, op. cit., p. 205.

²¹ Since evidence detailed in the text suggests that joint companies yielded maximum benefit to the U.S.S.R., it is assumed that the division of total profits gave a 15-percent return to the U.S.S.R. and a 5-percent return to the bloc partner annually on investment, which is assumed to have been shared 50-50. If so, the profit sacrifice to the bloc partner is 5 percent of its invested capital annually for 8 years, 1946-53.

²² Includes \$45,000,000 paid by Hungary to the U.S.S.R. on a \$200,000,000 commercial debt to Germany, subsequently claimed by the U.S.S.R. Margaret Dewar, "Soviet Trade With Eastern Europe: 1945-49." London: Royal Institute of International Affairs, 1951, pp. 68-70. The remaining \$155,000,000 canceled debt appears as a component of the \$197,000,000 entry for Hungary in col. (3) of table 2.

²³ Spulber, op. cit., 204.

Source: Each entry is documented by footnoted references above.

TABLE 2.—U.S.S.R. ECONOMIC ASSISTANCE TO EAST EUROPEAN COUNTRIES AND BALANCE¹ OF THE GRANT EQUIVALENT OF AID AND SUBVENTION TRANSFERS, CUMULATIVE 1945-60

[In millions of current dollars]

Recipient country	Loans (A)		Debt cancellations (B)	Reparations cancellations (C)	Release of joint stock companies (D)
	Face value (1)	Grant equivalent (2)			
East Germany	238	62		6,612	200
Bulgaria	343	89	45	10	
Czechoslovakia	62	16			
Hungary	379	99	197	78	250
Poland	831	216	626		
Romania	222	58		147	710
Total	2,075	540	868	6,847	1,160

Recipient country	Grant equivalent of aid		Balance of aid and subvention			
	Excluding rep. cancel. (6)	Including rep. cancel. (7)	Excl. rep. cancel.		Incl. rep. cancel.	
			Sacrifice (8)	Gain (9)	Sacrifice (10)	Gain (11)
East Germany	262	6,874	(19,254)	(16,587)	(12,642)	(9,975)
Bulgaria	34	144	128	134	138	144
Czechoslovakia	16	16	16	16	16	16
Hungary	546	624	(783)	(431)	(705)	(353)
Poland	842	842	216	216	216	216
Romania	768	915	(952)	(645)	(805)	(498)
Total	2,568	9,415	(20,629)	(17,297)	(13,782)	(10,450)

¹ Net transfers to U.S.S.R. in parentheses.

² Goldman op. cit. p. 19. The range of \$700 to \$1,100,000,000 shown for this item in Goldman op. cit. table 11-1 and the \$900,000,000 average shown by Horvath op. cit., table 1 probably includes the value of delivered Soviet investments in joint stock companies which was repaid by the Romanians, as discussed in Montias op. cit. pp. 146-7.

Source: Cols. (1) to (7) are based on Horvath op. cit. 1971, table 1, except as noted; cols. (8) to (11): cols. (6) or (7) less table 1, cols. (11) or (12).

TABLE 3.—U.S.S.R. IMPORTS FROM CZECHOSLOVAKIA AND EAST GERMANY, 1948-55

[In millions of current dollars or percent]

Year	Total imports		Share of machinery and metallurgical products (percent)		
	Value (1)	Growth previous year=100 (percent) (2)	Total (3)	Machinery (CTN 1) (4)	Metallurgy (CTN 24-27, 29) (5)
Czechoslovakia:					
1948.....	\$136	348	48	18	30
1949.....	205	151	41	18	23
1950.....	201	98	68	29	39
1951.....	253	126	71	31	40
1952.....	299	118	78	36	42
1953.....	312	104	84	36	48
1954.....	318	102	83	46	37
1955.....	386	122	73	41	32
East Germany:					
1948.....	62	283	6	4	2
1949.....	146	237	18	15	3
1950.....	160	109	41	38	3
1951.....	328	205	52	44	8
1952.....	365	111	61	54	7
1953.....	483	132	78	73	5
1954.....	618	128	79	75	4
1955.....	506	82	84	78	6

Note: CTN=CEMA trade nomenclature (cf. compendium, app. A).

Source. "Vneshnaia trgovlia SSSR; statisticheskii sbornik, 1918-66" (foreign trade of the U.S.S.R.; statistical volume, 1918-66).

BALANCE SHEET ON ECONOMIC REFORMS

By MICHAEL GAMARNIKOW

CONTENTS

	Page
I. Introduction	164
II. Economic Reforms Prior to 1968	167
Poland—the frustrated pioneer	168
Czechoslovakia—a straggler takes over the lead	172
East Germany—a reform imposed from above	175
Bulgaria—the strange case of a phantom reform	176
Hungary—where there is a political will * * *	179
Romania—a nonmaverick on the reform front	182
III. The “Prague Spring” and its Aftermath	184
IV. Economic Reforms After August 1968	187
Hungary—a firm resolve to carry on	188
Poland—a fourth time lucky?	195
East Germany—a somewhat shop-soiled “economic miracle”	198
Czechoslovakia—full speed astern	201
Bulgaria—a reform stuck in the quagmire of reorganizations	204
Romania—a reform paralyzed by administrative inertia	207
V. Conclusions	210

I. INTRODUCTION

Some 20 years have passed since the countries of Eastern Europe began their search for an alternative economic system, which could effectively replace the traditional methods of running the national economy.¹ These two decades have been a period of intense intellectual ferment and of qualitative changes in economic thinking throughout the Moscow Bloc. Orthodox economic theories, time honored ideological dogmas, and long established practices of planning and management have been not only openly challenged, but quite often publicly condemned as “outdated, unworkable, and hampering further economic progress.”²

The most apparent reason for this increasingly critical approach was the growing realization that the traditional command economy system has outlived any economic usefulness it ever had. Diminishing returns had set in with respect to huge investment expenditures, and such outlays—as a Czechoslovak economist put it—“were no longer able to secure the predetermined growth rate, regardless of its social

¹ Preliminary discussions on the need for economic reforms began in Hungary early in 1953, during the first premiership of Imre Nagy. Later that year, several committees of economic experts were charged with the task of drafting a blueprint of a new economic model. However, the whole project was abandoned in 1955 when Nagy was ousted and replaced by Andreas Hegedüs.

The first comprehensive program of economic reforms was worked out in Poland in 1957. Despite the initial official approval, this program was never implemented, mainly because of strong objections raised by Moscow and other East European regimes. Another important factor was a strong resistance of the dogmatic elements in the Polish party apparatus.

² O. Sik, “The Problems Involved in the Transition to the New System,” Part I, *Rude Pravo* (Prague), Feb. 18, 1966.

usefulness.”³ Indeed, especially in the more industrialized countries of Eastern Europe, the growth rate began to stagnate.⁴ At the same time, statistical evidence began to accumulate, disclosing the growing disparity between actual output and effective demand (both for consumers and industrial users). As a result, stocks of unwanted products began to grow at an alarming rate, disturbing the ratio between the accumulation and consumption funds beyond the tolerable level. The root of the trouble has been aptly diagnosed by a prominent Polish economist as “a basic contradiction between the old methods of planning and industrial management, evolved at another stage of economic development, and the current aims of economic policy, as determined by an objective need to substitute intensive methods of promoting economic growth for the extensive ones.”⁵

The orthodox command economy system became a victim of its own partial success. Despite the overriding emphasis on capital goods industry and growth-oriented investment policies, pursued for more than a decade, by the late 1950's most of the East European economies had attained a sufficient degree of all-round industrialization to emerge from an era of absolute scarcities and a classic sellers' market into the stage of limited buyers' market. It was at this point that the inherent inadequacies of the arbitrarily directed command economy began to be felt in earnest. The most obvious symptom of inefficiency and wastefulness of the old system was “the objectively unexplainable phenomenon of overproduction of unsalable and unwanted goods in the midst of the still-prevailing scarcities.”⁶ All of these disproportions indicated quite clearly that the command economy was simply unable to cope with the problems involved in the transition from an era of predominantly investment demand, determined by the central planners themselves, to a period when effective consumer demand was beginning to assert itself. At this new stage, the prior determination of production targets tended to become more and more difficult, since the structure of consumer demand—once the staple needs of the population at large have been reasonably well satisfied—is very much influenced by such unpredictable factors as subjective value judgment and personal preferences. This effective consumer demand did not exert much weight on the economic decisionmaking at the stage of absolute scarcities, when practically everything which was being produced for internal consumption, was almost sure to be bought. But even in a limited buyers' market, the situation is entirely different. And by the mid-1950's it was becoming more and more obvious that the methods of planning and industrial management would have to be adapted to this new situation.

Having accepted the need for change, the understandable reaction of East European ruling elites has been a tendency to contain the unavoidable economic reforms within the existing political and economic system. Although the objective economic conditions put them into the position in which they had no alternative but to initiate sub-

³ E. Loebli, “On Dogmatism in Economic Thinking,” *Kulturny Zivot* (Bratislava), Sept. 28, 1963.

⁴ The pertinent facts illustrating this stagnation are well documented in the article by Prof. W. Brus, “Some General Remarks on the Changes in the System of Planning and Management,” *Gospodarka Planowa* (Warsaw), November 1966.

⁵ J. Pajestka, “Some Factors Affecting the Acceleration of Economic Development of Our Country,” *Nowe Drogi* (Warsaw), Dec. 12, 1962, pp. 66-77.

⁶ W. Brus, “On Certain Stipulations of Economic Progress,” *Zycie Gospodarcze* (Warsaw), Nov. 11, 1962.

stantive changes in the methods of planning and management, the party establishments have shown every intention to control both the scope and the momentum of economic reforms in order to preserve the orthodox political and economic institutions which ensured their monopoly of power.⁷ They did not really want a new economic model, but would have been perfectly satisfied with a more efficient and rational version of the old one.

This ambivalent attitude toward economic reforms can be explained both by purely ideological considerations and by the exigencies of practical politics. It is one of the basic tenets of the orthodox Marxist doctrine that the political superstructure of any given society is determined by the specific institutional forms of its economic base. This dogma presupposes a full harmony between the prevailing economic and social relations and the corresponding political system. In this sense, the totalitarian power structure of the Communist state was, indeed, perfectly coordinated with the centralized institutions of command economy and its arbitrary operational patterns. Within the framework of this system, the ruling elite combined its monopoly of political power with full control over all essential economic decision-making. Thus, the party establishment was able not only to determine a strict order of economic priorities, but also to subordinate economic development of the country to its doctrinal and political objectives. At the same time, a centralized command economy permitted the ruling elite to dispense economic privileges to the huge, bureaucratic administrative apparatus, which has been the backbone of Communist system since it was established.

Thus, both the East European ruling elites and the great mass of entrenched bureaucrats had every reason to preserve the existing economic system and the traditional methods of planning and management. Yet, they could not indefinitely ignore the extremely serious economic and social problems, resulting from the persistent malfunctioning of the orthodox command economy model. Those problems were especially manifest because the relative liberalization of the post-Stalin era gave many outstanding economists and other social thinkers a chance to speak more freely and to point out the big flaws in the traditional system of planning and management. They were even able to put forward alternative solutions and to describe the outlines of an alternative economic model. The net effect of all this was that the ruling oligarchy and the administrative bureaucracy have found themselves in the unenviable position of defending an economic system which was not only vulnerable on theoretical grounds, but which had also failed to produce the expected results and had led to economic stagnation.

It was, indeed, a very perplexing dilemma both for the more dogmatic elements among the ruling elites and for the multitude of the usufructuaries of the traditional economic system. While the latter were mainly concerned about their jobs and other vested interests,⁸ the former were anxious about the implications of economic reforms for the spheres of ideology and power politics. For it has long been

⁷ J. Fock, "The Economic Reform Was Initiated by the Party and It Must Be Carried Out Under the Leadership of the Party," *Népszabadság* (Budapest), Dec. 1, 1966.

⁸ R. Selucky, "The New System of Management Has Started," *Plamen* (Prague), Jan. 1, 1967.

perceived by more perceptive Marxist scholars that economic reforms are bound—at least in a longer run—to undermine the monopoly of political power enjoyed by the East European party establishments.⁹ Indeed, there was a very strong probability that, as the result of introducing a more participatory economic model, there would emerge a number of special interest groups. Some interest groups, such as the technocrats, might eventually evolve into new elites, with powerful specific interests of their own. Such elites could then become real contenders for political power.

With their vital interests at stake, the hardline party leaders and the administrative bureaucracy have formed a common front against pragmatic reformers. They avoided frontal attacks on the proposed reforms and any involvement in theoretical debates. Instead, they resorted to a variety of delaying tactics. They preferred to operate behind the scenes, often paying lipservice to the need for a change, while, in fact, they were quietly sabotaging the reform programs.¹⁰ In this way they usually succeeded in delaying or at least diluting the necessary reforms.

The political strength of this antireform opposition in all East European countries was quite formidable, and their negative attitude toward any qualitative change in the traditional methods of planning and management was by no means due to self-interest alone. One cannot ignore the fact that, as far as the economic problems were concerned, the perception of the East European party establishment was conditioned for many years by the generally accepted dogma that politics must always have an absolute priority over economics. There were many members of party apparatus in every East European country who genuinely feared that any meaningful changes in the economic system could not fail to endanger the ideological purity of Marxism-Leninism and, thus, undermine the very basis of the dictatorship of the proletariat. They did not deny that a new economic model was likely to perform much better than the old one. But they were firmly convinced that this higher economic efficiency was not worth its inevitable political price.

II. ECONOMIC REFORMS PRIOR TO 1968

These crosscurrents of pressures and counterpressures, generated in turn by objective economic needs and by subjectively motivated fears and apprehensions, have seriously retarded and distorted the whole process of a gradual dismantling of orthodox command economy. Everywhere the progress was slow, and its erratic course indicated an obvious lack of political will to implement the necessary reforms. But the overall trend toward economic pragmatism could no longer be reversed. By late 1960's most East European regimes have formally adopted some sort of a program of economic reforms.¹¹ It should be noted, however, that the main changes which have occurred at this

⁹ I. Bystrina, "The New System and Democracy," *Literarni Noviny* (Prague), Dec. 17, 1966.

¹⁰ O. Šik, "The Way to the New System Is Not an Easy One," *Praca* (Bratislava), June 4, 1966.

¹¹ The most notable exception is Albania, where any deviation from the orthodox economic system was (and still is) regarded as an anathema. Also the mini-reform scheme introduced in Romania in 1968 could hardly be regarded as a fully fledged reform program.

stage were not so much institutional as psychological. The forces of the old order have—at least outwardly—accepted the necessity of introducing novel methods of planning and management, as well as different organizational and operational patterns. But they still waged a stubborn rearguard action, in order to limit the scope of the proposed reforms and to delay their actual implementation for as long as possible.

The reform programs adopted in the individual East European countries were by no means identical. Some of them could be classified as blueprints of a genuinely new economic model, while others amounted to nothing more than a haphazard patchwork of ad hoc rationalization measures, intended to improve the performance of the existing economic system. However, the dividing line was not easy to determine. Quite often there was a big difference between the declared theoretical assumptions of the proposed reforms and the subsequent practical measures which purported to put them into effect. Moreover, the same general concepts and apparently similar operational solutions often proved to have different substantive meanings at the stage of actual implementation.

Consequently, it would be quite futile to attempt an across-the-board classification of the individual East European reform programs. Instead, it is much more advisable to discuss the progress of economic reforms country by country. In this way, one can not only describe and analyse the main characteristics of this or that reform blueprint, but one can also point out the real significance of various checks and balances, which were quite deliberately introduced by the local ruling oligarchy, so as to preserve its essential prerogatives of power. To be really effective a program of economic rationalization requires something more than a set of sound theoretical principles and a comprehensive reform blueprint. In the last analysis, the most decisive factor is the political will to put these reforms into effect.

Poland—the Frustrated Pioneer

Poland pioneered the economic reforms in 1956 and 1957, only to find itself near the very bottom of the reformist league some 10 years later. It was by no means an accident that the first officially sponsored program of economic reforms was worked out in Poland. As already indicated, any substantive changes in the orthodox command economy system run counter to the most essential vested interests of the party establishment and the entrenched bureaucracy. Therefore, such changes can be forced through most easily in a country where the political stranglehold of these dominant power groups has been considerably weakened. Such, indeed, was the situation in Poland, where a lengthy period of bitter factional struggle within the ruling elite itself reached its climax in the “bloodless revolution” of October 1956. At that time, the economic pragmatism in Poland enjoyed the apparent (if not very sincere) official backing of the faction of party leadership, which emerged victorious from this struggle. Indeed, the green light for economic reforms was given by Gomulka himself, as soon as he was elected First Secretary of the Polish Communist Party

(PUWP).¹² Soon afterwards, in response to powerful popular pressure for meaningful changes in the existing economic system, the Polish regime created the Economic Council, a special body composed of some of the most prominent Polish economists.¹³ The publicly declared task of this Council was to prepare the blueprint for a "Polish Economic Model."¹⁴ During 1957, the Economic Council elaborated and published two basic documents, which contained both the theoretical premises of the new model as well as concrete proposals for the necessary reforms.¹⁵ These two official documents were supplemented by dozens of keynote articles published by the chief protagonists of the "Polish Economic Model." Together they provided a definite blueprint of an entirely novel system of planning and management, perhaps the most comprehensive program of economic reforms worked out anywhere in the Soviet bloc.

The reform program proposed by the Economic Council called for two kinds of basic changes in the economic system. One was a drastic reorganization of the administration and management of the economy, emphasizing far-reaching decentralization and full financial independence of individual enterprises.¹⁶ The second category of proposed reforms sought to inject quasimarket conditions into the relations between industrial enterprises and wholesale and retail distribution. The basic overall aim was to substitute "the profit motive and other economic incentives for administrative directives, as the mainspring of economic activity."¹⁷

On the organizational side the Polish economic model called for a wholesale dismantling of the bureaucratic superstructure. The basic economic unit was to be a self-governing, self-financing and fully independent enterprise.¹⁸ Each of these autonomous economic units was to operate according to the principles of businesslike accounting, and the highest possible degree of profitability was to be the main concern of its director (acting together with the workers' council, which had at that time full rights of comanagement). This independent enterprise was to sell its final products either to other factories or to the distributive enterprises at prices "which would be primarily determined by the real costs of production and the forces of the market mechanism."¹⁹ All forms of state-subsidized production and distribution were to be gradually phased out.

In order to recreate such market-oriented conditions, in which the profit motive could function as the mainspring of all economic activity, the blueprint of the Polish Economic Market provided for a general reform of wages and prices. The aim was to bring the prices of raw

¹² Gomulka speech at the VIII Plenum of the Polish Central Committee, Oct. 19-22, 1956, published in *Nowe Drogi* (Warsaw), October 1956, pp. 30-34.

¹³ Among the members of the Economic Council were several economists of world repute, such as Prof. Oscar Lange, Prof. W. Brus and Prof. Michael Kalecki.

¹⁴ Editorial: "Economic Council has Begun Its Work—the Main Task is the Elaboration of the Polish Economic Model"—*Trybuna Ludu* (Warsaw), Feb. 10, 1957.

¹⁵ These proposals were contained in two basic documents:

(a) "Theses of the Economic Council Concerning Certain Changes in the Economic Model"—*Zycie Gospodarcze* (Warsaw), June 2, 1957.

(b) "Theses of the Economic Council in the Matter of Determining the Principles of Price Structure"—*Zycie Gospodarcze* (Warsaw), Dec. 22, 1957.

¹⁶ E. Lipinski, "Workers' Councils, Enterprises and Other Matters," *Zycie Gospodarcze* (Warsaw), Dec. 22-29, 1957.

¹⁷ W. Brus, "The Concept of Incentives Based on the Profit Motive," *Zycie Gospodarcze* (Warsaw), June 23, 1957.

¹⁸ E. Lipinski, "The Model of Socialist Economy," *Nowe Drogi* (Warsaw), December 1956.

¹⁹ J. Mujzel, "The Prices and the Model," *Zycie Gospodarcze* (Warsaw), Apr. 23, 1957.

materials, semifinished products and finished articles in line with the real cost of production. To compensate the population at large for the expected rise in the level of prices and in the cost of living, the Economic Council proposed substantial increases in wages and salaries, as well as in pensions and in social benefits.²⁰ Polish reformers argued that once the proper relationship between prices, production cost and individual incomes had been reestablished the forces of the market would tend to keep them in equilibrium. In time, economies of scale and competition between independent enterprises could be relied upon to bring the prices down to a level, which would make genuine mass consumption possible.²¹

The main mistake committed by the Polish reformers in the 1956-1957 period was that they wanted to achieve too much too soon. The time was not yet ripe for implementing pragmatic reforms on such a scale. The other countries of the Soviet bloc, including those which later introduced economic reforms much along the lines advocated in Poland in the midfifties, regarded the blueprint Polish economic model as the epitome of ideological revisionism. Indeed, a strong pressure was put on the Gomulka regime by those countries to stop playing with fire.²²

This hostile outside pressure was, however, only one of the factors which prevented the practical implementation of the Polish economic model. Much more decisive in this respect has been the active resistance of the dogmatic forces within the Polish establishment. Those forces, defeated temporarily in October 1956, have been fighting against the implementation of the Polish economic model both on ideological grounds and because their vested interests and special group privileges were seriously threatened by the new organizational and operational patterns, foreseen in the reform blueprint. But the new system of planning and management was not the primary object of the hardliners counteroffensive. They used the failure of the new economic model as a political lever to restore their power position within the party, and they were indifferent to any harm done to the national economy in the process. Thus, many experiments intended as pilot schemes for the new methods of planning and management were deliberately sabotaged and obstructed by the entrenched bureaucrats.

By late 1959, the dogmatic counteroffensive had achieved most of its objectives. The Economic Council had, for all practical purposes, ceased to exist.²³ The changes already implemented in the organizational structure of Polish industry were effectively countered by the strengthening of centralized control, with its profusion of operational directives. The proposed reform of wages and prices, due to be implemented in 1958, was abandoned altogether. Workers' councils, which were originally intended to comanage the independent enterprises, were shorn of all the essential prerogatives which had been granted

²⁰ Cf. "Theses of the Economic Council in the Matter of Determining the Principles or Price Structure," *Zycie Gospodarcze* (Warsaw), Dec. 22, 1957.

²¹ O. Lange, "How Do I Visualize the Polish Economic Model," *Trybuna Ludu* (Warsaw), Dec. 31, 1957. See also Cz. Borbrowski, "Before the Change in the Economic Model," *Zycie Gospodarcze* (Warsaw), May 12, 1957.

²² This hostile pressure was later fully admitted by the official Polish media. See: W. Brus, "Some General Remarks on the Changes in the System of Planning and Management," *Gospodarka Planowa* (Warsaw), November 1966. Among the countries, which objected most strongly against the Polish Economic Model were Czechoslovakia and Hungary.

²³ The Economic Council became moribund in mid-1959, although it was not formally dissolved until the end of 1962.

to them by legislation in 1956.²⁴ At the same time, the very concept of a Yugoslav-type workers self-management system (a prominent feature of the 1956/1957 version of the Polish economic mode) was formally disowned.²⁵ Finally, at the turn of 1959 the powers of the central planners were greatly strengthened²⁶ and that was—for all practical purposes—the end of the first phase of economic reforms in Poland.

The return to a monocentric economic system and to the methods of direct control inevitably created serious economic difficulties, which reached their climax in the winter of 1962–63. Consequently, in the fall of 1963, the Polish ruling elite began again to look more critically at the arbitrary methods of planning and management. This led to renewed interest in economic reforms which had been so hastily abandoned. In March 1964, the party leaders, preparing for their Fourth Congress in June, published a set of theses outlining, among other things, certain concrete measures which were intended to reactivate some aspects of the Polish economic model. Although quite a few of those proposals were subsequently watered down in the final text of the Fourth Congress resolution, the bulk of them did survive and a more or less definite program of economic reform, based on this truncated blueprint, was later approved by a Central Committee Plenum held in July 1965.²⁷

Thus, after an interval of nearly 6 years, economic pragmatism again became a part of the official policy line in Poland. But the political situation in the corridors of power was by then entirely different from that which prevailed in the early post-October period. At that time, the dogmatic elements within the Polish ruling elite had been decisively routed and were in full political retreat. The quasi-liberal faction, favorable to economic reforms, held the levers of power and—what is equally important—controlled the information media, which it used very extensively to promote more pragmatic concepts of “socialism.” In contrast, the 1964–65 version of the reform blueprint was devised and sponsored by middle-of-the-road apparatchiki, not as an article of faith, but under the pressure of sheer economic necessity.

This second version of the Polish reform program bore a distinct imprint of its principal sponsors. Structural and institutional changes in the existing system were pushed into the background and new theoretical concepts—if any—were deliberately blurred. The main emphasis was put on preparing a number of elaborate bureaucratic measures, necessary (so it was argued) to set the new system in motion. All in all it was a thoroughly Parkinsonian attempt to inject a certain degree of economic rationalism into the Polish body economic. This was to be achieved by some intricate juggling of the standard indicators of centralized planning and a certain degree of decentrali-

²⁴ “The Draft of the Decree to Be Issued by the Polish Council of Ministers About the Organization and Prerogatives of the Workers’ Councils,” *Trybuna Ludu* (Warsaw), Nov. 1, 1956, an official PAP release. See also: M. Kalecki, “Workers’ Councils and Central Planning,” *Nowe Drogi* (Warsaw), December 1956.

²⁵ “The Draft of a Bill on Workers’ Self-Government,” *Trybuna Ludu* (Warsaw), Oct. 11, 1958, an official PAP release.

²⁶ “AR,” “Increased Tasks and Prerogatives of the Planning Commission,” *Trybuna Ludu* (Warsaw), Jan. 5, 1960.

²⁷ Cf.: “The Resolution of the VII Plenum of the Central Committee of PUPW,” *Trybuna Ludu* (Warsaw), July 27, 1965.

zation in the sector of investment financing. The need to base production plans detailed market analysis was also stressed, in order to give this emasculated blueprint a sort of consumer-oriented appearance. At the same time, however, each of the proposed pragmatic half-measures was also replete with built-in safety devices, which were meant to perpetuate bureaucratic controls.

Yet even this devitalized version of economic reform was unacceptable to the powerful pressure groups of dogmatic ultras, political hardliners and entrenched bureaucrats. They fought the reform blueprint every inch of the way, playing skillfully on the inbred apprehensions and reservations of Gomulka and his close associates. When the watered-down version of the proposed reforms finally became an integral part of the official party program, the dogmatists and the hardliners reverted to their favorite tactics of procrastination, deliberate inaction and other subversive forms of bureaucratic sabotage. These tactics proved so effective that all the proposed economic reforms virtually remained on paper. In July 1967 *Zycie Gospodarcze*, the organ of loyalist economic reformers, complained bitterly that although 2 years had passed since the final approval of the new methods of planning and management by the Central Committee Plenum, the actual implementation of the reform on all levels still left much to be desired.²⁸

Discussing the reasons why the 1964-65 version of the new model failed to get off the ground, *Zycie Gospodarcze* put the main blame on "old habits and conditioned reflexes which are the heritage of the old system." It also castigated very harshly the dogmatic mentality of those who were entrusted with the implementation of the new system. "They stick to old methods and familiar routine," charged the Polish weekly, "in the hope that everything will return to the old ways."²⁹

By the time the article in question appeared in *Zycie Gospodarcze*, however, the dogmatists and the hardliners were already marshaling their forces for a massive escalation of their counteroffensive against economic reform, an onslaught, which reached its climax after the Soviet invasion of Czechoslovakia. The net effect of this counteroffensive was to push economic reform programs in Poland back to square one.

Czechoslovakia—A Straggler Takes Over the Lead

In Czechoslovakia, the dogmatic majority within the top party hierarchy had successfully resisted all meaningful changes in the existing command economy system until well into the early 1960's. But the writing was already on the wall. In the course of the 1961-65 5-year plan the average annual growth rate fell to 1.8 percent, down from a respectable 7-percent growth rate, registered during the previous 5-year period.³⁰ Faced by a very real threat of virtual economic stagnation, if not a negative growth rate, the Novotny regime reluctantly consented to a public discussion among the party's economic experts

²⁸ J.G. (J. Glowczyk, the editor-in-chief), "The Reform and Men," *Zycie Gospodarcze* (Warsaw), July 30, 1967.

²⁹ *Ibid.*

³⁰ Ota Sik, "On the Threshold of a New Stage in the Development of Socialist Economy," *Rude Pravo* (Prague), June 5, 1966.

about the reasons for such an obvious malfunctioning of national economy.

By contemporary Polish, or even Bulgarian standards, this debate was certainly rather timid, and most participants did not dare to go beyond a very general criticism of the worst abuses of the arbitrary methods of planning and management. Its subject matter was also far less specific than that of the theoretical discussion in the Soviet Union, which followed the publication of Professor Liberman's theses³¹ and their partial endorsement by Khrushchev at the CPSU Plenum in November 1962. Nevertheless, there was a general consensus among Czechoslovak experts that the whole economic system ought to be overhauled in order to make it more responsive to the needs of the market. Such unorthodox ideas were expressed even in the official party statements. Thus, in January 1964, an unsigned editorial in *Rude Pravo* conceded cautiously that "production should be exposed to a certain amount of pressure both from the market and from the customers."³²

Nevertheless, by the middle of 1964 Czechoslovakia was still one of the stragglers. The debate among the experts was purely theoretical, centering on the theme of past errors in planning and management and on the reasons for the poor current performance of the economy. No concrete reform proposals had yet been publicly formulated, and no significant experiment pilot projects were yet in operation. But within a few months the situation had changed radically. By October 1964 a comprehensive, officially sponsored blueprint of economic reform had been worked out and published.³³ In January 1965 this reform program was unanimously approved by the central committee of the CPCS, and it was scheduled to become fully operative, at least so far as its basic principles were concerned, in 1966. Detailed guidelines were to be issued by June 1965, and all problems concerning the practical implementation of the new economic model were to be ironed out by the end of the year.³⁴

This rather tight schedule was, however, abandoned within a few months. Instead, another plenary meeting of the central committee resolved that the proposed new model should be implemented in two stages. The first, beginning January 1, 1966, was intended to "create proper incentives for discovering material and labor reserves on the enterprise level." The second stage, beginning January 1967, was to provide the solution for "the problems of investments and of proper management of Socialist enterprises." The precise meaning of these terms was not very clear, but the new timetable obviously implied a delay. This was confirmed by the official explanation that such "gradualism" was necessary because numerous practical problems and disproportions do not permit a speedier implementation of the new economic model.³⁵

Thus, on the eve of the "Prague spring" the situation in Czechoslovakia conformed to the well-known pattern. On one side was a truly

³¹ J. G. Liberman, "The Plan, Profits and Premium," *Pravda* (Moscow), Sept. 9, 1962.

³² *Rude Pravo* (Prague), Jan. 8, 1964.

³³ "On the Proposal Concerning the Principles for Perfecting the Planned Direction of the National Economy," *Rude Pravo* (Prague), Oct. 17, 1964.

³⁴ The Resolution "Concerning the Main Trends in Perfecting the Planned Direction of the National Economy, and on Party Work," *Rude Pravo* (Prague), Jan. 30, 1965.

³⁵ "Resolution of the CC of the CPCS Concerning the Activities of the Organs of Central Management," *Rude Pravo* (Prague), Nov. 4, 1965.

pragmatic blueprint, envisaging far-reaching reforms, on the other, an apparent lack of political will to carry those reforms to their logical conclusion. "The central authorities," warned a Slovak economist, "are already looking for possibilities of limiting the freedom of action of Socialist enterprises by imposing additional obligations, which can be enforced by a variety of means."³⁶ This undercover tug of war persisted throughout 1966, and the chief protagonists of the new economic model began openly to express their dismay over the slow progress of the reforms. And, although the 13th Party Congress in June 1966 unanimously approved all the pragmatic principles of the new system of planning and management,³⁷ the leaders of the reformist wing of the CPCS were not too optimistic. "The chief obstacle," warned Professor Ota Sik in an interview published in the Slovak Trade Union daily *Praca*, "is the noneconomic way of thinking of some people who are backing the new system with words, but in practice still follow the old ways."³⁸

Yet, despite all these delays and setbacks, the Czechoslovak reformers had something to be really proud of. Within a relatively short time they prepared a blueprint of a very progressive new economic model, which was certainly far ahead of any contemporary East European reform program. Moreover, their new economic model was formally and unequivocally endorsed by the Party Congress.

The main feature of the Czechoslovak reform blueprint was far reaching decentralization of the whole decisionmaking process. Only the major questions of macroeconomic policy were to remain within the sphere of authority of the central institutions. All other economic problems, including operational matters, were to be settled either at the level of individual trusts (raw material and investment funds allocations), or at the level of enterprises (concrete production plans, employment limits, wage scales and certain categories of prices).³⁹ Old methods of economic management, based on arbitrary directives and centralized control were to be replaced by new ones, relying principally on material incentives, the profit motive and standard rules of financial accounting.

In order to introduce at least some vestiges of a market economy into their model, Czechoslovak reformers envisaged also a major reform of the existing pricing system. They have proposed three categories of prices: 1. State-determined, fixed prices for all essential raw materials, investment goods and basic staples; 2. Flexible, or limited movement prices for the bulk of less essential commodities and services. Such prices were to be permitted to fluctuate freely within their lower and upper limits, set up periodically by central authorities; 3. Free market prices, determined solely by supply and demand. Such prices were foreseen for certain, selected groups of consumer goods.⁴⁰

³⁶ J. Kovacik, "A Difficult Birth," *Praca* (Bratislava), Dec. 21, 1965.

³⁷ Cf. Resolution of the 13th CPCS Congress as published in *Rude Pravo* (Prague), June 7, 1966.

³⁸ Ota Sik, "The Way to the New System is not an Easy One," *Praca* (Bratislava), June 4, 1967.

³⁹ Cf. The Resolution of the Central Committee of the CPCS, "Concerning the Main Trends in Perfecting the Planned Direction of National Economy," *Rude Pravo* (Prague), Jan. 30, 1965. See also the relevant parts of the Resolution of the 13th Party Congress of the CPCS *Rude Pravo* (Prague), June 7, 1966.

⁴⁰ Jiri Typolt, "Fixed, Flexible and Free Prices," *Rude Pravo* (Prague), Nov. 25, 1965.

The logical implication of such a three-pronged pricing system was that all nonessential commodities (and some staples as well) would be eventually upgraded to a more liberal price category, as soon as such a move was warranted by the supply and demand position. This is why most Czechoslovak reformers regarded this system as merely a transitional solution, which would remain in force until the full operation of the market mechanism could be restored.⁴¹

East Germany—A Reform Imposed From Above

As in Czechoslovakia, it was the specter of economic stagnation, which finally forced the hand of the East German ruling elite.⁴² But while in Czechoslovakia the new economic model was being shaped in a protracted tug of war between the reformers and the dogmatic majority within the party establishment, in East Germany a ready-made reform program was imposed in one fell swoop of theoretical debate and isolated pilot experiments.

The East German reform blueprint was worked out in near secrecy by high party functionaries, and it was formally approved by the Central Committee of the SED in July 1963.⁴³ Soon afterwards it began to be implemented with a typical teutonic thoroughness. The main feature of the East German model was a radical reform of the organizational structure, geared to the basic objective of greater economic efficiency. The cornerstone of this reorganization was the establishment of a relatively large number of specialized industrial trusts,⁴⁴ patterned after the traditional German cartel. Each of these trusts, called *Vereinigung Volkseigener Betriebe* (V.V.B.) were conceived as an independent economic unit—not unlike an average Western industrial concern. The managerial board of each VVB was to supervise and direct the activities of a dozen or so of subordinate enterprises, producing, as a rule, the same or similar goods.⁴⁵

Their vast decisionmaking power has devolved to the *Vereinigungen Volkseigener Betriebe* from the industrial departments of the national economic council from the ministries and from the state planning commission. At the same time, the VVB's have become the task-setters for all their component industrial enterprises. Hence, the East German economic model resulted in a two-directional shift of the focal point of economic decisionmaking toward the VVB's—downward from the central agencies and upward from the individual factories.

In contrast to other East European reform blueprints, the new economic model adopted by the GDR did not envisage any larger scope for the operation of market mechanism. There was also much less emphasis on material incentives and initiative from below. Instead, the so-called "Tonnen Ideologie" (tonnage ideology), which was the offi-

⁴¹ For the most comprehensive discussion of the three-category pricing system and its long-term objectives, see Ota Sik, *Plan und Markt Sozialismus*, Vienna, Molden Verlag, 1967.

⁴² In East Germany too the growth rate dropped dramatically in the early sixties—from 8.1 percent average annual growth rate registered during the 1956-60 period, to 2.8 percent in 1962, and 2.1 in 1963 and 1964.

⁴³ "Guidelines on the New System of Economic Planning and the Direction of the National Economy," *Neues Deutschland* (East Berlin), July 17, 1963.

⁴⁴ According to the latest data some ninety trusts were operating in the GDR in 1972. Cf. *Neues Deutschland* (East Berlin), Aug. 14, 1972.

⁴⁵ Wolfgang Berger, "The New Economic System in the GDR—Its Essence and Its Problems," *World Marxist Review*, February 1965.

cial article of faith during the entire command economy era, was replaced by a veritable cult of economic efficiency, measured in terms of productivity, up to date technology and strict cost-accounting.

To this end several pragmatic rules of the economic game have been introduced in East Germany. Capital assets taken over by the newly established VVB's have been revalued to their true economic price in order to insure realistic depreciation writeoffs. Differentiated interest rates have been set up for both short-term and long-term credits granted by state banking institutions to individual trusts. State subsidies paid to unprofitable enterprises have been largely eliminated. All supply and industrial cooperation deals, both at the enterprise and the trust level, were put on a strict contractual basis. Bonus payments and wage increases were made entirely dependent on profits.

With such a degree of pragmatism in other fields, the East German regime remained emphatically conservative on one basic issue. It insisted on preservation of the principle of central price control. Although in the original reform blueprint prices had been assigned a special role as "economic levers," their determination was to remain the sole prerogative of central planners. In a keynote speech at the December 1965 Central Committee Plenum, Ulbricht again insisted that the adaptation of prices to the prevailing market conditions had to be achieved "in a planned way," that is, by central planners.⁴⁶

Some East German economists did play with the idea of a multi-category pricing system, similar to that envisaged in Czechoslovakia. But all such concepts were openly discouraged by the SED hierarchy. It is highly symptomatic that the only specific proposal for introducing such many pronged pricing system in East Germany was published not in the GDR, but in the Soviet Union.⁴⁷ In any case, until the end of the period under review and, indeed to this day the East German authorities remained firm in their resolve that all prices must be centrally determined and strictly controlled.

Bulgaria—The Strange Case of a Phantom Reform

While the East German ruling elite has opted for a fairly comprehensive blueprint and introduced it in one fell swoop on the macro-economic scale, the Bulgarian party leadership has elected instead to follow the Soviet example of trying out the new system of planning and management in a step by step manner, in the form of number of selected microeconomic experiments. In Bulgaria, which in the early 1960's was still a relatively underdeveloped country, the need to change from extensive to intensive methods of promoting economic growth was not so pressing as it was in Czechoslovakia and East Germany. Nevertheless, once pragmatic reform proposals became politically and ideologically acceptable in the Soviet Union itself, even the ultra-conservative Bulgarian establishment could no longer keep its own protagonists of a new economic model at bay.

⁴⁶ Ulbricht's speech at the 11th SED Plenum as reported by *Neues Deutschland* (East Berlin), Dec. 18, 1965.

⁴⁷ Dr. M. Betherr, "Four prices types," *Ekonomicheskaja Gazeta* (Moscow), October 1966, 40, p. 39. In this article Dr. Betherr proposed that East Germany should introduce a four category pricing system. He suggested the following types of prices: (1) Fixed Prices for all staples, raw materials and investment goods; (2) Maximum Prices which would allow some discount sales to industrial users; (3) Limited Movement Prices for all nonessential and consumer goods; (4) Contract prices to be determined by buyer and sellers, for certain types of enterprises to enterprise transactions.

The most outspoken among the Bulgarian advocates of economic reforms was Professor Petko Kunin, a newly rehabilitated associate of Traicho Kostov and now a fully fledged member of the Central Committee.⁴⁸ As many other prominent East European economists, Professor Kunin argued that the only way to increase economic efficiency of the socialist system is to free individual enterprises from the shackles of arbitrary, monocentric planning and direct, bureaucratic controls. Instead, each enterprise should be transformed into an independent, self-financing economic unit, which ought to base all its activities on the profit motive and the full operation of the market mechanism.⁴⁹

Another remedy, which Professor Kunin prescribed for Bulgaria's economic ills was the old-fashioned medicine of competition. Socialized enterprises—he argued—should compete with each other for shares of the market, and the earnings of both managers and workers should depend on the outcome of this competitive process. To this end he advocated the principle of profit sharing, which would create a direct link between economic performance of a given enterprise and the earnings of the workers.⁵⁰

As could well be expected the official reform blueprint which was eventually adopted in Bulgaria fell well short of Professor Kunin's ultrapragmatic concepts. In actual fact, the full extent of this reform program remained rather a mystery to everybody except the top members of Bulgarian ruling elite. Early in 1963 the proposed reform measures were discussed at length, but behind closed doors by the Bulgarian Politburo. In May 1963, Zhivkov presented to this body a report on the "Guidelines of a new system of planning and management." Neither Zhivkov's report, nor the "guidelines" were ever published. Apparently the Politburo had discussed this phantom reform program in a very detailed manner, for it was not finally approved until January 1964, and even then only "in principle."⁵¹

Four months later, that is, in May 1965, the decision was made to try out the new methods on a series of microeconomic experiments. The new system was introduced first in the "Dimitrova" woolen textile mill, and was subsequently expanded to about 50 carefully selected enterprises in a number of industries. By late 1965 about 30 percent of all major industrial undertakings, including most of light industry and food processing and some machinery factories, were reportedly working under the new rules.⁵² The Bulgarian authorities also began to experiment with a regrouping of industry into industrial associations (trusts), resembling those institutions which have already been set up in the other East European countries. Nine such trusts were

⁴⁸ Traicho Kostov a leading member of Bulgarian hierarchy was executed in December 1949, after one of the most notorious show trials, which followed the expulsion of Yugoslavia from the Cominform. In one of the subsidiary trials "the Kostov group" Professor Kunin received a 15-year jail sentence. Early in 1960, he was fully rehabilitated and at the VIII Party Congress in November 1962, he was reelected to the Central Committee of the Bulgarian Communist Party.

⁴⁹ P. Kunin, "The Systematic Development of the National Economy According to Plan and the Principle, From Each According to His Ability, to Each According to His Work Under Socialism," *Novo Vreme* (Sofia), December 1963.

⁵⁰ *Ibid.* For a similar proposal, see A. Mlloshevsky, "On the Question of Strengthening Economic Incentives in Our Country," *Novo Vreme* (Sofia), November 1963.

⁵¹ Cf. J. F. Brown, "Reforms in Bulgaria," *Problems of Communism*, May/June 1966.

⁵² Unsigned editorial: "For a Nationwide Discussion," *Rabotnichesko Delo* (Sofia), Dec. 5, 1965.

apparently in operation by the end of 1965, controlling the economic performance of their subordinate enterprises.⁵³

Bulgarian experiments, both on the enterprise level and on that of the trust were allegedly based on the "selective application" of the profit motive and, to a certain degree, on the principle of profit sharing. But neither the enterprises nor the trusts had any say in determining prices or wages, and they had little authority in shaping their own production plans. Moreover, to discourage "excessive" investment expenditure and "to reduce costs" the Government had imposed a substantial levy on all fixed circulating capital.⁵⁴

On the basis of such experiments, the Bulgarian Central Committee approved in December 1965 a draft proposal of a comprehensive reform blueprint. This time it "invited" a public discussion on the subject.⁵⁵ The main reforms outlined in this draft proposal followed a dual approach: binding directives and centralized controls on the macroeconomic level, combined with indirect controls and a profit motive at the factory and trust level. The Bulgarian blueprint also envisaged the introduction of a many-category pricing system, although not as flexible as the one adopted in Czechoslovakia.

On the whole, the proposed reform measures offered some hope for a more efficient performance of the Bulgarian economy, although the envisaged changes, both in industrial structure and in the methods of planning and management, were certainly much less bold than those foreseen in the East German or Czechoslovak models. As far as the implementation of these reforms was concerned, the Bulgarian Central Committee had tentatively decided that the scattered microeconomic experiments should continue throughout 1966 and 1967. Beginning with 1968 the new system was to be introduced in the economy as a whole.⁵⁶

Although these decisions were officially labeled as "unanimous," the Bulgarian hierarchy was apparently still very much divided on the crucial issue of how much of the decisionmaking power should devolve from the central economic institutions to the newly organized industrial trusts. The Central Committee plenum, which was to give its final approval to the proposed reform program was originally scheduled for the end of January 1966.⁵⁷ But since the reform controversy was evidently not settled by that time, it had to be postponed at a very short notice.⁵⁸ Finally, a Central Committee meeting did take place at the end of April 1966, but its outcome was still far from conclusive. The plenum gave its approval to "the basic principles of the new system" but not to the detailed "guidelines." These were to be redrafted by the Politburo "in accordance with the numerous suggestions put forward at the plenum."⁵⁹ Thus the dispute was not over yet.

⁵³ *Ibid.*

⁵⁴ G. Petrov: "How to Raise the Efficiency of the Management of the Economy," a series of articles in the provincial paper *Radopsky Ustrem*, Sept. 22, 24, 26 and 29, 1964.

⁵⁵ "The Politburo Theses on the New System of Planning and Management of National Economy," *Rabotnichesko Delo* (Sofia), Dec. 4, 1965.

⁵⁶ *Ibid.*

⁵⁷ Unsigned editorial: "For a Nationwide Discussion," *Rabotnichesko Delo* (Sofia), Dec. 5, 1965.

⁵⁸ The plenum was scheduled for Jan. 28, 1966. The announcement about the postponement was published in *Rabotnichesko Delo* (Sofia) on Jan. 26.

⁵⁹ Text of the Central Committee resolution as published in *Rabotnichesko Delo* (Sofia), Apr. 29, 1966.

By reading carefully between the lines of published documents,⁶⁰ one could pinpoint quite easily the focal points of this controversy. One was a conflict of authority between the ministries and the newly created industrial trusts. The ministries were accused at the plenum of "undue interference in the operational problems," while the trusts were charged with "a tendency to take advantage of their monopolistic position." The second major bone of contention was the issue to what extent the market situation should have a direct bearing on the process of price determination.⁶¹

These controversial issues were but the visible tip of an iceberg. The real problem was that an essentially conservative Bulgarian establishment was not yet prepared to implement an economic model, which introduced so many far-reaching innovations. The crucial issue in Bulgaria, to a much greater extent than in the other East European countries, was that of maintaining the essential elements of party control over the economy. Throughout the debate about the new system, there were clear indications that the dogmatic core of the party apparatus intends not only to retain its existing prerogatives, but to assume new ones.⁶²

With so many contradictory interests at stake, the only way to achieve a semblance of political consensus was to send the whole draft of economic reforms back to the drawing board.⁶³ Thus, the decision to continue microeconomic scale experiments was just a smoke screen. The hard fact was that by the end of 1966 Bulgaria still had no viable reform program and the prospects of working out such a program by the 1968 deadline were extremely remote.

*Hungary—Where There Is a Political Will * * **

In Hungary, on the other hand, the situation was very different. There was no open tug of war between the protagonists and the antagonists of economic reform, and the Hungarian ruling elite showed none of the ambivalence, inhibitions, and apprehensions, which were so much in evidence in Poland, Czechoslovakia, and Bulgaria. True, by contemporary East European standards, Hungary was certainly a very late starter. At the turn of 1964, the Hungarians did not even have an officially sponsored reform blueprint. But this was due primarily to objective political conditions prevailing during a period of "normalization," which followed the ill-fated Hungarian uprising of November 1956.

However, what really distinguished Hungary from the other East European countries was the fact that a large majority of the post-insurrection Politburo (whatever their political sins in 1956 and 1957) was genuinely committed to the cause of economic reforms and had amply demonstrated a political will to implement a comprehensive and market-oriented reform blueprint. All this became apparent only in

⁶⁰ For instance Zhivko's report as published in *Rabotnichesko Delo* (Sofia), Apr. 29, 1966.

⁶¹ Cf. Zhivkov report, op. cit. *Rabotnichesko Delo* (Sofia), Apr. 29, 1966.

⁶² Unsigned editorial: "Under the New Conditions," *Partiyen Zhivot* (Sofia), September 1965, 13, pp. 3-9.

⁶³ After the April 1966 Plenum, a group of 150 economic experts was given the task of preparing an "improved" version of the new model. This new version was supposed to incorporate "all suggestions and conclusions as expressed by the participants in the plenum discussion." Cf. *Rabotnichesko Delo* (Sofia), June 6, 1966.

the second half of the 1960's. Meanwhile, after the traumatic experiences of the Hungarian uprising. Kádár and his close associates had to keep a very low and rather orthodox profile. As far as the Soviet Union was concerned they were still on probation. But as soon as their political credit in Moscow was firmly established, the Hungarian hierarchy turned its attention to the task of economic reform.

After that events moved very swiftly. Early in 1965, 11 special committees of economic experts were set up and began to work on a draft of a new economic model.⁶⁴ In less than 15 months all the preparatory work was done, and in May 1966, the central committee of the HSWP approved a comprehensive program of economic reforms. It was also resolved that all the organizational and legal groundwork, necessary to implement the new system should be completed by the end of 1967, so that the new model could become fully operative as of January 1, 1968.⁶⁵ For one, this rather tight schedule was strictly adhered to, which shows quite clearly that where there is a political will, there is also a way to work out a comprehensive program of viable economic reforms in a relatively short time and to implement it without undue delays.

The Hungarian reform blueprint differed from its other East European counterparts on four pivotal issues. First of all, in Hungary the most essential operational and structural features of the new model were to be introduced not only in industry, transport and distributive services, but also in agriculture. Second, the organizational pattern foreseen for Hungarian industry, did not envisage any middle-level superstructure, such as trusts or industrial associations. Third, the Hungarians were the first to realize that, because of the changed *modus operandi* of the new system, the whole concept of the role of trade unions in a Communist planned economy had to be very radically redefined.⁶⁶ The fourth unique feature of the Hungarian New Economic Mechanism was an elaborate profit-sharing scheme, which was deliberately biased in favor of the managerial class, to compensate this group for its entrepreneurial risk-bearing tasks.

However, the most essential distinguishing trait of the Hungarian reform was the greatly enhanced economic role of individual enterprises, which were conceived as the mainstay of the new system. The Hungarian decree on state enterprises,⁶⁷ the first legislation of this kind in Eastern Europe, was a virtual Magna Charta for business-minded enterprise managers. In the decree the sphere of responsibility of a factory director was greatly enlarged and very clearly defined. He was to set up his own production plans based exclusively on market analysis and negotiate with trade unions about wage rates

⁶⁴ Perhaps out of purely ideological considerations, the Hungarian ruling elite carefully avoided the expression "new economic model." Instead the term "new economic mechanism" (NEM) was being used in all official statements and documents.

⁶⁵ Cf. "The Resolution of the Plenum of the Central Committee of the HSWP," published in *Népszabadság* (Budapest), May 29, 1966. For more details on the proposed reform blueprint see: Joseph Held, "Hungary: Iron Out of Wood," *Problems of Communism* (Washington), November/December 1966.

⁶⁶ There is no space here to discuss either the rationale behind the decision to reassess the role of trade unions, or the specific measures, which were intended to serve this purpose. For more information on this subject, see the chapter: "Trade Unions: An Agonizing Reappraisal" in M. Gamarnikow *Economic Reforms in Eastern Europe*, Wayne State University Press (Detroit), 1968, and Radio Free Europe Research Paper, "The New Economic Mechanism and the Reform of Trade Unions in Hungary," (Munich), Nov. 11, 1966.

⁶⁷ Decree No. 11 of the Hungarian Revolutionary Workers and Peasants Government, *Magyar Közlöny* (Budapest) May 13, 1967.

for his employees. He was also authorized to make all decisions about marketing his factory products and obtaining credits from the state banking system and investment plans (in so far as these were financed out of the enterprise's own resources).

The principal statutory obligation of the enterprise manager was to show a sizable profit at the end of the financial year. The appropriate legislation determined very clearly how such profits should be divided.⁶⁸ The state took its share in the form of taxes and capital levies. The rest was to be apportioned between investment fund, capital amortization fund, profit and loss reserve fund and additional remuneration fund. The investment fund was to be used for further industrial expansion, the amortization fund, for replacement of capital assets and the profit and loss reserve fund, to cover possible losses in a bad year. All this was very similar to standard Western business practice.

The purpose of the additional remuneration fund was to finance an elaborate profit-sharing scheme—another unique feature of the Hungarian economic model. For profit-sharing purposes all personnel of a state enterprise were divided into three distinct categories. The manager and his top assistants belonged to the first category; the supervisory personnel down to the foreman level and the top administrative employees belonged to the second one; and the remaining employees were classified in the third category. This subdivision was not only pertinent in respect to participation in profits, but also indicated the differences in bearing entrepreneurial risks.

Accordingly, the members of the top managerial group could be rewarded, out of the additional remuneration fund, up to 80 percent of their regular yearly salaries. The people in category II could receive no more than 50 percent of their regular salary as their share in enterprise's profits. For category III, this figure dropped to 15 percent. But this obvious inequality in profit-sharing rules was somewhat balanced by a similar difference in risk-bearing provisions. The workers and lower grade office employees were exempted from any risk-bearing. Whether the enterprise made a profit or a loss, their wages were guaranteed by the state and had to be paid out in full. In contrast, only 75 percent of the salaries of the top managerial group (category I) were guaranteed by the state. The remaining 25 percent were to be paid to them only if the enterprise which they managed earned a profit. The same principle was to be applied to supervisory staff (group II); for them the corresponding figures were: 85 percent of the yearly salary guaranteed, 15 percent dependent on the balance of the profit-and-loss account.⁶⁹ Thus, the Hungarian profit-sharing scheme was based on a clear principle of income differentiation, depending on responsibility and risk-bearing.

As far as the reform of the pricing system was concerned, the basic position taken in the Hungarian reform blueprint was that "prices have to reflect the real (that is, market) value of all goods and services."⁷⁰ Until the existing market shortages were eliminated, however,

⁶⁸ Decree No. 19 issued by the Economic Committee of the Bulgarian Council of Ministers, *Műszaki Élet*, June 15, 1967.

⁶⁹ *Ibid.*

⁷⁰ "Resolution of the Hungarian Socialist Workers Party Central Committee Concerning Reform of the Economic Mechanism," Supplement to the Weekly Bulletin—23 of June 9, 1960, published by the Hungarian news agency MTI.

some prices would still have to be fixed by the state, or would be allowed to move between the upper and lower limits set by the central planners. Other prices were to be determined by the enterprises themselves, "in accordance with the current supply and demand position." It was also assumed that, after the transitional period was over, the profit motive and competition would keep all prices at their true market value.⁷¹

Thus, on the eve of the Prague spring, Hungary had managed to work out a new economic model, which was very much ahead of any contemporary East European reform blueprint, both with respect to the decentralization of the decisionmaking process and the conscious use of the market mechanism to insure the best possible satisfaction of the needs of the population at large. One can say, therefore, that since 1968, Hungary has been the pace setter of economic reform movement in Eastern Europe.

Romania—A Nonmaverick on the Reform Front

It was in the early 1960's that Romania began to acquire its well deserved reputation as political maverick of the Moscow bloc. In the foreign policy field, its ruling elite proved consistently to be far more sensitive to the self-defined national interests of Romania than to the overall political objectives of the bloc. But on internal policy matters the Romanian Party establishment remained staunchly conservative, and it was still firmly wedded to the rules of Marxist orthodoxy. All this, at least to some degree, explained Romania's clearly demonstrated distaste for all pragmatic economic concepts in the sphere of planning and industrial management. But this lack of interest in economic reforms had also a more valid objective reason. Ceausescu and his close associates were simply too preoccupied with their drive for political and economic independence from Moscow to pay much attention to such mundane problems as greater economic efficiency, rational industrial management, or elimination of waste. Besides, the Romanian economy was just in the takeoff phase of rapid industrialization and, from the point of view of quantitative returns on new investment outlays, it was at the same stage of economic development, which such countries as Hungary and Poland had reached in the early 1950's. Romania's basic economic problem was one of creating, as soon as feasible, a relatively modern industrial potential to balance off her essentially agricultural and raw material economy.⁷²

But during 1966, the question of getting a proper return on invested capital and the dire necessity to adapt the industrial output to the highly competitive conditions prevailing in the Western markets⁷³

⁷¹ *Ibid.*

⁷² It was this question of massive industrialization, which was the main issue in a head-on confrontation between Romania and the Soviet Union at all the Comecon meetings in the early sixties. The U.S.S.R. (supported by Czechoslovakia and East Germany) insisted that Romania's main role in the Comecon should be that of a supplier of agricultural produce and raw materials. Ceausescu and his close associates argued that in order to become a truly Socialist state, Romania must create her own industrial proletariat and to this end one has to build up an adequate industrial potential. Needless to say, their true objective was to create a sound economic base for Romania's political sovereignty.

⁷³ In many cases Western investment credits were to be paid back in the form of deliveries of finished and semifinished products, manufactured in newly built factories, which were financed out of these credits.

forced the Romanian Party leaders to revise, at least to some extent, their indifferent attitude toward the problem of economic efficiency. Accordingly in the second half of 1966, the tightly controlled Romanian press published a whole series of articles stressing the necessity of a more pragmatic and rational attitude to the problems of planning and industrial management.⁷⁴ Some of these articles (no doubt also officially inspired) went even so far as to suggest that the managers of large enterprises should be given more competence in the sphere of output planning, self-financed investments, and setting up of wage rates.⁷⁵ This was a clear indication that some of the essential elements of other East European reform programs were being tentatively considered as a suitable means for improving the Romanian monocentric economic system.

More important still, a certain note of urgency crept into the discussion dealing with more pragmatic economic solutions by the end of 1966. This was primarily due to a prodding keynote speech, which the Romanian First Secretary, Nicolae Ceausescu, delivered at the Central Committee Plenum at the end of December 1966.⁷⁶ In his assessment of the economic situation, Ceausescu was unusually severe in criticizing the shortcomings of Romanian industry. He frankly painted a very bleak picture of the deficiencies, which still prevailed after almost two decades of planned economy and announced that a whole series of problems, including improved organization of enterprises, the application of economic incentives, management training and an increased role for the banking system, would come up for consideration in 1967.⁷⁷

But while the top leadership of the Romanian Party was apparently ready for a small dose of economic pragmatism, the hard core of the bureaucratic apparatus, and especially the powerfully provincial big-wigs, remained utterly antagonistic to all the proposed changes in the existing economic system, because they feared that the principle of party control over the economy (and thus much of their own power base) would be substantially undermined. So, they pointed to a number of "objective difficulties," which in their opinion made the proposed changes somewhat "premature" and "perhaps too far-reaching at the present state of economic development."⁷⁸

Ultimately, after several months of such shadow-boxing, esoteric polemics and behind-the-scenes give and take, the top party leadership came out with a sort of a minireform program. In October 1967, the Romanian Central Committee approved draft directives for perfecting management and planning of the national economy. Those draft directives were then unanimously approved by a specially convened National Party Conference in December 1967. The blueprint for this minireform was a rather curious document, a typically Romanian mix-

⁷⁴ For instance, B. Serban, "Enterprise Management in Step With Progress," *Romania Libera* (Bucharest), Sept. 7, 1966; L. Petrescu, "The Ability to Make Optimal and the Most Objective Decisions," *Romania Libera* (Bucharest), Sept. 14, 1966; N. Agachi, "The Caliber of Enterprise Management," *Romania Libera* (Bucharest), Sept. 28, 1966; N. Agachi, "The Caliber of Enterprise Management," *Romania Libera* (Bucharest), Sept. 28, 1966.

⁷⁵ L. Petrescu, "The Ability to Make Optimal and the Most Objective Decisions," *Romania Libera* (Bucharest), Sept. 14, 1966.

⁷⁶ Cf. the text of Ceausescu's speech, as published in *Scanteia* (Bucharest), Dec. 25, 1966.

⁷⁷ *Ibid.*

⁷⁸ "Some Conclusions From the Meetings of the Regional Party Committee," *Scanteia* (Bucharest), Apr. 14, 1967.

ture of a patchwork of pragmatic proposals, combined with an ardent desire to acquire up-to-date technology of a modern industrial state. But, precisely because of its inherent contradictions, the Romanian minireform program could not be regarded either as an effective instrument for improving economic performance or as a viable solution for the thorny and very complex problem of loosening the powerful bureaucratic stranglehold over individual industrial enterprises and, indeed, over the whole Romanian economy.

Thus, for instance, the directives issued after the National Party Conference envisaged a substantial increase in the area of responsibilities of the enterprise-level management.⁷⁹ Yet, the same directives (or any other decree or instructions) failed to give these factory directors sufficient prerogatives to exercise this authority. Indeed, the proposed changes in the organizational structure of industry (such as the creation of industrial centrals) went in the opposite direction. If anything they tended to strengthen the prerogatives of the bureaucratic superstructure and its powers of operative control.

To a Western observer, the Romanian minireform looked like another attempt to prove that a still developing "Socialist" country could (and should) maintain the essentials of an arbitrary, monocentric command economy, with its intricate system of direct controls, and yet—in spite of this—it could still achieve significant improvements in economic performance through limited and selectively applied rationalization measures. Experience has shown that this type of halfhearted minireform was doomed to fail, because even potentially positive pragmatic solutions, if they are being applied in a patchwork manner, tend to be effectively neutralized by bureaucratic interference and administrative inertia.

III. THE "PRAGUE SPRING" AND ITS AFTERMATH

There are many very sound reasons why the "Prague spring" should be regarded as the most important turning point in the relatively short history of the economic reform movement in Eastern Europe. For one thing, all of what happened in Czechoslovakia during the brief period of Dubcek's rule is still being seen by all antagonists of economic reforms throughout the Moscow bloc as a sort of a final warning that any tampering with the orthodox economic base of "genuine socialism" must inevitably create a mortal danger to the whole political superstructure of the dictatorship of the proletariat. This type of we-told-you-so argument still remains a very serious obstacle to the implementation of really qualitative economic reforms in many East European countries.

Second, the Soviet invasion of Czechoslovakia in August 1968 was seized upon by the dogmatic core of the party establishment in some East European countries (such as Poland) as a unique opportunity to settle the accounts with their own economic reform lobby, hopefully once and for all. Third, the traumatic aftermath of the Czechoslovak events created very powerful pressures on these East European ruling elites, which were genuinely committed to the implementation of a

⁷⁹ I. Bituleanu, "The Profitability of Enterprises," *Probleme Economice* (Bucharest), February 1967.

new economic model. These pressures and the sense of self-preservation induced some, such as the Hungarians, to scale down their own reform programs.

But the most significant development—and a positive one this time—was a growing realization that there exists a very close interdependence between successful implementation of economic reforms and institutional changes in the political structure. This interdependence was by no means discovered by Dubcek and his close associates. But they were the first to draw proper conclusions from the fact that so many well-thought-out East European reform programs were effectively frustrated because the dogmatic elements in the party establishment held the balance of political power.

What actually happened in Czechoslovakia in the brief interval of relative political freedom, before the Soviet tanks rolled in, is now a matter of historical record. There is little doubt that the entire process of democratization acquired a specific momentum of its own and, for many complex reasons, went much further than originally envisaged by Dubcek and his close associates, as a necessary precondition for the successful implementation of the new economic model. No one can say for certain whether the trend of events in Czechoslovakia between January and August 1968 was inevitable, since no absolutely comparable situation has ever existed in Eastern Europe. The momentum of any social process is influenced by many diverse factors; some of them unique to the given country, to the given period of time, or to the given political situation. Pertinent as those factors were to the actual sequence of events in Czechoslovakia, they might not manifest themselves elsewhere.

Yet one basic point should be stressed here—the fact that as soon as Dubcek and his close associates assumed political power, they deliberately reversed the priorities of the Czechoslovak reform program, insisting that meaningful changes in the political system were a necessary precondition for the effective operation of the new economic model. This was not done under the spell of political euphoria that overtook Czechoslovakia after the downfall of Novotny. The reversal of priorities was a deliberate political decision, the theoretical justification for which had been worked out well in advance by several prominent social scientists.⁸⁰

The basic political postulates of the reformers were perhaps best formulated by prominent sociologist I. Bystrina in an article written 1 year before the ouster of Novotny. His basic argument was that:

The continued development of the new system of management of the national economy definitely requires a simultaneous development of more democratic forms, methods, and institutions within the political system, in accordance with the principles of Socialist pluralism, which is obviously a higher form of political development than the old, partly fictitious, partly formal, monolithic forms of the past.⁸¹

What the Czechoslovak reformers were aiming at was a sort of institutionalization (within the framework of the prevailing mono-

⁸⁰ In the fall of 1966 a special research team was set up by the Czechoslovak authorities to study and to recommend some changes in the existing political system, so as to make it consistent with the requirements of the new economic model. This team, which was headed by Prof. Zdenek Mlynar, a close associate of Dubcek during the Prague Spring, published its findings just before the fall of Novotny.

⁸¹ I. Bystrina, "New System and Democracy," *Literarni Noviny* (Prague), Dec. 17, 1967.

party system) of the conflict of interest groups, which the implementation of economic reforms put into focus again after they had been deliberately downplayed by the bogus "unity of interests" approach. This could be done, they suggested, through devolution of some of the political power to "democratic representative bodies and to special interest organizations."⁸²

The main attention of Dubcek and his close associates was directed toward creating the rudiments of a pluralistic and participatory democracy in a form that could still be contained within the limits of the single-party system. The task of preparing a comprehensive program of economic reform, which now had a real chance to be promptly and consistently implemented by a political leadership genuinely committed to introducing a new economic model, was turned over to a group of economic experts, headed by Professor Ota Sik.⁸³

Although this second version of economic reforms was in essence merely an expansion and elaboration of the original 1964 reform blueprint, it was enriched by two entirely new elements—the concept of diverse forms of ownership and the concept of self-administration of enterprises. In addition the basic modus operandi of the new version of the Czechoslovak model was to depend much more on the operation of the market mechanism than it was the case in the 1964 reform blueprint.⁸⁴

The concept of diverse forms of ownership envisaged in essence the end of State monopoly in the fields of production, transport and distribution, one of the basic dogmas of orthodox Marxism. Instead, it was proposed that the actual form of ownership should depend on the specific economic tasks of a given enterprise and on its social significance. Thus, State ownership was to be retained in all basic industries, in banking and in public transport. Publicly controlled non-state enterprises (owned formally by the workers themselves), were meant to operate in those areas of production and services which were intended to satisfy mass consumption needs. These large undertakings were to be supplemented by cooperative and privately owned enterprises, competing with them for a proper share of the market.

The concept of self-administration meant not only that each enterprise should be a fully independent economic unit operating according to normal business principles, but also that the employees of any enterprise should have a right to participate (through a workers' council) in the decisionmaking process. At the same time, the independent role of the trade unions was to be fully restored. Within each enterprise there was to be a plurality of three social forces: workers' council, management and trade unions. Trade unions would represent the interest of enterprise's employees as hired workers, and the workers' council, their interests as co-owners of a given enterprise, while

⁸² J. Kronpa, "The Development of Political System in Our Country," an interview with Prof. Z. Mlynar, Student (Prague), Sept. 27, 1967.

⁸³ Under Dubcek, Professor Sik became deputy prime minister in charge of economic problems, but retained the overall direction over the final shaping of the new economic model.

⁸⁴ The work on the new version of the Czechoslovak economic model was not finished by the time the Soviet tanks rolled in. Hence, no official document outlining the new proposals was published. The best description of the proposed reforms can be found in ch. IV of Prof. R. Selucky's book "Economic Reform in Eastern Europe," Praeger Publishers (New York), 1972, pp. 95-119. Professor Selucky, now at Carleton University, Ottawa, was himself a prominent Czechoslovak reformer.

management was supposed to represent primarily business interest of the enterprise concerned.

In its actual functioning the new version of the Czechoslovak model was to depend heavily on the operation of the market mechanism, although the Czechoslovak reformers stopped short of the principle of free price formation. Instead they proposed a slightly modified version of the many-category pricing system and relied principally on the structural changes and on competition to keep most prices at their free market value level. They also aimed at the full convertibility of the Czechoslovak Koruna, in order to bring the domestic prices in line with world price level.

The new version of the Czechoslovak economic model was to be presented for approval at the forthcoming XIV Party Congress, which was also supposed to institutionalize the proposed political reforms and legitimize the social objectives of socialism with a human face. But before the XIV Congress could convene, the Soviet tanks had put an end to the Czechoslovak experiment and restored Marxist-Leninist orthodoxy.

It is not yet possible to assign a clear order of priority to the complex motives that prompted the Soviet decision to invade Czechoslovakia. There can be little question, however, that one of the primary objectives of this armed intervention was to curtail Dubcek's program of institutional and economic reforms because of its strong reliance on concomitant political liberalization.

If this assessment of the Soviet motives is correct (and there is a wealth of circumstantial evidence to support it), the Czechoslovak precedent would raise a serious question-mark about the future prospects of economic reform throughout Eastern Europe. What would be at stake would be not necessarily the process of economic change in the limited sense of efforts to evolve more rational and pragmatic methods of planning and management, but the broader impetus to bring about those qualitative changes in the orthodox power structure that seem absolutely necessary, if the economic reforms are to succeed.

IV. ECONOMIC REFORMS AFTER AUGUST 1968

The Soviet leadership has carefully (and, no doubt, deliberately) refrained from defining the permissible limits of economic reforms and the concomitant changes in political power structure.⁸⁵ However, the shock wave produced by forcible curtailment of the Czechoslovak experiment undisputably had a very powerful impact on the whole economic reform movement throughout Eastern Europe.

After the invasion a veritable barrage of propaganda was directed both against the "revisionist" concepts of Czechoslovakia's reform program and against economic reforms which were being implemented in Yugoslavia. The fact that the Yugoslav economic model was also included in these propaganda attacks convinced many members of the party establishment throughout Eastern Europe (and some Western observers as well) that the Soviet leadership was not only seriously

⁸⁵ The so-called Brezhnev doctrine meant simply that everything that happens in a Moscow bloc country is of major concern to the Soviet Union. But the doctrine was so loosely formulated, as to give the Soviet leadership maximum flexibility in judging every development, according to the current political situation and Moscow's own interests.

concerned about political and ideological cohesion of the Moscow bloc, but also intended to put an end to all economic reform experiments by branding them publicly as dangerous revisionism.⁸⁶

Today, in retrospect, one can definitely say that these fears (or hopes, if one looks at the whole problem from the standpoint of dogmatic ultras) have not materialized, and that the primary purpose of this propaganda barrage against "revisionist concepts was to justify post factum the armed intervention in Czechoslovakia.

The simple fact is that in the aftermath of Soviet invasion none of the major economic reform programs in Eastern Europe (with the exception of the Czechoslovak new economic model) was either totally abandoned, or even substantially revised. True, some of them, notably in Bulgaria, have been somewhat diluted and their implementation was slowed down. On the other hand, the Hungarian party leadership very soon reasserted its firm resolve to implement its own new economic model as originally planned, while in Poland (after a brief but hectic period of antireform rhetoric, economic reform was back in the official favor by the end of 1968. And yet, in many respects, the post-1968 development pattern on the sector of economic reforms was so diversified, that it again requires a country-by-country review.

Hungary—A Firm Resolve To Carry On

As already pointed out, many features of the Hungarian new economic model resembled rather closely certain essential characteristics of its Czechoslovak counterpart. As in Czechoslovakia, the cornerstone of the Hungarian new model was the concept of a fully independent and self-financing enterprise. Its *modus operandi* was based on the profit motive and, to some extent at least, on the market mechanism and commodity-money relations, rather than on the orthodox practices of directive and centralized planning. Finally, the Hungarian reformers have opted for a many category pricing system, quite similar to that proposed in Czechoslovakia.

Thus, it was hardly surprising that the powerful shock produced by the brutal military intervention in Czechoslovakia, as well as the vehement attacks in the Moscow bloc press against Czechoslovak economic reformers, raised serious and deep-rooted concern in Hungary about the fate of her own new economic model. The fact that the other Moscow-bloc countries maintained a heavy propaganda barrage against the concept of "Socialist market economy" in general and against the principles of both the Czechoslovak and the Yugoslav economic reforms in particular, did nothing to alleviate these fears, especially since so many distinct features of the Hungarian model were quite similar to some of the solutions which were now branded as "revisionist."

Hungarian public opinion was well aware of the fact that some Moscow-bloc countries were beginning to express serious reservations about the Hungarian reforms. Thus, on September 28, Radio Budapest commentator János Dolgos openly admitted that "several theses and concepts of the great experiment we have undertaken in our country have been questioned at home and abroad." One of the main doubts which had been raised, he said, concerned Hungary's continued co-

⁸⁶ This is, for instance, how these attacks were understood in Poland and a veritable "antirevisionist" hue and cry was initiated there against economic reformers.

operation with Comecon, while "other comrades" questioned the fate of centralized economic planning and the principle of profit sharing.⁸⁷

The Hungarian ruling elite's response to this complicated situation was prompt, consistent, and unambiguous. High-ranking party leaders, including Kádár himself, publicly and repeatedly proclaimed their determination to proceed with speedy implementation of economic reform.⁸⁸ The same firm resolve to carry on was stressed in a number of programmatic editorials, published in *Népszabadság*, the central organ of the HSWP.⁸⁹ All of these articles and public statements indicated a definite refusal to give in to internal and external pressures, generated by the invasion of Czechoslovakia and the subsequent antireformist hue and cry.

These pressures eased somewhat when Moscow soon after the invasion began to give the Hungarians some obvious go-ahead signals. These signals were given in the usual esoteric manner, that is, in the form of positive assessments of the various aspects of the Hungarian economic model, published in the Soviet press.⁹⁰ The real political and ideological meaning of such esoteric approval was, however, quite clear to the initiated. And since, in practice, the Soviet attitude determines both the legitimacy and the feasibility of any proposed economic reforms, there was really no reason, at least from early 1969 on, why the Hungarian ruling elite should not proceed with the implementation of its new economic model.

However, the political decision to neither abandon nor even dilute the essential content of the Hungarian reform program, despite of what had happened in Czechoslovakia, was only a part of the story. The other was an apparent resolve of the Hungarian ruling elite to introduce some institutional political reforms of their own.

One would have expected that the brutal crushing of the incipient democratization process in Czechoslovakia would produce a powerful restraining effect on a similar (although much less pronounced) trend in Hungary. In fact, the reverse has actually happened. Paradoxically enough, the occupation of Czechoslovakia, which put an effective damper on discussion about the political implications of economic reform elsewhere in the bloc, has impelled a franker airing of the same problem in Hungary.

Objectively speaking, there was a very valid reason why the Hungarian ruling elite should be giving a serious thought to its own institutional problems at that particular time. This reason was essentially economic. As already indicated, the Hungarian new economic model began to be put into effect much later than its Yugoslav and Czechoslovak counterparts. In fact, the year 1968 was its trial period and the problem of securing the active participation of the population, particularly of the working class, had just begun to be felt. One can say, therefore, that a substantive ideological debate about the need to

⁸⁷ Radio Budapest, Sept. 28, 1968.

⁸⁸ For instance, Kádár's speech to workers of Budapest Hosiery Mill on Oct. 24, 1968, broadcast live both by radio and television. Similar assurances were made by Jenő Fock, István Szirmai, Károly Németh and others.

⁸⁹ For instance, unsigned editorial: "Where Are We Going?" *Népszabadság* (Budapest), Sept. 22, 1968.

⁹⁰ Cf. B. Rodionov, "Gathering Speed," *Izvestia* (Moscow), Sept. 16, 1968; M. Timur, "Steps of Growth," *Izvestia* (Moscow), Nov. 14, 1968; V. Gerasimov, "With the Participation of Millions," *Pravda* (Moscow), Feb. 13, 1969; and M. Timur "A Country's Reform an Economic Development," *Pravda* (Moscow), Apr. 22, 1969.

democratize the orthodox political institutions in Hungary was bound to intensify around the end of 1968.

But the difficult political climate of the post-invasion era has set definite limits, both to the ideological debate itself and still more to concrete reform proposals. This is why the Hungarian ruling elite decided to seize the initiative and to keep the ideological discussion within permissible limits. Thus, an authoritative article on this problem, published in *Népszabadság* acknowledged quite frankly that there exists a direct cause and effect relationship between the implementation of the new economic model and the anticipated institutional changes in the sphere of politics. "Everybody knows—wrote *Népszabadság*—that now, following the reform of the economic mechanism, many questions concerning the activity of state and local authorities are also being put on the agenda. This is so, because economic reforms require corresponding changes in political structure."⁹¹

The nature of these institutional reforms was analyzed at length in yet another programmatic article, published in the HWSP central theoretical monthly *Társadalmi Szemle*. This article dealt at length with the idea that "further expansion of democratic institutions is one of the principal tasks of our party."⁹² Developing this thesis, *Társadalmi Szemle* went on to argue that neither economic reforms, nor a more democratic political system can become fully operative, unless the broad masses of the population acquire a sense of direct participation in the decisionmaking process. To attain this objective, it was argued, no major institutional changes in the existing political superstructure are really necessary. The appropriate institutions, such as state representative bodies and non-state socialist organizations are already there, although they are not yet functioning properly. Therefore "the main emphasis should be put on the greater democratization of the existing institutions, rather than on the establishment of new ones."⁹³

In retrospect, one can definitely say that much of the institutional debate in Hungary was mainly a rhetorical exercise. Practical political reforms which were introduced in 1969 and in 1970 had little institutional significance, since their formally more democratic provisions had no genuine political content and met with no public response.⁹⁴ Anyway, with all its slogans about "socialist democracy" the Hungarian ruling elite has not moved an inch from its orthodox stand on the leading role of the party.

"Our historical experiences, declared Béla Biszku in March 1969, prove unequivocally that socialist construction is feasible only if the principle of the leading role of the Communist Party is strictly adhered to."⁹⁵ This meant that the Hungarian ruling elite intended to

⁹¹ L. Rózsa, "The Road of Our Democracy," *Népszabadság* (Budapest), Sept. 1, 1968.

⁹² E. Kálmán, "Mutations and Potentialities and Socialist Democracy," *Társadalmi Szemle* (Budapest), August–September 1968.

⁹³ *Ibid.*

⁹⁴ A typical example was the electoral reform of November 1966 (amended in April 1970), which introduced the principle of single member parliamentary constituencies, contested by several candidates. In practice, however, the law was heavily biased in favor of the official party candidates, and there was a dearth of other contestants, who saw no reason to serve as political window dressing.

⁹⁵ B. Biszku, "A Few Timely Aspects of the Party's Leading Role," *Népszabadság* (Budapest), Mar. 13, 1969.

allow only the degree of democratization of the country's political superstructure, which it could effectively contain and control.⁹⁶

While little progress could be registered in the sphere of substantive political reforms, the new economic model was being implemented in Hungary with genuine zeal and in an orderly and consistent manner. So much so, that by early 1969 the new system became fully operative in all branches of national economy, including agriculture.

The main practical problem involved in launching the new economic model in 1968 was the need to dovetail the initial transitory period, which was estimated to require 3 years (1968-1970) with a successful fulfillment of the third 5-year plan (1966-1970). Realistically anticipating some slowdown in the real growth rate during this transitory period, the Hungarian planners have considerably scaled down their targets for an increase in national income and industrial production. Moreover, in accordance with a switch from extensive to intensive development methods, the plan placed heavy emphasis on the growth of those industries which were serving the domestic consumer market and the export needs.

In fact, the economic results achieved in the initial period were much better than anticipated, and the first three years of the new model were unanimously hailed as an unqualified success by both the party leaders and competent economic experts.⁹⁷ Indeed, contrary to some pessimistic forecasts made at the time when the new economic model was about to be launched, the Hungarian economy managed to maintain a high rate of economic growth, an apparent state of full employment and a reasonable ratio of capital accumulation to individual and social consumption.⁹⁸

But the new model achieved much more than that. Thanks to the combined effect of emergent market forces and the growing initiative at the enterprise level, there was a marked improvement in the supply of goods for mass consumption purposes. This in itself was highly encouraging, since certain provisions of the reform program were only being implemented in a step by step manner.⁹⁹ But there were other very hopeful symptoms of incipient prosperity. Thus, both in 1969 and in 1970 the volume of retail sales rose even faster than production, which helped to reduce excessive inventories. Living standards began to climb at an unprecedented rate. Exports increased so rapidly that for the first time in many years Hungary could boast a favorable trade balance both with the East and with the West. A real breakthrough was also achieved in agriculture, where for the first time since the collectivization drive, the rate of growth exceeded that of industry.

⁹⁶ "It must be again made clear that we do not want a democracy in general, but a socialist democracy, that is a political development * * * which does not endanger, even for a moment, the socialist foundations of the system, but strengthens and develops them." I. Pozgal, "Some Problems of the Development of Socialist Democracy," *Társadalmi Szemle* (Budapest), October 1968.

⁹⁷ Cf. R. Nyers, "Problems of Profitability and Income Distribution," *The New Hungarian Quarterly*, No. 40, Winter 1970 and No. 41, Spring 1971. See also the proceedings of the National Congress of Hungarian Economists held in June 1970, *Figyelő* (Budapest), June 4, 1970.

⁹⁸ *Ibid.*

⁹⁹ For instance, in 1968 no more than 23 percent of all retailed goods were placed in a free price category. In 1969 their share of total supplies had increased to 31 percent and in 1970 to 39 percent. Similarly, in 1968 new investments, financed by enterprises themselves represented only 40 percent of the total outlays. Their share in the total investments increased to 51 percent in 1969 and to 59 percent in 1970.

However, the euphoria generated by better than expected overall performance of the new economic model did not last very long. By mid-1971, it was becoming quite evident that the Hungarian NEM had developed serious teething troubles. In a certain sense the new system fell victim to its own initial success. The imbalances and distortions which appeared in Hungary were typical for an economy with an excessive rate of growth and a population which wanted to break the affluence barrier too soon. Broadly speaking, these disproportions could be categorized under three main headings: excessive investment expenditure, shortage of skilled labor, and rapid growth of consumer imports.

Of these three imbalances, over investment was by far the most serious problem. In 1971, the total expenditure on new investments was growing twice as fast as the national income. The Hungarian economy, still suffering from many shortages and bottlenecks left over from the era of command economy, simply did not have enough resources to satisfy this over-expanded investment demand. As a result, about 80 percent of all investment projects fell behind their original construction schedules, while the total investment expenditure was expected to exceed by some 50,000 million forints the target set for the current 5-year plan.¹⁰⁰

The root cause of the over-investment problem was a backlog of pent-up consumer demand, accompanied by huge amounts of money laying idle in saving accounts. When the new, market-oriented economic model was introduced in Hungary in January 1968, every perceptive enterprise manager realized that this postponed demand was the best potential source of bigger sales and greater profits. All one had to do was to produce the goods that were in short supply and cash in on unsatisfied market requirements.

At first, increased sales could be achieved by squeezing a better economic performance out of the existing productive potential, by raising labor productivity and by better adjustment of the factory production plans to the needs of the market. But soon the whole process of filling in the consumption gap acquired a momentum of its own. Better economic performance meant higher earnings for the managerial class and the technocrats. Higher labor productivity had to be induced by raising workers' wages. At the same time, peasant incomes went up considerably as more food was produced and sold.

In short, the process of filling in the consumption gap left by the era of command economy generated a substantial upsurge in individual incomes and this, in turn, created an additional effective demand for more sophisticated consumer goods. Such goods could no longer be produced by the existing industrial potential—at least not in the quantities that the market clamored for. The only possibilities for maintaining sufficient sales was either to increase the productive capacity by additional investments, or to bolster available supplies by additional imports.

The shortage of skilled labor was also a byproduct of incipient prosperity. When the new economic model was launched, many members

¹⁰⁰ Speech of Premier Jenő Fock at the National Conference of Economic Activists, *Népszabadság* (Budapest), Oct. 23, 1971.

of the Hungarian establishment (and many workers as well) feared that the increased economic efficiency could result in substantial unemployment.¹⁰¹ Indeed, many surplus workers lost their jobs in the early stages of economic reform. But they were soon reabsorbed by other enterprises, which were expanding their output. In no time at all labor and especially skilled manpower became a scarce commodity and industrial managers began to compete fiercely for the services of skilled workers by offering them higher wages. These increased labor costs could easily be absorbed by bigger profits, but the acute competition for skilled manpower also resulted in a substantial labor turnover.¹⁰²

Unfortunately, while the Hungarian new economic model relied rather heavily on the market forces for promoting economic growth, it did not evolve any suitable, market-type control machinery to rectify the potential imbalances and disproportions. Hence, the Hungarian authorities had to fall back on the system of direct controls to reduce excessive investment expenditures and to check excessive exports. Accordingly, in November 1971 the Hungarian Government introduced "temporarily" strict controls over investment expenditure of individual enterprises and a system of import licenses.¹⁰³ At the same time, the party leadership had once more reaffirmed its faith in the new economic model and went out of its way to reassure the population that, despite the temporary setbacks, the original reform program will be—in due course—implemented in full.

However, the most crucial problem, which remains unsolved to this day was what to do next. There were two broad schools of thought. One, represented primarily by Professor Csikós-Nagy as the official establishment spokesman on economic reforms, maintains that in order to insure the proper functioning of the new model over a longer period, one has to introduce certain structural changes in the organization of industry, with the aim of strengthening central control over the investment outlays of independent enterprises. This retrograde step is to be balanced by a greater reliance on the profit motive and the market mechanism in other fields. To this end, state subsidies, which are still being paid to factories unable to pay their way, are to be substantially reduced. This would imply a gradual closing down of unprofitable and inefficient enterprises. In addition, more competition for homemade products is to be fostered, by lowering import duties.

Other corrective measures, foreseen by the party establishment, envisage a substantial reduction of taxes paid by Hungarian enterprises. Thus, Prof. Csikós-Nagy suggested that tax on fixed capital should be reduced from 5 percent of the assessed value of such capital to 3 percent, and that the rules for capital depreciation writeoffs should be modified. Finally, as the best long-term solution, Csikós-Nagy advocated a comprehensive wage and price reform, the main objective of which would be to close the "irrationally big gap" between the actual cost of production and the final price. By 1980, argued professor

¹⁰¹ J. Kovács, "Manpower Forecasts," *Magyar Nemzet* (Budapest), Nov. 14, 1967.

¹⁰² For a more detailed discussion of all these problems see RFE Research Papers: "Whither Reform in Hungary," Feb. 25, 1972, and "The State of Economic Reform in Hungary," Mar. 23, 1973.

¹⁰³ *Ibid.*

Csikós-Nagy, consumer goods prices should reflect their true economic value, that is their actual costs and comparable world market prices, even if this implied that wage rates would have to be raised substantially to compensate for higher prices.¹⁰⁴

The second school of thought encompasses all-out reformers, who argue that the only effective way to cure the problems developed by the Hungarian new economic model is to carry the reforms begun in 1968 to the next logical stage, so as to eradicate the remaining vestiges of a command economy.

The neoreformers criticize the new economic model, in its present form, on two counts: first, because it still preserves the hierarchical relationship between the central institutions and the allegedly independent enterprises; and second, because the present system of regulating profits is not only ineffective, but often counterproductive.¹⁰⁵

As to the first point, the neoreformers claim that despite all the structural reforms introduced so far, the enterprises are not really independent economic units. They are subordinated to the ministries and other central bodies and remain on the lowest rung of a hierarchical pyramid. Yet their basic interests differ from those of the ministry. For the enterprise profit is the main indicator of business success. For the ministry such profits are only of secondary importance. The ministry is mainly interested in the overall development of its own branch of industry, in its overall production results, in its overall foreign trade earnings, and so on. The crux of the whole problem, argue the neoreformers, is the fact that every ministry and every central institution tends to identify its own specific interests with the interests of the society as a whole. Due to the persistence of the hierarchical relationship, the central institutions assert their own specific interests over those of individual enterprises, thus impeding the enterprise directors in pursuing a consistent market-oriented policy.¹⁰⁶

The second set of difficulties and contradictions, argue the neoreformers, has its roots in the faulty system of regulating profits. The state, both to satisfy its budgetary needs and to forestall excessive divergencies in enterprises profits and in personal incomes, deliberately restricts the possibilities of profit accumulation at the micro-economic level by heavy taxes and capital levies. Such policy, claim the neoreformers, helps the weak and uneconomic enterprises, but hampers the proper development of dynamic ones. It also has a more or less similar effect on individuals. Thus, many skilled workers shift from one job to another because they believe that, at their old place of work their earnings are being deliberately kept down for the sake of the abstract objective of social justice, which benefits only idlers and beginners.¹⁰⁷

Nevertheless, both the official spokesmen of party establishment and the neoreformers agreed that the new model, as introduced in 1968, had, by and large, stood the test of time. They also agreed that in the course of actual implementation of economic reforms, there emerged

¹⁰⁴ B. Csikós-Nagy, "Achievements and Perspectives of the Hungarian Economic Reform," *Közgazdasági Szemle* (Budapest), September 1972.

¹⁰⁵ M. Tardos, "Problems of Economic Competition in Our Homeland," *Közgazdasági Szemle* (Budapest), July-August 1972.

¹⁰⁶ T. Rozgonyi, "Harmony and Conflicts of Interests," *Népszava* (Budapest), Dec. 8, 1973.

¹⁰⁷ Cf. M. Tardos, op. cit., and A. Csernok, "A Few Questions on the Development of Our National Economy," *Társadalmi Szemle* (Budapest), November 1972.

more problems than were originally anticipated.¹⁰⁸ While there was a general consensus that a reform of the new model itself had clearly become necessary, the decision on this crucial issue was repeatedly postponed, not only because of disagreement as to what to do next, but also out of purely political considerations. For such a reform would imply giving a freer play to market mechanism. But such a solution would be vehemently opposed by a newly emerged pressure group; namely, the blue-collar workers, who have already begun complaining that the market-oriented new model tends to distort the pattern of income distribution in favor of the technocrats. For this reason the blue-collar workers lobby opposes any changes which would promote a more vigorous play of market forces—changes on which the success of the Hungarian reform program ultimately depends.¹⁰⁹

Poland—A Fourth Time Lucky?

As already indicated in the section II of this paper, Poland's experience with economic reforms has been rather traumatic and hardly encouraging. The record shows that, since 1956, Poland had made three abortive attempts to introduce a new economic model (and a quite different one each time). The first and the most comprehensive reform blueprint was worked out in 1957, but it was never put into effect. The second, more moderate attempt, made in 1964–65, fizzled out 2 years later, after a bout of fierce factional infighting within the party establishment. Finally the third try, which was made in 1969–70 after a brief period of intense antireformist propaganda floundered ignominiously after its principal sponsors were ousted from the party leadership by the workers revolt in December 1970.¹¹⁰

But precisely because of these repeated failures to improve both the functioning and the performance of Polish economy, the need for far-reaching economic reforms persisted and, if anything, the whole problem has become more acute with the passage of time. The severe economic crisis at the turn of 1970, which sparked the workers' revolt, was evidence of this. Thus, it was hardly surprising that barely 2 months after this major political upheaval the party leadership resolved that "the whole system of economic management must be completely overhauled and adapted to a new strategy of social and economic development."¹¹¹

In accordance with this basic policy decision, the PUWP leadership set up a special commission of experts and charged it with working out a comprehensive economic reform program. Some 200 eminent specialists were drafted to serve on 10 working teams, which were to prepare both the general concept of the proposed new economic model, as well as the concrete reform measures necessary to implement the intended changes in economic system.¹¹²

¹⁰⁸ I. Pozsgay, "The Price of Progress," *Társadalmi Szemle* (Budapest), May 1972.

¹⁰⁹ For a more detailed discussion of this intricate issue, see RFE Research Paper: "Hungary Industrial Workers—Increasing Success as a Pressure Group," Mar. 8, 1973.

¹¹⁰ Paradoxically enough, the "New System of Economic Incentives," intended originally as the centerpiece of the third version of Poland's economic reform program was one of the underlying causes of this revolt, since one of its provisions amounted to a virtual wage freeze for the period of 2 years.

¹¹¹ Cf. Resolution of the VIII Central Committee Plenum of the PUWP, as published in *Trybuna Ludu* (Warsaw), Feb. 8, 1971.

¹¹² Cf. Report on the first meeting of the special commission of experts, as published in *Trybuna Ludu* (Warsaw), May 29, 1971.

These teams of economic experts worked at their allotted tasks for over a year. Finally, in April 1972, the special commission prepared an interim report, which was then submitted to the party leadership for final approval. Apparently, however, there were again some serious differences of opinion among the party hierarchy about the entire concept of the proposed new economic model, and this caused considerable delay in publication of the new reform blueprint.¹¹³

In the meantime, the Polish ruling elite had changed its mind about the way in which the proposed reform measures were to be put into effect. Initially, the intention was to introduce a comprehensive reform program throughout the whole economy at one time, much as the Hungarian regime had done in January 1968. But, by mid-1972, this macro-economic approach was abandoned. Instead, it was decided that the new system would be introduced on a trial basis in a number of large-scale experimental enterprises.¹¹⁴ Thus, the new system was not to be tried out in its entirety. In the first stage, which began in 1972, only certain partial solutions advocated by economic experts were introduced on an experimental basis, while other aspects of the reform, which would require more time to be worked out properly, were not scheduled to be put into effect until the late seventies.¹¹⁵

Nevertheless, the new economic system was initially carried out on a fairly large scale. Some 28 large industrial organizations, which were selected as pilot units, were said to employ about 1 million people, or about 10 percent of the total labor force (outside agriculture) and to produce about 20 percent of the total industrial output.¹¹⁶ Many of these major economic units were specially created for the purpose of this experiment and were in fact large-scale industrial conglomerates, or industrial associations, rather than individual enterprises.

Indeed, a large-scale industrial conglomerate seems to be the kingpin of the new Polish economic model. But, unlike the East German VVB's, the Bulgarian trusts, or the Romanian industrial centrals, these conglomerates were not conceived as administrative-management units, but rather as large, self-financing industrial undertakings.¹¹⁷ Hence, the size of the proposed conglomerates and their organizational structure depended primarily on the specific attributes of a given branch of industry. As a rule, however, each of the initial 28 experimental undertakings was either an industrial conglomerate or another type of large-scale economic organization.¹¹⁸

In 1974 the number of pilot units is to be increased by another 25 large industrial organizations, which means that about 40 percent of total Polish industrial output would then be produced in undertakings working according to the rules of the new economic system.¹¹⁹ What

¹¹³ Indeed, this reform blueprint has not been yet published in its entirety.

¹¹⁴ "Streamlining the System of Planning and Management," Polish Press Agency (Warsaw), Oct. 9, 1972.

¹¹⁵ S. Chęstowski, "How to Speed Up Socio-economic Progress," *Zycie Gospodarcze* (Warsaw), Jan. 2, 1972.

¹¹⁶ J. Głowczyk, "Comprehensively, Concretely and Gradually," *Zycie Gospodarcze* (Warsaw), Dec. 23-30, 1973.

¹¹⁷ K. Gollnowski, "The Interpretation of the Concept of WOG," *Zycie Gospodarcze* (Warsaw), Aug. 5, 1973. (WOG in Polish is the abbreviation of "large economic organization.")

¹¹⁸ Out of 28 initial pilot units, not less than 25 were industrial conglomerates or Industrial Associations, two were large import-export organizations, and one a transport undertaking. A full list of pilot units was published in *Zycie Gospodarcze* (Warsaw), Dec. 23-30, 1973.

¹¹⁹ "According to the New Principle," *Trybuna Ludu* (Warsaw), Dec. 13, 1973. A report on the decision of the PUPP Politburo about expanding the reform experiment.

seems still more important, however, is the fact that while the first batch of pilot units were mostly composed of conglomerates producing either capital goods or raw materials and semifinished products, the second batch includes mostly large economic units producing primarily for the consumer market.

The main purpose of the new system, according to the official statements, is to introduce a more flexible relationship between the enterprises, the industrial associations and the central institutions. Thus, the central planners, as a rule, are no longer empowered to set exact production targets for each of the experimental units. The planners apparently retained some rights, however; they can tell the producing units what and in some special cases how much to produce. At the enterprise level, the independence of managers and their responsibility for operational decisions on investment, wages, employment, internal organization, and other matters have been greatly expanded, with considerable stress being placed on clearly locating responsibility in individuals. A more economic approach to investments has been instituted, emphasizing financing through repayable high-interest credits, rather than through State grants. A new wage system which makes wages dependent on the efficiency of the enterprise was also introduced.¹²⁰ A central wage index relates admissible incomes paid from the enterprise wage fund to the dynamics of production, reduction of material costs, and maintenance of repayment on investment credits. The general index of enterprise performance, as distinct from the earlier simple plan target fulfillment, is added-value production, that is, the value of production sold, minus the value of purchased materials, external services, repayment of investment credits and interest rates, and turnover tax.¹²¹

The main unresolved problem of the fourth version of the Polish new economic model would seem to be the ambiguities between the somewhat loosely defined legal and economic status of the large economic units and the prerogatives of central planners. It is quite possible, however, that this problem might be ultimately solved by redefining the role of central planning. Thus, State planners might still retain their overall responsibility for a purposeful guidance of the national economy, as a whole, but would be divested of all operative functions.¹²² Their main tasks are likely to be limited to setting up the basic proportions of the future macroeconomic development. They will also be expected to correlate the long-term objectives of the party's socioeconomic policy with the basic targets of the national economic plans. Finally, they will forecast the long-term needs of the national economy and assess the means available for satisfying such requirements. But they would not be allowed to interfere with the process of operative decisionmaking at the microeconomic level, which would be left to individual enterprises and industrial associations.¹²³ Such a limitation of the role of central planners is apparently regarded by Polish economic reformers as an indispensable safeguard against

¹²⁰ Dr. B. Flek, "The Wages Fund in the Pilot Units," *Przegląd Związkowy* (Warsaw), July-August 1973.

¹²¹ K. Szware, "The Shape of the Changes," *Zycie Gospodarcze* (Warsaw), July 8, 1973.

¹²² J. Beksiak, "Central Plan as an Instrument of Economic Policy," *Notice Drogi* (Warsaw), No. 10, October 1971.

¹²³ *Ibid.*

a rebirth of "misinterpreted centralism," which in the past had always led to a total paralysis of the initiative from below.¹²⁴

Accordingly, the enterprise managers might be granted a much greater freedom of action, especially in the spheres of output planning and setting wage rates of employment quotas.¹²⁵ However, the mutual relationship between the enterprises and the industrial associations is still unclear. This is really the key issue of the proposed new model, since the nature of this relationship will determine to what extent the middle level bureaucratic superstructure will be permitted to interfere in the operative decisions of the managers of individual enterprises. There are many indications that the Polish hierarchy might opt eventually for a differentiated organizational structure, depending on the specific conditions in a given branch of industry.¹²⁶ If so, the greatest scope for entrepreneurial initiative and freedom of action is likely to be granted to the managers of those industrial plants, which produce directly for the market.

One has to emphasize, however, that the fourth version of the Polish new economic model is still in the experimental stage, and that, with conflicting tendencies apparent within the PUWP leadership, no one can really predict what kind of a new system will eventually emerge in Poland. One thing, however, seems to be already quite certain, namely, that the fourth version of the Polish new model will be far less decentralized and less market-oriented than its current Hungarian counterpart.

East Germany—A Somewhat Shop-Soiled Economic Miracle

In the post-1968 period East Germany was the only East European country, where the economic reform program had been unaffected by the traumatic aftermath of the Soviet invasion. Objectively speaking, there was no reason why it should be. The East German economic model was entirely different from the ideologically condemned Czechoslovak reform blueprint, the party's grip over the entire economy was as firm as ever, and, in the tightly controlled East German intellectual milieu, there were no unorthodox reformers, whose ideas had to be publicly pilloried. Thus, the GDR hierarchy could carry on complacently, as if nothing had happened.

This feeling of self-satisfaction with its own reform program was, to some extent, quite justified. By 1968, the East German economy had achieved such remarkable results that many members of the GDR hierarchy (and some Western observers as well) began to talk about East German *Wirtschaftswunder* (economic miracle). Indeed, since the reform program was first introduced in July 1963, East German industrial production had nearly doubled, the export earnings in hard currencies had more than trebled, and individual and collective consumption rose some 42 percent over its 1964 level.¹²⁷ By 1969, the standard of living of the East German population was the highest in

¹²⁴ K. Sokolowski, "Democratic Centralism in Economic Management," *Nowe Drogi* (Warsaw), No. 12, December 1971.

¹²⁵ Resolution of the Sixth Party Congress, ch. 2, p. 7.

¹²⁶ Resolution of the Sixth Party Congress, ch. 5, p. 16.

¹²⁷ Cf. DIW Analyses, a weekly publication of the German Institute of Economic Research in West Berlin, No. 28/1969. See also the report on fulfillment of national plan in 1968, *Neucs Deutschland* (East Berlin), Jan. 24, 1969.

the whole Moscow bloc, and productive efficiency of East German industry had become a byword throughout Eastern Europe.

One has to bear in mind, however, that this dynamic progress was only partly due to the reforms introduced in mid-1963. Another important element—perhaps the decisive one—was East Germany's de facto membership of the Common Market. This meant, in practice, that the GDR was the only East European country which could export to the EEC area without being subjected to the custom duties levied on goods produced in other nonmember countries. Thus, for all practical purposes, East German exports were treated in the same way as those of any bona fide member country of the European Economic Community.

The reason for this strange state of affairs was certain provisions of the treaty of Rome. The treaty was drafted in an entirely different political environment, namely, at the time when both Bonn and its Western allies refused to acknowledge the existence of the GDR as a political entity. Hence, when the Common Market was created in 1957, a special protocol was attached to the treaty of Rome. Under the terms of this protocol, trade between East and West Germany was to be considered an internal trade, and as such was not subjected to the EEC external tariff.

The purpose of this special protocol was largely political and little thought was apparently given, at that time, to the potential economic implications of this type of arrangement. In 1957, the problem of East German exports to the EEC area was a very minor consideration. But since the mid-sixties, after it has created a substantial industrial potential, the GDR has turned this back door access to the Common Market into a veritable gold mine. Although strictly speaking, the East German goods could be exported duty-free only to the German Federal Republic, once they were on West German territory, there was nothing to prevent them being resold to any other EEC country.

This unique business opportunity was soon reflected in the trade figures of the goods turnover between the GDR and the Federal Republic. In 1965 East German exports to the GFR were valued at 1,249 million deutsche marks. Yet, only 6 years later, in 1971, their total trade turnover had more than doubled, reaching 2,583 million deutsche marks. Moreover, since 1968, the East German exports to the Federal Republic have been growing at an annual rate of some 25 to 30 percent.¹²⁸ The rapid growth at this stage was hardly surprising, since by 1967 the external tariff wall of the EEC had become really effective and the East Germans could exploit their privileged position to the full.

Fueled by these hard currently, export earnings, the East German economy continued to grow at a very rapid rate in 1969 and to some extent in 1970. But by 1971 the well-oiled East Germany economic machine began to wobble and sputter, indicating quite clearly that the supposedly superefficient East German industry had run into a serious growth barrier. In 1971, about 30 percent of East German enterprises failed to fulfill the overambitious tasks set up for them by central

¹²⁸ Cf. The official Economic Report ("Wirtschaftsbericht") submitted to the Bundestag by the West German government in January 1972.

planners. As the result of this, the production plans for 1972 had to be considerably lowered.¹²⁹

The other problem area was foreign trade. After several years of registering recordbreaking growth rates, especially on the export side of the balance of trade, East German industry has obviously lost its competitive momentum. This has been particularly true in exports to hard currency areas. Thus, in 1972 such exports have increased by less than 10 percent, well off the 30 percent mark recorded in the previous years and much below the targets set by the overconfident central planners.¹³⁰

What went wrong with the East German "economic miracle"? It seems that the slowdown had its roots in two crucial areas: their economic system and economic policy. The highly successful East German economic reform program ran into a serious second-stage trouble, while the economic policy pursued by East German regime proved to be too ambitious and unrealistic. In a sense, this was a classic example of dizziness resulting from success.

In retrospect, the origins of East Germany's economic troubles can be traced to a mid-1968 decision to undertake a large-scale investment program, in order to modernize whole branches of industry, and to rebuild not less than 16 major urban centers. To finance this ambitious investment program, without slowing down the growth in living standards, the East German planners counted heavily on a steady influx of foreign exchange.¹³¹

There was a sound basis for making such an assumption, given the excellent foreign trade record of the past 2 years and the good prospects for East Germany's trade with the Common Market. However, the GDR planners did not reckon with the elements. Because of bad weather, the harvests of 1969 and 1970 fell far below expectations, and much of their precious foreign exchange reserves had to be used to import food. At the same time, the winter of 1969-70, the longest and the coldest in living memory, cut sharply into the vital production of brown coal—the main source of energy. As the result, industrial production had to be curtailed and export surpluses were substantially reduced.¹³²

The East German insistence on an inflexible, centrally controlled wages and prices system was also a constraining factor. In order to preserve the competitive advantages of their industrial exports on the Western markets, the East German planners kept wage increases to the minimum. This meant that consumer prices had to be kept stable, despite the inflationary tendencies in the rest of the world. As the result, retail price subsidies have risen sharply to 8,750 million East German marks in 1971 and to 9,200 million marks in 1972.¹³³

¹²⁹ Dr. M. v. Berg, "The Difficulties of the GDR Economy," a series of two articles in *Neue Züricher Zeitung* (Zürich), Aug. 1 and 3, 1972.

¹³⁰ W. Lamberz, Report at SED Central Committee Plenum, as published in *Neues Deutschland* (East Berlin), Oct. 13, 1972.

¹³¹ Cf. Günther Mittag's report of the 13th Session of the SED Central Committee, "The Implementation of National Economic Plan for 1970," published in *Neues Deutschland* (East Berlin), June 11 and 12, 1970.

¹³² *Ibid.*

¹³³ Inge Lorek, "Our Social Policies," *Die Arbeit* (East Berlin), April 1972 and a statement by Dr. Alfred Dost, deputy to the minister in the GDR Price Office, *Presse Information* (East Berlin), Feb. 15, 1973.

The reaction of East German hierarchy to these setbacks and problems was typically conservative. At the 13th session of the SED Central Committee the main blame for incipient economic woes was laid squarely at the door of the managers of state enterprises (VEB's) and trusts (VVB's), which were accused of "lack of planning discipline," "financial laxity and gross neglect of the principles of cost-accounting," and "lack of leadership abilities."¹³⁴ The remedies suggested in the Politburo report, such as reintroduction of stricter central controls in the spheres of financing and in output planning (not to mention the inevitable "ideological education" drive) were put into effect in the second half of 1970 and in 1971.

The changes introduced into the East German model in 1970 represented a definite tendency toward recentralization of the whole decisionmaking process. This retrograde step was taken at a time when the increasing role of Western export markets in the East German economic expansion would entail a still greater freedom of action for the managers of industrial trusts and larger enterprises. However, the conservative East German hierarchy has always displayed a tendency to turn back to more centralized systemic solutions and more orthodox methods of economic management. Hence, the future development trend of the East German economic model is rather difficult to predict.

Czechoslovakia—Full Speed Astern

One of the chief victims of the dogmatic restoration in Czechoslovakia was the entire program of economic reforms. In the early post-invasion period, there were apparently still some forlorn hopes that at least the vestiges of the new economic model could be preserved. Dubcek himself declared in October 1968 that "nothing could be worse for us today than if the whole process of economic reform were to be stopped * * *." The party and its leadership do not intend to abandon the reform objectives set by the 13th Party Congress and our action program.¹³⁵ But in the political climate of post invasion in Czechoslovakia, such assurances were nothing more than wishful thinking. In April 1969, Dubcek was replaced as First Secretary of the CPCS by Gustav Husak, and the rollback of economic reforms began in earnest.

The preliminary stage of this carefully coordinated antireform offensive was a broad-gaged attack on Ota Sik and other prominent economic reformers, as well as on the basic theoretical premises of the Czechoslovak economic model. These denouncements ranged from personal name-calling and indiscriminate charges of outright economic revisionism, to a detailed, pseudoscientific analysis of the alleged ideological and theoretical errors committed by the Czechoslovak economic reformers in working out the blueprint of a new economic model.¹³⁶

The general attacks on the economic concepts of Sik and his followers centered on various accusations. The reformers were accused of try-

¹³⁴ G. Mittag, op. cit.

¹³⁵ Dubcek's speech to workers and party representatives from 27 factories located in Prague and in central Bohemia, CETEKA, Oct. 17, 1968.

¹³⁶ For a systematic and critical analysis of Sik's model, see the series of articles by J. Vejvoda entitled "about the Theoretical Premises of Sik's Economic Model," *Tribuna*, Dec. 10, 17, and 23, 1969.

ing to return the economy to "the liberalistic period, and hence to take over, in essence, the Yugoslav model"¹³⁷ and of trying to introduce a "socialist market economy" based on the "capitalism of free competition as in the 18th and 19th centuries."¹³⁸ Another critic charged them with trying to implement a "so-called new model of Socialist market economy," emulating not "the highly organized monopolist market, typical of the current stage of development in the capitalist countries, but rather the premonopolist market that existed in the era of free competition" and to fashion "a kind of variant of the ill-famed idea of the convergence of capitalism and socialism."¹³⁹ The reform attempts by the "rightist-opportunists" were considered to be the result of "economic romanticism and rightist view," to be "anti-socialist" and "revisionist," and to represent an attempt to apply "the methods of a bourgeois society." Radio Prague's Moscow correspondent, Frantisek Kolar, characterized the proposal for developing a separate Czechoslovak economic model as being "counterrevolutionary and an anti-Communist revision of Marxism-Leninism."¹⁴⁰

Another major criticism has centered on the attempts of Šik and his followers to minimize the role of the plan and to favor the market mechanism. Husak said that, as a result, the "rightists" favored "complete anarchy."¹⁴¹ He also charged that they wanted "to weaken the role of the plan as the main instrument for directing the Socialist economy," and wanted to give "the system of economic instruments * * * its own life." He claimed that the reformers had attempted "to separate and create two independent spheres—the enterprise sphere and the central sphere—thus basically violating the principles of democratic centralism in the national economic management."¹⁴²

After a lengthy period of this massive propaganda barrage, the second stage of the rollback process began. At the Central Committee Plenum, held at the end of January 1970, the entire pre-1968 economic reform program was formally scratched and replaced by a new concept, described vaguely as a "planned management system."¹⁴³

The precise theoretical meaning of this new concept was not spelled out concretely, either at the January plenum or since, but the practical implications of the new "system" were, nevertheless, quite clear from the beginning. The national economic plan was to be restored as "the main instrument of economic policy," in order to insure "the harmony between political and economic aims, as defined by the party leadership."¹⁴⁴ In other words, the decentralization process which began in 1965 and was well advanced by mid-1968 was to be reversed, and the preponderant economic role of the central planners was to be restored. The planners were given back most of their old prerogatives, includ-

¹³⁷ Ladislav Šupka, a department head in the CPCS Central Committee in an interview by J. Šloncar, "What Next in Economic Reform?" *Tribuna* No. 40, Oct. 15, 1969.

¹³⁸ Comment by Jan Vecar, candidate in economic sciences, over Radio Prague, Oct. 21, 1969, 1830 hours.

¹³⁹ Deputy Premier Vaclav Hula in a speech delivered at January 1970 Central Committee Plenum, cf. *Rude Pravo* (Prague), Jan. 29, 1970.

¹⁴⁰ Radio Prague, Nov. 14, 1969.

¹⁴¹ Husak's keynote speech at the January 1970 Central Committee Plenum, cf. *Rude Pravo* (Prague), Jan. 29, 1970.

¹⁴² *Ibid.*

¹⁴³ The resolution of the Central Committee of the CPCS "On Main Questions of Party's Economic Policy," *Rude Pravo* (Prague), Feb. 2, 1970, and a similar resolution adopted at the Slovak CP Central Committee Plenum, *Pravda* (Bratislava), Feb. 9, 1970.

¹⁴⁴ Resolution of the January 1970 Plenum of the CPCS, op. cit., *Rude Pravo* (Prague), Feb. 2, 1970.

ing the right to set binding production tasks for every single enterprise.¹⁴⁵

The whole organizational and institutional structure at the micro-economic level was also basically reshaped. The enterprise councils, established during the Prague spring, were abolished, and the enterprise managers were given sole responsibility for running the industrial undertakings, under close tutelage of the appropriate ministries. Trade unions were to return to the "tested forms of trade union work,"¹⁴⁶ which simply meant that they were to be transformed once again into an instrument of economic management and a transmission belt for party directives.

Thus, in the second stage of the rollback process, the whole Czechoslovak economy was subjected to a strong dose of economic dirigisme. Just before the January 1970 plenum, prices were virtually frozen at their 1969 level,¹⁴⁷ while wages and investment expenditures were being rigidly controlled by central planners. Initially, the price freeze was proclaimed as a temporary measure, necessary to prevent a further growth of inflationary pressures. But with the passage of time, it has become quite evident that strict price control was conceived as a standard policy of the Husak regime. Prior to the price freeze, some 30 percent of the retail goods were in the free price category.¹⁴⁸ After the freeze, the products and services within the "free" price group were largely limited to the catering trade, delicatessens, temporary accommodations, mail order services, jewelry and costume jewelry, seafood, fruit, and vegetables.¹⁴⁹ In all, only some 60 items are now included in the "free" price category. For all practical purposes, the three-tier price system has been suspended.

While the rollback of the new model bordered dangerously on an all-out return to command economy, the Czechoslovak authorities continued to assure the population that all these moves were purely temporary measures, which were indispensable to restore the dynamics of economic growth.¹⁵⁰ The new "planned management system," it was repeatedly pledged, would be fully and "creatively" developed, after the period of political normalization was over.

Indeed, the resolution of the January 1970 Central Committee plenum charged the party presidium with the "completion and gradual implementation of a comprehensive system of planned management." The new model was to "perfect the instruments of planning" and at the same time, "give a greater scope to individual initiative both at the enterprise and the middle managerial (that is, trust) level."¹⁵¹

According to the resolution, the draft blueprint of the "planned management system" was to be submitted by the CPCPS Presidium to the 14th Party Congress in May 1971. But no such blueprint was either presented or discussed at this gathering. The resolution of the 14th

¹⁴⁵ "The Criterion Is Changing," *Prace*, Jan. 30, 1970.

¹⁴⁶ Ljapavsky, "The Defense of Interests," *Rude Pravo* (Prague), Mar. 3, 1970.

¹⁴⁷ Wholesale prices were frozen at their Jan. 1, 1969, level, and the retail ones, at that of June 30, 1969. See Czechoslovak order in Council No. 168 of Dec. 23, 1969.

¹⁴⁸ Report of Zuzana Korackova on the information presented by Czech Price Bureau employees at a press conference held on August 5. *Radio Prague*, Aug. 5, 1969.

¹⁴⁹ Rudolph Rohlicek, "On Anti-Inflationary Measures and Politics in General," *Rude Pravo* (Prague), Mar. 24, 1970.

¹⁵⁰ Jan Vintera, "What Kind of Return to the Plan?", *Svet Prace* (Prague), No. 9, Mar. 4, 1970.

¹⁵¹ Viktor Novotny, "The Main Center of Consolidation Is in the Enterprises," *Prace* (Prague), Mar. 6, 1970.

Congress spoke only very generally about the need for "further perfecting of the system of industrial management."

Moreover, a recent authoritative article on this subject, published under the signature of a high party functionary, indicated quite clearly that the Czechoslovak authorities do not really intend to produce a comprehensive blueprint of the elusive "planned management system," at least not in the near future. The author argued that the "work on the development of the planned management system" must be seen as a "continuous process," during which a set of economic instruments, "capable of resolving the management problems of a given period" was to be created, tested, and approved.¹⁵² The article made it quite clear that this "continuous process" did not involve working out a new economic system. Instead, the present (that is, the dirigiste one) was merely to be "enriched" by certain new elements. For instance, a reform of wholesale prices was to be carried out in 1976 to be gradually introduced throughout the whole economy.¹⁵³ The central institutions intend also "to improve" their market research methodology. The aim here was a better adaptation of the output mix to the effective needs of the population and "to perfect" the methods of economic forecasting.

All this makes it perfectly clear that having scratched the "revisionist" new economic model of 1965-68, the Husak regime has no intention of replacing it by a new economic system of its own. It appears that the present rulers of Czechoslovakia are unwilling to contemplate comprehensive, systemic reform, which would compromise their emphasis on the determining role of the center in both planning and management. What seems to be in the offing is a somewhat more flexible approach to separate aspects of the economy, via wage policy, and the continued "patchwork" practice of making periodic adjustments in order to meet current requirements.

Bulgaria—A Reform Stuck in the Quagmire of Reorganizations

"In Bulgaria," [wrote a knowledgeable Western observer in 1967,] "there is no shortage of bold reform blueprints. What seems to be lacking is the determination, or the ability to carry them out."¹⁵⁴ Needless to say, the impetus for orthodoxy and conformity generated by the Soviet invasion of Czechoslovakia had greatly reinforced the inborn circumspection of the Bulgarian ruling oligarchy on such an ideologically sensitive issue as economic reforms.

According to the original schedule, the Bulgarian new model was to become fully operative by 1968. But, because of serious disagreements within the party establishment, the implementation of the reform program on the macroeconomic scale, had to be postponed, while the whole blueprint was sent back to the drawing boards.¹⁵⁵

The amended version of the new model was again submitted for discussion at a plenary meeting of the central committee in July 1968—1 month before the invasion of Czechoslovakia. However, the results

¹⁵² Karel Stolba, "To Strengthen the Principle of Planned Management at All Levels," *Zivot Strany* (Prague), No. 22, Oct. 29, 1973.

¹⁵³ *Ibid.* N.B. According to *Svet Hospodarstvi*, May 29, 1973, the new system of remuneration was introduced so far in some 18 percent of all industrial enterprises.

¹⁵⁴ *Economist* (London), Nov. 11, 1967.

¹⁵⁵ *Supra*, footnote 63.

of these deliberations were inconclusive. The plenum not only failed to formulate and approve a coherent program of economic reforms, but demonstrated once again that the principle of Party control over the economy was far more important for the Bulgarian establishment than any considerations of economic efficiency.

True to form, the programmatic Politburo report on the proposed changes in the methods of planning and management was full of obvious inconsistencies and contradictions and, worse still, it definitely suggested a retreat from certain significant concepts of the original new economic model proposed in 1965. This was particularly evident in the oft-repeated thesis that "the need for central planning increases as society develops" since at that stage "the planning must be expanded to encompass the whole society." The report stressed also repeatedly the "compulsory character of the central plan," arguing that "the individual enterprises are not able to estimate the social conditions correctly and are thus in no position to determine the public's needs."¹⁵⁶ It also stressed the "urgent necessity to strengthen party control over every segment of national economy." Such formulations undermined the whole decentralization spirit of the original reform blueprint.

Thus Bulgaria became the first country in Eastern Europe which, even before the invasion of Czechoslovakia, formally reversed the decentralization principle, the basic tenet of all bona fide economic reformers. What the July 1968 plenum preserved from the original reform blueprint was the concept that economic rationalization can only be achieved through economic and financial levers. Hence the plenum resolved that such instruments as interest charges, credit financing, amortization rules, taxes material incentives and bonuses must be "improved" in order to encourage more efficient use of economic resources at the level of enterprises and associations (trusts). How this "general use of indirect control methods" could be reconciled with the "compulsory character of the central plan" and the principle of party control remained the secret of the Bulgarian party hierarchy.

The effectiveness of economic and financial levers obviously depends to a great extent on a rational price system. Yet, the plenum decided to postpone the introduction of the three-category pricing system until the often delayed reform of wholesale prices had been carried out, arguing reasonably enough that no enterprise manager can be entrusted with price-setting prerogatives until he had a clear idea about his actual production costs. Apparently, the lack of such knowledge was no obstacle to price determination by the central institutions.

Despite the inconclusive outcome of the July 1968 plenum and the obvious contradictions in the still rather nebulous reform blueprint, the Bulgarian hierarchy decided in 1968 that the new economic system should be introduced for the economy as a whole at the beginning of 1969. A formal decision to this effect was made by the Bulgarian Council of Ministers, which also announced that the reform of wholesale prices would be carried out on January 1, 1969. At the same meeting, the Council of Ministers issued several detailed decrees and regulations, which were meant to define the respective spheres of activities, as well as the prerogatives and the duties of the managers of state

¹⁵⁶ Text of the report of Todor Zhivkov published in *Rabotnicheskoto Delo* (Sofia), July 25, 1968.

enterprises and industrial associations. But, as if to complicate deliberately the whole situation, the Council of Ministers also approved a new decree on state planning, which to a great extent cancelled out the prerogatives of lower and middle level economic administration.¹⁵⁷

Formally, the economic system that was introduced in the entire Bulgarian economy in January 1969 was based on the decisions of the July 1968 plenum. But the fact remained that, despite several years of experimentation, adjustments and reorganizations, the new model was still not fully crystallized. There was much confusion and uncertainty, especially at the enterprise and trust level, as to the actual meaning of the reform. This confusion was illustrated by the fact that the original regulations defining the rights and the duties of enterprise and association managers had to be amended twice within just two years.¹⁵⁸

This tendency toward continual experimentation and reorganization was well demonstrated by the evolution of the economic role of the association (trust). Originally, the Bulgarian association was conceived as an independent economic entity, supervising the activities of a number of subordinate enterprises, which, however, remained independent legal and economic bodies. This meant that at the early stage of the reform the association was not responsible for the economic performance of the component enterprises, but was merely supposed to serve as an intermediary administrative link between the enterprises and the ministry.

The reorganization, which was carried out on January 1, 1971,¹⁵⁹ not only reduced the number of associations from 120 to 64, but changed their entire character and their basic economic functions. The association ceased to act as an intermediary administrative link between the ministry and the independent enterprises and was transformed into a conglomerate economic organization, into which the subordinate enterprises have been completely incorporated. This meant that the Bulgarian enterprises had lost their independent legal and economic status and had become, in effect, subdivisions of a large industrial concern. All problems dealing with supplies, financing, production plan, and marketing have been reserved for the association. The sole task of the enterprises was to produce what the parent association told them to produce. Hence, this type of reorganization was another major step on the road to centralization.¹⁶⁰

When the Bulgarian new model was first officially launched in December 1965, it closely resembled the Czechoslovak reform blueprint of that period. Central planning was never formally abandoned, but at least a genuine attempt was made to decentralize to some extent the decisionmaking process and to replace administrative directives by economic and financial instruments. Since then, however, the Bulgarian reform blueprint had undergone so many changes, adjustments, and

¹⁵⁷ The decision of the Council of Ministers was published in *Rabotnichesko Delo* (Sofia), Nov. 13, 1968, while the relevant regulations and decrees were published in *Derzhaven Vestnik* (Sofia), No. 88, Nov. 15, 1968.

¹⁵⁸ *Derzhaven Vestnik* (Sofia), No. 44, June 6, 1969, and *Derzhaven Vestnik* (Sofia), No. 98, Dec. 11, 1970.

¹⁵⁹ *Derzhaven Vestnik* (Sofia), No. 98, Dec. 11, 1970.

¹⁶⁰ Of the 64 new associations, only about 35 were industrial ones, the rest were construction, trade, and transport associations, etc. Thus, the whole Bulgarian industry was concentrated in 35 large industrial concerns.

reorganizations that by 1971 it was much more akin to the East German model of 1963.

However, the system set up in 1971 was by no means the final mutation of the Bulgarian model. Its organizational structure and its modus operandi were amended twice during 1972¹⁶¹ and subjected to yet another major change in early 1973. This time the pendulum swung in another direction and the main emphasis was again put on economic rather than administrative methods of planning and management.¹⁶² But these new methods were placed in the context of new, super-large economic units—the so-called economic complexes, which encompassed mutually connected industrial branches and were—in effect—a sort of vertical combines.

Outwardly, this type of organizational structure might suggest yet another step toward greater centralization. But because various industrial branches (or parts of them) were now included in larger economic complexes, the orthodox administrative methods of planning and management were no longer suited to the intricate nature of the interwoven activities of the new super units. Every association which belongs to a given economic complex must have some measure of economic and financial autonomy in order to cooperate effectively with other affiliated associations. Hence, to quote the Politburo report, “the interbranch nature of economic complexes predetermines the decisive role of economic methods of management and planning and considerably restricts the use of administrative methods, which are more suited to branch or departmental structure.”¹⁶³

It is still too early to say whether the establishment of economic complexes would result in yet another evolution of the Bulgarian model. As the record up to date shows, this model is much more reorganization-prone than any of its East European counterparts. Hence, nobody can really say how long the present organizational structure (and the good intentions of the Bulgarian ruling elite, which are closely connected with it) are going to last. If fully and consistently implemented and if given enough time to prove its worth, this latest version of the Bulgarian new model might produce some positive results by overcoming the perennial difficulties in industrial cooperation caused by lack of proper coordination between the individual branches of industry. But the more cohesive organizational coordination and more sensible methods and instruments of planning cannot be regarded as adequate substitutes for a meaningful reform program and genuinely decentralized operational patterns.

Romania—A Reform Paralyzed by Administrative Inertia

While in Bulgaria the economic reform program was plagued by too much experimentation and too many organizations, in Romania the main problem was that of administrative inertia. The seemingly inborn obstinacy of the top-heavy Romanian bureaucracy caused

¹⁶¹ *Darzhaven Vestnik* (Sofia), No. 20, Mar. 10, 1972, and *Derzhaven Vestnik* (Sofia), No. 70, Sept. 5, 1972.

¹⁶² Resolution of the December 1972 Central Committee Plenum, as published in *Rabotnicheskoto Delo* (Sofia), Dec. 17, 1972.

¹⁶³ The Politburo Report, delivered by Todor Zhivkov was published in *Rabotnicheskoto Delo* (Sofia), Dec. 14, 1972.

countless delays in putting into effect even such modest reform proposals as those envisaged in the Directives approved by the National Party Conference in December 1967.¹⁶⁴ The other major impediments to a consistent implementation of the Romanian mini-reform measures were the lack of a clear-cut concept of the new economic system and the persistent dirigiste tendencies within the top echelons of the administrative and party hierarchy.

The new organizational structure, which was to be introduced in Romania by 1969, was conceived as a trilevel system, consisting of economic ministries, the industrial centrals (or quasitrusts) and the enterprises. The essence of this reorganization was the establishment of industrial centrals, which were to assume some of the microeconomic planning functions and most of the operational prerogatives formerly exercised by the ministries. At the same time, these industrial centrals were supposed to supervise and to direct the day-to-day economic activities of a number of subordinate enterprises. The general idea was that the whole conglomerate should function on a businesslike basis, with the overall aim of improving economic efficiency at all levels.

To this end, the Romanian minireform was supposed to soften somewhat the unyielding command economy approach of the old system. Not only the managers of the industrial centrals but also the directors of individual enterprises were to have a greater say in drawing up of economic plans. The industrial centrals, on the other hand, were to have the sole responsibility for all financing arrangements and for overall supply procurements. They were also to share with the ministries the responsibility for determining wage scales. The centrals could also empower their subordinate enterprises to introduce certain changes in the product mix of their output, in response to any shifts in demand.¹⁶⁵

Inadequate as those prerogatives were from the point of view of genuine decentralization of the essential decisionmaking process, they could, perhaps, have led to a meaningful improvement of economic efficiency, were it not for a variety of built-in checks and balances, which reflected the obstinate dirigiste tendencies within the Romanian Party establishment.

Having decentralized somewhat the industrial structure and having granted certain new prerogatives to the lower echelons in the economic set up, the authors of the Romanian minireform program did their best to neutralize most of the potential advantages of this more flexible operational arrangement by insisting that all the essential attributes of central planning should be retained in their most rigid form. Thus, in practice neither industrial centrals, nor enterprises could deviate from a set of mandatory indicators, imposed by the central planners.¹⁶⁶

The problem of efficient management was further complicated by an ideologically motivated decision to reject the principle of one-man-management in favor of a concept of a "management collective." It

¹⁶⁴ *Supra*, footnote 79.

¹⁶⁵ "The Statute of the Industrial Central," published in *Buletinul Oficial* (Bucharest), No. 47, Apr. 2, 1969.

¹⁶⁶ G. Lazaride, "Investigation, of the System of Plan Indicators," *Probleme Economice* (Bucharest), No. 5, 1971.

was argued that such collective leadership would replace the "arbitrariness" and "subjectivism" of individual economic decisions by a "better informed judgment, based on a group wisdom and a variety of experiences."¹⁶⁷ In practice, however, the concept of a management collective became a thinly disguised excuse for packing the boards of directors at all levels of economic structure, from the larger enterprises to the ministries, with party appointees, selected among "meritorious" but often ignorant apparatchiki.

Such a composition of the collective management bodies could not fail to strengthen the bias toward economic dirigisme, which was inherent in the Romanian reform blueprint. Since plan fulfillment, as far as the industrial centrals were concerned, was contingent on strict adherence to centrally imposed plan indicators by all subordinate enterprises, full implementation of the allotted production tasks by these enterprises had soon become the main concern of the conglomerate managers. Worse still, in order to insure adequate fulfillment of the plan targets, the industrial centrals began to make extensive use of their right to impose their own mandatory indicators on the subordinate enterprises. Moreover, the managers of industrial centrals "had frequently shown a tendency to assume direct control over such operative matters, which are best left to enterprises themselves."¹⁶⁸

However, the greatest bane of the Romanian minireform was neither the management collective nor even the predilection for economic dirigisme, but sheer administrative inertia. The self-imposed deadlines for the introduction of individual reform measures were repeatedly postponed and the implementation of sectoral solutions was constantly delayed, quite often without any explanation.

Originally, the Romanian minireform was to become fully operative by December 31, 1969.¹⁶⁹ By any standards, this was a reasonable deadline. When the report "On Measures To Improve the Management and Planning of the National Economy" was submitted by Ceausescu to the RPC National Conference in December 1967, he claimed that "the party and state leadership have been working on these measures for over 2 years."¹⁷⁰ One might infer from this statement that the economic reform program was ready and, after the preparatory legal and administrative work had been completed (and 2 years were more than ample for that purpose), it could be implemented as scheduled.

Nevertheless, there was a considerable delay in putting the initial reform measures into effect.¹⁷¹ Therefore, the 10th Party Congress (August 1969) postponed the implementation deadline for 1 year, that is, until December 31, 1970,¹⁷² explaining that not all of the proposed sectoral solutions had been fully worked out. But the year 1970 came and still the preparatory work on the reform program was progressing at a very slow pace. The deadline was pushed back again to December 31, 1971.¹⁷³ But in 1971 the process of implementation of

¹⁶⁷ "Improving Collective Leadership in Enterprises and Industrial Centrals," *Probleme Economice* (Bucharest), No. 12, December 1969.

¹⁶⁸ *Ibid.*

¹⁶⁹ Law No. 22/27 published in *Buletinul Oficial* (Bucharest), No. 112, Dec. 27, 1967.

¹⁷⁰ Text of Ceausescu introductory speech. *Scanteia* (Bucharest), Dec. 7, 1967.

¹⁷¹ By the end of 1969, only eight industrial centers had been established and this only on experimental basis.

¹⁷² Law No. 74 as published in *Buletinul Oficial* (Bucharest), Dec. 29, 1969.

¹⁷³ Law No. 41, as published in *Buletinul Oficial* (Bucharest), Dec. 18, 1970.

economic reform had reached such an impasse that the RPC National Conference, scheduled for July of that year, at which the Romanian politburo was to present a progress report on the new system, had to be called off.

Inevitably the date at which the minireform was to become fully operative had to be postponed once again—this time to the end of 1972.¹⁷⁴ Although there were no further official postponements, the Romanian minireform program remains completely stalled.¹⁷⁵

The RPC National Conference (which was itself postponed twice) did eventually convene in July 1972, but instead of a progress report on the reform, it heard complaints and recriminations about the constant delays in the implementation of the new economic system. The almost total paralysis of the reform program was quite frankly acknowledged both in the keynote speeches and in the final resolution.¹⁷⁶ Soon afterwards several highly placed scapegoats were found. In October 1972 the executive committee of the RPC and the state council carried out a mass purge of top economic officials, including a couple of deputy prime ministers, the chief planner, and the chairman of the state economic council. They were either ousted, or transferred to other, less responsible jobs.¹⁷⁷

Thus, in a typical Communist manner, the main blame for a near-paralysis of the Romania reform program, due primarily to the lack of a clear-cut concept of the new economic system, to department infighting, and to administrative inertia, was put on a handful of individuals in exposed positions. This means that the Romanian party hierarchy had again missed (or pretended not to perceive) the main point; namely, that the near paralysis of the reform program was caused by continuing rigidity of central planning and by its own predilection for dirigiste solutions.

V. CONCLUSIONS

"At the present stage of socioeconomic relations," declared one of the top economic theoreticians of the Polish Communist Party, "economic reforms are a historical necessity."¹⁷⁸ Such a statement, coming from a man for whom the dialectics of historical materialism are an article of faith, is certainly a very remarkable admission. Indeed, the main conclusion, which one could draw from this analytical review of both the past history and of the current status of economic reform programs in the six East European countries, is that, at a certain stage of socioeconomic development, dismantling the orthodox command economy system and replacing it by a qualitatively different, more flexible, more decentralized, and more market-oriented economic

¹⁷⁴ Law No. 53, as published in *Buletinul Oficial* (Bucharest), Dec. 21, 1971.

¹⁷⁵ Recently, however, Gaston Marin, the chairman of state commission on prices, stated in an article published in *Scanteia* (Bucharest) of Dec. 20, 1973, that the council of ministers had set "final" deadlines for establishment of factory and wholesale prices. The long-delayed price reform was one of the major obstacles holding up the implementation of the minireform.

¹⁷⁶ Ceausescu's report, published in *Scanteia* (Bucharest), July 20, 1972, Maurer speech (*Scanteia*, July 21, 1972), and the text of the resolution (*Scanteia*, July 29, 1972).

¹⁷⁷ All these changes were announced on Oct. 11, 1972. See *Scanteia* (Bucharest), Oct. 12, 1972.

¹⁷⁸ Jozef Pajestka, "A Discussion on Modernizing the System of Economic Management," *Nowe Drogi* (Warsaw), No. 12, December 1971. Prof. Pajestka, a full member of the Central Committee, is also serving as deputy chairman of the Special Commission preparing economic reforms.

model is "a historical necessity." To put it differently, it is the only rational solution to a very intricate and perplexing problem.

One could also say that the process of dismantling, once set in motion, is essentially irreversible. Despite many setbacks, frustrations and disappointments, suffered by dedicated economic reformers throughout Eastern Europe, nowhere—not even in postinvasion Czechoslovakia—could one pinpoint a deliberate, programmatic endeavor to revert to the command economy system as it existed prior to the launching of the reforms. The process of change could be sidetracked or interrupted, and certain objectionable features of the old, arbitrary, monocentric system could be reintroduced, as an ad hoc remedy, but the overall, reformist trend can no longer be reversed. The best example is Poland, where in the last 18 years the process of change was interrupted three times (including a brief period of antireformist witch hunts), only to be resumed again after a short interlude of quasi-monocentric restoration.

No one can predict with any degree of accuracy either the momentum of change, or the final structural and institutional forms of the future new economic model or models. The extent and the intensity of resistance to such systematic transformations, on which the dynamics of the whole process depend are equally unpredictable. The enforced retreat from the new economic model, evident in Czechoslovakia since the Soviet invasion, offers grim evidence that dogmatic elements within the party establishment, given the right opportunity, are prepared to go very far to preserve the systemic status quo, not to mention their own vested interests.

However, barring a full-scale, bloc-wide return to some sort of neo-Stalinism, imposed by force (which, even in the unlikely event that it could be achieved, would probably create a total economic chaos), the process of change cannot be reversed. Even the most conservative ruling elites in Eastern Europe seem to have realized at last that they cannot have their cake and eat it. If they want genuine economic (and technological) progress and a steady increase in living standards, they must accept qualitative changes in the economic system. Strong popular pressures for meaningful and constant improvements in living standards, and the desire to expand their economic relations with the West at a very rapid rate provide strong incentives to the ruling elites in Eastern Europe to continue their reforms.

Will the leaders in Eastern Europe be willing to give up some of their political power in order to achieve economic efficiency?

It is a generally acknowledged fact of life that a new economic system cannot produce the expected results without some substantive change in the existing power structure in favor of the emerging special interest groups.

This basic dilemma remains largely unsolved. However, the factual evidence, presented in the main body of this study would suggest that most of the present-day East European elites are prepared to go very far (by their own standards) to improve substantially the productive efficiency of their respective economies. All of them (with the possible exception of the Romanians) have by now realized that the era of extensive growth is over, and that in the future economic growth will have to be induced by more sophisticated and more diversified intensive methods.

No doubt, there will always be a strong temptation to look for politically less sensitive substitutes for economic reforms, such as industrial cooperation, or importation of modern technology and production techniques. But such substitutes can be, at best, only temporary palliatives. Up-to-date industrial technology remains up-to-date for only a very short time; without systemic changes, which would provide proper incentives for technological progress at the home base, the improvement in productive efficiency can be only a temporary phenomenon. As far as industrial cooperation is concerned, the past experience shows that there exists a very definite correlation between the progress in implementation of bonafide economic reforms and the propensity to cooperate with Western firms, especially at the enterprise level.¹⁷⁹ Thus, when all is said and done, only a qualitatively different system of planning and management can meaningfully improve both the productive performance and economic efficiency of East European economies.

The ultimate institutional and structural forms of such a new system are a matter of conjecture. Economic reform programs throughout Eastern Europe (even those in Hungary and in the GDR) are still at an experimental, trial-and-error stage. However, there is a rather subtle, but very meaningful difference between the economic models proposed in the earlier period (prior to 1968) and their more recent mutations. The earlier versions of the new model (that is, the Polish Economic Model of 1956/57, the initial Czechoslovak blueprint, and the Bulgarian model) were based on a sort of an idealistic laissez-faire concept of full independence of every enterprise—large and small—and an absolute faith in the perfect operation of the market mechanism and the interplay of supply and demand. In a way, this was an understandable reaction to the gross distortions, resulting from the malfunctioning of the old command economy system and its arbitrary methods of planning and management. But such a concept of a new economic model reflected a blissful ignorance of the intricate operational patterns of modern industrial society. Whether such a laissez-faire economic system was ever compatible with state ownership of all (or almost all) means of production, transport and distribution, was always a highly debatable point. But quite apart from this type of consideration, more perceptive economic reformers were bound to realize quite soon (especially after the objective study of Western economies and Western business methods ceased to be an ideological taboo) that such a fully decentralized economic model cannot operate effectively in the complex and highly interdependent economic world of the second half of 20th century.

Needless to say, one of the basic lessons of the invasion of Czechoslovakia has been a clear warning that, while economic reforms, as such, are ideologically and politically acceptable, any reform program must be kept within the bounds of the constantly changing ideological orthodoxy.

This warning was an important factor in the retreat from the extreme laissez-faire-type positions, but not the most decisive one. The

¹⁷⁹ For a broader discussion of this problem and for factual evidence of such a correlation see, Mr. Gamarnikow, "Industrial Co-operation—East Europe Looks West," *Problems of Communism* (Washington), May-June 1971.

reformers themselves have become more sophisticated and more conscious of the realities of modern industrial structure and its intricate system of mutual interdependence. Hence, the switch-over is taking place from a rather idealistic vision of a fully independent enterprise, responding perfectly (and at once) to any change in effective demand, to a more realistic structural set up, based on large conglomerates, functioning as a major industrial concern.

Still, the shift in structural concepts has not progressed far enough. No East European country had yet succeeded in changing the old branch structure of its economy, in accordance with the requirements of modern business patterns. The conglomerates are almost always a horizontal, specialized combines; there are few vertically integrated, diversified complexes. There is also the ever-present tendency to control the subordinate enterprises by binding directives and mandatory indicators, rather than to rely on economic instruments and on the initiative, specialized knowledge and business acumen of enterprise managers.

This does not mean, however, that all the basic ideas of a "socialist market economy" have been abandoned. For one thing, the decentralization process has been only partially reversed, and in Hungary, for instance, the original concept is still very much in force. Central planners no longer concern themselves with operational problems and production targets at the microeconomic level, and most of their supervisory functions have been taken over by the middle level superstructure.

Secondly, the important role of the market is generally acknowledged. Most pricing systems in Eastern Europe have undergone substantial reforms. There is a clear tendency to bring prices much closer to actual production costs (including a standard profit margin) and, in some East European countries, prices of certain consumer goods do depend on the interplay of supply and demand. Market research is also becoming common-place, and it plays an ever increasing role in determining future production plans.

Third, there has been a major change in the methods of investment financing. Central investment allocations are now, by and large, limited to major new projects, while most of other types of investment are being financed by repayable bank credits, available either to trusts, or to enterprises themselves. Thus, investment funds ceased to be free goods and the proper role of interest rates, depreciation write-offs, and capital levies has been fully recognized.

Finally, the order of economic priorities has undergone a major change too. Capital accumulation no longer has an absolute priority over the growth of consumption, and some East European countries (most notably Poland, Hungary, and Czechoslovakia) have even gone over to an outright consumerism. Although these changes in economic priorities do not yet fully correspond to the actual needs of the population (if only in terms of the available purchasing power), they do reflect a genuine effort, on the part of at least some East European ruling elites, to achieve a more balanced type of economic growth.

POLICY CYCLES IN SOCIALIST ECONOMIES: EXAMPLES FROM CZECHOSLOVAK AGRICULTURE*

By LAWRENCE J. BRAINARD

CONTENTS

	Page
I. The Polk ₂ Cycle.....	215
II. Czechoslovakia's First 5-Year Plan Period: 1948-54.....	217
III. The Drive for Collectivized Agriculture: 1955-60.....	220
IV. Problems of Socialist Agriculture: 1961-67.....	223
V. Post-1967 Developments.....	226
VI. Conclusions	227

The complexities facing would-be forecasters of East-West trade are many. Future trade policy in East and West, the progress of political detente, considerations of comparative advantage, and the weather will each have a role in determining the volume and composition of these trade flows. In the United States the prolonged debate concerning our trade policy toward socialist nations has served to focus attention on this one issue and the related questions of MFN and Eximbank credits. As a result, medium-term forecasts of U.S. trade with the socialist area regularly appear in two variants—with and without MFN and Eximbank credits.

While the above are key issues, the trade implications of domestic policies in socialist countries must not be overlooked. The tying of major development efforts to the 5-year plan period, for example, will influence the pattern of East-West trade, producing trends quite different from those implied by simple extrapolations of recent trade figures. At the beginning of the plan period a sharp rise in investment follows the initiation of many new industrial projects. Because of domestic capacity limitations this necessitates the boosting of imports and the restriction of exports of investment goods. The lag in bringing new export capacity on line and the subsequent deterioration in the trade balance create pressures later in the plan period to restrict imports administratively. When major projects are completed, though, more exports are generated. As the trade balance improves, the basis for yet another development push is created, thus superimposing a cyclical pattern on the secular trend in trade.

This simplified model of a socialist trade cycle illustrates one plausible way socialist development policies may affect foreign trade activities. There are undoubtedly other ways one might profitably view these interactions. The point is that considerations of the future potential of East-West trade must look beyond trade to underlying factors which characterize socialist economic policies and institutions.

*The views expressed herein are the sole responsibility of the author, and they should not be considered as reflecting the official position or endorsement of his employer, the Chase Manhattan Bank.

The research results presented here focus on a particular characteristic of policymaking behavior in socialist economies, namely policy cycles. These cycles, which are by no means unique to planned economies, transmit their effects to certain economic aggregates, thus generating cycles in these variables. The trade and investment cycles observed in some socialist countries, for example, provide evidence of underlying policy cycles.¹ In contrast to the case of the capitalist business cycle, though, fluctuations generated by policy cycles need not be pervasive in the sense that they affect all sectors of the economy and the rate of economic growth. The cycles in Czechoslovak agricultural policy examined below had an identifiable impact on the trade balance and on other sectors in the economy, but the impact was not so strong as to induce further cycles in these sectors.

I. THE POLICY CYCLE

Soviet-type economies present a mixture of command and market mechanisms. Many of the economy's resources are allocated by means of directives, but market processes are utilized to allocate consumer goods and labor services. The coexistence of the command and market sectors, though, has traditionally been unstable, due to the policymakers' inability to achieve balance between them.

The conflicting behavior patterns of the two sectors interact to cause economic disequilibrium in the allocation and use of resources. The command sector takes as given the primacy of politics and the promotion of socialist economic relations. Policies of taut planning, forced-draft industrialization, collectivization, etc., ignore restraints of the economy's factor endowment, thus increasing the imbalance of supply and demand in the economy. The operation of the decentralized markets within the command framework reinforces this imbalance, since individuals have a limited opportunity to pursue goals opposed to those set by the policymakers.

As it is used here disequilibrium consists of two interrelated components. One is the economic disruption and loss of production caused by a particular policy as individuals adjust to it. The second component is measured by the economic cost of maintaining the policy after individuals have adjusted to it, as compared to the situation before the policy was introduced.

There is a tendency for economic disequilibrium to generate further disequilibrium. The policymakers continue to implement their policies. Their excessive optimism and limited knowledge of the economy's resource constraints make them slow to recognize disequilibria, and they may desire to create some pressure within the system as a way to legitimize their power. When particular disequilibria become serious, administrative measures are introduced to contain them. These additional administrative measures tend to aggravate the economic disequilibrium because they are generally applied at a more aggregative level than the source of the disequilibrium. The constraints of the

¹ Alexander Bajt, *Investment Cycles in European Socialist Economies: A Review Article*, *Journal of Economic Literature*, IX, No. 1 (1971), 53-63; Jan Stankovsky, *Bestimmungsgründe in Handel zwischen Ost und West*, *Forschungsberichte*, No. 7 (November 1972), Österreichisches Institut für Wirtschaftsforschung, Vienna; John M. Montias, *Trade in Machinery Products*, in *International Trade and Central Planning*, ed. by Alan A. Brown and Egon Neuberger (Berkeley: University of California Press, 1968), 131-43.

resource endowment cause the effects of disequilibrium to become more pronounced.

The growing economic disequilibrium eventually overburdens the administrative capacities of the policymakers and produces a crisis. The policymakers respond to the crisis by introducing institutional and policy changes designed to reduce the stresses and strains caused by economic disequilibrium and to move the economy closer to an economic equilibrium in terms of efficient allocation of resources, that is, toward a balance between supply and demand. These changes, in contrast to previous policy, give greater weight to market-type forces in allocation resources. They reduce the tensions caused by economic disequilibrium, but they also erode the primacy of the policymakers' political goals. After the tensions have been reduced, the policymakers reimpose control over the allocation of resources and the process is initiated once again in similar fashion. Thus, there is a tendency for the institutional and policy changes to occur in a cyclical pattern.²

Although the model sketched above focuses on economic disequilibrium generated by the political system, other factors will affect the trend of disequilibrium, dampening or reinforcing it. In different Socialist countries these factors reflect the imprint of both unique conditions and random shocks. No claim is made here for a general or comprehensive theory. The model should be interpreted, rather, as a heuristic device which could prove helpful in discovering some of these interactions in specific cases.

What is required is a certain turn of mind, the desire to speculate and to search in a certain direction, rather than the application of any infallible and objective technique.³

The link of the policy cycle to foreign trade can easily be drawn. Participation in an international market offers policymakers the short-run possibility of mitigating particular domestic disequilibria. The neglect of underlying causes of disequilibria, however, leads to the use of foreign trade as a safety valve or shock absorber. This makes policymakers particularly vulnerable to random shocks, for example, the weather, which affect the trade balance. Where domestic disequilibria are pervasive, a likely result will be a balance-of-payments crisis and a type of trade cycle. The model of the Socialist trade cycle outlined above shows one way cycles in investment policy may in turn generate trade cycles.

The following study of Czechoslovak agriculture analyzes three postwar cycles in agricultural policy.⁴ It focuses on the process by which economic disequilibrium has induced changes in policy. During the collectivization period 1948-60, disequilibria associated with the mass outmigration of labor and the need to increase food imports were the primary factors compelling policy changes. After collectivization was completed in 1960, the growing economic cost of maintaining this system—labor and capital subsidies to state farms and collectives, in-

²This model is developed in detail in the author's "A Model of Cyclical Fluctuations Under Socialism," *Journal of Economic Literature*, forthcoming.

³Albert O. Hirschman, *A Bias for Hope: Essays on Development and Latin America* (New Haven: Yale University Press, 1971), p. 13.

⁴The study is based on parts of the author's "Policy Cycles in a Planned Economy: The Case of Czechoslovak Agricultural Policy, 1948-67," unpublished Ph. D. dissertation, Department of Economics, University of Chicago, 1971.

efficient production, and high levels of food imports—provided the inducement for policy changes. Because of the influence of exogenous factors such as the weather on agricultural production, though, the trends of increasing and decreasing economic disequilibrium which induced these policy changes are difficult to define with precision. In dealing with phenomena of instability a certain degree of vagueness cannot be avoided.

II. CZECHOSLOVAKIA'S FIRST 5-YEAR PLAN PERIOD: 1948-54

The first 5-year economic plan (1949-53) placed major emphasis on the rapid expansion of industrial output, especially that of heavy industry. Agriculture had a supporting role to play as a supplier of foodstuffs and a source of development capital and manpower. The collectivization of agriculture which accompanied the industrialization drive created producers' cooperatives (Unified Agricultural Cooperatives—in Czech, *Jednotné Zemědělské Družstva* or *JZD*) organized to facilitate the redistribution of a surplus from agriculture to priority industrial sectors. Official policy also dictated that retail food prices be kept low, so as to improve the level of living of urban dwellers.

Development policies for agriculture stressed the expansion of livestock production and the mechanization of crop production. By 1953 total livestock production was to surpass the prewar output level by over 20 percent. The plan for total crop output, however, was only 95 percent of the prewar level.⁵ Mechanization of agriculture was synonymous with more tractors. The policymakers (many of whom had no experience with agriculture) believed that doubling the tractor stock (the 1953 target) would nearly complete the mechanization process.⁶

Prices and quotas were differentiated as a means to further the goal of socialized agriculture. *JZD*'s received the highest output prices, the lowest input prices, and the lowest compulsory delivery quotas. Since the prices of quota deliveries were fixed below equilibrium levels as a method of taxation, *JZD*'s were often able to sell more of their output at higher, above-quota prices than were private farmers.

Comprehensive agricultural planning and the monopolization of agricultural purchasing and input supply afforded the policymakers a measure of direct control over all agricultural enterprises. By 1951 nearly all the agricultural machinery on private farms and *JZD*'s was transferred to machine tractor stations.⁷

Table 1 presents selected agricultural data for this period. The economic disequilibrium generated by the implementation of official policy can be seen clearly in the data on agricultural labor and investment (rows 1-4).

The agricultural labor force declined rapidly. The collectivization drive was the major cause. The outmigration was facilitated by the industrialization drive and the short commuting distance between

⁵ Czechoslovakia, Ministry of Information, *The First Czechoslovak Five-Year Plan* (Prague: Orbis, 1949), p. 105.

⁶ Karel Kaplan, *Utváření generalní linie výstavby socialismu v Československu* (The Formation of the General Line of the Building of Socialism in Czechoslovakia) (Prague: Academia, 1966), p. 235.

⁷ V. Láclna, "Hledání cest a první kroky združstevňování československé vesnice (The Search for Ways and the First Steps in the Collectivization of Czechoslovak Villages)," *Sborník Historický*, No. 14 (1966), pp. 130-31.

rural and industrial areas characteristic of many parts of Czechoslovakia. The loss to agriculture in terms of human capital was greater than indicated by rates of change: (1) the absolute decline in male workers was greater; (2) the best farmers ("kulaks") were forced out of agriculture; (3) the management of JZD's was placed in the hands of unqualified party members; and (4) the younger and more qualified workers found jobs outside agriculture more readily.

Investment resources were used to support building construction on JZD's (row 3) even though 56 percent of the planned investment in the original 5-year plan was to go for machinery and agricultural implements. As a result the pace of mechanization of agriculture stagnated. The building projects, in turn, were hastily conceived and poorly executed. Private farm investment of all kinds dropped abruptly. During the 5-year plan period the share of agriculture in total investment was 9 percent, slightly higher than the 8 percent originally planned.

The control of prices was used successfully to expropriate agricultural incomes. From 1948 to 1952 agricultural output prices fell and estimates of disposable personal real income showed declines of about 20 percent (row 6). The disposable real income per employed person in agriculture was about 60 percent of nonagricultural income.

The policymakers attempted to increase livestock production by expanding the size of herds. Herds were enlarged at a time when the yields of fodder were adversely affected by the collectivization drive and the decline in agricultural manpower. Despite increased imports of feed grains (row 7), the lack of fodder helped account for lower livestock yields.

The organization of JZD's and state farms was subject to serious inefficiencies. Definite organizational rules had not been formalized. The enterprises were supposed to be guided by comprehensive plans handed down from above. But the plans were internally inconsistent, and managerial confusion was the result. On JZD's collective production suffered because labor and capital resources were concentrated on private plots.

The policymakers reacted to the internal stresses and strains in ways which aggravated the extent of economic disequilibrium. They increased their harassment of agricultural producers in order to speed up collectivization and to increase marketed production.⁸ Bad weather in 1952 was an exogenous factor which aggravated the crisis in agricultural supply. As a result certain ration allotments were reduced. Sufficient food reserves and imports were not available to meet the retail demand.

The shortages of foodstuffs caused by the disruption associated with the collectivization drive and the subsequent drain on scarce foreign exchange reserves were the major compelling factors which brought about significant institutional and policy changes in 1953. In June the pressure of excess demand in retail markets were reduced by the

⁸ For example: (1) a new Minister of Agriculture was appointed (September 1951), and the collectivization drive was stepped up in 1952; (2) resolutions exhorting farmers to improve production began to appear regularly during 1952 and they were given wide publicity in the press; (3) several mass trials of so-called kulaks were staged during 1952; and (4) efforts were intensified to fulfill the targets of the five-year plan which had been increased in early 1951 to unrealistically high levels.

monetary reform which confiscated a large portion of the private money supply. At the same time rationing was abolished and retail prices were increased by 20 percent. Major changes in agricultural policy followed. Party leaders called a temporary halt to the collectivization drive and peasants were allowed to leave the JZD's. Substantially higher output prices were announced, effective September 1, for the 1953 harvest and all livestock products delivered after that date (table 1, row 5). Delivery quotas were reduced 15 percent for private farmers and 25 percent for JZD's. Most of the debt owed the State Bank by cooperatives was written off.⁹

The changes in policy increased substantially the disposable personal real income in agriculture and reversed the decline in agricultural manpower. More resources were allocated for agricultural investment, and mechanization received more weight (table 1, rows 2-4, 6). Plans were approved in June 1954 to increase the sown area and to recruit new agricultural workers. The new Communist Party First Secretary, Antonin Novotny, promised that agricultural planning would become more decentralized and that the quality of agricultural science would be improved.¹⁰

TABLE 1.—SELECTED AGRICULTURAL DATA: 1948-55

	1948	1949	1950	1951	1952	1953	1954	1955
1. Agricultural land added to JZD's types III and IV (as percentage of land belonging to agricultural enterprises).....	0	0.1	9.0	5.5	15.1	11.1	-4.3	0.2
2. Permanent agricultural labor force (percentage change over previous year):								
Total.....	-4.8	-4.3	-11.0	-7.3	-8.0	+3.5	+7.5	+2.3
Czech lands.....	-5.7	-8.4	-9.7	-5.0	-5.3	+1.4	+5.5	+1.4
Slovakia.....	-3.4	+1.8	-12.6	-10.5	-11.8	+6.8	+10.4	+3.6
3. Share of building construction in total gross fixed investment in agriculture ² in percent.....	88.8	63.3	66.1	74.3	88.7	85.1	74.0	65.2
4. Share of agriculture ² in total gross fixed investment (constant prices in percent).....	4.2	5.8	8.0	10.4	9.0	11.2	11.2	14.2
5. Index of average agricultural purchase prices (1948=100):								
Major crop products.....	100.0	98.3	95.4	95.4	94.9	121.5	121.5	122.6
Major livestock products.....	100.0	100.0	100.0	100.2	97.5	99.6	109.2	119.2
6. Index of disposable personal real income in agriculture (1948=100).....	100.0	77.1	82.2	75.7	79.1	82.1	96.8	105.4
7. Grain imports (thousand tons).....	789.0	(⁹)	944.0	1,446.0	1,119.0	999.0	1,286.0	1,413.0
8. Agricultural output ⁴ (index 1950=100).....	84.6	94.4	100.0	96.1	96.7	95.7	93.7	103.0

¹ As of Aug. 31, 1953, 5.3 percent added.

² Agriculture includes forestry. Includes private investment in agricultural buildings. The share of private investment in total agricultural investment was 67 percent in 1948, 20 percent in 1949, 8 percent in 1950, and less than 2 percent in 1951-55.

³ Not available.

⁴ Includes changes in farm stocks.

Sources: Rows 1 to 5, 7, 8: "Statisticka Rocenka CSSR," various years; "Statistické přehledy," supplement to "Zemědělské Ekonomika," No. 4 (1965), and No. 5 (1967). Row 6: Gregor Lazarcik, "Czechoslovak Agricultural and Non-agricultural Incomes: 1948-1965," occasional paper No. 20 of the Research Project on National Income in East Central Europe (New York, Columbia University, 1968).

⁹ J. Silar and J. Baca, "Vliv finančních nástrojů na faktory růstu Československého zemědělství (The Influence of Financial Instruments on the Factors of Growth on Czechoslovak Agriculture)," Research Study No. 4 (Prague: Research Institute of Finance, 1968).

¹⁰ A. Novotny, *Projevy a stati* (speeches and articles), volume I (Prague: NPL, 1964), pp. 44, 52, 75.

TABLE 2.—SELECTED AGRICULTURAL DATA: 1955-62

	1955	1956	1957	1958	1959	1960	1961	1962
1. Agricultural land (as percentage of land belonging to agricultural enterprises) added to—								
JZD's types III and IV.....	0.2	4.1	17.1	11.2	6.6	1.8	-1.3	-1.2
State-owned agricultural enterprises.....	.3	1.3	.5	.9	1.1	1.0	1.8	1.8
2. Permanent agricultural labor force (percentage change over previous year):								
Total.....	+2.3	-4.5	-3.6	-5.0	-9.5	-6.7	-3.7	-2.3
Czech lands.....	+1.4	-5.8	-2.6	-3.8	-6.1	-4.1	-1.9	-3.0
Slovakia.....	+3.6	-2.7	-5.1	-6.4	-14.5	-10.9	-6.7	-1.3
3. Share of investments in machinery in total gross fixed investment in agriculture ¹ (constant prices in percent)	34.8	34.7	33.0	32.2	30.9	35.7	39.3	41.2
4. Share of agriculture ¹ in total gross fixed investment (constant prices, in percent)	14.2	15.8	15.4	16.4	16.9	16.8	16.8	15.7
5. Index of agricultural purchase prices (quota deliveries 1955=100):								
Major crop.....	100.0	100.0	100.0	100.0	100.0	152.0	154.0	154.0
Major livestock.....	100.0	96.4	100.3	98.1	101.2	177.1	174.2	173.8
6. Index of disposable real income in agriculture (1955=100)	100.0	107.5	109.4	94.8	92.3	100.4	96.7	86.2
7. Index of retail food prices (1953=100)	98.2	95.8	92.7	92.7	90.3	89.7	89.2	90.8
8. Grain imports (thousand tons)	1,413.0	1,600.0	1,662.0	1,317.0	1,924.0	2,003.0	1,553.0	1,543.0
9. Per capita food production (index, 1955=100)	100.0	107.0	103.0	98.0	96.0	102.0	98.0	93.0
10. Agricultural output ² (index 1955=100)	100.0	104.0	103.5	109.4	106.8	115.6	113.0	106.1

¹ Includes forestry.

² Includes changes in farm stocks.

Sources: Rows 1-6, 8, 10: see table 1. Row 7: "Statisticka Rocenka," various years. Row 9: U.S. Department of Agriculture, Economic Research Service, "Indices of Agricultural Production: Eastern Europe and the Soviet Union, 1950-68" (Washington, D.C., Government Printing Office, 1969).

III. THE DRIVE FOR COLLECTIVIZED AGRICULTURE: 1955-60

The policies of the adjustment period were reversed during 1955. The improved economic performance of agriculture relieved pressure due to supply difficulties on the policymakers and made possible the resumption of the collectivization drive. In industry, the draft of the second 5-year plan (1955-60, prepared during 1955) outlined a return to the rapid expansion of industrial output characteristic of the first 5-year plan period. Periodic small reductions in the retail prices of major foodstuffs furthered the goal of low food prices for urban workers (table 2, row 7).

There were changes, however, in the orientation of agricultural policy. During the earlier policy cycle, disequilibrium in agriculture was most evident in the labor market. Now agricultural workers were no longer encouraged to change jobs. Attempts were made to recruit more young agricultural workers, and private farmers (especially women) were prevailed upon to join JZD's rather than seek employment outside agriculture. More important, the policymakers attempted to equalize personal income differences on JZD's—differences between geographic regions and between efficient and less efficient collectives. It was thought that that higher personal incomes on JZD's in less fertile regions and on inefficient JZD's would help stabilize these enterprises by reducing outmigration.

Less reliance was placed on comprehensive planning and administrative harassment of agricultural enterprises. Instead, differentiation of agricultural prices and quotas received more emphasis. The number of obligatory targets in the enterprise plans of state farms and JZD's was reduced and organizational rules for JZD's (outlined in a 1953 model charter) were implemented. Administrative interference in the internal management of socialized enterprises, although reduced, was still common.

Other changes were evident in the plans for substantially increased investment in agriculture. This rapid expansion of investment reflected: (1) the need to compensate for the loss of agricultural manpower; (2) the delay in investment in mechanization caused by the previous collectivization drive; and (3) the need to substitute for the existing capital stock on private farms which was often useless in collective production. The increased investment and the diminished expropriation of agricultural income (as the number of private farms fell) meant that agriculture gradually became less important as a source of development capital for industrialization.

The effects of the implementation of the policies described above may be traced in table 2. Although the permanent agricultural labor force increased during 1954-55, it resumed its decline when collectivization was renewed in 1956 (rows 1, 2). The total rates of decline were highest in 1958-60 because the last farms to be collectivized presented the greatest economic and political obstacles.

The share of agriculture in total investment increased (row 4). During this period the capital input increased faster in agriculture than in industry.¹¹ There were inefficiencies associated with this rapid expansion of capital. Investment resources were again concentrated in building construction. Many of the new collective buildings were poorly planned and had to be later modified and rebuilt. The machinery investments were concentrated in large-sized tractors and grain combines. Other types of machinery which would have been more effective substitutes for labor were neglected. Lastly, the allocation of capital and income subsidies favored lagging enterprises which were least able to use the additional resources efficiently.

In order to increase livestock production the area sown to labor-intensive fodder crops was increased. This, however, aggravated the labor shortage and reduced the area sown to grains, whose yield had been increasing the fastest. The policymakers increased imports of grain. The use of grain for feed reduced an enterprise's dependence on its fodder production, helped solve problems of seasonal labor shortages, and avoided the tax implicit in the low prices for grain sold to the state.

Payments in kind to JZD members (for work units earned) also escaped the implicit tax in the agricultural output prices. These payments in kind were consumed or used for private livestock production which was consumed or sold in free peasant markets. In both instances the farmer paid no taxes. The private plots also allowed a fuller use of domestic labor resources and often gave the JZD member a higher hourly income than did his work for the collective.

¹¹ Gregor Lazarek, *Czechoslovak Gross National Product by Sector of Origin and by Final Use, 1937 and 1948-65*, Occasional Paper No. 26 of the Research Project on National Income in East Central Europe (New York: Columbia University, 1969), p. 33.

The extent of economic disequilibrium was aggravated during 1958 by administrative measures restricting private plot production. The supplementary income from private plots was reduced, but incentives for JZD members to improve collective production as a means of increasing their incomes were not effective. The further collectivization of marginal farms and the implementation of a plan to double the size of cattle herds by 1965 made the situation increasingly more serious and more demanding of scarce capital. The trend in agricultural production was not auspicious either. Per capita food production (excluding changes in farm stocks) declined in the years 1957 to 1959 (table 2, row 9). Imports of foodstuffs were increased but the commitment of scarce foreign exchange reserves strained the balance of payments.

During 1959 the policymakers implemented sweeping institutional and policy changes.¹² Although the renewed collectivization caused less disruption of agriculture production than in 1951-53, the economic costs—especially the subsidies and higher imports—played a greater role in compelling policy changes. The policymakers learned to mitigate certain aspects of the economic disequilibrium generated by the labor migration, but a higher economic cost had to be paid. It is interesting to compare the Hungarian approach to collectivization after 1957 with the Czechoslovak experience. In Hungary the policymakers were careful to encourage private plot production, and as a result collectivization was completed in 1962 without causing a mass outmigration of labor as in the Czechoslovak case.

In January the decision to sell the bulk of the machinery on the MTS to the JZD's was announced. It was expected that decentralized control of machinery by the JZD's themselves would improve the organization of production and help increase output. In March a new Minister of Agriculture was appointed and several important amendments were made to the JZD model statute. In June a major reorganization of the agricultural price and purchasing systems was announced. The two-price system (quota and above-quota prices) was abolished as was the quota system. Prices were unified for the entire country and for all types of producers. The new prices for 1960 showed substantial increases. Agricultural taxes were increased and differentiated by production zone. The system of delivery contracting which replaced the quota system gave the JZD management more freedom in organizing production activities.

The collectivization drive was ended during 1960, short of the 1961 goal of complete socialization of agriculture. Twelve percent of the agricultural land was left in private farms. Although higher purchase prices helped increase agricultural incomes, many JZD's were in a precarious financial position. The purchase of MTS machinery imposed a financial burden, and labor shortages hindered efforts to increase production. The policymakers attempted to solve these problems by merging weaker cooperatives with more stable ones.¹³ In addition, most of the debt accumulated by JZD's was written off in 1960.¹⁴ The party's reorganization efforts were extended also to the state farm

¹² These changes are reported in *East Europe*, VII (1959): March, p. 49; April, p. 49; May, p. 53; August, p. 44.

¹³ Novotny, *Projevy*, Vol. II, p. 191.

¹⁴ Silar and Baca, "Vliv financnich nastroju," p. 221.

system. The number of separate farms was doubled, thereby reducing the average size from over 6,400 hectares to 3,100 hectares.

Because of the growing economic costs associated with socialized agriculture, the policy changes adopted in 1959–60 contained an element lacking in previous years—an emphasis on the need for economic analysis. One Czech economist expressed it this way: “It is clear now that the management of agricultural production will have to be based on economic analysis.”¹⁵

IV. PROBLEMS OF SOCIALIST AGRICULTURE: 1961–67

After the strains of economic disequilibrium had been reduced, the policymakers initiated a new trend in agricultural policy. The socialization of private agricultural production continued to be an important goal. The focus, though, was more on private plot agriculture on JZD's than on independent private farmers. No concerted effort was made to collectivize the remaining private farms until 1972–73. Administrative measures were used, however, to limit production and the supply of inputs on private plots.

Another aspect of the socialization process was the rapid growth of the state sector. About 80 percent of this expansion came from the conversion of JZD's into state farms and other state enterprises (table 3, row 1). These changes were made in order to prevent the transfer of collective land back into the private sector.¹⁶ It was easier and quicker to stabilize weak JZD's by converting them into state farms (where labor was paid a fixed wage), than by attempting to improve incomes indirectly by subsidizing production activities on the JZD's.

The relationship between agriculture and industry was changed in several ways during this period. The stagnation of industrial growth in 1962–64 brought with it a slower growth of retail demand for foodstuffs and a reduced demand for labor in industry. Agricultural incomes were rising relative to nonagricultural incomes and outmigration from agriculture slowed (row 2). Retail food prices showed little change, but the increases in agricultural purchase prices in 1960 were not reflected in retail prices. Although the evidence is incomplete, it seems probable that after 1960 the net capital flow was into agriculture, not out of it.

The policymakers' agricultural development policies displayed a number of changes. Where labor was concerned, policies concentrated on improving the quality of agricultural labor. The introduction of modern agricultural techniques also received high priority. The supply of mineral fertilizers and other modern inputs such as herbicides, pesticides, and mixed feeds was increased. Mechanization received an increased share of total agricultural investment (row 3).

In order to increase output, the policymakers attempted to keep every available hectare of arable land under cultivation. In order to keep weak JZD's operating, efforts were expanded to equalize agricultural incomes as a way of stabilizing the labor force. This was done

¹⁵ J. Bartunek, “Příprava nových ekonomických opatření v zemědělství (The Preparation of New Economic Measures in Agriculture),” *Planované Hospodářství*, XII, No. 12 (1959), p. 332.

¹⁶ The conversion of JZD's into state farms was concentrated in the less fertile regions of Czechoslovakia, such as the districts of Northern and Western Bohemia, Northern Moravia, and Central and Eastern Slovakia.

by increasing subsidies and allocating larger amounts of capital to weak JZD's. It was thought that incomes could be equalized with fewer subsidies in the long run if the capital intensity on JZD's in the less fertile regions was increased.¹⁷

The improvements in agricultural incomes played a role in reducing the outmigration of agricultural labor during this period, as did the ending of the collectivization drive. Improvements in the quality of labor, however, were stymied by numerous obstacles. The distribution of trained agricultural labor was uneven. In 1963, only 17 percent of the university graduates in agriculture were working on JZD's, even though JZD's accounted for over 60 percent of the total agricultural land.¹⁸ Many graduates with agricultural training preferred to work in nonagricultural jobs and it was difficult to attract the better students to agricultural studies.

TABLE 3.—SELECTED AGRICULTURAL DATA: 1961-67

	1961	1962	1963	1964	1965	1966	1967
1. Agricultural land (as percentage of land belonging to agricultural enterprises) added to—							
State-owned agricultural enterprises.....	1.8	1.8	1.7	2.8	1.2	0	0
JZD's types III and IV.....	-1.3	-1.2	-1.4	-2.3	-1.1	.1	0
2. Permanent agricultural labor force (percentage change over previous year 1967 2 years change):							
Total.....	-3.7	-2.3	-1.3	-2.8	-2.8	(¹)	-1.9
Czech lands.....	-1.9	-3.0	-.9	-1.9	-3.8	(¹)	-3.4
Slovakia.....	-6.7	-1.3	-1.7	-4.3	-.9	(¹)	+ .7
3. Share of investments in machinery in total gross fixed investment in agriculture ² in percent ³	39.3	41.2	41.9	38.3	41.5	39.5	27.1
4. Share of agriculture ² in total gross fixed investment in percent ³	16.8	15.7	14.6	14.5	14.0	13.8	11.0
5. Index of agricultural purchase prices (basic fixed price, 1960=100):							
Major crop.....	101.3	101.3	101.3	101.3	100.7	116.6	130.6
Major livestock.....	98.3	98.1	98.1	95.9	100.1	108.4	117.9
6. Index of disposable real income in agriculture (constant prices) (1961=100).....	100.0	89.1	91.7	105.5	107.5	(¹)	(¹)
7. Index of retail food prices (1961=100).....	100.0	101.8	101.6	100.8	100.4	99.9	(¹)
8. Grain imports (thousand tons):							
Total.....	1,553.0	1,543.0	1,872.0	2,350.0	1,716.0	1,501.0	1,669.0
of which ⁴ from nonsocialist countries.....	358.0	29.0	450.0	1,181.0	481.0	255.0	215.0
9. Per capita food production (index, 1957-59=100).....	99.0	94.0	102.0	103.0	90.0	106.0	107.0
10. Agricultural output ⁵ (index, 1957-59=100).....	106.1	99.6	105.5	110.5	107.8	118.5	125.2

¹ Not available.

² Includes forestry.

³ 1961-63 constant prices of Jan. 1, 1964; 1964-66 constant prices of Apr. 1, 1964; 1967 prices of Jan. 1, 1967.

⁴ Includes wheat and rye for human consumption, corn, feed barley, and estimates for feed wheat.

⁵ Includes changes in farm stocks.

Source: See table 2.

Investment policies continued the inefficient substitution of capital for labor. Although there was a labor shortage, the mechanization of the more labor-intensive farm tasks was neglected. Because of the restrictions introduced on private plot production, a greater share of

¹⁷ Jiri Karlik, et al., *Ceskoslovenske zemedelstvi a pracovni sily* (Czechoslovak Agriculture and the Labor Force) (Prague: Svoboda, 1966), p. 160.

¹⁸ Statistické prehledy, supplement to *Zemedelska Ekonomika*, No. 4 (1965).

the labor-intensive products had to be produced by JZD's. At the end of 1964 about 40 percent of the cows on JZD's and state farms were still milked by hand. In crop production, only 8 percent of the sown area in sugar beets and 11 percent of the sown area in potatoes was harvested with the aid of harvesting machines.¹⁹ The possibilities of shifting the performance of certain farm tasks to agricultural service industries were not fully exploited.

The policy of increasing the capital intensity on farms in the less fertile areas was a major factor in reducing the productivity of capital investment. The new tax structure (with taxes differentiated by five broad production zones) was ill-suited to the task of equalizing incomes. Since labor was relatively free to migrate, the effects of differential rent increased the difficulties of keeping marginal land under cultivation. The policy makers attempted to compensate for the lack of sufficient differentiation in the tax structure by using ad hoc direct subsidies.

The policymakers failed to understand the interdependence of fixing factor returns (labor in this case) and the allocation of factors. The economic functions of differential rent as a guide to the rational allocation of both labor and capital was never fathomed. As a consequence, the policymakers attempted to equalize agricultural incomes on JZD's by reversing the allocative effects of differential rent. The extent of the misallocation of capital caused by this policy was considerable.²⁰

The conversion of weak JZD's into state farms increased the extent of capital misallocation. The state farms had higher costs of production than JZD's, and they received more investment capital. Gross fixed investment per hectare in the state sector was 20 percent higher than in the collective sector in 1962, but 80 percent higher by 1965.²¹

Changes in the internal organizational efficiency of both state farms and JZD's are difficult to estimate. State farms benefited from increases in agricultural specialists, but they were often burdened with the task of cultivating land which no one else wanted to use. On JZD's the restrictions on private plot production were of little help in bringing about a reallocation of labor to collective production. Direct subsidies to collective production were more effective. But since these subsidies were allocated on an ad hoc basis to weak JZD's, a JZD could claim these subsidies simply by being inefficient. The incentives for more efficient management were weakened.

Several exogenous factors made the policymakers less able to tolerate economic disequilibrium in agriculture. The Sino-Soviet break in 1960 eliminated China as an important supplier of foodstuffs. In 1963 the Soviet Union suffered a poor harvest and was unable to supply enough grain to meet Czechoslovakia's needs. Consequently, Czechoslovakia had to purchase over half its imported grain with hard currencies in 1964 (table 3, row 8). This placed a severe strain on the balance of payments. Efforts to stabilize weak JZD's were a costly

¹⁹ E. Diviška, "Analýza vývoje Československého zemědělství ve vztahu k ostatním odvětvím (An Analysis of the Development of Czechoslovak Agriculture in Relation to Other Sectors)," in *Zemědělství v ekonomickém rozvoji* (Agriculture in Economic Growth), by J. Dupal, et al. (Prague: Academia, 1968), p. 110.

²⁰ Every region which had an above-average increase in fixed and working capital on JZD's between 1961 and 1963 also showed an average productivity of capital in 1961 which was below the national average. The data are reproduced in Brannard, "Policy Cycles," p. 173.

²¹ These figures are calculated from the *Statistická Rocenka* for the respective years.

failure. More JZD's had to be turned into state farms as a stopgap measure, especially in 1964 (row 1). The misallocation of capital caused by the various stabilization measures was enormous. Official estimates of the net value added per unit of fixed capital showed a decline of 50 percent between 1958-60 and 1963-65.²²

In 1965 poor weather was an additional exogenous factor which helped initiate institutional and policy changes. The compelling aspects of the economic disequilibrium which induced change were now largely reflected in growing economic costs, particularly the drain of hard currencies and higher subsidies. In October, higher prices for agricultural products were announced. Retail food prices remained unchanged, however, and this limited the amount by which purchase prices could be increased. In February 1966 the first serious criticism of the system of planning and control appeared in the press. In March the institutional reforms planned for agriculture were published in a resolution of the party's central committee.²³

The resolution emphasized that the plan was to remain "the basic instrument of control in agriculture." Individual farms, however, were given the freedom to make their own annual plans on the basis of contracts negotiated with state purchasing enterprises. Where the farm plans conflicted with the state's annual plan, the discrepancies would be resolved primarily by the use of "economic levers," and directive measures were to be used only as a last resort.

The role of prices and other financial instruments was changed by the reform. Free market prices were introduced for a limited number of products. It was intended that the level of the fixed purchase prices would allow farms in the more fertile areas to realize part of the differential rent in their gross income, and a new agricultural tax was introduced in order to expropriate a part of the surplus. In order to cover the higher costs of production in less fertile areas, a system of differential payments added to the value of marketed production was introduced.

In addition to these changes, the resolution touched on several other topics. It emphasized the need to improve the quantity and quality of off-farm inputs by developing the commercial ties between farms and industrial suppliers. Measures to improve the rural standard of living and ways to attract more qualified workers were also discussed. On January 1, 1967, the reform proposals were officially put into action.

V. POST-1967 DEVELOPMENTS

One feature which distinguished the 1967 reforms from the previous ones in 1953-54 and 1959-60 was the major change in the institutional system of centralized administration of agriculture. The number of central directives was reduced, and farms were relatively free to draw up their own production plans. The structure of costs and rewards which guided their decisions, however, still contained serious irrationalities.

²² Silar and Baca, "Vliv finančních nástrojů," Appendix p. 2.

²³ For a detailed analysis of these reforms see Jerzy Karcz, "Certain Aspects of New Economic Systems in Bulgaria and Czechoslovakia," in *Agrarian Policies and Problems in Communist and Non-Communist Countries*, ed. by Douglas Jackson (Seattle: University of Washington Press, 1971), pp. 178-204; and Jerzy Karcz, "Agricultural Reform in Eastern Europe," in *Plan and Market: Economic Reform in Eastern Europe*, ed. by Morris Bornstein (New Haven: Yale University Press, 1973), pp. 207-43.

Most of the agricultural purchase prices continued to be fixed centrally. As a consequence the price structure reflected relative scarcities imperfectly at best. Because the policy makers were reluctant to increase retail food prices, the level of purchase prices for farm products was too low. Rather than increase prices, the policy makers chose to increase subsidies in 1967. The new subsidies, however, possessed many of the same defects as the ad hoc direct subsidies used prior to 1967.

In 1970 obligatory targets for enterprises were reintroduced and the state plan was "again the obligatory foundation and starting point for economic activity at all levels of management."²⁴ According to this source these changes were necessitated by the reform's undervaluation of the role of the state plan and the unrealistic expectation that economic instruments could resolve conflicts between enterprises and social interests.²⁵ A more probable reason for the reimposition of controls derives from the political instability after 1968.

Although the managerial freedom of farm enterprises has been restricted, attempts are still being made to improve the enterprises' material incentives. The system of subsidies and taxes is being modified. Priority is now being given to the functional integration of the planning and management of the agricultural-industrial complex (agricultural enterprises, government purchasing organs, and firms supplying agricultural inputs). Since 1970 another development has seen the formation of interfarm enterprises in an effort to promote further horizontal integration. At the end of 1972, 282 such enterprises were in existence, primarily in egg and poultry production and farm construction.

Interestingly enough, agricultural output from 1965-66 through 1972-73 grew at the fastest rate—about 4 percent per annum—during the postwar period. The 1967 reforms contributed to this growth, although to what extent is difficult to estimate. The weather during the period was quite favorable. More important were the improvements in the inputs supplied to agricultural enterprises: new varieties of seeds, herbicides, pesticides, fertilizers, mixed feeds, and more productive breeds of livestock. These new technologies have also made the inefficiencies in the agricultural sector "bearable," in the sense that the policymakers have been able to live with them without feeling compelled to implement new reforms. In this sense also, parallels may be drawn with Western Europe. Governments there have learned as well to live with considerable inefficiencies caused by agricultural policies. The pressures for reform are not absent, but they have become more diffuse.

VI. CONCLUSIONS

Evidence exists for the conclusion that Czechoslovak policymakers learned from their experiences in dealing with economic disequilibrium in agriculture.

When the collectivization drive resumed in 1955, the policymakers paid close attention to particular economic disequilibria which had

²⁴ E. Diviš, et al., "Příspevek k analýze nové soustavy řízení československého zemědělství (A Contribution to the Analysis of the New System of Management of Czechoslovak Agriculture)," *Politická Ekonomie*, XIX, No. 8 (1971), p. 701.

²⁵ *Ibid.*, p. 708.

plagued them during the first policy cycle. Efforts were made to recruit agricultural labor for the Socialist sector and to increase the sown area. Agricultural investment on JZD's and state farms increased steadily. The number of planned targets for enterprises was reduced and more reliance was placed on the use of economic instruments rather than on administrative harassment. These changes meant, however, that the collectives were not being used to expropriate agricultural incomes. The policymakers modified their goals to give less weight to the redistribution of income from agriculture to industry.

During the third policy cycle efforts were intensified to improve agricultural production. Agricultural incomes were increased and the policymakers attempted to improve the quality of the agricultural labor force and the supply of modern off-farm inputs. The administrative system of planning, however, caused certain disequilibria to go unrecognized.

The misallocation of capital, for example, was less apparent to the policymakers than the economic disequilibrium characterized by the exodus of agricultural labor. The policymakers' efforts to control the disequilibrium in the labor market caused an increasing misallocation of capital resources. The administrative system did not provide the policymakers with consistent signals for the types of services farmers themselves desired, for the most labor-saving investments, and for the most efficient allocation of resources among farms. The administrative system, however, was effective in directing the policymakers' attention to those socialized enterprises which experienced the greatest operational difficulties.

The 1967 reforms derived from an awareness of the economic disequilibrium caused by the increasingly serious misallocation of capital resources in the preceding years. The reforms were based on the principle that each farming enterprise should look out for its own needs without administrative interference from above. Although elements of these reforms remain, the changes introduced in 1970 restrict once again the decisionmaking freedom of enterprises.

In summary, the pressures of economic disequilibrium have over time modified the set of goals the Czechoslovak policymakers attempted to achieve in agriculture. Greater weight is now placed on economic considerations. The policymakers have also learned how to reduce the amplitude of economic fluctuations by controlling economic variables, as reflected, for example, in the various measures used to stabilize the agricultural labor market after 1960. The learning process, though, is complex. Czechoslovak history bear witness to this fact.

VARIATIONS IN MANAGEMENT OF THE INDUSTRIAL ENTERPRISE IN SOCIALIST EASTERN EUROPE

By DAVID GRANICK

CONTENTS

I. Centralized Economies: Romania and the G.D.R.....	Page 230
II. Market Economies: Hungary and Yugoslavia.....	238

Management is defined very broadly in this paper. The term is used to refer to the means by which the activities of a Socialist enterprise are influenced by higher authorities in the country's state apparatus. Management techniques, as here defined, cover an extremely broad gamut ranging from direct orders given to enterprise directors as to the quantities of specified products to be produced, to the use of monetary policy as a means of treating macroeconomic problems of unemployment, inflation, and exchange rate instability.

Scholarly comparisons of management differences (so defined) among the various countries of Eastern Europe have tended to concentrate upon variations in the degree of centralization implied by the methods used for national management of enterprises. Although the differences to be examined in this paper do relate to such centralization, this is not the perspective from which they are approached. In order to put the issue of centralization to one side, insofar as this is possible, the comparisons made will not be between centralized and decentralized Socialist economies. Rather, a different comparison will be made within each of these groups.

The first issue to be treated is that of the relationship between enterprise goals and incentives in centralized Socialist economies. Romania and the German Democratic Republic are the two countries whose industry will be examined here, both being contrasted with that of the U.S.S.R. It will be argued that the national differences are profound, and that in key respects the GDR's pattern is closer to the managerial schema of large decentralized American companies than it is to that of either of its CMEA partners.

The second issue is the effect of internal political constraints on the form and effectiveness of national management in market socialist economies. Hungarian and Yugoslav experience will be drawn upon; the relevant constraints to be treated are, respectively for these two countries, full employment and the self-management principle.

This paper rests upon the results of a study which began with what is probably a unique experience: 11 months of interviews during 1970-71 with people holding managerial posts in the four East European countries mentioned. Interviews were conducted at all levels of the industrial managerial hierarchy, the bulk being in enterprises and

in amalgams of them (*centrale* and *Kombinate*). The full study will be published as a book under the tentative title *Comparisons of Enterprise Guidance in Socialist Economies: Eastern Europe*, by Princeton University Press in 1975; the reader is referred to it for substantiation and further detail.¹

I. CENTRALIZED ECONOMIES: ROMANIA AND THE G.D.R.

Economics, like other sciences, is concerned with developing connections between micro and macro behavior. In the case of socialist economies, the enterprise is taken as the micro-unit of production; such macrobehavior as the widespread neglect of quality in the production of civilian industry of the U.S.S.R. finds its explanation in a microeconomic model. It is difficult to see how an explanation restricted to macroeconomics could be found which would explain the continuation of the neglect of quality over widely ranging time periods in Soviet history, given these periods' differences in their degree of capital scarcity.

An implicit model of microeconomic behavior in Soviet-type economies has become widely accepted in western literature.² This model is internally consistent, and appears to have considerable explanatory value for Soviet industry since the Second World War. However, as will be argued below, its presumable applicability to the U.S.S.R. does not imply that it is also a useful model for all other CMEA centralized economies.

The orthodox model.—The features of what I shall call the orthodox model are the following:

(1) Managers are assumed to attempt to maximize their expected personal incomes in both the current year and in the future.

(2) The proxy for such maximization of discounted future earnings is taken as the maximization of discounted future bonuses expected to be earned while managers hold their current positions, subject to the constraint of avoiding actions which are likely to lead to dismissal. The justification for the use of this proxy is twofold. First, bonuses are assumed normally to constitute a substantial proportion of total managerial income. Second, the evaluation of individual managers for possible future promotion is assumed to be made by the same criteria which determine their bonuses.

(3) Managerial bonuses constitute a well-defined function of the degree of fulfillment of specified plan indicators. This function is highly kinked, with very little or no bonuses being paid for anything less than 100 percent plan fulfillment.

(4) Annual plan indicators are set at levels which are quite ambitious in relation to the potentialities of a high proportion of enterprises. The managers of such enterprises are thus unable to fulfill these indicators 100 percent except by violating other plan instructions which are less important for the awarding of bonuses. The decision-making powers of the managers stem from the fact that they must choose which instructions to violate and in what degree; they are

¹ The paper also draws upon two articles which have already appeared: "The Orthodox Model of the Socialist Enterprise in the Light of Romanian Experience," *Soviet Studies*, April 1974, and "The Hungarian Economic Reform," *World Politics*, XXV, 3 (April 1973).

² The most crucial parts of the model rest particularly upon J. S. Berlner, *Factory and Manager in the U.S.S.R.* (Cambridge, Mass., Harvard University Press: 1957) and H. Hunter, "Optimum Tautness in Developmental Planning," *Economic Development and Cultural Change*, July 1961, part I, pp. 561-72.

guided in their tradeoffs by the effect on the bonuses which they are maximizing.

(5) The constraint on managers' behavior (which consists of avoiding actions likely to lead to dismissal) is not overly severe, and it leaves a great deal of room for such tradeoffs. The justifications for this critical hypothesis are that the ministries are themselves primarily concerned with the fulfillment of those plan indicators to which enterprise bonuses are attached, and that the ministerial staff recognize that such fulfillment is impossible except through violation of other ministerial instructions.

(6) Overfulfillment of plan indicators in 1 year is followed in the next by the setting of a higher plan for the enterprise than it would otherwise have been given. The greater the overfulfillment, the higher the plan in the following year. Enterprise managers are well aware of this process.

(7) Because of the above effect of overfulfillment, combined with the fact that bonuses constitute a kinked function of the percentage of plan fulfillment, enterprise managers avoid "excessive" overfulfillment in any year. "Excessive" is defined as a percentage of plan overfulfillment which is believed to jeopardize 100 percent plan fulfillment in the following year. (This is a further specification of (1).)

This model treats the managers as independent and maximizing decisionmakers. Planners influence managerial decisions through their choice of the parameters which affect managerial bonuses: (1) the selection of the particular success indicators which are to influence bonuses, and the weighting of these indicators in the bonus function; (2) the level at which the planned indicators are set for a given enterprise in the current year, and (3) the degree to which the increase in this planned level in future years is influenced by the enterprise's current performance; (4) the shape of the nonlinear bonus function relating achieved performance to the planned indicators.

The model has the attraction that it can be used to explain where and why decisions of enterprise managers will lead to results which are dysfunctional from the viewpoint of the central authorities. The model is based upon an assumption that is clearly comparable to the profit-maximizing assumption for firms which is the basis of microeconomics of capitalist economies. It permits the construction of a microeconomics of socialist economies which is the counterpart to the microeconomics of capitalist economies.

There is, however, a fundamental difference in the justification which can be offered for the assumption of managerial-income maximization in socialist enterprises and for profit maximization in capitalist enterprises. The latter assumption is justified on the basis that enterprises which do not act in this fashion are unlikely to survive in the longrun. In a centralized socialist economy, however, the survival characteristics needed for enterprise managers to retain their functions are not determined through the working of a market economy, but rather by the administrative decisions of higher authorities. What is required for socialist economies is a managerial analysis, and the orthodox model described above is only one possible subset of relevant managerial models.

Romanian industry.—The applicability of the orthodox model to contemporary Romanian industry has been tested against information—primarily that of 1969 and 1970—which covers all of the 300 operating units in 6 of the country's 13 industrial ministries. This information was provided in the various ministerial headquarters; the sectors included range from the highest to the lowest national priority. The unit of analysis is taken sometimes as the enterprise, and sometimes as the *centrala* (200 units into which industrial firms were grouped at the end of 1969).

The Romanian results conflict sharply with both the assumptions and conclusions of the orthodox model.

The orthodox model is predicated on the assumption that managers attempt to maximize their bonuses, and that these bonuses are linked in well-defined fashion to the difference between enterprise performance and plan as measured by specified plan indicators.

In Romania, however, bonuses of top managers of enterprises and *centrale* seem to average only 4 to 9 percent of their annual salary—a very low figure by the standards of either the Soviet Union or of large, decentralized American companies. The difference between flat failure and major success in bonus performance for individuals seems to be about 12 percent of salary. Executives within the apparatus of branch ministries receive virtually no variable income at all. Bonuses of this magnitude do not appear to be large enough to serve as the fundamental motivating force for managers which is posited by the model.

Much more important, the overwhelmingly dominant financial source of income variations for top managers in enterprises and *centrale* consists of the ministerial bonus fund. The distribution of this fund is controlled by the minister and vice-ministers, and is carried out according to subjective rather than objective evaluations of managerial performance. Such subjective evaluation does not appear to be a function of the unit's performance compared to plan, whether this be measured by a single plan indicator or by a weighted average of a number of them. Therefore, even to the degree that managers do indeed intend to maximize their bonus earnings, such an attempt provides no guide as to the stress they will place on different plan indicators to achieve.

The orthodox model further assumes that the annual plan indicators are set at a very ambitious level. This assumption does not seem to hold in Romanian industry.

The orthodox model proceeds on the basis of the bonus-maximizing assumption, the assumption of ambitious planning, and other assumptions presented earlier, to predict that a large proportion of production units must fail to fulfill their plans, and that a much greater percentage of units will underfulfill substantially than overfulfill substantially. Data for the 300 operating units of the 6 ministries studied lead to a sharp rejection of both these predictions. A major reason for the conflict between observed and predicted enterprise performance relative to plan is that Romanian plans for both enterprises and *centrale* are changed frequently during the year, and seem to be intended to represent ministry officials' best estimates as to what enterprise

performance will actually be.³ Thus 100 percent plan fulfillment serves primarily as an indicator of the ability of ministerial officials to predict enterprise performance, and cannot be regarded as a measure of the quality of the enterprise's own performance.

No satisfactory information is available for Romania as to the basis upon which managerial promotions and demotions are made. But it is quite clear that the criteria employed are subjective, and that the degree of fulfillment of key plan indicators is not given dominant weight. Thus the applicability to Romania of the orthodox model cannot be rescued by substituting career advancement for bonuses.

Analysis of decisionmaking in the enterprises and *centrale* studied suggests that their managements have no clearly delineated objective function which they attempt to maximize. Rather, managerial behavior can be best described as simply an attempt to meet the relatively modest set of constraints prescribed by the annual plans. Economic decisionmaking defined as the weighting of the advantage of overfulfilling one indicator at the expense of underfulfilling another, seems to be absent at the enterprise and *centrala* level. Managers at these levels appear to focus their attention almost exclusively on improving technical efficiency—what Leibenstein has called X efficiency. Economic decisionmaking is concentrated at the level of the ministerial headquarters and higher bodies.

In contrasting Romanian microeconomic behavior with that predicted by the orthodox model, we can see both advantages and disadvantages in the Romanian pattern. We would not expect Romanian industry to suffer from the "success indicator" suboptimizing which has plagued Soviet industry.⁴ The orthodox model predicts that enterprise managers will neglect plan instructions which have only a minor effect upon the awarding of bonuses, let alone those desires of central planners which cannot be expressed in quantitative terms. Romanian enterprise and *centrale* managers have no reason for such neglect.

This major advantage of Romanian industry is offset by two other considerations. The first is that the only pressure upon Romanian managers to exert themselves to a maximum consists of career promotion and demotion. Demotions seem to be quite exceptional, and promotion of upper enterprise managers (whether within their own organizational level or to ministerial level) is accompanied by very little monetary reward.⁵ Thus Romanian executives operate in a comparatively pressure-free environment, and the degree of their intensity of effort compared to that of their Russian counterparts may reflect this difference in environment.

The second and even more important consideration is that true decisionmaking in Romanian industry is concentrated at the level of

³ The individual ministry, of course, is subject to constraints on the degree that it can adjust the plans for its subunits to its changing expectations as to these subunits' probable performance. Such constraints, however, serve as only a minor modification to the sentence in the text.

⁴ See A. Nove, "The Problem of 'Success Indicators' in Soviet Industry," *Economica*, February 1958, pp. 1-13.

⁵ Functional directors in *centrale* (the top four or five managers below the chief executive officer) earn only 10 percent less than do their counterparts in their industrial ministry. From the sample of upper managers for whom I have data, promotion of a functional director to chief executive officer of his own concern would be accompanied by an average of only 13 percent increase in earnings.

ministerial headquarters⁶ or higher. Top managers in the centrale (which averaged 8,000 employees each at the time of my interviews in 1970) have decisionmaking functions which are more comparable with those exercised by foremen and junior managers in western capitalist firms than with those of top or even middle managers in such western companies. Economic decisions are either prepared and taken in the ministerial headquarters or higher bodies, or they are not taken at all. Here is a degree of centralization which far exceeds that found in the U.S.S.R., or which is postulated in the orthodox model, and it has given grave concern to Romanian national leaders.⁷

East German Industry.—The management of East German industry, as it was observed in the summer of 1970 and as its changes have been traced through the literature up until the middle of 1973, is radically different from both the orthodox model and from the pattern observed in Romania.

As in the orthodox model, bonuses paid to top managers in enterprises and *Kombinate* represent a substantial portion of their incomes. (*Kombinate* are groupings of enterprises, and are the counterpart of Romanian *centrale*.) But in contrast to this model, and similarly to the Romanian situation, these bonuses are allocated from a ministerial bonus fund and are apportioned according to subjective rather than objective evaluations of managerial performance. Overfulfillment of individual planning indicators appears to be of little importance in determining managerial bonuses.

The bonus fund earned by the enterprise or *Kombinate* serves as the sole significant source of bonuses for personnel below the level of top management, and the size of this bonus fund is determined objectively by comparison between performance and plan as measured by selected plan indicators. Since the size of the bonus fund must be of importance to the unit's top management, if only because high bonus levels help in the retaining and attraction of competent personnel, one might think that the motivation of East German top managers would be linked by this route to selected plan indicators.

In fact, this is so to only a limited degree. Until 1972, the size of the enterprise or *Kombinate* bonus fund was in theory determined entirely by the amount of profits earned, subject to the side conditions of fulfillment of two other plan indicators. In fact, however, it was the degree of fulfillment of the side conditions which served as the actual determinant of the bonus fund, and these side conditions tended to be very broad. One enterprise, for example, had as one of its side conditions the fulfillment of all export contracts (including quality standards and delivery dates); the second side condition was the fulfillment of the year's schedule of all measures planned to be taken to reduce costs.

⁶ Individual industrial ministries in which I interviewed employed labor forces varying between 65,000 and 400,000 people.

⁷ It does not seem possible to generalize as to the net efficiency of the Romanian system of management compared to that of the orthodox model. While Romania has shown extraordinarily high rates of growth of GNP, the major causal factor has probably been the rapid structural change away from agriculture. The ability of Romanian industry to function with an exceptional degree of centralization of economic decisionmaking is doubtless promoted by the relative simplicity of its product mix. What can be said, however, is that this highly centralized pattern of decisionmaking has proven its viability in administering a rather large industrial complex (employing a total of 1.6 million people).

In early 1972, the system of side conditions attached to payments into the bonus fund of the enterprise or *Kombinate* was abolished. But at the same time, the guaranteed level of bonuses per employee was raised sharply: to 80 percent of the planned bonus fund per employee in the unit. Between 1971 and 1972, the guaranteed bonus fund per employee in ministerially directed industry was increased from 200 marks to 585 marks annually; taken as a proportion of the maximum bonus fund (in most firms), the guaranteed minimum was now 65 percent instead of the previous 24 percent. Thus the importance of the enterprise bonus fund as a source of variations in employees' incomes was seriously downgraded at the very moment that the system of side conditions was eliminated.

The degree of ambitiousness of plan indicators set for production units in the G.D.R. is a complex matter. If one refers only to the indicators which are defined by the plan as "key," then it would seem that East German planning is not categorized by taut planning.⁸ This was certainly the case during 1969 and 1970 in the enterprises and *Kombinate* in which I interviewed. For the entire year of 1972, 95 percent of the industrial enterprises under ministerial jurisdiction fulfilled their annual sales plans—the most important indicator at that time; the comparable figure for the first half of 1973 was 90 percent.⁹ (These figures contrast with annual national industrial statistics of 60 to 69 percent [for the indicator of total output] in the Soviet Union during 1951–54, the most recent period for which such data are available.)¹⁰ Furthermore, the fact that aggregate overfulfillment of industry's sales plan was only 1.7 and 2.1 percent in each of these periods suggests strongly that the enterprises and *Kombinate* exerted their efforts in other directions than that of gross overfulfillment of plan.

On the other hand, if one means by ambitiousness of plan indicators the degree of tautness of the side conditions set prior to 1972 for the full payment of earned sums into the bonus fund, then planning has been very taut indeed. In one branch of industry which was regarded as quite successful during 1969, and in which high top-management bonuses were paid for that year's results, not a single *Kombinate* or major enterprise was able to meet fully its side conditions for the bonus fund. These side conditions, however, were so broad that they cannot be considered planning indicators in the sense that the term was used in item (4) of the orthodox model.

Defining planning indicators as consisting of the major ones of sales volume and net profits, the predictions of the orthodox model as to plan fulfillment must be rejected just as sharply for the GDR as for Romania. In the GDR, however, unlike Romania, enterprise plans do not seem to be changed on a major scale during the course of the year. Instead, the reason for the high proportion of East German enterprises which fulfilled their plans must be sought in the absence of original taut planning by the industrial ministries.

More than in any other East European country, it would seem that East German top managers are affected by career incentives. The

⁸ For an opposite view with regard to the period since 1968, see M. Keren, "The New Economic System in the GDR: An Obituary," *Soviet Studies*, XXIV, 4 (April 1973).

⁹ Plan fulfillment reports, *Die Wirtschaft*, Jan. 24, 1973, p. 15, and July 18, 1973, p. 13.

¹⁰ *Pravda*, Aug. 10, 1955, p. 1.

1970 age distribution of a sample of top managers in *Vereinigung Volkseigener Betriebe's Kombinate*, and enterprises shows the remarkable opportunities for rapid promotion which have existed in the G.D.R.¹¹

Age	Top managers in—	
	VVB's	Kombinate and enterprises
Less than 40 years (percentage).....	23	68
Over 49 years (percentage).....	8	9
Sample size (number).....	13	22

Furthermore, demotion is a serious threat for East German managers. I have data as to the next post of 15 predecessors of the top managers in my sample; 27 percent of them suffered clear demotion.

From these facts as to promotion and demotion, as well as from the importance of top-management bonuses in total managerial earnings, I conclude that East German managers must feel themselves under a fair degree of pressure to perform effectively. In this regard, they are in quite a different position from Romanian top managers, although in a rather similar one (for different reasons) to that of Russian managers.

The orthodox model presented one set of criteria for performance, and predicted managerial behavior on the basis of these criteria. The appropriate model for East Germany is quite different, and seems to be the same as that relevant for a number of large, decentralized American companies in which I have interviewed. The first model can be categorized as one of maximizing, while the second consists of a particular form of satisficing.¹²

The orthodox (or Soviet) model can be characterized as a conventional model of maximization under constraints.¹³ The individual enterprise managements are rewarded for maximizing one or another specified quantitative objective (or a specified combination of a very few such objectives), subject to the constraint of meeting both a few other individual quantified objectives and a combination of other central objectives of which only some are quantified. In practice in Soviet industry, most of the specified constraints—particularly those which are nonquantified—tend to have little force and are nonbinding.

American corporate planning for the divisions and lower units within the organization also singles out a small number of critical plan objectives (for example, profits earned in the planning year). In sharp contrast to the orthodox model, however, there is no substantial incentive for overfulfillment of these objectives. Rather, the plan targets serve as constraints which are to be met 100 percent but no more, and

¹¹ The sample is drawn from the organizations in which I conducted interviews. For each such organization, data were provided for each top manager (although the proportion for whom age information is lacking is 24 percent in the VVB's and 21 percent in the Kombinate and enterprises). Top managers are defined as the chief executive officer and the four or five functional directors in each unit. The VVB's are organizations intermediate between the industrial ministry and the Kombinate.

¹² For an elaboration of the two models, see Granick, *Managerial Comparisons of Four Developed Countries: France, Britain, United States, and Russia* (Cambridge, Mass., and London, MIT Press: 1972), ch. 2.

¹³ In a Soviet survey carried out during roughly 1966-67 among Soviet professionals, junior managers, and middle managers, overfulfillment of plan held first place among the activities rewarded by bonuses. (A. A. Zvorykin and A. M. Gelluta in G. V. Osipov and J. Szczepański, eds., *Sotsial'nye problemy truda i proizvodstva*, Moscow Mysl': 1969. This article was translated in full in *International Studies or Management & Organization*, fall 1973, and reference is to p. 111 there.)

EDITOR'S NOTE.—Satisficing, as contrasted with maximizing, is the process of resolving a problem as satisfactorily as possible, given the various constraints or choices.

it is trusted that the residual efforts of the managers of divisions, factories, sales units, et cetera, will be directed to meeting the residual and only informally specified goals of the company central planners. Managers of subunits "satisfice" with regard to meeting their stated plan objectives; that is, they make no efforts to exceed them.

The satisficing model can differ significantly from the maximizing model only if the critical plan objectives are set at less than a taut level. This constraint was realized in the American corporations in which I interviewed, and appears also to be met in East German industry. Furthermore, managerial reward cannot be attached to the degree of success in overfulfilling plan indicators if the satisficing model is to operate. The American corporations and East German industry both pay high bonuses in proportion to top managerial salaries, but bonus levels in each case are determined subjectively rather than objectively.

In the American corporations examined, career advancement appears to be by far the most important incentive conditioning managerial behavior. In order to be seriously considered for advancement, American managers must meet their planned targets; but this is only a minimum and not very discriminating criterion. Overfulfillment of explicit planned targets is largely irrelevant. Promotion is based primarily upon the subjective evaluation of the "potential" of managers rather than upon an evaluation of their performance.¹⁴

The career histories of current upper managers within the American companies show that the length of period in any single post had been very short, that managers had typically managed in a number of quite different job functions, and that they had worked in a number of organizational subunits within the company.¹⁵ Since successful careers typically cut across a number of functions and subunits, concentration on meeting measurable success indicators would be a form of career-suicide for a manager. Thus an American factory manager who attained superplan cost reductions by resisting too strenuously the marketing department's efforts to expand sales through widening the range of products produced in his factory, which would incidentally reduce the length of his production runs and so raise his costs of production, would find his career opportunities in the company sharply curtailed. The American subunit manager achieves his career awards primarily through activities geared to goals other than the narrow ones specified in the plan objectives laid down for him.

To the degree that one can judge from a rather small national sample of East German career histories, reinforced by subjective impressions from interviews, the typical managerial pattern in East German industry approaches—although it does not equal—the American figures of short tenure in past posts and of prior experience in a large number of job-functions and different organizations. In these respects, it appears considerably closer to the American corporate pattern of managerial careers than do the comparable patterns in

¹⁴ If one assumes that the manager's direct superior, as well as the superior one-level above, are accepted within the company as the best judges of his performance, then we have relevant 2-year transfer data for one company, which cover all managers and professionals who were either promoted or who changed subunits within the firm. (Sample size is between 750 and 1,500 managers and professionals; it cannot be specified more closely for fear of identifying the company.) No correlation existed between prior performance rating and extent of promotion, nor did one appear when other independent variables were introduced into the regression equation (*Granick, Managerial Comparisons*, pp. 303-05).

¹⁵ *Ibid.*, ch. 8.

Romania, Hungary, Slovenia (the latter is the Yugoslav republic studied) or, presumably, the U.S.S.R.

This similarity of career patterns for upper managers in the G.D.R.'s industry and in large, decentralized American industrial corporations suggests confirmation of the thesis that the behavior of East German managers is likely to be better described by the satisficing model of American corporation-division behavior than by the maximizing, orthodox model.

Behavior dictated by the satisficing model offers the same macro-economic advantage as does the Romanian model: namely, avoidance of success-indicator suboptimizing. But such satisficing behavior, as represented in East German industry, avoids the offsetting disadvantages found in Romania. There is neither an increase in centralization of decisionmaking as compared with the orthodox model, nor is there a lessening of managerial effort. In these respects, national management in the G.D.R. seems to be significantly different from that found in the two other centralized socialist economies (Romania and the U.S.S.R.) which have been examined.¹⁶ Given the preconditions necessary for this satisficing managerial model to function effectively, it appears to be a more efficient model of centralized planning than its competitors in either Romania or the U.S.S.R.¹⁷

II. MARKET ECONOMIES: HUNGARY AND YUGOSLAVIA

Hungarian industry and the full-employment constraint.—As of January 1968, a major reform was introduced in Hungary which radically changed the mechanisms through which socialist enterprise activities are influenced by higher state authorities. Operational planning to the level of the individual enterprise (a body which, in Hungary, had by this time much the same size and character as the Romanian *centrala* and the East German *Kombinate*) was renounced; instead, it was intended that central authorities would restrict their role to the setting of global goals and to the adoption of parametric measures needed to stimulate enterprises to pursue these goals in their own interests. Although central authorities have in fact intervened sharply in the affairs of individual enterprises in all of the years since the reform, such interference has been primarily through financial arrangements localized to the individual enterprise. The reform conception that the integration of the economy is to be achieved primarily through the market place has to a large degree been realized.

It is important to emphasize that the shift to use of the marketplace as the prime integrative device has been defended in Hungary primarily on the ground that it constitutes a superior management mechanism for achieving the same broad goal as earlier; that is, the achievement of the objectives of central authorities. For example, it has been claimed that central control, in the meaningful sense of implementation of central objectives, has been strengthened rather than weakened by the reform.¹⁸ The use of the marketplace in Hungarian industry can be compared to the efforts by large, decentralized capi-

¹⁶ Although significant changes were introduced into the East German managerial system during 1971 and 1972, they do not seem to have modified the points made here.

¹⁷ This, of course, is not necessarily to suggest that Romania or the U.S.S.R. would be well advised to shift to this model. The issue of preconditions is all important.

¹⁸ J. Zala, "Central Intention and Planning," *Acta Oeconomica*, 7, 3-4 (1971), pp. 289-301. A report in November 1970 by the Hungarian Communist Party's Central Committee strongly implies the same claim (see E. Kemenes in *New Hungarian Quarterly*, XII, 42, summer 1971, p. 205).

talist companies to integrate the activities of their various plants and divisions through the medium of interplant and interdivisional sales. Such use of the market is simply a managerial tool; whether within a large capitalist company or in a socialist nation, its appropriateness must be judged by its effectiveness in realizing the objectives of the top authorities. Its competitor as a managerial tool should be taken as the issuance of direct planning orders.

This 1968 shift in managerial mechanisms in Hungary has not, however, been accompanied by any relaxation of a very constricting policy constraint: that of the maintenance of micro as well as macro full employment. The purpose of this section is to discuss the significance of this constraint for the forms which the market mechanism has taken in Hungarian industry, as well as for the effectiveness of this mechanism.

On an aggregate level, the rate of open (including frictional) unemployment which can be tolerated in Hungary is considerably lower than that accepted as a government policy objective in capitalist countries. But at least equally important is the fact that it is considered impermissible, except in very rare circumstances, to dismiss workers on any grounds other than those of gross incompetence or continued violation of factory discipline.¹⁹ Thus, even when other jobs are readily available, workers cannot be forced to change either their trade or their place of work because of the abolition of their existing post.²⁰ Not a single industrial enterprise was closed during the first year of the reform,²¹ and this situation has remained very similar thereafter.

This job maintenance policy seems to stem from what is considered to be a fundamental advantage of socialism over capitalism. Perhaps the greatest reproach which socialists have historically made against capitalism is that it functions with a reserve army of unemployed, and that workers are constantly threatened with the loss of their posts. During the quarter of a century that the Communist Party regime has been in power in Hungary, workers have had virtually complete job security. More than anything else, it is this feature which has given content in the mind of the ordinary worker to the slogan of a workers' state.

While the basic mechanisms of governmental control over the Hungarian economy have changed drastically under the reform, this strict interpretation of the "right to work" has gone untouched. Meddling with this fundamental right of Hungarian workers would raise in the sharpest form the issue of the abandonment of socialism: In the minds both of the population of Hungary and of leaders in the other CMEA countries.²² Precisely because of the drastic reform measures under-

¹⁹ For a rather similar view of the facts as to workers dismissals, see A. Bernard, H. Guillaume, B. Uilmo, et al., "Organisation et méthodes de la planification hongroise," *Economies et Sociétés (Cahiers de l'I.S.E.A., Série G. No. 31)*, VII, 2-3, February-March 1973, p. 335. This is a revised form of a report of a French Planning Commissariat mission to Hungary during October 1971.

²⁰ I am familiar with only two significant exceptions in Hungary. The first is in the coal mining industry, where a number of inefficient pits were closed. However, new industry was brought into these regions so that little geographic movement was required of the former miners. The second is a policy of moving some 40 to 45 plants, with a total employment of 10,000, out of Budapest during the period of roughly 1971-75.

²¹ Z. Komonyi, "Some Aspects of Enterprise Behavior," in Z. Román (ed.), *Progress and Planning in Industry* (International Conference on Industrial Economics of April 1970, Akadémiai Kiadó, Budapest: 1972), p. 339.

²² The Hungarian academician J. Bognar implies that abandonment of the socialist value system ("e.g., equality, right to work, free education and health service, inexpensive cultural facilities and services") would mean falling headlong into state capitalism. ("Economic Reform, Development and Stability in Hungary," *Acta Oeconomica*, 1972, 1, p. 29. The emphasis is mine.)

taken, I would speculate that Hungarian leaders—whatever their own desires might be—would find any tampering with the current job maintenance policy to be more politically dangerous than is the case in any other CMEA country.

But if workers are to be fully protected with regard to their jobs, and virtually protected as to their wages, from the consequences of enterprise inefficiency and from the forced adjustments to changing product demands and technology which are their fate in capitalist economies, then two critical consequences follow.

The first consequence is that all high-cost enterprises must be shielded from the repercussions of their own inefficiency upon their output volume and thus upon their employment.²³ Since enterprises must sell their products on the marketplace, this implies that at least one of the following three conditions must prevail: (1) A subsidy system must be used which is differentiated to the needs of individual enterprises; (2) enterprises must be protected from competition by giving them monopoly rights over both their own products and those which are close substitutes; (3) prices must be maintained at levels high enough to cover the costs of the most inefficient producers, and these must be assured of the possibility of selling their products at these prices.

All three of these conditions existed to some degree in Hungary in 1971 when I was interviewing there, and they have continued since. But all three have consequences which are repugnant to Hungarian reformers, since they require intervention by state authorities at the level of the individual enterprise. The first condition implies that central authorities must closely supervise the subsidized enterprises and instruct them on how to improve their effectiveness; otherwise, the subsidies would be completely open ended.²⁴ The second implies that the state must either determine prices, qualities, and product mix so as to prevent the monopolists from exploiting their positions, or that it must absorb monopoly profits into the state budget and—in order to do this—regulate the individual enterprises sufficiently closely to be able to determine what portion of their profits is due to their monopoly position. The third condition implies that central authorities must restrict the investment opportunities of the more efficient enterprises so that these enterprises do not expand sufficiently to threaten the market position of the less efficient. But it also implies either that the more efficient enterprises must be given maximum output quotas in the short run (that is, return in fact to the system of physical planning of output), or that markets be maintained in permanent disequilibrium. Only by the maintenance of market disequilibrium can increases in output by the more efficient enterprises be prevented from either forcing the less efficient into lower production than they require on employment grounds, or into sales at prices which would bring them financial losses.

²³ The most authoritative Hungarian figure with regard to economic policy writes that "competition cannot become a competition among capital; competition in Hungary does not endanger the existence of enterprises" (R. Nyers, "Hungarian Economic Policy in Practice," *Acta Oeconomica*, 1971, 3-4, p. 270).

²⁴ It is perfectly true that enterprises may be warned—as has in fact been done—that their differential subsidies will be reduced over time; such warnings may motivate high-cost enterprises toward improved efficiency. But if the enterprises are not successful in reducing costs or improving their product mix, central authorities cannot withdraw the subsidies without jeopardizing the job protection of the enterprises' workers.

Protection of jobs from changing product demands, and from alterations in technology which affect the skill composition required for the enterprise labor force, is much more difficult to provide by the first and second conditions than by the third one of price maintenance.²⁵ But price maintenance implemented through shortrun physical planning would represent a return to prereform conditions. The continued operation of a sellers' market would thus appear to be the preferred mechanism, even if it is used in combination with the others.

For these reasons, the second consequence of a national job-maintenance policy is that prices will generally be set below their equilibrium levels, while still being high enough to assure profits to the least efficient enterprises. This implies that the employment constraint which I have hypothesized as binding upon the Hungarian economy must prevent the government from leaving pricing decisions to the marketplace. Restraints over such price setting seems to be a necessary condition for satisfying the job-maintenance policy constraint on the system.

The disequilibrium pricing system which is characterized as a sellers' market is generally recognized to exist in Hungary as in the other CMEA countries.²⁶ The principal explanation for its existence

²⁵ The first alternative of differentiated subsidies might seem to some readers to be less deleterious than the permanent maintenance of sellers' market conditions. There are, however, reasons for rejecting sole reliance upon it other than the necessarily ex post and open-ended character which such subsidies would have to take.

(1) Under Hungarian conditions, market-equilibrium prices in many spheres could only be those dictated by monopolies. It is true that monopoly profits could be taxed away through differentiating the sales tax even more sharply than it is today, but supply would still be determined through monopoly pricing. Furthermore, there would be strong ideological objections to having relative prices (particularly of consumer goods) heavily influenced by the degree of monopoly existing in the branch.

(2) The Ministry of Finance would doubtless exercise its parochial interest in combating the novel concept of open ended subsidies which increase uncontrollably during the fiscal year with the decline in demand for the products of individual enterprises. Annual budgeting would be made much more difficult.

(3) There would be a fear that demand for certain products is extremely inelastic in the shortrun, and thus that the producing enterprises cannot—however much they may reduce prices—sell their existing product mix without reducing production and employment. Probably more important, even if demand is not so inelastic, enterprises may not (mistakenly) reduce prices rapidly enough.

²⁶ See, for example, Janos Kornai in *Közgazdasági Szemle*, 1971, 1, translated as Working Paper No. 7 of the International Development Research Center for Indiana University.

A survey (said to cover 80 to 85 percent of the large firms in industry and construction, and 20 percent of those in agriculture) as to the 1971-75 plans of individual enterprises showed that these enterprises were collectively planning on a rate of production increase which was 50 percent higher than had been attained during 1966-70 or was planned nationally for 1971-75; yet only 10 percent of these enterprises mentioned marketing factors as threatening their fulfillment of their own high goals (M. Siman in *Figyelő*, Oct. 20, 1971, pp. 1 and 4).

A questionnaire addressed in late 1968 to the three top directors of some 60 to 70 large enterprises, the results of which were believed by the group presenting the report to be typical of manufacturing, showed that only 12 percent of the respondents believed that their own enterprise faced strong competition from domestic producers, and that 17 percent believed that it faced strong competition from imports (Bulletin of the Institute for Industrial Economics of the Hungarian Academy of Sciences, No. 6 (1969), and the tables in the Hungarian brochure to which the bulletin refers). A ministerial conference in 1971 was said to have established that true competition exists only in the laundry detergent field (I. Friss in *Közgazdasági Szemle*, 1971, 12, December, pp. 1397-1411; and other source adds certain telecommunication items to the sphere of competition (J. Wilcssek in *Figyelő*, 4, Jan. 26, 1971, p. 3).

A study of the reasons for consumer dissatisfaction with durable consumer goods in 1969 showed that 64 percent listed total lack of availability—in contrast with the remaining one-third listings of poor quality, lack of choice with respect to price, size, or fashion, lack of spare parts, and absence of proper sales timing ("Kereskedelem-Politikai Közvélemény-kutatás." *Marketing* *Placcutatás*, 1, 1970, p. 8, as referred to in G. P. Lauter, *The Manager and Economic Reform in Hungary*, New York, Washington, and London, Praeger: 1972 p. 75).

Finally, the marginal rate of monetary saving (increase in savings deposits divided by the increase in monetary income) has been very high during 1968-71, and has indeed actually increased somewhat in comparison with the previous 4 years: from 41 to 46 percent (Hungarian Central Statistical Office, *Statistical Yearbook 1971*, pp. 332-33). If sellers' market conditions had been radically reduced during the reform years, one might have expected the marginal rate of saving to have become low or negative.

which is usually presented is that central planners consistently make greater demands upon the available economic resources than can be met.²⁷ Institutional reasons can be given for such excess demand. Pressure upon central planners from enterprises and from individual sectoral ministries for additional investments which sum to more than can be realized is one such reason.²⁸ Both political and incentive pressure for increases in the monetary disposable income of the population, which are greater than the resources which central planners are willing to allocate to the production of consumer goods, coupled with an unwillingness on the part of central planners to allow a compensating rate of inflation in the prices of consumer goods, comprise a second reason. These, however, constitute a rather ad hoc explanation which leaves unexplained why central planners should consistently give in to these pressures. The alternative explanation that the job-maintenance constraint is the fundamental cause offers the attraction inherent in the principle of Occam's Razor.

I would argue, therefore, that the sellers' market in Hungary is not merely a flaw in planning, but rather a necessary condition for meeting a policy constraint which takes precedence over the objectives of the reform.²⁹ Here is the basic fashion in which an internal political constraint shapes the form of the market mechanism which the Hungarian government uses as its prime tool of central managerial control over the enterprises.

Furthermore, the efficiency of the market mechanism is drastically affected by the requirement of a general sellers' market. The marketplace is an allocative instrument which works poorly in any country when prices are prevented from finding their equilibrium levels. Thus it is perhaps not surprising that the economic effectiveness of the Hungarian economy does not seem to have improved during the first 4 years after the reform in comparison with the record of a command-economy mechanism during the previous 5 or 10 years. It is to the great credit of Hungarian planners and administrators that there was no particular diminution of effectiveness.

Yugoslav industry and the self-management constraint.—In contrast to Hungary, the second market-socialist economy treated in this paper has rejected both the microeconomic and macroeconomic constraints of full employment. Since the Yugoslav reform of 1965, which may be taken as a somewhat arbitrary date for the beginning of the current period in the economy's history, Yugoslav unemployment has ranged annually between 7.2 and 9.1 percent of the employed labor force.³⁰ Not only does the Yugoslav Government make no claims to being able to resolve the capitalist problem of macroeconomic unemployment, but it adapts to it in the same fashion as do the less developed capitalist countries of Europe; namely, by permitting massive migration of the labor force to central and northwest Europe.³¹

²⁷ See, for example, Kornai; his explanation leans most heavily upon the excess of investment plans.

²⁸ See J. Dreclin, "Investment Equilibrium: Mechanisms of Control and Decision," *Acta Oeconomica*, 1971, 3-4, pp. 275-87.

²⁹ Nyers, p. 270, assures us that it is absolutely clear that early abolition of the sellers' market would be an unrealistic objective. He does not, however, explain the reasons for his viewpoint.

³⁰ Self-employed, primarily the bulk of the agricultural labor force, are counted as neither employed nor unemployed.

³¹ In late 1971, 20 percent of Yugoslavia's employed labor force worked in western Europe. Forty-four percent of these workers abroad had left during 1970 and 1971. (Borba, Dec. 4, 1971, p. 11, summarized in ABSEES, April 1972. This is based on a summary of official figures collected by the host countries.)

Rather than full employment, self-management has been the major political constraint affecting the management of the Yugoslav economy. Partly since 1961, but particularly since 1965, self-management has been one of the major myths (used in a nonpejorative sense) of Yugoslav society, and as such has been immune to attack from within the system.³² This section will explain the nature of this constraint, and its effect upon the ability of the Yugoslav Government to manage the economy.

For purposes of this paper, self-management will be distinguished from workers' management. (Workers' management is a particular form of self-management.) The concept of self-management embodies three different elements:

(1) Decisions of all types should be made at the lowest level at which an issue can be reasonably handled. The justification is the desirability of a pattern of direct democracy wherever this is feasible, and otherwise of a system in which decision-making bodies are in as direct contact as possible with the public which elected them. The political application of this principle is that as few decisions as possible should be elevated to the federal (all-Yugoslav) level, and as many as possible be relegated to the commune level; this is true both for government and for Communist Party (League of Communists) authority.³³ The economic application is that the individual enterprise should be given as much power as possible in relation to government authorities, and that within the enterprise there should be decentralization of authority to suborganizations called economic units.

Traditional Leninist doctrine bears a superficial resemblance to this element of self-management, in that it also holds that decisions relating to particular applications of broad policies should be made at the lowest feasible level. But in Leninist doctrine, this amounts to no more than administrative decentralization—required so that central bodies should not be overburdened with petty issues, and so that the solutions of these issues be worked out at a level where the necessary detailed information is available. In contrast, the self-management concept provides for genuine autonomy of decisionmaking at each level. Under self-management, lower organizational levels are not given the task of simply applying central policy; instead, they are intended to be relatively autonomous in developing their own policy.

This element of self-management is the direct antithesis of centralization, whether political or economic.

(2) Decisions at each level should be made, to the degree feasible, by elected representatives of the constituency or by meetings of all members of the constituency. Full-time bureaucrats (managers in economic organizations) should be kept under the control of elected representatives, where possible at their own hierarchical level within the organization.

(3) Elected representatives should be replaced frequently, with consecutive reelection being strictly limited. This rotation principle is designed to insure both that the elected representatives remain close

³² See the 1970 statement by D. Rihtman-Augustin that it is difficult to talk about any common values in this country, unless we affirm that it is self-management as an ideological project (fourth meeting of the Yugoslav Association for Sociology held in February 1970, as reported by B. Jakšić in *Praxis*, international edition, VIII, 3-4, 1971, p. 660).

³³ A prominent Yugoslav sociologist agreed with me that the application of self-management to the party was to some extent observable through 1971. But he pointed out that the Yugoslav League of Communists had never renounced the principle of democratic centralism within the party, and that this principle was strongly reaffirmed in 1972-73.

in spirit to their constituency, and that the educational experience of serving on an elected body be shared over time by a high proportion of the total constituency.

The self-management principle acts as a counter both to centralization and to bureaucratic control, and applies to political as well as to economic decisionmaking. In my treatment of self-management from this point on, I shall concentrate on the aspect of anticentralization.

In the economy, the self-management principle has been taken to imply that the enterprise should be as unregulated as practicable, and that as little as possible of the country's gross material product should flow through the government (particularly the Federal) budget. During the last 3 years (1963-65) prior to the major economic reform, an average of 64 percent of the country's gross material product, and 68 percent of the gross material product produced in industry, was absorbed by the budget of the federal, republic, or commune organs or by bank interest. In the 5 succeeding years (1966-70), these proportions were down to an average of 39 and 36 percent respectively.³⁴ Thus investment decisions were transformed essentially into self-management decisions of enterprises. Subsidies diminished. The various enterprises were intended to be integrated primarily through the marketplace, rather than by government regulation or through central party influence.

Where coordination of the various self-management units by devices other than the market is deemed desirable (e.g., in the case of wage restraint), the ideal form of coordination has been viewed as agreement among representatives of the various units rather than state or party intervention. Thus the republic chambers of commerce are considered proper vehicles for such coordination. The syndicalist nature of this approach is apparent.

Self-management, in its most important aspect which is the creation and maintenance of many autonomous centers of economic power, really began in 1961 and has flowered since 1965. In 1961, each individual enterprise became free to set the current earnings of its own labor force within its financial limits. After 1965, the federal government lost most of its control over investment; at least in principle, subsidies for current operations—other than exports—became of minor significance, and enterprises were left to survive as best they could in the open marketplace; in 1966, prices for one-third of industrial production had become totally free of control (de facto, and not simply de jure as in Hungary a few years later), and the relationship among different fixed prices was sharply altered by the federal government to the considerable disadvantage of various branches of heavy industry which had been previously favored. Although a substantial portion of imports remained subject to federal licensing, and enterprises could thus be compelled to export if they were to satisfy their individual import needs, the degree of control over imports was sharply diminished.

³⁴ The only reason for lumping bank interest with government receipts is the aggregated nature of the data sources. Government receipts include not only all direct and indirect taxes, but also the commune reserve fund for enterprises and gross social security payments. (Calculations are made from *Statistička Federativna Republika Jugoslavija, Savezni Zavod za Statistiku, Statistički Godišnjak Jugoslavije*, Beograd, of various years, tables 106-4 to 106-8.)

By 1970, when I conducted my Yugoslav interviews, a semilegal—even if only a thin and loosely organized—market existed in Yugoslavia for foreign-currency purchases and sales by enterprises, and the value of the Yugoslav dinar in this market seems normally not to have exceeded the official rate by more than about 50 percent. Finally, the banking system was transformed into a collection of independent “business banks” which provided both short-term and long-term credit; Federal control over this system was essentially limited to the reserve regulations and rediscounting procedure which are customary for central banks in capitalist countries.

The transformation of the Yugoslav economy to a genuine market basis is usually dated from 1965 in Yugoslav writings. The principal changes which occurred on or about 1965 were the following:

(1) The establishment of a single rate of sales tax on retail sales only, rather than a multitude of rates.

(2) The abolition of subsidies to industrial enterprises for sales on the domestic market. The combination of these two changes implied a massive withdrawal on the part of the Federal Government from the determination both of prices and of the incomes of enterprises.

(3) The freeing of enterprise depreciation funds from partial blocking of expenditures by the Federal Government.

(4) The transformation of the banks from control by Federal, republic, and commune authorities to primary control by those enterprises which both invested equity capital in the individual banks and which placed their bank deposits with them. This transformation appears to have had considerable effect upon the lending policies followed by the banks.

(5) The unification of foreign-exchange rates applicable to different sectors of the economy. (This had been attempted in 1961, but was not successful at that time.) Although differential export subsidies have made this last change less significant than it might at first appear, its importance has not been challenged.³⁵

The early 1970's saw further reduction in Federal economic influence, although now primarily to the advantage of the republics, autonomous regions, and communes. Funds which the Federal Government had earlier invested in enterprises were transferred to these lower Government levels, and the interest and loan repayments by the enterprises were to be made to them. In some cases, these Government units completely freed the enterprises from these debts; but, at least as of late 1972, this did not seem to be the rule.³⁶

In this new environment, central planning lost whatever significance it had previously had.³⁷ Five-year plans were expected to continue on an indicative rather than an obligatory basis. Annual plans were abandoned. In short, although interventionism (particularly with regard to import quotas and domestic prices) was maintained, central guidance of the economy became minimal.

³⁵ See R. Bičanić, *Economic Policy in Socialist Yugoslavia* (Cambridge, England, Cambridge University Press: 1973), pp. 130 and 211–238.

³⁶ See the interview with Cemovic, the president of the Inter-Republic Committee for Monetary Questions, *Borba*, Aug. 8, 1972, p. 4.

³⁷ Aleksander Bajt, “Yugoslav Economic Reforms, Monetary and Production Mechanism,” *Economics of Planning*, VII, 3 (1967), p. 203. Bajt is also quite skeptical about the coordinating power of national plans prior to 1965.

Thus, under the slogan of self-management, a genuine market system was created in Yugoslavia. Unlike the situation in Hungary, prices by and large were allowed to find their own clearing levels. Not only did the national authorities restrict their intervention at the level of the enterprise to the use of financial means, but even such intervention was relatively unimportant. Again unlike the situation in Hungary, the chief executive officers of enterprises were in theory appointed, removed, and financially rewarded by groups internal to their own enterprise; while this principle was never fully carried out (communes and republics have always played a role in such decisions), the national government and national party authorities have exercised no significant role in such decisions.

The creation of an all-powerful ideology of self-management in Yugoslavia must be given enormous credit for the formation and preservation of this well-developed market economy. The history of Hungary since the January 1968 reform has shown the strong temptations which exist for any reforming Socialist government to revert to its past traditions of central interference and detailed control. The ideology of planning is a powerful one in all Socialist economies (including Yugoslavia), and it seems likely to lead to the falsifying of free-market conditions by the central government whenever anything goes wrong. Perhaps only a still more powerful counterideology can restrain such actions.

The costs of this ideology have, however, been high. Since the Second World War, developed capitalist countries have attempted to manage their economies in the sense of carrying out national policy as to the appropriate tradeoff among the goals of full employment, relative stability of domestic prices, and avoidance of major balance-of-payments crises. Although such management has been directed to a much narrower group of objectives than has been the case in the CMEA Socialist countries, nevertheless the existence of such national management in developed capitalist countries constitutes a very fundamental difference from prewar practice. National management tools have been primarily monetary and fiscal policy.

In the period since 1965, the self-management principle has not only prevented the implementation in Yugoslavia of traditional Socialist methods of managing the economy, but it has also effectively prevented the use of either monetary or fiscal policy.³⁸ Since the principle of self-management autonomy is most likely to be threatened by the National Government, it is not surprising that any Federal initiative in the economic sphere should be interpreted as such an attack. As any particular exercise of monetary or fiscal policy would be bound to have a negative effect on the economy of one or another of the Yugoslav republics (since they are at widely disparate income levels), nationality conflict allied with the self-management ideology have effectively prevented their use. The result is that the Yugoslav economy is run along Adam Smith lines to a degree which is quite unusual

³⁸ The governor of the National Bank of Yugoslavia declared in 1970 that the increase of prices cannot be stopped by monetary methods (*Prirednyj vjesnik* July 23, 1970, cited in *ABSEES*, October 1970). The Yugoslav economist Horvat has written that "fiscal policy practically does not exist in the country" (B. Horvat, "Analysis of the Economic Situation and Proposal for a Program of Action," *Praxis*, international edition, VIII, Mar. 3, 1971, p. 550).

for Europe as a whole. Judged from the viewpoint of conventional Western doctrine as to the proper management role of the National Government, the system would appear at best to be an unregenerate 19th century market economy.³⁹

The economic consequences cannot be considered as favorable. Yugoslavia has combined a high rate of unemployment, a high rate of emigration, a high rate of inflation,⁴⁰ and a substantial deficit in balance of payments on current account.⁴¹ Both material social product and, particularly, industrial production, have shown a slower rate of annual growth during 1961-70 than during the immediately preceding period of 1956-60 when the National Government exercised strong managerial powers over the economy.⁴²

In the longer run, the economic balance of the effects of Yugoslav self-management may be more favorable than it has been to the present. If the self-management ideology continues to dominate Yugoslav political thinking, its proponents are likely to become more secure—and thus more tolerant—over time. There seems no reason why self-management cannot be merged with national macroeconomic policy in the same fashion that in Western countries private capitalism has been merged with a major economic role for government. But this is a matter of evolution. Acceptance of such a modification of Yugoslav self-management in the early 1970's would, in my view, most probably lead to an emasculation of a genuine market economy and to a return to Federal Government control.

In any case, the political constraint of self-management has been a prime force in both creating and shaping the post-1965 Yugoslav market economy, as well as in preventing the conventional national management which might have substantially improved its performance.

³⁹ Viewed from a different perspective, however, the system represents a major step toward communism. As the secretary of the commission for self-management of the council of the Confederation of Yugoslav Trade Unions has stated, "the process of the withering away of the state and that of the realization of self-management are in essence one and the same social process, designated by different terms" (N. Jovanov, "Définition théorique de la notion et de l'essence de l'autogestion en Yougoslavie," Belgrade, April 1972, mimeographed, p. 8).

⁴⁰ During 1966-71, the annual compound rate of increase in retail prices was 11 percent.

⁴¹ During 1966-71, the annual deficit in balance of payments on current account averaged 12 percent of annual gross trade imports.

⁴² Official annual compound rates of growth (in 1966 prices) were as follows:

Material social product:	
1956-60	8.0
1961-70	7.5
Industrial production:	
1956-60	13.2
1961-70	8.4

Part II. PERFORMANCE AND RESOURCE
ALLOCATION

(249)

ECONOMIC GROWTH AND RESOURCE ALLOCATION IN EASTERN EUROPE *

By THAD P. ALTON

CONTENTS

	Page
I. Introduction.....	252
II. Changes in Structure of Economic Activity.....	254
III. Rates of Economic Growth.....	269
IV. Labor and Capital Productivity.....	278
V. Future Prospects and Current Problems.....	283
VI. Conclusions.....	293
APPENDIX	
Notes on Sources.....	294
Publications.....	296
TABLES	
1. Indexes of Population, 1950-72.....	255
2. Composition of Gross National Product by Industrial Origin, Selected Years, 1950-72.....	256
3. Composition of National Income (Net Material Product) by Industrial Origin, Selected Years, 1950-72.....	257
4. Composition of Distributed National Income (Net Material Product) by Final Uses, Selected Years, 1950-72.....	261
5. Structure of Employment by Industrial Sector, Selected Years, 1948- 72.....	263
6. Structure of Employment by Branches of Industry, Selected Years, 1950-72.....	265
7. Sectoral Structure of Fixed Capital, Selected Years, 1950-72.....	267
8. Total and Per Capita Dollar Values of GNP, 1972.....	268
9. Indexes of Real GNP.....	270
10. Indexes of Real GNP Per Capita.....	270
11. Indexes of National Income (Net Material Product) Produced, Total and Per Capita, Official Figures, 1950-72.....	271
12. Indexes of National Income (Net Material Product) Domestically Distributed, 1950-72.....	272
13. Average Annual Rates of Growth of GNP Per Capita.....	273
14. Growth of GNP by Sector of Origin, 1960-72.....	274
15. Average Annual Rates of Growth of National Income (NMP) Pro- duced, By Sectors of Origin, 1960-73.....	275
16. Average Annual Rates of Growth of National Income (NMP) Domestically Distributed, 1960-72.....	277
17. Average Annual Growth Rates of Employment, 1960-72.....	278
18. Average Annual Rates of Growth of Labor Productivity, 1960-72.....	279
19. Official Indexes of Fixed Capital, Selected Years, 1950-72.....	280
20. Average Annual Rates of Growth of Fixed Capital Inputs and Capital Productivity, Selected Periods, 1960-72.....	281
21. Indexes of Employment, Fixed Capital, National Income (NMP), Labor Productivity, Capital Productivity, and Capital-Labor Ratios, 1972.....	282
22. Average Annual Rates of Growth, Selected Indicators.....	286

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I. INTRODUCTION

This paper aims to show the rates of economic growth and structure of resource use in six countries of Eastern Europe (Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Romania in the postwar period. This will be done primarily by tables showing the composition of aggregate output, its allocation to final uses, the allocation of labor and fixed capital resources to production, the productivities of factor inputs, and the rates of growth of output, inputs, and factor productivities.

The composition of national economic activity and the rates of growth of its major components are of course the outcome of a complex interaction of many factors: State policy, motivations of managers, employees, and consumers, the availability of resources, the rules of the game governing economic activities, participation in world trade, production and application of technology, the weather (primarily through its influence on agriculture), and diverse other factors. Elsewhere in the present volume the reader will find essays that illuminate performance by a discussion of some of these factors. The present paper is directed toward measures of performance, but some reflections on problems of resource allocation will be offered in the final section.

Section II of this paper presents structural aspects of economic growth. The composition of economic activity will be examined in both the gross national product (GNP) and net material product (NMP) national income concepts. Selected comparisons will be made with other countries of Europe and the U.S.A. The changing patterns of labor and fixed capital inputs by production sectors will be shown for various dates of the postwar period.

Changes in structure are a consequence of diverse rates of growth of component activities; we show such rates in section III. Section IV relates factor inputs to output in the form of labor and capital productivities. Section V discusses current issues of resource allocation and future perspectives.

The major conclusions as to changes in economic structure and growth will be evident from the statistical tables; comments in the text are intended to summarize the findings in the tables and to point out limitations of the statistics for appraising economic growth. Obviously, the complexities of economic growth can by no means be fully comprehended by a single set of statistics based on the relative prices of some one year or of one country where the reference is, respectively, to intertemporal comparisons for a given country or comparisons between countries. Indeed, important qualitative factors may be largely overlooked in conventional statistical measures.

As regards the statistical materials presented here, both those that were independently established in the work underlying this paper and those taken directly from the summary official national statistics of the countries being surveyed, a general caution is in order at the outset. Results are inevitably imprecise and conclusions must be qualified by the relativities that are inescapable in comparisons based on different sets of prices, or other weights enabling commensuration and aggregation.

As to the precision of measurement of rates of growth in official statistics, we may cite briefly the observation of a Hungarian econo-

mist at the 13th General Conference of the International Association for Research in Income and Wealth held in August and September 1973. Referring to the inaccuracies of constant price accounting as it affects a "real" index of national income, he noted reliability limits of 10 to 15 percent in relation to a 5-percent rate of growth.¹ More striking differences may be expected where the weight base is shifted from an early year to a later year.² Preliminary calculations of an index of Czechoslovak civilian industrial production in various weighting regimens (1948, 1962, and 1967 prices) show a very substantial sensitivity of the rates of growth to the weighting regimen.³ We have found this index number ambiguity also very striking in other intertemporal and international comparisons, notably of value added in agriculture as calculated in early period and later period prices.

The observations of Robert W. Campbell, M. Mark Earle, Jr., Herbert S. Levine, and Francis W. Dresch on the conceptual problems involved in United States-U.S.S.R. comparisons of output and their cautions as to the significance of empirical findings should be noted here.⁴ Conceptually, intercountry comparisons are analogous to intertemporal comparisons within a given country. Inferences of relative production potentials based on GNP (or NMP) comparisons should be tempered by cautions regarding the extent of utilization of capacity, flexibility in resource allocation to produce alternative mixes of products, and problems of valuation of services.

The call by Campbell et al. for dynamic comparisons and explanations of the growth process that would have prognostic value is well taken.⁵ And it is precisely here that particular skepticism is warranted as to the significance of numerical findings on the elasticity of substitution of capital for labor by whatever model, so long as these findings are not presented over a range of alternatives depending on the output and factor input measures used and their consistency vis-a-vis one another. One may wonder whether the findings would not be seriously affected by rather widely divergent output measures that could be matched against given factor input measures. Also, the suitability of the capital input series and the adequacy of their correspondence to the output series for the countries of Eastern Europe pose a serious challenge to the prognostic value of analyses based on them.

Despite counsels of perfection, comparisons, of necessity, are being made and can be used to gain a reasonably clear impression of the economic transformation occurring in Eastern Europe. Further cumulation of independently calculated or officially revised measures of economic performance and the testing of their sensitivity to economically justifiable alternative weighting regimens and other tests are recommended. Meanwhile, we shall present in this paper our GNP estimates along with various official NMP measures. The latter treat as national income only the net product originating in so-called material product sectors—industry, agriculture, forestry, construction, trade, and transportation and communications, and exclude, as non-productive, government services, education, health care, defense, and other services. At present, Czechoslovakia still treats passenger transportation and communication services for households and the non-

¹ Janos Arvay, writing in *Statisztikai szemle*, October 1973, pp. 948-962.

² See *Statisztikai szemle*, August 1966, pp. 722-724.

³ Work done at the Research Project on National Income in East Central Europe.

⁴ See United States, 93d Cong., 1st sess., Joint Economic Committee, *Soviet Economic Prospects for the Seventies, A Compendium of Papers*, June 27, 1973, pp. 131 ff.

⁵ *Ibid.*, p. 134.

material sectors as outside the material product concept. Other countries over the recent years have dropped this distinction, although sometimes they have not adjusted their published indexes retrospectively to accommodate the expanded concept. It may be worth noting that the NMP concept is not strictly value added by the sector to which it is credited, because the purchases of this sector from the nonmaterial sectors are not subtracted from its gross output (as are the purchases from material product sectors and depreciation) to arrive at net material product. In effect, the purchases from nonmaterial sectors appear in the net material product of the purchasing material product sector; only material costs are subtracted from gross output to arrive at "net material product." However, the value of nonmaterial services thus included in the national income (NMP) is not large, only a few percent.

II. CHANGES IN STRUCTURE OF ECONOMIC ACTIVITY

Population growth, the predominant source of new labor inputs into the economies of Eastern Europe, has declined sharply in the postwar period (see table 1). From 1950 to 1965, with the exception of East Germany (which showed a decline of about 7 percent), these countries had substantial increases of population: Poland—33 percent, Romania—26 percent, Bulgaria—18 percent, Czechoslovakia—17 percent, and Hungary—11 percent. Thereafter, however, the growth rates declined; from 1965 to 1972 Romania showed an increase close to 9 percent, Bulgaria and Poland, about 5 percent, Czechoslovakia and Hungary about 2 percent, and East Germany essentially no change. Elsewhere in the present *Compendium*,⁶ the detailed development of population and manpower is discussed; here it is mentioned as background for the increasingly prominent references to manpower shortages and the necessity for sharp increases in labor productivity to maintain a high rate of economic growth. The pressure is of course most intense in East Germany, Czechoslovakia, and Hungary, but one finds references to growing scarcity of manpower even in Bulgaria. For the latter, however, and for Romania and Poland, the supply of manpower will become a more pressing problem after a decade or so, given the composition of the present population. The 1972 population for the 6 countries as a whole, 104.2 million, is about half that of the United States (208.8 million), about two-fifths that of the U.S.S.R. (247.4 million), or slightly less than the combined population of West Germany and France (111.3 million).

⁶ See the article by Paul F. Myers.

TABLE 1.—INDEXES OF POPULATION, 1950-72

(Mid-year or annual averages, 1965=100)

	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania
1950	88.40	87.50	108.04	92.02	78.82	185.98
1955	91.44	92.47	105.43	96.83	86.62	191.24
1960	95.93	96.44	101.30	98.38	93.86	96.72
1965	100.00	100.00	100.00	100.00	100.00	100.00
1966	100.69	100.57	100.22	100.30	100.64	100.61
1967	101.33	101.03	100.36	100.68	101.42	101.35
1968	102.05	101.43	100.37	101.06	102.57	103.64
1969	102.84	101.81	100.33	101.45	103.36	105.16
1970	103.51	101.24	100.22	101.80	103.27	106.44
1971	104.08	101.75	100.24	102.10	104.16	107.58
1972	*104.73	102.28	100.14	102.45	104.99	108.59
Population 1972 (millions)	18.59	14.48	17.04	10.40	33.07	20.66

¹ Interpolated by straight line between published data of nearest periods.² Estimate.Source: Statistical yearbooks, except as follows: Hungary, *Statiszkalal idoszaki kozlemenyek*, "A lakosság jövedelme és fogyasztása 1960-71."

Throughout Eastern Europe in the postwar period national economic plans have emphasized growth of industry as a key sector for economic progress. Agriculture was initially looked upon as a sector to provide, by transfer, manpower inputs into industry, and under discriminatory pricing and procurement policies, to help finance industrial investments. More recently, in all the countries, agriculture has come to be looked upon with more favor, and there have been improvements in the provision of factor inputs and price incentives to producers. Thus, the relative decline of the sector has abated. Tables 2 and 3 show the shifting composition of national output, as indicated in GNP concept and in the official net material product (NMP) definition of national income.⁷

Between 1950 and 1973, the share of industry and handicrafts in GNP in the more developed economies of East Germany and Czechoslovakia increased from over one-third to nearly one-half of total GNP. In the remaining countries, this share grew to around two-fifths of GNP, starting from one-sixth to one-fourth. Concomitantly, the share of agriculture decreased in all the countries, with the decline as a share of GNP being the sharpest in Bulgaria, Romania, and Poland (from about two-fifths to about one-fifth of GNP), intermediate in Hungary and Czechoslovakia (from about a fourth to about one-eighth of GNP), and the least in East Germany (from nearly one-sixth to one-eleventh). Further shrinkage may be expected in the share of agriculture over the next decade or two toward the 5-to-10 percent level. Industry already shows signs of leveling off in East Germany, Czechoslovakia, and Hungary, and other countries are expected to follow this trend. The service sectors should become more prominent as the economies mature.

International comparisons of industrial composition of GNP, reflecting as they do different bases of valuation, must be regarded as imprecise. Yet, for some very rough comparison with three countries of Western Europe, we may note that in current prices in 1970, the shares in gross domestic product (GDP) were as follows, in industry: France—38 percent, West Germany—47 percent, and Italy—35 percent;

⁷ See the appendix for a brief note on statistical sources and methodology of these tables.

and in agriculture: 6, 3, and 9 percent, respectively.⁸ One should not read into these figures necessarily an indication of relative levels of per capita output among these countries or with respect to countries of Eastern Europe, or for the latter among themselves (on the basis of tables 2 and 3). Direct comparisons of production on the basis of samples of production or the application of purchasing power parity ratios of currencies to national product categories would have to be carried out in order to arrive at relative levels of overall and per capita production. The results of such bilateral or multilateral comparisons would not, of course, be unambiguous, but such comparisons would correctly address the question. Tables 2 and 3 have some indicative value for comparisons over time for a single country where the valuation base is constant; where this is not so, the comparisons are greatly reduced in significance (see below).

TABLE 2.—COMPOSITION OF GROSS NATIONAL PRODUCT BY INDUSTRIAL ORIGIN, SELECTED YEARS, 1950-72
[In constant prices]

	1950	1960	1965	1970	1972
Bulgaria:					
Industry and handicrafts.....	15.9	25.0	29.2	37.4	39.0
Agriculture and forestry.....	41.3	34.7	31.0	22.5	21.1
Construction.....	4.5	6.1	6.3	7.9	7.5
Transport and communications.....	4.2	5.7	6.6	7.9	8.2
Trade.....	3.7	6.0	6.2	6.6	6.7
Housing.....	18.9	12.0	10.0	8.6	8.8
Government and other services.....	11.5	10.5	10.7	9.1	8.7
Total GNP.....	100.0	100.0	100.0	100.0	100.0
Czechoslovakia:					
Industry and handicrafts.....	34.8	36.1	44.0	47.3	47.7
Agriculture and forestry.....	23.9	20.0	11.6	11.9	11.7
Construction.....	6.7	8.0	7.7	7.1	7.2
Transport and communications.....	7.3	10.0	13.6	12.3	12.8
Trade.....	7.1	7.3	7.7	8.1	8.3
Housing.....	10.0	8.5	6.1	5.0	4.8
Government and other services.....	10.2	10.1	9.3	8.3	7.5
Total GNP.....	100.0	100.0	100.0	100.0	100.0
East Germany:					
Industry and handicrafts.....	36.0	45.0	46.5	46.8	47.4
Agriculture and forestry.....	15.3	12.0	10.8	10.0	9.2
Construction.....	4.1	5.8	6.3	7.6	7.8
Transport and communications.....	7.2	6.9	7.1	7.0	7.8
Trade.....	6.7	10.7	10.6	11.5	12.1
Housing.....	12.8	7.4	6.7	6.1	5.6
Government and other services.....	17.9	12.2	12.0	11.0	10.1
Total GNP.....	100.0	100.0	100.0	100.0	100.0
Hungary:					
Industry and handicrafts.....	25.3	32.1	36.6	37.6	37.3
Agriculture and forestry.....	29.7	22.5	18.4	16.8	17.1
Construction.....	6.2	7.3	7.4	8.9	8.7
Transport and communications.....	9.5	13.4	13.7	12.3	11.5
Trade.....	6.2	7.3	7.8	9.3	9.5
Housing.....	12.0	8.3	7.5	6.5	6.1
Government and other services.....	11.1	9.1	8.6	8.6	9.8
Total GNP.....	100.0	100.0	100.0	100.0	100.0
Poland:					
Industry and handicrafts.....	22.0	32.0	35.7	39.2	29.3
Agriculture and forestry.....	36.9	28.4	24.9	20.0	19.6
Construction.....	4.5	6.3	6.0	7.2	7.7
Transport and communications.....	5.7	6.9	7.7	8.5	9.2
Trade.....	6.2	6.6	6.9	7.5	7.7
Housing.....	12.9	10.4	9.3	9.0	8.4
Government and other services.....	11.8	9.4	9.5	8.6	8.2
Total GNP.....	100.0	100.0	100.0	100.0	100.0

⁸ United Nations, *Yearbook of National Accounts Statistics, 1971*, Vol. III, p. 72. We use GDP and GNP interchangeably at various points in this paper. Adjustment of the territorial concept (GDP) for factor payments to and from foreigners not normally residing in a given territory will lead to the national concept (GNP).

TABLE 2.—COMPOSITION OF GROSS NATIONAL PRODUCT BY INDUSTRIAL ORIGIN, SELECTED YEARS, 1950-72—Continued
[In constant prices]

	1950	1960	1965	1970	1972
Romania:					
Industry and handicrafts.....	21.3	26.2	33.7	42.0	41.8
Agriculture and forestry.....	42.2	39.7	30.9	23.1	24.5
Construction.....	3.0	7.1	7.5	9.6	9.0
Transport and communications.....	5.7	6.7	8.1	9.6	9.0
Trade.....	3.8	5.3	6.6	7.1	6.8
Housing.....	11.3	7.3	6.3	5.2	4.6
Government and other services.....	12.7	7.7	6.9	5.2	4.3
Total GNP.....	100.0	100.0	100.0	100.0	100.0

TABLE 3.—COMPOSITION OF NATIONAL INCOME (NET MATERIAL PRODUCT) BY INDUSTRIAL ORIGIN, SELECTED YEARS, 1950-72
[Percent of total]

	Total	Industry	Agriculture and forestry	Construction	Transport and communications	Trade	Other
Bulgaria:							
1956 ¹	100	37	33	7	3	17	3
1960 ¹	100	47	28	8	4	11	2
1965 ¹	100	49	28	8	5	8	2
1970 ¹	100	55	18	9	7	9	2
1971 ²	100	56	16	9	7	9	3
1971 ³	100	51	24	9	7	6	3
1972 ⁴	100	51	24	9	7	6	3
Czechoslovakia:							
1950 ¹	100	61	17	9	3	9	1
1960 ¹	100	63	14	11	4	8	1
1965 ¹	100	69	10	10	4	6	1
1966 ¹	100	68	10	11	4	6	1
1966 ²	100	62	13	12	4	8	1
1970 ¹	100	62	11	11	3	12	1
1972 ⁴	100	61	10	12	4	12	1
East Germany:⁵							
1950.....	100	47	28	6	7	10	1
1955.....	100	52	20	6	7	14	1
1960.....	100	56	16	7	6	13	2
1965.....	100	59	14	7	5	13	2
1970.....	100	61	12	8	5	13	2
1972.....	100	61	11	8	5	13	2
Hungary:							
Original version:							
1960 ⁶	100	58	22	12	4	8	-3
1965 ⁶	100	67	16	11	5	7	-6
1967 ⁶	100	68	15	11	4	7	-6
Revised version:							
1960 ⁶	100	36	30	11	5	14	3
1965 ⁶	100	42	24	11	6	14	4
1970 ⁶	100	43	18	12	6	15	7
1972 ⁶	100	43	18	12	6	15	6
Poland:⁷							
1950.....	100	32	51	9	8	8	1
1960.....	100	40	30	11	6	12	1
1965.....	100	45	25	10	6	12	2
1970.....	100	50	19	11	6	12	2
1972.....	100	50	18	12	7	12	2
Romania:							
1950 ¹	100	44	28	6	4	12	6
1955 ¹	100	40	37	6	4	9	4
1960 ¹	100	44	33	9	4	6	4
1965 ¹	100	49	29	8	4	7	3
1970 ¹	100	60	20	10	4	4	2
1970 ⁹	100	58	19	10	6	4	3
1972 ⁹	100	57	22	9	6	4	2

¹ In constant 1957 prices through 1960. In Jan. 1, 1962 prices through 1971.

² January 1962 prices.

³ Current prices.

⁴ Apr. 24, 1960 prices.

⁵ Jan. 1, 1967 prices.

⁶ Constant or comparable prices.

⁷ 1971 prices. Before 1965, agriculture is shown excluding certain agricultural services. In 1965, without such services, the share of agriculture would be 22.6 percent, including them, 23.2 percent.

⁸ Agriculture alone is 47.9 percent; forestry was estimated roughly at 3 percent.

⁹ Current prices; 1970 and 1972 figures reflect changes in coverage to include passenger transportation and the communications services formerly excluded from material product, and also some services formerly excluded from industry and agriculture.

The impression of structural changes obtained from the official national income (NMP) tabulations by industrial origin from 1950 to 1972 is roughly consistent with that evident from changes in GNP (compare tables 2 and 3). Despite the less comprehensive concept of national output represented by NMP national income (exclusion of so-called nonmaterial services and depreciation) as compared to GNP and the different bases of valuation, as well as the different methodologies for construction of the aggregate measures in constant prices, the two tables show much the same general development. Because NMP national income excludes nonmaterial services, the shares of the corresponding sectors, other things being equal, would have to be larger at a comparable point in time in NMP than they would appear to be in GNP. The differing compositions of GNP and NMP aggregates obviously reflect more than the different production boundaries of the concepts, and a detailed address to the bases of valuation and methodology underlying the two measures would be required to make the differences explicit. For one instance, transfer elements (turnover taxes, subsidies, disproportionate accumulations via profits among industrial sectors) may be expected to warp the NMP structures in the stated prices from what these structures would be at some approximation to factor cost. The composition of GNP in table 2 for each country reflects a consistent base of valuation, the approximate factor cost structure of the GNP in the weight-base year, moved by value-added indexes or their approximations to other years. Obviously, if relative factor prices were substantially different in some alternative weight-base used for the GNP aggregations, some changes in the composition of GNP might be expected from that shown in table 2. This is part of the inescapable ambiguity inherent in comparisons employing different bases of valuation.

Such ambiguity is explicit in some of the entries in table 3, where the structure of aggregate NMP by industrial origin is shown for some countries for a particular year in more than one set of prices. Obviously, Bulgaria did not deindustrialize between 1970 and 1972, although the tabulated share of industry fell from 55 to 51 percent of national income, with offsetting changes for agriculture (a rise from 18 to 24 percent) and for other sectors. The influence of the change in price bases is evident in the choice of two entries for Bulgaria for 1971; industry represents 56 percent or 51 percent, depending on calculation in 1962 prices or in current prices, respectively. A similar situation is shown for Czechoslovakia for 1966, Romania for 1970, and Hungary for a number of years in two different sets of "comparable" prices.⁹ The more recent set of comparable prices for Hungary should reflect the price reforms that were intended to bring prices closer into line with production costs. Deviations of prices from production costs still persist in Hungary, however, and subsidies remain a significant factor, though not as great a problem as in some other countries of Eastern Europe.

The revisions for Hungary shown in the official figures are particularly striking as regards the shares for trade (approximate doubling in the revision), the declines for industry, and the increases for agriculture and "other." So long as one sticks to a single version of the Hungarian official figures on composition of the NMP, a roughly

⁹ It would seem that the shifting of price bases and the related chain linking of indexes of production would raise issues of consistency of output indexes to input indexes of capital and labor services in productivity calculations using production functions.

consistent impression of the structural changes in production may be gained. The share of the dominant industrial sector leveled off after 1965. The share of agriculture declined over the period, but with some indication of slowing down the decline by 1972. Because agricultural production is strongly influenced by weather in particular years, its share may be somewhat unstable in the country tabulations.¹⁰ Allowance has to be made for this in drawing conclusions from a single year; it would be advisable to take 2 or 3 years to provide an "average" share for agriculture.

One might be tempted to make comparisons among the countries on the basis of the share for industry in NMP as shown in table 3, but this temptation should be resisted for reasons given above. (One could arrive at the obviously ridiculous result that Hungary stood both highest, at 68 percent (in 1967), or lowest, at 43 percent (in 1972), depending on which version of the official statistics one chose to read!)¹¹

Composition of product by end uses.—We have not made detailed calculations of the distribution of GNP to final uses for the most recent years. It is possible, however, to gain some orientation with respect to the breakdown of the GNP for Poland for 1970 and Hungary for 1972 on the basis of calculations made in these countries.¹² Proceeding in keeping with the United Nations methodology for national accounts, Zienkowski estimated that between 25 and 26 percent of the GNP was allocated to investment in fixed capital over the period 1966–70. If we estimate that changes in inventories could account for about 5 percent more, then gross investment could claim around 30 percent of GNP. Private and public consumption (government consumption, defense, health, education, etc.) would account for the remaining 70 percent. Official Hungarian statistics for 1972, referring to "gross domestic product" in current prices show for a total of domestic uses taken as 100 percent, that personal consumption accounts for 58.2 percent, public consumption, for 10.0 percent, and gross investment, for 31.8 percent. In "comparable prices" (not specified, but apparently 1968 prices), the shares were somewhat different, namely, personal consumption—60.3-percent, public consumption—9.9 percent, and gross investment—29.8 percent. If, however, we take into account the export surplus, then the share of gross investment is increased on this account, and, concomitantly, the shares of personal and public consumption are decreased.¹³ In current prices, the results are as follows: personal consumption—57.6 percent, public consumption—9.9 percent, and gross investment—32.5 percent. In the "comparable prices" noted above, the shares in the larger total that includes the export surplus are: personal consumption—59.5 percent, public consumption—9.8 percent, and gross investment—30.7 percent. One might guess that the composition of the GNP by end uses in the other countries of Eastern Europe would be similar to that of Poland and Hungary, but allowance should be made for differences that a number of alternative bases of valuation can make (see, for example, the discussion of table 3, on p. 257).

¹⁰ See the contribution by Gregor Lazarcik in the present *Compendium* for a detailed analysis of the performance of East European agriculture.

¹¹ *Hospodarske noviny*, No. 5, 1974, p. 3, in Table 4, shows for Hungary a decline of the share of industry in NMP from 48.6 percent in 1950 to 43.6 percent in 1970. Clearly these figures are not comparable, and no caution as to the bases of valuation was given in the source.

¹² Leszek Zienkowski, writing in *Gospodarka planowa*, No. 6, 1973, pp. 382–385, and the official Hungarian statistical yearbook, *Statistickai evkonyv*, 1972, p. 73.

¹³ Hungarian official statistics show both NMP and GDP breakdown, detailing the export (or import) surplus.

It should be noted that the official country data showing the composition of national income by sector of origin and by end use (table 3 and 4) are expressed in the actual market prices, without adjustment for the uneven incidence of such price deforming elements as turnover taxes, accounting profits, and subsidies. During the 1950's and the early 1960's the distortion introduced by such elements was very substantial.¹⁴ Price reforms carried out more recently in some of the countries have brought prices closer to factor costs by incorporating an explicit charge for capital into costs, by reducing the role of turnover tax as a device for rationing consumer goods and assuring State budget revenues, by treating profit less as a second form of turnover tax or as a formal accounting category and more as a return to capital and as a spur to efficiency, and by reducing subsidies. There is still much to be done to improve prices as guides to resource allocation, and cautions are still well advised in considering the magnitude of particular economic activities in market prices as indicators of their resource cost. There would be less concern, say, in the case of Hungary, than for Romania, but in all countries there are still significant departures of prices from resource costs in particular activities. It would be difficult to generalize, but allowance should be made that the shares of gross investment and defense are understated at market prices from what they would be at factor cost.

Table 4 presents official data of the countries of Eastern Europe on the distribution of the total domestically used national income (NMP). These data show declining shares of net investment (accumulation) in four countries from 1970 to 1972, as follows (in percentage shares, 1970 and 1972): Bulgaria—30.8 to 26.0, Czechoslovakia—23.1 to 21.7, East Germany—24.0 to 21.9, Hungary—27.9 (1971) to 22.0. Poland increased the share of investment from 29.3 to 31.6 percent, the highest share among the countries shown in the table. Romania does not provide details on the distribution of the national income to end uses; the figures shown in table 4 were taken from two "pie charts," one for 1961-65 and the other for 1966-70. Annual detail was not indicated.

¹⁴ Estimates have been made at the Research Project on National Income in East Central Europe for a number of countries to show the aggregate economic activity in GNP concept both at market prices and at adjusted factor costs. (See the bibliography for monographs on Czechoslovakia, Hungary, and Poland for the mid 1950's. Cross-section GNP accounts, for 1967 and 1968, have been completed also for Czechoslovakia, Hungary, and Poland for the mid 1950's. Cross-section GNP accounts, for 1967 and 1968, have been completed also for Czechoslovakia and Hungary.)

TABLE 4.—COMPOSITION OF DISTRIBUTED NATIONAL INCOME (NET MATERIAL PRODUCT) BY FINAL USES, SELECTED YEARS, 1950-72

[Percentage shares in total]

	Consumption		Accumulation			National income
	Personal consumption	Collective consumption	Accumulation, total	Net investment in fixed capital	Increment to working capital and reserves	
Bulgaria ¹ (see footnote on price bases):						
1952	70.6	5.6	23.8			100
1956	80.7	5.0	14.3			100
1960	69.2	3.3	27.5			100
1965	69.2	2.5	28.3			100
1970	66.3	2.9	30.8			100
1972	70.2	3.8	26.0			100
Czechoslovakia :						
1950 (current prices)	67.6	15.5	16.9			100
1966 (current prices)	65.7	17.8	16.5	11.2	5.3	100
1966 (Jan. 1, 1967 prices)	60.3	19.1	20.6	14.6	6.0	100
1970 (Jan. 1, 1967 prices)	57.9	19.0	23.1	15.3	7.8	100
1972 (Jan. 1, 1967 prices)	57.6	20.7	21.7	19.0	2.7	100
East Germany (all years in 1967 prices):						
1950	82.9	8.6	8.5	3.1	5.4	100
1955	81.3	8.9	9.8	8.7	1.1	100
1960	73.7	8.2	18.1	15.0	3.2	100
1965	71.6	8.5	19.9	15.4	4.5	100
1970	66.8	9.2	24.0	20.3	3.7	100
1972	68.0	10.1	21.9	18.4	3.5	100
Hungary ² (in comparable prices):						
1961-65	70.6	8.4	21.0	13.5	7.7	100
1966-70	68.1	8.4	23.5	15.5	8.0	100
1971	63.2	8.9	27.9	18.0	9.9	100
1972	68.5	9.5	22.0	19.0	3.0	100
Poland (in 1971 constant prices):						
1950	71.8	7.2	21.0	13.0	8.0	100
1960	67.4	8.4	24.2	16.9	7.3	100
1965	63.7	9.5	26.8	18.6	8.2	100
1970	61.4	10.7	27.9	21.8	6.1	100
1971	59.8	10.9	29.3	21.9	7.4	100
1972	57.7	10.7	31.6	24.8	6.8	100
Romania ³ :						
1961-65	74.3		25.7			100
1966-70	69.7		30.3			100

¹ At 1957 prices through 1962; Jan. 1, 1962, prices through 1970; 1972 index price base not indicated, but seems to be the 1962 prices, cf. "Statisticheski godishnik 1972," p. 91, and "Statisticheski izvestia," 1973, No. 7, p. 54, table 5, with reference to 1971 values.

² The official tabulation shows, in addition to the total domestic uses taken as 100 percent, the export (+) or import (-) surplus, which amounted to the following percentage of national income: 1961-65: (-)1.4, 1966-70: (-)0.6, 1971: (-)8.2, 1972: (+)1.5.

³ In unspecified prices. Detailed composition was not provided.

It should be noted that the export surplus is not included in the totals in table 4; an import surplus obviously could affect the percentage shares if it were disproportionately distributed among the domestic uses. (An export surplus would conventionally be considered an addition to investment, and an import surplus as disinvestment.) Hungary showed a small export surplus in 1972; Poland had an import surplus. Taking such balances into account would not substantially alter the general impression the table conveys, but it could sharply change the share of gross investment from 1 year to the next when an import surplus is followed by an export surplus. Such, for example, was the case for Hungary in 1971-72. Treating the import surplus in 1971 as disinvestment, would mean in "comparable prices" that gross investment's share would be 29.4 percent of GNP, instead of 33.9 percent when the foreign trade balance is disregarded. (For 1972, the respective shares, including and excluding the export surplus were 29.4 percent

and 29.8 percent.) By 1973, the pendulum had swung back from the large surplus of 1971 to a large export surplus.¹⁵

It is worth noting again the relativity of shares of end uses to the prices in which the distributions are calculated. For Czechoslovakia in 1966, two distributions are shown, one in current prices and one in January 1, 1967, prices. In the former, net investment amounts to 16.5 percent of the domestically distributed national income (NMP); in the latter, this share (for the same year) comes to 20.6 percent. Thus, the range of ambiguity comes to about 25 percent of the net investment in 1966 prices. This is one reason why one speaks of gaining only a general impression from the table. Precise intertemporal or international comparisons of shares of the national product devoted to end uses on the basis of such tabulations are ruled out.

For rough comparison, the percentage shares of gross investment in GDP in 1970 in the United States, France, Italy, and West Germany, respectively, were as follows: 17, 29, 23, and 30.¹⁶ In Eastern Europe the comparable shares would be around 30 percent.

Explicit state budget expenditures on defense during the past decade may be estimated for the countries of Eastern Europe roughly in the range of 2 to 5 percent of GNP at current established national market prices.¹⁷ After rough adjustment in the direction of factor cost (in domestic prices), the range would become roughly 4 to 7 percent of GNP. In the more recent years of the period, East Germany, Czechoslovakia, and Poland would show higher shares than Bulgaria, Hungary, and Romania. Soviet defense expenditures as shares of GNP in current prices during the 1960's were in the range of 8.4 to 11.1 percent.¹⁸ The possibilities for augmenting economic growth by reducing defense expenditures and spending more on productive investment is evidently not as great in the countries of Eastern Europe as in the U.S.S.R.

The changing composition of economic activity in the countries of Eastern Europe shown in tables 2 and 3 is corroborated in general terms by the changing structure of national employment over the 1948-72 period as shown in table 5. At the beginning of this period, these countries were widely dissimilar in the shares represented by industry and agriculture in total employment. The extent of diversity may be judged by juxtaposition of the percentage shares in total employment represented by industry on one hand, and agriculture and forestry on the other, in that order, as follows: East Germany—40 and 23, at the top, and Bulgaria—8 and 82 at the bottom. At the end of the period the gap had closed very strikingly to: East Germany—42 and 12, still at the top, and Romania—26 and 44, at the bottom. The share of industry by 1960 had begun to level off in Czechoslovakia and East Germany, but rapid structural change is still in progress in Romania and Bulgaria. Hungary and Poland fall between these extremes of structural change. There is still ample scope for transfer of labor from agriculture to other sectors in Romania, Poland, Bulgaria, and, to a lesser extent, Hungary and Czechoslovakia. With

¹⁵ *Statistikai havi közlemenyek*, No. 1, 1974, p. 53. The large export surplus with socialist countries (roughly 20 percent of Hungary's exports to these countries in 1973) may limit Hungary's ability to export to the West and thus gain the means to pay for increased imports from the West, including advanced technology.

¹⁶ United Nations, *Yearbook of National Account Statistics*, 1971, vol. III, pp. 25, 39-41.

¹⁷ See article in the present *Compendium* by Alton, Bass, Czirjak and Lazarcik for more detailed estimates of defense expenditures in various bases of valuation.

¹⁸ See the article by Stanley H. Cohn "Economic Burden of Defense Expenditures," in U.S. 93d Congress, 1st Session, Joint Economic Committee, *Soviet Economic Prospects for the Seventies*, p. 151.

technological advance one may expect that the share of employment in agriculture will decline further even in East Germany, and that the share of service sectors will rise in all countries.

TABLE 5.—STRUCTURE OF EMPLOYMENT BY INDUSTRIAL SECTOR, SELECTED YEARS, 1948-72

[Percent of total]

	1950 ¹	1960	1970	1972 ²
Bulgaria:				
Industry.....	7.9	21.9	30.4	31.2
Agriculture and forestry.....	82.1	55.5	35.7	33.9
Construction.....	2.0	5.2	8.4	8.6
Transport and communications.....	1.5	4.1	6.0	6.0
Trade.....	2.2	4.0	6.1	6.6
Other.....	4.3	9.3	13.4	13.7
Total.....	100.0	100.0	100.0	100.0
Czechoslovakia:				
Industry.....	27.9	36.1	37.6	38.4
Agriculture and forestry.....	36.9	24.8	18.3	16.6
Construction.....	6.0	7.9	8.6	8.9
Transport and communications.....	4.9	5.8	6.6	6.7
Trade.....	8.0	7.6	9.2	9.8
Other.....	16.3	17.8	19.7	19.6
Total.....	100.0	100.0	100.0	100.0
East Germany:¹				
Industry.....	39.7	41.4	41.7	41.6
Agriculture and forestry.....	22.9	17.0	12.8	12.0
Construction.....	5.8	6.1	7.1	7.2
Transport and communications.....	7.0	7.2	7.5	7.5
Trade.....	10.7	11.6	11.0	10.9
Other.....	13.8	16.7	19.8	20.8
Total.....	100.0	100.0	100.0	100.0
Hungary:				
Industry.....	19.7	29.8	38.0	37.6
Agriculture and forestry.....	49.8	36.6	21.6	20.4
Construction.....	5.3	5.9	8.0	8.4
Transport and communications.....	4.2	6.8	7.5	7.6
Trade.....	4.8	6.4	9.1	9.4
Other.....	16.2	14.5	15.8	16.6
Total.....	100.0	100.0	100.0	100.0
Poland:				
Industry.....	20.8	25.5	29.2	29.6
Agriculture and forestry.....	54.3	44.3	36.2	34.5
Construction.....	5.0	6.6	7.3	7.7
Transport and communications.....	4.6	5.4	6.4	6.5
Trade.....	5.3	6.1	6.2	6.1
Other.....	10.0	12.1	14.7	15.6
Total.....	100.0	100.0	100.0	100.0
Romania:				
Industry.....	12.0	15.1	23.0	26.1
Agriculture and forestry.....	74.3	65.6	49.3	44.2
Construction.....	2.2	4.9	7.8	8.4
Transport and communications.....	2.2	2.8	4.3	4.4
Trade.....	2.5	3.4	4.3	5.1
Other.....	6.8	8.2	11.3	11.8
Total.....	100.0	100.0	100.0	100.0

¹ Bulgaria, 1948; East Germany, 1952.² Bulgaria, 1972.

At the present, labor scarcities are felt strongly in East Germany and Czechoslovakia, and to a somewhat lesser extent in Hungary, and there are discussions of shortages even in Bulgaria. The structure of Polish population is such that manpower will be in relatively ample

supply into the 1980's, but by the end of that decade the number of new entrants into the labor force will have sharply diminished.

The structure of employment by branches of industry shown in table 6 provides further insight into the development priorities over the postwar years. In all the countries, machinery has become the dominant branch, accounting at the outset of the 1950-72 period in the various countries for from 15 to 36 percent of total industrial employment and by the end of the period, rising to 24 to 42 percent. Chemicals and rubber, a much smaller branch, also improved its shares substantially over the period. Metallurgy fared similarly, except in Hungary and Poland, where its shares declined. The large branches of textiles, and food processing and tobacco relatively lost ground, as did the lumber and wood products branch. However, a decline in the share of a branch in the total does not necessarily imply an absolute decline in its employment over the period. Employment in agriculture in all countries did, in fact, show negative rates of growth (see table 15), but the only other instance of such decline was trade in East Germany. Within the machinery branch, the subbranches of electrical, electronic, and precision engineering products were expanding more rapidly than the average.

TABLE 6.—STRUCTURE OF EMPLOYMENT BY BRANCHES OF INDUSTRY, SELECTED YEARS, 1950-72 (SOCIALIZED INDUSTRY, EXCEPT EAST GERMANY, WHICH IS TOTAL INDUSTRY)

[Percent of total]

	Bulgaria				Czechoslovakia				East Germany		
	1952	1960	1965	1971	1950 ¹	1960	1965	1972	1960	1966	1972
1. Electric power.....	1.9	1.6	1.6	1.4	1.4	1.7	1.7	1.8	9.2	9.6	6.3
2. Mining and/or fuels.....	6.5	5.7	5.6	5.0	9.3	8.1	8.3	6.5	-----	-----	-----
3. Metallurgy.....	3.2	5.2	6.8	5.7	7.2	8.6	9.1	8.8	3.7	4.1	4.2
4. Machinery.....	15.1	16.7	19.8	23.9	24.9	34.6	35.8	37.4	36.4	38.0	42.1
5. Chemicals and rubber.....	3.5	3.4	4.1	5.7	4.2	4.1	4.5	5.1	9.7	10.3	11.1
6. Building materials.....	3.4	4.3	5.0	4.3	4.4	4.5	3.9	3.9	3.3	3.2	3.2
7. Subtotal, rows 1-6.....	33.6	36.9	42.9	46.0	51.4	61.6	63.3	63.5	62.3	65.2	66.9
8. Lumber and wood products.....	14.1	10.4	8.8	7.2	6.6	5.0	4.8	4.7	5.5	5.2	(C)
9. Paper and allied products.....	7	9	1.0	1.1	1.7	1.7	1.7	1.7	2.2	2.1	(C)
10. Textiles.....	15.3	12.7	10.0	10.3	13.6	9.8	9.0	8.6	11.9	10.3	8.7
11. Other light industry.....	16.8	22.3	21.3	21.8	16.0	13.4	13.6	13.9	10.5	9.9	*16.5
12. Food processing and tobacco.....	19.5	16.8	16.0	13.6	10.7	8.5	7.6	7.6	7.6	7.3	7.9
Total employment.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

	Hungary				Poland				Romania ²			
	1950	1960	1965	1972	1950	1960	1965	1972	1950	1960	1965	1972
1. Electric power.....	2.8	2.8	2.7	2.0	3.0	2.2	2.1	2.2	1.3	1.3	2.1	1.7
2. Mining and/or fuels.....	11.1	11.3	10.5	7.8	13.0	12.1	11.1	9.7	7.5	6.9	5.8	4.2
3. Metallurgy.....	7.8	6.5	6.1	6.0	6.6	5.7	5.8	5.6	6.6	7.6	7.8	6.8
4. Machinery.....	29.2	27.8	29.3	31.1	17.7	24.9	28.2	31.3	21.3	23.3	24.2	28.0
5. Chemicals and rubber.....	4.6	4.9	5.7	6.6	6.1	6.3	6.6	6.9	2.8	4.4	5.5	6.6
6. Building materials.....	6.8	5.3	4.9	4.8	5.4	5.9	5.2	4.8	5.8	5.6	5.5	5.0
7. Subtotal, rows 1-6.....	62.3	58.6	59.2	58.3	51.8	57.1	59.0	60.5	45.3	49.1	50.9	52.3
8. Lumber and wood products.....	2.2	3.3	3.8	3.0	6.3	5.2	5.0	4.8	17.2	16.4	16.1	12.9
9. Paper and allied products.....	1.0	0.7	0.8	1.0	2.0	1.5	1.4	1.3	1.1	1.0	1.5	1.3
10. Textiles.....	14.2	9.5	9.3	8.3	16.8	12.6	11.4	10.5	12.7	11.4	10.4	11.8
11. Other light industry.....	7.8	17.8	17.0	18.6	12.4	11.5	11.1	11.4	12.7	12.7	12.0	13.2
12. Food processing and tobacco.....	12.5	10.1	9.9	10.8	10.7	12.1	12.1	11.5	11.0	9.4	9.1	8.5
Total employment.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ Workers distribution for 1950; not fully comparable to later years or other countries.
² Includes some nonindustrial activities, for example, reed cutters in paper, wood cutters in lumber and wood products, etc.

* For 1972, rows 8 and 9 are combined with row 11.

The changes in sectoral structure of fixed capital over the 1950-72 period (table 7) roughly correspond to those of employment. Here, as in table 6, a declining share does not signify necessarily an absolute decline; capital grew in all the major sectors of the economy (see table 17). The decline of the capital shares of the nonmaterial production sphere and of transport and communications was offset by increasing capital shares for industry and other material production sectors.

TABLE 7.—SECTORAL STRUCTURE OF FIXED CAPITAL, SELECTED YEARS, 1950-72

[Percent shares of sectors in total]

	Bulgaria (at full initial cost)				Czechoslovakia (in 1967 prices)				East Germany (at reproduction prices)			
	1952	1960	1965	1971	1950	1960	1965	1972	1955	1960	1965	1971
Industry.....	11.8	20.4	27.9	34.4	29.0	32.2	33.9	34.9	27.4	29.6	33.7	37.1
Agriculture.....	13.2	13.4	14.5	13.5	7.6	8.1	8.7	8.9	5.9	6.3	7.2	8.1
Forestry.....												
Construction.....	.6	.9	1.3	2.0	1.2	1.5	1.6	2.1	.7	.9	1.2	1.7
Transport and communications.....	20.3	17.3	14.6	14.3	7.5	7.4	7.2	6.6	10.7	10.2	10.2	9.8
Trade.....	1.4	1.7	1.8	2.5	2.6	2.7	2.8	3.6	2.5	2.1	2.9	3.1
Other material production.....	.1	.1	.1	.0	.1	.1	.1	.1	.1	.2	.2	.3
Subtotal: material production.....	47.4	53.8	60.2	66.7	48.0	52.0	54.3	56.2	47.3	49.8	55.4	60.1
Nonmaterial production.....	52.6	46.2	39.8	33.3	52.0	48.0	45.7	43.8	52.7	50.2	44.6	39.9
Of which, housing.....	45.8	38.2	30.9	26.3	27.3	25.5	23.9	22.3	(1)	(1)	(1)	(1)
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

	Hungary (In comparable prices)			Poland (In 1971 prices)			Romania (At full costs)				
	1960	1965	1972	1960	1965	1972	1950	1960	1965	1972	
Industry.....		25.3	27.5	30.5	17.6	20.5	25.7	19.8	27.7	31.8	37.8
Agriculture.....		7.6	8.0	9.8	17.3	16.4	15.8	19.0	14.9	13.5	11.8
Forestry.....		.2	.3	.3	.8	.7	.6				
Construction.....		.5	.7	1.3	.8	1.1	1.8	.7	2.0	2.4	3.0
Transport and communications.....		19.1	18.1	16.3	10.2	10.1	10.3	13.7	11.1	10.9	12.0
Trade.....		1.1	1.5	2.1	1.5	1.8	1.8	13.1	12.6	12.4	8.7
Other material production.....		0	0	0	1.9	1.9	2.3				
Subtotal: material production.....		53.8	56.1	60.3	50.1	52.5	58.3	66.3	68.3	71.0	73.3
Nonmaterial production.....		46.2	43.9	39.7	49.9	47.5	41.7	33.7	31.7	29.0	26.7
Of which, housing.....		(1)	(1)	21.8	34.2	32.2	28.3	*(31.2)	*(28.4)	*(25.2)	*(22.9)
Total.....		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1 Not available.

* Figure includes, besides housing, communal economy, etc.

Table 8 shows a number of alternative estimates of the level of total and per capita GNP (or GDP) of the countries of Eastern Europe in 1972 in 1972 U.S. dollars. Sources and methodology of the estimates are given in the appendix notes to the table. The A and B figures are based on the original estimates by Maurice Ernst, with the A denoting dollar values obtained by conversion from West German marks (in the initial East European country—West Germany comparison) to dollars by the official marks to dollars exchange rate, and B denoting values based on conversion by the geometric mean of purchasing power equivalent rates of the two currencies. Estimates C are United Nations ECE figures based on curve-fitted estimating equations relating physical indicators to dollar values of GDP's of Western countries. These estimating equations were then used with physical indicators of the Eastern European countries to estimate their dollar GNP's. Estimates D were published by the U.S. Department of State. Estimates E were taken from a Czechoslovak source: the methodology was not indicated. All the estimates were moved by our GNP indexes (see tables 9 and 10, below) to 1972 and expressed in 1972 dollars by means of the implicit U.S. GNP price deflators.

A rough estimate for Poland in 1970 was prepared by Zienkowski on the basis of a Polish-Austrian comparison of levels of personal consumption and on other considerations.¹⁹ His result, converting shillings to dollars at the official rate of exchange, was 1,200 U.S. dollars GNP per capita. This figure falls within the range of the A and B estimates of table 8, adjusted to the 1970 basis to reflect the growth of GNP per capita and the GNP price deflator for the U.S. dollar.

TABLE 8.—TOTAL AND PER CAPITA DOLLAR VALUES OF GNP, 1972¹

(In 1972 U.S. dollars)

	Total (billion dollars)		Per capita (dollars)				
	A	B	A	B	C	D	E
Bulgaria.....	12.1	13.8	1,410	1,610	1,740	1,570	1,510
Czechoslovakia.....	35.5	40.8	2,450	2,820	2,530	2,500	2,240
East Germany.....	37.6	43.3	2,210	2,530	2,410	2,520	2,110
Hungary.....	16.8	19.3	1,620	1,850	1,810	1,820	1,610
Poland.....	47.2	54.2	1,430	1,640	1,770	1,750	1,540
Romania.....	28.6	32.9	1,380	1,590	1,410	1,560	1,210
Total.....	177.8	204.3					

¹ See the text for designation of A-E.

Sources: See appendix, notes to table 8.

For comparison, the U.S. GNP in 1972 (in 1972 dollars) was \$1,151 billion, of \$5,515 per capita, and Soviet GNP was \$597.6 billion, or \$2,414 per capita.²⁰ Thus, the total GNP of the six countries of Eastern Europe in 1972 roughly amounted to about one-sixth that of the United States and about one-third that of the U.S.S.R. On a per capita basis the average GNP in the six countries in 1972 was about one-third that of the United States and three-fourths that of the U.S.S.R. In comparisons with countries of Western Europe at levels attained in 1970, the combined GNP of the six countries of Eastern Europe was about 15 percent less than that of West Germany. Per

¹⁹ *Gospodarka planowa*, No. 6, 1973, pp. 382-385.²⁰ *Statistical Abstract of the United States, 1975*, p. 320; 93d Congress, 1st Session, Joint Economic Committee, *Soviet Economic Prospects for the Seventies*, p. XVI.

capita levels of GNP in Czechoslovakia and East Germany were higher than in Italy, and around two-thirds to three-fourths that of West Germany and France. At the lower end of the scale, in Bulgaria, Poland, and Romania the per capita GNP was somewhat above that of Greece and Spain, but below that of Italy. Hungary ranked somewhat higher, but still below the Italian level.

III. RATES OF ECONOMIC GROWTH

Tables 9-12 present indexes of "real" GNP and NMP (that is, in constant prices) by sectors of origin of product and by end uses over the 1950-72 period. Subsequently, tables 13-16 show some of the same information as average rates of growth over the 1960-72 period. Comparisons are made with countries of Western Europe and the United States. Appendix notes to the tables indicate sources of data and provide methodological comments.

The GNP measures represent aggregations of indexes of value added in industry, agriculture, and other sectors of production. Weights for the aggregation consist of relative shares of the sectors in total GNP at factor cost in a selected base year. For each sector the weight consists of returns to labor, a net return to the current value of fixed and working capital, and depreciation of fixed capital. The NMP measures represent aggregations of gross output less material cost (including depreciation) in the material product sectors (various services are excluded; see above, p. 4). The indexes were calculated for successive subperiods, but with different prices for the various subperiods. The subperiod indexes were chain linked into overall indexes.

One should not expect necessarily very close agreement of the GNP measures and their component indexes vis-a-vis the NMP indexes and their components. As regards the overall GNP and NMP national income indexes, these may differ because of coverage (GNP includes depreciation and services that are excluded by the NMP measure), methodology, and bases of valuation. The same remark applies to corresponding sectoral indexes, but one should expect less disagreement on grounds of coverage for the sectoral measures than for the overall GNP and the NMP national income indexes.

No attempt was made to insure consistent coverage in the NMP sectoral measures over time; these measures were taken without change from the official publications. The latter often provide footnotes to tables advising the reader that reclassifications of economic activities had occurred that would introduce some degree of incomparability in the published series, but retrospective adjustments rarely were made. One major change, the reclassification of passenger transportation and communications serving households and nonmaterial sectors from the nonmaterial sphere to the material, was not made uniformly in Eastern Europe. Czechoslovakia still treats these activities as nonmaterial.

More substantial are the differences in methodology underlying our independently calculated indexes and the corresponding official indexes. But here not enough information is available on the official measures to undertake a detailed comparison. The brief statement that the official NMP measures in constant prices represent gross output minus its material cost does not answer questions concerning pricing of new products. It is believed that new industrial products are

introduced at initially high "constant" prices with a view toward subsequent reduction of these prices as the volume of production increases, but that such reductions are not made as expected.

Tables 9 (GNP indexes) and 11 (NMP indexes) agree as to the rank of overall growth of the six countries of Eastern Europe. Because GNP includes some relatively slow growing service sectors that the NMP excludes, and because some of our independently calculated sectoral indexes differ substantially from the corresponding official indexes, the extent of growth shown by the two overall measures should differ, with GNP growing more slowly than NMP. By either measure, Romania and Bulgaria, the less-developed countries of the area, showed the fastest growth over the 1950-1972 period. Poland came next, followed by Hungary, Czechoslovakia, and East Germany. The same rank order for growth is evident from the 1965-1972 period. Table 10 shows the same information as table 9, but on a per capita basis. Since the countries that showed the highest overall growth also had the highest rates of growth of population, their performance on a per capita basis is less outstanding, although the rank order in terms of extent of growth is about the same as in table 9.

TABLE 9.—INDEXES OF REAL GNP
[1965=100]

	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania
1950.....	36.7	55.3	45.5	52.5	51.0	42.3
1955.....	49.9	65.4	68.0	68.3	64.2	59.7
1960.....	73.2	88.9	86.5	82.5	80.3	77.0
1961.....	76.7	92.4	87.5	86.5	86.7	82.9
1962.....	82.4	93.7	89.8	90.2	85.6	84.7
1963.....	85.6	91.9	92.5	95.2	90.7	88.7
1964.....	93.7	96.4	95.4	100.7	94.8	94.9
1965.....	100.0	100.0	100.0	100.0	100.0	100.0
1966.....	108.2	105.3	103.3	106.3	106.3	111.0
1967.....	116.2	110.4	106.8	112.3	110.6	117.9
1968.....	122.5	116.3	111.1	115.1	118.1	122.9
1969.....	130.7	120.7	114.8	119.7	118.8	130.0
1970.....	140.5	127.3	118.5	124.9	123.5	137.3
1971.....	147.7	133.9	122.4	133.1	131.2	153.7
1972.....	158.0	138.1	127.6	138.6	142.6	166.5

TABLE 10.—INDEXES OF REAL GNP PER CAPITA
[1965=100]

	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania
1950.....	41.5	63.2	42.1	57.0	64.7	49.2
1955.....	54.6	70.7	64.5	70.5	74.1	65.4
1960.....	76.3	92.2	85.4	83.9	85.6	79.6
1961.....	79.2	94.9	87.0	87.5	91.1	85.0
1962.....	84.3	95.7	89.4	91.0	88.9	86.3
1963.....	86.9	93.3	91.8	95.8	93.1	89.7
1964.....	94.3	97.1	95.6	101.0	95.8	95.4
1965.....	100.0	100.0	100.0	100.0	100.0	100.0
1966.....	107.5	104.7	103.1	106.0	105.6	110.3
1967.....	114.7	109.3	106.4	111.5	109.0	116.3
1968.....	120.0	114.7	110.7	113.9	115.1	118.6
1969.....	127.1	118.6	114.4	118.0	114.9	123.6
1970.....	135.7	125.7	118.2	122.7	119.6	129.0
1971.....	141.9	131.6	122.1	130.4	126.0	142.9
1972.....	150.9	135.0	127.4	135.3	135.8	153.3

TABLE 11.—INDEXES OF NATIONAL INCOME (NET MATERIAL PRODUCT) PRODUCED, TOTAL AND PER CAPITA OFFICIAL FIGURES, 1950-72 ¹

[In constant prices; 1965=100]

	Total							Per capita						
	1950	1955	1960	1965	1970	1971	1972	1950	1955	1960	1965	1970	1971	1972
Bulgaria.....	36	46	72	100	152	163	175	41	50	75	100	147	157	167
Czechoslovakia.....	44	64	91	100	139	146	154	50	69	94	100	137	143	151
East Germany.....	32	60	84	100	129	135	143	30	57	83	100	129	135	143
Hungary.....	46	61	82	100	139	148	156	50	63	83	100	137	145	152
Poland.....	36	54	74	100	134	144	159	46	62	79	100	130	138	151
Romania.....	24	46	65	100	145	164	180	28	50	67	100	136	152	166

¹ Price bases used in the official calculations were various, with chain linkages at specified years, as follows: Bulgaria—1957 prices up to 1962, prices of Jan. 1, 1962, for 1962-71, thereafter, prices of Jan. 1, 1971. Czechoslovakia—1955 prices to 1960, 1960 constant prices to 1967, 1967 constant prices thereafter. East Germany—in comparable prices. Hungary—average prices of 1949 to 1954, average prices of 1954 to 1958, average prices of 1959 to 1960, unspecified prices to 1968, 1968 prices thereafter. Poland—1956 prices to 1960, 1961 prices to 1965, 1965 constant prices to 1970, 1971 constant prices thereafter. Romania—1950 prices to 1959, 1955 prices to 1965, 1963 prices thereafter, except depreciation, which is included in material cost at current prices since 1971 in the calculation of net material product.

² 1952.

Table 12 shows trends in the national income (NMP) domestically distributed to final uses. Export balances are not taken into account but should be kept in mind where investment (accumulation) comparisons are considered. Differences between total NMP produced and total NMP distributed are attributed to the foreign trade balance, to losses, and to statistical discrepancies. Romania does not provide indexes of MNP by final uses.

In all countries, over the 1950-70 period, consumption grew at a slower rate than total NMP or accumulation (net investment). This conclusion also holds with respect to 1965-72 in all countries except Bulgaria (1965-71), where the index for consumption is slightly higher, but the large difference between the indexes of NMP produced and NMP domestically distributed between 1970 and 1971 should be noted. In the period since 1970, the consumption categories grew faster than accumulation in all countries except Poland, where an import surplus made possible a high increase in all final uses, but especially of accumulation. Net investment in fixed capital grew more rapidly than other final uses in all countries, except in Czechoslovakia in the more recent years, where evidently increases in inventories accounted for the rapid growth of the comprehensive accumulation category. "Other consumption" (variously defined, but comprised mostly of consumption of material goods and services in government, defense, health, education, communal services, etc.) grew more rapidly than personal consumption (also variously defined as that which is financed by households from their own incomes or that which is attributed to household from all sources).

TABLE 12.—INDEXES OF NATIONAL INCOME (NET MATERIAL PRODUCT) DOMESTICALLY DISTRIBUTED, 1950-72
 [Official figures in constant prices; 1965=100]

	1950	1955	1960	1965	1970	1971	1972
Bulgaria:							
Total consumption.....	37.2	52.8	72.5	100	141.3	151.7	(1)
Personal consumption.....	35.5	51.1	71.3	100	140.1	148.9	(1)
Other consumption.....	96.2	108.6	116.3	100	165.4	215.4	(1)
Accumulation.....	28.3	21.5	67.1	100	167.1	147.9	(1)
Total distributed.....	34.7	43.7	71.2	100	149.0	151.4	(1)
Total NMP produced.....	36.0	46.0	72.0	100	152.0	163.0	175.0
Czechoslovakia:							
Total consumption.....	48.4	64.1	84.4	100	130.6	138.7	147.1
Personal consumption.....	51.7	63.2	86.4	100	130.1	136.4	142.9
Other consumption.....	37.4	66.8	78.0	100	132.4	145.8	160.1
Accumulation.....	18.4	66.0	125.0	100	190.0	187.0	196.9
Fixed capital (net).....	(1)	(1)	91.7	100	131.6	141.4	150.0
Total distributed.....	44.0	64.2	89.9	100	139.6	145.8	154.3
Total NMP produced.....	44.0	64.0	91.0	100	139.0	146.0	154.0
East Germany:							
Total consumption.....	35.4	63.7	88.5	100	125.7	131.0	138.9
Personal consumption.....	35.7	64.3	89.3	100	123.2	128.6	135.7
Other consumption.....	31.7	59.2	83.3	100	143.3	157.5	170.0
Accumulation.....	13.5	28.6	79.4	100	160.3 ¹	157.1	157.9
Fixed capital (net).....	15.6	31.5	84.3	100	175.3	168.5	170.2
Total distributed.....	31.3	57.4	87.0	100	132.2	136.5	143.5
Total NMP produced.....	32.0	60.0	84.0	100	129.0	135.0	143.0
Hungary:							
Total consumption.....	49.5	63.4	83.2	100	135.1	143.6	148.5
Personal consumption.....	50.3	62.8	85.4	100	133.7	141.2	146.2
Other consumption.....	33.1	46.0	83.1	100	172.8	219.5	165.6
Accumulation.....	18.9	36.8	75.5	100	192.1	196.6	198.5
Fixed capital (net).....	(1)	(1)	83.3	100	142.9	158.9	152.0
Total distributed.....	46.0	61.0	82.0	100	139.0	148.0	156.0
Poland:							
Total consumption.....	38.4	57.2	78.2	100	130.6	140.6	153.4
Personal consumption.....	40.0	58.8	79.7	100	127.9	136.9	148.9
Other consumption.....	27.2	44.5	66.7	100	150.2	167.5	185.8
Accumulation.....	27.5	45.1	66.9	100	137.3	158.6	192.4
Fixed capital (net).....	24.4	43.2	66.8	100	154.9	171.4	218.2
Total distributed.....	35.5	54.0	75.1	100	132.3	145.4	163.9
Total NMP produced.....	36.0	54.0	74.0	100	134.0	144.0	159.0

¹ Not available.

Tables 13-16 show average annual compound rates of growth at constant prices for various time periods for GNP and NMP aggregates of economic activity. Per capita GNP rates of the six Eastern European countries as a whole (taking simple arithmetic averages) were about the same as those of the European Economic Community in the various periods, that is, around 4 percent (see table 13), but lower than those of Italy, Greece, or Spain. Within the group of Eastern European countries, Bulgaria and Romania, the less developed countries, showed the higher rates, while Czechoslovakia and East Germany, the more developed countries, showed lower rates as a rule.

TABLE 13.—AVERAGE ANNUAL RATES OF GROWTH OF GNP PER CAPITA¹

[At constant prices; percent]

	1960-65	1965-70	1967-72	1960-72	1960-70
Eastern European countries:					
Bulgaria.....	5.5	5.9	5.5	5.9	.....
Czechoslovakia.....	1.3	4.5	4.4	3.4	.....
East Germany.....	3.1	3.4	3.5	3.4	.....
Hungary.....	3.9	3.9	4.0	3.9	.....
Poland.....	2.8	3.4	4.0	3.7	.....
Romania.....	4.4	4.7	5.7	5.3	.....
6 countries, simple arithmetic averages.....	3.5	4.3	4.5	4.3	.....
Other countries:					
United States.....	3.4	2.2	.....	.....	3.3
Japan.....	9.1	11.2	.....	.....	9.7
European economic community.....	4.1	4.1	.....	.....	4.1
France.....	4.5	4.9	.....	.....	4.6
West Germany.....	3.7	3.9	.....	.....	3.5
Italy.....	4.3	5.3	.....	.....	4.5
Greece.....	6.9	6.6	.....	.....	6.8
Spain.....	7.4	5.3	.....	.....	6.1

¹ By least squares fit to $I_n = I_0(1 + R)^n$.

The same data for Eastern Europe are shown in table 14 for total GNP, and there the rankings are more diverse because the relatively rapid growth of population of the less developed countries is not reflected (as it is in table 13). The rates of growth range from a low of 2 percent (Czechoslovakia in 1960-65) to a high of 7 percent (Romania in 1967-72). The rates generally correspond to the level of development, the less developed countries showing the higher rates. Rates for individual countries over the subperiods were generally consistent in holding to about the average for the 1960-72 period as a whole. Czechoslovakia was the exception; there the rate for 1960-65 (2 percent) reflect the mounting difficulties of adjustment from sellers' markets domestically and abroad, to more selective demand. The unweighted arithmetic average rates of growth of GNP of the six countries of Eastern Europe by various periods were (in percent) as follows: 1960-65—4.1, 1965-70—4.8, 1960-72—4.8. The rates for the European Economic Community, for comparison, were somewhat higher: 1960-65—5.3, 1965-70—5.4, and 1960-70—5.1.²¹

²¹ United Nations, "Yearbook of National Account Statistics, 1971" vol. III, table 4B.

TABLE 14.—GROWTH OF GNP BY SECTOR OF ORIGIN, 1960-72

[Average annual rates at constant prices; percent]

	1960-65	1965-70	1967-72	1970-72
Bulgaria:				
GNP.....	6.3	6.6	6.2	6.6
Industry (including handicrafts).....	8.4	12.2	10.1	10.3
Agriculture and forestry.....	4.5	-8	7	2.1
Construction.....	7.6	11.1	6.6	9.5
Transport and communications.....	9.9	10.4	8.6	9.8
Trade.....	6.9	8.3	7.1	7.6
Housing.....	3.0	3.6	5.3	3.8
Government and other services.....	6.6	3.6	3.5	4.7
Czechoslovakia:				
GNP.....	2.0	4.8	4.6	3.9
Industry (including handicrafts).....	2.9	6.1	6.0	5.0
Agriculture and forestry.....	-3.6	5.0	3.4	2.1
Construction.....	-8	2.7	3.6	2.4
Transport and communications.....	4.8	2.8	3.9	3.7
Trade.....	3.0	6.5	5.6	5.0
Housing.....	1.2	.9	1.1	1.0
Government and other services.....	4.3	2.9	1.2	3.1
East Germany:				
GNP.....	2.9	3.4	3.5	3.4
Industry (including handicrafts).....	3.6	3.8	4.0	3.6
Agriculture and forestry.....	1.4	4	-1.2	1.8
Construction.....	4.2	7.8	6.3	6.4
Transport and communications.....	3.2	4.1	5.7	4.0
Trade.....	2.7	5.3	5.7	4.6
Housing.....	1.2	.9	.7	.9
Government and other services.....	1.9	1.1	.9	1.8
Hungary:				
GNP.....	4.2	4.3	4.4	4.2
Industry (including handicrafts).....	6.4	4.7	4.9	5.4
Agriculture and forestry.....	1.3	2.5	1.4	1.6
Construction.....	4.0	8.8	6.5	6.4
Transport and communications.....	4.6	1.7	2.1	2.9
Trade.....	5.7	8.0	7.7	6.9
Housing.....	1.6	1.7	1.5	1.7
Government and other services.....	3.1	4.1	8.2	4.5
Poland:				
GNP.....	4.1	4.1	4.6	4.6
Industry (including handicrafts).....	6.5	6.2	6.4	6.4
Agriculture and forestry.....	.9	-1.0	-3	1.1
Construction.....	3.3	8.0	7.4	6.6
Transport and communications.....	6.6	6.1	7.8	6.8
Trade.....	4.6	6.5	7.0	5.9
Housing.....	2.3	3.6	3.4	3.1
Government and other services.....	4.5	2.5	3.1	3.3
Romania:				
GNP.....	5.0	6.0	7.0	6.3
Industry (including handicrafts).....	10.0	10.6	10.3	10.3
Agriculture and forestry.....	-1	-1.8	3.1	1.7
Construction.....	6.0	11.3	9.9	8.7
Transport and communications.....	9.2	9.7	7.5	8.9
Trade.....	9.2	7.8	7.3	8.2
Housing.....	2.4	2.5	2.8	2.4
Government and other services.....	3.2	.7	0	1.4

¹ Least squares fit to $I_t = I_0(1 + R)^t$.

The rates of growth of GNP by sectors of origin of product are not fully comparable with corresponding rates of growth of NMP (tables 14 and 15) for reasons mentioned above. These reasons refer to: (1) differences of production boundaries in the overall concepts (GNP includes depreciation and services that are excluded from NMP) and in particular sectors (e.g., Czechoslovakia excludes passenger transportation and communications serving nonmaterial sectors from NMP; other countries have added these services to their NMP concept at various times); (2) differences in bases of evaluation (the GNP measures combine indexes of component sectors by weights representing sectoral shares in GNP at factor cost in a base year; the NMP measures include such price deforming elements as turnover tax, subsidies, and accounting profits at diverse rates that do not necessarily reflect factor contributions, and these NMP measures are

chain linked at various intervals); and (3) different methodologies for construction of indexes. (Note: "Other" in table 15 refers to miscellaneous material production; it is not comparable to anything in table 14.) The GNP indexes for industry are based on sample series of production aggregated by constant price weights at lower levels and by approximations to factor cost weights at higher levels. The NMP measures are scantily described as comprising gross production less material costs (including depreciation) calculated at constant prices for subperiods and chain linked into an overall index.

TABLE 15.—AVERAGE ANNUAL RATES OF GROWTH OF NATIONAL INCOME (NMP) PRODUCED, BY SECTORS OF ORIGIN, 1960-73¹

[At constant prices; percent]

	1960-65	1965-70	1960-70	1971	1972	1973
Bulgaria:						
NMP, total.....	7.0	8.6	8.2	7.0	7.0	-----
Industry.....	9.1	12.9	11.2	9.0	8.0	-----
Agriculture.....	2.9	-2.5	1.2	-2.0	7.0	-----
Construction.....	7.6	12.3	10.9	4.0	4.0	-----
Transport and communications.....	11.9	9.9	11.6	10.0	9.0	-----
Trade.....	6.3	11.3	8.6	8.0	16.0	-----
Other.....	5.0	2.3	3.9	-----	-----	-----
Czechoslovakia:						
NMP, total.....	1.2	6.9	4.2	5.1	5.9	5.2
Industry.....	3.1	6.0	4.5	4.8	4.8	6.3
Agriculture.....	-4.2	6.3	1.2	3.3	2.7	-----
Construction.....	-5	6.4	5.3	10.4	11.4	6.5
Transport and communications.....	-9	3.4	2.2	11.8	6.9	-----
Trade.....	-4.3	14.4	3.9	2.1	9.9	-----
Other.....	5.3	17.3	11.8	-3.0	2.6	-----
East Germany:						
NMP, total.....	3.5	5.2	4.5	4.5	5.8	-----
Industry.....	4.7	5.8	5.1	5.2	5.4	-----
Agriculture.....	.7	1.0	2.1	-4.7	10.5	-----
Construction.....	4.2	8.1	6.5	4.8	4.0	-----
Transport and communications.....	3.8	4.2	3.8	6.5	6.3	-----
Trade.....	2.7	5.5	4.4	6.2	5.4	-----
Other.....	4.4	5.4	5.4	2.6	-3	-----
Hungary:						
NMP, total.....	4.5	6.8	5.4	6.5	5.1	7.0
Industry.....	6.7	7.0	6.9	6.3	5.7	7.0
Agriculture.....	.7	1.2	1.1	8.6	4.6	5.0
Construction.....	2.8	9.6	5.9	6.6	3.0	3.0
Transport and communications.....	6.2	8.4	6.7	5.8	4.5	3.0
Trade.....	4.2	8.8	6.1	11.0	5.0	6.0
Other.....	20.9	17.7	15.7	-2.7	2.7	(²)
Poland:						
NMP, total.....	6.0	6.0	6.2	8.1	10.1	10.0
Industry.....	8.6	7.9	8.3	8.5	10.4	(12.0)
Agriculture.....	1.1	-2.1	.6	7.4	4.4	-----
Construction.....	5.6	8.3	7.3	5.0	18.0	(20.8)
Transport and communications.....	7.2	6.2	7.0	12.0	12.5	-----
Trade.....	4.2	6.7	5.2	9.3	9.0	-----
Other.....	7.2	13.9	10.4	1.0	13.5	-----
Romania:						
NMP, total.....	8.9	7.8	8.8	13.0	10.0	11.0
Industry.....	13.7	11.8	12.9	12.0	12.0	15.0
Agriculture.....	-1	1.1	1.9	19.0	9.0	0.0
Construction.....	6.2	11.4	8.2	9.0	7.0	7.0
Transport and communications.....	12.6	9.3	10.9	9.0	6.0	8.0
Trade.....	11.3	-10.7	1.1	9.0	6.0	7.0
Other.....	-4	6.3	2.9	(²)	(²)	(²)

¹ Figures for 1972-73 are preliminary. The rates for periods are determined by least squares fit to $I_t = I_0(1+R)^t$.

² Not available.

A caution also should be noted as to the comparability of annual average compound rates of growth obtained by least square fit to an exponential curve. It can happen that the scattering of actual observations over a longer period is such that the derived average rate for such a period is greater (or smaller) than all the rates derived for component subperiods that exhaust the longer period. For example,

for the 1960-70 period an overall rate can emerge that is lower than the rates for both 1960-65 and 1965-70. (Such was the case for West German GDP, in percent: 1960-65—4.9, 1965-70—4.7, and 1960-70—4.6; see UN, Yearbook of National Account Statistics, 1971, Vol. III, p. 96. Wider "differences" could be cited. Such instances occur also in some of our tables which were calculated by a computer and spot checked, where "abnormalities" appear, by the more laborious reference to tables of logarithms and use of a desk calculator.) Thus, this is an additional caution to be kept in mind for comparisons between GNP and NMP growth rates for various periods and subperiods.

Despite these differences, the rates shown in tables 14 and 15 reflect the same general trends for particular sectors over the period as a whole and by subperiods. The general pattern of less developed countries showing higher rates of growth is evident for industrial production; Bulgaria and Romania are at the top, and Czechoslovakia and East Germany at the bottom in both tables (14 and 15). Industrial activity in the European Economic Community grew at the following annual rates (percent): 1960-65—6.2, 1965-70—6.6, and 1960-70—6.1.²² These rates are higher than those of East Germany and Czechoslovakia and lower than those of Bulgaria and Romania by either table 14 or 15. Rates for Poland and Hungary were closer to those of the European Economic Community.

The small differences in the indexes for agriculture for a particular country in tables 14 and 15 reflect the inclusion of depreciation in the GNP measure and its exclusion from the NMP index, and the different bases of valuation. Because the prices of farm purchases (fertilizers, fuels, etc.) in relation to average prices of farm sales, as well as the relative prices of farm outputs within total production (especially of animal products versus plant products) are subject to substantial changes, one should not expect precise agreement among various alternative indexes. The differences can in fact be very large, depending on the choice of weights (and inferences as to factor productivities and factor substitution accordingly would not necessarily be invariant). Agriculture is a relatively slow-growing sector in all the countries.

The low rates of growth of housing (table 14) should be read in conjunction with the NMP indexes for personal consumption (table 12). Official policy statements and economic plans reflect dissatisfaction with this aspect of economic progress.

The odd figure for the growth of NMP of the Romanian trade sector merits special attention as indicative of possibly less onerous manifestations of index number problems that may go uncorrected simply because the indexes do not shock observers as utterly incredible. The average annual rate of growth of minus 10.7 percent in the 1965-70 period is not a misprint. The corresponding index was published in the 1971 official Romanian statistical yearbook (*Anuarul statistic al Republicii Socialiste Romania*, 1971, p. 111) but dropped from view in subsequent issues. Taking 1950 as 100, this index reached a level of 213 in 1965 and then diminished to a value of 52 in 1970, or to less than one-fourth its peak value. At "constant prices," what should this signify? Clearly, the index is not devoid of meaning, but this meaning must be sought in a study of Romanian prices. The index obviously cannot be taken at face value and used for intertemporal and inter-

²² Ibid.

national comparisons, or used uncritically for analyses of resource allocation. It suggests care in the use of statistics of whatever provenance. Eventual findings by elaborate statistical analyses obviously may have prognostic value only if their data support is satisfactory. A number of alternative measures may provide some insurance against statistical miscarriages.

Table 16 shows average annual rates of growth of national income (NMP) domestically distributed to final uses. Because nonmaterial services are excluded from the NMP concept, the NMP indexes and the growth rates based on them are poor indicators of trends in personal and public consumption; they are better indicators of net investment than of consumption. In all countries, except Czechoslovakia, net fixed capital formation over the 1960-70 period and in subperiods thereof grew more rapidly than total consumption or personal consumption. (An index of inventory changes is not shown.) In 1971 total consumption and personal consumption grew faster than total national income (NMP) domestically distributed in Bulgaria and East Germany, and in the other countries shown in the table, a quickened rate of growth of domestically distributed national income was reflected in higher rates for consumption than in the previous five-year period. The fall of Gomulka in Poland may have had some influence on these trends. In 1972 the rates for consumption declined, except in East Germany and Poland. In the latter country concerns are being expressed about the possibility of continued favorable crop years for food production and of import surpluses to maintain consumption at a high rate of growth.

TABLE 16.—AVERAGE ANNUAL RATES OF GROWTH OF NATIONAL INCOME (NMP) DOMESTICALLY DISTRIBUTED, 1960-72¹

[At constant prices; percent]

	1960-65	1965-70	1960-70	1971	1972
Bulgaria:					
NMP, total.....	7.0	8.6	8.2	1.6	9.9
NMP, per capita.....	6.1	7.8	7.4	1.0	9.2
Total, consumption.....	6.9	7.2	7.1	7.4	6.1
Personal consumption.....	6.5	7.0	6.9	6.3	6.0
Net fixed capital formation.....	12.3	16.1	12.8	NA	NA
Czechoslovakia:					
NMP, total.....	1.2	6.9	4.2	5.1	5.9
NMP, per capita.....	.5	6.4	3.6	4.6	5.4
Total, consumption.....	2.9	6.0	4.6	6.2	6.0
Personal consumption.....	2.7	5.2	4.0	5.0	4.8
Net fixed capital formation.....	1.1	4.3	2.4	7.3	NA
East Germany:					
NMP, total.....	3.5	5.2	4.5	3.3	5.1
NMP, per capita.....	3.7	5.0	4.5	3.3	5.2
Total, consumption.....	2.1	4.5	3.5	4.2	6.1
Personal consumption.....	2.1	4.3	3.4	4.3	5.6
Net fixed capital formation.....	3.3	12.7	8.5	NA	NA
Hungary:					
NMP, total.....	4.5	6.8	5.4	11.2	-4.4
NMP, per capita.....	4.2	6.4	5.1	10.9	-4.7
Total, consumption.....	3.7	5.8	4.6	6.1	3.4
Personal consumption.....	3.5	5.7	4.5	5.6	3.7
Net fixed capital formation.....	7.5	11.3	8.0	2.4	1.0
Poland:					
NMP, total.....	6.0	6.0	6.2	9.9	12.7
NMP, per capita.....	4.6	5.1	5.2	9.0	11.8
Total, consumption.....	4.4	5.1	5.0	7.7	9.1
Personal consumption.....	4.4	5.1	5.0	7.0	8.8
Net fixed capital formation.....	7.9	9.6	9.3	10.6	27.2

¹ By least squares fit to $I_n = I_0(1+R)^n$.

IV. LABOR AND CAPITAL PRODUCTIVITY

Table 17-21 present rates of growth of labor and capital inputs and their related productivities (output index divided by the input index). Both GNP and NMP concepts are represented in the tables.

In table 17 the relatively stable total employment growth rates reflect demographic factors; more significant are the different rates of the various sectors of production. In all the countries in all periods, agricultural employment has declined. This decline was most rapid in Bulgaria and slowest in Poland, reflecting, no doubt, the system of private agriculture in the latter as contrasted to socialized agriculture in the other countries, as well as the possibilities for alternative employment. Industrial employment grew more rapidly in the less developed countries (Romania, Bulgaria, and Poland) than in Hungary and the industrially more developed countries (East Germany and Czechoslovakia). In all countries, except Romania, the rate of growth of industrial employment has slackened in the last 5 years of the larger 1960-72 period. Employment in construction has also slackened from earlier high rates, though still growing faster than the average for the economy.

TABLE 17.—AVERAGE ANNUAL GROWTH RATES OF EMPLOYMENT,¹ 1960-72

	1960-65	1965-70	1967-72	1960-72
Bulgaria, total.....	0.6	1.5	1.1	1.3
Industry (including handicrafts).....	4.2	3.5	2.1	4.2
Agriculture and forestry.....	-4.3	-3.5	-3.5	-3.9
Construction.....	6.7	5.4	3.0	5.9
Transport and communications.....	1.0	4.5	3.9	3.2
Trade.....	4.5	3.5	7.0	4.2
Other sectors.....	3.4	3.5	3.3	3.4
Czechoslovakia, total.....	1.7	1.7	1.1	1.6
Industry (including handicrafts).....	2.0	1.2	- .6	1.5
Agriculture and forestry.....	-2.3	-1.2	-1.6	-1.6
Construction.....	2.5	2.9	2.7	2.0
Transport and communications.....	2.6	2.8	2.0	2.4
Trade.....	3.1	3.2	4.3	2.9
Other sectors.....	4.2	2.8	1.2	3.1
East Germany, total.....	- .2	- .5	- .6	- .7
Industry (including handicrafts).....	- .8	- .3	- .2	- .9
Agriculture and forestry.....	-2.1	-3.5	-3.5	-2.9
Construction.....	- .6	4.5	3.5	1.9
Transport and communications.....	- .4	4.4	1.2	1.4
Trade.....	- .2	- .6	- .9	- .3
Other sectors.....	1.7	1.8	2.2	1.9
Hungary, total.....	-1.1	1.8	1.4	1.1
Industry (including handicrafts).....	2.6	2.7	1.1	2.1
Agriculture and forestry.....	-7.6	-1.5	-1.2	-3.9
Construction.....	2.2	4.9	5.1	3.7
Transport and communications.....	1.8	4.6	1.2	1.9
Trade.....	3.3	- 4.7	4.6	3.6
Other sectors.....	1.4	2.7	1.7	1.1
Poland, total.....	2.0	2.4	2.2	2.3
Industry (including handicrafts).....	2.9	3.5	2.8	3.3
Agriculture and forestry.....	- .3	- .3	- .1	- .1
Construction.....	2.1	3.9	3.2	3.2
Transport and communications.....	3.9	3.2	2.9	3.5
Trade.....	1.5	2.6	1.6	1.9
Other sectors.....	4.1	3.4	3.7	3.8
Romania, total.....	1.4	1.2	1.4	1.4
Industry (including handicrafts).....	4.9	4.0	5.8	4.6
Agriculture and forestry.....	-2.5	-2.4	-3.9	-2.6
Construction.....	5.2	4.3	3.8	4.0
Transport and communications.....	5.0	2.9	3.1	3.9
Trade.....	3.6	1.9	4.3	3.4
Other sectors.....	4.4	2.6	1.8	3.4

¹ Least squares fit to $I_t = I_0(1+R)^t$.

Average annual rates of growth of labor productivity (GNP indexes divided by employment indexes) for overall GNP have been

maintained at higher levels in Bulgaria and Romania than in the other countries (table 18). Industrial labor productivity has displayed similar stability, but in some other sectors the rates of growth have fluctuated considerably (construction, agriculture, and trade). High rates of growth of capital inputs have helped to sustain the growth of labor productivity (see tables 19 and 20).

TABLE 18.—AVERAGE ANNUAL RATES OF GROWTH OF LABOR PRODUCTIVITY, 1960-72¹

[In constant prices; percent]

	1960-65	1965-70	1967-72	1960-72
Bulgaria:				
GNP.....	5.6	5.1	5.1	5.2
Industry.....	4.2	8.7	8.0	6.2
Agriculture.....	8.8	2.7	4.2	6.0
Construction.....	.9	5.7	3.6	3.7
Transport and communications.....	8.9	6.0	4.8	6.6
Trade.....	2.4	4.8	.1	3.4
Czechoslovakia:				
GNP.....	.3	3.1	3.4	2.2
Industry.....	.9	4.9	5.4	3.4
Agriculture.....	-1.2	6.2	5.1	3.7
Construction.....	-1.0	-2	.8	.4
Transport and communications.....	2.2	0	1.9	1.3
Trade.....	-1	3.3	1.2	2.1
East Germany:				
GNP.....	3.1	2.9	2.9	2.7
Industry.....	4.5	3.5	3.8	2.7
Agriculture.....	3.5	3.9	2.3	4.7
Construction.....	4.8	3.3	2.8	4.5
Transport and communications.....	2.8	3.7	4.5	3.6
Trade.....	2.9	5.9	6.6	4.9
Hungary:				
GNP.....	4.3	2.4	3.0	3.3
Industry.....	3.8	2.0	3.8	3.3
Agriculture.....	8.9	3.9	3.5	5.5
Construction.....	1.8	4.0	1.4	2.7
Transport and communications.....	2.8	1.0	.9	2.0
Trade.....	2.4	3.3	3.1	3.3
Poland:				
GNP.....	2.1	1.8	2.5	2.3
Industry.....	3.6	2.8	3.6	3.1
Agriculture.....	1.2	-.7	-.2	1.3
Construction.....	1.2	4.1	4.2	3.5
Transport and communications.....	2.7	2.9	4.9	3.4
Trade.....	3.1	3.9	5.4	4.0
Romania:				
GNP.....	3.6	4.8	5.6	4.9
Industry.....	5.1	6.6	4.5	5.7
Agriculture.....	2.3	.6	6.9	4.3
Construction.....	.8	6.9	6.2	4.7
Transport and communications.....	4.2	6.7	4.3	5.1
Trade.....	5.6	5.9	2.9	4.8

¹ By least squares fit to $I_t = I_0(1+R)^t$. Each productivity index is the ratio of the corresponding output (gross value added) and labor input indexes.

Massive fixed capital inputs have taken place in all the countries of Eastern Europe (tables 19 and 20). Rates of growth of fixed capital have been particularly high in Bulgaria and Romania. Fixed capital growth has been higher in the material production sector than in the nonmaterial sector. Within the material production sector, industry and construction have experienced higher rates than other sectors. Agriculture witnessed less rapid growth of fixed capital than the average for material production sectors as a whole in Bulgaria, Hungary, Poland, and probably Romania, and more rapid growth than this average in Czechoslovakia and East Germany. This evidently reflects the labor scarcity in the latter countries.

TABLE 19.—OFFICIAL INDEXES OF FIXED CAPITAL, SELECTED YEARS, 1950-72

[A: 1950=100 except Bulgaria (1952), B: 1960=100; C: 1965=100]

	Bulgaria			Czechoslovakia			East Germany		
	1960	1965	1971	1960	1965	1972	1960	1965	1971
Industry:	264	522	1,057	156	200	273	100	138	188
A.....	100	198	401	100	128	176	100	138	188
B.....	51	100	203	78	100	137	72	100	136
C.....									
Agriculture and forestry:	155	243	370	149	194	267	100	139	193
A.....	100	157	239	100	130	179	100	139	193
B.....	64	100	152	77	100	138	72	100	139
C.....									
Construction:	229	502	1,261	174	229	389	100	162	287
A.....	100	219	550	100	132	224	100	162	287
B.....	46	100	251	76	100	170	62	100	177
C.....									
Transport and communication:	130	159	256	139	163	200	100	121	144
A.....	100	122	196	100	117	144	100	121	144
B.....	82	100	161	85	100	123	83	100	119
C.....									
Trade:	192	301	668	149	189	317	100	129	173
A.....	100	157	348	100	127	213	100	129	173
B.....	64	100	222	79	100	168	78	100	134
C.....									
Material production, total:	174	282	513	152	193	266	134	179	241
A.....	100	162	295	100	127	175	100	134	181
B.....	62	100	182	79	100	138	75	100	134
C.....									
Nonmaterial production, total:	134	168	230	130	150	192	111	119	132
A.....	100	125	171	100	115	148	100	107	119
B.....	80	100	137	87	100	129	93	100	111
C.....									
Total, all sectors:	153	222	364	140	171	227	121	146	181
A.....	100	145	238	100	122	162	100	121	150
B.....	69	100	164	82	100	133	83	100	124
C.....									

	Hungary			Poland			Romania		
	1960	1965	1972	1960	1965	1972	1960	1965	1972
Industry:							225	357	836
A.....	100	133	208	100	138	235	100	159	372
B.....	75	100	156	72	100	170	63	100	234
C.....									
Agriculture and forestry:							127	159	257
A.....	100	171	220	100	111	145	100	125	202
B.....	58	100	129	90	100	131	80	100	162
C.....									
Construction:	768	1,380	3,560				477	791	1,800
A.....	100	179	464	100	161	335	100	166	377
B.....	56	100	259	62	100	208	60	100	227
C.....									
Transport and communication:	120	140	177				131	177	307
A.....	100	116	147	100	117	162	100	135	234
B.....	86	100	127	85	100	138	74	100	173
C.....									
Trade:	185	304	617				(¹)	(¹)	(¹)
A.....	100	164	333	100	136	190			
B.....	61	100	203	74	100	140			
C.....									
Material production, total:	156	199	300	144	179	269	(¹)	(¹)	(¹)
A.....	100	128	192	100	124	187			
B.....	78	100	150	81	100	151			
C.....									
Nonmaterial production, total:	127	147	187	117	131	157	151	191	270
A.....	100	116	148	100	112	134	100	127	178
B.....	86	100	128	89	100	120	79	100	140
C.....									
Total, all sectors:	142	173	243	129	153	207	161	223	399
A.....	100	122	172	100	118	160	100	138	248
B.....	82	100	141	85	100	136	72	100	180
C.....									

¹ Not available.

TABLE 20.—AVERAGE ANNUAL RATES OF GROWTH OF FIXED CAPITAL INPUTS AND CAPITAL PRODUCTIVITY, SELECTED PERIODS, 1960-72¹

[In constant prices; percent]

	1960-65	1965-70	1967-72	1960-72
Bulgaria:				
Capital inputs:				
Industry.....	13.6	12.7	11.0	12.3
Agriculture.....	9.0	7.1	6.6	7.7
Construction.....	16.8	16.0	10.9	15.7
Capital productivity:				
Industry.....	-5.1	-5	-9	-2.0
Agriculture.....	-4.5	-7.9	-5.9	-5.6
Construction.....	-9.2	-4.9	-4.3	-6.2
Czechoslovakia:				
Capital Inputs:				
Industry.....	5.2	4.2	4.9	4.6
Agriculture.....	4.9	4.3	5.0	4.5
Construction.....	7.5	7.7	8.6	7.3
Capital Productivity:				
Industry.....	-2.	1.9	1.1	.4
Agriculture.....	-8.5	.6	-1.5	-2.4
Construction.....	-8.3	-5.0	-5.0	-4.9
East Germany:				
Capital inputs:				
Industry.....	6.4	4.9	5.5	5.7
Agriculture.....	6.6	5.6	5.0	5.7
Construction.....	9.9	10.1	10.4	9.2
Capital productivity:				
Industry.....	-2.8	-1.1	-1.5	-2.1
Agriculture.....	-5.2	-5.1	-6.2	-3.8
Construction.....	-5.8	-2.2	-4.2	-2.8
Hungary:				
Capital inputs:				
Industry.....	5.6	6.0	6.4	6.0
Agriculture.....	5.2	7.0	8.6	6.7
Construction.....	11.2	10.9	15.0	11.9
Capital productivity:				
Industry.....	.8	-1.3	-1.5	-.5
Agriculture.....	-3.9	-4.5	-7.2	-5.1
Construction.....	-7.2	-2.1	-8.5	-5.5
Poland:				
Capital inputs:				
Industry.....	6.5	7.5	7.6	7.1
Agriculture.....	2.1	3.8	3.9	3.2
Construction.....	9.4	11.4	9.3	9.9
Capital productivity:				
Industry.....	0	-1.3	-1.1	-.7
Agriculture.....	-1.2	-4.8	-4.2	-2.0
Construction.....	-6.1	-3.4	-1.9	-3.3
Romania:				
Capital inputs:				
Industry.....	9.5	12.3	12.4	11.2
Agriculture.....	4.2	5.8	7.7	6.0
Construction.....	10.4	10.5	11.3	11.1
Capital productivity:				
Industry.....	.5	-1.8	-2.0	-.9
Agriculture.....	-4.3	-7.6	-4.6	-4.3
Construction.....	-4.4	.7	-1.4	-2.3

¹ Rates determined by least squares fit to $I_n = I_0(1+R)^n$. The capital productivity indexes are the ratios of the sectoral output (GNP) indexes to the capital input indexes.

Official national indexes of employment, fixed capital, national income originating factor productivities, and capital-labor ratios, 1960 versus 1972, are arrayed in table 21. Rows 4, 5, and 6 follow by ratios of rows 1, 2, and 3. We leave it to the reader to scan the relationships.

The question immediately arises as to what future prospects for the economies of Eastern Europe are foreshadowed by their past performance as indicated by various measures of inputs and outputs. This question is of mounting concern to the planners and economists

of the countries concerned, as well as of interest to students of economic development generally. We may harken here to the advice in the J. E. C. compendium, "Soviet Economic Prospects for the Seventies," page 134, calling for the formulation of a model that would relate relevant economic series (output, labor, capital, research and development expenditures, education, et cetera) in such a way as to forecast future performance.²³ One can only endorse the need for prognoses, and prognoses will no doubt be made by application of explicit models, or by simple extrapolation of past experience, or by something much cruder in the form of a glance at the demographic considerations and some intuitive address to psychological and sociological principles that could scarcely qualify as a model.

TABLE 21.—INDEXES OF EMPLOYMENT, FIXED CAPITAL, NATIONAL INCOME (NMP), LABOR PRODUCTIVITY, CAPITAL PRODUCTIVITY, AND CAPITAL-LABOR RATIOS, 1972 (1960=100)

[Official data]

	Total national income	Industry	Agriculture	Construction
Bulgaria: ¹				
Employment.....	99.9	153.4	66.0	193.4
Fixed capital.....	295.0	2401.0	239.0	550.0
National income originating (NMP).....	225.0	302.8	103.2	266.6
Labor productivity.....	225.2	197.4	156.4	137.8
Capital productivity.....	76.3	75.5	43.2	48.5
Capital, labor ratio.....	295.3	261.4	362.1	284.4
Czechoslovakia:				
Employment.....	111.6	120.2	77.5	127.4
Fixed capital.....	3 175.0	175.6	178.5	223.4
National income originating (NMP).....	171.1	180.3	108.0	185.2
Labor productivity.....	153.3	150.0	139.4	145.4
Capital productivity.....	97.8	102.7	60.5	82.9
Capital, labor ratio.....	3 156.8	146.1	230.3	175.4
East Germany: ¹				
Employment.....	101.4	102.0	71.8	118.0
Fixed capital.....	180.6	187.5	193.3	287.1
National income originating (NMP).....	161.6	175.6	104.8	190.4
Labor productivity.....	159.4	172.2	146.0	161.4
Capital productivity.....	89.5	93.6	54.2	66.3
Capital, labor ratio.....	178.1	183.8	269.2	243.3
Hungary:				
Employment.....	101.2	125.0	59.7	147.0
Fixed capital.....	192.5	207.5	220.5	464.0
National income originating (NMP).....	189.9	225.6	111.5	194.7
Labor productivity.....	187.6	180.5	186.8	132.4
Capital productivity.....	98.6	108.5	50.6	42.0
Capital, labor ratio.....	190.2	166.4	369.3	315.6
Poland:				
Employment.....	122.4	146.4	98.0	146.9
Fixed capital.....	187.0	235.0	145.0	335.0
National income originating (NMP).....	214.5	266.5	116.0	236.9
Labor productivity.....	175.2	182.0	118.4	161.2
Capital productivity.....	114.7	113.4	80.0	70.7
Capital, labor ratio.....	152.8	160.5	148.0	228.0
Romania:				
Employment.....	101.1	180.6	70.6	178.3
Fixed capital.....	(⁴)	371.6	202.4	377.4
National income originating (NMP).....	278.0	430.1	135.5	283.0
Labor productivity.....	275.0	238.2	191.9	158.7
Capital productivity.....	(⁴)	115.7	66.9	75.0
Capital, labor ratio.....	(⁴)	205.8	286.7	211.6

¹ 1971 data.

² Includes forestry.

³ Freight transport only.

⁴ Not available.

We abstain from offering any quantifications of prospects, but we shall discuss in the next section some of the problems confronting these economies and some of the efforts of their economists and other observers to find solutions. Here we suggest that more consideration

²³ See the article by Robert W. Campbell, M. Mark Earle, Jr., Herbert S. Levine, and Francis W. Dresch.

than in the past should be given to the relativity of intertemporal and international economic comparisons to the bases of valuation and to techniques of index number construction. There is a great need for cumulation of findings by various models, and by many alternative economic input and output series to be applied to such models, in order to establish empirically whether some stability of findings, or a narrow range of results will emerge. For it does not seem to be a matter of indifference what output series should be matched against given labor and capital input series in the quest for explanation of past growth and future prospects. The official indexes of outputs are being modified in a number of instances. Independent calculations using early period, intermediate period, or late period weights suggest very substantial sensitivity of calculated aggregate indexes to the weighting regimens.

Many refinements or alternative series of labor inputs are evident and available from national statistics: economically active persons, full man-year equivalent series, man-hour series, wage-weighted labor inputs, education-level weighted inputs, etc. Taking account of such refinement obviously would help explain economic growth.

The immediate prospect for the capital input measures, however, is less promising. The capital stock series in full initial cost is given only in current prices in Bulgaria; the price base is not specified in Romania. Much of the fixed capital carried in the official series in East European countries is obsolescent. The relation of net capital stock to gross capital stock depends on the applicable rates of depreciation, and such rates may be available in a number of real and hypothetical alternatives. In Hungary the average level of depreciation rate was raised by 40 percent in 1968.²⁴ Poland is raising depreciation rates that will very sharply reduce the lives of various types of fixed capital. Bulgaria and Czechoslovakia are elaborating new norms for depreciation. Bulgaria is planning a capital census for the next year in order to facilitate studies of productivity that cannot be carried out with the present inadequate information. Current discussions indicate that the fixed capital stock in Eastern European countries has in it much deadwood that should be eliminated by sharply higher rates of scrapping. New policies in all countries are calling for less construction of new plants and more modernization of existing facilities. What this betokens is eventually better information on fixed capital; what it suggests for the present is caution on findings based on the presently available fixed capital series.

V. FUTURE PROSPECTS AND CURRENT PROBLEMS

Judged on the basis of comparative rates of growth, the economies of Eastern Europe on the whole more than held their own in the second half of the 1960's as compared with the first half. This is the case whether we use GNP or NMP indexes, or their derived rates of growth, overall or per capita (tables 9-15, 22). Performance in 1971, 1972, and 1973, to the extent that results have been published, has been somewhat uneven, but, on the whole, the tempos of the 1965-70 period have been maintained. Bulgaria shows some signs of slight slackening of its rate of growth in 1971-72, but is still growing at a fast rate.

²⁴ B. Sitnin, "Khozraschet Relations in European CMEA Countries," *Planovoe Khoziaistvo*, July 1973, p. 103.

Czechoslovakia has eased the pace but is growing faster in 1971-73 than in 1960-65. East Germany in 1971-72 seems to have maintained the average rate of the preceding half decade; Hungary does likewise in 1971-73. Poland and Romania in 1971-73 are apparently enjoying an economic boom in comparison with either half of the decade of the 1960's. The six countries of Eastern Europe as a whole grew about as fast as the European Economic Community (EEC) during the 1960's, but one might expect them to have grown somewhat faster in view of their lower level of development. If Bulgaria and Romania are excluded, the average performance of the remaining four countries of Eastern Europe is below that of the EEC.

What are their future prospects? Their problems are numerous: growing labor scarcities; unsatisfactory rates of growth of labor productivity, despite the high rates of investment; obsolescent technology; misdirected investment allocations of the 1950's and 1960's, inconsistent and conflicting elements in their systems of planning and management; apathy on the part of employees; rising expectations of consumers confronting governments that are less able than in the past to ignore them in favor of increased investments; inefficiency in production and stagnation of technological progress induced by sheltered markets at home and in the Socialist Council on Mutual Economic Assistance (CMEA) bloc; limited possibilities for wider participation in world trade because of dependence on Soviet sources of raw materials (iron ore, oil, gas, cotton, et cetera.); pressures to shorten the workweek to catch up with such reductions achieved much earlier in other countries; anticipated rising costs for protecting the environment from pollution; and rising costs of imported raw materials, to name some of the more immediate ones. (Poland is projecting an expenditure of 1.5 percent of the national income by 1990 on environmental protection—"Gospodarka Planowa," No. 10, 1973, pp. 649-660.) There is general dissatisfaction with the quality of production—a matter that is intimately connected with the web of problems relating to personal motivations, enterprise incentives, competition with foreign producers, and technological progress. Housing remains scarce, and consumer services are inadequate. We shall discuss briefly some of the problems of resource allocation confronting the economies of Eastern Europe in the 1970's, but first let us consider the prospects for the immediate future in the light of past performance and the plans for 1971-75.

Table 22 presents rates of growth of a number of economic indicators for the 5-year plan intervals of the 1960's for the individual years of 1971 and 1972, and for the 1971-75 plan. The rates set for 1971-75 and the results achieved for 1971-72, taken in comparison with the rates realized for 1966-70, indicate some slackening of growth for Bulgaria, Czechoslovakia, East Germany, and Hungary (see the rates for national income produced, gross industrial production, and gross agricultural output). By the same measures, Poland and Romania have planned for 1971-75 and are achieving in 1971 and 1972 higher rates than in 1966-70 (except for gross industrial production in Romania, which is growing at essentially the same rate as in 1966-70). Labor productivity rates of growth planned for 1971-75 are equal to or higher than those achieved in 1966-70, and the targets are being met by Czechoslovakia, Hungary, and Poland in 1971-72. Bulgaria and Romania are lagging somewhat with respect to the

1971-75 targets and the 1966-70 rates for labor productivity, but the rates achieved in 1971-72 are still high compared to those of other countries in the area. East Germany is also mildly lagging in 1971-72 with respect to more modest past performance and the 1971-75 target.

National income (NMP) domestically used may differ for a given country in comparison to its national income produced in the same period or year. Such differences can arise mostly on account of foreign trade balances, but also on account of losses and statistical discrepancies. The necessity to redress unfavorable trade balances may be indicated by planned rates being set lower for national income used than for national income produced. The rates for these two indicators show overall agreement in the countries represented in table 22, although some differences are evident for particular periods. For example, in 1971 and 1972, Poland has shown substantially higher rates for national income consumed than for national income produced. Foreign credits to finance net imports have helped here.

The 1971-75 plans show higher target rates for growth of gross investment than for consumption in all countries except Bulgaria. In 1971, however, the growth of consumption was faster than that of gross investment in Czechoslovakia, East Germany, and Poland, as well as Bulgaria.

Thus, performance rates achieved in 1971-72 and the planned growth rates for 1971-75 broadly indicate a continuance of the growth of the 1966-70 period, with some differences among countries, as noted above. In all countries, the rates of growth of national income produced in 1971-72 and planned for 1971-75 are higher than those realized in 1961-65. The statistical performance, however, does not adequately take into account the quality of growth or the problems that lack of balanced growth may produce in the future.

TABLE 22.—AVERAGE ANNUAL RATES OF GROWTH, SELECTED INDICATORS¹

	1961-65	1966-70	1971	1972	1971-75 (plan)
Bulgaria:					
National income produced (NMP)...	6.7	8.7	7.0	7.0	7.7- 8.5
Industrial production, gross value...	11.7	11.3	9.6	8.3	9.2- 9.9
Agricultural output, gross value.....	4.3	4.7	3.1	4.8	2.3- 3.7
Labor productivity in industry.....	7.2	6.9	7.2	5.9	7.6
National income domestically used (NMP).....	7.0	8.3	1.6	9.9	8.1
Total consumption.....	6.7	8.2	5.5	5.0	8.4- 9.4
Gross fixed investment.....	14.2	² 12.3	- .8	³ 10.7	6.0- 7.0
Czechoslovakia:					
National income produced (NMP)...	1.9	6.9	5.1	5.9	5.1
Industrial production, gross value...	5.2	6.8	6.9	6.4	6.0- 6.3
Agricultural output, gross value.....	4	3.5	3.2	3.6	2.7
Labor productivity in industry.....	3.3	5.3	6.4	5.8	5.4- 5.7
National income domestically used (NMP).....	1.2	7.0	5.1	5.9	-----
Total consumption.....	3.4	⁴ 5.6	6.3	6.0	4.9
Gross fixed investment.....	5.7	7.2	5.7	8.3	6.2- 6.5
East Germany:					
National income produced (NMP)...	3.5	5.3	4.5	5.4	4.9
Industrial production, gross value...	⁵ 5.9	6.6	5.6	6.3	6.0
Agricultural output, gross value.....	1.8	1.5	-1.1	8.5	2.4
Labor productivity in industry.....	5.9	6.2	4.9	5.0	6.2
National income domestically used (NMP).....	3.5	5.5	3.3	5.1	4.0
Total consumption.....	2.3	4.6	4.0	-----	4.2
Gross fixed investment.....	7.0	9.7	0	3.0	5.2
Hungary:					
National income produced (NMP)...	4.1	6.8	7.0	5.0	5.5- 6.0
Industrial production, gross value...	8.0	6.1	5.0	5.6	5.7- 6.0
Agricultural output, gross value.....	1.6	3.0	9.6	5.0	2.8- 3.0
Labor productivity in industry.....	5.1	3.6	5.3	6.5	4.5- 5.0
National income domestically used (NMP).....	4.5	7.4	11.2	-4.4	5.4
Total consumption.....	3.7	6.0	6.2	⁶ 3.5	5.0
Gross fixed investment.....	9.2	² 8.4	9.9	-2.0	8.1- 8.4
Poland:					
National income produced (NMP)...	6.2	6.0	8.2	9.0	7.0
Industrial production, gross value...	8.5	8.4	8.3	10.8	8.4
Agricultural output, gross value.....	2.6	2.9	3.7	8.1	3.6- 3.9
Labor productivity in industry.....	5.2	4.9	4.9	6.0	⁸ 5.4
National income domestically used (NMP).....	6.0	5.9	9.9	12.7	7.0
Total consumption.....	4.9	5.4	7.7	9.1	6.6
Gross fixed investment.....	8.2	8.1	7.7	⁷ 21.5	8.3
Romania:					
National income produced (NMP)...	9.1	7.7	12.9	10.0	11.0-12.0
Industrial production, gross value...	13.7	11.8	11.5	11.7	11.0-12.0
Agricultural output, gross value.....	3.2	4.2	18.4	9.0	6.3- 8.3
Labor productivity in industry.....	7.3	7.3	6.3	7.1	7.3
Total consumption.....	-----	6.2	-----	-----	7.6

¹ See appendix, notes to table 22.

² Annual average change from preceding 5-year period.

³ Estimated.

⁴ 1967-70.

⁵ Commodity production (production de biens).

⁶ Consumption by the population.

⁷ State and cooperative sectors only.

⁸ Includes construction.

Fixed capital stocks are growing at significantly different rates in the countries of Eastern Europe (see tables 20 and 21). Romania and Bulgaria show rates up to two times as high as the other countries. The "actual" rate of increase of combined labor and capital productivity is an unclear matter, partly because the indexes of capital inputs and of production in industry and other sectors are of uncertain reliability, are available in a number of alternatives, and perhaps are ill-matched for deriving results that possess prognostic value. Nevertheless, there is some evidence that a preferentially higher rate of growth of gross investment as compared to that of consumption is beginning to be questioned by the policymakers in these countries. Rising popular expectations for a better standard of living motivate such considerations.

The rates of growth of GNP and its consumption and investment components, and their shares in the total GNP are intimately interconnected with rates of growth of labor and capital inputs and their combined productivity. Bergson's projections for the Soviet economy for the period 1970-80 under various assumptions as to rates of growth of factor inputs, their relation to output in a production function, and various rates of growth of factor productivity, illuminate also the problems confronting Eastern European countries.²⁵ A higher rate of growth of factor productivity obviously can compensate for falling rates of growth of labor inputs and relatively low rates of growth of capital stock. The quest for higher productivity underlies the various tinkering and the more substantial reforms of economic systems in Eastern Europe.

The inverse relationship in Eastern Europe between the level of development and the rate of economic growth finds reflection in the kinds of economic priorities set in these countries. At one extreme, Romania, with ample resources of manpower and rich raw material resources, is pushing extensive development—rapid expansion through increased employment and new production facilities. Quantity of output takes precedence over quality, investment grows at a high rate, output of producer goods grows faster than output of consumer goods, development of the tertiary, service sector is lagging. Plans for the near term call for very rapid growth of both industry and agriculture, and some disproportions and bottlenecks in supply may be expected to appear. Bulgaria, also on the extensive mode, is experiencing lower rates of growth of total employment but at the same time showing some fast tempos for growth of employment in service sectors (table 17). Poland's more ample manpower supply should support extensive development into the mid-1980's, but already concerns are expressed over the lag in supply of services to households and the need to give more emphasis than in the past to modernization of existing production capacities. Efforts are being made to get a greater contribution to economic growth from labor productivity than in the past. Hungary's policies reflect the evident labor scarcity; emphasis is placed less on rapid quantitative growth and more on quality, efficiency, balanced growth, and advanced technology. Investment policies stress modernization of existing facilities and efforts to reduce the volume of unfinished construction of new capacities.²⁶ The more highly developed economies of Czechoslovakia and East Germany show the lowest overall growth rates in the area. The urgency for improving factor productivity is greatest for them because their manpower situation is the least favorable. East Germany is attempting to maintain strong and relatively detailed central economic direction and at the same time to promote the spread of modern technology by giving priority in development to the high-technology bearing branches—chemical industry, machine building, electro-technical equipment, electronics, instruments, and synthetic materials.²⁷

The tight labor supply in the more developed countries of Eastern Europe was made more stringent by the adoption of shorter work hours (for example, East Germany introduced a 5-day work week in 1967). Employment of women has increased rapidly in the postwar

²⁵ Abram Bergson, "Toward a New Growth Model," *Problems of Communism*, March-April, 1973, pp. 1-9.

²⁶ Gyula Nemeth and Mrs. Bela Sziklay, article in *Gazdasag*, No. 3, 1973, pp. 83-102.

²⁷ V. Isunov, "Development of the GDR Economy in 1971-1975," *Voprosy ekonomiki*, No. 2, 1973, pp. 75.

period, and they now represent relatively large shares of total employment in Eastern Europe. Thus, in 1972, as percentages of the indicated totals, these shares were as follows: Bulgaria—42.5 (of total number of workers and employees), Czechoslovakia—47.4 (of total employment in the national economy), East Germany—49.0 (of total employment in the national economy; or 50.2 of the total number of workers and employees), Hungary (1973)—42.9 (of total employment in the national economy), Poland (1970)—46.0 (of total “economically active” population), and Romania—32.2 (of total number of workers and employees).²⁸ There is some scope here for further increased participation of women in total employment, but in Czechoslovakia and East Germany it would appear that the practical limit has been reached.²⁹ In Poland, over 70 percent of the total number of employed women are married, and over 50 percent of the working mothers have children of age 6 or younger. Forecasts for 1976–1980 assume further growth of participation of women in employment. Of those within the working-age bracket, the percentage employed is expected to increase from 73.4 in 1975, to 78.3 in 1980, and the increase will be highest in the 24–35 age group.³⁰ Part-time jobs are being urged for women.

Labor migration within the CMEA area does not appear to be considered a solution to regional manpower shortages. (See “International Symposium on Labor Resources in CMEA Countries,” *Voprosy ekonomiki*, No. 2, 1973, pp. 151–155.)

As the easy gains of growth through increased employment are approaching exhaustion in Eastern Europe, there is increased concern being shown over more efficient utilization of the available manpower and capital resources. Past economic performance is being analyzed to identify the sources of growth. An example of such studies is an analysis of the growth of Polish industrial production in 1965–68.³¹ The authors of this study quantify the contributions to growth of total industrial output by 22 branches in terms of: (1) structural changes of employment among branches of industry; (2) increased employment; (3) increased labor productivity (output per employee); and (4) a joint contribution of items (1)–(3). The analysis was carried out by a method of difference analysis, assuming that output is equal to the product of employment and labor productivity and relating the later period (1968) to the earlier by means of changes in employment by branches of industry, in labor productivity, in structure of output, and in ratios of branch employment to total employment in industry.³²

The authors concluded that the increment in industrial production, 1965–68, was attributable (in percentages of the total) to: (1) Changes in structure of employment, (–) 1.01, (2) changes in employment, 56.28; (3) changes in labor productivity, 40.20; and (4) joint contribution of items, (1) to (3), 4.52. Textiles, chemicals, and fuel branches accounted for about 80 percent of the total contribution of the 22 branches attributable to labor productivity. Increased employment was evidently the dominant factor in the growth of industrial

²⁸ Sources: Statistical yearbooks of the indicated countries.

²⁹ In the U.S.S.R. in 1970, women accounted for 51 percent of total employment in the national economy—N. Tatarinova, “Scientific-Technical Progress and the Labor of Women,” *Voprosy ekonomiki*, No. 11, 1973, p. 58.

³⁰ *Zycie gospodarze*, March 10, 1974, p. 6.

³¹ Mirosława and Jan Klamut, “Influence of Structural Changes on Factors of Economic Growth,” *Gospodarka planowa*, No. 1, 1973, pp. 20–26.

³² The authors are appropriately modest regarding the economic interpretations they place on their mathematical formulations, stating that replacement of one arbitrary interpretation by another may still leave one in a situation described by Strumilin as “in lifting the nose out of the mud, the tail sinks; in lifting the tail, the nose sinks.”

production. The authors caution that the study should be regarded primarily as illustrative of a method of analysis and that the period of study (1965–68) was too short to average out the fluctuations that affect the observations.

Zoltan Roman addressed the issue of labor productivity in Hungary by taking into account the contribution of fixed capital.³³ His analysis proceeds by comparison of indexes of outputs with indexes of labor inputs and combined labor and capital inputs. He presents a formula for calculation of total factor productivity which has in its numerator an index of production, and in its denominator an index of combined labor (L) and capital (C) input indexes: $aL + (1-a)C$, where "a" is the relative weight assigned to labor. When made explicit in the form of a production function and when carried to the extent of displaying the elasticity of substitution of one factor for another, it is clear that this formulation with fixed weights results in an infinite elasticity of substitution.³⁴ Roman carries his analysis so far as to estimate quantitatively the sources of growth of Hungarian national income (NMP) in percentage shares contributed by various factors: population, rates of participation in labor force of eligible population, employment, share of employment in the "material" sphere of production, simple labor productivity (output per employee), factor substitution, education, economies of scale, structural changes of employment, combined labor and capital inputs, and total productivity.³⁵

Similar studies aiming at explaining past economic growth are being undertaken both within Eastern Europe and outside the area.³⁶ The results should be judged both on grounds of theoretical adequacy and empirical validity. The discussion of various approaches and the cumulation of results purporting to have prognostic value no doubt will help illuminate the causes of economic growth. Studies that aim to illustrate a method and those that are hypothetical, or speculative, that seek to set possible limits to courses of development, of course merit the attention of serious students. But prognostication can be misleading when a single forecast is made under circumstances where many, possibly widely divergent, forecasts can be made under even a single theoretical approach, but using a variety of indexes of inputs and outputs. In the case of Hungary, for example, there are several choices for an index of industrial production, and other alternatives can be produced under various assumptions concerning index number formulas, actually available price weights of various vintages, value-added or gross-output product group and branch weights based on factor cost or on market prices, etc.³⁷

Concern over labor and capital productivity in Eastern Europe is reflected in measures designed to facilitate the introduction of new, technologically advanced fixed capital and to eliminate from the stock items that are fully depreciated or morally obsolescent. Amortization

³³ Zoltan Roman, "The Dynamics of Labor Productivity in the National Economy of Hungary," *Voprosy ekonomiki*, No. 6, 1973, pp. 85-92.

³⁴ A number of earlier researchers had proceeded similarly, as indeed we did also, but other means of combining labor and capital inputs are currently the standard. These allow for various elasticities of substitution, either by assumption based on empirical evidence, or implicitly determined by choice of production function and alternative empirical data.

³⁵ Roman, *op. cit.*, p. 91.

³⁶ E.g., see the article by Miklos Siman, "Sources of the Increase in Production, 1967-1972," *Kozgazdasagi szemle*, No. 1, 1974, pp. 1-22.

³⁷ Among the Hungarian industrial production indexes are gross output measures, net output measures, and indexes based on sample product series aggregated on lower levels by hours worked and on higher levels by various approximations to value added (including indexes prepared by Zoltan Roman and published through 1964, and, in 1968, a new official index using sample series with various modifications).

periods had been set for too long periods of useful life, with depreciation rates too low. Despite this, fixed capital continues to be kept in stock long after its life has expired. In Hungary, in 1971, the value of fixed capital in use, whose life had expired, increased to 51 percent in industry and 22 percent in transportation and communication.³⁸ Beginning January 1, 1974, the predominant majority of Polish state and cooperative enterprises will be applying new rates of depreciation.³⁹ These rates will be higher than the old rates by 43 percent on machinery, equipment and means of transport, and by 34 percent on buildings and constructions. As a result, the period of use (in years) should drop from about 19 to 13 on machinery and equipment, and from more than 43 to 35 on buildings and constructions. Hungary, East Germany, and Romania already had introduced new, higher rates of depreciation, and Czechoslovakia is planning to do so.⁴⁰ Bulgaria will take a census of fixed capital on December 31, 1974, hoping to establish uniform valuation, to make possible proper application of norms of depreciation, and to create a basis for comparisons of capital intensity and for economic analyses.

These measures may be expected to raise questions about the consistency of fixed capital indexes over time. If to some substantial degree the present series are burdened by capital stock that long ago should have been scrapped and presently will be scrapped, and if some of the capital investments were not justified on economic grounds (as was the case with some part of the investment attendant upon collectivization of agriculture), then measures relating to capital productivity and total factor productivity derived from unadjusted capital series should be interpreted with caution. Over short periods, analyses of factor productivities and substitutions may be hazardous because of abnormalities of supply (bad harvests, foreign trade problems) that may seriously warp output of a particular branch of production, and because of cyclical behavior of investment (relaxation of duress to support high rates of investment followed by renewed pressures to achieve fast growth via high rates of investment).

Despite the absence of adequate measures of factor productivity, enough is evident from rough measures of production costs and from general observations of the quantity and quality of output and its marketability in competition with foreign goods to conclude that Eastern Europe and the U.S.S.R. are seriously lagging in technology and in efficiency of production. In addition to taking such measures as directing investment expenditures primarily to completion of unfinished projects and giving priority to modernization of existing facilities rather than construction of new plant, they are emphasizing throughout the area a rapid catch-up to the technological level of industrially developed Western economies. In the short run, this is to be achieved by imports of technologically advanced equipment and processes, but for the longer run, the aim is to train and motivate scientists, managers, and employees, to improve on the imported technology and to innovate products and processes that rival best available elsewhere.⁴¹ Specialization within product groups in intra-CMEA trade is almost always invoked as a further means of improving technology.

³⁸ G. Gertsovich and B. Mihailov, "The Efficiency of Social Production in European Countries—Members of CMEA," *Voprosy ekonomiki*, No. 11, 1973, pp. 108–119.

³⁹ Zdzislaw Fedak, "New Rates and Principles of Amortization," *Finanse*, No. 6, 1973, pp. 1–12.

⁴⁰ G. Gertsovich and B. Mihailov, *op. cit.*, p. 115.

⁴¹ See, E. G. Jozef Pajestka, "Innovative Dynamism and the Coupling of Science with the Economy," *Ekonomista*, No. 5, 1973, pp. 1021–1038.

Training scientists and engineers is a task that economic observers in Eastern Europe bestow on their educational systems with suitable exhortations to get good results. Specialization in intra-CMEA trade should help in the longer run, but even better results should follow from broader competition on world markets. Perhaps the countries of Eastern Europe are about to experience more adverse consequences than in the past from their ties to the Soviet Union. In the new context of sharply higher world prices for raw materials (oil, natural gas, cotton, ores, etc.), the Soviet Union may exact greater counter deliveries of desired products from Eastern Europe than heretofore. Because of the need to pay for its increased imports of high-technology goods from the West, the U.S.S.R. may even deliver less raw materials to Eastern Europe than the countries there had expected. Political considerations, including the prospects of Soviet-U.S. détente, must be taken into account here.⁴²

Human motivation and economic organization are basic concerns confronting the policymakers in Eastern Europe. Their task is to devise a socioeconomic system that successfully combines motivation with organization to achieve the goals of policy. Their dilemma is how to harmonize their insistence upon the supremacy of the Communist parties and their state bureaucracy in setting goals and directing activity with the aspirations of the population in their roles as workers, managers, innovators, consumers, and contributors to policy formation. This dilemma is all the more painful because the Soviet Union limits the scope for devising alternative Eastern European economic systems to those in harmony with Soviet aims.

The economic systems currently in effect display a range of combinations of central planning and management with assorted degrees of freedom on lower levels to make decisions on wages, investments, research and development, marketing, and prices. Direct central commands are augmented by arrays of economic levers intended to guide economic activity toward the achievement of centrally established goals. At one extreme stands East Germany with relatively strong, detailed central planning and management; at the other is Hungary with less detailed central direction and more substantial devolution of decisionmaking to lower levels.⁴³ Poland comes somewhere in between, stressing both the virtues of central decision and the necessity to spur efficiency at lower levels.⁴⁴ Various schemes of rewards to managers and employees have been devised. These typically link rewards to performance as measured by various indexes: quantity of output in physical units or in constant prices, achievement of goals of assortment, profit targets, cost reductions, introduction of new products, value added in production, goals for exports, etc. Revisions of economic mechanisms, replacement of norms guiding performance, abolition of measures once regarded as salutary,⁴⁵ decentralization, recentralization—the ferment continues, and so does the basic dilemma.

⁴² See Adam B. Ulam, "The Destiny of Eastern Europe," *Problems of Communism*, January-February 1974, pp. 1-12.

⁴³ See V. Sitnin, "Khozraschet Relations in European CMEA Countries," *Planovoe Khoziaistvo*, No. 7, 1973, pp. 102-111, and V. Isunov, "Development of the GDR Economy in 1971-1975," *Voprosy ekonomiki*, No. 2, 1973, pp. 75-83.

⁴⁴ Jozef Pajestka, "Perfection of Management in Organizations Introducing New Principles of the Economic-Financial System," *Nowe drogi*, No. 10, 1973, pp. 49-63.

⁴⁵ For example, the imposition of a charge for the use of fixed and working capital placed at the disposition of enterprises was hailed as introducing rationality into price formation. Bulgaria has abolished such charges in 1973, and Hungary, a leader in their introduction, is considering their abolition or modification.

One gets the impression that the designers of East European systems of economy have been studying what is positive in Western economic systems in regard to promoting factor productivity, and striving to graft this onto their own systems. The analog of the modern Western corporation is the East European industrial association. Profit and wage motivations related to efficiency, innovations, and marketability of products—basic motivations in the West—are being adapted with various compromises in Eastern Europe.

In their forced draft industrialization under the Soviet model of socialized economy, the policymakers and central controllers in Eastern Europe have seriously weakened the most precious element: the motivation of personnel and enterprise at the local levels. Their continual programs of change in economic administration, planning, and management, reflect the necessity to reinvigorate such motivation, but they do not wish to carry it to the extent that it would challenge the political authority of the Communist parties and their government bureaucracies. The various measures of devolution of decisionmaking from the center to the enterprise, and the systems of profit incentives and differential rewards being introduced in many variations in these countries represent in essence, if not in form, half-way measures of reprivatization.

There are lessons to be learned from the economic experience of the U.S.S.R. and Eastern Europe. Forced industrialization on the Soviet model can make progress where there are ample reserves of manpower and enough state force to restrain consumption by the population to levels low enough to finance a high rate of investment by public saving. In the pressure for quantitative goals, efficiency in factor use and quality of output suffer. Technological progress yields place to extensive expansion of capacity with obsolescent techniques. Exhortations to the population to work hard and efficiently are no substitute for tangible individual rewards for special effort. When the easy sources of growth (reserves of labor, natural resources, the readily available technology of other years and other countries, the patience of the population) are exhausted, a slowdown threatens. It becomes evident that the old prescription no longer is potent. Something vital has been dulled in the process—human motivation needs a better set of stimuli than fine slogans and promises of tomorrow. The effort to catch up to the level of more developed countries requires new sources: cutbacks on bureaucracy and military spending, foreign credits to finance import of advanced technology, and a bigger slice of the national product to help refurbish the popular will to work. More than that, it requires scope for initiative from below—funds at lower levels to be spent flexibly on research and development and for differential rewards for special efforts at efficiency and innovation, and the expectation that the rewards of yesterday can be spent fruitfully to meet the needs of tomorrow.

Socialization, centralization, and organized duress were imposed upon the economies of Eastern Europe, but the disadvantages of such a system are there whether the system is introduced by force, or whether a country slides into it by slow degrees. Herein lies a lesson for other countries, whether they are underdeveloped and seek to develop rapidly, or whether they are already advanced and are confronting

double-digit inflation and a rising role of government expenditures and direct controls over economic activity.⁴⁶

The environment for personal motivation and for enterprise is becoming polluted by rigidities introduced by government measures seeking quick solutions to economic problems. Eastern Europe is trying to find its way back. Other countries can profit from that experience.

V. CONCLUSIONS

The statistical evidence on changes in economic growth and resource allocation in Eastern Europe is given in the tables. Some summary conclusions are as follows:

(1) The structure of production has shifted strikingly from 1950, when agriculture was the dominant sector in all countries, except Czechoslovakia and East Germany, to 1972, when industry became the predominant sector everywhere, and agriculture had receded to second place in most countries. Service sectors (trade, government, and other services) are gaining in importance, and in some countries, trade and government and other services already outrank agriculture in their contributions to the national product (tables 1-2).

(2) Investment has claimed a large and generally increasing share of the national product up to 1970. Plans for 1971-75 call for continued priority in the rate of growth of gross fixed investment over that of total consumption in all countries except Bulgaria (tables 4, 22). Results in 1971 and 1972, however, have shown higher rates for total consumption in Czechoslovakia (1971), East Germany (1971), and Hungary (1972).

(3) Changes in the structure of allocation of manpower and fixed capital to sectors of production are in accord with the changing composition of national product (tables 5-7). Because output per person employed in agriculture is below that of other sectors, agriculture still accounts for a share of employment that is higher than its share in the national product. It is expected that this disproportion will continue to be reduced by changes in relative prices in favor of agriculture as its share in total employment declines further.

(4) Rates of growth of GNP per capita in 1960-72 in Eastern Europe have been unexceptional. The less developed countries (Bulgaria, Romania, and Poland) have grown faster than the more developed (Czechoslovakia and East Germany). The average rate for Eastern Europe is roughly the same as that of the European Economic Community, but if Bulgaria and Romania are excluded, the average for the remaining four countries of Eastern Europe is lower than that of the EEC (table 13). The quality of growth in Eastern Europe has been unsatisfactory; the lag in technology in the area is recognized as a serious obstacle to future growth.

(5) Agriculture is the slowest growing sector in all the countries; industry is the fastest, as a rule (tables 14-15). Housing and personal services have grown unsatisfactorily.

(6) Net fixed capital formation over the 1960-70 period has grown faster than other final uses of national income in all countries except Czechoslovakia (table 16).

⁴⁶ U.S. gross fixed capital formation over the 1960-70 period averaged 17 percent of the gross domestic product; in Japan it was twice as great; in France and West Germany, about 25 percent. Government expenditures on the average in this decade claimed about 20 percent of the GDP in the United States; in Japan the share was 9 percent; in France and West Germany, about 14 percent. (See United Nations, *Yearbook of National Account Statistics*, 1971, Table 2A.)

(7) Average annual rates of growth of employment for the economy as a whole have leveled off or are falling in all countries. Agricultural employment is declining. Rates of growth of employment are generally high in industry, trade, and other services (table 17).

(8) Average rates of growth of labor productivity have been generally maintained, but with some fluctuations around an average level in most countries in the period 1960-72 (tables 18, 21, 22).

(9) Output per unit of fixed capital has shown negative rates of growth in all countries (tables 20, 21).

(10) National plans for 1971-75 and the results achieved for 1971 and 1972 indicate some slackening of growth of production for Bulgaria, Czechoslovakia, East Germany, and Hungary (table 22). Poland and Romania have planned and are achieving higher rates of growth than in 1966-70.

(11) Possibilities for further extensive growth by means of transfers of labor from agriculture and by increased employment of women are becoming limited. Sustained economic growth will require modernization of fixed capital and changes in the economic systems that will promote innovation and efficiency. Government policies for continued high rates of investment are running into the opposition of rising consumer expectations.

(12) There is inevitable ambiguity in index number comparisons because of alternative choices of prices and other weights that enable commensuration, and because of alternative methods of constructing indexes. This ambiguity requires that findings as to rates of growth and factor productivity be taken with appropriate caution. Both output indexes and factor input indexes can be prepared in a number of variants. Their correspondence in factor productivity analyses is not a matter of indifference.

(13) Various attempts are being made to modify the systems of economic planning and management by measures of decentralization and by use of automatic regulators, including success criteria and profit distributions, so as to encourage efficiency, innovation, and quality. These measures in essence, if not in form, represent a limited reprivatization of the economic system; they seek to restore something that the earlier economic systems had frustrated. Their success is problematical.

(14) Countries outside Eastern Europe, both highly developed and less developed, should profit from the experience of Eastern Europe. They should guard against the possibility of sliding into systems of economic organization that are counterproductive.

APPENDIX

NOTES ON SOURCES

Tables 1, 3-7, 11-12, 15-17, 19, and 21-22 are based directly on official data, generally given in statistical yearbooks of the respective countries or in other sources that refer to the official statistics. The principal sources used here are as follows:

Bulgaria. Tsentralno statisticheskio upravlenie. "Statisticheski godishnik na Narodna Republika Bulgariia." Annual.

Czechoslovakia. Statni statisticky urad. "Statisticka rocenka Ceskoslovenske socialisticke republiky." Annual.

Germany (Democratic Republic). Staatliche Zentralverwaltung fur statistik. "Statistisches Jahrbuch der Deutschen Demokratischen Republik." Annual.

Hungary. Kozponti statisztikai hivatal. "Statisztikai evkonyv." Annual.

- Poland. Główny urząd statystyczny. "Rocznik statystyczny." Annual.
 Romania. Directia centrala de statistica. "Anuarul statistic al Republicii Socialiste Romania." Annual.
 United Nations. "Yearbook of National Account Statistics," 1971, Vol. III.
 ——— "World Economic Survey", 1972.
 ——— Economic Commission for Europe "Economic Survey of Europe in 1970, Part II."
 ——— "Etude sur la situation economique de l'Europe en 1971, Deuxieme Partie."
 United States, "Statistical Abstract of the United States."

Tables 2, 8-10, 13-14, and 20 are based on work done at the research Project on National Income in East Central Europe, formerly at Columbia University and at Riverside Research Institute, and currently at L. W. International Financial Research, Inc., New York, N.Y. The project's publications (see list below) provide details on our sectoral GNP indexes and the weights used to combine them into overall GNP indexes. Updating of various measures to 1972 generally conforms to the methods described in the publications, with some adjustments. The general procedure is summarized in Thad P. Alton, "Economic Structure and Growth in Eastern Europe," U.S. Joint Economic Committee Print, "Economic Developments in Countries of Eastern Europe, a Compendium of Papers," 1970, pages 41-64. Some changes in sectoral weights have been made for the indexes presented in the present report. New weights for Bulgaria are based on the 1963 Bulgarian input-output table, augmented as necessary to the GNP concept. Revised weights have been used also for Romania and East Germany, where more recent data on wages, fixed capital, and employment made possible improvements. Agricultural indexes for Bulgaria and Romania have been revised to reflect more recent prices of production inputs and farm outputs. The industrial production indexes for 1968-72 were extended on the basis of correspondence of our sample product based indexes with official measures for the earlier years of the 1960's. Average annual rates of growth presented in tables are for the most part rates determined by least squares fit to the compound rate formula: $I_n = I_0(1+R)^n$. Footnotes to tables, comments in text, and special notes to tables (see below) should make clear the rate concept.

Notes to Table 8

The A and B estimates of total and per capita GNP are based on estimates originally presented by Maurice Ernst for 1964 (see U.S., 89th Cong., 2d sess., Joint Economic Committee, "New Directions in the Soviet Economy," part IV, p. 977). These estimates were updated to 1967 in my article in 91st Congress, 2d session, Joint Economic Committee, "Economic Developments in Countries of Eastern Europe," p. 49. Ernst's estimates were made by comparing Eastern European countries with West Germany in marks and subsequently adjusting the results roughly to allow for less favorable relative magnitudes that would emerge from calculations in Eastern European currencies. The link to the U.S. dollar was based on alternative A on the official exchange rate of the mark to the dollar and in alternative B on the geometric mean of two rates based on purchasing power equivalents prepared for OEEC for 1955. The A and B estimates were moved to 1972 using GNP indexes prepared by the Research Project on National Income in East Central Europe (table 9 and 10) and then converted to 1972 U.S. dollars using the implicit GNP price deflator.

Estimate C consists of figures published by the United Nations, "Economic Survey of Europe in 1969," part I, p. 150, for 1965. These figures were moved to 1972 by our indexes of GNP and then expressed in 1972 dollars using the implicit U.S. GNP price deflators. The U.N. estimates were derived by establishing a mathematical relationship by curve-fitting between each of 21 physical production indicators and the U.S. dollar value of GDP (based on official exchange rates) for 22 Western countries. Twenty-one estimating equations were thus obtained, and for each country the GDP was estimated 21 times by this means. The arithmetic average of the 21 GDP estimates was taken for the final GDP U.S. dollar estimate for the given country. Confidence limits at the 5-percent significance levels were established for the individual country estimates. The estimating equations were then used to obtain dollar figures for the GDP's of Eastern European countries, with confidence limits again indicated. A comparison of the U.N. estimates derived by this method for 22 Western countries, with figures derived from conversions by official exchange rates and with estimates for Western European countries prepared by OECD by updating the original Gilbert-Kravis estimates of 1955, provided an indication of range for the alternative GDP (or GNP) measures.

The range of estimates was in some instances very substantial. Confidence limits at the 5-percent level for the 22 Western countries ranged from a low of ± 7 to a high of ± 18 percent (meaning, that with random samples of indicators considered to be drawn from some universe of samples, there would be a 95-percent chance that the true values of GDP would lie within the indicating percentage limits). The corresponding confidence limits for the Eastern European countries were as low as ± 13 percent to as high as ± 21 percent.

Estimate D was taken from figures published by U.S. Department of State, background notes of the following indicated dates: Bulgaria—September 1971, Czechoslovakia—March 1972, East Germany—January 1971, Hungary—February 1970, Poland—July 1970, and Romania—August 1970. The values referring to an earlier year were moved to 1972 by our GNP indexes and expressed in 1972 dollars by the application of the implicit U.S. GNP price deflator. There was no indication of methodology by which the figures given in background notes were derived.

Estimate E is based on figures published in "Hospodarske noviny," No. 5, 1974, p. 3, for 1970 in the form of relative numbers (with Czechoslovakia=100) and an absolute figure for Czechoslovakia in 1965 dollars. The periodical cited a publication by J. Tauchman as the source of data. The figures were moved to 1972 by our GNP indexes and then expressed in 1972 dollars using the implicit U.S. GNP price deflator.

Notes to Table 22

Official statistics as published in:

United Nations, "World Economic Survey, 1972," pp. 67-73.

Ibid., Economic Commission for Europe, "Etude sur la situation economique de l'Europe en 1971," Deuxieme partie, pp. 117-120.

Ibid.,—, "Economic Survey of Europe in 1970," part II.

Statistical yearbooks and other official publications of the countries concerned.

NOTE.—The statistics in the various sources do not always agree. There are small differences that may reflect preliminary versus final data or methods of deriving average rates of growth. Some annual figures in tables 15 and 22 for 1971 and 1972 may differ because of derivation from different rounded index number series. In some instances the rates are specified as "regression parameters from time series," or as "average annual compound rates," or as "average annual change from preceding 5-year period" (as was indicated for agricultural gross output, 1966-70 and 1971-75), or simply as "average annual rate" (as for gross value of industrial production). The data by 5-year periods were taken from the United Nations compilations, and there seems to be comparability along each given row. For the rough purpose here, no attempt was made to get more precise specifications.

PUBLICATIONS OF THE RESEARCH PROJECT ON NATIONAL INCOME IN EAST CENTRAL EUROPE

Books

Thad P. Alton and Associates (Laszlo Czirjak, George Pall, Leon Smolinski). "Hungarian National Income and Product in 1955."

Thad P. Alton and Associates (Vaclav Holesovsky, Gregor Lazarek, Paul D. Sivak, Alexej Wynnyczuk). "Czechoslovak National Income and Product, 1947-48 and 1955-56."

Thad P. Alton and Associates (Andrzej Korbonski, Bogdan Mieczkowski, Leon Smolinski). "Polish National Income and Product in 1954, 1955, and 1956."

Financial Studies (Book Length)

Thad P. Alton, Elizabeth M. Bass, Jaroslav Dusek, and Frank Bandor. "Financial and Fiscal Systems of Czechoslovakia." ACDA/F-45, vol. I, 1968.

Laszlo Czirjak and George Pall (Editors: Thad P. Alton and Elizabeth M. Bass). "Financial and Fiscal Systems of Hungary." ACDA/E-45, vol. II, 1968.

Vaclav Holesovsky and Claus Wittich. "Financial and Fiscal Systems of Poland." ACDA/E-45, vol. III, 1968.

Vaclav Holesovsky, Alexej Wynnyczuk and Jaroslav Dusek. "Recent Developments in the Czechoslovak Financial System." ACDA/E-134, vol. I, 1971.

Paul Marer and George Pall. "Recent Developments in the Hungarian Financial System." ACDA/E-134, vol. II, 1971.

- George R. Feiwei and Alexej Wynnyczuk. "Recent Developments in the Polish Financial System." ACDA/E-134, vol. III, 1971.
- Paul Marer. "Selected Comparisons of the Financial Systems of the U.S.S.R., Czechoslovakia, Hungary and Poland." ACDA/E-134, vol. IV, 1971.
- Thad P. Alton, Gregor Lazarcik, Laszlo Czirjak, and Elizabeth M. Bass. "Estimates of Military Expenditures in Eastern Europe." ACDA/E207.

Occasional Papers

- OP- 1 Gregor Lazarcik. "Growth of Czechoslovak Trade, Banking, and Insurance, 1937-1962."
- OP- 2 Vaclav Holesovsky and Gregor Lazarcik. "Trends in Czechoslovak Housing, Government, and Other Services, 1937-1962."
- OP- 3 George J. Staller. "Czechoslovak Index of Investment, 1937-1962: Machinery and Equipment."
- OP- 4 George J. Staller. "Czechoslovak Index of Construction, 1937-1962."
- OP- 5 Maurice C. Ernst. "Index of Polish Industrial Production, 1937-1960."
- OP- 6 Gregor Lazarcik. "Output of Czechoslovak Forestry, Fishery, and Hunting, Trapping and Game at Constant 1948 Prices, 1936 and 1946-1962."
- OP- 7 Gregor Lazarcik. "Czechoslovak Agricultural Output, Expenses, Gross and Net Product and Productivity, 1934-38 and 1946-1962."
- OP- 8 Laszlo Czirjak. "Hungary: Index of Transport and Communication Services, 1938-1962."
- OP- 9 Gregor Lazarcik. "Output and Value Added in Czechoslovak Transportation and Communications, 1937 and 1946-1962."
- OP-10 "Indexes of Rumanian Industrial Production, 1938, 1948, and 1950-1967."
- OP-11 Laszlo Czirjak. "Growth of Hungarian Domestic and Foreign Trade, 1938 and 1946-1965."
- OP-12 Laszlo Czirjak. "Output of Hungarian Forestry, Fishing and Hunting, 1934-38 and 1946-1965."
- OP-13 Laszlo Czirjak. "An Index of Hungarian Construction, 1938 and 1946-1965."
- OP-14 Laszlo Czirjak. "Hungarian Agricultural Production and Value Added, 1934-38 and 1946-1965."
- OP-15 George Pall and Leon Smolinski. "Indexes of Hungarian Service Sectors and Fianacial Institutions, 1938 and 1947-1965."
- OP-16 Laszlo Czirjak. "Indexes of Hungarian Industrial Production, 1938 and 1946-1965."
- OP-17 Laszlo Czirjak. "Hungarian Investment, 1938 and 1949-1965: Trends in Fixed Capital, Inventories, and Net Foreign Investment."
- OP-18 Vaclav Holesovsky and George Pall. "Personal Consumption in Hungary, 1938 and 1947-1965."
- OP-19 Andrzej Korbonski and Claus Wittich. "Index of Polish Transport and Communications, 1937 and 1946-1965."
- OP-20 Gregor Lazarcik. "Comparison of Czechoslovak Agricultural and Non-agricultural Incomes in Current and Real Terms, 1937 and 1948-1965."
- OP-21 "Comparison of Hungarian Agricultural and Nonagricultural Incomes, 1938 and 1949-1965 (to be published Fall, 1973)."
- OP-22 Andrzej Korbonski and Claus Wittich. "Index of Polish Construction Materials Consumption, 1937 and 1946-1965."
- OP-23 Andrzej Korbonski and Claus Wittich. "An Index of Polish Trade and Catering, 1937 and 1946-1965."
- OP-24 Gregor Lazarcik and George J. Staller. "A New Index of Czechoslovak Industrial Output, 1937 and 1947-1965."
- OP-25 Vaclav Holesovsky and Gregor Lazarcik. "Czechoslovakia: I. Extension of Growth Indexes to 1965; II. Personal Consumption Index, 1937 and 1948-1965."
- OP-26 Gregor Lazarcik. "Czechoslovak Gross National Product by Sector of Origin and by Final Use, 1937 and 1948-1965."
- OP-27 Gregor Lazarcik and Alexej Wynnyczuk. "Bulgarian Growth of Industrial Output, 1939 and 1948-1965."
- OP-28 Gregor Lazarcik and Alexej Wynnyczuk. "Bulgaria: Index of Government Services, Trade, Banking and Insurance, and Communal Services, 1938 and 1948-1965."

- OP-29 Andrzej Korbonski and Claus Wittich. "Indexes of Polish Housing, Service, and Government Sectors, 1937 and 1946-1965."
- OP-30 Gregor Lazarcik and Alexej Wynnyczuk. "Bulgaria: Indexes of Construction, Investment, Housing, and Transportation and Communications, 1939 and 1948-1965."
- OP-31 Joseph Bombelles. "Yugoslav Agricultural Production and Productivity, Prewar and 1948-1965."
- OP-32 Gregor Lazarcik and Wassyl Znayenko. "Bulgarian Agricultural Production, Output, Expenses, Gross and Net Product, and Productivity, 1939 and 1948-1967."
- OP-33 Frank Bandor, Laszlo Czirjak, and George Pall. "Hungary: Extension of Growth Indexes to 1967."
- OP-34 Alexej Wynnyczuk and Wassyl Znayenko. "Trends in Output, Inputs and Factor Productivity in Polish Industry, 1947-1967."
- OP-35 Laszlo Czirjak and Jaroslav Dusek. "Growth of East German Industrial Output, 1936, 1946, and 1950-1967."
- OP-36 Gregor Lazarcik. "East German Agricultural Production, Expenses, Gross and Net Product, and Productivity, 1934-38 and 1950-1970."
- OP-37 Andrzej Korbonski and Gregor Lazarcik. "Polish Agricultural Production, Output, Expenses, Gross and Net Product, and Productivity, 1934-38, 1937, and 1946-1970."
- OP-38 Gregor Lazarcik and George Pall. "Rumania: Agricultural Production, Output, Expenses, Gross and Net Product, and Productivity, 1938, 1948, and 1950-1971."
- OP-39 Gregor Lazarcik. "Bulgarian Agricultural Production, Output, Expenses, Gross and Net Product, and Productivity, at 1968 Prices, 1939, and 1948-1970."
- OP-40 George J. Staller. "The Comparative Material Products of Czechoslovakia and the Soviet Union: 1959."
- OP-41 Andrzej Korbonski, Alexej Wynnyczuk and Wassyl Znayenko. "Poland: Index of Gross Investment, 1937 and 1946-1967."
- OP-42 Vaclav Holesovsky, Alexej Wynnyczuk and Wassyl Znayenko. "Index of Personal Consumption in Poland, 1937 and 1946-1967."
- OP-43 Laszlo Czirjak. "Hungarian GNP by Sectors of Origin of Product and End Uses, 1938 and 1946-1967."

MILITARY EXPENDITURES IN EASTERN EUROPE: SOME ALTERNATIVE ESTIMATES*

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CONTENTS

	Page
I. Introduction.....	299
II. GNP, Defense Expenditures, and Implicit Conversion Rates of National Currencies to Dollars.....	300
III. Estimates of the Defense Expenditures of East European Countries by Major Purpose, in Current Domestic Currencies, 1960-73.....	306
IV. Estimates of Defense Expenditures at Adjusted Domestic Prices.....	310
V. Dollar Estimates of East European Military Expenditures by Major Purpose, Existing Conversion Rates and Some New Approaches.....	312
VI. A Comparison of Selected Western Estimates of East European Military Expenditures.....	318
Bibliography.....	326

TABLES

1. GNP, Defense Expenditures, and Implicit Conversion Rates of East European Countries, 1960-73 (Variant A).....	302
2. Average Annual Percentage Rates of Change in GNP and Defense Expenditures for Eastern European Countries, 1960-73.....	304
3. Estimates of Defense Expenditures by Major Purpose, East European Countries, in Current Domestic Currencies (Millions), 1960-73.....	308
4. Structure of Gross National Product by End Use at Market Prices and Adjusted Prices, Czechoslovakia 1967 and Hungary 1968.....	310
5. Estimates of Defense Expenditures by Major Purpose, East European Countries, in Current U.S. Dollars (Millions), 1960-73 (Variant A and B).....	314
6. Estimates of Defense Expenditures by Major Purpose, East European Countries, in Current U.S. Dollars (Millions), 1968 (Variant C).....	318
7. Comparison of Military Expenditure Estimates: 1960-73.....	320-323

I. INTRODUCTION

The present study aims to show the magnitude, trends, and structure of military expenditures of selected countries of Eastern Europe, namely, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Romania. Valuations are shown in current domestic prices and in current dollars. In order to place military expenditures in perspective, they are shown in the context of values of GNP in absolute and relative terms, as well as, in terms of average annual rates of change (chs. II and III).

*The present contribution is a revision and updating of the authors' *Estimates of Military Expenditures in Eastern Europe*, prepared for US ACDA, by the Research Project on National Income in East Central Europe, at L. W. International Financial Research, Inc., N. Y., N. Y. The authors are indebted to Frank Bandor and George Pall for cooperation in the research for this paper.

Inasmuch as prices in these countries reflect varying degrees of incidence of turnover taxes, profits, and subsidies, the structure of GNP by final uses at market prices differs from that in prices that approximate factor cost. We have attempted to show what difference this would make in the case of Czechoslovakia for 1967 and Hungary for 1968 as regards the share of military expenditures in GNP (see ch. IV).

In international comparisons of shares of GNP devoted to defense expenditures, the factor cost structure would be preferable to that given in effective market prices. Nevertheless, factor cost approximations conventionally calculated would still fall short of an equitable standard of comparison in those cases where conscription results in diverse proportions of opportunity cost being paid to conscripts in the form of nominal cash pay plus subsistence. This follows from the conventional procedure of accepting the market price (actual) returns to labor as equal to the factor cost of labor.

Where the concern is to compare internationally the shares of GNP allocated to defense, it would appear that a modified concept of GNP and military expenditures should be employed; that is, both the GNP aggregate and the military component should reflect suitable upward revaluation to account for services of military personnel at opportunity cost. We did not attempt such adjustments in the present study. It seems clear, nonetheless, that the outcome of such comparisons between countries of Eastern Europe on the one hand and the United States on the other would be to raise the shares of the former in relation to the latter. That is, the shares we should show would be higher than those in table 4.

Another approach to international comparisons of defense expenditures is to express all the outlays in a common currency. To this end we present a number of alternative dollar valuations of the East European military expenditures. In order to facilitate such conversions to dollars, we allocated the total military expenditures to personnel costs and other outlays, and used distinct conversion rates for the components (ch. V).

As a result of the direct valuation of military personnel costs at U.S. pay rates in our newer variants, the dollar values of total military expenditures are very substantially higher than in alternative estimates (ch. VI).

The procedures we employed could certainly be refined, particularly in getting better breakdowns of total expenditures and devising better conversion rates to apply to components of the total.

II. GNP, DEFENSE EXPENDITURES, AND IMPLICIT CONVERSION RATES OF NATIONAL CURRENCIES TO DOLLARS

In this chapter we present for Eastern Europe and for each country, for the period 1960 to 1973, annual estimates of the total gross national product and total military expenditures in current dollars, conversion rates, and shares of defense in GNP. Given the limitations of time, accessible information, and material resources, we applied the best feasible methods of estimation available at present.

For each country the GNP values in current market prices in the respective national currencies were estimated as follows. Detailed independent estimates of GNP were made at our research project for Czechoslovakia for 1966 and 1967 and for Hungary for 1967 and 1968.

Also rough estimates of GNP are available for East Germany for 1966 and Romania for 1960 and 1961, while for Bulgaria and Poland detailed independent estimates of GNP are available only for 1956 and 1954-56, respectively. On the basis of the ratios between GNP and official national income (material product) for these benchmark years, we were able to inflate the official national income series to the GNP concept for all other years covered in this study. It is to be noted that these ratios exhibited a degree of stability, comparing the middle of the 1950's with the 1967-68 period.

Officially given military expenditures series were available for all countries, and they include the direct cost of maintenance of military personnel, cost of military equipment and supplies, and maintenance of equipment and structures. In some countries, that is, Czechoslovakia and East Germany, expenditures for internal security are included in the military expenditure data. On the other hand, indirect military activities, that is, expenditures on military research and development, industrial investment spending on military facilities, and other related spending are not included in the national defense figures. Adjustments of official figures to conform more closely with the U.S. definition of military purpose are made in chapter III.

The general level and relative importance of military expenditures in different Eastern European countries may be obtained by expressing the defense outlays in percentages of the total GNP. Such a comparison will be meaningful only if the pricing of the defense and nondefense (civilian) components of GNP is uniform. Unfortunately, in all centrally planned economies, the prices of civilian consumption goods and services, because of the heavy incidence of turnover taxes, are relatively high in relation to prices of investment goods and, particularly, military hardware and other procurement items, on which turnover taxes generally are not imposed. Also, most probably, the production of defense items is heavily subsidized through the state budget. This uneven incidence of pricing results in substantial underestimation of the "real" cost of military spending when expressed as a percentage of GNP at market prices in domestic currencies (table 1, col. 5).

The conversion of military expenditures given in national currencies into current dollars is a very difficult task, given the lack of information on prices of military items and composition of military procurements in East European countries. Proper conversion, indeed, would require information on the composition of the forces, rates of military pay, the quantity, quality, and technical characteristics of the various military items purchased in each year, and the value weights in the national currencies and in dollars. This study offers several approaches to the problem of conversion. The first (Variant A), presented in this chapter, is based on implicit conversion rates for GNP derived from comparisons of dollar estimates of GNP and domestic currency estimates of GNP, both given in current prices. Further refinements involve estimates of the structure of military expenditures, presented in chapter III, with components then converted separately from domestic currencies into current dollars, as described in chapter V. All the conversion rates used, it should be said, rest on approximative methods and accordingly should be interpreted with caution.

TABLE 1.—GNP, DEFENSE EXPENDITURES, AND IMPLICIT CONVERSION RATES OF EAST EUROPEAN COUNTRIES, 1960-73 (VARIANT A)

Year	GNP, millions of current dollars	Implicit conversion rate: \$1=	Indexes in current dollars, 1960=100		Defense as percentage of GNP in:	
			GNP	Defense	Domes'ic currencies	Dollars
BULGARIA						
1960	4,000	1.54	100.0	100.0	2.9	14.0
1961	4,200	1.54	106.1	106.5	3.3	14.0
1962	4,600	1.55	115.4	113.1	3.6	13.7
1963	4,800	1.62	121.5	110.3	3.8	12.7
1964	5,400	1.59	134.9	119.8	3.0	12.4
1965	5,800	1.56	146.7	121.8	2.5	11.6
1966	6,500	1.54	163.1	125.7	2.4	10.8
1967	7,200	1.50	180.8	103.8	2.3	10.1
1968	7,900	1.49	198.2	136.0	2.2	9.6
1969	8,800	1.46	221.7	146.2	2.3	9.2
1970	10,000	1.45	251.4	164.4	2.2	9.1
1971	11,000	1.30	276.7	182.7	2.5	9.2
1972	12,100	1.28	305.1	203.2	2.5	9.3
1973 ¹	13,800	1.22	345.6	234.0	2.5	9.5
CZECHOSLOVAKIA						
1960	16,200	12.73	100.0	100.0	4.3	6.9
1961	17,000	12.97	105.2	104.4	4.3	6.9
1962	17,500	12.79	108.0	114.5	4.9	7.4
1963	17,400	12.42	107.4	120.0	5.0	7.8
1964	18,500	11.60	114.2	135.5	4.8	8.2
1965	19,600	11.30	120.8	140.4	4.6	8.1
1966	21,100	11.72	130.6	142.9	4.4	7.6
1967	22,900	12.43	141.4	154.7	4.4	7.6
1968	25,100	12.76	155.0	161.8	4.1	7.3
1969	27,300	13.23	168.6	169.1	4.0	7.0
1970	30,600	12.43	189.2	169.7	3.9	6.2
1971	33,400	11.86	206.5	194.0	4.0	6.5
1972	35,600	11.76	219.6	208.0	4.0	6.6
1973 ¹	39,000	11.28	240.8	225.6	3.8	6.5
EAST GERMANY						
1960	18,100	4.81	100.0	100.0	1.2	3.1
1961	18,500	4.85	102.4	101.6	1.1	3.1
1962	19,200	4.77	106.4	169.7	2.9	5.0
1963	20,100	4.71	111.1	191.4	3.0	5.4
1964	21,000	4.72	116.2	196.8	2.9	5.3
1965	22,400	4.55	124.2	214.8	3.0	5.4
1966	23,800	4.51	131.8	225.4	3.0	5.4
1967	25,400	4.51	140.6	247.4	3.1	5.5
1968	27,500	4.39	152.1	316.4	4.8	6.5
1969	29,800	4.26	164.8	346.7	5.0	6.6
1970	32,400	4.13	179.4	386.9	5.1	6.8
1971	35,000	4.06	194.0	413.6	5.1	6.7
1972	37,700	3.93	208.5	448.5	5.1	6.8
1973 ¹	41,400	3.75	229.3	507.1	5.4	6.9
HUNGARY						
1960	7,100	25.15	100.0	100.0	1.7	5.8
1961	7,500	24.75	106.2	105.1	1.8	5.8
1962	8,000	24.59	112.1	122.4	2.5	6.4
1963	8,500	24.14	119.9	153.5	3.2	7.5
1964	9,100	23.71	128.6	156.6	2.8	7.1
1965	9,200	22.84	130.2	161.9	2.7	7.3
1966	10,100	22.96	142.6	157.1	2.3	6.5
1967	11,000	23.16	155.0	156.9	2.1	5.9
1968	11,700	23.69	165.3	172.8	2.4	6.1
1969	12,800	24.44	180.1	190.8	2.4	6.2
1970	14,100	23.67	198.3	227.5	2.8	6.7
1971	15,700	23.10	221.2	242.6	2.7	6.4
1972	16,800	23.42	237.4	254.0	2.4	6.1
1973 ¹	18,900	22.26	266.7	279.5	2.3	6.1

TABLE 1.—GNP, DEFENSE EXPENDITURES, AND IMPLICIT CONVERSION RATES OF EAST EUROPEAN COUNTRIES, 1960-73 (VARIANT A),—Continued

POLAND

Year	GNP, millions to current dollars	Implicit conversion rate: \$1 =	Indexes in current dollars, 1960=100		Defense as percentage of GNP in:	
			GNP	Defense	Domestic currencies	Dollars
1960	18,800	23.53	100.0	100.0	3.4	7.4
1961	20,600	23.43	109.3	107.9	3.5	7.3
1962	20,500	24.45	109.3	112.1	3.7	7.6
1963	22,000	24.51	117.2	120.2	3.8	7.6
1964	23,400	24.49	124.4	128.0	3.8	7.6
1965	25,200	24.80	133.8	133.9	3.7	7.4
1966	27,500	24.35	146.1	138.1	3.8	7.1
1967	29,500	23.91	155.9	148.1	3.7	7.0
1968	32,800	23.65	174.2	164.6	3.9	7.0
1969	34,500	23.48	183.7	180.5	4.1	7.3
1970	37,900	22.82	201.5	193.8	4.1	7.1
1971	42,100	23.63	224.1	220.0	3.8	7.3
1972	47,200	23.82	251.0	224.9	3.5	7.2
1973 ¹	54,000	23.52	287.2	261.2	3.1	6.8

ROMANIA

1960	9,300	15.56	100.0	100.0	2.3	10.6
1961	10,200	15.20	109.0	103.8	2.3	10.1
1962	10,500	15.61	112.8	107.1	2.4	10.1
1963	11,200	16.61	119.7	110.9	2.2	9.9
1964	12,100	17.07	129.9	112.2	2.1	9.2
1965	13,000	17.41	139.5	109.4	2.1	8.4
1966	14,300	16.78	159.1	109.2	2.0	7.3
1967	16,300	16.45	174.4	103.9	1.9	6.3
1968	17,700	16.24	189.1	111.2	2.0	6.3
1969	19,600	15.73	209.6	128.6	2.0	6.5
1970	21,800	15.08	233.6	142.7	2.1	6.5
1971	25,600	14.52	273.8	143.5	2.0	5.6
1972	28,600	14.33	305.7	167.2	1.9	5.8
1973 ¹	33,100	13.72	354.3	178.0	1.7	5.3

¹ Preliminary.

EASTERN EUROPE

Year	GNP, millions of current dollars ¹	Defense, millions of current dollars	Indexes in current dollars, 1960=100		Defense as percentage of GNP in:		Nonpersonnel and R. & D. costs as percentage of defense variant B
			GNP ²	Defense	Domestic currencies ³	Dollars ²	
1960	73,477	5,055	100.0	100.0	2.6	6.9	28.7
1961	78,040	5,320	106.2	105.2	2.7	6.8	30.6
1962	80,345	6,019	109.3	119.1	3.3	7.5	37.7
1963	84,009	6,467	114.3	127.9	3.5	7.7	38.6
1964	89,499	6,860	121.8	135.7	3.2	7.7	36.5
1965	95,253	7,096	129.6	140.4	3.1	7.4	36.5
1966	103,877	7,267	141.4	143.8	3.0	7.0	38.6
1967	112,300	7,624	152.8	150.8	2.9	6.8	40.1
1968	122,617	8,492	166.9	168.0	3.2	6.9	43.2
1969	132,781	9,275	180.7	183.5	3.3	7.0	43.8
1970	146,833	10,088	199.8	199.6	3.4	6.9	46.5
1971	162,916	11,052	221.7	218.6	3.4	6.8	45.5
1972	177,971	12,152	242.2	240.4	3.2	6.8	43.2
1973 ¹	200,215	13,294	272.5	263.0	3.1	6.6	41.8

¹ Preliminary.² Calculated from unrounded data.³ Unweighted average of percentages of all 6 countries.

Sources: Calculated from data given in Thad P. Alton, Gregor Lazarcik, Laszlo Czirjak, and Elizabeth M. Bass, "Estimates of Military Expenditures in Eastern Europe," Washington, D.C., U.S. Arms Control and Disarmament Agency, 1973. Prepared by Research Project on National Income in East Central Europe, L.W. International Financial Research, Inc. New York, N.Y., tables 1, 2, 4, and 5, revised and updated for 1971-73.

In this study, the GNP dollar figures were first derived in constant 1967 prices on the basis of the 1967 GNP dollar values and the extended GNP indexes shown by Alton.¹ The GNP's in constant 1967

¹ Thad P. Alton, "Economic Structure and Growth in Eastern Europe," in Joint Economic Committee 91st Cong., 2d Sess., *Economic Developments in Countries of Eastern Europe*, 1970, p. 49, and "Economic Growth and Resource Allocation in Eastern Europe," in this volume, table 8.

dollars were deflated into current dollars by the U.S. GNP implicit price deflator.

The new estimates of defense spending (table 1, col. 4 and table 5, col. 4) value the East European (and the U.S.S.R.) military personnel services directly in dollars at U.S. pay rates for officers and men, with some adjustments for quality. For converting the military non-personnel and research and development expenditures from domestic currencies into dollars we used the implicit average exchange rates (table 1, col. 2) derived from comparisons of the estimated GNP's in domestic currencies and the corresponding dollar values of the GNP's in current prices.

The important findings in tables 1 and 2 may be summarized as follows:

1. The implicit conversion rates between East European domestic currencies and the U.S. dollar decreased in the last 5 years because the rate of inflation in the United States was higher than in the East European countries.

TABLE 2.—AVERAGE ANNUAL PERCENTAGE RATES OF CHANGE IN GNP AND DEFENSE EXPENDITURES FOR EASTERN EUROPEAN COUNTRIES, 1960-73¹ (CALCULATED FROM DATA IN CURRENT DOLLARS)

Country and period	GNP	Defense expenditures		
		Total	Personnel costs	Nonpersonnel and R. & D. costs
Bulgaria:				
1960-73	10.0	6.8	6.2	9.6
1960-67	8.8	3.9	3.9	3.8
1967-73	11.0	10.2	9.0	17.4
Czechoslovakia:				
1960-73	7.0	6.5	6.0	7.2
1960-67	5.1	6.4	5.4	7.8
1967-73	9.3	6.5	6.6	6.4
East Germany:				
1960-73	6.6	13.3	8.5	21.6
1960-67	5.0	13.4	7.3	24.4
1967-73	8.5	12.7	10.0	15.3
Hungary:				
1960-73	7.8	8.2	6.8	13.7
1960-67	6.5	6.7	5.2	13.0
1967-73	9.5	9.7	8.6	14.6
Poland:				
1960-73	8.5	7.7	7.1	8.7
1960-67	6.3	5.8	3.3	9.8
1967-73	10.6	9.7	11.6	7.5
Romania:				
1960-73	10.2	4.5	3.4	9.6
1960-67	8.3	3	—7	7.0
1967-73	12.5	9.4	10.9	12.6
Eastern Europe:				
1960-73	8.0	7.7	6.2	11.0
1960-67	5.1	5.3	3.7	10.9
1967-73	11.6	10.6	9.3	11.0
U.S.S.R.:				
1960-73	8.0	7.7	5.3	8.9
1960-67	7.2	7.6	9	10.6
1967-73	8.9	7.9	10.7	7.0
United States:				
1960-73	7.5	4.0	5.8	3.3
1960-67	6.7	6.2	7.2	6.9
1967-73	8.4	1.5	4.3	.4

¹ Data for 1973 are preliminary.

Notes and Sources: Eastern European countries: Calculated from data in tables 1 and 5 (variant A). U.S.S.R.: Calculated from the following sources: U.S. ACDA, "World Military Expenditures 1971," pp. 9, 19, and 23. The GNP and defense series were updated for 1960 and 1971-73 by growth rates given in Stanley H. Cohn, "General Growth Performance of the Soviet Economy" and "The Economic Burden of Soviet Defense Outlays," in U.S. Congress, Joint Economic Committee, "Economic Performance and the Military Burden in the Soviet Union," Washington, D.C., U.S. Government Printing Office, 1970, pp. 9 and 183, and John P. Hardt, "Summary" and Herbert Block, "Value and Burden of Soviet Defense," in U.S. Congress, Joint Economic Committee, "Soviet Economic Prospects for the Seventies," Washington, D.C., U.S. Government Printing Office, 1973, pp. IX, 177. These growth rates for 1960 and 1971-73 were adjusted by the U.S. GNP implicit price deflator for 1960 and 1971-73 given in U.S. Department of Commerce, Survey of Current Business, July 1971, p. 46; *ibid.*, January 1974, p. 7; and Statistical Abstract of the United States, 1973, p. 348. Personnel costs were obtained by attributing to Soviet officers (estimated at 12 percent of military personnel) the average yearly compensation in dollars of officers in the United States, and by attributing to the Soviet enlisted personnel (88 percent of total military personnel) 75 percent of the average yearly compensation in dollars of enlisted men in the United States (see *Ibid.*, 1965, p. 265; *ibid.*, 1968, p. 262; and *ibid.*, 1973, p. 271). The nonpersonnel and R. & D. costs were obtained as the difference between the total defense expenditures and the personnel costs. United States: Calculated from the following sources: *Ibid.*, 1971, p. 305; *ibid.*, 1973, pp. 257 and 319; and Survey of Current Business, January 1974, p. 7.

2. Military expenditures expressed as percentages of GNP are substantially lower (in some countries several times lower, for example, Bulgaria, Hungary, and Romania) in domestic currencies than in current dollars. There are two reasons for these large differences: (a) the very low nominal pay rates in Eastern Europe for enlisted men (a small fraction of their opportunity costs), and (b) price distortions (the uneven incidence of turnover taxes, accounting profit taxes, and subsidies) which result in a very low percentage share for military expenditures in GNP at current market prices (as compared to shares on other bases of valuation, for example, at dollar prices). Thus, these percentage shares of GNP in domestic currencies of centrally planned Eastern European countries are very misleading for comparisons with percentage shares in other countries where such drastic valuation abnormalities do not occur (for example, Western Europe, United States, and Canada).

3. Our new estimates based on dollar valuations indicate that the percentage share of GNP spent on defense in Eastern Europe as a whole is more than double the corresponding percentage of GNP calculated in the national currencies.

4. When valued in dollars, the nonpersonnel and research and development expenditures (operations, maintenance, and military procurements) expressed as a percentage of total defense outlays increased steadily from 29 percent in 1960 to over 46 percent in 1970. This would indicate substantial progress in mechanization and modernization of Eastern Europe's military forces.

5. Based on valuations in dollars, defense spending grew at approximately the same rate as GNP (table 2). In most of the countries defense spending grew at a slower rate in the 1960-67 period than in the 1967-73 period. For Eastern Europe as a whole, the average annual rate in the latter period (10.6 percent) was double that in the former (5.3 percent).

6. In all Eastern European countries the nonpersonnel and R. & D. costs grew at substantially higher rates than personnel costs. The high annual percentage rates of growth of nonpersonnel costs that occurred in Bulgaria, East Germany, Hungary, and Romania in the last 6 years apparently indicate rapid progress in mechanization and modernization of their armed forces.

7. Comparison of Eastern Europe with the U.S.S.R. shows that the rate of growth of GNP was the same in 1960-73 in both countries and likewise the rate of growth of defense spending was the same in both. The other Warsaw Pact member countries have contributed a lower share of their GNP's to defense than the U.S.S.R. In the last 6 years the average annual rate of growth in military spending has been higher in Eastern Europe than in the U.S.S.R.

8. Comparison with the United States, however, shows distinct differences. The average annual rate of growth of defense spending in current dollars from 1960 to 1973 has been significantly lower in the United States than in the U.S.S.R. or in Eastern Europe. The contrast is greatest for the 1967-73 period, when the U.S. GNP grew at an average annual rate of 8.4 percent, while the military expenditures grew only at 1.5 percent. The respective percentages for the U.S.S.R. were 8.9 and 7.9., and for Eastern Europe, 11.6 and 10.6 (table 2).

9. U.S. military outlays on nonpersonnel and R. & D. costs in current dollars remained practically unchanged from 1967 to 1973. Since U.S.

wholesale prices increased by 35 percent in the same period, the non-personnel spending (operations, maintenance, military procurements and research and development) actually declined by about 26 percent in real terms. This is in contrast to the continuous increase of these costs in the U.S.S.R. and Eastern Europe in the same period.

10. In the NATO member countries (excluding the United States), defense spending declined by about 10 percent from 1967 to 1971; in 1971 it accounted for only 3.3 percent of GNP in dollar valuation.² Thus, the NATO allies (Western Europe and Canada) are carrying a disproportionately smaller share of the burden of NATO defense than the United States. Such a favored relationship does not exist between the U.S.S.R. and the other members of the Warsaw Pact.

11. It should be noted that Eastern Europe as a whole currently spends, in terms of dollars, more on defense than any other country besides the United States and the U.S.S.R., or about one-fifth as much as the United States. (See tables 1 and 5.) This is a significant contribution to the total defense expenditures of the Warsaw Pact.

12. One may conclude that the overall military posture of the Warsaw Pact countries has been steadily improving over the last 6 years while that of the United States and other NATO countries has been deteriorating in absolute and relative terms. In other words, the United States and its NATO allies have materially reduced their military efforts, while the U.S.S.R. and Eastern Europe continued to increase their military spending.

13. The tentative conclusions of this study point to the need for further research on comparisons of economic potential and the related military expenditures.

The results shown in tables 1 and 2 can be improved by detailed studies of the structure of the GNP's in current market prices and in prices with adjustment toward factor cost for all the countries under study, enabling corrections for major deviations from factor costs. Some preliminary findings for two countries are presented in chapter IV. Further research on exchange rates based on purchasing power parities is necessary for improving the international comparability of defense spending of various countries. Use of reliable purchasing power parity exchange rates could substantially alter the results shown here. A survey of currently used and alternative dollar conversion rates is provided in chapter V.

III. ESTIMATES OF THE DEFENSE EXPENDITURES OF EAST EUROPEAN COUNTRIES BY MAJOR PURPOSE, IN CURRENT DOMESTIC CURRENCIES, 1960-73

The estimates presented in table 3 offer a breakdown of direct defense budget expenditures between outlays to support uniformed military personnel and those for operations, maintenance, and procurements as a residual category that could not be further subdivided except on an arbitrary basis. In addition, some rough measures to reflect presumed research and development of a military nature financed outside of budget defense appropriations are offered for the three countries in which such activities may reasonably be thought to be greater than negligible.

² See Gregor Lazarek, "Defense, Education and Health Expenditures and Their Relation to GNP in Eastern Europe, 1960-70", *The American Economist*, No. 1, 1973, pp. 32-33.

The concept of "military purpose" providing the underlying framework for these estimates is fairly strict. The intention is to reflect current outlays to support, equip and administer armed forces, plus research and development directly related to military purposes. No attempt has been made to assess industrial investments that may be related to armaments production. Investment expenditures made directly by ministries of defense, however, are implicitly included.

The definition of armed forces followed for these estimates includes, in addition to the regular army, navy, and air forces, the border guard troops routinely organized and equipped as army units in all these countries, and the security troops that are essentially military in their organization and equipment. It is important to distinguish between these latter, the "militarized police," and the various other internal security units, such as the secret police, the worker's militia, customs guards, prison guards and other uniformed services that do not seem to be directly military in their organization and potential. This "civilian" portion of internal security is excluded from the estimates. Adjustments have accordingly been made in the budget expenditure totals for the two countries, Czechoslovakia and East Germany, whose published budget appropriation figures reflect defense and internal security taken together.

The general estimation method followed was the same for all the six countries covered. Working from estimates of regular forces and "paramilitary" border and security troops published by the Institute for Strategic Studies, London, the pay and subsistence of these forces were calculated with reference to national wage rates and consumption data. Exact procedures varied somewhat with the availability or nonavailability of data or other evidence of national differences in structure. The resulting personnel costs were then deducted from the defense budget expenditure totals to obtain the estimates for operations (including civilian personnel and other administrative expenses), maintenance and procurements (other than supplies for the subsistence of uniformed personnel). The basis for the research and development estimates were budget expenditures on "science and research," of which only a portion were deemed "military." Again, varying availability of data necessitated some differences in method. The details for all estimates are outlined in the notes to table 3.

Inevitably, these estimates must be regarded as rough approximations. Many choices underlie them, some involving no small element of arbitrariness. One of the more debatable points, perhaps, was the decision that the military-type security troops are financed out of ministry of defense budgets, not through internal security appropriations. This decision was arrived at on the basis of evidence for Poland around 1950, with some vaguer indications for Hungary. Should the assumption be erroneous, the residual for operations, maintenance and procurements would be higher, and total expenditures to military purposes would increase by the amount to support such troops under internal security, rather than defense appropriations. The magnitudes of these differences, however would not be great. Depending somewhat on assumptions as to the numbers of these particular forces and their pay, the alternate decision might increase the residuals within the defense budgets and the total expenditure for military purposes by around 5 percent.

TABLE 3.—ESTIMATES OF DEFENSE EXPENDITURES BY MAJOR PURPOSE, EAST EUROPEAN COUNTRIES, IN CURRENT DOMESTIC CURRENCIES (MILLIONS), 1960-73

	Defense budget expenditures						Total (1)-(6) (7)
	Total	Personnel costs			Operations, mainte- nance, pro- curements	Research and devel- opment	
		Total	Military pay	Subsist- ence			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bulgaria (leva):							
1960	179	75	39	36	104		179
1961	217	79	42	37	138		217
1962	258	81	43	38	177		258
1963	297	80	44	36	217		297
1964	260	90	47	43	170		260
1965	230	93	47	46	137		230
1966	240	101	52	49	139		240
1967	247	115	61	54	132		247
1968	264	126	64	62	138		264
1969	302	127	63	64	175		302
1970	324	126	65	61	198		324
1971	354	130	66	64	224		354
1972	391	132	67	65	259		391
1973 ¹	422	142	72	70	280		422
Czechoslovakia (crowns):²							
1960	6,675	2,001	925	1,076	4,674	1,090	7,765
1961	7,229	2,040	948	1,092	5,189	1,099	8,328
1962	8,242	2,074	953	1,121	6,168	1,259	9,501
1963	8,447	2,091	954	1,137	6,356	1,380	9,827
1964	7,969	2,454	1,013	1,441	5,515	1,552	9,521
1965	7,896	2,539	1,038	1,501	5,357	1,722	9,618
1966	8,890	2,520	1,057	1,463	6,370	1,826	10,716
1967	10,156	2,710	1,127	1,583	7,446	2,083	12,239
1968	10,945	2,014	1,233	1,781	7,931	2,332	13,277
1969	12,034	3,282	1,304	1,978	8,752	2,038	14,072
1970	12,470	2,795	1,313	1,482	9,675	2,249	14,719
1971	12,972	3,014	1,373	1,641	9,958	2,412	15,384
1972	13,169	3,218	1,429	1,699	10,041	2,575	15,744
1973 ¹	12,958	3,275	1,480	1,795	9,683	2,850	15,808
East Germany (marks):²							
1960	1,000	447	233	214	553	50	1,050
1961	1,000	464	242	222	536	50	1,050
1962	2,700	472	246	226	2,228	135	2,835
1963	2,800	574	299	275	2,226	140	2,940
1964	2,900	593	311	282	2,307	145	3,045
1965	3,100	629	332	297	2,471	155	3,255
1966	3,200	679	358	321	2,521	160	3,360
1967	3,600	717	376	341	2,883	180	3,780
1968	* 4,814	812	434	378	4,002	241	5,055
1969	* 5,229	848	452	396	4,381	261	5,490
1970	* 5,712	838	466	372	4,874	286	5,998
1971	* 6,018	837	479	358	5,181	301	6,319
1972	* 6,237	858	495	363	5,359	311	6,528
1973 ¹	* 6,571	923	525	398	5,648	329	6,900
Hungary (forints):							
1960	3,100	1,522	760	762	1,578		3,100
1961	3,376	1,545	777	768	1,831		3,376
1962	4,913	1,573	805	768	3,340		4,913
1963	6,500	1,827	954	873	4,673		6,500
1964	6,163	1,918	1,008	910	4,245		6,163
1965	5,757	1,982	1,028	954	3,775		5,757
1966	5,219	2,032	1,069	963	3,187		5,219
1967	5,433	2,004	1,084	920	3,429		5,433
1968	6,611	2,051	1,123	928	4,560		6,611
1969	7,644	2,131	1,168	963	5,513		7,644
1970	9,448	2,195	1,235	960	7,253		9,448
1971	9,891	2,166	1,226	940	7,725		9,891
1972	9,430	2,294	1,282	1,012	7,136		9,430
1973 ¹	9,848	2,386	1,332	1,054	7,462		9,848
Poland (zlotys):							
1960	14,920	3,857	2,265	1,592	11,063	150	15,070
1961	17,019	4,087	2,451	1,636	12,932	203	17,222
1962	18,378	4,099	2,429	1,670	14,279	248	18,626
1963	20,695	4,276	2,544	1,732	16,419	272	20,967
1964	21,881	4,692	2,806	1,886	17,189	294	22,175
1965	23,255	5,303	3,300	2,003	17,952	297	23,552
1966	25,213	4,697	2,798	1,899	20,516	338	25,551
1967	26,438	5,046	2,977	2,069	21,392	412	26,850
1968	30,332	5,307	3,105	2,202	25,025	442	30,774
1969	33,519	5,496	3,176	2,320	28,023	424	33,943
1970	35,724	5,047	2,914	2,133	30,677	450	36,174
1971	37,684	6,161	3,499	2,662	31,523	735	38,419
1972	39,490	6,649	3,845	2,804	32,841	1,034	40,524
1973 ¹	39,206	7,185	4,333	2,852	32,021	1,162	40,368

See footnotes at end of table p. 309.

TABLE 3.—ESTIMATES OF DEFENSE EXPENDITURES BY MAJOR PURPOSE, EAST EUROPEAN COUNTRIES, IN CURRENT DOMESTIC CURRENCIES (MILLIONS), 1960-73—Continued

	Defense budget expenditures						Total (1)+(6)
	Total	Personnel costs			Operations, mainte- nance, pro- curements	Research and devel- opment	
		Total	Military pay	Subsist- ence			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Romania (lei):							
1960.....	3,392	1,312	631	681	2,080	-----	3,392
1961.....	3,639	1,379	663	716	2,260	-----	3,639
1962.....	3,924	1,457	700	757	2,467	-----	3,924
1963.....	4,143	1,564	746	818	2,579	-----	4,143
1964.....	4,346	1,610	774	836	2,736	-----	4,346
1965.....	4,735	1,624	808	816	3,111	-----	4,735
1966.....	4,927	1,686	848	838	3,241	-----	4,927
1967.....	5,146	1,617	852	765	3,529	-----	5,146
1968.....	5,751	1,665	877	788	4,086	-----	5,751
1969.....	6,319	1,823	929	894	4,496	-----	6,319
1970.....	7,067	1,955	1,016	939	5,112	-----	7,067
1971.....	7,424	1,736	902	834	5,688	-----	7,424
1972.....	7,710	1,937	1,007	930	5,773	-----	7,710
1973 ¹	7,922	1,893	984	909	6,029	-----	7,922

¹ Preliminary.² Excludes civilian portion of internal security.

Source: "Estimates of Military Expenditures in Eastern Europe," op. cit., table 2, and notes thereto, revised and updated to 1971-73.

The general results for all countries show a clear tendency for total defense expenditures to rise more rapidly than personnel costs. The rise in personnel costs, it should be noted, is partly attributable to the fact that rising wage levels and rising costs of living are reflected in our estimates of pay and subsistence. The numbers of personnel have tended to increase somewhat in very recent years, according to the Institute for Strategic Studies estimates. Increasing costs of operations, maintenance and procurements per uniformed effective are, of course, a logical concomitant of modernization, the introduction of more sophisticated and more expensive weaponry, communications and other equipment.

With regard to the changing structure of the observed defense budgets, it seems important to state that none of the breakdowns of expenditure by purpose in these estimates rely directly on the technique of estimating by analogy with other countries or earlier time periods. In the Benoit-Lubell estimates, analogy to Poland is the basis for all the countries in question but Czechoslovakia, and their sources suggest that their detailed breakdown of the residual after personnel costs for both countries derives from estimates made for 1956.³ In the estimates presented here in table 3, the technique of analogy was almost totally confined to minor aspects, such as differentials between enlisted men's and officers' pay. No structural rule of thumb was applied to all in common beyond the assumption with regard to the financing of security troops, discussed above. The broad results are the product of numbers of troops and rates of pay and subsistence calculated separately for each country. No reasonably sound up-to-date basis was found for a breakdown of the operations-maintenance-procurement residuals, hence no new attempt was made in this regard.

³ Emile Benoit, ed. *Disarmament and World Economic Interdependence*, New York, Columbia University Press, 1967, pp. 31-32 and 37.

IV. ESTIMATES OF DEFENSE EXPENDITURES AT ADJUSTED DOMESTIC PRICES

At the present state of research, revaluations of military expenditures in Eastern Europe at prices closer to factor costs than the established market prices can be offered for only two countries, Czechoslovakia and Hungary, for the single years 1967 and 1968, respectively. It should be understood that even these estimates, limited as they are in geographical and chronological scope, are tentative. The detailed GNP accounts from which they are drawn are still in manuscript, potentially subject to some revision.

The estimates in question are shown in table 4, in terms of the structure of GNP by end use. The definition of GNP here is the Western concept rather than the narrower net material product national income traditionally used in Eastern Europe. The underlying values are current domestic values of the given years. For each country, the structure of GNP by end uses is shown first as measured in current domestic market prices, then as adjusted with a view to correcting for major departures from factor costs.

TABLE 4.—STRUCTURE OF GROSS NATIONAL PRODUCT BY END USE AT MARKET PRICES AND ADJUSTED PRICES, CZECHOSLOVAKIA 1967 AND HUNGARY 1968

[In percent]

	Market prices		Adjusted prices	
	Hungary 1968	Czechoslovakia 1967	Hungary 1968	Czechoslovakia 1967
Personal consumption.....	53.9	52.1	51.1	52.7
Government consumption.....	9.0	10.5	6.6	9.8
National defense.....	2.4	4.2	3.5	5.4
(a) Cost of personnel.....	.4	.9	.4	.9
(b) Military purchases.....	2.0	3.3	3.1	4.5
Gross investment.....	34.7	33.2	35.8	32.2
Total.....	100.0	100.0	100.0	100.0

Source: Research project on national income in East-Central Europe, "Czechoslovak National Income and Product," 1966 and 1967, tables 1A-5C, in manuscript, 1972, and "Hungarian National Income and Product, 1967 and 1968," tables 1A-5C, in manuscript, 1972.

For the adjusted measures here, the guiding principle is that the total GNP in market prices recompenses the factors of production taken as a whole. The need for adjustment of the component market prices values arises because, in these centrally planned economies, the disparate incidence of indirect taxes, profits, and subsidies in individual market prices distorts the reflection of the costs of factors used in the production of particular goods, or categories of goods, and services. Through the intervention of reallocative fiscal devices, such as the turnover tax, the cost of the capital used to produce commodity A may be collected in the selling prices of commodity B. Recent price reforms in Eastern Europe have mitigated some of the earlier extremes of arbitrariness in this regard, but the nonuniform incidence of turnover taxes, profits, and subsidies is still an important factor affecting the structure of GNP. The adjustment procedure used for the esti-

mates here is largely a matter of redistributing known values of indirect taxes, profits, and subsidies among the various end uses of GNP with a view to achieving a more accurate reflection than is offered by the market price values of the cost of all the factors entering into a particular final product or service.

Details of estimating procedure vary somewhat from country to country, depending on the availability of data. The general approach is to deduct indirect taxes and profits from the appropriate use values in market prices, and add offsetting subsidies to obtain "adjusted base" values. The total sum of the net deduction (indirect taxes plus profits, minus subsidies) is then redistributed among the eligible GNP uses. The portion assigned to rent is such as to make the measure of rent in terms of adjusted prices equal to the gross value added by housing (as adjusted to allow for a return to capital at the same rate as in other sectors of production) plus purchases from other sectors. The remainder is distributed among the other eligible uses in proportion to their "adjusted base" values (that is, market price less indirect taxes and profits, plus subsidies).

In making the adjustments for turnover taxes, profits, and subsidies, we were guided by information given in official statistical sources and in discussions of the State budgets and prices in economic periodicals. The Hungarian 1968 and 1969 input-output tables facilitated a number of rough adjustments by indicating the distribution of output of affected sectors of production to intermediate and final uses and also by showing the structure of costs of production. It must be emphasized that the adjustments we made are by no means precise; however, they provide a structure of GNP by end uses that we believe is closer to factor cost than the structure in the established market prices.

The result of the adjustment, for both countries, shown in table 4, is a larger share of GNP for military uses than indicated in the market prices. In this context, we should note that we followed convention in accepting the actual returns to labor as equal to factor cost in valuing certain components of end uses of GNP. The single instance where this procedure is especially important is the valuation of services of military personnel. The very low shares of personnel cost observable in table 4 are a reflection of low pay levels for enlisted personnel in East European forces. Costs of military personnel were not affected by the adjustment procedure followed for table 4. An adjustment along the lines of opportunity cost would result in a significant increase in such personnel costs.

The question of opportunity costs is especially important for international comparisons in the military field. Where conscription results in nominal cash pay in some countries, but in pay closer to opportunity cost of the labor in others, there is obviously a departure from symmetry of valuation in the comparison of shares of military expenditures in the GNP's. If the adjustment procedure were carried out so as to allow for revaluation of services of military personnel at opportunity cost in each country's adjusted structure of GNP in its own costs, or prices, then the shares of military expenditures in the countries where conscripts are given nominal wages (as in Eastern Europe) would increase relatively in comparison with countries where the conscripts are paid a substantial part of their opportunity cost

V. DOLLAR ESTIMATES OF EAST EUROPEAN MILITARY EXPENDITURES BY MAJOR PURPOSE, EXISTING CONVERSION RATES, AND SOME NEW APPROACHES

For international comparisons of military expenditures, or of other components of national products, of the Warsaw Pact countries, it is necessary to express the given values in the national currencies in a common unit of value. The present chapter will survey various available approaches for conversions into U.S. dollars and offer some alternatives.

Among the available conversion rates are two sets of official exchange rates and two sets of Western conversion rates applied to military expenditures. For each country, the official rates are the "basic" rate that is used as a unit of account in foreign trade statistics and the "noncommercial" or tourist rate applied to traveler's funds and sometimes to other personal transactions. The two sets of Western rates are, first, those estimated by Benoit and Lubell and subsequently adopted as the basis for dollar estimates published by the Stockholm International Peace Research Institute (SIPRI) and the Institute for Strategic Studies, London (ISS), and second, those used for dollar estimates published by the U.S. Arms Control and Disarmament Agency (ACDA).⁴ A complete set of our rates for 1960-73 appears in this study in table 1, column 2. Various rates for 1965 shown below were chosen for purposes of comparison with the original Benoit-Lubell estimates, which referred to 1964-65.

Of the two sets of official rates, it may be said that neither offers a satisfactory basis for converting military expenditures. The arbitrary nature of the "basic" rates is well known; indeed, it is admitted that they bear no meaningful relationship to purchasing power parity with respect to the goods moving in international trade. The noncommercial, or tourist rates, in contrast, are intended to and apparently largely do reflect purchasing power parities for a tourist's basket of consumer goods and services. Here, however, the objection is that such purchases not only represent a product-mix lacking many of the elements included in military expenditures, but also that they are made at prices including a high incidence of turnover tax, from which purchases by East European ministries of defense are thought to be largely exempt, and probably higher profit rates than the average included in the prices of military procurements.

MAJOR AVAILABLE SETS OF RATES FOR CONVERTING EAST EUROPEAN NATIONAL CURRENCIES TO U.S. \$1

Country	Official rates			
	Basic (1964)	Noncommercial (1968)	Benoit-Lubell (1964-65)	ACDA (1965)
	(1)	(2)	(3)	(4)
Bulgaria (leva).....	1.17	2.00	1.16	1.11
Czechoslovakia (crowns).....	7.20	16.20	8.50	8.45
East Germany (marks).....	2.22	(7.3)	3.39	3.42
Hungary (forints).....	11.74	30.00	17.36	15.95
Poland (zlotys).....	4.00	40.00	15.92	18.32
Romania (lei).....	6.00	18.00	9.43	13.35

SOURCES

- Col. 1: Calculated on the basis of officially given gold content.
 Col. 2: "Nemzetközi statisztikai évkönyv" (international statistical yearbook), 1970, Budapest, p. 365.
 Col. 3: Emile Benoit, ed. "Disarmament and World Economic Interdependence", New York, 1967, p. 40.
 Col. 4: "Estimates of Military Expenditures in Eastern Europe," *op. cit.*, table 1, col. 11.

⁴ These rates were calculated for ACDA by Thad P. Alton, Gregor Lazarcik, Laszlo Czirjak, and Elizabeth Bass at the Research Project on National Income in East Central Europe, L. W. International Financial Research, Inc., New York, N. Y.

The Benoit-Lubell rates, in the words of their authors, represent "very rough purchasing power parity."⁵ The rather general account provided of their derivation indicates that they are based on comparisons of general national income and product aggregates. It is not clear whether or not any consistent effort was made when deriving these estimates to allow for the skewed incidence of turnover tax and profits in East European prices of different categories of goods and for different categories of buyers. The authors were, however, quite aware of this problem, as evidenced by their use of differential rates for various components of the U.S.S.R.'s defense expenditures.⁶

The set of rates hitherto used for dollar estimates published by ACDA were given implicitly by estimates of GNP in national currencies and in dollars, with adjustments to remove the turnover tax, and profits and profit taxes from the national currency values. These elements are believed to be absent in the prices paid by ministries of defense. The conversion rates thus derived must also be regarded as very rough approximations of purchasing power parity.⁷

Clearly, the rates implicitly given by comparisons of aggregates in national currencies and in dollars are far from ideal. They reflect the roughness of the basic estimates. However, more satisfactory information on purchasing power parities is thus far fragmentary. Some work in this field has been done among the East European countries themselves, but very few results have been published. Reported United Nations research may bring some new results.

Even if detailed purchasing power parity rates were available for application to the diverse bundles of military goods and services, there would still remain problems of choosing suitable weights for combining the detailed rates into rates appropriate for major components of military expenditures. The composition of the latter varies among countries and, for given countries, over time.

The new estimates offered in this chapter represent a somewhat more direct approach to the problem of converting East European military outlays into dollars, although they still, inevitably, rest in part on rates implicitly derived from GNP estimates in dollars and in national currencies. The roughness of the "purchasing power" parities underlying the dollar figures has already been noted. Our approach in all three variants presented is to convert the military personnel costs within military expenditures by pricing the "products," that is, the services of the officers and enlisted men, directly in American prices. This is done entirely in terms of cash pay in variants A and B, with an alternative treatment of subsistence in variant C. The reliance on implicit GNP rates, of which two further variants are used, is thus somewhat reduced in scope.

Our results in current U.S. dollars are presented in three variants: A, B, and C in tables 5 and 6, respectively. The calculations are summarized below. We assumed for all three variants that the percentage of officers in total military personnel was roughly the same as in the United States, or 12 percent on the average, for the East European countries for the 1960-73.⁸ It may be noted that this ostensibly differs from the procedure in chapter III where, for cal-

⁵ Emile Benoit, ed. *Disarmament and World Economic Interdependence*, New York, 1967, p. 40.

⁶ Specifically (in rubles per \$1 U.S.): 0.5 for procurements, R. & D., operations, maintenance and construction; 0.2 for cash pay of military personnel and cost of transfers; 1 for military subsistence; see *ibid.*, p. 40.

⁷ Details on the estimation of these rates will be found in *Estimates of Military Expenditures in Eastern Europe*, op. cit., notes to table 1.

⁸ See U.S. Department of Commerce, *Statistical Abstract of the United States, 1971*, p. 252.

culating the cost of military personnel in domestic currencies, we put the number of officers at 20 percent of the total military personnel. This larger share was assumed to include lower grade officers, covering sergeants as well as commissioned officers.

For each of the three variants, we estimated separately three functional categories of military expenditures: (1) personnel costs, broken into compensation for officers and for enlisted men, separately; (2) costs of operations, maintenance, and procurements; and (3) estimates of military research and development for those countries in which this category was believed to be of some significance (that is, Czechoslovakia, East Germany, and Poland).⁹ It is to be noted that military subsistence (cost of food and clothing) is included in compensation of officers and enlisted men.

TABLE 5.—ESTIMATES OF DEFENSE EXPENDITURES BY MAJOR PURPOSE, EAST EUROPEAN COUNTRIES, IN CURRENT U.S. DOLLARS (MILLIONS), 1960-73 (VARIANT A AND B)

Year	Personnel costs	Nonpersonnel and research and development costs		Total defense expenditures	
		Variant A	Variant B	Variant A	Variant B
Bulgaria:					
1960	488	68	77	556	565
1961	502	90	102	592	604
1962	515	114	130	629	645
1963	479	134	153	613	632
1964	559	107	121	666	680
1965	589	88	100	677	689
1966	609	90	103	699	712
1967	639	88	100	727	739
1968	663	93	105	756	768
1969	693	120	137	813	830
1970	777	137	156	914	933
1971	844	172	196	1,016	1,040
1972	928	202	231	1,130	1,159
1973 ¹	1,071	230	262	1,310	1,333
Czechoslovakia:					
1960	672	453	510	1,125	1,192
1961	690	485	557	1,175	1,247
1962	708	580	667	1,288	1,375
1963	727	623	715	1,350	1,442
1964	915	609	700	1,524	1,615
1965	952	626	724	1,579	1,676
1966	908	700	803	1,608	1,711
1967	973	767	881	1,740	1,854
1968	1,015	805	924	1,820	1,939
1969	1,086	816	937	1,902	2,023
1970	950	959	1,102	1,909	2,052
1971	1,140	1,043	1,199	2,183	2,339
1972	1,267	1,073	1,232	2,340	2,499
1973 ¹	1,427	1,111	1,276	2,538	2,703
East Germany:					
1960	442	125	144	567	586
1961	455	121	138	576	593
1962	467	495	566	962	1,033
1963	582	503	576	1,085	1,158
1964	596	520	595	1,116	1,191
1965	641	577	661	1,218	1,302
1966	684	594	681	1,278	1,365
1967	724	679	778	1,403	1,502
1968	827	967	1,108	1,794	1,935
1969	877	1,089	1,248	1,966	2,125
1970	945	1,249	1,429	2,194	2,374
1971	995	1,350	1,544	2,345	2,539
1972	1,100	1,443	1,653	2,543	2,753
1973 ¹	1,281	1,594	1,828	2,875	3,109

See footnote at end of table, p. 315.

⁹ Research and development is shown together with nonpersonnel costs (operations, maintenance, and procurements).

TABLE 5.—ESTIMATES OF DEFENSE EXPENDITURES BY MAJOR PURPOSE, EAST EUROPEAN COUNTRIES, IN CURRENT U.S. DOLLARS (MILLIONS), 1950-73 (VARIANT A AND B)—Continued

Year	Personnel costs	Nonpersonnel and research and development costs		Total defense expenditures	
		Variant A	Variant B	Variant A	Variant B
Hungary:					
1960	352	63	72	415	424
1961	362	74	85	436	447
1962	372	136	156	508	528
1963	443	194	222	637	665
1964	471	179	205	650	676
1965	507	165	189	672	696
1966	513	139	159	652	672
1967	503	148	170	651	673
1968	525	192	220	717	745
1969	566	226	258	792	824
1970	638	306	351	944	989
1971	673	334	383	1,007	1,056
1972	749	305	349	1,054	1,098
1973 ¹	825	335	384	1,160	1,209
Poland:					
1960	922	475	546	1,397	1,468
1961	947	561	644	1,508	1,591
1962	972	594	683	1,566	1,655
1963	998	681	783	1,679	1,781
1964	1,074	714	821	1,788	1,895
1965	1,135	736	846	1,871	1,981
1966	1,086	857	984	1,943	2,070
1967	1,157	912	1,048	2,069	2,205
1968	1,222	1,077	1,237	2,299	2,459
1969	1,311	1,211	1,392	2,522	2,703
1970	1,343	1,364	1,548	2,707	2,911
1971	1,708	1,365	1,569	3,073	3,277
1972	1,999	1,422	1,633	3,421	3,632
1973 ¹	2,239	1,410	1,621	3,649	3,860
Romania:					
1960	861	134	154	995	1,015
1961	884	149	171	1,033	1,055
1962	908	158	182	1,066	1,090
1963	948	155	179	1,103	1,127
1964	956	160	185	1,116	1,141
1965	910	179	206	1,089	1,116
1966	894	193	223	1,087	1,117
1967	819	215	247	1,034	1,066
1968	854	252	290	1,106	1,144
1969	994	286	330	1,280	1,324
1970	1,081	339	391	1,420	1,472
1971	1,036	392	452	1,428	1,488
1972	1,261	403	465	1,664	1,726
1973 ¹	1,332	439	507	1,771	1,839
Eastern Europe:					
1960	3,737	1,318	1,503	5,055	5,240
1961	3,840	1,480	1,697	5,320	5,537
1962	3,942	2,077	2,384	6,019	6,326
1963	4,177	2,290	2,628	6,467	6,805
1964	4,571	2,289	2,627	6,860	7,198
1965	4,734	2,371	2,726	7,105	7,460
1966	4,694	2,573	2,953	7,267	7,647
1967	4,815	2,803	3,224	7,624	8,039
1968	5,106	3,836	3,884	8,492	8,990
1969	5,527	3,748	4,302	9,275	9,829
1970	5,734	4,354	4,977	10,086	10,711
1971	6,396	4,656	5,343	11,052	11,739
1972	7,304	4,848	5,563	12,152	12,867
1973 ¹	8,175	5,119	5,878	13,294	14,053

¹ Preliminary.

Source: Calculated from "Estimated of Military Expenditures in Eastern Europe," op. cit., tables 4 and 5, revised and updated for 1971-73.

Variants A.—In this variant the estimates of different categories of outlays in current U.S. dollars were done as follows: (1) The cost of personnel was obtained by attributing to officers in all East European countries (12 percent of total military personnel) the average yearly compensation in dollars of officers in the United States, and by at-

tributing to the enlisted personnel in all East European countries (88 percent of total military personnel) 75 percent of the average yearly compensation (including subsistence) in dollars of enlisted men in the United States. This rough downward adjustment of enlisted men's pay is justified by the consideration that the technical qualifications required of these men in Eastern Europe is assumed to be lower than in the United States. No similar downward adjustment was felt to be necessary for the officer's pay in Eastern Europe because their duties and competence are thought to be about the same as in the United States. The average annual pay plus allowances for officers and enlisted men in the United States is given below in current U.S. dollars:

Year	Officers	Enlisted personnel	Enlisted personnel, adjusted (75 percent of col. 2)
	(1)	(2)	(3)
1960.....	8,734	3,034	2,276
1961.....	8,884	3,135	2,351
1962.....	9,034	3,236	2,427
1963.....	9,184	3,337	2,503
1964.....	9,334	3,439	2,579
1965.....	9,677	3,583	2,687
1966.....	9,811	3,612	2,709
1967.....	10,684	3,622	2,716
1968.....	10,697	3,862	2,896
1969.....	11,341	4,146	3,110
1970.....	12,947	4,734	3,550
1971.....	14,000	5,300	3,975
1972.....	15,000	6,000	4,500
1973.....	16,000	6,700	5,025

Source: 1960 and 1964-66: U.S. Department of Commerce, "Statistical Abstract of the United States, 1965," p. 265; 1961-63: Estimated by interpolation; 1967: *ibid.*, 1968, p. 262; 1968: *ibid.*, 1969, p. 260; 1969-70; *ibid.*, 1971, p. 255; 1971-73: *ibid.*, 1973, p. 271.

The average annual pay given above in columns 1 and 3 was multiplied by the number of officers and enlisted men for each country and year, respectively. The resulting values in U.S. dollars are shown in table 5, column 1 for officers and enlisted men combined.

(2) Dollar estimates of outlays on operations, maintenance, and procurements, and research and development (table 5, cols. 2 and 3) were obtained for variant A by converting our estimates in domestic currencies for East European countries (table 3, cols. 5 and 6) by the GNP implicit average exchange rates between the U.S. dollar and domestic currencies given in table 1, column 2, for respective countries and years. These GNP exchange rates were derived by comparing GNP's in domestic currencies with the corresponding dollar values of the GNP's in current prices. The calculation of GNP's in current U.S. dollars is described in chapter II, and the respective values are given in table 1 column 1. It is to be noted that the GNP dollar estimates in table 1 are based on Maurice Ernst's study,¹⁰ updated by Thad P. Alton.¹¹ In the variant A of Alton's estimates that we used, the GNP at current domestic prices in the various Eastern European countries was converted to West German marks by means of estimated purchasing power ratios for individual components of GNP. The values in West German marks so obtained were then converted into U.S.

¹⁰ Maurice Ernst, in U.S. Congress, Joint Economic Committee, *New Directions in the Soviet Economy*, Washington, U.S. Government Printing Office, 1966, Part IV, Appendix A, pp. 911-912.

¹¹ Thad P. Alton, in U.S. Congress, Joint Economic Committee, *Economic Developments in Countries of Eastern Europe*, 1970, pp. 48-49, and "Economic Growth and Resource Allocation in Eastern Europe," Table 8, in this volume. The GNP estimates for 1973 were obtained by extrapolating the 1972 figures.

dollars at official exchange rates between the U.S. dollar and the West German mark, originally for 1955. The 1955 U.S. dollar values of East European GNP's were carried forward by East European GNP quantity indexes into the 1960-73 period, and then the GNP's in constant U.S. dollars of 1955 were deflated into current dollars by the U.S. GNP implicit price deflator.

It should be also noted that the estimates of military research and development outlays are very rough and were made only for Czechoslovakia, East Germany, and Poland, on the basis of very scanty information.

Variante B.—In this variant the cost of personnel (table 5, col. 1) is the same as under variant A and the method of its estimation is described in variant A above.

Dollar estimates of outlays on operations, maintenance, and procurement, and research and development (table 5, col. 3) were obtained by converting our estimates in domestic currencies for the East European countries (table 3, cols. 5 and 6) by variant B GNP implicit average exchange rates between the U.S. dollar and domestic currencies for each country as follows (U.S. \$1 equals amounts shown in table):

Year	Bulgaria (leva)	Czechoslovakia (crowns)	East Germany (marks)	Hungary (forint)	Poland (zloty)	Romania (lei)
1960.....	1.35	11.08	4.20	21.95	20.52	13.49
1961.....	1.35	11.29	4.24	21.60	20.39	13.18
1962.....	1.36	11.14	4.17	21.47	21.28	13.54
1963.....	1.42	10.82	4.11	21.07	21.32	14.40
1964.....	1.40	10.10	4.12	20.70	21.31	14.80
1965.....	1.37	9.84	3.97	19.94	21.58	15.10
1966.....	1.35	10.20	3.94	20.05	21.19	14.55
1967.....	1.32	10.82	3.94	20.22	20.81	14.26
1968.....	1.31	11.11	3.83	20.69	20.58	14.08
1969.....	1.28	11.52	3.72	21.34	20.44	13.64
1970.....	1.27	10.82	3.61	20.66	19.86	13.07
1971.....	1.14	10.32	3.55	20.16	20.56	12.59
1972.....	1.12	10.24	3.43	20.45	20.74	12.42
1973.....	1.07	9.82	3.27	19.44	20.47	11.90

The method of calculation of the variant B GNP implicit exchange rates is the same as in variant A above, both being based on Ernst's study as updated by Alton, except that their variant B GNP dollar estimate was used to obtain the implicit average exchange rates. In their variant B, the GNP at current domestic prices in various East European countries was converted to West German marks by means of estimated purchasing power ratios for individual components of GNP (by the same method as for variant A), and then the values in West German marks so obtained were converted into U.S. dollars by means of estimated purchasing power parity equivalents for 1955 prepared by Milton Gilbert and Associates.¹²

Variante C.—In this variant the military expenditures by major purpose in East European countries were estimated in current U.S. dollars for 1968 (table 6). Estimates were made for 1968 only, because the purchasing power parity exchange rates for military subsistence were estimated only for that year.

¹² Milton Gilbert and Associates. *Comparative National Products and Price Levels*, Paris, O.E.E.C., 1958.

Personnel costs, except for military subsistence (table 6, rows 2 to 5), were calculated by the same procedure as under variant A above (table 5, col. 2; see also sources to table 6).

The cost of military subsistence (food and standard clothing, table 6, row 6) was estimated by converting the value of military subsistence in domestic currencies given in table 3, column 4, into U.S. dollars by purchasing power parity exchange rates for food, clothing, and footwear calculated on the basis of major consumption quantities in each of the East European countries, valued respectively at average U.S. retail prices in 1968 and at the average retail prices in each East European country's domestic currency in 1968. The estimated exchange rates are given in notes to table 6, row 6. It should be noted that the value of military subsistence in variants A and B (\$475 per enlisted man per year) is included in the cost of personnel (table 5).

Dollar estimates of expenditures on operations, maintenance, and procurement, and research and development (table 6, rows 7 and 8) are the same as under variant B (table 5, col. 3), and the method of their estimation is described in variant B above.

TABLE 6.—ESTIMATES OF DEFENSE EXPENDITURES BY MAJOR PURPOSE, EAST EUROPEAN COUNTRIES, IN CURRENT U.S. DOLLARS (MILLIONS), 1968 (VARIANT C)

	Bulgaria	Czecho- slovakia	East Germany	Hungary	Poland	Romania	East Europe
1. Total defense.....	788	1,755	1,916	771	2,457	1,139	8,826
2. Personnel cost, total.....	683	1,041	871	551	1,241	849	5,236
3. Officers.....	222	340	277	176	409	286	1,710
4. Enlisted men, total.....	461	701	594	375	832	563	3,526
5. Military pay.....	392	599	489	310	722	505	3,017
6. Subsistence.....	69	102	105	65	110	58	509
7. Operations, maintenance, procurement.....	105	714	1,045	220	1,216	290	3,590
8. Research and development.....		210	63		21		294
9. Total defense and research and development.....	788	1,965	1,979	771	2,478	1,139	9,120

Sources: Row 1: Sum of rows 2 and 7. Row 2: Sums of rows 3 and 4. Row 3: Obtained by applying to number of officers (12 percent of total personnel) in 1968 the U.S. officers' pay plus allowances in 1968, or \$10,697 (see variant A). Row 4: Sum of rows 5 and 6. Row 5: Obtained by applying to 8 percent of all military personnel the U.S. enlisted men adjusted pay in 1968, or \$2,896 (see variant A) plus applying to 80 percent of all military personnel the U.S. enlisted men adjusted pay in 1968 reduced by the value of subsistence (\$475 per enlisted man and year, see U.S. Department of Defense, Modernizing Military Pay, vol. I, Washington, 1967, p. 45). Row 6: Military subsistence in domestic currencies given in table 3, col. 4 was converted into U.S. dollars by purchasing power parity exchange rates for food, clothing, and footwear calculated on the basis of major consumption quantities in these countries in U.S. retail prices and in each of the domestic currencies in 1968. The resulting exchange rates to the U.S. dollar were 0.9 leva for Bulgaria, 15.5 crowns for Czechoslovakia, 3.6 marks for East Germany, 14.0 forints for Hungary, 20.7 zlotys for Poland, and 13.5 lei for Romania. Row 7 and 8: Estimates of Military Expenditures in Eastern Europe, op. cit, table 5, rows 5 and 6, respectively, revised. Row 9: Sum of rows 1 and 8.

VI. A COMPARISON OF SELECTED WESTERN ESTIMATES OF EAST EUROPEAN MILITARY EXPENDITURES

The estimates to be considered here are those appearing in the publications of the Institute for Strategic Studies in London (ISS), the Stockholm International Peace Research Institute (SIPRI), the United Nations, the U.S. Arms Control and Disarmament Agency (ACDA), official East European data, and our estimates. For purposes of comparison and analysis, they fall into two groups: estimates in domestic East European values (shown in conjunction with official defense expenditure data in table 7) and estimates in U.S. dollar values (of which the current price versions are shown in table 8).

In the domestic currency group of estimates (table 7), there appears to be substantial agreement among all sources that the officially announced defense appropriations in East European State budgets

constitute the main measure of military expenditures in these countries. Many of the seeming discrepancies in table 7 between the official budget series and the figures published by ISS, SIPRI, and the UN are traceable to differences between ex-ante, or planned budget expenditure figures and ex-post data on actual budget expenditures. The latter sometimes appear with a considerable timelag. Hence differences between up-to-the-minute assessments such as those issued annually by ISS and retrospective estimates are to be expected. Discrepancies can also arise when defense expenditures are announced in vague terms, such as shares of proposed budgets, as is routine in the case of Bulgaria. Also, for particular countries in particular years there may be more than one published version of both the ex-ante and ex-post figures, differences between appropriations initially proposed and ultimately passed into law, between actual expenditures as reported on a preliminary basis and as ultimately recorded in final accounts.

TABLE 7.—COMPARISON OF MILITARY EXPENDITURE ESTIMATES, 1960-73

[In millions of domestic currencies, current prices]

	Bulgaria					Czechoslovakia					
	Official	ISS	SIPRI	U.N.	Ours	Official ¹	Official ²	ISS	SIPRI	U.N.	Ours
1960.....	179	(³)	179	179	179	8,783	6,229	(³)	8,800	8,800	7,765
1961.....	217	(³)	217	217	217	9,512	7,229	(³)	9,500	9,500	8,328
1962.....	258	(³)	258	258	258	10,845	8,242	(³)	10,900	10,900	9,501
1963.....	297	(³)	270	(³)	297	10,829	8,447	(³)	11,300	11,300	9,827
1964.....	260	260	260	(³)	260	10,217	7,968	10,948	10,900	10,200	9,521
1965.....	230	231	231	(³)	230	10,125	7,896	10,220	10,300	10,100	9,618
1966.....	240	240	240	240	240	10,841	8,890	10,800	10,900	10,900	10,716
1967.....	247	264	264	(³)	247	12,385	10,156	12,373	12,400	12,400	12,239
1968.....	264	264	264	(³)	264	13,189	10,945	13,000	13,000	13,200	13,277
1969.....	302	272	303	(³)	302	14,268	12,034	13,400	13,900	14,300	14,072
1970.....	324	324	324	(³)	324	14,919	12,470	13,900	14,800	14,900	14,719
1971.....	(³)	324	366	(³)	354	15,943	12,972	15,000	15,030	16,200	15,384
1972.....	(³)	324	(³)	(³)	391	16,770	13,169	15,920	15,920	17,100	15,744
1973.....	(³)	422	(³)	(³)	422	16,800	12,958	16,700	(³)	(³)	15,808

	East Germany					Hungary					
	Official ¹	Official ²	ISS	SIPRI	U.N.	Ours	Official	ISS	SIPRI	U.N.	Ours
1960.....	1,000	1,000	(³)	(³)	(³)	1,050	3,100	(³)	(³)	(³)	3,100
1961.....	1,000	1,000	(³)	(³)	(³)	1,050	3,376	(³)	3,563	3,563	3,376
1962.....	2,700	2,700	(³)	2,764	(³)	2,835	4,913	(³)	4,998	4,998	4,913
1963.....	2,800	2,800	(³)	2,764	(³)	2,940	6,500	(³)	6,050	6,050	6,500
1964.....	2,900	2,900	2,764	2,764	(³)	3,045	6,163	6,150	6,005	6,005	6,163
1965.....	3,100	3,100	2,800	2,800	(³)	3,255	5,757	5,757	4,926	4,926	5,757
1966.....	3,200	3,200	3,300	3,300	(³)	3,360	5,219	5,219	5,064	6,064	5,219

1967	3,600	3,600	3,600	3,600	(*)	3,780	5,433	5,444	5,437	5,433	5,433
1968	5,800	4,814	5,800	5,800	(*)	5,055	6,611	6,439	6,439	6,611	6,611
1969	6,300	5,229	6,350	6,350	(*)	5,490	7,644	7,952	7,952	7,644	7,644
1970	6,800	5,712	6,747	6,747	(*)	5,998	9,448	8,900	8,900	9,848	9,448
1971	7,200	6,018	7,200	7,200	(*)	6,319	9,891	8,900	9,440	9,891	8,891
1972	7,600	6,217	7,600	7,625	(*)	6,528	9,430	9,717	9,715	9,715	9,430
1973	8,328	6,571	8,328	8,300	(*)	6,900	9,848	16,117	9,850	(*)	9,848

	Poland					Romania				
	Official	ISS	SIPRI	U.N.	Ours	Official	ISS	SIPRI	U.N.	Ours
1960	14,920	(*)	14,900	14,900	15,070	3,392	(*)	(*)	(*)	3,392
1961	17,019	(*)	17,000	17,000	17,222	3,639	(*)	(*)	(*)	3,639
1962	18,378	(*)	18,400	18,400	18,626	3,924	(*)	3,900	(*)	3,924
1963	20,695	(*)	20,700	20,700	20,967	4,143	(*)	4,100	(*)	4,143
1964	21,881	22,233	21,900	21,900	22,175	4,346	4,110	4,110	(*)	4,346
1965	23,255	23,459	23,600	23,200	23,552	4,735	4,540	4,540	4,735	4,735
1966	25,213	25,300	25,200	25,200	25,551	4,927	4,800	4,800	4,927	4,927
1967	26,438	26,450	26,400	26,400	26,850	5,146	5,000	5,000	5,146	5,146
1968	30,332	29,111	29,100	30,300	30,774	5,751	5,187	5,187	5,751	5,751
1969	33,519	31,936	33,000	33,500	33,943	6,319	5,395	6,400	6,319	6,319
1970	35,724	35,300	35,400	35,700	36,174	7,067	7,000	7,052	7,067	7,067
1971	37,685	35,300	37,700	37,200	38,419	7,424	7,500	7,495	7,424	7,424
1972	39,490	37,400	39,861	39,900	40,524	7,710	6,800	7,845	(*)	7,710
1973	39,206	39,210	41,066	(*)	40,368	7,922	7,920	7,922	(*)	7,922

¹ Before adjustment for police force.

² After adjustment for police force.

³ Not available.

⁴ Revised figures.

⁵ Apparently an error.

Sources: Official: "Estimates of Military Expenditures in Eastern Europe," op. cit., table 1, col. 3, revised and updated. ISS: "The Military Balance," 1964-65, pp. 6-8; ibid., 1965-66, pp. 6-8; ibid., 1966-67, pp. 6-8; ibid., 1967-68, pp. 2-4; ibid., 1968-69, pp. 2-4; ibid., 1969-70, pp. 12-14; ibid., 1970-71, pp. 14-17; ibid., 1971-72, pp. 9-11; ibid., 1972-73, pp. 11-13; ibid., 1973-74, pp. 11-13. SIPRI: See SIPRI 1969-70, p. 271, and ibid., 1973, p. 237. United Nations: U.N. Statistical Yearbook, 1965, pp. 642 and 653; ibid., 1967, pp. 661, 668, and 673; ibid., 1970, pp. 682, 688, and 693; ibid., 1971, pp. 678, 684, 690, and 691; ibid., 1973, pp. 711-724. Ours: See table 3.

The limited scope of this study did not permit us to attribute every difference among the estimates in table 7 to an exact cause. Enough, however, were traced to one of the reasons outlined above to allow us to conclude that the domestic currency figures published by ISS, SIPRI, and the UN, and our earlier set, those underlying the dollar figures hitherto published by ACDA, consistently reflect State budget appropriations as officially announced by the East European governments in question, without adjustment.

The new set of domestic currency estimates presented in this study also are based primarily on official defense expenditure data (using final ex-post figures when they are available). Here, however, two types of adjustments have been made, affecting the series for three countries. First, deductions were made to eliminate the expenditures on civilian police functions of the internal security apparatus that were included with military expenditures in the budget appropriation figures as published for Czechoslovakia throughout the period under review, and for East Germany since 1968 (see chapter III). In table 7, this adjustment appears as the difference between official series "a" and official series "b."

The second type of adjustment, affecting Czechoslovakia, East Germany, and Poland was the addition of estimates representing outlays on military research and development presumed to be funded outside the State budget defense outlays proper. For Czechoslovakia and East Germany, this addition tends to offset the deductions for civilian internal security. For Bulgaria, Hungary, and Romania, where announced appropriations are believed to refer to military purposes only and R. & D. are believed to be negligible, our series simply reflect budget defense expenditures in as final version as could be found.

When we turn to the estimates in terms of U.S. dollars shown in table 8, the issues range beyond matters of coverage and exclusions and lead to questions concerning the structure of East European military expenditures. The estimates thus far published by ISS, SIPRI, and ACDA all have the common characteristics that the total military expenditures in domestic currency for a given country and year has been converted into dollars at a uniform rate; there was no breakdown of the total into components with different rates applied to the latter. The rates themselves differ from source to source. ISS estimates diverge for the early years, then begin to concur with SIPRI's in using Benoit-Lubell exchange rates. The ACDA estimates here, meanwhile, are essentially those presented with slight revisions in our earlier study, "Estimates of Military Expenditures in Eastern Europe, op cit.," table 1, column 12. As such, they reflect conversion by implicit modified GNP rates that represent rough attempts to equate purchasing power parities for the military sector as a whole for each country. It might be noted that these three sets of estimates for recent years are in close agreement, particularly when allowance is made for differences in the underlying domestic currency values.

The single rates underlying the conversions discussed above were not arrived at by combining particular rates applicable to components of total military expenditures, using the percentage composition of the total as weights. Instead, they reflect other considerations. Obviously, the use of a single rate for all components of military expenditure has the effect of retaining the same structure of military outlays in the dollar versions as in domestic prices. Since it is unrealistic to assume that the relative costs of services of military personnel and of other components of military expenditures would be the same in Eastern Europe as in the United States, this study has attempted a more detailed approach to the problem of conversion.

TABLE 8.—COMPARISON OF MILITARY EXPENDITURE ESTIMATES: 1960-73

[Millions of current dollars]

	Bulgaria						Czechoslovakia					
	U.S.		Ours				U.S.		Ours			
	ACDA	ISS ¹	SIPRI	A	B	C	ACDA	ISS ¹	SIPRI	A	B	C
1960.....			154	556	565			1,035	1,125	1,192		
1961.....	230		187	592	604		960	1,118	1,175	1,247		
1962.....	230		222	629	645		1,150	1,282	1,288	1,375		
1963.....	300	128	233	613	632		1,200	789	1,329	1,350	1,442	
1964.....	240	122	224	666	680		1,170	752	1,282	1,524	1,615	
1965.....	210	116	199	677	689		1,200	715	1,212	1,579	1,676	
1966.....	240	208	207	699	712		1,200	1,270	1,282	1,608	1,711	
1967.....	240	225	228	727	739		1,370	1,452	1,459	1,740	1,854	
1968.....	260	228	228	756	768	788	1,390	1,538	1,529	1,820	1,939	1,965
1969.....	310	234	261	813	830		1,510	1,576	1,635	1,902	2,023	
1970.....	310	279	279	914	933		1,660	1,765	1,741	1,909	2,052	
1971.....	NA	NA	316	1,016	1,040		NA	1,875	1,768	2,183	2,339	
1972.....	NA	NA	323	1,130	1,159		NA	NA	1,873	2,340	2,499	
1973.....	NA	301	NA	1,301	1,333		NA	1,336	NA	2,538	2,703	

	East Germany						Hungary					
	U.S.		Ours				U.S.		Ours			
	ACDA	ISS ¹	SIPRI	A	B	C	ACDA	ISS ¹	SIPRI	A	B	C
1960.....			NA	567	586			NA	415	424		
1961.....	280		NA	576	593		170	205	436	447		
1962.....	760		815	962	1,033		280	288	508	528		
1963.....	800	650	815	1,085	1,158		380	277	348	637	665	
1964.....	790	658	815	1,116	1,191		360	262	346	650	676	
1965.....	910	665	826	1,218	1,302		360	246	284	672	696	
1966.....	950	975	973	1,278	1,365		320	300	292	652	673	
1967.....	1,070	1,063	1,062	1,403	1,502		320	313	313	651	672	
1968.....	1,760	1,715	1,711	1,794	1,935	1,979	370	370	371	717	745	771
1969.....	1,960	1,873	1,873	1,966	2,125		440	457	458	792	824	
1970.....	2,200	1,990	1,990	2,194	2,374		560	511	513	944	989	
1971.....	NA	2,124	2,124	2,345	2,539		NA	543	544	1,007	1,056	
1972.....	NA	{ 2,240 }	2,249	2,543	2,753		NA	{ 558 }	560	1,054	1,098	
1973.....	NA	{ 1,854 }	2,448	2,875	3,109		NA	{ 419 }	567	1,160	1,209	

See footnotes at end of table, p. 324.

TABLE 8.—COMPARISON OF MILITARY EXPENDITURE ESTIMATES: 1960-73—Continued

	Poland						Romania							
	U.S. ACDA		ISS ¹	SIPRI	Ours			U.S. ACDA		ISS ¹	SIPRI	Ours		
					A	B	C					A	B	C
1960			936	1,397	1,468				NA		995	1,015		
1961	950		1,068	1,508	1,591		310		NA		1,033	1,055		
1962	1,000		1,156	1,566	1,655		340		414		1,066	1,090		
1963	1,120	911	1,300	1,679	1,781		330	342	435		1,103	1,127		
1964	1,220	920	1,376	1,788	1,895		330	296	436		1,116	1,141		
1965	1,270	928	1,482	1,871	1,981		350	250	481		1,089	1,116		
1966	1,400	1,589	1,583	1,943	2,070		380	510	509		1,087	1,117		
1967	1,500	1,662	1,658	2,069	2,205		410	530	530		1,034	1,066		
1968	1,780	1,830	1,828	2,299	2,459	2,478	480	551	550		1,106	1,144	1,139	
1969	2,040	2,080	2,073	2,522	2,703		560	574	679		1,280	1,324		
1970	2,250	2,220	2,224	2,707	2,911		610	750	748		1,420	1,472		
1971	NA	2,350	2,368	3,073	3,277		NA	798	795		1,428	1,488		
1972	NA	{ NA } { 1,770 }	2,504	3,421	3,632		NA	{ 725 } { 453 }	832		1,664	1,726		
1973	NA	1,799	2,580	3,649	3,860		NA	528	840		1,771	1,839		

¹ ISS has changed conversion rates in 1972, by using subsequently rates taken from Estimates of GNP, Defense, Education, and Health Expenditures of East European Countries, 1960-70, U.S. Arms Control and Disarmament Agency, Washington D.C., December 1971 (ACDA/E-207).

NA—Not available.

Sources: USACDA: World Military Expenditures 1971, p. 19. ISS: The Military Balance, 1963-64, pp. 7-9; *ibid.*, 1964-65, pp. 6-8; *ibid.*, 1965-66, p. 43; *ibid.*, 1966-67, p. 46; *ibid.*, 1967-68, p. 47; *ibid.*, 1968-69, p. 55; *ibid.*, 1969-70, p. 57; *ibid.*, 1970-71, p. 110; *ibid.*, 1971-72, p. 60; *ibid.*, 1972-73, p. 70; *ibid.*, 1973-74, p. 74. SIPRI: Calculated from current price data by the application of the Benoit-Lubell exchange rates; see SIPRI 1968-69, p. 179, *ibid.*, 1969-70, p. 271, and *ibid.*, 1973, p. 237. Ours: Variant A and variant B from table 5; variant C from table 6.

The basic procedure for our estimates, offered in variants A, B, and C, table 8, was to treat personnel costs and other outlays separately for purposes of conversion into dollars. Given East European secrecy in military matters, even this rudimentary breakdown of military expenditures involved some rather rough estimates. Details on estimating the cost structure in domestic currencies are given in chapter III, and the dollar conversion procedures are given in chapter V. Briefly, both rely on the estimates of armed force personnel levels provided by the Institute of Strategic Studies, which also appear to be accepted by ACDA and by SIPRI as well. It was further assumed that the appropriate total force levels included the "paramilitary" forces (border troops and security troops) treated separately in ISS publications, in addition to the regular armed forces. On this point, also, other studies implicitly concur.

Further steps in the conversions procedures, however, move essentially into new territory and undoubtedly raise some debatable issues. An element in the personnel cost estimates, for example, is the share in the total forces presumed to be represented by officers. The rules-of-thumb broadly applied here are expedients that could be challenged in the light of detailed knowledge of the organization and duties of military personnel in Eastern Europe and the United States.

Under personnel costs, the products bought are the services of officers and enlisted men. Our estimates variants A, B, and C here assign the pay of an American officer to his East European counterpart, and somewhat less than the pay of an American enlisted man to the East European, whose average technical qualifications and job requirements are assumed to be somewhat less demanding. For the nonpersonnel costs, reflecting a mixed basket of purchases of goods and services, the conversion rates used in variants A and B were the implicit GNP exchanges rates defined in chapter V. Variant C offers, for 1 year only, 1968, an alternative treatment of the cost of enlisted

personnel, valuing the subsistence or in-kind portion of their compensation in terms of consumer goods purchasing power parities between U.S. dollar and the respective domestic currencies.

As is shown in table 8, our variants A, B, and C for each country are close together, reflecting essentially similar valuations of the cost of personnel and only some variation in the method of valuation of nonpersonnel costs (operations, maintenance, procurements, and research and development) and military subsistence (see chapter V, variants A, B, and C). The dollar values in variant B are a few percent higher than in variant A and those in variant C are in turn 1 to 3 percent higher than in variant B.

It is to be noted, however, that our dollar estimates of defense expenditures differ substantially from those of ISS, SIPRI, and ACDA for several countries. The differences are largest for Bulgaria where our estimates are roughly there to four times higher than the ISS, SIPRI, or ACDA estimates. Our estimates are more than twice as high on the average as those of ISS, SIPRI or ACDA for Romania, roughly twice as high for Hungary, about one-third to one-half higher for Poland, and one-tenth to one-fourth higher for Czechoslovakia and East Germany.

The very large differences between our estimates and the estimates of ISS, SIPRI, and ACDA for Bulgaria, Romania, and to a lesser degree, for Hungary can be explained by the relatively high cost of military personnel as compared to nonpersonnel items in their total defense effort. In the ISS, SIPRI, and ACDA estimates, the services of military personnel in effect were valued at national prices. These prices are below opportunity cost (East European military expenditures reflect very small nominal cash payments to enlisted men), and these values were converted into U.S. dollars at uniform conversion rates used for all components of military expenditures. Our valuation of the services of military personnel was at prevailing U.S. rates, which reflect far more closely the opportunity cost of military personnel than the valuations in the East European prices. The differences between our results and those of other agencies are smaller for those countries (for example, Czechoslovakia, East Germany, and Poland) in which the nonpersonnel costs are relatively large (that is countries armed with more expensive military equipment) in relation to the number of military personnel.

The new alternative estimates of defense spending in Eastern Europe presented in this study are a first attempt that barely penetrates the surface of a complex but important problem: What volume of resources is being expended on the military sector in Communist Eastern Europe in the wake of the disarmament limitation efforts (SALT) by the leading world powers? To provide more comprehensive answers to this crucial question a sustained research effort should be undertaken in several important areas: (1) Detailed studies of the structure of the GNP in current market prices and at factor costs to correct for major deviations from factor costs in all the countries under study. (2) Comprehensive research on exchange rates based on purchasing power parities in order to improve comparisons of defense spending of Eastern Europe with that of the United States of America and other countries. (3) Detailed study of research and development efforts to improve military technology and capabilities. (4) Detailed analysis of ways by which resources channeled to defense can be concealed by centrally planned Communist countries.

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AGRICULTURAL OUTPUT AND PRODUCTIVITY IN EAST-ERN EUROPE AND SOME COMPARISONS WITH THE U.S.S.R AND U.S.A.

By GREGOR LAZARCIK*

CONTENTS

	Page
I. Introduction.....	329
II. Role of Agriculture in the East European Economies.....	331
III. Concepts and Methods.....	333
IV. Growth and Structure of Output and Inputs.....	334
A. Performance of Socialized Versus Private Agriculture.....	334
B. Performance in Individual Countries.....	340
C. Changes in Structure of Output and Inputs.....	341
D. Contribution of Individual Countries to the Total Output and Inputs of Eastern Europe.....	342
V. Per Capita Trends and Levels of Output.....	346
A. Per Capita Output.....	346
B. Per Capita Levels of Output.....	350
VI. Productivity of Land and Livestock.....	352
A. Trends in Agricultural Land and Land Per Farm Worker.....	352
B. Growth of Output and Input Per Unit of Land.....	356
C. Comparison of Levels of Output and Input Per Unit of Land.....	361
D. Yields of Selected Crops Per Hectare.....	363
E. Yields Per Livestock Unit.....	364
VII. Productivity of Labor in Agriculture.....	366
A. Trends in Economically Active Agricultural Population.....	366
B. Growth of Output and Input Per Worker.....	370
C. Levels of Output and Input Per Worker.....	372
VIII. Progress in Agricultural Technology.....	373
A. Progress in Mechanization.....	373
B. Growth of Fertilizer Consumption.....	376
C. Scientific Methods on the Farm.....	377
D. Growth of Investment.....	378
IX. Size Comparisons of Output Between Eastern Europe, U.S.S.R. and U.S.A.....	379
X. Conversion Rates Between the Ruble, East European National Currencies, and the U.S. Dollar for Agricultural Products.....	381
XI. Conclusion and Outlook.....	384
Bibliography.....	389

APPENDIXES

A. Notes and Sources for Tables 1 to 27.....	392
B. Notes and Sources for Tables 28 to 29.....	393

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TABLES

	Page
1. Eastern Europe: Indexes of agricultural output, expenses, gross product, depreciation, and net product.....	335
2. Growth of agricultural output.....	337
3. Growth of current operating expenses, gross product, depreciation, and net product in agriculture.....	339
4. Percentage distribution of output, expenses, gross product, depreciation and net product in agriculture.....	341
5. Percentage contribution of individual countries to agricultural output.....	343
6. Percentage contribution of individual countries to expenses, gross product and net product in agriculture.....	345
7. Eastern Europe: Indexes of per capita output, expenses, gross and net product in agriculture.....	346
8. Per capita growth of agricultural output.....	348
9. Per capita growth of gross and net product in agriculture.....	349
10. Per capita comparisons of levels of output, gross and net product in agriculture.....	351
11. Indexes of agricultural land and percentage distribution of agricultural land.....	353
12. Agricultural land per person employed in agriculture.....	355
13. Eastern Europe: Indexes of output, expenses, gross and net product per hectare of agricultural land.....	357
14. Growth of agricultural output per hectare of agricultural land.....	358
15. Growth of operating expenses, gross and net product per hectare of agricultural land.....	360
16. Comparison of levels of output, expenses, gross and net product per hectare of agricultural land in agriculture.....	362
17. Yields per hectare of agricultural land for wheat, rye, potatoes, and sugar beets per year.....	363
18. Yields per head of livestock for meat, milk and eggs per year.....	365
19. Employment in agriculture.....	367
20. Percentage distribution of agricultural employment and total population.....	369
21. Eastern Europe: Output, expenses, gross and net product per person employed in agriculture.....	371
22. Growth of agricultural output and operating expenses per person employed in agriculture.....	371
23. Growth of gross and net product per person employed in agriculture.....	372
24. Comparisons of levels of output, expenses, gross and net product per person employed in agriculture.....	373
25. Number of tractors per 1,000 hectares of agricultural land and per 1,000 workers in agriculture.....	375
26. Consumption of commercial fertilizers per hectare of agricultural land.....	377
27. Gross fixed agricultural investment and its share in the total investment.....	378
28. Comparisons of levels of agricultural output: East European countries, U.S.S.R., and United States, 1959, 1966, and 1970.....	380
29. Purchasing power parity conversion rates between the ruble and east European national currencies and the U.S. dollar for agricultural products, 1959, 1966, and 1970.....	382
30. Rates of growth of gross agricultural production, planned and actual, 1966-75, as officially reported.....	387
31. Wheat-based price relatives for Eastern Europe and U.S.S.R. 1961-65 average.....	388

I. INTRODUCTION

Rapid industrialization and increased productivity of labor has been accompanied by increasing real per capita incomes in the Eastern European countries since the 1950's. As a result of a series of economic reforms designed to increase economic incentives and efficiency in Eastern Europe, during the second half of the 1960's the rising trend in the real income of the population was accelerated. Increasing real incomes, in turn, brought rapidly rising demand for more and better quality foods of animal origin.

In most of the Eastern European countries, the domestic food supply did not keep pace with the growing demand. The lag in the supply started to assert itself especially in the 1960's after the socialization of agriculture had been effectively completed in Bulgaria, Czechoslovakia, East Germany, Hungary, and Romania (the share of socialized land ranges from 86 percent in Hungary to 91 in Bulgaria).¹ Full collectivization of agriculture brought a slowdown in the rate of growth of agricultural output in these countries in the 1960's (see table 2).

In order better to satisfy the increasing demand for high protein foods, the Eastern European countries have taken a series of important decisions with regard to agriculture over the course of the last 8 to 10 years. The results of these may be summarized as follows: (1) imports of feed grain, oilcake, fish meal, and other high protein feed for livestock have increased sharply since the second half of the 1960's, (2) an expansion of domestic production of high yield varieties of feed grain, concentrates, and roughages has been implemented in varying degrees of intensity in all Eastern European countries, (3) a continuously larger flow of inputs in the form of fertilizers, increased mechanization, improved feeding technology, higher yield livestock breeds, and better crop varieties may be observed, and the general improvement of agricultural technology has received greater attention than previously, (4) as part of broader economic reforms, a series of incentives to increase farmers' productivity have been introduced in the form of higher prices for agricultural products, decentralization of farm decisionmaking to stimulate personal interest through profits, greater participation of individual farmworkers in management of farms, greater fringe benefits, and other personal incentives designed to encourage rational use of resources and improve agricultural productivity.

In Poland and Yugoslavia, meanwhile, the ownership and management of farms continues overwhelmingly in private hands, organized in many small private family farm units. Only 17 and 13 percent of the agricultural land in Poland and Yugoslavia, respectively, is in state farms, and collective farms are insignificant in these two countries.² Their governments have actively supported private farming by providing a variety of incentives to private agriculture in order to stimulate the expansion of farm output. Such policies, for example, in Poland during the last several years, consisted of (1) government increases in prices paid to farmers for their products, (2) expansion of agricultural credits to private farmers on favorable terms, (3) increasing imports of feedstuffs and protein meal which are sold to private farmers to enhance the output of meat and dairy products, (4) increasing the mechanization of agriculture by new investments, (5) greatly expanding the use of fertilizers by private farmers, (6) encouraging specialization and interfarm cooperation in the use of machinery, (7) stepping up government agricultural research to

¹ See Hungary, Kozponti Statisztikai Hivatal, *Statisztikai evkonyv, 1972*, Budapest, 1973, p. 254, and Bulgaria, Tsentralno statistichesko upravlenie, *Statisticheski godisnik 1972*, Sofia, 1972, p. 200.

² See Poland, Główny urząd statystyczny, *Rocznik statystyczny, 1973*, Warsaw, 1973, p. 258, and Yugoslavia, Savezni zavod za statistiku, *Statisticki godisnjak SFRJ 1973*, p. 140.

increase farm productivity, (8) reducing land taxes to farmers who increase meat sales, and (9) above all, abstaining from forced collectivization of agriculture.

Basically two agricultural systems coexist in Eastern Europe, the one consisting of the countries with predominantly socialized agricultures—Bulgaria, Czechoslovakia, East Germany, Hungary, and Romania; and the other consisting of the countries with predominantly private agriculture, Poland and Yugoslavia. Since in all cases, agriculture functions in the context of a Communist country under a more or less centrally planned economic system (Yugoslavia, of course has undergone significant decentralization), there is a basis for taking a comparative approach between the two types of agricultural systems in Eastern Europe: socialized versus private.

In the following pages, the agricultural performance of Eastern Europe will be analyzed by country and by groups of countries (socialized versus private agricultural system). Some comparison will also be made with the U.S.S.R. and U.S.A., in an attempt better to appraise the growth performance of recent years, and comparisons will be made to earlier periods.

The aim of this basically statistical study is to present the measures and assess the changes in agricultural growth in the Eastern European countries in the postwar period. Aspects to be covered are: (1) changes in the relative importance of agriculture in the national economy of each country, (2) changes in the growth and structure of basic output and input measures, (3) trends and levels of output per capita, (4) changes in productivity of land and labor in agriculture, (5) progress in agricultural technology and growth of investment, (6) comparisons of output between Eastern Europe, U.S.S.R. and U.S.A., (7) conversion rates between rubles, East European national currencies, and U.S. dollars based on the prices of agricultural products, and (8) the outlook for the next few years.

In an earlier study of East European agriculture submitted to the Joint Economic Committee,³ this author used as commodity weights the FAO wheat-based price relatives for the Western European region for 1952–56, because no Eastern European weights were available at that time. In the present study, however, the newly released FAO wheat-based price relatives for Eastern Europe and U.S.S.R. for 1961–65 period are used in the valuation of agricultural output. Consequently, the present measures are believed to be more appropriate to East European conditions than the earlier ones.

II. ROLE OF AGRICULTURE IN THE EAST EUROPEAN ECONOMIES

Agriculture has an important role in the national economic development of Eastern Europe. Until recently, agriculture was the largest economic sector in most of the Eastern European countries, measured in terms of its share in total employment and its share in the gross

³ See Gregor Lazarek, "Growth of Output, Expenses, and Gross and Net Product in East European Agriculture," U.S. Congress, Joint Economic Committee, *Economic Developments in Countries of Eastern Europe, A Compendium of Papers*, U.S. Govt. Print. Off., 1970, Washington, D.C., pp. 463–527. Hereafter referred to as *Compendium 1970*.

national product. The percentages for the individual countries and for all of Eastern Europe for 1950 and 1973 are as follows:

AGRICULTURE'S SHARE IN PERCENT OF TOTAL¹

	Labor force		GNP	
	1950	1973	1950	1973
Bulgaria.....	74.0	31.2	39.3	20.0
Czechoslovakia.....	36.5	14.2	22.6	10.8
East Germany.....	26.2	10.9	15.0	8.8
Hungary.....	50.1	20.7	29.2	16.1
Poland.....	53.1	33.4	35.8	19.2
Romania.....	73.3	44.0	42.0	22.2
Yugoslavia.....	67.0	35.8	28.5	20.5
Eastern Europe.....	56.3	29.2	28.3	15.8
U.S.S.R.....	54.0	28.5	38.4	21.2
United States.....	15.3	4.6	5.5	3.7

¹ Eastern European countries: Labor force: Agricultural employment is in terms of economically active persons in agriculture taken from statistical yearbooks of the respective countries. GNP: Thad P. Alton "Economic Structure and Growth in Eastern Europe" present volume table 2. The shares were adjusted for forestry. Data for 1973 were estimated from 1972 and the plan fulfillment reports for 1973 reported by the statistical offices of the respective countries, U.S.S.R. and United States: For 1950: F. D. Whitehouse and I. F. Havalka, "Comparison of Farm Output in the United States and U.S.S.R." Joint Economic Committee, Congress of the United States. "Soviet Economic Prospects for the Seventies," 1973 p. 341; For 1973: U.S.S.R.: J. P. Hardt "Summary," op. cit. p. ix and xvi, estimated from 1972 and the plan fulfillment report for 1973 reported by the Central Statistical Office in Moscow, January 1974; United States: "Statistical Abstract of the United States, 1973," U.S. Department of Commerce, 1973, pp. 219 and 248 and "Survey of Current Business," 1973, No. 11, p. 11, based on the 1st 3 quarters of 1973.

In 1950, Bulgaria and Romania had almost three-fourths of their economically active population in agriculture and were among the least developed countries in Europe. Hungary, Poland, and Yugoslavia, with more than one-half of their economically active population in agriculture, were also predominantly agricultural countries. Czechoslovakia and East Germany, meanwhile, had, respectively, one-third and one-fourth of labor in agriculture. They were already industrialized countries.

In terms of agriculture's contribution to GNP, the shares were lower than for employment because the productivity per active person in agriculture was between one-half and two-thirds of that in non-agricultural sectors. Eastern Europe as a whole and the U.S.S.R. exhibited strongly agricultural characteristics when compared to the U.S.A., which had only 15 percent of the labor force in agriculture and 5.5 percent of GNP generated in agriculture in 1950.

Because of rapid industrialization, the share of agricultural employment and agriculture's contribution to GNP has fallen rapidly over the last two decades in all Eastern European countries, as in the U.S.S.R. By 1973, except for Romania, in all Eastern European countries, the share of agricultural labor had declined to one-third or less of the total. In Czechoslovakia, only 14 percent and in East Germany, 11 percent of total employment remains in agriculture. The share of agriculture's contribution to the total GNP decreased roughly by one-half in all the countries from 1950 to 1973. In 1973 the highest share, 22 percent, was in Romania and the lowest, less than 9 percent, in East Germany. Yet in all countries, agriculture is still the second largest sector after industry. The trend of decline in agriculture's share in the total GNP in Eastern Europe has been similar to that in the U.S.S.R. Both Eastern Europe as a whole and the U.S.S.R. have roughly 29 percent of their labor force in agriculture and generate 16 and 21 percent of GNP in agriculture, respectively. Compared with the U.S.A., the relative importance of agriculture is several times larger in the East European and the Soviet economies.

III. CONCEPTS AND METHODS

The definition of agriculture as an economic sector and the concepts and definitions of output and input measures used in this study have been set forth in detail in an earlier study of East European agriculture presented to the Joint Economic Committee of the U.S. Congress in 1970.⁴ Perhaps a very brief summary of the concepts and methodology used here may be in order for the benefit of the reader.

Forestry, fishing, and hunting, are not included in agriculture, as may be the case in some U.N. statistics. The coverage of our data range from 95 percent to almost 100 percent of agricultural production, depending on the country. Our measures of output and inputs are based on physical quantity series consisting of from 80 to over 100 individual products for each country. Since the official output and input measures differ from those used by international organizations, or are nonexistent, an independent, uniform calculation of all important measures was made by the research project on national income in east central Europe in New York in accordance with standard international definitions. These measures are presented in this study.

Pricing system.—The best available uniform price weights to facilitate international comparisons of Eastern European countries are the newly calculated wheat-based price relatives for Eastern Europe and the U.S.S.R. for 1961–65 devised recently by the Food and Agriculture Organization of the United Nations for the calculations of regional and world agricultural production. These Eastern European price-weights were used in this study for the aggregation of agricultural output. These price relatives for agricultural products are the arithmetic averages of all the national wheat-based price relatives weighted by the respective country's production of the farm products concerned. The national wheat-based price relatives consists of the national producer price of the product expressed as a percentage of the national producer price of an equal weight of wheat. For most products the prices are weighted averages of producer prices for the 1961–65 period.⁵ These new wheat-based price relatives for Eastern Europe are presented in table 31.

Other measures (i.e., operating expenses, gross product, depreciation, and net product of agriculture) were derived from output (calculated in wheat-based price relatives for 1961–65) on the basis of percentage relationships of these measures for each country and each year calculated in each country's constant prices paid to or by producers for their products or production inputs.⁶ This system of valuation takes into account the differences in relative scarcities in each country, and at the same time it permits international comparisons in terms of uniform wheat-based price relatives for all countries.

The index numbers of various output and input measures are computed by a modified Laspeyre's formula⁷ using the FAO Eastern

⁴ See Gregor Lazarek, *Compendium 1970*, pp. 467–472.

⁵ See U.N. Food and Agriculture Organization, "Production Yearbook 1972," vol. 26, Rome 1973, pp. 409–411.

⁶ The national price weights used were as follows: Bulgaria, 1968 leva; Czechoslovakia, 1956 crowns; East Germany, 1965 marks; Hungary, 1955 forints; Poland, 1956 zlotys; Romania, 1959 leu; Yugoslavia, 1964 dinars.

⁷ The formula is:

$$\frac{\sum P_1 Q_i}{\sum P_0 Q_i}$$

where P_1 represent the selected constant prices, Q_i the quantities of the base year, and Q_i the quantities of the given year.

European wheat-based price relatives as weights. The time comparison base period chosen in this study is the prewar 5-year average, 1934-38, whenever possible.

Agricultural output.—In this study agricultural output is defined as end-use output from agriculture available for human consumption and industrial use, plus changes in livestock, and farm investment in kind by farmers' own efforts. The same concepts are used by the U.N. economic organs to calculate agricultural output in Western Europe and by the OECD member countries. In this study the output of agriculture is calculated by subtracting from gross crop and animal production all intermediate products utilized on farms in further production. The physical quantities of output are then aggregated by the FAO wheat-based price weights given in table 31.

Expenses and depreciation.—Current operating expenses are defined here as the total quantity of all goods and services bought by the agricultural sector from all nonagricultural sectors and from abroad and used up in the production of agricultural output. Depreciation is here defined and calculated as the current charge to take account of wear, tear and obsolescence of capital goods serving agriculture.⁸

Gross product and net product.—The gross product of agriculture is the gross value added by productive activity within the agricultural sector. It is the contribution of the agricultural sector to gross national product (GNP). In this study it is obtained from agricultural output by subtracting current operating expenses. The net product of agriculture is the gross product minus depreciation.⁹ It is the contribution of the agricultural sector to the net national product (NNP) or net value added by the agricultural sector.

IV. GROWTH AND STRUCTURE OF OUTPUT AND INPUTS

A. Performance of Socialized Versus Private Agriculture

The various measures of output and expenses for Eastern Europe as a whole and for two groups of countries—one with predominantly socialized agriculture, the other with overwhelmingly private agriculture—are given in table 1 for prewar (1934-38) and 1950-1973 period. The data show the following results:

(1) The overall performance of countries with private agriculture has been superior to that of countries with socialized agriculture in the postwar period when compared with the prewar base. The former group reached or surpassed the prewar levels of agricultural output, gross and net product of agriculture by 1953. In subsequent years the expansion continued, and by 1973, the measures exceeded the prewar level by 73 to 109 percent. The group of countries with socialized agricultures reached the prewar level of output 4 years later, in 1957, and their combined net product index did not reach the prewar level until 1966. By 1973, their net product was only 10 percent and their output 61 percent above the prewar level.

⁸ See U.N. Economic Commission for Europe, "Agricultural Sector Accounts and Tables. A Handbook of Definitions and Methods," Geneva, 1956, p. 10 and Organization for European Economic Cooperation, "The Measurement of Agricultural Production and Food Consumption," Paris, 1955, p. 15.

⁹ U.N. Economic Commission for Europe, "Output, Expenses, and Income of Agriculture in European Countries," 1st, 2d, 3d, 4th, 5th, and 6th Report, Geneva, 1953, 1955, 1958, 1961, 1965, and 1969.

TABLE 1.—EASTERN EUROPE: INDEXES OF AGRICULTURAL OUTPUT, EXPENSES, GROSS PRODUCT, DEPRECIATION, AND NET PRODUCT

[1934-38=100]

	Agricultural output			Crop output			Animal output		
	Socialized ¹	Private ²	Total	Socialized ¹	Private ²	Total	Socialized ¹	Private ²	Total
Prewar.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	78.7	99.2	86.4	84.5	91.5	87.3	73.8	106.6	85.6
1951.....	89.4	108.4	96.6	98.8	111.8	103.9	81.4	105.1	90.0
1952.....	86.7	98.3	91.1	85.5	92.5	88.2	87.7	104.0	93.6
1953.....	89.8	109.5	97.2	103.5	105.8	104.4	78.2	113.0	90.7
1954.....	87.2	106.6	94.4	88.2	94.4	90.6	86.3	118.5	97.9
1955.....	97.7	117.3	105.1	100.5	112.3	105.1	95.4	122.2	105.0
1956.....	91.9	112.3	99.5	87.2	94.1	89.2	95.8	130.0	108.1
1957.....	103.5	127.8	112.6	105.3	113.8	108.6	102.0	141.5	116.2
1958.....	108.4	131.5	117.1	109.2	114.2	111.2	107.7	148.4	122.3
1959.....	111.3	138.2	121.4	109.5	123.2	114.8	112.9	152.7	127.2
1960.....	114.2	136.4	122.5	113.3	119.5	115.7	114.9	152.7	128.5
1961.....	112.1	150.3	126.4	104.7	137.3	117.4	118.5	162.8	134.4
1962.....	110.3	135.2	119.6	107.2	107.4	107.3	113.0	162.2	130.7
1963.....	115.2	150.5	128.4	114.2	145.8	126.5	116.1	155.1	130.1
1964.....	120.1	152.8	132.4	116.4	143.3	126.9	123.3	162.1	137.3
1965.....	124.5	160.0	137.8	119.5	148.3	130.7	128.8	171.3	144.1
1966.....	134.5	171.0	148.2	132.2	162.5	144.0	136.5	179.3	151.9
1967.....	140.1	173.3	152.6	137.3	164.4	147.8	142.6	182.0	156.8
1968.....	140.8	180.2	155.5	135.6	174.1	150.6	145.3	186.0	160.0
1969.....	140.3	172.2	152.2	135.1	157.5	143.8	144.7	186.6	159.8
1970.....	138.6	174.3	152.0	123.3	157.2	136.5	151.7	191.0	165.9
1971.....	148.0	185.8	162.1	134.4	169.0	147.9	159.5	202.1	174.8
1972.....	158.3	195.9	172.4	147.1	173.5	157.4	167.8	217.7	185.8
1973 ³	161.4	209.4	179.4	149.7	183.8	163.0	171.4	234.2	194.0

	Operating expenses			Gross product			Depreciation			Net product		
	Socialized ¹	Private ²	Total	Socialized ¹	Private ²	Total	Socialized ¹	Private ²	Total	Socialized ¹	Private ²	Total
Prewar.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	112.7	133.6	120.6	75.7	96.1	83.4	103.3	100.1	102.1	74.1	95.9	82.2
1951.....	128.8	136.1	131.5	86.0	106.0	93.5	106.9	106.7	106.9	84.7	105.9	92.6
1952.....	125.6	143.9	132.4	83.3	94.3	87.4	111.2	98.9	106.3	81.6	94.0	86.2
1953.....	144.4	149.7	146.4	85.0	105.9	92.8	112.3	104.9	109.3	83.4	106.0	91.8
1954.....	147.6	144.7	146.5	81.8	103.2	89.8	114.5	101.0	109.1	79.9	103.4	88.6
1955.....	165.4	163.3	164.6	91.7	113.2	99.8	123.0	108.1	117.0	89.9	113.6	98.7
1956.....	172.4	172.5	172.5	84.7	107.0	93.0	113.1	104.9	121.8	81.9	107.1	91.3
1957.....	190.2	196.5	192.6	95.9	121.7	105.5	132.1	112.7	124.3	93.7	122.3	104.4
1958.....	190.0	201.1	194.2	101.1	125.4	110.2	139.1	113.3	128.7	98.9	126.2	109.1
1959.....	214.6	229.6	220.2	102.1	130.0	112.6	156.2	118.9	141.2	99.0	130.8	110.8
1960.....	240.1	223.7	234.0	103.0	128.6	112.6	188.6	115.4	159.3	97.9	129.5	109.7
1961.....	250.6	236.3	245.2	99.8	142.6	115.9	187.7	113.0	157.8	94.7	144.6	113.3
1962.....	274.2	251.1	265.5	95.8	124.9	106.7	186.4	112.0	156.6	90.4	125.8	103.6
1963.....	296.8	282.4	291.4	99.1	138.8	114.0	191.3	119.0	162.3	93.7	140.1	111.0
1964.....	329.6	286.2	313.3	101.5	141.0	116.3	195.8	122.9	166.6	95.9	142.2	113.2
1965.....	362.0	370.3	365.1	103.4	141.3	117.6	214.4	152.0	189.4	96.9	140.6	113.1
1966.....	385.2	339.1	367.9	112.3	156.1	128.7	220.7	163.1	197.6	105.8	155.6	124.4
1967.....	404.5	366.0	390.0	116.7	156.2	131.5	233.9	165.9	206.7	109.8	155.6	126.8
1968.....	437.4	396.3	422.0	114.5	160.9	131.9	246.0	172.0	216.4	106.7	160.2	126.6
1969.....	452.3	418.1	439.5	112.6	150.4	126.7	257.5	182.6	227.4	104.0	148.3	120.5
1970.....	487.3	482.1	485.4	107.7	147.0	122.4	271.7	179.4	234.7	98.0	144.8	115.4
1971.....	513.4	491.0	505.0	115.5	158.7	131.7	299.4	192.2	256.4	104.7	156.4	123.9
1972.....	543.6	564.6	551.5	124.1	163.2	138.7	325.2	203.7	276.5	112.2	160.5	130.2
1973 ³	583.7	591.8	586.7	124.0	175.4	143.2	353.3	216.6	298.5	110.4	172.6	133.6

¹ Countries with socialized agriculture: Bulgaria, Czechoslovakia, East Germany, Hungary, and Romania.² Countries with private agriculture: Poland and Yugoslavia.³ Preliminary.

Sources: See app. A. Indexes were calculated from physical quantities weighted by FAO Eastern European and Soviet Union wheat based price relatives for 1961-65.

(2) Within agricultural output, both groups of countries had achieved higher rates of growth in animal products than in output of crops. Because of their very low output in the early postwar years, the countries with socialized agriculture experienced slightly higher average annual rates of growth¹⁰ of animal products in the postwar period than the other group. Meanwhile, the rate of increase in crop output was higher for the countries with private agriculture (table 2).

¹⁰ All average annual rates of growth in this study are calculated by fitting an exponential curve to the indexes by the least squares method:

$$I_t = I_0(1+r)^t$$

TABLE 2.—GROWTH OF AGRICULTURAL OUTPUT

	Indexes, 1934-38=100							Average annual rates of growth					
	1934-38	1950-55	1956-60	1961-65	1966-70	1971-72	1973 ¹	1950-72	1950-55	1955-60	1960-65	1965-70	1967-72
Bulgaria:													
Output.....	100	100.1	125.2	158.1	192.6	204.7	216.9	4.1	3.1	7.3	5.2	1.0	1.6
Crops.....	100	101.9	121.8	152.3	182.5	184.6	198.6	3.6	1.1	7.4	6.6	-4	7
Animal products.....	100	97.1	130.8	167.6	209.1	237.6	246.7	4.9	6.5	7.1	3.6	2.8	2.8
Czechoslovakia:													
Output.....	100	88.2	101.1	106.5	127.6	141.6	149.8	2.3	3	2.5	4	3.9	2.9
Crops.....	100	98.7	107.8	109.0	130.8	138.1	149.4	1.7	1.9	2.1	-2.0	4.7	1.4
Animal products.....	100	82.6	97.5	105.1	125.9	143.6	150.1	2.7	-8	2.7	1.8	3.5	3.8
East Germany:													
Output.....	100	83.3	99.2	100.4	122.2	130.2	137.0	2.4	3.3	4.1	1.8	1.6	1.4
Crops.....	100	95.3	96.8	89.7	103.4	104.9	107.9	4	-2.4	3.8	0	-1	-6
Animal products.....	100	76.7	100.6	106.2	132.4	144.0	152.9	3.4	7.6	4.2	2.7	2.3	2.2
Hungary:													
Output.....	100	91.1	110.7	122.7	139.5	155.3	164.5	2.7	2.2	2.4	2.4	3.5	2.3
Crops.....	100	104.4	113.1	118.5	144.6	158.7	176.1	2.1	2.0	-1.1	3.4	4.3	1.3
Animal products.....	100	80.3	108.6	126.1	135.3	152.5	155.2	3.3	2.3	5.4	1.6	2.7	3.2
Poland:													
Output.....	100	114.8	134.5	153.7	178.3	200.2	225.8	2.8	1.4	3.0	2.5	9	2.6
Crops.....	100	104.0	107.0	129.8	158.5	174.3	192.3	2.8	-1	1.5	5.1	-2	1.5
Animal products.....	100	124.5	159.4	175.7	196.4	223.8	256.3	2.8	2.4	3.9	.8	1.6	3.4
Romania:													
Output.....	100	86.7	105.6	121.3	144.4	166.2	173.8	3.4	5.8	4.8	1.1	-1	2.4
Crops.....	100	79.6	96.6	108.1	124.3	136.7	141.4	2.9	6.5	5.8	1.2	-3.0	5
Animal products.....	100	98.4	120.6	143.1	177.8	215.2	227.7	3.9	4.9	3.5	1.0	3.2	4.5
Yugoslavia:													
Output.....	100	91.2	119.4	142.3	166.5	173.3	178.6	3.8	5.6	6.3	3.2	2.4	1.0
Crops.....	100	96.9	123.1	147.7	171.1	166.1	169.4	3.5	5.6	5.9	3.1	2.0	-1.0
Animal products.....	100	84.8	115.4	136.4	161.4	181.3	188.5	4.1	5.7	7.0	3.2	2.8	3.2
Countries with socialized agriculture:													
Output.....	100	88.3	105.9	116.5	138.9	153.1	161.4	2.9	3.0	4.0	2.0	1.9	2.1
Crops.....	100	93.5	104.9	112.4	132.7	140.8	149.7	2.2	2.0	3.8	1.8	6	6
Animal products.....	100	83.8	106.7	119.9	144.2	163.7	171.4	3.4	3.8	4.2	2.1	2.9	3.3
Countries with private agriculture:													
Output.....	100	106.6	129.5	149.8	174.2	190.9	209.4	3.1	2.6	4.0	2.7	1.4	2.1
Crops.....	100	101.4	113.0	136.4	163.1	171.3	183.8	3.0	1.8	3.2	4.3	7	5
Animal products.....	100	111.6	145.1	162.7	185.0	209.9	234.2	3.2	3.2	4.7	1.5	2.0	3.3
Total Eastern Europe:													
Output.....	100	95.1	114.6	128.9	152.1	167.2	179.4	3.0	2.8	4.0	2.3	1.7	2.1
Crops.....	100	96.6	108.1	121.8	144.6	152.7	163.0	2.5	2.0	3.5	2.9	7	6
Animal products.....	100	93.8	120.5	135.3	158.9	180.3	194.0	3.3	3.6	4.4	1.8	2.5	3.3

¹ Preliminary. Source: See app. A.

(3) Inputs into agriculture from other sectors increased sharply due to rapid mechanization and better technology on farms. Both groups of countries had about a sixfold rise in current operating expenses comparing the prewar level to 1973. In the postwar period the average annual rate of growth in expenses was about 7.4 percent for the socialized agricultures and 6.4 percent for the private agricultures. During 1967-73, however, the latter showed marked increases (table 3). Depreciation has followed a similar pattern except that its growth was not as spectacular: 5.2 percent annual compound rates for the socialized group and only 3.3 percent for the private group over the whole postwar period. The countries with socialized agriculture pushed mechanization, on collectives and state farms, at a faster rate than the countries with private agriculture.

TABLE 3.—GROWTH OF CURRENT OPERATING EXPENSES, GROSS PRODUCT, DEPRECIATION, AND NET PRODUCT IN AGRICULTURE

	Indexes, 1934-38=100							Average annual rates of growth					
	1934-38	1950-55	1956-60	1961-65	1966-70	1971-72	1973 ¹	1950-72	1950-55	1955-60	1960-65	1965-70	1967-72
Bulgaria:													
Expenses.....	100	118.6	180.0	263.0	448.4	539.5	584.9	8.3	5.7	10.9	8.1	7.8	4.7
Gross product.....	100	98.0	119.1	146.4	164.1	167.3	175.7	3.2	2.7	6.6	4.8	—9	.6
Depreciation.....	100	117.2	154.2	211.0	283.2	355.1	387.2	5.8	2.7	6.9	5.8	6.4	6.8
Net product.....	100	97.1	117.4	143.2	158.3	158.2	165.1	3.0	2.7	6.6	4.7	—1.6	.1
Czechoslovakia:													
Expenses.....	100	185.2	278.0	452.3	572.5	629.2	679.5	7.1	6.6	7.2	10.7	1.9	3.2
Gross product.....	100	78.0	86.1	77.0	89.7	100.1	104.7	.7	—9	1.2	—4.3	5.1	2.8
Depreciation.....	100	115.3	130.2	170.2	207.3	240.5	266.9	3.9	1.6	1.8	6.2	3.1	4.0
Net product.....	100	76.8	82.1	68.6	79.1	87.4	90.1	.1	—1.2	1.1	—6.4	5.6	2.5
East Germany:													
Expenses.....	100	109.5	155.4	183.8	235.7	322.2	372.6	5.2	7.1	4.9	3.9	5.2	9.2
Gross product.....	100	79.6	91.4	88.7	106.3	103.4	104.0	1.6	2.6	3.9	1.2	—4	—1.4
Depreciation.....	100	126.8	145.0	2.1.8	265.8	333.8	389.5	5.0	2.3	3.5	6.2	4.8	6.2
Net product.....	100	77.4	88.9	83.5	98.9	92.7	90.7	1.2	2.6	3.9	.7	—2	—2.4
Hungary:													
Expenses.....	100	171.2	233.8	442.3	630.5	805.0	900.0	8.6	3.2	10.5	9.5	8.1	7.4
Gross product.....	100	86.8	104.0	105.3	121.9	120.0	124.9	1.6	2.0	1.4	.8	2.1	.7
Depreciation.....	100	149.7	427.5	488.3	648.5	839.8	904.2	9.2	4.7	30.3	—12.1	6.8	7.6
Net product.....	100	85.8	98.7	97.5	104.2	108.3	111.9	1.1	2.0	—1.0	2.4	1.6	—1
Poland:													
Expenses.....	100	153.2	201.4	278.0	406.5	565.5	646.4	6.5	2.4	6.0	9.2	6.0	9.9
Gross product.....	100	110.4	126.9	139.6	152.4	158.7	178.1	1.9	1.2	2.4	1.0	—1.0	.1
Depreciation.....	100	107.9	112.4	120.0	178.1	207.6	230.0	3.2	—5	.7	5.5	3.7	4.4
Net product.....	100	110.6	128.0	141.2	150.4	154.9	174.1	1.8	1.3	2.6	.6	—1.5	—3
Romania:													
Expenses.....	100	141.4	221.8	365.1	652.8	770.7	825.5	9.6	12.7	6.2	11.0	9.1	4.6
Gross product.....	100	83.9	99.7	108.7	118.2	135.1	140.2	2.3	5.2	4.6	—4	—2.6	1.8
Depreciation.....	100	92.1	126.7	148.9	197.5	272.9	313.2	5.1	5.3	4.3	4.6	5.0	8.5
Net product.....	100	83.2	97.3	105.2	111.4	123.2	125.3	2.0	5.2	4.7	—1.0	—3.8	.7
Yugoslavia:													
Expenses.....	100	109.9	219.0	317.1	373.2	361.6	358.2	7.3	10.7	11.5	8.8	.2	.1
Gross product.....	100	90.3	114.9	134.4	157.1	164.8	170.5	3.5	5.4	5.9	2.6	2.7	1.1
Depreciation.....	100	90.3	114.9	134.4	157.1	170.8	175.9	3.5	5.4	5.9	2.6	2.7	1.9
Net product.....	100	90.3	114.9	134.4	157.1	164.5	170.1	3.5	5.4	5.9	2.6	2.7	1.0
Countries with socialized agriculture													
Expenses.....	100	137.4	201.5	302.7	433.4	528.5	583.7	7.4	7.6	7.2	8.4	5.8	5.8
Gross product.....	100	83.9	97.4	99.9	112.7	119.8	124.0	1.8	2.4	3.4	.3	.6	.8
Depreciation.....	100	111.9	149.8	195.1	246.0	312.3	353.5	5.2	3.1	7.6	2.3	4.8	6.5
Net product.....	100	82.3	94.3	94.3	104.9	108.4	110.4	1.4	2.3	3.0	.1	—1	0
Countries with private agriculture:													
Expenses.....	100	145.2	204.7	285.2	400.3	527.8	591.8	6.4	3.5	7.0	9.2	5.8	8.4
Gross product.....	100	103.1	122.5	137.7	154.1	160.9	175.4	2.4	2.4	3.6	1.5	.3	.4
Depreciation.....	100	103.3	113.0	123.8	172.6	198.0	216.6	3.3	.8	2.0	4.8	3.4	3.8
Net product.....	100	103.1	123.2	138.6	152.9	158.5	172.6	2.4	2.6	3.7	1.4	.1	.2
Total, Eastern Europe:													
Expenses.....	100	140.3	202.7	296.1	421.0	528.2	586.7	7.1	5.7	7.1	8.7	5.8	6.8
Gross product.....	100	91.1	106.8	114.1	128.2	135.2	143.2	2.1	2.4	3.5	.8	.4	.6
Depreciation.....	100	108.5	135.1	166.5	216.6	266.4	298.5	4.6	2.2	5.8	3.0	4.4	5.7
Net product.....	100	90.0	105.0	110.8	122.8	127.1	133.6	1.8	2.4	3.3	.6	0	.1

¹ Preliminary.

Source: See app. A.

(4) Because of rapidly increasing expenses and depreciation, the gross and net products grew at a slower rate than output for both groups. Both groups of countries had higher annual rates of increase in the 1950's, but the growth of gross and net product slowed to less than 1 percent in the last 13 years (1960 to 1973). The countries with private agriculture, however, experienced higher rates of growth in their gross and net products than the countries with socialized agriculture over the postwar period taken as a whole.

B. Performance in Individual Countries

In comparison with prewar levels, the greatest increase in agricultural output in the postwar period was achieved by Poland with an increase of 126 percent, followed by Bulgaria with 117 percent, and Yugoslavia and Romania with 79 and 74 percent, respectively. The most industrialized countries, East Germany and Czechoslovakia, had the lowest increases in output, 37 and 50 percent, respectively, while Hungary was in the middle with about 65 percent. Over the postwar period as a whole, the output of animal products grew at a higher annual rate than output of crops in all countries except Bulgaria and Poland for 1960-65, Czechoslovakia for 1950-55 and 1965-70, Hungary for 1960-70, and Romania for 1950-65. However, in the 1967-72 period the output of animal products grew two to four times faster than crop output in all countries. In the last 7 to 8 years all the Eastern European countries put heavy emphasis on rapid increases in meat, egg, and milk output in order to improve the quality of national diet.

The most spectacular rise in inputs from other sectors occurred in Hungary, with a 9-fold increase, followed by Romania with an 8-fold increase, Czechoslovakia with 7-fold increase and Poland and Bulgaria with 6.5- and 6-fold increases, respectfully, comparing prewar to 1973. East Germany's expenses rose only 3.7-fold, but its agriculture was already the most developed of all Eastern European countries before the war. Yugoslavia, though belonging to the group of countries with underdeveloped agricultures before the war, had a relatively moderate rise in expenses of about 3.6-fold, from the prewar period to 1973.

Since inputs are subtracted from output to get the gross and net products of agriculture, the higher cost increases in relation to increases in output are reflected in more sluggish rates of growth in gross and net product. In fact, the net product of agriculture remained below the prewar level throughout postwar period in East Germany and Czechoslovakia, and only just surpassed that level in Romania after 1960 and in Hungary after 1965. There was, however, a very good performance in Bulgaria for both gross and net products. Poland and Yugoslavia, countries with predominantly private, small-scale agriculture, registered an impressive gain of 74 and 70 percent, respectively, in net value added since the war (table 3). The interrelationship of total output, inputs, and gross and net product, which can be readily followed country by country in tables 2 and 3, seems to reveal a less efficient use of inputs in Czechoslovakia, East Germany, and to some extent in Hungary and Romania—countries whose agriculture is socialized—than in Poland and Yugoslavia, where agriculture is predominantly in private ownership, mostly as small family farms. However, the incentives given to Hungarian collective farmers

through a share-cropping system in the regions with specialized agriculture brought favorable results in the 1960's. Among all the countries with socialized agricultures, only Bulgaria showed a performance comparable to Poland's and Yugoslavia's in the postwar period.

C. Changes in Structures of Output and Inputs

It may be useful to review the structural changes of Eastern European agriculture over time. Such changes are shown in table 4 in terms of percentages of output and may be summarized as follows: Since the share of animal products increased in all countries over the postwar period, the efficiency of the transformation of intermediate produce into animal products probably increased; but increased imports of feed in recent years¹¹ also contributed to the relatively fast expanding output of animal products compared to that of crops. The share of animal products in total output in 1968-72 was from 54 to 71 percent in the more industrialized countries—Czechoslovakia, East Germany, Hungary and Poland—while in the developing countries of southern Europe—Bulgaria, Yugoslavia and Rumania—it was less than one half, between 43 and 48 percent. In all countries the share of expenses, and to a lesser degree, depreciation increased dramatically compared to prewar shares; correspondingly the share of gross and net product declined. In the countries with socialized agriculture on the average, the share of expenses in total output increased about 3.5 times or more, while in Poland and Yugoslavia, the share increased about 2.5 times, comparing prewar to 1968-72.

The Eastern European countries with socialized agricultures are already almost as dependent on inputs from other sectors as Northwestern Europe.¹² However, these greatly increased outside resources have not brought as favorable results for socialized agriculture in Eastern Europe as they have for privately operated agriculture in Western Europe, or for the countries with private agriculture (Poland and Yugoslavia) in Eastern Europe.

TABLE 4.—PERCENTAGE DISTRIBUTION OF OUTPUT, EXPENSES, GROSS PRODUCT, DEPRECIATION, AND NET PRODUCT IN AGRICULTURE
[Output of agriculture=100]

Area and period	Output of agriculture				Gross product	Depreciation	Net product
	Total	Crops	Animal products	Expenses			
Bulgaria:							
Prewar.....	100	62.1	37.9	10.0	90.0	4.2	85.8
1950-55.....	100	63.2	36.8	11.9	88.1	4.9	83.2
1956-60.....	100	60.4	39.6	14.4	85.6	5.1	80.5
1961-65.....	100	59.8	40.2	16.7	83.3	5.6	77.7
1968-72.....	100	57.0	43.0	25.7	74.3	6.9	67.4
Czechoslovakia:							
Prewar.....	100	35.3	64.7	7.9	92.1	7.6	84.5
1950-55.....	100	39.4	60.6	16.5	83.5	9.5	73.0
1956-60.....	100	37.6	62.4	21.6	78.4	9.8	68.6
1961-65.....	100	36.1	63.9	33.4	66.6	12.2	54.4
1968-72.....	100	35.4	64.6	34.8	65.2	12.6	52.6
East Germany:							
Prewar.....	100	35.4	64.6	12.3	87.7	3.9	83.8
1950-55.....	100	40.5	59.5	16.2	83.8	5.9	77.9
1956-60.....	100	34.5	65.5	19.2	80.8	5.7	75.1
1961-65.....	100	31.6	68.4	22.5	77.5	7.8	69.7
1968-72.....	100	28.9	71.1	27.0	73.0	9.2	63.8

¹¹ U.S. Dept. of Agriculture, *Agricultural Situation in Communist Areas*, ERS-Foreign, No. 350, 1973, pp. 20-22 and 45-50. *The Feed-Livestock Economy of Eastern Europe: Prospects to 1980*, ERS, Foreign Agricultural Economic Report No. 90, 1973, p. 90.

¹² U.N. FAO, *Sixth Report on Output, Expenses and Income of Agriculture in European Countries*, New York, 1969, p. 37.

TABLE 4.—PERCENTAGE DISTRIBUTION OF OUTPUT, EXPENSES, GROSS PRODUCT, DEPRECIATION, AND NET PRODUCT IN AGRICULTURE—Continued

Area and period	Output of agriculture				Gross product	Depre- ciation	Net product
	Total	Crops	Animal products	Expenses			
Hungary:							
Prewar.....	100	45.0	55.0	5.1	94.9	1.5	93.3
1950-55.....	100	51.5	48.5	9.7	90.3	2.5	87.8
1956-60.....	100	46.0	54.0	10.9	89.1	5.8	83.3
1961-65.....	100	43.5	56.5	18.6	81.4	7.3	74.1
1968-72.....	100	46.4	53.6	25.7	74.3	7.7	66.6
Poland:							
Prewar.....	100	47.6	52.4	10.2	89.8	6.5	83.3
1950-55.....	100	43.1	56.9	13.6	86.4	6.1	80.3
1956-60.....	100	37.9	62.1	15.3	84.7	5.4	79.3
1961-65.....	100	40.2	59.8	18.4	81.6	5.1	76.5
1968-72.....	100	41.8	58.2	26.8	73.2	6.7	66.5
Romania:							
Prewar.....	100	62.4	37.6	4.9	95.1	7.6	87.5
1950-55.....	100	57.4	42.6	8.0	92.0	8.0	84.0
1956-60.....	100	57.1	42.9	10.3	89.7	9.1	80.6
1961-65.....	100	55.7	44.3	14.7	85.3	9.3	76.0
1968-72.....	100	52.0	48.0	23.7	76.3	11.7	64.6
Yugoslavia:							
Prewar.....	100	52.4	47.6	4.3	95.7	4.3	91.4
1950-55.....	100	55.7	44.3	5.2	94.8	4.3	90.5
1956-60.....	100	54.0	46.0	8.0	92.0	4.1	87.9
1961-65.....	100	54.3	45.7	9.7	90.3	4.1	86.2
1968-72.....	100	51.9	48.1	9.3	90.7	4.1	86.6
Countries with socialized agriculture:							
Prewar.....	100	46.0	54.0	8.2	91.8	5.1	86.7
1950-55.....	100	48.8	51.2	12.7	87.3	6.5	80.8
1956-60.....	100	45.6	54.4	15.5	84.5	7.2	77.3
1961-65.....	100	44.2	55.8	21.2	78.8	8.6	70.2
1968-72.....	100	42.4	57.6	27.3	72.7	9.9	62.8
Countries with private agriculture:							
Prewar.....	100	49.3	50.7	8.2	91.8	5.7	86.1
1950-55.....	100	46.9	53.1	11.1	88.9	5.6	83.3
1956-60.....	100	43.1	56.9	12.9	87.1	5.0	82.1
1961-65.....	100	44.9	55.1	15.5	84.5	4.7	79.8
1968-72.....	100	45.1	54.9	21.1	78.9	5.9	73.0
Total, Eastern Europe:							
Prewar.....	100	47.2	52.8	8.2	91.8	5.3	86.5
1950-55.....	100	48.0	52.0	12.0	88.0	6.1	81.9
1956-60.....	100	44.5	55.5	14.4	85.6	6.3	79.3
1961-65.....	100	44.6	55.4	18.7	81.3	6.9	74.4
1968-72.....	100	43.8	56.2	24.7	75.3	8.2	67.1

Sources: Output was calculated from physical quantities weighted by FAO Western European and Soviet Union wheat based price relatives for 1961-65. All other items were calculated from output and percentage distribution of these items given in national currencies; see app. A.

D. Contribution of Individual Countries to the Total Output and Inputs of Eastern Europe

The relative importance of each country as a supplier of agricultural output is shown in table 5. Bulgaria, the smallest country, supplied only about 8 percent of the agricultural output of Eastern Europe. But her importance as a supplier increased from 7 to over 8 percent in the last 12 years. In ascending order of importance come Hungary (10 percent), Czechoslovakia (11 percent), Yugoslavia, Romania, and East Germany (about 14 percent each), and Poland, the largest supplier, accounting for 29 percent of the total output. The importance of the two industrialized countries, East Germany and Czechoslovakia, has declined. Because of better performance, the share of the countries with private agriculture increased from 42 percent in 1950-55 to 43 percent in 1960-72. The share of Bulgaria, Romania, and Yugoslavia in crop and animal output increased from 1950-55 to 1966-72. Poland's share of crop output alone also increased over the postwar period.

TABLE 5.—PERCENTAGE CONTRIBUTION OF INDIVIDUAL COUNTRIES TO AGRICULTURAL OUTPUT
[Eastern Europe=100]

	Crop output				Animal output				Agricultural output			
	1950-55	1961-65	1966-70	1971-72	1950-55	1961-65	1966-70	1971-72	1950-55	1961-65	1966-70	1971-72
Bulgaria.....	9.1	10.8	10.9	10.5	4.9	5.9	6.2	6.2	6.9	8.1	8.3	8.1
Czechoslovakia.....	10.1	8.9	9.0	9.0	14.3	12.6	12.9	12.9	12.3	10.9	11.1	11.2
East Germany.....	12.8	9.6	9.3	8.9	17.4	16.7	17.1	17.0	15.2	13.5	13.9	13.5
Hungary.....	11.4	10.3	10.6	11.0	9.9	10.8	9.9	9.8	10.7	10.6	10.2	10.3
Poland.....	26.5	26.2	27.0	28.1	32.2	31.4	30.0	30.1	29.5	29.1	28.6	29.2
Romania.....	15.5	16.7	16.2	16.9	10.6	10.7	11.3	12.1	13.0	13.4	13.5	14.2
Yugoslavia.....	14.5	17.5	17.1	15.7	10.6	11.8	11.9	11.8	12.5	14.4	14.2	13.5
Countries with socialized agriculture.....	59.0	56.3	56.0	56.2	57.2	56.7	58.1	58.1	58.1	56.5	57.1	57.3
Countries with private agriculture.....	4.10	43.7	44.0	43.8	42.8	43.3	41.9	41.9	41.9	43.5	42.9	42.7
Total, Eastern Europe.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Output was calculated from physical quantities weighted by Eastern European and Soviet Union wheat-based price relatives for 1961-65 period (see app. A).

A substantially different relationship exists with respect to expenses and depreciation (table 6). For all the countries with socialized agriculture except East Germany (and Czechoslovakia for 1971-72) their share in total expenses increased from 1950-55. The level of East German expenses, however, was already very high in the 1950's. The share of expenses for the countries with private agriculture declined from 39 percent in the 1950-55 period to 37 percent in 1971-72, while their share of output increased.

In terms of value added, that is, gross and net product, the shares in the total for Eastern Europe of Czechoslovakia, East Germany, and Hungary decreased from 1950-55 to 1966-72. At the same time the corresponding shares of Bulgaria, Romania, and Yugoslavia had a tendency to rise. Poland's share of net product remained stable (about 29 percent) over the whole postwar period.

TABLE 6.—PERCENTAGE CONTRIBUTION OF INDIVIDUAL COUNTRIES TO EXPENSES, GROSS PRODUCT AND NET PRODUCT IN AGRICULTURE
[Eastern Europe=100]

	Operating expenses				Gross product				Net product			
	1950-55	1961-65	1966-70	1971-72	1950-55	1961-65	1966-70	1971-72	1950-55	1961-65	1966-70	1971-72
Bulgaria.....	6.7	7.2	8.6	8.3	6.9	8.3	8.3	8.0	7.1	8.4	8.4	8.1
Czechoslovakia.....	16.8	19.5	17.4	15.2	11.7	9.0	9.3	9.8	11.0	8.0	8.3	8.9
East Germany.....	20.4	16.2	14.6	15.9	14.5	12.9	13.7	12.7	14.5	12.7	13.6	12.3
Hungary.....	8.6	10.5	10.5	10.7	10.9	10.6	10.1	10.2	11.4	10.6	10.2	10.2
Poland.....	33.3	28.7	29.5	32.7	28.9	29.2	28.4	28.0	28.9	29.9	28.8	28.7
Romania.....	8.6	10.5	13.3	12.5	13.6	14.1	13.6	14.7	13.3	13.7	13.1	14.0
Yugoslavia.....	5.4	7.4	6.1	4.7	13.4	16.0	16.6	16.5	13.8	16.7	17.6	17.8
Countries with socialized agriculture.....	61.2	63.9	64.4	62.6	57.6	54.8	55.0	55.5	57.3	53.4	53.6	53.5
Countries with private agriculture.....	38.8	36.1	35.6	37.4	42.4	45.2	45.0	44.5	42.7	46.6	46.4	46.5
Total, Eastern Europe.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Expenses, gross and net product were calculated from output and percentage distribution of these items given in national currencies (see app. A).

V. PER CAPITA TRENDS AND LEVELS OF OUTPUT

A. Per Capita Output

Trends in per capita output express better than absolute figures the quantitative improvement in the supply of agricultural products and changes in levels of self-sufficiency in domestically produced food. Tables 7 to 10 show the trends from prewar to 1973 in agricultural output measures in relation to population for individual countries, groups of countries, and for the whole Eastern Europe.

In general, the per capita trends are similar to the total performance measures except that the rates of change are slowed down by increases in population (table 7). Because of large shifts in the Polish population due to territorial changes after the war, the countries with private agriculture (Poland plus Yugoslavia) show substantially higher per capita results in the postwar period (compared to the prewar) than the countries with socialized agriculture. This upward bias is impossible to eliminate. But it should be kept in mind when making prewar to postwar comparisons on a per capita or a per employee basis. However, because of rapid postwar population growth in Poland and Yugoslavia, their combined average annual rate of growth in agricultural output per capita was 1.9 percent (1.8 percent for crops, 2 percent for animal products) from 1950 to 1972, while for the countries with socialized agriculture the overall rate was 2.4 percent.

TABLE 7.—EASTERN EUROPE: INDEXES OF PER CAPITA OUTPUT, EXPENSES, GROSS AND NET PRODUCT IN AGRICULTURE

[1934-38=100]

	Agricultural output			Crop output			Animal output		
	Socialized ¹	Private ²	Total	Socialized ¹	Private ²	Total	Socialized ¹	Private ²	Total
Prewar.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	77.1	121.4	92.9	82.8	112.0	93.8	72.2	130.5	92.0
1951.....	87.0	130.5	102.8	96.2	134.6	110.6	79.3	126.6	95.8
1952.....	83.8	116.4	95.9	82.7	109.6	92.9	84.8	123.1	98.5
1953.....	86.4	127.4	101.3	99.5	123.2	108.8	75.2	131.5	94.6
1954.....	83.3	122.0	97.4	84.3	108.0	93.5	82.4	135.5	100.9
1955.....	92.8	131.9	107.2	95.4	126.3	107.3	90.5	137.5	107.2
1956.....	86.9	124.4	100.7	82.5	104.2	91.0	90.6	144.0	109.4
1957.....	97.5	139.5	113.0	99.2	124.2	109.0	96.1	154.4	116.6
1958.....	101.6	141.7	116.5	102.4	123.0	110.6	100.9	159.8	121.7
1959.....	103.8	146.7	119.7	102.0	130.8	113.2	105.2	162.2	125.5
1960.....	106.0	143.3	119.9	105.2	125.5	113.3	106.6	160.5	125.8
1961.....	103.6	155.9	122.8	96.8	142.4	114.1	109.5	168.9	130.6
1962.....	101.5	138.7	115.4	98.7	110.1	103.5	104.0	166.4	126.1
1963.....	105.5	152.5	122.9	104.6	147.7	121.1	106.3	157.2	124.5
1964.....	109.7	152.8	125.8	106.3	143.3	120.6	112.6	162.1	130.4
1965.....	113.2	158.3	130.0	108.6	146.7	123.3	117.1	169.5	135.9
1966.....	121.7	167.9	138.9	119.6	159.5	135.0	123.5	176.0	142.4
1967.....	126.2	168.7	142.1	123.6	159.9	137.7	128.4	177.2	146.1
1968.....	125.8	173.5	143.6	121.1	167.7	139.0	129.8	179.1	147.6
1969.....	124.5	164.5	139.5	119.9	150.4	131.8	128.4	178.2	146.4
1970.....	122.6	166.2	138.9	109.1	149.9	124.8	134.2	182.1	151.6
1971.....	130.2	175.4	147.1	118.3	159.5	134.2	140.3	190.8	158.6
1972.....	138.6	183.4	155.4	128.8	162.4	141.9	147.0	203.7	167.5
1973 ³	140.5	194.1	160.5	130.3	170.4	145.9	149.3	217.1	173.6

See footnotes at end of table

TABLE 7.—EASTERN EUROPE: INDEXES OF PER CAPITA OUTPUT, EXPENSES, GROSS AND NET PRODUCT IN AGRICULTURE—Continued

	Expenses and depreciation			Gross product			Net product		
	Social-ized ¹	Private ²	Total	Social-ized ¹	Private ²	Total	Social-ized ¹	Private ²	Total
Prewar.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	106.9	146.6	121.8	74.1	117.7	89.6	72.5	117.3	88.4
1951.....	117.1	149.2	129.6	83.7	127.6	99.5	82.4	127.5	98.6
1952.....	116.0	148.4	128.6	80.5	111.6	92.0	78.9	111.3	90.8
1953.....	126.9	152.7	137.3	81.7	123.2	96.7	80.2	123.3	95.7
1954.....	128.9	144.9	135.9	78.2	118.1	92.6	76.3	118.3	91.4
1955.....	141.5	158.0	148.7	87.1	127.3	101.8	85.3	127.7	100.7
1956.....	148.7	160.2	154.2	80.1	118.4	94.1	77.4	118.6	92.3
1957.....	158.0	176.7	166.0	90.3	132.9	105.9	88.2	133.5	104.7
1958.....	159.7	177.6	167.4	94.8	135.0	109.6	92.7	135.9	108.5
1959.....	179.1	195.2	186.3	95.2	138.1	111.0	92.2	138.9	109.3
1960.....	204.4	188.1	200.1	95.6	135.1	110.2	90.9	136.0	107.4
1961.....	209.2	192.4	204.6	92.3	147.9	112.6	87.5	150.0	110.0
1962.....	221.2	198.6	214.5	88.2	128.1	102.9	83.2	129.0	99.9
1963.....	234.4	217.8	229.8	90.7	140.7	109.0	85.8	142.0	106.2
1964.....	253.9	218.8	242.5	92.7	141.0	110.5	87.6	142.2	107.5
1965.....	277.3	277.2	278.7	94.0	139.8	110.9	88.1	139.1	106.7
1966.....	291.0	261.5	281.6	101.6	153.2	120.6	95.8	152.8	116.6
1967.....	305.0	275.8	295.7	105.1	152.0	122.5	98.8	151.4	118.2
1968.....	324.7	292.5	314.3	102.2	155.0	121.7	95.3	154.3	116.9
1969.....	334.7	306.4	325.8	99.9	143.6	116.2	92.3	141.6	110.4
1970.....	357.4	340.6	352.8	95.2	140.2	111.9	86.7	138.1	105.5
1971.....	378.9	347.1	368.8	101.6	149.8	119.5	92.1	147.7	112.5
1972.....	402.2	389.0	399.0	108.7	152.7	125.1	98.2	150.2	117.4
1973 ³	430.8	405.1	423.0	107.9	162.5	128.1	96.1	160.0	119.5

¹ Countries with socialized agriculture.² Countries with private agriculture.³ Preliminary.

Sources: Calculated from physical quantities weighted by FAO Eastern European and Soviet Union wheat-based price relatives for 1961-65 period and population data taken from statistical yearbooks of respective countries (see app. A).

The behavior of output per capita for individual countries is summarized in table 8. In the 1950-55 period, when output was recovering from the wartime setback and the first collectivization drive, the indexes of per capita output were below the prewar level in most countries. In Poland, however, and to a certain extent in Czechoslovakia, where there was a sharp decline in population because of territorial shifts and population transfers, the 1950-55 output per capita compares favorably with that of prewar. In the postwar period, Bulgaria, East Germany, and Yugoslavia experienced the highest annual rates of growth of per capita output, 3.3 and 2.7 percent respectively, followed by Hungary and Romania with 2.3 percent annual rate of growth for each, while Czechoslovakia and Poland had only modest 1.6 and 1.5 percent annual rates. East German per capita annual rates compared well with other countries because her population actually declined from 18.4 million in 1950 to slightly over 17 million in 1973;¹³ Poland, in contrast, had a rapid population growth, from about 25 to over 33.4 million in the same period.¹⁴ In all countries, per capita output of animal products increased at a higher annual rate than that of crops, in line with the effort to improve protein content in national diets, particularly in the last 6-7 years (table 8).

¹³ Germany (Democratic Republic). Staatliche Zentralverwaltung für Statistik. "Statistisches Jahrbuch der Deutschen Demokratischen Republik," 1973, Berlin, 1973, p. 3.¹⁴ Rocznik statystyczny 1973," op. cit., pp. 2-3.

TABLE 8.— PER CAPITA GROWTH OF AGRICULTURAL OUTPUT

	Indexes, 1934-38=100						Average annual rates of growth			
	1950-55	1956-60	1961-65	1966-70	1971-72	1973 ¹	1950-72	1950-60	1960-70	1967-72
Bulgaria:										
Output.....	90.1	107.1	129.4	152.0	158.0	166.2	3.3	3.4	3.1	1.0
Crops.....	91.7	104.2	124.6	144.0	142.5	152.1	2.8	2.5	3.0	.1
Animal products.....	87.4	111.9	137.1	165.1	183.5	189.2	4.1	4.9	3.3	2.2
Czechoslovakia:										
Output.....	99.4	107.9	109.5	127.9	140.8	147.5	1.6	1.2	2.2	2.7
Crops.....	111.2	115.1	112.1	131.1	137.3	147.1	1.0	.8	1.5	1.2
Animal products.....	93.0	104.1	108.1	126.1	142.7	147.8	2.0	1.4	2.6	3.6
East Germany:										
Output.....	75.8	94.4	97.4	118.6	126.5	133.2	2.7	4.1	3.0	1.4
Crops.....	86.7	92.0	87.0	100.3	101.9	104.9	.8	.9	1.4	-.6
Animal products.....	69.8	95.7	103.1	128.6	140.0	148.6	3.8	6.2	3.7	2.3
Hungary:										
Output.....	87.3	102.4	111.5	124.7	137.1	144.6	2.3	2.6	2.2	1.9
Crops.....	100.0	104.6	107.6	129.3	140.1	154.6	1.7	.8	3.4	.9
Animal products.....	77.0	100.5	114.6	121.0	134.6	136.3	2.8	4.3	1.3	2.8
Poland:										
Output.....	151.9	161.2	172.4	190.8	209.4	223.0	1.5	1.8	1.6	1.9
Crops.....	137.7	128.3	145.6	169.6	182.3	198.4	1.4	-1.2	2.8	.9
Animal products.....	164.9	191.1	196.7	210.2	234.0	264.5	1.5	2.2	.9	2.8
Romania:										
Output.....	80.7	91.6	100.7	114.6	126.2	129.9	2.3	3.1	1.5	1.1
Crops.....	74.1	83.8	89.8	98.6	103.8	106.8	1.9	3.4	.6	-.8
Animal products.....	91.6	104.6	118.9	141.1	163.5	170.2	2.9	2.8	2.5	3.2
Yugoslavia:										
Output.....	85.8	105.5	119.2	132.6	133.6	135.7	2.7	4.2	1.9	.1
Crops.....	91.3	108.8	123.7	136.2	128.1	128.8	2.4	4.1	1.7	-2.0
Animal products.....	79.8	102.0	114.3	128.5	139.8	143.3	3.0	4.6	2.2	2.3
Countries with socialized agriculture:										
Output.....	85.1	99.2	106.7	124.2	134.4	140.5	2.4	2.9	3.3	1.6
Crops.....	90.2	98.3	103.0	118.6	123.6	130.3	1.7	1.9	1.9	.1
Animal products.....	80.8	99.9	109.9	128.9	143.6	149.3	3.0	3.8	2.7	2.7
Countries with private agriculture:										
Output.....	125.0	139.2	151.7	168.1	179.4	194.1	1.9	1.9	1.8	1.3
Crops.....	119.0	121.7	138.2	157.4	161.0	170.4	1.8	.7	2.4	-.2
Animal products.....	130.9	156.3	164.8	178.5	197.3	217.1	2.0	2.9	1.3	2.6
Total Eastern Europe:										
Output.....	99.6	114.0	123.4	140.6	151.3	160.5	2.2	2.5	2.1	1.5
Crops.....	101.2	107.5	116.6	133.6	138.1	145.9	1.8	1.4	2.1	0
Animal products.....	98.2	119.9	129.5	146.8	163.1	173.6	2.5	3.4	2.1	2.7

¹ Preliminary.

Sources: Data in table 2 divided by population data taken from statistical yearbooks of respective countries (see app. A).

The trend in per capita inputs exhibited an ascending pattern similar to that of total inputs in all countries under study. Gross and net product per capita, however, did not recover to the prewar levels in most countries until late 1960's (table 9). Only Bulgaria, East Germany, and Yugoslavia had significant gains in both gross and net product per capita for the 1950-72 period. Poland's early postwar favorable per capita figures reflected a sharp decline in population resulting from postwar territorial changes. In the 1967-72 period, however, all countries except East Germany and Yugoslavia experienced a negative rate of growth in per capita net product.

TABLE 9.—PER CAPITA GROWTH OF GROSS AND NET PRODUCT IN AGRICULTURE

	Indexes, 1934-38=100							Average annual rates of growth			
	1934-38	1950-55	1956-60	1961-65	1966-70	1971-72	1973 ¹	1950-72	1950-60	1960-70	1967-72
Bulgaria:											
Gross product.....	100	88.2	101.9	119.8	129.5	129.9	134.7	3.4	2.9	1.7	0
Net product.....	100	87.4	100.4	117.2	124.9	122.2	126.6	2.2	2.8	1.4	-1.6
Czechoslovakia:											
Gross product.....	100	90.1	91.8	79.2	89.9	99.5	103.1	.1	0	.8	2.6
Net product.....	100	86.5	87.6	70.6	79.2	86.9	88.7	-1.1	-2.2	.2	2.3
East Germany:											
Gross product.....	100	72.4	86.9	86.1	103.2	100.4	101.1	2.0	3.4	2.4	-1.3
Net product.....	100	70.4	84.5	81.0	96.0	90.1	88.2	1.6	3.4	2.1	-2.4
Hungary:											
Gross product.....	100	83.2	96.2	95.7	100.9	106.0	109.7	1.1	2.3	.9	.3
Net product.....	100	82.2	91.3	88.6	93.1	95.6	98.4	.7	1.4	1.2	-1.4
Poland:											
Gross product.....	100	146.2	152.1	156.6	163.1	166.0	183.8	.6	.5	.6	-1.5
Net product.....	100	146.4	153.4	158.3	161.0	162.0	179.6	.5	1.6	-2.2	.9
Romania:											
Gross product.....	100	78.1	86.4	93.0	93.8	102.6	104.8	1.3	2.7	-1.4	.4
Net product.....	100	77.4	84.4	87.4	88.4	93.6	93.7	.9	2.5	-1.1	-1.7
Yugoslavia:											
Gross product.....	100	85.0	101.5	112.6	125.1	127.0	129.5	2.4	3.8	1.8	.2
Net product.....	100	85.0	101.5	112.6	125.1	126.8	129.3	2.4	3.8	1.8	.1
Countries with socialized agriculture:											
Gross product.....	100	80.9	91.2	91.6	100.8	105.2	107.9	1.3	2.3	1.0	.3
Net product.....	100	79.3	88.3	86.4	93.8	95.2	96.1	.9	2.1	.7	-1.6
Countries with private agriculture:											
Gross product.....	100	121.0	132.0	139.5	148.8	151.3	162.5	1.2	1.6	.8	-1.3
Net product.....	100	121.0	132.7	140.4	147.6	148.9	160.0	1.2	1.7	.5	-1.6
Total, eastern Europe:											
Gross product.....	100	95.4	106.2	109.2	118.5	122.3	128.1	1.3	2.0	.9	0
Net product.....	100	94.3	104.5	106.1	113.5	114.9	119.5	1.1	1.9	.6	-1.6

¹ Preliminary.

Sources: Data in table 3 divided by population data taken from statistical yearbooks of respective countries. (See app. A).

B. Per Capita Levels of Output

Table 10 shows per capita comparisons of levels of output, gross and net product in agriculture in relation to the East European level, for individual countries and groups of countries in selected periods. These findings show that in the 1950-55 period (except for East Germany) the per capita level of agricultural output was lower generally in countries which had the highest shares of the active population in agriculture than in the more industrialized countries.

From 1950-55 to 1966-72, however, the levels of per capita agricultural output declined in Czechoslovakia and Poland in relation to Eastern Europe as a whole. Bulgaria improved its relative position greatly, followed by Yugoslavia, Romania, and Hungary. Hungary has been and is the highest per capita producer of agricultural output, followed closely by Bulgaria, while Yugoslavia has been the lowest. By 1971-72, Bulgaria and Hungary ranked highest in per capita output of crops, while East Germany and, again, Hungary excelled in per capita output of animal products. The lowest per capita levels of output of crops occurred in East Germany, Czechoslovakia, and Yugoslavia, and the latter along with Romania also rank lowest in per capita output of animal products. East Germany and Czechoslovakia have been large importers of grain in recent years. The levels of gross and net product per capita follow roughly the output pattern for individual countries. Hungary, Bulgaria, and Poland rank highest while Czechoslovakia, East Germany, and Romania are lowest.

The combined measures for country groups reveal that the relative levels of per capita output of animal products in the countries with socialized agriculture have increased over time, while these levels have decreased in the countries with private agriculture. The relative level of net product, however, had a tendency to increase for the countries with private agriculture on a per capita basis, in relation to Eastern Europe as a whole. The relative levels of crop output and gross product per capita remained practically unchanged for both the socialized and private agricultures.

TABLE 10.—PER CAPITA COMPARISONS OF LEVELS OF OUTPUT, GROSS AND NET PRODUCT IN AGRICULTURE

[Total Eastern Europe=100]

	Crop output				Animal output				Agricultural output			
	1950-55	1961-65	1966-70	1971-72	1950-55	1961-65	1966-70	1971-72	1950-55	1961-65	1966-70	1971-72
Bulgaria.....	133.9	157.9	159.2	152.4	71.9	85.6	90.8	90.9	101.7	117.8	121.5	117.6
Czechoslovakia.....	85.3	74.7	76.2	77.2	120.9	106.5	109.6	111.7	103.8	92.3	94.6	96.8
East Germany.....	75.7	66.0	66.4	65.3	102.8	115.1	126.6	124.2	89.8	93.2	99.6	88.8
Hungary.....	128.8	120.3	126.0	132.1	111.7	126.1	117.4	117.7	119.9	123.5	121.3	123.9
Poland.....	109.5	100.5	102.1	106.3	133.1	120.5	113.5	113.8	121.8	111.6	108.4	110.6
Romania.....	99.5	104.6	100.2	102.1	68.2	67.1	79.3	73.3	83.2	83.9	81.7	88.7
Yugoslavia.....	92.0	108.3	104.0	94.6	67.5	73.3	72.7	71.2	79.3	88.9	86.8	81.3
Countries with socialized agriculture.....	98.2	97.4	97.9	98.6	95.2	98.2	101.6	102.0	96.6	97.9	99.9	100.5
Countries with private agriculture.....	102.6	103.5	102.8	101.8	107.2	102.4	97.9	97.4	105.0	102.9	100.1	99.3
Total, Eastern Europe.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Gross product				Net product							
Bulgaria.....	101.8	120.8	120.3	116.4	103.4	123.2	122.7	118.5				
Czechoslovakia.....	98.6	75.7	79.2	84.9	93.3	67.2	71.0	76.9				
East Germany.....	85.6	88.9	98.2	92.7	85.5	87.2	89.5	89.7				
Hungary.....	123.1	123.8	120.2	122.4	128.6	123.2	121.1	122.8				
Poland.....	119.6	112.0	107.5	106.0	119.4	114.8	109.1	108.5				
Romania.....	87.0	88.0	84.2	89.3	85.4	85.7	81.0	84.7				
Yugoslavia.....	85.4	98.8	101.2	99.6	87.6	103.1	107.1	107.3				
Countries with socialized agriculture.....	95.9	94.9	96.2	97.3	95.4	92.4	93.7	94.0				
Countries with private agriculture.....	106.1	106.9	105.0	103.6	106.9	110.3	108.4	108.0				
Total, Eastern Europe.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0				

Sources: Calculated from physical quantities weighted by FAO Eastern European and Soviet Union wheat-based price relatives for 1961-65 period divided by population data (see appendix A).

VI. PRODUCTIVITY OF LAND AND LIVESTOCK

A. Trends in Agricultural Land and Land per Farmworker

In most Eastern European countries, the area of agricultural land ¹⁵ remained relatively stable in the postwar period. In Czechoslovakia, East Germany, Hungary, and Poland, agricultural land declined a few percent from 1950-55 to 1971-72, while in Bulgaria, Romania, and Yugoslavia it increased a few percent in the same period (table 11). In comparison to prewar years only Poland had a significant drop, about 20 percent, in agricultural land, due to territorial changes. Still, Poland has about 26 percent of the total agricultural land in Eastern Europe, followed by Romania and Yugoslavia with close to 20 percent each. The remaining four countries each held between 8 and 9 percent of the total agricultural land in Eastern Europe.

¹⁵ Agricultural land comprises all arable land, including orchards, gardens, vineyards, permanent and temporary meadows, pasture, and grazing land.

TABLE 11.—INDEXES OF AGRICULTURAL LAND AND PERCENTAGE DISTRIBUTION OF AGRICULTURAL LAND

	Indexes of agricultural land, 1934-38=100						Percentage distribution, Eastern Europe=100 ¹					
	1934-38	1950-55	1956-60	1961-65	1966-70	1971-72	1934-38	1950-55	1956-60	1961-65	1966-70	1971-72
Bulgaria.....	100	98.9	97.7	100.1	103.5	105.0	6.9	7.4	7.3	7.5	7.9	8.0
Czechoslovakia.....	100	95.5	95.1	93.5	91.9	91.3	9.3	9.8	9.6	9.5	9.4	9.4
East Germany.....	100	97.9	96.9	95.9	94.9	94.5	8.0	8.6	8.4	8.4	8.4	8.4
Hungary.....	100	96.6	95.0	92.6	91.2	90.5	9.1	9.6	9.4	9.2	9.1	9.1
Poland.....	100	79.8	79.7	78.9	76.5	76.0	30.7	27.0	26.7	26.5	25.9	25.9
Romania.....	100	94.8	95.9	98.0	99.4	99.6	18.0	18.8	18.8	19.3	19.8	19.9
Yugoslavia.....	100	95.2	100.0	99.2	98.3	97.2	18.0	18.8	19.6	19.5	19.6	19.3
Countries with socialized agriculture.....	100	96.3	96.0	96.2	96.4	96.4	51.3	54.2	53.7	54.0	54.5	54.8
Countries with private agriculture.....	100	85.5	87.2	86.4	84.6	83.8	48.7	45.8	46.3	46.0	45.5	45.2
Total, Eastern Europe.....	100	91.0	91.7	91.4	90.6	90.3	100.0	100.0	100.0	100.0	100.0	100.0

¹ Percentages may not add to total due to rounding.

Source: See app. A.

In comparison to the U.S. standard, the agricultural land per person employed in agriculture is very small in all Eastern European countries (table 12). Because of the rapid decline in agricultural employment in the last two decades, the agricultural land per employed person in agriculture rose sharply in all countries except Poland. However, by 1972, the number of hectares per person employed in agriculture ranged from 2.9 in Romania to 7 in East Germany, with 4 hectares the average for all Eastern Europe. The average annual rate of growth of agricultural land per person employed accelerated for the countries with socialized agriculture during the 1960's, while for the countries with private agriculture the rate of growth decelerated in the same period. Poland actually experienced a decline in land per person employed in agriculture in the last 12 years because agricultural employment increased in the same period.

TABLE 12.—AGRICULTURAL LAND PER PERSON EMPLOYED IN AGRICULTURE

	Hectares per employed					Indexes, ¹ 1934-38=100					Average annual rates of growth			
	1934-38	1950	1960	1965	1972	1934-38	1950	1960	1965	1972	1950-72	1950-60	1960-70	1967-72
Bulgaria.....	1.9	2.1	2.4	3.1	4.1	100	108	128	162	217	3.4	0.7	5.4	4.2
Czechoslovakia.....	3.2	3.6	5.0	5.7	6.4	100	114	157	178	202	2.8	2.2	1.6	1.7
East Germany.....	4.1	3.5	5.2	5.4	7.0	100	84	126	131	171	2.8	2.8	2.1	5.1
Hungary.....	3.6	3.6	4.2	5.3	6.2	100	99	116	146	172	2.7	.8	2.8	2.9
Poland.....	3.2	3.8	3.8	3.6	3.5	100	117	119	112	109	-.4	.2	-.9	-.4
Romania.....	2.2	1.9	2.0	2.4	2.9	100	87	95	111	137	2.0	.9	2.5	3.3
Yugoslavia.....	2.4	2.5	3.1	3.4	3.9	100	106	133	144	164	1.9	2.4	1.7	1.8
Countries with socialized agriculture.....	2.6	2.5	3.0	3.5	4.3	100	95	112	131	162	2.4	1.1	2.7	3.4
Countries with private agriculture.....	2.8	3.1	3.5	3.5	3.7	100	110	123	124	129	.7	1.2	.3	.5
Total, Eastern Europe.....	2.7	2.8	3.2	3.5	4.0	100	101	117	127	145	1.6	1.2	1.6	2.0

¹ Indexes are calculated from unrounded data.

Source: See app. A.

B. Growth of Output and Input per Unit of Land

In this section we summarize our findings on output and input measures per hectare of agricultural land. As a result of the relative stability of the area in agricultural land, except for Poland, the output and input measures per unit of land followed the same general trends in the postwar period as the total performance measures given in tables 1 to 3.

Tables 13 to 15 show the trends of various measures of production and expenses per hectare of agricultural land by country, groups of countries, and region. In general, the productivity of land increased in all the countries. However, the economically least developed countries had the largest annual rates of increase because their production per unit of land was very low before the war and even lower immediately following it. Poland's upward jump in productivity of land between the prewar period and 1950-55 was due to territorial changes which resulted in her obtaining a better quality of land than she had before the war. In all countries the average annual rate of growth of output of animal products exceeded that of output of crops. Over the postwar period, the countries with private agriculture experienced a 3.2 percent annual rate of growth of output per unit of land, while the countries with socialized agriculture had a 2.9 percent rate of growth (table 14).

TABLE 13.—EASTERN EUROPE: INDEXES OF OUTPUT, EXPENSES, GROSS AND NET PRODUCT PER HECTARE OF AGRICULTURAL LAND

[Indexes 1934-38=100]

	Agricultural output			Crop output			Animal output		
	Socialized ¹	Private ²	Total	Socialized ¹	Private ²	Total	Socialized ¹	Private ²	Total
Prewar.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	81.1	117.2	94.9	87.1	108.2	95.9	76.0	126.0	94.0
1951.....	92.3	127.8	106.1	102.0	131.8	114.2	81.1	123.9	98.9
1952.....	89.6	115.9	100.2	88.4	109.1	97.1	90.7	122.6	102.9
1953.....	93.4	127.6	106.7	107.6	123.4	114.6	81.3	131.7	99.6
1954.....	91.3	123.6	103.8	92.4	103.5	99.6	90.3	137.3	107.5
1955.....	102.5	135.2	115.3	105.4	129.4	115.3	100.0	140.9	115.2
1956.....	96.0	128.8	108.7	91.2	107.9	98.2	100.1	149.0	118.1
1957.....	108.2	146.6	123.0	110.0	130.5	118.6	106.6	162.2	126.9
1958.....	113.1	150.8	127.8	114.0	130.9	121.4	112.4	170.1	133.5
1959.....	115.4	158.4	132.0	113.5	141.2	124.9	117.1	175.1	138.4
1960.....	118.6	156.3	133.3	117.7	137.0	126.0	119.3	175.1	139.9
1961.....	116.5	172.7	137.8	108.8	157.8	128.0	123.1	187.1	146.5
1962.....	114.7	154.3	130.0	111.4	122.6	116.6	117.5	185.2	142.1
1963.....	120.0	174.6	140.8	118.9	169.1	138.7	120.9	180.0	142.6
1964.....	124.9	177.1	144.8	121.0	166.0	138.9	128.2	187.8	150.2
1965.....	129.4	188.5	152.0	124.2	174.8	144.2	133.8	201.9	158.9
1966.....	139.9	201.7	163.5	137.5	191.7	158.9	141.9	211.4	167.6
1967.....	145.6	204.5	168.3	142.6	193.9	163.1	148.2	214.8	173.0
1968.....	146.0	213.3	171.6	140.5	205.2	166.2	150.6	220.2	176.5
1969.....	145.0	204.0	167.8	139.7	185.5	158.5	149.6	221.0	176.1
1970.....	143.7	206.7	167.8	127.8	186.3	150.7	157.2	226.4	183.1
1971.....	153.4	221.1	179.4	139.4	201.1	163.7	165.4	240.5	193.4
1972.....	164.2	234.4	191.2	152.6	207.6	174.6	174.1	260.4	207.0
1973 ³	167.5	251.0	199.2	155.3	220.4	181.0	177.9	280.7	215.4
	Expenses and depreciation			Gross product			Net product		
	Socialized ¹	Private ²	Total	Socialized ²	Private ²	Total	Socialized ¹	Private ²	Total
Prewar.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	112.4	141.6	124.4	78.0	113.6	91.6	76.3	113.3	90.3
1951.....	124.2	146.1	133.8	88.7	124.9	102.7	86.4	124.9	101.8
1952.....	124.1	147.8	134.3	86.1	111.1	96.1	84.4	110.8	94.8
1953.....	137.3	153.0	144.6	88.4	123.4	101.9	86.7	123.5	100.7
1954.....	141.2	146.9	144.8	85.7	119.7	98.7	83.6	119.8	97.4
1955.....	156.3	162.0	159.9	96.2	130.5	109.5	94.3	130.9	108.3
1956.....	164.3	165.8	166.4	88.5	122.6	101.6	85.5	122.8	99.7
1957.....	175.3	185.6	180.8	100.2	139.6	115.3	97.9	140.3	114.0
1958.....	177.8	189.0	183.6	105.6	143.7	120.3	103.2	144.6	119.0
1959.....	199.2	210.8	205.5	105.9	149.1	122.5	102.6	150.0	120.5
1960.....	228.8	205.2	222.5	107.0	147.4	122.5	101.7	148.5	119.4
1961.....	235.1	213.1	229.5	103.7	163.9	126.3	98.3	166.2	123.4
1962.....	249.8	221.1	241.7	99.6	142.6	115.9	94.0	143.6	112.6
1963.....	266.6	249.4	263.3	103.2	161.0	124.9	97.5	162.6	121.6
1964.....	289.0	253.5	279.3	105.5	163.3	127.3	99.7	164.7	123.8
1965.....	317.0	330.2	325.9	107.5	166.5	129.7	100.7	165.7	124.8
1966.....	334.5	314.2	331.5	116.7	184.1	142.0	110.1	183.5	137.3
1967.....	351.9	334.4	350.2	121.3	184.3	145.1	114.1	183.5	139.9
1968.....	376.8	359.7	375.8	118.7	190.6	145.5	110.6	189.7	139.8
1969.....	389.9	380.1	385.8	116.4	178.2	139.7	107.6	175.6	132.8
1970.....	418.8	423.4	420.2	111.6	174.3	135.1	101.5	171.7	127.5
1971.....	446.7	437.6	443.6	119.8	188.9	145.7	108.5	186.2	137.1
1972.....	479.6	497.2	490.7	128.7	195.2	153.8	116.4	191.9	144.4
1973 ³	513.6	523.9	520.0	128.6	210.2	159.0	114.5	206.9	148.3

¹ Countries with socialized agriculture.² Countries with private agriculture.³ Preliminary.

Source: Calculated from physical quantities weighted by FAO Eastern European and Soviet Union wheat-based price relatives for 1961-65 period divided by acreage of agricultural land taken from statistical yearbooks of respective countries (see app. A).

TABLE 14.—GROWTH OF AGRICULTURAL OUTPUT PER HECTARE OF AGRICULTURAL LAND

	Index, 1934-38=100							Average annual rates of growth			
	1934-38	1950-55	1956-60	1961-65	1966-70	1971-72	1973 ¹	1950-72	1950-60	1960-70	1967-72
Bulgaria:											
Output.....	100	101.2	128.2	157.9	186.2	194.9	206.7	3.8	4.5	3.2	1.1
Crops.....	100	103.8	124.8	152.1	176.4	175.8	189.2	3.3	3.6	3.1	.2
Animal products.....	100	98.3	133.9	167.4	202.2	226.3	235.2	4.6	6.0	3.4	2.2
Czechoslovakia:											
Output.....	100	92.4	106.4	113.9	138.8	155.0	164.3	2.6	2.3	3.1	3.1
Crops.....	100	103.3	113.4	116.6	142.3	151.2	163.8	1.9	2.0	2.4	1.6
Animal products.....	100	86.4	102.5	112.4	136.9	157.2	164.6	2.9	2.6	3.5	3.9
East Germany:											
Output.....	100	85.0	102.4	104.7	128.8	137.8	144.9	2.6	3.5	3.1	1.5
Crops.....	100	97.3	99.9	93.5	109.0	111.0	114.2	.6	.3	1.6	-1.5
Animal products.....	100	78.3	163.8	110.8	139.6	152.4	161.7	3.6	5.6	3.8	2.4
Hungary:											
Output.....	100	94.3	116.5	132.5	153.0	171.5	182.0	3.1	3.6	2.9	2.5
Crops.....	100	108.0	119.1	128.0	158.6	175.2	194.7	2.5	1.7	4.0	1.5
Animal products.....	100	83.1	114.4	136.3	148.4	168.4	171.6	3.6	5.3	2.0	3.4
Poland:											
Output.....	100	143.8	168.7	194.9	233.1	263.6	299.0	3.1	2.6	3.2	2.8
Crops.....	100	130.3	134.2	164.6	207.1	229.4	254.5	3.0	.6	4.4	1.7
Animal products.....	100	156.1	200.0	222.4	256.7	294.5	339.3	3.1	4.0	2.5	3.6
Romania:											
Output.....	100	91.4	110.1	123.7	145.3	167.0	174.6	3.1	4.2	2.1	2.3
Crops.....	100	84.0	100.8	110.3	125.1	137.3	142.0	2.6	4.4	1.2	.4
Animal products.....	100	103.8	125.7	146.0	179.0	216.2	228.7	3.6	3.9	3.1	4.5
Yugoslavia:											
Output.....	100	95.7	119.4	143.4	169.4	178.3	183.9	3.6	4.6	3.2	1.3
Crops.....	100	101.8	123.1	148.9	174.1	170.9	174.9	3.4	4.4	2.9	-1.7
Animal products.....	100	89.0	115.4	137.5	164.3	186.5	194.6	4.0	4.9	3.4	3.5
Countries with socialized agriculture:											
Output.....	100	91.7	110.3	121.1	144.0	158.8	167.5	2.9	3.5	2.8	2.1
Crops.....	100	97.1	109.3	116.9	137.6	146.0	155.3	2.2	2.5	2.4	.6
Animal products.....	100	87.0	111.1	124.7	149.5	169.8	177.9	3.4	4.4	3.1	3.2
Countries with private agriculture:											
Output.....	100	124.6	148.2	173.4	206.0	227.4	251.0	3.2	3.1	3.2	2.2
Crops.....	100	118.6	129.5	157.9	192.3	204.4	220.4	3.1	1.9	3.8	.8
Animal products.....	100	130.5	166.3	188.3	218.8	250.4	280.7	3.3	4.1	2.7	3.6
Total Eastern Europe:											
Output.....	100	104.5	125.0	141.0	167.8	185.3	199.2	3.0	3.3	3.0	2.2
Crops.....	100	106.1	117.8	133.2	159.5	169.1	181.0	2.6	2.2	3.0	.7
Animal products.....	100	103.0	131.4	148.0	175.3	199.7	215.5	3.4	4.3	3.0	3.4

¹ Preliminary.

Source: Data in table 2 were divided by acreage of agricultural land taken from statistical year-books of respective countries (see app. A).

Current operating expenses per unit of land increased from prewar to 1973 most dramatically in Hungary (10 times) followed by Poland and Romania (8.5 times), Czechoslovakia (7.5 times), Bulgaria (5.6 times), Yugoslavia and East Germany (almost 4 times, each). In the 1960-73 period the annual rate of growth of expenses per unit of land was higher in the countries with private agriculture than in the countries with socialized agriculture (table 15).

From 1950 to 1973, gross and net product per unit of land increased at the highest annual rate in Yugoslavia (3.4 percent), followed by Bulgaria (2.7-2.9 percent), Poland (2.1-2.2 percent), Romania, Hungary, East Germany, and Czechoslovakia. East Germany had an absolute decline in the 1967-73 period. The countries with private agriculture had higher rates of growth in gross and net product per unit of land from 1960 to 1973 than the countries with socialized agriculture.

TABLE 15.—GROWTH OF OPERATING EXPENSES, GROSS AND NET PRODUCT PER HECTARE OF AGRICULTURAL LAND

	Indexes, 1934-38=100						Average annual rates of growth ²				
	1934-38	1950-55	1956-60	1961-65	1966-70	1971-72	1973 ¹	1950-72	1950-60	1960-70	1967-72
Bulgaria:											
Expenses.....	100	120.0	184.4	262.7	433.4	513.7	558.3	7.4	7.0	8.1	4.6
Gross product.....	100	99.2	122.0	146.2	158.6	159.4	167.4	2.9	4.0	1.8	.1
Net product.....	100	98.2	120.2	143.1	153.0	150.7	157.4	2.7	3.9	1.5	-4.4
Czechoslovakia:											
Expenses.....	100	193.8	292.4	483.7	622.7	688.8	744.6	6.3	5.7	5.9	3.6
Gross product.....	100	83.7	90.5	82.4	97.6	109.6	114.9	1.0	1.2	1.7	3.0
Net product.....	100	80.4	86.3	73.4	86.0	95.7	98.8	.4	1.0	1.1	2.6
East Germany:											
Expenses.....	100	111.9	160.4	191.7	248.5	340.9	394.4	5.3	5.6	5.1	8.6
Gross product.....	100	81.3	94.3	92.5	112.0	109.4	110.0	1.8	2.9	2.6	-1.2
Net product.....	100	79.1	91.8	87.1	104.2	98.1	96.0	3.4	2.9	2.2	-2.3
Hungary:											
Expenses.....	100	177.2	246.2	477.8	691.3	889.0	991.2	9.0	9.0	5.4	7.6
Gross product.....	100	89.8	109.4	113.8	123.7	132.5	138.1	1.9	3.2	1.5	.9
Net product.....	100	88.8	103.9	105.3	114.2	119.6	123.8	1.5	2.4	1.9	.1
Poland:											
Expenses.....	100	192.0	252.6	352.4	531.2	744.4	854.6	6.0	3.4	8.4	9.0
Gross product.....	100	138.3	159.1	177.0	199.2	208.9	235.9	2.2	2.3	1.8	.3
Net product.....	100	138.6	160.6	178.9	196.6	203.9	230.5	2.1	2.4	1.3	-1.1
Romania:											
Expenses.....	100	149.2	231.2	372.4	657.1	774.2	830.3	7.5	7.1	8.8	5.8
Gross product.....	100	88.5	103.9	110.9	119.0	135.7	140.8	2.0	3.8	.2	1.7
Net product.....	100	87.7	101.5	137.4	112.1	123.7	125.9	1.7	3.6	-5	.6
Yugoslavia:											
Expenses.....	100	115.4	219.0	319.7	379.7	372.1	368.2	5.7	8.4	4.0	1.0
Gross product.....	100	94.8	114.9	135.4	159.9	169.6	176.0	3.4	4.1	3.0	1.4
Net product.....	100	94.8	114.9	135.4	159.9	169.3	174.5	3.4	4.1	3.0	1.3
Countries with socialized agriculture:											
Expenses.....	100	142.7	209.9	314.7	449.5	548.2	605.6	6.7	6.5	6.4	6.0
Gross product.....	100	87.1	101.4	103.9	116.9	124.6	128.6	1.8	2.9	1.5	.8
Net product.....	100	85.4	98.2	98.1	108.8	112.5	114.5	1.4	2.7	1.1	0
Countries with private agriculture:											
Expenses.....	100	169.8	234.7	330.2	473.4	629.7	709.8	5.8	4.2	7.4	7.7
Gross product.....	100	120.6	140.5	159.4	182.3	192.0	210.2	2.5	2.8	2.2	.7
Net product.....	100	120.6	141.2	160.5	180.8	189.1	206.9	2.5	2.9	1.9	.4
Total, Eastern Europe:											
Expenses.....	100	154.2	221.1	324.0	464.5	585.2	651.9	6.4	5.6	6.8	6.6
Gross product.....	100	100.1	116.4	124.8	141.5	149.8	159.0	2.1	2.8	1.8	.8
Net product.....	100	98.9	114.5	121.2	135.4	140.8	148.3	1.9	2.8	1.5	.2

¹ Preliminary.

² Rates of growth for expenses include also depreciation.

Source: Data in table 3 divided by acreage of agricultural land taken from statistical yearbooks of respective countries. (See app. A.).

C. Comparison of Levels of Output and Input per Unit of Land

Relative levels of productivity of land in relation to the Eastern European average as a base are shown in table 16. Over the postwar period the differences among countries in productivity of land have been reduced, but in 1971-72 they were still very large, and they were greater in the output of animal products than in that of crops. In 1971-72, for example, East Germany produced more than three times as much animal products per hectare as either Romania or Yugoslavia. In the countries with socialized agriculture, productivity of land in terms of output had been about 16 percent higher than in countries with private agriculture in 1950-55, but this difference was reduced to 11 percent by 1971-72.

There have been even larger differences in inputs per hectare among Eastern European countries. Czechoslovakia's and East Germany's levels were about 6-7 times as large as Yugoslavia's in 1971-72. The use of nonagricultural input per unit of land in the countries with socialized agriculture exceeded by 38 percent that in the countries with private agriculture in 1971-72.

Differences in levels of gross and net product per hectare among countries of Eastern Europe were smaller than those of inputs. The net product per hectare of land in the countries with socialized agriculture exceeded by 14 percent that in the countries with private agriculture in the 1950-55 period, but became lower, differing by 5 percent, in 1971-72. The level of Romanian gross and net product per unit of land remained the lowest of all in the Eastern European countries.

TABLE 16.—COMPARISON OF LEVELS OF OUTPUT, EXPENSES, GROSS AND NET PRODUCT PER HECTARE OF AGRICULTURAL LAND IN AGRICULTURE (TOTAL EASTERN EUROPE=100)

	Crop output				Animal output				Agricultural output			
	1950-55	1961-65	1966-70	1971-72	1950-55	1961-65	1966-70	1971-72	1950-55	1961-65	1960-70	1971-72
	Bulgaria.....	122.5	144.0	139.5	131.1	65.8	78.0	79.6	78.2	93.0	107.5	106.5	101.0
Czechoslovakia.....	103.4	93.0	94.8	95.0	146.5	132.6	136.4	137.4	125.8	114.9	117.7	119.1
East Germany.....	149.2	114.2	111.1	106.8	202.4	199.2	212.0	203.1	176.9	161.3	166.7	161.6
Hungary.....	118.7	112.0	115.9	120.8	103.0	117.5	108.0	107.6	110.5	115.0	111.6	113.3
Poland.....	98.4	98.9	104.0	108.6	119.5	118.6	115.6	116.4	109.4	109.8	110.4	113.0
Romania.....	82.7	86.5	81.9	84.8	46.7	55.5	57.5	60.9	69.2	69.3	68.4	71.2
Yugoslavia.....	76.9	89.5	87.4	81.0	56.4	60.6	61.1	60.9	66.2	73.5	73.0	69.6
Countries with socialized agriculture.....	108.8	104.3	102.6	102.7	105.4	105.2	106.5	106.1	107.1	104.8	104.8	104.6
Countries with private agriculture.....	89.5	94.9	96.9	96.8	93.5	93.9	92.2	92.6	91.6	94.4	94.3	94.4
Total, Eastern Europe.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Operating expenses				Gross product				Net product			
Bulgaria.....	91.9	95.8	110.3	103.7	93.2	110.2	105.4	100.1	94.6	112.4	107.6	101.9
Czechoslovakia.....	172.3	204.6	183.7	161.3	119.5	94.3	98.5	104.5	113.1	84.2	88.3	94.6
East Germany.....	237.0	193.3	174.8	190.3	168.6	153.9	164.4	151.6	168.4	151.3	162.1	146.8
Hungary.....	88.8	114.0	115.0	117.4	113.5	115.3	110.6	111.9	118.6	114.8	111.4	112.3
Poland.....	123.8	108.1	113.6	126.4	107.4	110.2	109.4	108.4	107.2	112.9	111.1	110.9
Romania.....	45.9	54.5	67.1	62.8	72.4	72.7	68.8	74.2	71.0	71.0	66.2	70.3
Yugoslavia.....	28.8	38.0	31.5	24.5	71.3	81.7	85.0	85.2	73.2	85.3	90.1	91.8
Countries with socialized agriculture.....	113.0	118.5	118.0	114.3	106.3	101.6	100.9	101.3	105.7	99.0	98.3	97.8
Countries with private agriculture.....	84.7	78.3	78.4	82.7	92.6	98.1	98.9	98.5	93.2	101.2	102.1	102.7
Total, Eastern Europe.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Calculated from physical quantities weighted by FAO Eastern European and Soviet Union wheat-based price relatives for 1961-65 period divided by acreage of agricultural land. (See app. A.)

D. Yields of Selected Crops per Hectare

Table 17 provides a more specific view of comparative levels and trends in productivity of land among various Eastern European countries. It shows yields per hectare for selected crops: wheat, rye, potatoes, and sugar beets. Before the war and in the 1950's the yields in all the Eastern European countries, except East Germany and Czechoslovakia, were substantially below those in West Germany. In Bulgaria, Romania and Yugoslavia the average yields were one-half or less than half of those of West Germany. It should be noted that the natural fertility of West German land is not better than that of Eastern Europe; much of the land in the Danubian Plains is of superior quality. In the last 15 years an effort has been made to improve the productivity of land, and in most of the Eastern European countries yields have increased substantially. In all the countries, the yields of wheat improved the most. The rates of improvement in rye, potatoes, and sugar beets were less uniform among the Eastern European countries. Bulgaria, Hungary, and Yugoslavia, showed most rapid progress in yields of wheat, potatoes and sugar beets, but their yields were still substantially lower than West German yields in 1971-73.

TABLE 17.—YIELDS PER HECTARE OF AGRICULTURAL LAND FOR WHEAT, RYE, POTATOES, AND SUGAR BEETS PER YEAR

	Quintals per hectare					Indexes of yields per hectare, 1934-38=100				
	1934-38	1954-56	1960-62	1965-67	1971-73 ¹	1934-38	1954-56	1960-62	1965-67	1971-73 ¹
Wheat:										
Bulgaria.....	12.5	12.8	17.0	28.0	33.7	100	102	136	224	270
Czechoslovakia.....	17.1	19.1	24.6	25.5	35.6	100	112	144	149	208
East Germany.....	24.6	28.1	31.1	35.3	39.6	100	114	126	143	161
Hungary.....	14.0	13.6	17.9	23.1	32.2	100	97	128	165	230
Poland.....	14.6	14.1	18.7	21.5	26.1	100	96	128	147	179
Romania.....	13.3	9.1	13.0	18.9	23.1	100	68	98	142	174
Yugoslavia.....	12.9	10.1	16.7	23.8	27.3	100	78	129	184	212
West Germany.....	24.5	28.4	33.1	34.8	43.8	100	116	135	142	179
Rye:										
Bulgaria.....	10.4	9.4	9.4	12.2	12.5	100	90	90	117	120
Czechoslovakia.....	16.0	18.2	21.0	20.5	28.1	100	114	131	128	176
East Germany.....	17.1	20.7	20.7	23.7	28.7	100	121	121	138	168
Hungary.....	11.1	11.2	11.0	11.3	14.3	100	101	99	102	129
Poland.....	12.8	13.2	15.6	18.0	22.9	100	103	122	141	179
Romania.....	10.6	9.1	10.6	11.5	13.9	100	86	100	108	131
Yugoslavia.....	8.7	8.2	10.3	11.8	12.0	100	94	118	136	138
West Germany.....	20.1	25.2	25.8	28.0	35.0	100	125	128	139	174
Potatoes:										
Bulgaria.....	80.0	88.9	101.2	105.5	130.0	100	111	126	132	162
Czechoslovakia.....	134.8	137.4	97.6	122.3	150.0	100	102	72	91	111
East Germany.....	173.0	164.1	165.0	189.0	168.6	100	95	95	109	97
Hungary.....	73.2	95.1	87.8	94.8	112.0	100	130	120	130	153
Poland.....	138.0	125.0	140.7	166.3	175.7	100	90	102	120	127
Romania.....	82.6	99.9	95.7	93.1	125.4	100	121	116	113	152
Yugoslavia.....	59.9	79.7	96.3	84.0	86.0	100	133	161	140	144
West Germany.....	185.0	221.2	238.9	263.2	291.0	100	120	129	142	157
Sugar beets:										
Bulgaria.....	176.7	150.4	208.2	317.5	365.0	100	85	118	180	207
Czechoslovakia.....	285.8	251.0	285.0	326.0	340.0	100	88	100	114	119
East Germany.....	291.0	267.8	238.4	303.1	320.4	100	92	82	104	110
Hungary.....	206.0	183.6	215.9	312.3	315.2	100	89	105	152	153
Poland.....	265.0	182.0	255.0	310.0	324.7	100	69	96	117	123
Romania.....	148.8	126.2	160.1	204.9	231.4	100	85	108	138	156
Yugoslavia.....	197.0	173.3	252.7	357.3	390.0	100	88	128	181	198
West Germany.....	327.2	335.5	368.0	418.7	450.0	100	102	112	128	138

¹ Data for 1973 are preliminary.

Sources: Calculated from statistical yearbooks of respective countries.

E. Yields per Livestock Unit

In the postwar period, the yields of meat per pig remained below the prewar level in all the countries with socialized agriculture, but they exceeded the prewar level in the countries with private agriculture (table 18).

In the prewar years and the 1950's, milk yields per cow were very low in Bulgaria, Romania, and Yugoslavia, but they have since increased substantially, especially in Bulgaria and Romania. The countries with higher milk yields before the war, that is, Czechoslovakia, East Germany, and Hungary, achieved smaller increases in comparison to West Germany in the postwar period.

Yields of eggs per hen increased from between 42 to 146 percent in Bulgaria, Hungary, Czechoslovakia, Poland, and Romania, but in East Germany the yield increased only slightly from prewar to 1971-73. As of 1971-73, the yields per livestock unit remained lower in all Eastern European countries than in West Germany. The differences in yields, however, were reduced greatly among countries in recent years.

TABLE 18.—YIELDS PER HEAD OF LIVESTOCK FOR MEAT, MILK AND EGGS PER YEAR

	Yields per head of livestock					Indexes of yields per head of livestock, prewar=100				
	Prewar	1954-56	1960-62	1965-67	1971-73 ¹	Prewar	1954-56	1960-62	1965-67	1971-73 ¹
Meat per pig in kilograms of live weight:										
Bulgaria.....	135	117	88	113	118	100	87	65	84	87
Czechoslovakia.....	132	96	97	16	132	100	73	73	88	100
East Germany.....	133	95	93	112	120	100	71	70	84	90
Hungary.....	152	98	112	120	140	100	64	74	79	92
Poland.....	79	78	86	92	102	100	99	109	116	129
Romania.....	129	78	88	92	105	100	60	68	71	81
Yugoslavia.....	86	91	95	110	122	100	106	110	128	142
West Germany.....	99	110	153	160	175	100	111	155	162	177
Milk per cow in liters:										
Bulgaria.....	450	648	1,358	1,864	2,010	100	144	302	414	447
Czechoslovakia.....	2,004	1,606	1,800	2,069	2,644	100	80	90	103	132
East Germany.....	2,549	2,341	2,557	3,079	3,500	100	92	100	121	137
Hungary.....	1,856	1,760	2,158	2,328	2,372	100	95	116	125	128
Poland.....	1,760	1,763	2,076	2,257	2,980	100	100	118	128	169
Romania.....	965	1,024	1,345	1,621	1,900	100	106	139	168	197
Yugoslavia.....	789	1,052	1,083	1,196	1,210	100	133	137	152	153
West Germany.....	2,489	2,957	3,389	3,666	3,920	100	119	136	147	157
Eggs per hen in number:										
Bulgaria.....	73	76	88	99	104	100	104	120	136	142
Czechoslovakia.....	124	96	106	150	192	100	77	85	121	155
East Germany.....	170	112	131	148	180	100	66	77	87	106
Hungary.....	66	75	82	97	120	100	114	124	147	182
Poland.....	71	86	94	96	175	100	121	132	135	246
Romania.....	56	68	84	91	112	100	121	150	162	200
Yugoslavia.....	70	60	62	76	102	100	86	88	108	146
West Germany.....	108	125	151	202	240	100	116	140	187	222

¹ Data for 1973 are preliminary.

Source: Calculated from statistical yearbooks of respective countries.

VII. PRODUCTIVITY OF LABOR IN AGRICULTURE

A. Trends in Economically Active Agricultural Population

Labor data used in this study are in terms of the economically active population in agriculture, which includes farmers, their wives working in agriculture most of their time, helping family members, and hired labor. The quality of agricultural labor statistics varies from country to country. East German, Czechoslovak, Hungarian, and Polish labor data are homogeneous, while those for the other Eastern European countries are rough estimates on the basis of census data, taken usually in 10 year intervals, and consequently the quality of labor units is less homogeneous.

In all of the Eastern European countries, the economically active population in agriculture declined substantially from the prewar years to 1972. The percentage declines for different countries are given in table 19.

Czechoslovakia had the largest exodus of labor from agriculture (53 percent), due to acute labor shortages in industry in the postwar years. The second largest postwar decline occurred in Bulgaria (51 percent), followed by Hungary (46 percent), East Germany (44 percent), Yugoslavia (40 percent), and Romania (25 percent). Poland's agricultural labor, on the other hand, actually increased slightly between 1950-55 and 1971-72. In the last 5 years the largest decreases occurred in Eastern Germany, Bulgaria, Romania, and Hungary.

TABLE 19.—EMPLOYMENT IN AGRICULTURE

	Indexes, 1934-38=100						Average annual rates of change					
	1934-38	1950-55	1956-60	1961-65	1966-70	1971-72	1950-72	1950-55	1955-60	1960-65	1965-70	1967-72
Bulgaria.....	100	88.2	85.2	74.4	56.0	49.1	-3.0	-1.1	-2.0	-3.4	-3.9	-3.7
Czechoslovakia.....	100	79.3	70.7	54.3	50.0	46.7	-3.0	-1.0	-5.4	-2.8	-1.4	-1.9
East Germany.....	100	102.8	88.1	74.2	66.3	56.3	-3.0	-2.6	-5.2	-8	-4.5	-5.2
Hungary.....	100	93.4	90.2	67.5	59.5	53.6	-3.1	-1.7	-2.3	-4.9	-2.3	-3.0
Poland.....	100	68.1	67.3	67.7	68.8	69.1	1	-3.1	-2	-4	-2	-2
Romania.....	100	107.7	103.5	93.3	84.4	74.9	-1.8	-9	-5	-2.7	-1.9	-3.3
Yugoslavia.....	100	84.7	77.9	71.3	64.8	60.2	-1.8	-1.2	-1.7	-1.8	-2.0	-2.1
Countries with socialized agriculture.....	100	97.4	91.9	78.6	68.9	61.2	-2.4	-1.2	-2.0	-2.9	-2.4	-3.3
Countries with private agriculture.....	100	75.4	72.0	69.3	67.0	65.2	-4.8	-7	-9	-6	-8	-8
Total, Eastern Europe.....	100	87.1	82.6	74.3	68.0	63.1	-1.7	-1.0	-1.6	-1.9	-1.7	-2.1

Source: See app. A.

Table 20 shows the percentage distribution of agricultural labor. The Polish agricultural labor force in 1971-72 accounts for 29 percent, the Romanian for 27 percent, and the Yugoslav for 20 percent of the total East European agricultural labor force. The remaining four countries together account for only 24 percent of the total.

TABLE 20.—PERCENTAGE DISTRIBUTION OF AGRICULTURAL EMPLOYMENT AND TOTAL POPULATION ¹
 [Eastern Europe=100]

	Percentage distribution of agricultural employment						Percentage distribution of total population					
	1934-38	1950-55	1956-60	1961-65	1966-70	1971-72	1934-38	1950-55	1956-60	1961-65	1966-70	1971-72
Bulgaria.....	9.9	10.0	10.2	9.3	8.1	7.7	5.9	6.8	6.8	6.9	6.9	6.9
Czechoslovakia.....	8.0	7.2	6.9	5.9	5.9	5.9	12.7	11.9	11.9	11.9	11.7	11.6
East Germany.....	5.3	6.3	5.7	5.3	5.2	4.8	14.7	16.9	15.4	14.5	14.0	13.6
Hungary.....	6.9	7.4	7.5	6.3	6.0	5.9	8.1	8.9	8.8	8.6	8.4	8.3
Poland.....	26.1	20.4	21.3	23.8	26.4	28.6	30.6	24.2	25.3	26.1	26.4	16.4
Romania.....	22.9	28.4	28.8	29.0	28.5	27.2	13.9	15.6	15.9	16.0	16.1	16.5
Yugoslavia.....	20.9	20.3	19.7	20.2	19.9	19.9	14.1	15.8	15.9	16.2	16.4	16.6
Countries with socialized agriculture.....	53.0	59.3	59.0	56.0	53.7	51.7	55.3	60.0	58.8	57.7	57.2	57.0
Countries with private agriculture.....	47.0	40.7	41.0	44.0	46.3	48.5	44.7	40.0	41.2	42.3	42.8	43.0
Total, Eastern Europe.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ Percentages may not add to total due to rounding.

Source: See appendix A.

B. Growth of Output and Input per Worker

As a result of the decline in the agricultural labor force, a consequence of industrialization, the productivity of labor in agriculture increased sharply over the postwar period. Tables 21 to 23 summarize the trends in labor productivity by country, groups of countries, and region.

Obviously, countries with the largest declines in labor experienced the largest increases in labor productivity; provided that total output was not lagging. Bulgaria, Hungary, Poland, and Czechoslovakia had the largest increases in output per unit of labor compared to prewar levels, followed by Yugoslavia, East Germany, and Romania. Poland's population shifts had a favorable effect on the indexes of output per unit of labor for the group of countries with private agriculture. When we consider only the postwar period itself the average annual compound rate of increase was higher for the countries with socialized agriculture (5.3 percent) than for those with private agriculture (3.9 percent); the agricultural labor force declined at a faster rate in the former group than in the latter. In Eastern Europe as a whole agricultural output per unit of labor increased by about three times from prewar to 1973.

The increases in inputs per worker in agriculture were very impressive in all countries. The most dramatic increase occurred in Hungary, with about an 18-fold rise over prewar levels by 1973. In descending order, other increases were Czechoslovakia (16-fold rise), Bulgaria (almost 13-fold rise), Romania (almost 12-fold rise), Poland (9-fold), East Germany (7-fold), and last, Yugoslavia (over 6-fold rise). Again, the countries with socialized agriculture had larger increases in inputs (a 9.1-percent annual rate of growth) than the countries with private agriculture (6.5 percent annual rate of growth), from 1950 to 1972.

TABLE 21.—EASTERN EUROPE: OUTPUT, EXPENSES, GROSS AND NET PRODUCT PER PERSON EMPLOYED IN AGRICULTURE

	Agricultural output			Expenses and depreciation			Gross product			Net product		
	Social-ized ¹	Private ²	Total	Social-ized ¹	Private ²	Total	Social-ized ¹	Private ²	Total	Social-ized ¹	Private ²	Total
Prewar	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1950	77.0	129.4	95.8	106.8	156.3	125.6	74.1	125.4	92.4	72.5	125.1	91.1
1951	90.3	142.3	109.3	121.5	162.7	137.8	86.8	139.1	105.8	85.5	130.9	104.9
1952	89.9	129.8	105.0	124.4	165.4	140.7	86.3	124.4	100.7	84.6	124.0	99.4
1953	94.0	145.3	113.0	138.2	174.2	153.1	89.0	140.6	107.9	87.3	140.7	106.7
1954	91.4	142.7	110.3	141.5	169.6	153.8	85.8	138.2	104.9	83.8	138.4	103.5
1955	101.9	158.4	122.6	155.3	189.8	170.2	95.6	152.9	116.5	93.7	153.4	115.2
1956	96.6	153.0	117.2	165.2	197.1	179.4	89.0	145.8	109.6	86.0	145.9	107.5
1957	110.0	175.8	134.0	178.2	222.7	196.9	101.8	167.4	125.5	99.5	168.3	124.2
1958	115.7	182.6	140.2	181.9	228.8	201.5	108.0	174.0	132.0	105.6	175.1	130.6
1959	123.0	193.6	148.9	212.2	257.6	231.7	112.8	182.2	138.1	109.3	183.3	135.9
1960	123.0	192.8	155.4	256.3	253.1	259.4	119.8	181.9	142.9	113.9	183.1	139.2
1961	135.6	213.8	164.4	273.7	263.8	274.0	120.8	202.9	150.7	114.5	205.7	147.4
1962	139.0	193.9	159.9	302.9	277.7	297.2	120.7	179.1	142.6	114.0	180.4	138.4
1963	141.0	217.4	169.4	313.4	310.5	316.8	121.3	200.5	150.3	114.7	202.4	146.3
1964	158.4	222.0	182.5	366.7	317.9	351.8	133.9	204.8	160.3	126.6	206.6	156.0
1965	169.2	233.4	193.5	414.5	408.8	414.9	140.6	206.1	165.1	131.6	205.1	158.9
1966	186.1	251.3	210.8	445.1	391.5	427.4	155.3	229.3	183.0	146.5	228.6	177.0
1967	197.7	256.8	220.2	477.7	420.0	458.0	164.6	231.5	189.8	154.8	230.5	183.0
1968	204.0	268.9	228.5	526.6	453.4	500.2	165.8	240.2	193.7	154.6	239.1	186.0
1969	209.7	259.2	228.3	563.6	482.8	532.9	168.3	226.3	190.0	155.5	223.1	180.7
1970	212.4	264.4	231.8	619.2	541.6	588.6	165.0	222.9	186.6	150.2	219.7	176.0
1971	236.4	284.0	253.6	688.1	562.0	635.8	184.5	242.5	206.0	167.2	239.1	193.9
1972	264.8	302.0	277.2	768.3	640.6	711.7	207.6	251.5	223.1	166.5	247.3	209.4
1973 ³	282.4	325.3	296.3	865.8	679.1	780.6	216.8	272.5	236.5	193.1	268.2	220.6

¹ Countries with socialized agriculture.² Countries with private agriculture.³ Preliminary.

Sources: Calculated from physical quantities weighted by FAO Eastern European and Soviet Union wheat-based price relatives for 1961-65 period and employment data taken from statistical yearbooks of respective countries. (See app. A.)

TABLE 22.—GROWTH OF AGRICULTURAL OUTPUT AND OPERATING EXPENSES PER PERSON EMPLOYED IN AGRICULTURE

	Indexes, 1934-38=100					Average annual rates of growth ²				
	1950-55	1956-60	1961-65	1966-70	1971-72	1973 ¹	1950-72	1950-60	1960-70	1967-72
Bulgaria:										
Output	113.6	147.0	212.6	343.9	416.9	468.0	7.2	5.2	8.6	5.3
Expenses	134.5	211.4	353.7	800.6	1,098.7	1,264.5	10.7	7.7	13.7	8.8
Czechoslovakia:										
Output	111.2	143.0	196.3	255.2	303.5	352.9	5.3	4.5	4.7	4.8
Expenses	233.4	393.0	833.6	1,144.8	1,348.4	1,599.3	9.1	7.8	7.4	5.3
East Germany:										
Output	81.0	112.6	135.2	184.3	231.1	258.8	5.4	6.3	6.2	6.6
Expenses	106.6	176.3	247.7	355.6	571.9	704.4	8.2	8.4	7.2	13.7
Hungary:										
Output	97.6	122.6	181.7	234.6	289.5	327.6	5.8	4.3	5.7	5.3
Expenses	183.3	259.2	655.2	1,060.1	1,500.8	1,784.3	11.8	9.8	8.0	10.5
Poland:										
Output	168.6	199.7	227.0	259.4	289.6	326.4	2.7	2.8	2.3	2.4
Expenses	225.2	299.1	410.6	591.2	817.9	933.1	5.6	3.6	7.6	8.6
Romania:										
Output	80.5	102.0	129.9	171.1	222.0	248.5	5.1	5.1	4.6	5.7
Expenses	131.4	214.2	391.4	773.4	1,029.6	1,182.0	9.5	8.0	11.3	9.2
Yugoslavia:										
Output	107.6	153.3	199.4	257.0	288.0	306.1	5.5	6.9	4.9	3.1
Expenses	129.8	281.0	444.5	576.1	600.7	611.4	7.6	10.8	5.7	2.8
Countries with socialized agriculture:										
Output	90.6	115.2	148.1	201.6	250.2	282.4	5.3	4.6	5.5	5.5
Expenses	141.1	219.3	384.9	629.2	863.7	1,021.5	9.1	7.6	9.1	9.4
Countries with private agriculture:										
Output	141.2	179.4	216.0	260.1	292.9	325.3	3.9	4.3	3.4	2.8
Expenses	192.4	284.1	411.4	597.6	810.0	920.1	6.5	5.3	7.7	8.2
Total Eastern Europe:										
Output	109.2	138.8	173.6	223.7	265.2	296.3	4.6	4.5	4.6	4.2
Expenses	161.1	245.5	398.8	619.2	837.7	969.6	8.0	6.8	8.4	8.6

¹ Preliminary.² Growth rates for expenses include also depreciation.

Sources: Data in table 2 divided by the number of employed in agriculture taken from statistical yearbooks of respective countries. (See app. A.)

TABLE 23.—GROWTH OF GROSS AND NET PRODUCT PER PERSON EMPLOYED IN AGRICULTURE

	Indexes, 1934-38=100						Average annual rates of growth			
	1950-55	1956-60	1961-65	1966-70	1971-72	1973 ¹	1950-72	1950-60	1960-70	1967-72
Bulgaria:										
Gross product.....	111.2	139.8	196.9	292.9	340.8	379.2	6.2	4.7	7.2	4.3
Net product.....	110.2	137.8	192.6	282.6	322.2	355.9	6.0	4.6	7.0	3.8
Czechoslovakia:										
Gross product.....	100.8	121.7	142.0	179.4	214.5	246.6	3.7	3.3	3.3	4.7
Net product.....	96.8	116.0	126.5	158.2	187.3	208.1	3.1	3.2	2.7	4.4
East Germany:										
Gross product.....	77.4	103.7	119.5	160.3	183.5	196.6	4.6	5.7	4.6	3.9
Net product.....	75.3	100.9	112.5	149.2	164.6	171.4	4.2	5.7	4.3	2.8
Hungary:										
Gross product.....	92.9	115.2	156.0	189.8	223.7	248.6	4.7	4.0	4.4	3.7
Net product.....	91.8	109.4	144.4	175.2	202.0	222.9	4.2	3.1	4.7	3.0
Poland:										
Gross product.....	162.2	188.4	206.2	221.7	229.6	257.5	1.8	2.5	.9	—1
Net product.....	162.5	190.1	208.5	218.8	224.1	251.6	1.7	2.6	.4	—5
Romania:										
Gross product.....	77.9	96.2	116.5	140.1	180.5	200.4	4.1	4.7	2.7	5.0
Net product.....	77.2	94.0	112.8	132.0	164.6	179.1	3.7	5.4	2.0	3.9
Yugoslavia:										
Gross product.....	106.6	147.5	188.3	242.6	273.8	292.3	5.2	6.4	4.8	3.2
Net product.....	106.6	147.5	188.3	242.6	273.3	291.7	5.2	6.4	4.8	3.1
Countries with socialized agriculture:										
Gross product.....	86.3	106.0	127.1	163.7	195.8	216.8	4.2	4.0	4.2	4.2
Net product.....	84.4	102.6	120.0	152.3	177.2	193.1	3.8	3.8	3.9	3.3
Countries with private agriculture:										
Gross product.....	136.7	170.1	198.6	230.1	247.0	272.5	3.2	4.0	2.5	1.2
Net product.....	136.7	171.0	200.0	228.2	243.2	268.2	3.1	4.0	2.2	1.0
Total Eastern Europe:										
Gross product.....	104.6	129.4	153.6	188.6	214.4	236.5	3.8	4.0	3.4	2.8
Net product.....	103.4	127.2	149.3	180.6	201.5	220.6	3.5	3.9	3.1	2.2

¹ Preliminary.

Source: Data in table 3 divided by the number of employed in agriculture taken from statistical yearbooks of respective countries. (See app. A.)

The increases in gross and net product per unit of labor were largest in Bulgaria, Poland, Yugoslavia, Hungary, and Czechoslovakia. In the postwar period (1950-72) the countries with socialized agriculture achieved higher rates of growth in gross and net product per unit of labor (4.2 and 3.8 percent, respectively) than the countries with private agriculture (3.2 and 3.1 percent).

On the whole the East European performance per unit of labor has been impressive. It reflects largely the absorption of the extensive disguised agricultural unemployment that existed before the war in this area, by transfers of labor to nonagricultural sectors of the economy, hence permitting better overall use of available human resources.

C. Levels of Output and Input per Worker

It may be useful to bring into focus comparative levels of productivity of labor among the different countries in relation to the Eastern European average level. Such data are shown in table 24.

TABLE 24.—COMPARISONS OF LEVELS OF OUTPUT, EXPENSES, GROSS AND NET PRODUCT PER PERSON EMPLOYED IN AGRICULTURE

[Total Eastern Europe=100]

	Agricultural output				Operating expenses			
	1950-55	1961-65	1966-70	1971-72	1950-55	1961-65	1966-70	1971-72
Bulgaria.....	69.4	81.7	102.6	104.9	68.6	72.8	106.2	107.7
Czechoslovakia.....	169.0	187.6	189.3	189.9	231.5	334.0	295.4	257.3
East Germany.....	241.6	253.7	268.3	283.8	323.8	304.1	281.2	334.3
Hungary.....	144.4	169.1	169.4	176.3	116.0	167.5	174.6	182.7
Poland.....	144.4	122.3	108.4	102.1	163.4	120.4	111.6	114.2
Romania.....	45.8	46.5	47.5	52.0	30.4	36.6	46.5	45.8
Yugoslavia.....	61.4	71.6	71.6	67.7	26.7	37.0	30.8	23.8
Countries with socialized agriculture.....	97.3	100.1	106.4	111.4	103.3	113.9	119.9	121.6
Countries with private agriculture.....	103.0	99.1	92.6	88.0	95.2	82.2	76.9	77.1
Total Eastern Europe.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Gross product				Net product			
Bulgaria.....	69.5	83.8	101.5	103.9	70.5	85.4	103.6	105.8
Czechoslovakia.....	160.5	153.9	158.4	166.6	151.9	137.4	142.0	150.8
East Germany.....	230.4	242.1	264.5	266.3	230.1	238.0	260.9	257.9
Hungary.....	148.2	169.5	167.9	163.2	154.9	168.7	169.1	174.8
Poland.....	141.8	122.7	107.5	97.9	141.6	125.8	109.1	100.1
Romania.....	47.9	48.8	47.8	54.1	46.1	47.5	45.9	51.3
Yugoslavia.....	66.2	79.6	83.5	82.9	67.9	83.0	88.4	89.3
Countries with socialized agriculture.....	97.2	97.7	102.4	107.8	96.7	95.1	99.8	104.1
Countries with private agriculture.....	104.1	103.0	97.2	91.7	104.8	106.2	100.2	95.7
Total Eastern Europe.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Calculated from physical quantities weighted by FAO Eastern European and Soviet Union wheat-based price relatives for 1961-65 period divided by the number of employed in agriculture taken from statistical yearbooks of respective countries. (See app. A.)

Very large differences in productivity of labor continue to exist among the individual countries in the postwar period. Before the war a Bulgarian, Romanian, or Yugoslav worker in agriculture produced hardly one-sixth as much output as an East German worker. As of 1971-72, the Romanian worker still produced less than one-fifth as much, and the Yugoslav worker about one-fourth of the East German output per worker. Czechoslovakia has been the second highest in output per worker, followed by Hungary, Poland, Bulgaria, Yugoslavia, and Romania on a rapidly descending scale.

The differences in relative levels of output of animal products per worker have been even greater. Relative levels of inputs and gross and net product per worker were approximately of the same order of magnitude as in the case of output.

In comparing the groups, we find that in the 1950-55 period the output, gross product, and net product per worker in countries with socialized agriculture were approximately 6 to 8 percent smaller than those in countries with private agriculture. By 1971-72, however, this relationship was reversed, and the level of output, gross product, and net product per worker in the countries with socialized agriculture exceeded that of the countries with private agriculture by between 9 and 26 percent. The worker in the countries with private agriculture had less than two-thirds the magnitude of inputs at the disposal of the worker in the countries with socialized agriculture in the 1971-72 period.

VIII. PROGRESS IN AGRICULTURAL TECHNOLOGY

A. Progress in Mechanization

A close relationship between mechanical power input and productivity of land and labor has been observed in many countries.¹⁰

¹⁰ U.N., FAO, "The State of Food and Agriculture 1968," Rome, 1968, pp. 93-95.

A widely used indicator of the extent of mechanization is the number of tractors per unit of land and per unit of labor. Table 25 presents estimates of tractors in terms of standard 15 hp tractor units per 1,000 hectares of agricultural land and per 1,000 workers in agriculture by country, groups of countries, and major regions. Our findings show that in the 1953-57 period the extent of the use of mechanical power was still very low, in terms of Western European standards, in most of the Eastern European countries. Only Czechoslovakia, East Germany, and Hungary were close to Western European levels. However, the level of Western European mechanization was, in turn, low in comparison to that of the United States, where there were 1,260 tractors per 1,000 workers in agriculture in 1973.¹⁷

¹⁷ U.S. Dept. of Agriculture, "Agricultural Statistics 1973," op.cit., pp. 517-23.

TABLE 25.—NUMBER OF TRACTORS PER 1,000 HECTARES OF AGRICULTURAL LAND AND PER 1,000 WORKERS IN AGRICULTURE

	Number of tractors per 1,000 heciare or 1,000 workers					Total Eastern Europe=100			Indexes of number of tractors per 1,000 hectares or 1,000 workers (1953-57=100)				
	Prewar	1953-57	1958-62	1963-67	1968-73 ¹	Prewar	1963-67	1968-73 ¹	Prewar	1953-57	1958-62	1963-67	1968-73 ¹
Bulgaria:													
Per 1,000 hectares.....	0.28	3.6	6.9	11.4	17.0	82	119	94	8	100	192	317	472
Per 1,000 workers.....	.56	7.7	16.3	34.6	64.0	64	108	93	7	100	212	449	831
Czechoslovakia:													
Per 1,000 hectares.....	.73	5.9	13.2	24.7	31.0	215	257	172	12	100	224	418	525
Per 1,000 workers.....	2.34	23.0	63.9	139.6	194.0	266	435	281	10	100	278	607	843
East Germany:													
Per 1,000 hectares.....	1.12	6.4	12.9	23.1	28.0	329	240	156	18	100	202	361	438
Per 1,000 workers.....	4.61	26.4	63.5	128.2	161.0	524	399	233	17	100	241	486	610
Hungary:													
Per 1,000 hectares.....	.99	3.0	5.4	9.1	17.0	291	95	94	33	100	180	303	567
Per 1,000 workers.....	3.59	11.3	21.8	44.0	107.0	408	137	155	32	100	193	389	947
Poland:													
Per 1,000 hectares.....	.01	2.9	4.0	7.3	16.0	3	76	88	0	100	138	252	551
Per 1,000 workers.....	.03	8.6	12.6	23.3	58.0	3	73	84	0	100	147	271	674
Romania:													
Per 1,000 hectares.....	.26	1.6	3.1	5.5	13.0	76	57	72	166	100	194	344	812
Per 1,000 workers.....	.58	3.1	6.4	13.0	39.0	66	40	56	19	100	206	419	1,258
Yugoslavia:													
Per 1,000 hectares.....	.15	.9	2.3	3.1	6.3	44	32	35	17	100	256	344	700
Per 1,000 workers.....	.36	2.6	7.2	10.7	24.0	41	33	35	14	100	277	412	923
Countries with socialized agriculture:													
Per 1,000 hectares.....	.61	3.7	7.3	13.0	22.0	179	135	122	16	100	197	351	595
Per 1,000 workers.....	1.63	9.8	21.6	44.5	93.0	186	139	135	17	100	220	454	949
Countries with private agriculture:													
Per 1,000 hectares.....	.06	2.0	3.3	5.5	12.0	18	57	67	3	100	165	275	600
Per 1,000 workers.....	.15	6.0	10.3	18.1	44.0	17	56	64	2	100	172	302	733
Total, Eastern Europe:													
Per 1,000 hectares.....	.34	2.9	5.5	9.6	18.0	100	100	100	12	100	190	331	621
Per 1,000 workers.....	.88	8.1	16.5	32.1	69.0	100	100	100	11	100	204	396	852
Western Europe:													
Per 1,000 hectares.....	1.28	11.0	18.9	27.1	38.0	376	282	211	12	100	172	246	345
Per 1,000 workers.....	5.91	59.6	116.9	198.0	280.0	672	617	406	10	100	196	332	470

¹ Data for 1973 are preliminary.

Source: Calculated from statistical yearbooks of respective countries and FAO yearbooks and monthly statistical bulletins.

Rapid progress toward mechanization started immediately after the war and has continued to gain momentum. In all the countries the rates of increase were spectacular; in fact the percentage increases exceeded those of Western Europe. As a result, the differences among individual countries and between Eastern and Western Europe have somewhat narrowed with the passage of time. By the 1968-73 period, Czechoslovakia and East Germany had almost 5 times as many tractors per unit of land and seven to eight times as many tractors per worker as Yugoslavia. Romania's level of mechanization was somewhat higher than that of Yugoslavia, and Poland's intensity in the use of tractors was about a third to a half of that of either Czechoslovakia or East Germany. Hungarian progress in mechanization gained upward momentum in the last 12 years.

The differences in relative levels of mechanization between the countries with socialized and private agriculture, taken as groups, remained about the same in the postwar period.

Western Europe has nonetheless retained its lead in mechanization over Eastern Europe. In the 1968-73 period, it still had about two times as many tractors per unit of land and about four times as many tractors per worker as Eastern Europe. Although progress in mechanization of Eastern European agriculture has been at a faster rate than in Western Europe in the last 15 years, there is still plenty of room for further improvement toward the West European level.

B. Growth of Fertilizer Consumption

Most of the Eastern European countries did not turn seriously toward increased use of fertilizers until the late 1950's. Table 26 shows that in the 1953-57 period, consumption of fertilizers per unit of land was very low in all the East European countries except Czechoslovakia and East Germany. The latter country already had an extremely high level of fertilizer use; in fact it exceeded the Western European level by almost 2.5 times and that of Eastern Europe by 5 times in the 1953-57 period. Czechoslovakia's consumption per hectare was at the level of that in Western Europe, and it exceeded by about two times the average for Eastern Europe in the same period.

Consumption of fertilizers in the postwar period has been expanding at the fastest rate in the countries which began with the lowest levels, with the most rapid increase occurring since the midfifties. In the two decades between 1953-57 and 1969-73, the consumption of fertilizers per hectare of agricultural land increases 27-fold in Romania, about 21-fold in Hungary, over 14-fold in Bulgaria, about 8-fold in Yugoslavia, and 4.8-fold in Poland. Czechoslovakia and East Germany experienced moderate increases of 3.9-fold and 2-fold, respectively, from their relatively advanced levels, and they remained the highest users of fertilizers per hectare of agricultural land in Eastern Europe. Their respective annual consumption was 185 and 246 kilograms per hectare in the 1969-73 period. Bulgaria, one of the lowest users of fertilizers in the 1950's, became a high user with an annual consumption of 108 kilograms in the 1969-73 period. Czechoslovakia and East Germany exceeded the Western European consumption level by 37 and 82 percent, respectively, in the 1969-73 period. Hungary and Poland

achieved an average level of 175 and 124 kilograms per hectare, while Yugoslavia and Romania remained the lowest users with 50 and 43 kilograms per hectare annually in the 1969-73 period.

TABLE 26.—CONSUMPTION OF COMMERCIAL FERTILIZERS PER HECTARE OF AGRICULTURAL LAND

	Nitrogen (N), phosphate (P ₂ O ₅) and potash (K ₂ O) in kilograms per hectare					Total Eastern Europe=100			Indexes of fertilizer consumption per hectare (1953-57=100)				
	Pre-war	1953-57	1958-62	1963-68	1969-73 ¹	Pre-war	1963-68	1969-73 ¹	Pre-war	1953-57	1958-62	1963-68	1969-73 ¹
Bulgaria.....	0.5	7.5	26.0	78.8	108	5	118	100	7	100	347	1,051	1,440
Czechoslovakia.....	12.2	47.7	71.8	117.2	185	117	175	171	26	100	150	246	388
East Germany.....	93.4	122.5	150.1	200.9	246	898	300	228	76	100	122	164	201
Hungary.....	1.3	8.3	26.2	60.7	175	12	90	162	16	100	316	731	2,108
Poland.....	4.9	26.1	35.8	64.0	124	47	96	115	19	100	137	245	475
Romania.....	.2	1.6	5.0	21.5	43	2	32	40	12	100	313	1,344	2,600
Yugoslavia.....	.6	6.4	16.7	32.9	50	6	49	46	9	100	261	514	781
Countries with socialized agriculture.....	17.1	31.1	46.2	80.7	130	164	120	120	55	100	148	259	418
Countries with private agriculture.....	3.3	17.8	27.7	50.7	83	32	76	77	18	100	156	285	466
Total, Eastern Europe.....	10.4	24.9	37.7	67.0	108	100	100	100	42	100	151	269	433
Western Europe.....	24.9	50.2	63.5	84.5	135	239	126	125	50	100	126	168	269

¹ Data for 1973 are preliminary.

Sources: Calculated from statistical yearbooks of respective countries and FAO yearbooks and monthly statistical bulletins.

The countries with socialized agriculture had fertilizer consumption per unit of land 75 percent higher than the countries with private agriculture in the 1953-57 period. That margin, however, was reduced to about 57 percent by the 1969-73 period.

Eastern Europe as a whole compares quite favorably in fertilizer consumption with Western Europe: It is, in fact, closing the gap between the levels in fertilizer consumption per unit of land. This heavily increased application of fertilizers already has paid off with significantly increased yields in Eastern Europe.

C. Scientific Methods on the Farm

The adoption of high-yielding crop varieties and livestock breeds helped to increase yields per unit of input in all the Eastern European countries. Research on improvement of seeds has been stepped up by the agricultural research institutes, partly under the coordination of the Council for Mutual Economic Aid's Permanent Commission on Agriculture. A significant increase in wheat yields has been attributed to the introduction of improved Soviet hard wheat varieties (Mironovskaya-808, Bezostaya-I, Kavkaz and Aurora) during 1966-73. These wheat strains were sown on more than 60 percent of the wheat area in Czechoslovakia, East Germany and Hungary, and on more than 85 percent in Bulgaria in recent years. Also hybrid varieties of corn and better strains of barley, rye, and oats were introduced. The development of improved breeds of livestock has contributed to increased yields of milk per cow, eggs per hen, higher dressing rates of livestock, leaner types of animals, and higher daily gains in live-weight for all livestock. New breeds of livestock are being imported from Western Europe and the United States.

Irrigation and drainage of agricultural land on a large scale is increasing the productivity of land in all Eastern European countries.

Technological knowledge has been disseminated through rapidly increasing numbers of agricultural technical institutes and agricultural colleges. The number of trained agronomists has increased several times in every Eastern European country. Application of more advanced farming methods undoubtedly has contributed to the higher productivity of land and labor in Eastern Europe.

The recent development of agroindustrial complexes is increasing the overall efficiency of agriculture through local processing of agricultural products, employing seasonally idle agricultural labor, and diffusing technical knowledge in rural areas of Eastern Europe.

D. Growth of Investment

The postwar growth of gross fixed agricultural investment and its share in total investment in Eastern Europe is shown in Table 27. These investment series should be interpreted with care, assuming a considerable margin of error, because for some of these countries not enough is known about the prices of investment goods, and the terms of measurement vary from country to country. Yet, despite their shortcomings, these series may give us a general picture of trends in investment in the postwar years.

Throughout Eastern Europe, there has been a substantial increase in investment, with the less developed countries showing the greater increases: Romania almost 12-fold, Yugoslavia 11.5-fold, Poland 7-fold, Hungary 6-fold, Bulgaria 6.5-fold, Czechoslovakia over 3-fold, and East Germany only over 2-fold increases, between 1950-55 and 1971-73. In comparison to West Germany, all of the Eastern European countries seemed to have a higher rate of investment in recent years. However, West Germany very substantially improved her performance in agriculture (tables 17 and 18).

TABLE 27.—GROSS FIXED AGRICULTURAL INVESTMENT AND ITS SHARE IN THE TOTAL INVESTMENT

	Indexes of gross fixed agricultural investment, 1951-55=100				Agriculture's share in the total investment (percent)				
	1956-60	1961-65	1966-70	1971-73 ¹	1951-55	1956-60	1961-65	1966-70	1971-73 ¹
Bulgaria ²	259	394	547	646	12.8	20.6	21.6	16.3	18.0
Czechoslovakia ³	228	271	278	326	11.2	16.1	14.4	11.1	10.0
East Germany ⁴	100	120	194	223	-----	9.7	13.2	14.1	13.1
Hungary ⁵	112	222	404	591	16.6	15.3	17.3	20.3	20.1
Poland ⁶	192	313	533	650	10.1	12.5	13.9	16.1	15.1
Romania ⁷	242	611	933	1,182	9.4	15.9	19.1	15.9	14.3
Yugoslavia ⁸	256	521	793	1,148	9.2	13.1	10.7	9.2	9.0
West Germany ⁹	177	227	217	210	4.8	5.0	4.7	3.4	3.0

¹ Data for 1973 are preliminary.

² State and collective farm investment in leva at 1956 and 1962 prices.

³ Total investment in agriculture in crowns at 1959 and 1967 prices.

⁴ Agriculture includes forestry and water management; investment in marks at 1967 prices.

⁵ Investment in forints at 1959 and 1968 prices.

⁶ Investment in zlotys at 1961 and 1971 prices.

⁷ Investment in lei at 1959 and 1963 prices.

⁸ Investment including private farming in dinars at current prices.

⁹ Investment at constant 1954 and 1962 prices.

Source: Calculated from statistical yearbooks of respective countries. (See app. A.)

Agricultural investment may be usefully related to total investment and then compared with agriculture's share in total GNP. These relationships are shown in table 27 and chapter II. We notice that agriculture's share in total investment was relatively low, around 10 to 13 percent or less, in most of the countries in the 1950-55 period. Only Hungary had a higher share (17 percent). On the other hand, the contribution of agriculture to the total GNP was over four times as large as the investment share in Romania, three times as large in Bulgaria and Yugoslavia, three and half times as large in Poland, and about twice as large in Hungary and Czechoslovakia in 1950. In fact in this period the governments sought to extract a maximum surplus from agriculture and to provide in return minimal investment support to the sector.

In subsequent periods, agriculture's share in total investment increased substantially, and it continued at this higher level into the 1970's in most of the countries. The difference between agriculture's share in total investment and its share in GNP has shrunk. In the 1960's and 1970's this difference was reduced in favor of investment, and in two countries, Hungary and East Germany, agriculture's share in total investment exceeded its share in GNP (see chapter II). In the still predominantly agricultural countries, Yugoslavia and Romania, the ratio of agriculture's investment share to its GNP share is below one-half and two-thirds, respectively. This would seem to suggest that agriculture is partly financing industrialization. In the final analysis, this ration reflects governmental price and taxing policies towards agriculture.

It is to be noted that in West Germany this ratio was 75 percent in the 1960's. This average ratio for all Eastern European is 90 for 1971-73. This may suggest that on the whole agriculture in Eastern Europe gets now a share of total investment that is more favorable than in a market-oriented economy, such as West Germany's.

IX. SIZE COMPARISONS OF OUTPUT BETWEEN EASTERN EUROPE, U.S.S.R. AND U.S.A.

In this section we summarize our findings of size comparisons of agricultural output between Eastern Europe, the U.S.S.R., the U.S.A., and individual countries for selected periods in current prices in national currencies and rubles (table 28). The size comparisons of agricultural output in terms of national currencies (i.e., when the U.S.S.R. is used in the valuation of output) yield as a rule somewhat smaller sizes of output for each of the Eastern European countries, compared to the U.S.S.R., than when the comparison is done in terms of rubles. The differences, however, are not large. For the convenience of the reader, a geometric mean of the comparisons in national currencies and in rubles was computed. The size comparisons of the U.S.S.R. and the U.S.A. valued in current rubles, favor the U.S.A., while in current U.S. dollars, the U.S.S.R.'s output is larger.

TABLE 28.—COMPARISONS OF LEVELS OF AGRICULTURAL OUTPUT: EAST EUROPEAN COUNTRIES, U.S.S.R., AND UNITED STATES, 1959, 1966, AND 1970

[In percent, U.S.S.R.=100]

Country, national currency and year	National currency comparison	Ruble comparison	Geometric mean ¹	Country, national currency and year	National currency comparison	Ruble comparison	Geometric mean ¹
Bulgaria (leva):				Romania (lei):			
1959.....	3.5	4.2	3.9	1959.....	7.5	8.6	8.0
1966.....	3.9	4.2	4.0	1966.....	7.7	7.8	7.7
1970.....	3.6	3.7	3.7	1970.....	6.1	6.2	6.1
Czechoslovakia (crowns):				Eastern Europe:			
1959.....	6.2	6.5	6.3	1959.....	47.6	55.0	51.2
1966.....	5.1	5.9	5.4	1966.....	43.8	52.8	48.1
1970.....	5.4	5.6	5.5	1970.....	40.8	46.1	43.4
East Germany (East German marks):				United States (dollars):			
1959.....	8.4	9.3	8.8	1959.....	127.3	135.9	131.5
1966.....	7.7	8.9	8.3	1966.....	110.9	121.3	116.0
1970.....	7.4	7.7	7.6	1970.....	108.0	119.6	113.6
Hungary (forints):				U.S.S.R. (rubles):			
1959.....	6.5	7.0	6.7	1959.....	100.0	100.0	100.0
1966.....	5.7	5.8	5.7	1966.....	100.0	100.0	100.0
1970.....	5.0	5.4	5.2	1970.....	100.0	100.0	100.0
Poland (zlotys):							
1959.....	15.5	19.5	17.4				
1966.....	13.8	20.2	16.7				
1970.....	13.3	17.5	15.3				

¹ Comparisons in national currencies and in rubles expressed as geometric mean.

Source: Calculated from physical quantities weighted alternatively in national currencies and in rubles for each bilateral comparison. (See app. B.)

From 1959 to 1970, the relative sizes of output of all Eastern European countries and the U.S.A. in comparison to the U.S.S.R. declined, because the agricultural output in the Soviet Union increased at a higher rate than in the U.S.A. and the Eastern European countries.¹⁸ The Eastern European agricultural output declined from 51 percent of the U.S.S.R. output in 1959 to 43 percent in 1970 and that of the U.S.A. from 132 to 114 percent of the U.S.S.R. in the same period. The calculations of other authors show very similar relative sizes of the U.S. and U.S.S.R. output (U.S. as percent of U.S.S.R. 137 in 1959 and 112 in 1970).¹⁹

International comparisons of output per capita provide better measures of relative self-sufficiency than comparisons of total agricultural output. In 1970 the agricultural output of the U.S.S.R. was very good, and consequently the country was fully self-sufficient in providing an adequate food supply to its population in that year. In most of the other East European countries and the U.S.A. 1970 was an average crop year. Hence comparing the per capita levels of agricultural output in terms of the U.S.S.R. per capita output will provide rough measure of "self-sufficiency" if we accept the U.S.S.R. level as a standard of an adequate food supply. The per capita levels of agricultural output in different countries in terms of the U.S.S.R. equals 100 for 1970 were as follows:²⁰

¹⁸ See F. Douglas Whitehouse and Joseph F. Havelka, "Comparison of Farm Output in the U.S. and U.S.S.R., 1950-71," U.S. Congress, Joint Economic Committee, *Soviet Economic Prospects for the Seventies. A compendium of Papers*. U.S. Government Printing Office, 1973, p. 345, and table 1 of the present study.¹⁹ See F. Douglas Whitehouse and Joseph F. Havelka, *op. cit.*, p. 358. Calculated from U.S. output using the generic mean of comparisons of U.S.S.R. and U.S. output valued, alternatively, in constant 1957-59 dollars and constant 1968 ruble prices.²⁰ Calculated from table 28 (geometric means) and population data taken from the statistical yearbooks of respective countries.

Bulgaria	105
Czechoslovakia	92
East Germany	108
Hungary	122
Poland	114
Romania	74
Eastern Europe	102
U.S.A.	135
U.S.S.R.	100

These per capita levels indicate that the U.S.A. produced 34 percent more output, Hungary 21 percent more, Poland 14 percent more, Bulgaria 6, and East Germany 8 percent more than the U.S.S.R. Two countries, Czechoslovakia and Romania supplied 8 and 26 percent, respectively, less than the U.S.S.R. on a per capita basis. Romanian agricultural output was very adversely affected by severe floods in 1970. The Eastern Europe as a whole exceeded by 2 percent the per capita output of the Soviet Union. The above comparisons of levels are affected by the composition of output and prices in various countries which, in turn reflect the differences in natural resources, levels of income, tastes and governmental agricultural policies. They are very crude indications of relative sizes of levels of per capita output between different countries.

X. CONVERSION RATES BETWEEN THE RUBLE, EAST EUROPEAN NATIONAL CURRENCIES, AND THE U.S. DOLLAR FOR AGRICULTURAL PRODUCTS

Until about the mid-1960's prices received by producers of agricultural products in most of the Eastern European countries and the U.S.S.R. were fixed by the government annually, and these prices very often did not reflect the real costs of production. Only Yugoslavia has had a relatively free price system for farm products. In the 1960's increased reliance was put on pricing to provide material incentives to farmers. The prices of crops rose rapidly in the first half of the decade, and then the prices of animal products rose sharply in the second half of the decade in order to stimulate production. Relative prices within the crop and animal sectors changed significantly to stimulate production in line with observed scarcities. In the U.S.S.R. the prices paid to producers were increased substantially in 1965 and again in 1969-70; prices of animal products showed especially high increases. In Hungary, after introduction of economic reforms in 1968, there was introduced a flexible price system composed of fixed, limited (flexible within narrow limits), and free prices for agricultural products in a bold move toward a production cost pricing.

The relative changes of prices paid for crops and animal products in individual Eastern European countries and the U.S.A. in terms of ruble prices from 1959 to 1970 are given in table 29. The data in this table reflect the purchasing power parity conversion rates between ruble and the different East European national currencies and the U.S. dollar separately for crops, animal products, and the total agricultural output.

TABLE 29.—PURCHASING POWER PARITY CONVERSION RATES BETWEEN THE RUBLE AND EAST EUROPEAN NATIONAL CURRENCIES AND THE U.S. DOLLAR FOR AGRICULTURAL PRODUCTS, 1959
1966, AND 1970

[Quantity of national currency per ruble in terms of prices paid to farmers, using alternatively the given-country quantity weights and the U.S.S.R. quantity weights]

Given country and output	1959			1966			1970		
	Given-country quantity weights	U.S.S.R. quantity weights	Geometric mean ¹	Given-country quantity weights	U.S.S.R. quantity weights	Geometric mean ¹	Given-country quantity weights	U.S.S.R. quantity weights	Geometric mean
Bulgaria (leva per ruble):									
Crops.....	0.98	1.27	1.12	1.10	1.29	1.19	1.02	1.14	1.08
Animal products.....	1.16	1.18	1.17	.99	.98	.98	.84	.85	.84
Total output.....	1.04	1.23	1.13	1.06	1.12	1.09	.93	.97	.95
Czechoslovakia (crowns per ruble):									
Crops.....	8.89	9.89	9.38	9.86	12.28	11.00	12.64	12.46	12.55
Animal products.....	12.04	12.32	12.18	10.75	11.86	11.29	10.12	10.63	10.37
Total output.....	10.54	11.15	10.84	10.35	12.06	11.17	10.98	11.39	11.18
East Germany (marks per ruble):									
Crops.....	2.68	3.39	3.01	2.26	3.21	2.69	2.67	2.96	2.81
Animal products.....	4.17	4.28	4.22	3.54	3.62	3.58	3.30	3.36	3.07
Total output.....	3.46	3.85	3.64	3.00	3.43	3.21	3.07	3.20	3.13

Hungary (forints per ruble):										
Crops	17.03	19.98	18.44	21.90	22.19	22.04	21.92	22.46	22.19	
Animal products	18.48	18.03	18.25	16.44	17.31	16.87	15.46	17.39	16.40	
Total output	17.65	18.97	18.30	19.23	19.64	19.43	18.19	19.49	18.83	
Poland (zlotys per ruble):										
Crops	16.94	25.27	20.69	14.66	28.12	20.30	15.23	26.50	20.09	
Animal products	19.67	20.49	20.08	16.45	17.60	17.02	13.40	13.38	13.39	
Total output	18.13	22.80	20.33	15.44	22.62	18.69	14.37	18.83	16.45	
Romania (lei per ruble):										
Crops	7.08	7.62	7.34	9.31	9.34	9.32	9.92	9.51	9.71	
Animal products	10.67	11.32	10.99	9.03	9.33	9.18	7.15	7.84	7.49	
Total output	8.33	9.53	8.91	9.19	9.34	9.26	8.36	8.53	8.44	
United States (U.S. dollars per ruble):										
Crops .....	.60	.66	.63	.48	.52	.50	.48	.49	.48	
Animal products .....	.59	.60	.59	.44	.48	.46	.37	.42	.39	
Total output .....	.59	.63	.61	.46	.50	.48	.41	.45	.43	

¹ Geometric mean of purchasing power parity conversion rates between ruble and the respective national currencies calculated alternatively by using the given-country quantity weights and the U.S.S.R. quantity weights.

Note: Quantity weights equals physical quantities of output used in calculation of the conversion rates.

Source: Calculated from physical quantities of agricultural output of respective countries valued alternatively in given-country prices and the U.S.S.R. prices paid to farmers for their agricultural products. Data are taken from statistical yearbooks of respective countries. (See app. B.)

In 1959 the conversion rates of national currencies per ruble were smaller for crops than for animal products for all countries except Poland and the U.S.A. The relative prices of animal products were higher in most of these countries than in the U.S.S.R. in 1959. In 1966, however, the conversion rates of national currencies per ruble became higher for crops than for animal products for all countries except East Germany. By 1970 the 1966 trend was further accentuated; the conversion rates per ruble for crops increased for Czechoslovakia, East Germany, Hungary and Romania, while the conversion rates for animal products continued to decline in all countries, and especially rapidly in Poland, Romania, and Bulgaria.

These shifts in conversion rates reflect the more rapid rise in prices of animal products in the U.S.S.R. between 1959 and 1970 than in all the other Eastern European countries and the U.S.A. The behavior of conversion rates for crops indicates that the prices of crops, increased faster in most of the Eastern European countries than in the U.S.S.R. from 1959 to 1966, while in the 1966 to 1970 period crop prices in the Soviet Union rose at about the same rate as in the most of the East European countries.

It is to be noted that the purchasing power of one ruble for farm products at producers' prices was equivalent \$0.45 when determined on the basis of Soviet physical output weights and \$0.41 when determined on the basis of United States physical output weights in 1970. The official exchange rate between the dollar and the ruble was \$1.11 per ruble in 1970, or more than double of the conversion rate for agricultural products. For Bulgaria the official exchange rate between the leva and the ruble was about 37 percent higher than the conversion rate for agricultural products. For all other Eastern European countries, however, the official exchange rates between the respective national currencies and the ruble were substantially lower than the calculated conversion rates for agricultural products in 1970. This may be a very rough indication of relatively higher prices paid to producers in Eastern Europe, except Bulgaria, than those paid to producers in the U.S.S.R. However, the official exchange rates in centrally planned economies are set arbitrarily by the governments and consequently have little relationship, if any, to comparative production costs.

XI. CONCLUSION AND OUTLOOK

The important conclusions of this essentially statistical study of Eastern European agriculture may be summarized as follows:

(1) Agricultural performance as reflected in our measures has been uneven among the Eastern European countries and over the period under study. Agricultural output in the early 1950's entered a period of slow growth concomitant with the increased drive for collectivization. When the pressure to collectivize lessened, output resumed its growth, but again it slackened with the new wave of collectivization between 1957 and 1961. Since then the trend of output has presented a mixed picture. In Bulgaria output has expanded rapidly between 1955 and 1965 but it slowed down drastically thereafter. In Czech-

oslovakia and Hungary a faster rate of growth of output occurred since 1966. In East Germany and Romania output grew very sluggishly since 1960 (see table 2).

(2) Poland and Yugoslavia decollectivized their agriculture after the first abortive drives in the early 1950's. As a group, their growth performance since the mid-1950's in most production measures was better than that of the group of countries with socialized agriculture. This advantage of private agriculture over socialized agriculture continued at an undiminished rate up to the present (see tables 1 and 2).

(3) In terms of gross and net product (that is, value added in agriculture, or its contribution to GNP and NNP) the group of countries with private agriculture surpassed the group of countries with socialized agriculture by a much greater margin than in the case of output. Between 1950-55 and 1973 the former group with small-scale, private farming enjoyed a 70 and 67 percent increase in gross and net product, respectively, while the latter group with large-scale, mechanized socialized farming attained only 48 and 34 increase of gross and net product, respectively (see table 3).

(4) Since the countries with socialized agriculture had a significantly higher increase in nonagricultural inputs into production but had smaller increases in output, gross product and net product than those with private agriculture, they must have used their productive resources far less efficiently than the group with private agriculture.

(5) The superior performance of the countries with private agriculture over the countries with socialized agriculture is evident in most growth measures since the mid-1950's, when Poland and Yugoslavia abandoned collectivization, and this superior performance continues until the present. The countries with private agriculture exceeded or lagged behind (—) the performance measures of the countries with socialized agriculture between 1955-60 and 1973 as follows:

In:	By margin of (percent)
Total agricultural output.....	6
Total net product of agriculture.....	20
Output per capita.....	-1
Net product per capita.....	11
Output per unit of land.....	12
Net product per unit of land.....	26
Output per unit of labor.....	-26
Net product per unit of labor.....	-16

Because of faster rates of population growth in the countries with private agriculture, their output per capita and per unit of labor lagged behind that of the countries with socialized agriculture. It should be noted that prewar to postwar comparisons per capita and per employed person favor the countries with private agriculture because of large shifts in the Polish population and area at the end of the war.

(6) Progress in mechanization of agriculture has been very impressive in Eastern Europe, but its level, except in Czechoslovakia and East Germany, is still significantly behind that of Western Europe.

Yugoslavia and Romania have the lowest levels of mechanization. However, the application of commercial fertilizers is in general closer to the Western European level, and in Czechoslovakia, East Germany, and Hungary the use of fertilizers per hectare of land is higher than in Western Europe as a whole.

(7) The introduction of higher-yielding varieties of wheat, corn, barley, rye, and oats along with the increased use of fertilizers brought about rapidly increasing yields per unit of land in all the Eastern European countries, especially during the last 8 to 10 years.

(8) Considerably greater emphasis has been placed on animal output in recent years in order to better satisfy rapidly increasing demands for products of animal origin in all the Eastern European countries. Yields per unit of livestock have increased significantly in the last 10 years.

(9) All the East European governments are putting increasingly stronger emphasis on increasing agricultural output and the productivity of land and labor. To effect this, they are channeling more resources into agriculture in the form of increased investment in machinery and equipment, better technology on farm, technical education, more flexibility and incentives to managers of farms, and pricing systems more responsive to changing scarcities, especially as shown in sharply increased prices paid to farmers.

(10) An international comparison of agricultural outputs showed that Eastern Europe as a whole, excluding Yugoslavia, accounted for about 43 percent as much output as the U.S.S.R. and about 38 percent as much as the United States in 1970. In turn, the U.S. output was about 14 percent larger than that of the U.S.S.R. in 1970. In terms of per capita levels of agricultural output, the United States ranks the highest followed by Hungary, Poland, East Germany, Bulgaria, the U.S.S.R., Czechoslovakia, and Romania in descending order.

(11) On the basis of the above overall growth performance measures, one is led to a conclusion that up to now socialized agriculture in the countries of Eastern Europe has not lived up to the expectations of their Communist governments for higher growth rates in production measures and in agricultural productivity than private family farming could achieve. Our comparisons of socialized versus private farming in Eastern Europe show better results for the latter. The inefficiencies of socialized agriculture have impeded economic development.

(12) The findings of this study afford a critique of agricultural systems in Europe. With the evident trend toward rational use of resources in Eastern Europe, readers there, as elsewhere, may want to ponder the significance of the systems as influences on productivity. Their concern with agricultural efficiency has prompted them to decentralize to some degree, to try to rediscover the springs of motivation through higher producer prices, higher profit, and other personal incentives. Agriculture remains a critical sector in Eastern Europe in view of the rising populations and the sharply increasing demand for more and higher quality protein-rich foods of animal origin.

The outlook for East European agriculture seems to be good through 1975. Official gross agricultural production plans for the 1971-75 period are more conservative and realistic than the overly optimistic 5-year plans of the past.

Table 30 shows the officially reported gross agricultural production results on a year-by-year basis for 1971-73 and the plan targets for 1971-75 period. The realized yearly gross production growth rates fluctuate sharply from country to country due to changing weather conditions. Thus, the officially reported actual growth rates of gross production for 1971-73 period are in excess of the planned growth rates for 1971-75 in Czechoslovakia, Hungary, Poland, Romania, and Eastern Europe as a whole. In Bulgaria and East Germany, the actual growth rates are about the same as the planned figures. Only in the U.S.S.R. was the actual performance for 1971-73 lower than the 1971-75 plan targets, evidently owing to the very poor harvest in 1972. Short of adverse weather conditions in Eastern Europe this year or in 1975, the 1971-75 planned rates of growth for agricultural production are likely to be fulfilled or slightly exceeded for most of the Eastern European countries, with the probable exception of the U.S.S.R., which is currently lagging behind the planned target.

TABLE 30.—RATES OF GROWTH OF GROSS AGRICULTURAL PRODUCTION, PLANNED AND ACTUAL, 1966-75, AS OFFICIALLY REPORTED

	Average annual rates of growth (percent)							
	1966-70 actual	1971-75 planned	1971 actual	1972		1973		1971-73 actual ¹
				Actual	Planned	Actual ¹	Planned	
Bulgaria.....	4.7	3.2-3.7	3.1	4.8	6.0	3.0	7.4	3.6
Czechoslovakia.....	3.5	2.7	3.2	3.6	4.6	4.2	4.3	3.7
East Germany.....	1.5	2.4	-1.1	8.5	-----	0	4.5	2.5
Hungary.....	3.0	2.8-3.0	9.6	5.0	3.0	5.0	2.0	6.5
Poland.....	2.9	3.6-3.9	3.7	8.1	4.6	7.8	2.1	6.5
Romania ²	4.2	6.3-8.3	18.4	9.0	21.0	.2	20.0	9.2
Total, Eastern Europe.....	3.1	3.5-4.0	5.4	7.1	7.1	4.1	5.9	5.5
U.S.S.R.....	3.9	3.7-4.0	1.1	-4.6	-----	14.0	12.6	3.2

¹ Data for 1973 are preliminary.

² The large growth rates—actual and planned—for Romania during this period reflect recovery from the severe flooding of 1970.

Source: National plans and plan fulfilment reports of respective countries published in statistical bulletins of these countries, and "World Economic Survey, 1972, Current Economic Developments," United Nations, New York, 1973, p. 69.

Prospects for the 1976-80 period will depend heavily on the determination of the East European governments to continue to provide and increase production incentives to farmers. Most likely there will be continuing emphasis on livestock production, in view of the increasing demand for meat products caused by rising incomes of the population. However, the domestic feed base is now inadequate to sustain the current rates of growth of animal output. Currently the Eastern European region is importing over 4 million metric tons of grain mostly for feed-stuffs and about 2.5 million tons of oilmeal,²¹ chiefly from the U.S.S.R.

²¹ U.S. Department of Agriculture, *The Feed-Livestock Economy of Eastern Europe: Prospects to 1980* op. cit., pp. 99-104.

and also from the United States, Canada, South America, and some developing countries in Asia. Since the U.S.S.R. is now deficient in its domestic feed supply, the Eastern European countries will have to rely more and more on imports of feed grain, oilmeal and feed concentrates from the United States, Canada, Latin America, and other exporters of agricultural products. Eastern Europe may become a steady and growing customer for U.S. exports of corn, soybean, oilmeal, and vitamin supplements in the years ahead.

Some of the countries, for example, Poland and Hungary intend to step up their exports of livestock products to Western Europe and the United States in order to pay for their imports of feedstuffs from the hard currency areas.

TABLE 31.—WHEAT-BASED PRICE RELATIVES FOR EASTERN EUROPE AND U.S.S.R., 1961-65 AVERAGE

[Averages of producer prices expressed as relatives in terms of wheat=100, per metric ton]

<i>Item</i>	<i>Price relative</i>
Crops:	
Wheat.....	100
Rye.....	85
Barley.....	92
Oats.....	67
Mixed grain.....	95
Corn.....	83
Millet.....	81
Sorghum.....	80
Buckwheat.....	94
Rice.....	152
Sugar beet ¹	21
Potatoes.....	36
Sweet potatoes ²	44
Pulses, edible.....	146
Peanuts.....	1,051
Soybeans.....	161
Cottonseed.....	75
Rapeseed and mustard.....	211
Sesame seed.....	982
Sunflower seed.....	164
Castor beans.....	144
Hempseed.....	247
Flax seed.....	200
Vegetables.....	76
Fruits.....	146
Grapes.....	257
Tabacco.....	1,224
Cotton, unginne ^d ³	302
Flax, stalks ⁴	77
Hemp, stalks ⁴	133
Hops ⁵	2,712
Poppy ⁵	1,190
Ch.cory ⁶	35
Pepper, aromatic and medical crops ⁷	920
Milling offals.....	63
Oilcake.....	90
Walnuts.....	444
Tea.....	1,100

See footnotes at end of table, p. 389.

TABLE 31.—WHEAT-BASED PRICE RELATIVES FOR EASTERN EUROPE AND U.S.S.R., 1961-65 AVERAGE—Continued

Item	Price relative
Animal products:	
Horses.....	155
Cattle and calves.....	579
Pigs.....	654
Sheep and goats.....	463
Poultry.....	657
Other animals.....	300
Eggs, ⁸ per 1,000 pieces.....	49
Milk.....	106
Wool, greasy; feathers.....	1, 825
Cocoons, fresh.....	1, 043
Honey.....	357
Wax ⁹	794
Bee-hives, ¹⁰ per 1,000 units.....	2, 776
Mohair ¹¹	4, 024

¹ Price of sugar converted into sugar beets of 15 percent sugar content.

² World weight (weighted averages of the eight world regions).

³ Price of lint converted into unginned cotton by factor 0.33.

⁴ Price of fiber converted into price of raw stalks by factor 0.15. for flax and 0.2 for hemp, see FAO, "Production Yearbook 1972," pp. 173-174.

⁵ The Czechoslovak ratios between wheat, hops, and poppy prices for 1961-65 was used as an estimate, see Czechoslovakia, Statni statisticky urad, "Statisticka rocenka CSSR 1966," p. 471.

⁶ The Czechoslovak ratio between wheat and chicory for 1965 was used, see "Statistické prehledy," 1971, Nr. 1, p. IX.

⁷ The Czechoslovak ratio between wheat, chicory, aromatic and medical crops was used as an estimate see Gregor Lazarek, "Performance of Socialist Agriculture," L-W. International Financial Research, New York, 1963, p. 29.

⁸ Price of eggs, given per ton, converted into price per 1,000 pieces by using an average weights of 56 grams per egg, see F. Cvančara, "Zemledelska vyroba v cislech," vol. II, Prague, 1965, p. 575.

⁹ The Czechoslovak ratio between honey and wax price in 1950 was used as an estimate.

¹⁰ The Czechoslovak ratio between honey and bee-hives price was used as an estimate.

¹¹ The Bulgarian ratio between wool and mohair price was used as an estimate.

Source: U.N. FAO, *Production Yearbook 1972*, vol. 26, Rome 1973, pp. 410-411.

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APPENDIX A

NOTES AND SOURCES FOR TABLES 1 TO 27

Prewar period and 1950-72

All quantity series and national prices needed for the construction of tables 1 to 27 were taken from publications published by the "Research Project on National Income in East Central Europe," Columbia University, Riverside Research Institute (RRI), and L.W. International Financial Research (LWIFR), as follows:

Bulgaria.—Gregor Lazarcik and Wassyl Znayenko, "Bulgarian Agricultural Production, Output, Expenses, Gross and Net Product, and Productivity, 1939 and 1948-1967," OP-32, RRI, 1970.

Gregor Lazarcik, "Bulgarian Agricultural Production, Output, Expenses, Gross and Net Product, and Productivity at 1968 Prices, 1939, and 1948-1970," OP-39, 1973. Updated to 1972. RRI and L.W.I.F.R., New York.

Czechoslovakia.—Gregor Lazarcik, "Production and Productivity in Czechoslovak Agriculture, 1934-38 and 1946-1967". Ph. D. dissertation. Updated to 1972. Columbia University, 1973.

Gregor Lazarcik, "Comparison of Czechoslovak Agricultural and Non-agricultural Incomes in Current and Real Terms, 1937 and 1948-1965". OP-20, 1968. Columbia University.

East Germany.—Gregor Lazarcik, "East German Agricultural Production, Expenses, Gross and Net Product, and Productivity, 1934-38 and 1950-1970". OP-36, 1972. Updated to 1972. RRI, New York.

Hungary.—Laszlo Czirjak, "Hungarian Agricultural Production and Value Added, 1934-38 and 1946-1965", OP-14, 1967. Updated to 1972. Columbia University.

Laszlo Czirjak and Paul Marer, "Comparison of Agricultural and Non-agricultural Incomes in Current and Real Terms, 1938 and 1949-70". OP-21, 1973. RRI and L.W.I.F.R., New York.

Poland.—Andrzej Korbonski and Gregor Lazarcik, "Polish Agricultural Production, Output, Expenses, Gross and Net Product, and Productivity, 1934-38, 1937 and 1946-1970", OP-37, 1972. Updated to 1972. RRI, New York.

Romania.—Gregor Lazarcik and George Pall, "Romania: Agricultural Production, Output, Expenses, Gross and Net Product, and Productivity, 1938 and 1948-1971," OP-38, 1973. Updated to 1972. RRI and L.W.I.F.R., New York.

Yugoslavia.—Joseph Bombelles, "Yugoslav Agricultural Production and Productivity, Prewar and 1948-1967," OP-31, 1970. Updated to 1972. RRI, New York.

1973

Our indexes for 1972 (weighted by wheat-based price relatives for 1961-65) were extended to 1973 by means of crop output indexes animal products output indexes and agricultural production indexes for individual countries calculated from plan fulfillment reports of respective countries for 1973 published in January and February 1974 issues for Bulgaria: *Rabotnicesko delo*, Sofia, daily; for Czecho-

slovakia: *Rude pravo*, Prague, daily, and *Hospodarske noviny*, Prague, weekly; for East Germany: *Die Wirtschaft*, Berlin, weekly; for Hungary: *Nepszabadsag*, Budapest, daily, and *Magyar Nemzet*, Budapest, daily; for Poland: *Trybuna ludu*, Warsaw, daily, and *Zycie gospodarcze*, Warsaw, weekly; for Rumania: *Elore*, Bucharest, daily, and *Scinteia*, Bucharest, daily; for Yugoslavia: *Borba*, Belgrade, daily.

APPENDIX B

NOTES AND SOURCES FOR TABLES 28 AND 29

Quantity Series

For Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Romania: the same sources as given in appendix A for tables 1 to 27. For U.S.A.: U.S. Department of Agriculture. "Agricultural Statistics," 1960 to 1972. Washington, U.S. Government Printing Office, 1960-72.

For U.S.S.R.: U.S. Department of Agriculture, Economic Research Service. "Indices of Agricultural Production in Eastern Europe and the Soviet Union, 1950-68." ERS-Foreign, 273. Washington, 1969, and "Agricultural Statistics of Eastern Europe and the Soviet Union, 1950-70." ERS-Foreign, 349. Washington, 1973. Tsentralnoe statisticheskoe upravlenie. "Narodnoe khoziaistvo SSSR," 1959-72. Moscow, 1959-73 and Sel'skoe khoziaistvo SSSR, statisticheskii sbornik. Moscow, 1960 and 1971. The quantity data taken from official Soviet sources were adjusted downward from "bunker" weight definition to "barn" weight definition used in other Eastern European countries and in the market economies. The adjustment was made on the basis of adjusted Soviet quantity data given in "Indices of Agricultural Production * * *," op. cit., and other U.S. Department of Agriculture publications on agricultural production in Eastern Europe and the Soviet Union.

Prices

The prices of agricultural products used in valuation of physical quantity series are, whenever possible, the average realized prices (weighted by the total quantity of a given product sold to all outlets) paid to producers (collective, state and private farmers) for the sale of their agricultural products in a given year. For each country the average prices for each agricultural product were obtained or calculated from statistical yearbooks and periodicals published by central statistical offices of respective countries, and various economic publications and articles published by a multitude of authors. The most important sources are cited in the bibliography.

EAST EUROPEAN CHEMICAL PRODUCTION AND TRADE

By HAROLD LENT

CONTENTS

	Page
Introduction.....	394
Summary.....	394
Production of Chemicals.....	395
Contribution of Imported Technology.....	398
Foreign Trade in Chemicals.....	400
Outlook: Chemical Production and Trade, and Imports of Equipment.....	403
Main Sources of Statistical Data.....	405

TABLES

1. Eastern Europe: Average annual rates of growth in industrial and chemical output by country, 1961-72.....	396
2. Comparison of average annual growth in industrial and chemical output, selected countries, 1961-72.....	396
3. Production of selected chemicals, Eastern Europe and European Community, 1960 and 1972.....	397
4. Per capita production of selected chemicals, Eastern Europe and European Community, 1960 and 1972.....	397
5. Production of selected chemical products in Eastern Europe, by country, 1960 and 1972.....	398
6. Eastern Europe: Estimated imports of equipment for the chemical industry, by country, 1959-70.....	399
7. Eastern Europe: Estimated imports of equipment for the chemical industry, by country, 1971-72.....	400
8. Eastern Europe: Direction of trade in chemicals and chemical products, 1960 and 1971.....	401
9. Eastern Europe: Trade in chemicals and chemical products with non-Communist countries, by country, 1960 and 1971.....	403
10. Eastern Europe: Production of selected chemical products by country, 1972 and plan 1975.....	404

INTRODUCTION

East European industrialization switched gears in the 1960's. The focus changed from products such as steel, cement, and heavy machinery to the newer branches of the chemical, electronics, and communications equipment industries that were pacing growth in Western Europe. This paper reviews the results of the "chemicalization" campaign with particular attention to its effects on East European trade in chemicals and the demand for Western technology.

SUMMARY

Chemical production in Eastern Europe tripled between 1960 and 1972. Investment and growth followed the example set by the United States, Western Europe, and Japan in emphasizing synthetic fibers,

plastics, and fertilizers. Per capita output of a few products like fertilizers now equals or exceeds output in Western Europe, although in most lines of production, Eastern Europe has a long way to go to catch up.

The development of East European chemical industries in the 1960's was based to a large degree on technology and equipment imported from the United States, Western Europe, and Japan. Most of the imported technology supported expanded production of fertilizers, synthetic materials, and intermediate chemicals derived from petroleum and natural gas. In addition, the chemical industries relied heavily on raw material supplies from the U.S.S.R.—especially oil, natural gas, and apatite concentrate.

Requirements for chemicals and chemical products in Eastern Europe generally have grown faster than production. Imports from non-Communist countries in particular exceed exports by a far larger margin than a decade ago. Eastern Europe has, however, developed a substantial export balance in fertilizer trade with the West.

Chemical production in Eastern Europe should continue to grow rapidly for the remainder of the 1970's at least. But the need for Western technology and equipment will remain high. Although efforts are being made to restrict imports of chemicals—in part by cooperation among the U.S.S.R. and East European countries—Eastern Europe probably also represents a growing market for Western suppliers of chemicals and chemical products.

PRODUCTION OF CHEMICALS

The chemical industries have been in the forefront of East European industrialization since the various regimes decided that modernization was the key to sustained growth. During 1961–72, output of chemicals and chemical products increased by an average of 10 percent per year compared with an average annual increase of about 6 percent for total industrial output (table 1).¹ The least developed of the East European countries, Bulgaria and Romania, achieved the highest rates of growth in chemical production as well as in total industrial output. In East Germany, where the chemical industry was relatively well developed by 1960, the annual rate of increase of chemical production exceeded that of industrial output by only one percentage point.

In stressing development of their chemical industries, the East European countries were treading a well-worn path. A rapid rate of growth in chemical production has prevailed in most industrialized areas of the world since World War II. In Western Europe chemical production increased by an average of 9 percent per year during 1961–72, compared with a 5-percent average annual increase in total industrial output—a growth pattern very similar to that in Eastern Europe (table 2). The growth in output of chemicals also outstripped the growth in total industrial output in Japan, the United States, and Canada. The rate of increase in Soviet production of chemicals outpaced industrial growth by nearly the same margin as in Eastern and Western Europe.

¹ By 1972, chemical production accounted for the following estimated percentages of industrial output in the respective countries: East Germany, 18 percent; Hungary, 12 percent; Romania, 10 percent; Poland, 9 percent; Czechoslovakia, 8 percent; and Bulgaria, 7 percent.

TABLE 1.—EASTERN EUROPE: AVERAGE ANNUAL RATES OF GROWTH IN INDUSTRIAL AND CHEMICAL OUTPUT BY COUNTRY, 1961-72

[In percent]

Country	Industrial output		Chemical output ¹	
	Official ²	Estimated ³	Official ²	Estimated ⁴
Eastern Europe	NA	6	NA	10
Romania	13	10	22	19
Bulgaria	11	10	18	17
Hungary	7	5	13	11
Poland	9	6	13	11
Czechoslovakia	6	5	10	9
East Germany	6	4	8	5

¹ Includes rubber processing.² Derived from indexes of the "gross" value of production at constant prices. The gross value of production is, in general the sum of the value of output of individual enterprises. Indexes were obtained from statistical yearbooks published by the 6 countries.³ Derived from value-added weighted indexes of intermediate and final products constructed by Thad P. Alton (see his paper in this compendium entitled "Economic Growth and Resource Allocation in Eastern Europe").⁴ Derived from an approximation of value-added indexes.⁵ Includes petroleum refining.⁶ Includes production of cellulose and paper.

TABLE 2.—COMPARISON OF AVERAGE ANNUAL GROWTH IN INDUSTRIAL AND CHEMICAL OUTPUT, SELECTED COUNTRIES, 1961-72

[In percent]

Country	Industrial output	Chemicals output ²
Western Europe ¹	5	9
Greece	9	14
Spain	11	14
The Netherlands	7	12
Finland	8	12
Italy	6	10
West Germany	6	10
France	6	9
Austria	6	9
Sweden	5	9
Belgium	5	8
United Kingdom	3	6
Japan	13	14
United States	5	8
Canada	6	7
U.S.S.R.	6	10

¹ Data for non-Communist countries are based on value-added weighted indexes constructed by OECD.² Includes petroleum refining and rubber processing which typically account for 20 percent to 30 percent of the total value.³ OECD countries.⁴ Excluding military production.⁵ Based on value-added weighted indexes constructed by Rush V. Greenslade and Wade E. Robertson (U.S. Cong., Joint Economic Committee, "Soviet Economic Prospects for the Seventies," June 1973, p. 271).

Although the growth rates for individual chemical products in Eastern Europe in many cases vary substantially from those in Western Europe, the relative priority attached to products in each area is quite similar. For example, the highest growth rate in Eastern Europe and in the European Community was reached in synthetic fibers, followed by plastics, synthetic rubber, fertilizer, and rayon, in that order (table 3). Comparable data are not readily available on the production of some of the other products of the industry such as pharmaceuticals, pesticides, dyes and paints, and photographic supplies.² Output of basic chemicals in Eastern and Western Europe in general behaves like the end products that consume the bulk of basic chemicals. Thus, the growth rates for synthetic ammonia and

² Petroleum and rubber products, which could not be excluded from the statistics shown in tables 1 and 2, fall outside the scope of this study.

sulfuric acid in Eastern Europe are higher than those in Western Europe because the growth rate for fertilizer is higher.

On a per capita basis, Eastern Europe had caught up with the European Community by 1972 in the production of fertilizers, related basic chemicals, and rayon, while output of plastics and synthetic fibers in Eastern Europe still lagged far behind (table 4). In synthetic rubber and caustic soda production, Eastern Europe actually lost ground.

TABLE 3.—PRODUCTION OF SELECTED CHEMICALS, EASTERN EUROPE AND EUROPEAN COMMUNITY, 1960 AND 1972
[In thousand metric tons (except as indicated)]

Item	Eastern Europe ¹			European community ²		
	1960	1972	Average annual growth (percent)	1960	1972	Average annual growth (percent)
Chemical Products:						
Synthetic fibers.....	20	270	24.2	200	1,600	18.9
Plastics.....	248	1,551	16.5	2,400	13,000	15.1
Synthetic rubber.....	108	349	10.3	269	1,420	14.9
Chemical fertilizer ⁴	3,229	8,281	8.2	10,400	15,500	3.4
Cellulosic (rayon) fibers.....	287	374	2.3	803	830	0.3
Basic chemicals:						
Synthetic ammonia ⁷	1,020	4,257	12.6	3,420	7,200	6.4
Sulfuric acid.....	2,500	7,100	9.1	12,700	18,600	3.2
Caustic soda.....	717	1,492	6.3	1,970	4,840	7.8

¹ Data were compiled largely from statistical yearbooks published by the 6 countries of Eastern Europe. Estimates were made in the few instances in which data were not available.

² The 9 percent members: Belgium, Denmark, France, West Germany, Italy, Ireland, Luxembourg, the Netherlands, and the United Kingdom. Data were obtained from the UN monthly statistical bulletin.

³ Based on 1969 data for Belgium and 1970 data for Denmark.

⁴ Nutrient basis.

⁵ Data are generally for the 12-mo. period beginning July 1 of the year shown.

⁶ Data are for 1971.

⁷ Nitrogen content.

TABLE 4.—PER CAPITA PRODUCTION OF SELECTED CHEMICALS, EASTERN EUROPE AND EUROPEAN COMMUNITY, 1960 AND 1972

[Kilograms per capita]

Item	1960		1972	
	Eastern Europe	European Community	Eastern Europe	European Community
Chemical products:				
Chemical fertilizers.....	33.0	45.0	80.0	61.0
Plastics.....	3.0	10.0	15.0	51.0
Synthetic fibers.....	(¹)	1.0	3.0	6.0
Cellulosic (rayon) fibers.....	3.0	3.5	4.0	3.2
Synthetic rubber.....	1.0	1.0	3.0	6.0
Basic chemicals:				
Synthetic ammonia.....	11.0	15.0	41.0	28.0
Sulfuric acid.....	26.0	55.0	68.0	73.0
Caustic soda.....	7.0	8.0	14.0	19.0

¹ Less than 0.5 kilograms per capita.

Source: Production data are from table 3; population data are from the UN monthly statistical bulletin.

East Germany is the largest producer of chemicals in Eastern Europe although its share of the area's output has declined substantially (table 5). In 1972, East Germany accounted for 40 percent of Eastern Europe's fertilizer production, 30 percent of the plastics production, 26 percent of the synthetic fiber output and 38 percent of the synthetic rubber production. On a per capita basis, East Germany's 1972 output of some products compares favorably with that of the European Community:

[Kilograms per capita]

	East Germany	European Community
Chemical fertilizers.....	193	61
Plastics.....	27	51
Synthetic fibers.....	4	6
Synthetic rubber.....	8	6

Expanded production of chemicals has made a significant contribution to development of other sectors of the economies of Eastern Europe, notably to agriculture. Total agricultural output and crop yields per hectare have risen substantially during the past decade or two, attributable in part to increased use of chemical fertilizers and pesticides. The Polish Minister of Agriculture has estimated that, by 1970, in comparison with the early to mid-1950's, crop yields in Poland were up by almost 60 percent, due to greater application of fertilizers.³ Increased production of synthetic materials has helped to minimize imports and no doubt has led to improvements in the quality, and/or reductions in the cost, of domestically produced textiles, tires, machinery, communications equipment, construction materials, and other products. An official of the Romanian textile industry has stated, for example, that increased production of man-made fibers in Romania reduced the share of textile raw materials that had to be imported from 70 percent in 1965 to 55 percent in 1970, and that the share is scheduled to drop to 20 percent in 1975.⁴

TABLE 5.—PRODUCTION OF SELECTED CHEMICAL PRODUCTS IN EASTERN EUROPE, BY COUNTRY, 1960 AND 1972¹

Country	1960				1972			
	Chemical, fertilizers	Plastics	Synthetic fibers	Synthetic rubber	Chemical fertilizers	Plastics	Synthetic fibers	Synthetic rubber
Eastern Europe.....	3, 229	248	20	108	8, 281	1, 551	270	349
Bulgaria.....	126	7	-----	-----	653	123	35	15
Czechoslovakia.....	287	64	3	1	678	297	47	51
East Germany.....	2, 166	115	8	87	3, 285	458	69	132
Hungary.....	102	10	(4)	-----	555	100	7	-----
Poland.....	477	40	8	20	1, 910	299	74	78
Romania.....	71	12	1	-----	1, 200	274	38	73

¹ Data were compiled largely from statistical yearbooks published by the 6 countries of Eastern Europe. Estimates were made in the few instances in which data were not available.

² Including 1,666,000 tons of potassium fertilizer.

³ Including 2,458,000 tons of potassium fertilizer.

⁴ Less than 500 tons.

CONTRIBUTION OF IMPORTED TECHNOLOGY

The expansion in East European chemical production during 1961-72 was made possible to a substantial degree by imported technology and equipment, particularly from non-Communist countries. The value of imported equipment for the chemical industries of Eastern Europe is estimated to have totaled at least \$1.7 billion in 1959-70,

³ Z. Kazimerchak, *Mezhdunarodnyy sel'skok hozyaystvennyy zhurnal*, No. 4, 1971. (U.S. Joint Publications Research Service, Translations on Eastern Europe, JPRS 53338, Feb. 27, 1973, p. 19.)

⁴ St. Stefanescu, *Industria textila*, No. 4, 1971. (U.S. Joint Publications Research Service, Translations on Eastern Europe, JPRS 53682, July 26, 1971, p. 67.)

of which \$1.2 billion came from non-Communist countries (see table 6). Most of the equipment was for the production of fertilizers, synthetic materials (plastics, fibers, and rubber) and related basic chemicals obtained from oil and natural gas.

Comparable data on the production of chemical equipment in Eastern Europe are not available, but imported equipment clearly has contributed heavily to total supply. Poland reportedly imported about 50 percent of the equipment required by its chemical industry during 1961-70,⁵ and a Romanian engineer stated in 1968 that 80 percent of the chemical equipment required by his country was being imported.⁶ East Germany and Czechoslovakia probably imported less than 50 percent of the equipment installed in their chemicals industries during the 1960's, Hungary probably between 50 percent and 80 percent, and Bulgaria probably more than 80 percent.

TABLE 6.—EASTERN EUROPE: ESTIMATED IMPORTS OF EQUIPMENT FOR THE CHEMICAL INDUSTRY, BY COUNTRY, 1959-70 ¹

[In millions of U.S. dollars]

Country	Total	Non-Communist countries	Communist countries		
			Total	U.S.S.R.	Eastern Europe
Eastern Europe.....	1,728	1,221	507	378	129
Bulgaria.....	410	171	239	205	34
Czechoslovakia ²	214	195	19	12	7
East Germany.....	203	178	25	10	15
Hungary.....	138	75	63	57	6
Poland.....	286	197	89	34	55
Romania.....	477	405	72	60	12

¹ Based largely on data from statistical yearbooks published by the 6 East European countries and by the U.S.S.R. Supplementary information was obtained from various periodicals including "Chemical Age International," "Chemische Industrie International" (English edition), "East-West Commerce," "European Chemical News," and "Hydrocarbon Processing." Estimates may include equipment for rubber processing, petroleum refining, and paper production.

² Specialized equipment for the chemical industry, which in 1968 constituted $\frac{3}{4}$ of all equipment imported for the chemical industry.

Eastern Europe was forced to rely heavily on non-Communist suppliers because much of the technology available from East European and Soviet sources is obsolete by Western standards. For example, Soviet engineers were designing ethylene plants with a capacity of 60,000 tons while Western engineers were building 200,000- to 450,000-ton units with much lower operating costs. Much the same situation applies to the design and construction of plants for producing synthetic ammonia, urea, and other chemicals. The Communist countries have also experienced problems in producing special types of equipment, such as acid-resistant pumps. In recognition of the overriding importance of Western technology and equipment, the East German Minister of the chemical industry stated in 1967 that "in the past 20 years the building of our chemical industry was mostly based on the purchase of modern manufacturing processes and installations from capitalistic countries."⁷ The major suppliers among the non-Communist countries were the United Kingdom, France, West Germany, Italy, Belgium the Netherlands, Austria, and Japan. U.S. sales

⁴ Lech Froelich, *Zycie gospodarcze*, June 3, 1973, p. 5. (U.S. Joint Publications Research Service, Translations on Eastern Europe, JPRS 59559, July 10, 1973, p. 3.)

⁵ Foreign Broadcast Information Service, Daily Report on Eastern Europe, Nov. 8, 1968, Volume IV, No. 220, p. H-7.

⁷ Gunther Wyschofsky, *Chemische Technik*, No. 9, 1967. (U.S. Joint Publications Research Service, Translations on East European Materials Industries, JPRS 43643, Dec. 8, 1967, p. 18.)

consisted largely of technology provided through chemical engineering firms in other non-Communist countries.

Eastern Europe stepped up the pace of its chemical equipment imports in 1971-72. Estimated imports amounted to about \$900 million, of which three-quarters came from the West (table 7). Annual imports of equipment in 1971-72 averaged \$450 million, more than three times the average of \$144 million in 1959-70. Romania continues to be the largest buyer of Western chemical equipment, much of it slated for four large fertilizer plants now under construction with a combined capacity of about 1.6 million tons per year (nutrient basis).

Although East European imports of chemical equipment have been increasing, there is some evidence of increased East European capability for building modern chemical plants. Czechoslovak engineers, for example, are reported to be supervising the construction of two large urea fertilizer plants in East Germany, under a license purchased in the Netherlands. Poland recently designed and built a large sulfuric acid plant in West Germany.

TABLE 7.—EASTERN EUROPE: ESTIMATED IMPORTS OF EQUIPMENT FOR THE CHEMICAL INDUSTRY, BY COUNTRY, 1971-72¹ 2

[In millions of U.S. dollars]

Country	Total	From non-Communist countries	From Communist countries		
			Total	U.S.S.R.	Other
Eastern Europe.....	902	673	229	145	84
Bulgaria.....	130	37	93	71	22
Czechoslovakia.....	145	140	5	2	3
East Germany.....	156	105	51	22	29
Hungary.....	82	61	21	16	5
Poland.....	139	100	39	17	22
Romania.....	250	230	20	17	3

¹ Based largely on data from statistical yearbooks published by the 6 East European countries and by the U.S.S.R. Supplementary information was obtained from various periodicals including "Chemical Age International," "Chemische Industrie International" (English edition), "East-West Commerce," "European Chemical News," and "Hydrocarbon Processing." Estimates may include equipment for rubber processing, petroleum refining, and paper production.

² Current dollars, which reflect the devaluation of the dollar following the Smithsonian Agreement of December 1971.

FOREIGN TRADE IN CHEMICALS

As chemical production climbed in Eastern Europe, chemicals began to account for an increasing share of exports. The value of exports of chemicals and chemical products increased by 11 percent per year during 1961-71 to an estimated \$1.6 billion in 1971 (table 8). Exports as a share of total trade rose from 7 percent to 9 percent. Exports of chemicals and chemical products are still small by West European standards, however. During 1961-71, exports of the nine current members of the European Community rose by 12 percent per year to \$16 billion, about 13 percent of total exports by these countries.

TABLE 8.—EASTERN EUROPE: DIRECTION OF TRADE IN CHEMICALS AND CHEMICAL PRODUCTS,¹ 1960 AND 1971

[In millions of U.S. dollars]

	Total ²	With non-Communist countries ³	With Communist countries		
			Total	U.S.S.R. ⁴	Other ⁵
1960:					
Exports.....	495	156	339	107	232
Imports.....	490	214	276	59	217
Balance.....	5	-58	63	48	15
1971:					
Exports.....	1,578	431	1,147	530	617
Imports.....	1,710	917	793	253	540
Balance.....	-132	-486	354	277	77

¹ Items included in following sections of the United Nations Standard International Trade Classification: 5 (chemicals) 231.2 (synthetic rubber), 266 (synthetic and artificial fibers), 651.61 and 651.71 (synthetic and cellulosic fiber yarn), and 862 (photographic supplies).

² Based on totals published by all countries except East Germany, for which an estimate was developed from fragmentary data on trade in individual chemicals and from data published by East Germany's trade partners.

³ From statistics compiled by the U.S. Department of Commerce on East-West trade.

⁴ From statistics published by the U.S.S.R. on its foreign trade.

⁵ Eastern European countries and other Communist countries excluding Yugoslavia (Albania, China, Cuba, Mongolia, North Korea, and North Vietnam).

Imports of chemicals by East European countries meanwhile increased at a slightly faster rate of 12 percent to an estimated \$1.7 billion in 1971, resulting in a deficit of \$130 million. The share of chemicals in total imports increased from an estimated 6 percent to 8 percent. In contrast, total imports of chemicals by the European Community increased about 13 percent per year to \$11 billion in 1971, resulting in a net surplus of \$5 billion.

Thus, Eastern Europe found that the development of its chemical industries had not reduced its dependence on imports. The growing use of chemical products exceeded the capabilities of the domestic industries. To obtain these imports, East European countries turned first to their neighbors and, less successfully, to the U.S.S.R. But well over half of the increase in East European chemical imports was supplied by non-Communist countries:

GROWTH IN TRADE IN CHEMICALS AND CHEMICAL PRODUCTS, 1960 AND 1971

[Million U.S. dollars]

	East European exports to—	East European imports from—
All countries.....	1,083	1,220
Non-Communist countries.....	275	703
U.S.S.R.....	423	194
Other Communist countries.....	385	323

At the same time, the largest gain in East European exports of chemical products was in deliveries to the U.S.S.R., followed closely by shipments to other Communist countries. Sales to non-Communist countries accounted for just 25 percent of the growth in total East European exports. As a consequence the deficit in trade in chemicals

and chemical products with non-Communist countries amounted to almost \$500 million in 1971, more than eight times the 1960 figure. Net import balances in plastics and manmade fibers combined exceeded \$200 million. Imports from non-Communist countries exceeded exports to them in every major product category except fertilizers, for which a \$70 million export surplus was reported. Moreover, a \$60 million deficit was incurred in trade with non-Communist countries in basic and intermediate chemicals. In 1972, the overall deficit in chemical and chemical product trade with non-Communist countries grew to about \$700 million.⁹

Thus far the U.S. share of East European trade in chemicals has been small. In 1971, the United States accounted for 1 percent—\$10 million—of Eastern Europe's imports of chemicals from non-Communist countries and purchased 2 percent—\$8 million—of the area's exports of chemicals. In 1973, U.S. exports to Eastern Europe amounted to \$14 million. Meanwhile, U.S. imports from Eastern Europe rose to \$17 million.

While their chemical trade with non-Communist countries shows a substantial deficit, the East European nations have developed a substantial export surplus in trade with the U.S.S.R. During 1961-71 the surplus grew from \$50 million to \$280 million. Eastern Europe exports large quantities of low-tonnage chemical products to the U.S.S.R., such as pharmaceuticals and dyes. Trade in synthetic materials, and in basic and intermediate chemicals, is more or less balanced. Potassium fertilizer is one of the largest items on the import side. The U.S.S.R. also supplies substantial amounts of raw materials for the chemical industry including apatite concentrate, (\$70 million in 1971), natural gas, crude oil, and coking coal.

The remainder of East European trade in chemicals consists largely of internal East European trade. Comprehensive information on the composition of chemicals trade among the six countries of Eastern Europe is not available although low-tonnage items such as pharmaceuticals and dyestuffs appear to predominate.

The largest deficit in trade with non-Communist countries in 1971 (table 9) was incurred by Hungary (\$138 million) and the smallest by Romania (\$13 million). Hungary's production of synthetic materials is small even by East European standards, so Hungarian planners have found it necessary to import large amounts of plastics and synthetic fibers from non-Communist countries. Imports of pesticides and basic and intermediate chemicals were also substantial in 1971. Although Hungary has a well-developed pharmaceuticals industry, its exports of pharmaceuticals and medicines to non-Communist countries amounted to only \$8 million in 1971, or \$2 million more than imports in this category.¹⁰ In contrast, Hungary's exports of pharmaceuticals and medicines to the U.S.S.R. totaled \$83 million in 1971. At the other extreme, Romania's import requirements for chemicals have been smaller, and it has been able to export large quantities of nitrogen fertilizers to the West by limiting domestic consumption per hectare to the lowest level in Eastern Europe.

⁹ Current dollars which reflect the devaluation of the dollar following the Smithsonian agreement of December 1971.

¹⁰ From statistics published by non-Communist countries. Hungarian statements indicate exports of pharmaceuticals and medicines to non-Communist countries may have totaled as much as \$43 million and imports as much as \$17 million.

TRADE 9.—EASTERN EUROPE: TRADE IN CHEMICALS AND CHEMICAL PRODUCTS WITH NON-COMMUNIST COUNTRIES, BY COUNTRY, 1960 AND 1971¹

[Million U.S. dollars]

Country	1960			1971		
	Exports	Imports	Net	Exports	Imports	Net
Eastern Europe.....	156	214	-58	431	917	-486
Bulgaria.....	4	14	-10	43	75	-32
Czechoslovakia.....	27	42	-15	56	170	-114
East Germany.....	74	46	28	122	205	-83
Hungary.....	12	40	-28	48	186	-138
Poland.....	35	48	-13	82	188	-106
Romania.....	4	24	-20	80	93	-13

¹ For sources and methods see footnotes to table 8.

East Germany's position slipped badly in the 1960's. East German imports from non-Communist countries jumped by 345 percent while exports to them increased by only 65 percent. The value of shipments to non-Communist countries of potassium fertilizer, one of East Germany's major export items, increased by only 43 percent. Exports to other East European countries meanwhile increased by 75 percent. East Germany, which possesses extensive deposits of potash, is the only significant producer of potassium fertilizer in Eastern Europe.

Concerned by the trend in chemicals trade, East European countries and the U.S.S.R. have jointly tried to limit imports of chemical products from non-Communist countries. These efforts have had only marginal success. For example, specialization in pharmaceutical production under CEMA reportedly led to discontinuing imports of 86 types of pharmaceuticals and to reducing imports of 72 others.¹¹ East European imports of pharmaceuticals from the West increased from \$15 million in 1960 to \$44 million in 1971, an increase of 190 percent, compared with an increase of 330 percent for all chemicals and chemical products. Eastern Europe is attempting to develop a similar specialization in the production of pesticides, imports of which from non-Communist sources grew from \$5 million in 1960 to \$39 million in 1971. By 1980, planners in Eastern Europe and the U.S.S.R. hope to satisfy 96 percent of the area's demand for pesticides from internal sources.

In dealing with trade deficits with the West, the East European countries—like the U.S.S.R.—want to trade production for technology. As one means of expanding exports of chemical products, East European countries have tried to purchase chemical technology and equipment from non-Communist countries under contracts that provide for repayment in kind, or for joint marketing of the resulting output. A West German firm built a urea fertilizer plant in Romania under such an arrangement. Bucharest has also concluded an agreement with a Japanese firm that will erect a synthetic fiber plant and participate in marketing the output.

OUTLOOK: CHEMICAL PRODUCTION AND TRADE, AND IMPORTS OF EQUIPMENT

The production targets for chemical fertilizers and synthetic materials established under the 5-year plans (1971-75) are the priority goals for further development of the chemical industries in Eastern

¹¹ Gyula Szeker, *Magyar kemikusok lapja*, No. 10, 1971. (U.S. Joint Publications Research Service, Translations on Eastern Europe, JPRS 55274, Feb. 25, 1972, p. 39.)

Europe (table 10).¹² By 1975 or 1976, fertilizer production probably will exceed 12 million tons annually. Per capita production will be well over 100 kilograms per year compared with 61 kilograms per capita in the European Community in 1972. Per capita production of synthetic fibers and synthetic rubber, however, will still be less than the 1972 levels in the European Community, while per capita production of plastics will only be half that in the European Community in 1972.

TABLE 10.—EASTERN EUROPE: PRODUCTION OF SELECTED CHEMICAL PRODUCTS BY COUNTRY, 1972 AND PLAN 1975

[Thousand metric tons]

Country	1972				1975 (plan)			
	Chemical fertilizer ²	Plastics	Synthetic fibers	Synthetic rubber	Chemical fertilizer ²	Plastics	Synthetic fibers	Synthetic rubber
Eastern Europe.....	8, 281	1, 551	270	349	12, 504	2, 597	442	497
Bulgaria.....	653	123	35	15	1, 150	152	35	20
Czechoslovakia.....	678	297	47	51	1, 074	500	60	75
East Germany.....	3, 285	458	69	132	4, 200	700	100	135
Hungary.....	555	100	7	-----	900	160	18	-----
Poland.....	1, 910	299	74	78	2, 470	520	121	120
Romania.....	1, 200	274	38	73	2, 710	565	108	147

¹ Most of the data for 1972 were obtained from statistical yearbooks published by the 6 East European countries. Planned production figures for 1975 were obtained from directives for the 1971-75 plan period published in the East European press.

² Nutrient content.

³ By August 1973 the plan had apparently been reduced to 117,000 tons.

Detailed plans for chemical production in Eastern Europe in the period after 1975 have not been published. Growth is likely to continue to be rapid, particularly in the synthetic materials sector. Poland, for example, has released some preliminary targets for 1980: 980,000 tons of plastics (a growth rate of 14 percent per year in 1976-80), 254,000 tons of synthetic fibers (16 percent per year), and 165,000 tons of synthetic rubber (7 percent per year). Moreover, although Poland's per capita output of mineral fertilizer is already quite large, the scheduled increase in production is substantial. Poland plans to produce 2,240,000 tons of nitrogen fertilizer (nutrient content) in 1980, a projected annual rate of growth of 8 percent during 1976-80.

Although East European capabilities for designing and building chemical plants are improving gradually, reliance on Western technology and equipment will continue at least through the remainder of this decade. An official of the state planning commission in Czechoslovakia, one of the leading producers of chemical equipment in Eastern Europe, recently stated that "a great portion of investment programs of the fifth 5-year plan (1971-75) and the sixth 5-year plan (1976-80) in the chemical industry assumes that we import licenses, the know-how, as well as key installations from the West."¹³ Data from trade journals and other periodicals indicate that most of the fertilizer capacity scheduled to come into operation in Eastern Europe during 1974-75 will incorporate Western technology and equipment. The situation is much the same in synthetic materials and related basic and intermediate chemicals. Moreover, many orders for delivery of

¹² Chemical production in Eastern Europe probably will be affected only marginally by increased world prices for crude oil and by efforts of the regimes in Eastern Europe to restrict its use. For the short-run, much of the oil consumed by Eastern Europe will continue to be obtained from the U.S.S.R. under long-term contracts which provide for lower prices than now prevail on world markets. Moreover, the authorities in Romania have indicated that the processing of crude oil for chemical production will have high priority.

¹³ Jaroslav Pek, *Chemický Průmysl* (Chemical Industry), No. 9, September 1973, p. 480.

chemical equipment and technology to Eastern Europe in the latter part of the decade have already been placed or are in the discussion stage. Poland, for example, reportedly signed a \$45 million contract in late 1973 with a Japanese firm for facilities to produce ethylene and other basic petrochemicals (and gasoline), and has made inquiries in Tokyo regarding the purchase of facilities costing over \$200 million for the production of synthetic fibers.

Eastern Europe probably will also continue to be an expanding market for western suppliers of chemicals and chemical raw materials in spite of efforts to restrict the growth of imports. To increase exports, East European negotiators probably will press even harder than they have for contracts that provide for repayment in kind for purchases of chemical plants and technology and for various kinds of joint marketing arrangements.

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PETROLEUM SUPPLY PROBLEMS IN EASTERN EUROPE

By J. RICHARD LEE

CONTENTS

	Page
Introduction.....	406
Petroleum as a Source of Energy.....	407
Oil Supply and Demand.....	408
Reserves and Production.....	408
Foreign Trade.....	409
Refining.....	411
Apparent Consumption.....	412
Natural Gas.....	412
Reserves and Production.....	412
Trade and Consumption.....	413
Prospects for the Future.....	415

TABLES

1. Eastern Europe: Primary sources of energy, 1960, 1965, and 1970.....	408
2. Eastern Europe: Oil supply and apparent consumption, 1960, 1965-73, 1975 plan.....	409
3. Eastern Europe: Natural gas supply and apparent consumption, 1960, 1965-73, 1975 plan.....	413

APPENDIX

Tables

1. Eastern Europe: Consumption of energy from primary sources, 1960, 1965, and 1970.....	417
2. Eastern Europe: Supply and apparent consumption of oil by country.....	418
3. Eastern Europe: Supply and apparent consumption of natural gas by country.....	419
Selected statistical bibliography.....	420

INTRODUCTION

The role of petroleum in the industrial and transport sectors of Eastern Europe has become increasingly important during the past decade. As Eastern Europe has sought to become competitive with Western Europe, wider uses of petroleum have been found in developing a modern road and rail transport network, petrochemical industries, and modern metallurgical processes. The growth of the oil industry in Eastern Europe has been accomplished primarily by imports, for the most part from the Soviet Union but to an increasing degree from the Middle East. This report examines the limited potential of the area for future indigenous production of petroleum and highlights the problems of increasing reliance on imports throughout the 1970's.

PETROLEUM AS A SOURCE OF ENERGY

Eastern Europe¹ has increased its use of petroleum almost three-fold since 1960 but continues to rely on coal as its major source of energy. Indeed, it is the only industrialized region in the world that does not rely heavily on the use of oil and gas.

Until the 1960's petroleum consumption was held down by the lack of indigenous oilfields in all countries except Romania, the competition from large coal resources, the shortage of hard currency for foreign purchases of oil, and the underdeveloped state of motor transport. These constraints on petroleum use still exist. Nevertheless, East European countries have had to convert to large-scale use of oil and gas to make their economies more competitive and to create the base for a modern chemical industry. Most of the rising demand for oil has been met by imports, primarily from the U.S.S.R., whereas increased use of natural gas has been made possible mostly by supplies from indigenous resources.

Eastern Europe changed from a small net exporter of energy in 1960 to a sizable net importer in 1970, primarily because imports of oil far exceeded exports of coal (see table 1). As the share of oil and gas in total energy consumption doubled during the 1960's, the role of coal declined from about 85 percent of energy consumed in 1960 to slightly less than 70 percent in 1970. The share of oil and gas in total energy use varies widely among the East European countries, but overall was less than 30 percent in 1970.²

Although there is an intensive effort underway among members of the Council for Mutual Economic Assistance (CEMA)³ to locate oil and gas deposits and increase production, Eastern Europe will have to depend on imported oil and gas to an ever greater degree for the foreseeable future. The Soviet Union will continue to provide most of the oil required by Eastern Europe (except for Romania), chiefly by means of an expanded crude oil pipeline system that is to reach a capacity of 50 million metric tons⁴ per year in 1975. Eastern Europe will rely on imports of Soviet natural gas for about 20 percent of total gas supply in 1975 when new gas pipeline networks are to be completed. But the East European countries still do not know where their oil and gas will come from after 1975, or at what cost. Their problems and possible courses of action in this regard are discussed in "Prospects for the Future", below.

¹ In this report, Eastern Europe includes Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Romania.

² Energy consumption by source is given for each country in Appendix Table 1.

³ Includes the U.S.S.R., Bulgaria, Cuba, Czechoslovakia, East Germany, Hungary, Mongolia, Poland, and Romania.

⁴ Metric tons are used throughout this report.

TABLE 1.—EASTERN EUROPE: PRIMARY SOURCES OF ENERGY, 1960, 1965, AND 1970¹
 [(In million tons of standard fuel)]²

	Coal ³	Oil	Natural gas	Hydroelectric power ⁴	Total
1960:					
Production.....	235.8	19.0	16.2	3.2	274.2
Net trade.....	-6.6	+4.5	+4	0	-1.7
Consumption.....	229.2	23.5	16.6	3.2	272.5
1965:					
Production.....	275.0	21.8	27.1	4.2	328.1
Net trade.....	-2.5	+21.0	+6	-0.6	+19.7
Consumption.....	272.5	42.8	27.7	4.8	347.8
1970:					
Production.....	305.7	23.4	46.8	4.5	380.4
Net trade.....	-7.2	+51.7	+3.1	+1.7	+49.3
Consumption.....	298.5	75.1	49.9	6.2	429.7

¹ See statistical handbooks cited in Selected Statistical Bibliography.

² 1 ton of standard fuel equals 7,000,000 kilocalories or 12,600,000 Btu's.

³ Includes trade in coke.

⁴ Includes imports of electric power from the U.S.S.R.

OIL SUPPLY AND DEMAND

Reserves and Production

Proved reserves of crude oil in the six countries of Eastern Europe are estimated at 200 million tons, approximately a 12-year supply, based on the 1973 level of output. This resource base, representing less than 0.5 percent of world oil reserves, is inadequate to cover demand for liquid fuels in the area. The potential for onshore discoveries in these countries does not appear promising, although exploratory efforts are continuing with emphasis on deep drilling. Geologists believe that some potential exists for offshore oil discoveries, especially in the Black Sea off Romania and Bulgaria and in the Baltic Sea coastal regions of Poland and East Germany. To date, however, only limited exploratory work has been conducted in these waters, with no tangible results. Based on the progress of offshore activity, significant increases in production are unlikely to result during the remainder of the 1970's. Estimated proved reserves and crude oil production in 1973 for each of the countries are shown below:

[(In million metric tons)]

Country	Proved reserves ¹	Crude oil production ²
Bulgaria.....	5	0.2
Czechoslovakia.....	2	.2
East Germany.....	1	(3)
Hungary.....	20	2.0
Poland.....	5	.3
Romania.....	165	14.3
Total.....	198	17.0

¹ Information on reserves derived from data in selected petroleum industry publications, including World Oil, Aug. 15, 1973; World Petroleum Report 1973; Petroleum Press Service (Petroleum Economist); Oil and Gas Journal, December 1973; Petroleum in Romania, American Petroleum Institute, August 1971.

² Production data obtained from statistical handbooks and monthly periodicals cited in "Selected Statistical Bibliography."

³ Negligible.

Crude oil production in Eastern Europe in 1973 amounted to 17 million tons, less than 0.5 percent of world oil output. During 1971-73, crude oil production in the area grew at an average annual rate of only

about 1.5 percent per year. (See table 2 for data on total oil supply and consumption.) Romania, which has the lion's share of oil reserves in Eastern Europe and is the major producer, accounted for about 84 percent of the area's crude oil output in 1973. Romania is the only net exporter of oil in Eastern Europe and is the only country where oil and gas provide the bulk of energy consumed. Even Romania, however, has had difficulty in increasing oil production. Despite intense exploratory efforts and attempts to increase secondary recovery, production has stabilized since the mid 1960's. During 1966-73, Romanian crude oil production rose at an average annual rate of only 1.6 percent; no change in this trend is forecast for the remainder of the 1970's. In the mid- to late-1960's, on the basis of several new discoveries, petroleum officials in Bulgaria, Poland, and Hungary forecast that oil production in 1975 would be significantly above the level anticipated for 1970. This optimism was unfounded. Output has declined during 1969-72 in Poland and since 1970 in Bulgaria, while Hungary has maintained production at a constant level of 2 million tons per year since 1970, and hopes to continue at this annual rate through 1980.

TABLE 2.—EASTERN EUROPE: OIL SUPPLY AND APPARENT CONSUMPTION, 1960, 1965-73, 1975 PLAN

[In millions of metric tons]

	Crude oil				Petroleum products			Apparent consumption ⁴
	Production	Imports	Exports	Total ² supply	Output ³	Imports	Exports	
1960.....	13.2	6.5	0.1	19.6	19.9	3.5	7.7	15.7
1965.....	15.1	18.9	.3	33.8	32.9	5.0	9.4	28.5
1966.....	15.5	21.8	.6	36.7	35.5	4.8	9.7	30.6
1967.....	16.0	23.5	.2	39.3	38.1	6.3	9.4	35.0
1968.....	16.2	28.7	.2	44.7	42.4	6.6	10.5	38.5
1969.....	16.0	35.0	.2	50.8	48.0	6.6	10.1	44.5
1970.....	16.3	39.5	.4	55.3	52.4	6.9	9.4	49.9
1971.....	16.6	45.6	.2	62.1	58.8	6.3	8.3	56.8
1972.....	16.9	54.5	.7	70.7	66.3	5.8	9.5	62.6
1973 ⁶	17.1	61.7	(⁶)	78.8	72.2	6.6	9.1	69.7
1975 plan.....	17.3	76.5	(⁶)	93.8	86.6	5.6	10.0	82.2

¹ See statistical sources cited in "Selected Statistical Bibliography."² Totals may not add due to rounding.³ Includes synthetic fuels obtained from processing coal in Czechoslovakia and East Germany.⁴ Includes storage and losses.⁵ Negligible.⁶ Preliminary estimate.

Foreign Trade

Because of the rapidly rising demand for oil during the past decade and the limits on indigenous production, Eastern Europe has had to rely on imports for an ever larger share of its oil supply. In 1970, for example, the area depended on imports for only about 10 percent of total energy consumed from primary sources (see table 1), but almost 70 percent of its oil supply was imported.⁵ The U.S.S.R. has been the major supplier of oil to Eastern Europe. During 1966-70 the Soviet Union provided these countries with about 138 million tons of crude oil, which accounted for more than 90 percent of their crude oil imports and about 60 percent of total crude oil supply.

⁵ Appendix table 2 shows for each country the changing share of imported crude oil and petroleum products in total consumption.

These Soviet exports represented about 9 percent of total crude oil production in the U.S.S.R. during the 5-year period. Plans for 1971-75 call for the Soviet Union to supply Eastern Europe with 243 million tons of crude oil, equivalent to about 11 percent of anticipated Soviet crude oil production during the period. If one excludes Romania, which is a net exporter of oil and does not receive oil from the U.S.S.R., the remaining five countries presently rely on Moscow for at least 80 percent of their total crude oil supply.

The Friendship crude oil pipeline has played a vital role in Soviet oil trade with Eastern Europe. This pipeline system, which began operating in 1962, extends more than 3,000 miles from the Urals-Volga oilfields in the U.S.S.R. to Poland, East Germany, Czechoslovakia, and Hungary. The section within the U.S.S.R. to Mozyr in Byelorussia is 40 inches in diameter and has a capacity of about 40 million tons per year. At Mozyr the line splits into two 24-inch branches, one going north to Poland and East Germany and the other to Czechoslovakia with a spur to Hungary. By the end of the 1960's this line was delivering about 20 million tons per year to the four countries. In addition, 10 million tons of Soviet crude oil were shipped in by tanker and 2-3 million tons of petroleum products were obtained by rail and by sea.

As East European oil demands continued to rise, CEMA decided in 1967 to build a second Friendship pipeline, paralleling the first for the most part. This second pipeline, which is in partial operation, now extends beyond the Urals to West Siberian oilfields and has a 48-inch diameter as far as Mozyr. There it branches in 28-inch diameter lines to the northern and southern sections of Eastern Europe. In the southern section Hungary will also be served by a separate branch extending from the Soviet-Hungarian border to a large refinery at Szazhalombatta, near Budapest. In 1975, when most of the pumping stations are to be installed, the entire Friendship pipeline system is to have the capacity to deliver 50 million tons per year to Eastern Europe.

During the past several years Soviet officials have indicated reluctance to continue increasing oil deliveries to Eastern Europe beyond the level planned for 1975. Instead they have suggested that East European nations seek supplemental oil supplies from the Middle East. Since 1968 most East European countries have signed barter agreements with one or more Middle East and North African oil producers (including Iran, Iraq, Libya, and Algeria) to obtain small amounts of crude oil in exchange for industrial goods and technical services. Such imports were expected to increase substantially in the next several years. To avoid payments problems, Eastern Europe is now scrambling to arrange further barter deals with Middle East and North African oil producers. Poland, Hungary, Bulgaria, and Czechoslovakia recently signed agreements to deliver equipment, complete plants, and technical services to Libya in exchange for Libyan crude oil.

Romania occupies a special position in the East European oil trade with the Middle East. It needs imported oil to refine into products that are then sold primarily to Western Europe to earn hard currency. Although Romanian crude oil production has leveled off in recent years, output is still more than adequate to meet domestic demand. But refining capacity has expanded beyond that required to process indigenous crude oil. As a result, Romania has been importing steadily

increasing amounts of crude oil—about 3.8 million tons in 1973—to process into products for the export market. These product exports are especially valuable now because world oil prices have quadrupled since mid-1973. To assure adequate deliveries of crude oil for the next several years, Romania concluded a barter deal with Libya in February 1974 to import 3 million tons per year through 1977 in exchange for a refinery to be built in Libya and for construction and agricultural services. This quantity of oil alone will provide half of the 6 million tons Romania plans to import in 1975.

The Pan Adria crude oil pipeline across Yugoslavia to Hungary and Czechoslovakia will reduce the cost of East European oil trade with the Middle East. After 8 years of discussions and negotiations, an agreement was concluded in February 1974 for construction of a 460-mile, 36-inch-diameter pipeline with a capacity of 34 million tons per year. If construction begins in 1974, as now planned, the first section of the line will be in operation in 1977 and will provide Hungary and Czechoslovakia annually with 5 million tons each. Another 24 million tons will be delivered to Yugoslav refineries in 1980. Crude oil supplies have not yet been contracted for, although Iran, Iraq, and Kuwait have been mentioned as potential suppliers.

Refining

At the end of 1973 the 6 countries in Eastern Europe had about 33 refineries on stream with a total crude charge capacity of some 80 million tons (1.6 million barrels per day), distributed as follows:

[Capacity in million tons per year]

Country	Number of refineries	Crude oil charge capacity
Bulgaria.....	3	10
Czechoslovakia.....	6	14
East Germany.....	15	16
Hungary.....	5	9
Poland.....	6	12
Romania.....	8	20
Total.....	33	81

¹ Excludes synthetic oil plants.

These plants range in size from a capacity of 100,000 tons per year (Ostrava, Czechoslovakia) to about 9 million tons per year (Plock, Poland).

To process Soviet crude oil made available via the Friendship pipeline, a major refinery construction program was undertaken in Eastern Europe in the early 1960's. At least one large refinery complex was built in each country to process the imported oil and to initiate production of petrochemicals. Along the northern section of the pipeline, new refineries were built at Plock in Poland and at Schwedt in East Germany. New plants also went on stream at Bratislava in Czechoslovakia and at Szazhalombatta in Hungary, on the southern pipeline route. All of these refineries were constructed with Soviet technical assistance, using Soviet processes and some Soviet equipment. As demand for oil products rose, these plants were expanded and modern-

ized to provide a larger share of domestic needs. Much of the new technology and equipment for installing secondary processing equipment—such as catalytic cracking, catalytic reforming, and hydrogen treating—has been acquired from the United States and from Western Europe.

In Bulgaria, a new refinery was completed in the mid-1960's near Burgas, on the Black Sea coast, to refine Soviet crude oil delivered by tanker. This plant was built with Soviet assistance and equipment, and subsequent expansion and modernization was carried out primarily with Soviet help, but also with some aid from West European firms.

Refining operations in Romania—a major oil producer and refiner for many years—have been among the best in Eastern Europe. In the early- to mid-1960's, the Romanians embarked on a refinery modernization program, employing U.S. technology and equipment to install catalytic reforming and catalytic cracking units at the Brazi refinery. Some of these units were added later to other refineries, having been adapted from the original installations at Brazi.

Apparent Consumption

Although East European countries no longer publish information on consumption of oil, "apparent consumption" can be derived from data on production and net trade. (See table 2, above, and appendix table 2.) As imports of crude oil rose and refineries expanded after the mid 1960's, Eastern Europe achieved a small net export of petroleum products, primarily to Western Europe (about 3.5 million tons in 1972). Nevertheless, East European countries have been importing products from the U.S.S.R. and exchanging products among themselves for years to satisfy rising and varying requirements. Apparent consumption of oil products rose from about 29 million tons in 1965 to 50 million tons in 1970, an average annual rate of increase of 12 percent. Available plan information indicates that oil consumption will reach some 82 million tons in 1975, a rate of growth of about 10 percent per year during 1971-75.⁶ In 1973 Eastern Europe relied on imports for about three-fourths of total consumption—about 70 million tons; this reliance on imports will increase slightly by 1975.

NATURAL GAS

Reserves and Production

Eastern Europe's position is better with respect to natural gas than to oil, as reserves of gas appear adequate and production has been rising steadily during the past decade. Total proved and probable reserves are estimated at 620 billion cubic meters, about a 13-year supply at the 1973 level of production. Romania has about two-fifths of the area's gas reserves and is the major producer, but new discoveries in East Germany, Hungary, and Poland have improved the overall production potential. Within the six countries of Eastern Europe, energy derived from production of natural gas in 1970 was

⁶ The total availability of petroleum products includes 600,000-700,000 tons of synthetic fuels obtained from coal in East Germany. This output was to have been phased out by 1975 but probably will be retained if prices of imported oil remain at present levels or continue to rise.

double that obtained from the output of indigenous crude oil (see table 1).⁷

Output of natural gas in Eastern Europe rose from about 21 billion cubic meters in 1965 to almost 48 billion in 1973 (see table 3). The average annual rate of increase in gas production during 1966-73 was almost 11 percent, more than seven times that for crude oil. During these years Romanian output increased at a rate of 7 percent per year and accounted for about 70 percent of total East European production of natural gas.⁸ Particularly large increases in gas production have occurred in East Germany since 1969, when a major discovery was made in the Magdeburg district close to the West German border. Output spurted from 370 million cubic meters in 1969 to 7 billion cubic meters in 1973. More than threefold increases in gas production have been recorded in Hungary and Poland since 1965, also resulting from new gas finds. Estimated reserves of natural gas and output in 1973 are as follows:

[In billion cubic meters]

Country	Reserves ¹	Production ²
Bulgaria	25	0.2
Czechoslovakia	15	.8
East Germany	100	7.0
Hungary	100	4.9
Poland	130	5.8
Romania	250	29.2
Total	620	47.9

¹ Information on reserves derived from data in selected petroleum industry publications, including World Oil, Aug. 15, 1973; World Petroleum Report 1973; Petroleum Press Service (Petroleum Economist); Oil and Gas Journal, December 1973; Petroleum in Romania, American Petroleum Institute, August 1971.

² Production data obtained from statistical handbooks and monthly periodicals cited in "Selected Statistical Bibliography."

TABLE 3.—EASTERN EUROPE: NATURAL GAS SUPPLY AND APPARENT CONSUMPTION, 1960, 1965-73, 1975 PLAN ¹

[In billion cubic meters]

Year	Production	Imports	Exports	Apparent consumption ²
1960	12.5	0.4	0.2	12.8
1965	20.8	.6	.2	21.2
1966	22.7	.9	.2	23.4
1967	25.7	1.6	.2	27.0
1968	28.5	1.8	.2	30.1
1969	32.8	2.1	.2	34.7
1970	36.0	2.6	.3	38.3
1971	39.5	3.4	.3	³ 42.5
1972	43.4	3.6	.2	³ 46.9
1973 ⁴	47.9	5.0	.2	52.7
1975 plan	53.5	13.7	.2	67.0

¹ Totals from statistical handbooks in "Selective Statistical Bibliography."

² Includes storage and losses.

³ Totals may not add due to rounding.

⁴ Preliminary estimate.

Trade and Consumption

Despite the substantial increase in indigenous output of natural gas since the mid-1960's, Eastern Europe's demand has exceeded supply. The U.S.S.R. made up the difference by delivering increasing volumes of gas—600 million cubic meters in 1965 but more than 5 billion in

⁷ The importance of natural gas in this energy calculation is exaggerated, as perhaps 20 percent of the gas is used as a feedstock for the manufacture of chemicals and not as a source of energy.

⁸ See appendix table 3 for data on the production, trade, and consumption of natural gas in the individual East European countries.

1973. The share of imports in total natural gas supply, 3 percent in 1965, amounted to almost 10 percent in 1973. Plans for 1971-75 call for Soviet deliveries of natural gas to Eastern Europe to total 33 billion cubic meters compared with only 9 billion during 1966-70. If these plans are fulfilled, imports will represent about 20 percent of total gas consumption in 1975 (see table 3).

The pipeline system for moving Soviet gas to Eastern Europe has been in a state of continuous expansion. In 1967 a 24-inch pipeline was completed from the Soviet gas field in the western Ukraine to a chemical plant at Pulawy, Poland, and extending to Warsaw where the gas is used mainly as an industrial fuel. Polish imports of Soviet natural gas rose from about 380 million cubic meters in 1965 to about 1.1 billion in 1967 and remained at about that level through 1970. As demand for gas rose by one-fourth between 1970 and 1973, Polish imports of gas increased by more than one-half to 1.7 billion cubic meters in 1973, even though production of indigenous gas grew appreciably.

In July 1968 the 28-inch diameter Brotherhood gas pipeline system was completed, connecting west Ukrainian fields with Czechoslovakia and Austria. Czechoslovak imports of Soviet gas through this line rose from 600 million cubic meters in 1968 to about 1.9 billion in 1972, accounting for about 70 percent of Czechoslovakia's total gas supply in 1972. In May 1969 the U.S.S.R. signed an agreement to export natural gas to East Germany. During 1969-71 Moscow also concluded agreements to deliver natural gas to several West European countries (West Germany, Italy, France) beginning in 1973.

With the pipe and equipment supplied to the U.S.S.R. by West European firms as part of the gas agreement, a 48-inch diameter pipeline has been built across part of Czechoslovakia. From this main line two 36-inch diameter sections split off, one to Austria and Italy and the other to East and West Germany. The northern section began delivering gas to East Germany in April 1973 and to West Germany in October 1973. Soviet deliveries to East Germany are to reach 4 billion cubic meters in 1975 and 3 billion to West Germany the same year. Concurrently, Czechoslovakia has been assured a larger supply of Soviet gas—about 3.5 billion cubic meters in 1975 and as much as 10 billion in 1980. Initially, the Soviet gas for East and West European consumers will come from Ukrainian and Central Asian deposits, but eventually from new fields in West Siberia. A 36-inch diameter pipeline is in the final stages of construction from the Shebelinka field in the Soviet Ukraine to Bulgaria, via Romania. This line is to supply Bulgarian industry near Sofia with 1 billion cubic meters in 1974 and 3 billion in 1975.

Soviet prices for natural gas delivered to Poland and Czechoslovakia during 1971-73 averaged almost 50 cents per 1,000 cubic feet (about \$17.50 per 1,000 cubic meters). These prices are far higher than the 22 cents per 1,000 cubic feet that the Soviet Union paid for Iranian and Afghan gas that it imported during those years. If Soviet practices follow those of Western Europe where the price of natural gas is aligned with the nearest competitive fuel rather than true production cost, prices charged for Soviet gas in the export market probably will rise in the near future. For example, the price of Dutch gas in the West European market, which is tied to the price

of oil, was 67 cents per 1,000 cubic feet in December 1973, equivalent to about \$4 per barrel of oil. As the average delivered price of oil in Rotterdam in February 1974 was about \$10 per barrel, the price of Dutch gas is likely to rise sharply. Prices charged to Eastern Europe by the U.S.S.R. are fixed through 1975, but those for 1976-80 are now being renegotiated bilaterally.

PROSPECTS FOR THE FUTURE

Eastern Europe faces serious problems in trying to assure energy supplies for the remainder of the 1970's. Planners are searching for answers to a number of interrelated questions:

Will the U.S.S.R. maintain or continue to increase deliveries of oil and gas after 1975, and how much will it charge for these fuels?

Will energy plans have to be revised to include greater use of indigenous coal resources, in part through coal liquefaction and gasification, and must further restrictions be imposed to conserve use of fuels and energy?

How much oil will have to be purchased from Arab producers for hard currency and how much obtained in barter deals? What effect would large purchases of fuel for hard currency have on balances-of-payments and industrial growth?

There is no question that Eastern Europe will have to acquire more of its oil supplies from non-Communist sources in the future. Unless the Soviet Union gets Western assistance to develop its oil and gas deposits in West Siberia, it will not have enough oil to meet simultaneously its own rising requirements, satisfy the needs of Eastern Europe, and expand exports to Western markets to earn hard currency. Although the U.S.S.R. probably will maintain deliveries of oil through the Friendship pipeline, the prospects for increased exports of Soviet oil to Eastern Europe during the second half of this decade are not promising. By 1980, Eastern Europe might have to get as much as 40 percent of its oil imports—perhaps 50 million tons—from the Middle East and North Africa.

The U.S.S.R. is now selling oil to Eastern Europe at about \$2.60 per barrel, about one-fourth of the world market price. According to present trade agreements this Soviet price is fixed through 1975, so that the bulk of East European oil supplies will be provided considerably below world market prices. Thus most of the East European countries will be relatively immune from large increases in their oil import bills through 1975. Although the Soviets would like to take advantage of higher prices and sell more oil to the West to earn badly needed hard currency, they are unlikely to renege on their commitment to deliver oil to Eastern Europe.

Eastern Europeans anticipate that Soviet oil and gas prices will rise significantly during the next plan period (1976-80). To pay the higher prices these countries will have to export more manufactured goods to the U.S.S.R. and/or invest heavily in developing Soviet fuels and raw materials. For example, a CEMA agreement concluded in February 1974 calls for joint development of natural gas deposits in the Orenburg region of the U.S.S.R. and construction of a pipeline to

Eastern Europe for increased gas deliveries. By 1980 imports of Soviet natural gas may account for about 30 percent of total East European gas supply.

Because of the international oil crisis, East European planners will reexamine energy goals and may cut back anticipated expansion of oil and gas use. However, Eastern Europe has embarked on a program of expanding automobile ownership, which will require more motor gasoline. Aware of the automobile explosion in Western Europe, East Europeans will not easily give up their desire for a family car. In addition, the drive toward dieselization of railroads in Eastern Europe will lead to increased consumption of diesel fuel. On the other hand, industrial uses of fuel oil, especially in the electric power, metallurgical, and building materials sectors, could be reduced by converting to coal without great difficulty or loss of efficiency. And, while hydrocarbon raw materials (oil and gas) are more efficient than other materials in the manufacture of some chemicals, reversion to use of coal can be accomplished readily.

Although conversion to greater use of coal would moderate balance-of-payments problems and ease fuel shortages, increased reliance on coal would have drawbacks. The quality of much of the coal that can be produced easily is diminishing, so that larger amounts are required to achieve a given calorific value. The increased bulk that must be transported adds to costs as does the disposal problem arising from the high ash content of the coal (up to 45 percent). In any event, transportation facilities in Eastern Europe would be squeezed by any pronounced switch to solid fuels.

In recent months conservation measures have been introduced by most East European countries to limit consumption of petroleum products—mainly by gasoline rationing and lower speed limits but also by reducing the use of fuel oil in industry and homes. Only Romania and Bulgaria, however, have launched serious conservation programs. Romania has raised prices of gasoline sharply, restricted lighting in offices and businesses, forced the lowering of room temperatures in industry and homes, and reduced industrial use of electric power and fuel oil. Together, these measures are designed to save 1.5 million tons of oil per year. Bulgaria's program is much the same. If these measures remain in effect, annual fuel savings would be equivalent to 10-15 percent of total oil consumption in Romania and Bulgaria in the mid-1970's. In the other countries present conservation efforts will result in only slight savings of oil.

A staggering import bill for oil faces the East European countries unless major barter arrangements can be made for the future. If as

much as 50 million tons of crude oil were purchased for hard currency from Arab countries in 1980 at present prices—about \$10 per barrel—the increased import bill for oil alone could reach more than \$2.5 billion. This would add some 15 percent to total estimated hard currency imports from the West in 1980. Any oil obtained in barter deals would, of course, reduce these hard currency expenditures. Barter imports of more than 15–20 million tons per year by 1980 are unlikely, however. Countries that could be major oil suppliers, such as Iraq and Libya, probably will want hard currency rather than East European goods and services. Therefore, even with barter or other special arrangements, some countries in Eastern Europe will find it difficult to avoid increasing balance of payments problems.

APPENDIX ¹

TABLE 1.—EASTERN EUROPE: CONSUMPTION OF ENERGY FROM PRIMARY SOURCES, 1960, 1965, AND 1970

[In million tons of standard fuel]¹

Country	Coal ²		Oil		Natural gas		Hydroelectric power ³		Total	
	Quantity	Percent	Quantity	Percent	Quantity	Percent	Quantity	Percent	Quantity	Percent
1960:										
Bulgaria.....	6.7	72.8	1.5	16.3	0	0	1.0	10.9	9.2	100
Czechoslovakia.....	46.3	87.7	3.5	6.6	1.7	3.2	1.3	2.5	52.8	100
East Germany.....	82.3	94.2	4.7	5.4	(⁴)	(⁴)	.4	.4	87.4	100
Hungary.....	14.9	80.5	2.9	15.7	.7	3.8	(⁴)	(⁴)	18.5	100
Poland.....	74.4	93.8	3.6	4.5	1.0	1.3	.3	.4	79.3	100
Romania.....	4.6	18.2	7.3	28.8	13.2	52.2	.2	.8	25.3	100
Total.....	229.2	84.1	23.5	8.6	16.6	6.1	3.2	1.2	272.5	100
1965:										
Bulgaria.....	10.5	61.7	5.4	31.8	.1	.6	1.0	5.9	17.0	100
Czechoslovakia.....	58.2	84.1	7.9	11.4	1.0	1.5	2.1	3.0	69.2	100
East Germany.....	91.7	91.2	8.3	8.2	.2	.2	.4	.4	100.6	100
Hungary.....	17.8	69.8	5.6	22.0	1.7	6.7	.4	1.5	25.5	100
Poland.....	87.7	90.1	6.9	7.1	2.2	2.3	.5	.5	97.3	100
Romania.....	6.6	17.3	8.7	22.8	22.5	58.9	.4	1.0	38.2	100
Total.....	272.5	78.3	42.8	12.3	27.7	8.0	4.8	1.4	347.8	100
1970:										
Bulgaria.....	12.9	48.2	12.3	45.9	.6	2.2	1.0	3.7	26.8	100
Czechoslovakia.....	62.3	77.4	13.6	16.9	2.7	3.3	1.9	2.4	80.5	100
East Germany.....	93.0	84.3	15.2	13.8	1.6	1.5	.5	.4	110.3	100
Hungary.....	16.1	52.3	8.8	28.5	4.8	15.6	1.1	3.6	30.8	100
Poland.....	102.3	83.2	11.9	9.7	7.9	6.4	.8	.7	122.9	100
Romania.....	11.9	20.4	13.3	22.8	32.3	55.3	.9	1.5	58.4	100
Total.....	298.5	69.5	75.1	17.5	49.9	11.6	6.2	1.4	429.7	100

¹ 1 ton of standard fuel equals 7,000,000 kilocalories or 12,600,000 Btu's.² Includes trade in coke.³ Includes imports of electric power from the U.S.S.R.⁴ Negligible.¹ For sources of statistics see appropriate sections of publications cited in "Selected Statistical Bibliography."

TABLE 2.—EASTERN EUROPE: SUPPLY AND APPARENT CONSUMPTION OF OIL BY COUNTRY

	Crude oil			Petroleum products ¹			Apparent consumption	
	Production	Imports	Exports	Total supply	Output	Imports		Exports
Bulgaria								
1960	200		80	132	100		(2)	1,000
1965	229	2,200	4	2,425	2,200	1,500	100	3,600
1966	404	2,604	25	2,983	2,700	1,600	300	4,000
1967	499	2,803	39	3,263	3,000	2,200	200	5,000
1968	475	3,310	237	3,548	3,300	2,700	100	5,900
1969	325	4,807	48	5,084	4,700	2,900	200	7,400
1970	334	5,696	108	5,922	5,400	2,900	200	8,100
1971	305	7,547	(3)	7,852	7,200	2,600	(2)	9,800
1972	248	8,279	(3)	8,527	7,800	2,400	(2)	10,200
1973 ⁴	195	9,652	(3)	9,847	9,000	2,400	(2)	11,400
1975 plan	200	13,000	(3)	13,200	12,000	2,000	(2)	14,000
Czechoslovakia:								
1960	137	2,355	0	2,492	2,600	(2)	200	2,400
1965	192	6,096	136	6,152	5,900	300	900	5,300
1966	190	6,512	125	6,577	6,200	400	1,100	5,500
1967	200	7,449	37	7,612	7,100	500	1,100	6,500
1968	205	7,810	0	8,015	7,400	600	1,100	6,900
1969	210	9,375	0	9,585	8,800	600	1,200	8,200
1970	203	9,789	47	9,954	9,200	600	700	9,100
1971	194	11,505	0	11,699	10,700	500	600	10,600
1972	191	12,571	0	12,762	11,700	400	400	11,600
1973 ⁴	190	14,300	0	14,490	13,300	500	600	13,200
1975 plan	200	17,000	0	17,200	15,800	500	500	15,800
East Germany:								
1960	(5)	1,941	-----	1,941	2,100	700	600	3,200
1965	(5)	5,132	-----	5,132	6,100	600	1,100	5,600
1966	(5)	6,440	-----	6,440	7,300	(2)	1,300	6,000
1967	(5)	6,640	-----	6,640	7,800	100	1,200	6,700
1968	(5)	8,039	-----	8,039	8,700	100	1,100	7,700
1969	(5)	9,272	-----	9,272	9,900	(2)	900	9,000
1970	(5)	10,334	-----	10,334	11,000	100	1,000	10,100
1971	(5)	10,919	-----	10,919	12,100	200	700	11,600
1972	(5)	14,858	-----	14,858	14,400	(3)	1,500	12,900
1973 ⁴	(5)	16,300	-----	16,300	15,500	(2)	1,200	14,300
1975 plan	(5)	18,000	-----	18,000	17,000	100	1,000	16,100
Hungary:								
1960	1,217	1,456	34	2,639	2,500	100	700	1,900
1965	1,803	2,251	121	3,933	3,800	400	500	3,700
1966	1,706	2,911	477	4,140	4,000	500	700	3,800
1967	1,686	2,956	169	4,473	4,300	600	700	4,200
1968	1,807	3,220	0	5,027	4,800	700	1,100	4,400
1969	1,754	3,764	113	5,405	5,100	700	1,000	4,800
1970	1,937	4,349	292	5,994	5,700	900	800	5,800
1971	1,955	4,892	188	6,659	6,300	700	300	6,700
1972	1,977	6,065	705	7,337	7,100	600	600	7,100
1973 ⁴	1,989	6,555	(5)	8,544	7,900	600	500	8,000
1975 plan	2,000	9,000	0	11,000	10,100	500	500	10,100
Poland:								
1960	194	714	-----	908	800	1,800	200	2,400
1965	339	3,216	-----	3,555	3,300	2,200	1,000	4,500
1966	400	3,347	-----	3,747	3,500	2,300	500	5,300
1967	450	3,609	-----	4,059	3,800	2,900	700	6,000
1968	475	5,582	-----	6,057	5,600	2,500	1,500	6,600
1969	438	6,510	-----	6,948	6,300	2,400	1,700	7,000
1970	424	7,011	-----	7,435	6,900	2,400	1,300	8,000
1971	395	7,894	-----	8,289	7,600	2,300	1,100	8,800
1972	347	9,703	-----	10,050	9,200	2,300	1,700	9,800
1973 ⁴	392	11,140	-----	11,532	10,000	3,100	1,300	11,800
1975 plan	400	13,500	-----	13,900	12,800	2,500	1,000	14,300
Romania:								
1960	11,500	0	-----	11,500	10,800	(2)	6,000	4,800
1965	12,571	0	-----	12,571	11,600	(2)	5,800	5,800
1966	12,825	0	-----	12,825	11,800	(2)	5,800	6,000
1967	13,206	0	-----	13,206	12,100	(2)	5,600	6,500
1968	13,285	750	-----	14,035	12,600	(2)	5,600	7,000
1969	13,246	1,300	-----	14,546	13,200	(2)	5,100	8,100
1970	13,377	2,291	-----	15,668	14,200	(2)	5,400	8,800
1971	13,793	2,858	-----	16,651	14,900	(2)	5,600	9,300
1972	14,128	3,000	-----	17,128	15,300	(2)	5,100	10,200
1973 ⁴	14,287	3,800	-----	18,087	16,500	(2)	5,500	11,000
1975 plan	14,500	6,000	-----	20,500	18,900	(2)	7,000	11,900

¹ Rounded to nearest hundred thousand tons.² Negligible.³ Not available.⁴ Preliminary estimate.⁵ Includes output of synthetic fuels from coal.⁶ Estimated to be less than 50,000 tons per year.

TABLE 3.—EASTERN EUROPE: SUPPLY AND APPARENT CONSUMPTION OF NATURAL GAS BY COUNTRY

[In million cubic meters]

	Production	Imports	Exports	Apparent consumption
Bulgaria:				
1960.....	0	0	0	0
1965.....	73	0	0	73
1966.....	109	0	0	109
1967.....	329	0	0	329
1968.....	506	0	0	506
1969.....	525	0	0	525
1970.....	474	0	0	474
1971.....	327	0	0	327
1972.....	220	0	0	220
1973 ¹	200	0	0	200
1975 plan.....	200	3,000	0	3,200
Czechoslovakia:				
1960.....	1,294	4	9	1,289
1965.....	752	0	14	738
1966.....	811	0	0	811
1967.....	1,016	265	0	1,281
1968.....	833	587	0	1,420
1969.....	885	889	0	1,774
1970.....	812	1,357	86	2,083
1971.....	772	1,660	123	2,309
1972.....	800	1,937	0	2,737
1973 ¹	800	2,363	0	3,163
1975 plan.....	800	3,500	0	4,300
East Germany:				
1960.....	26	0	0	26
1965.....	133	0	0	133
1966.....	100	0	0	100
1967.....	107	0	0	107
1968.....	143	0	0	143
1969.....	370	0	0	370
1970.....	1,233	0	0	1,233
1971.....	2,800	0	0	2,800
1972.....	5,000	0	0	5,000
1973 ¹	7,000	700	0	7,700
1975 plan.....	9,000	4,000	0	13,000
Hungary:				
1960.....	342	186	0	528
1965.....	1,108	200	0	1,308
1966.....	1,552	200	0	1,752
1967.....	2,045	200	0	2,245
1968.....	2,684	200	0	2,884
1969.....	3,235	200	0	3,435
1970.....	3,469	200	0	3,669
1971.....	3,705	207	0	3,912
1972.....	4,110	199	0	4,309
1973 ¹	4,850	200	0	5,050
1975 plan.....	5,200	1,200	0	6,400
Poland:				
1960.....	541	241	0	782
1965.....	1,312	379	0	1,691
1966.....	1,290	702	0	1,992
1967.....	1,463	1,109	0	2,572
1968.....	2,402	1,000	0	3,402
1969.....	3,672	994	0	4,666
1970.....	4,975	1,002	0	5,977
1971.....	5,164	1,488	0	6,652
1972.....	5,601	1,500	0	7,101
1973 ¹	5,800	1,710	0	7,510
1975 plan.....	6,300	2,000	0	8,300
Romania:				
1960.....	10,330	0	204	10,126
1965.....	17,452	0	200	17,252
1966.....	18,789	0	200	18,589
1967.....	20,694	0	200	20,494
1968.....	21,935	0	228	21,707
1969.....	24,087	0	200	23,887
1970.....	25,031	0	200	24,831
1971.....	26,719	0	200	26,519
1972.....	27,713	0	200	27,513
1973.....	29,238	0	200	29,038
1975 plan.....	32,000	0	200	31,800

¹ Preliminary estimate.

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POPULATION AND LABOR FORCE IN EASTERN EUROPE: 1950 TO 1996

By PAUL F. MYERS*

CONTENTS

	Page
I. Introduction.....	421
II. Population Changes Since 1950.....	423
III. Future Trends in the Population.....	428
Total Population.....	429
Age-Sex Structure.....	431
IV. Labor Force Changes Since 1956.....	434
V. Future Trends in the Labor Force.....	440
Total Labor Force.....	440
Sectoral Distribution.....	444
Policy Implications.....	449
Appendix tables.....	454
Appendix A. Methods and Assumptions Used in Preparing the Projections.....	470
Population.....	470
Labor Force.....	471
Total Labor Force.....	472
Agricultural Labor Force.....	473
Industrial Labor Force.....	475
Comparisons With Other Systematic Projections.....	476

I. INTRODUCTION

In recent years economists, planners, and demographers in Eastern Europe have devoted much attention to the future population and labor supply in their respective countries. Two main themes run through their writings. One concerns present and future manpower shortages and the consequent need to increase productivity, reduce the high rate of labor turnover, improve management, and rationalize the work process. The other concerns the current low levels of the birth and population growth rates and the consequent need to raise these levels so that the long-range growth of the population and labor force can be assured and aging of the population can be slowed. This

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paper presents projections of the population and labor force in each of six countries of Eastern Europe. The data provided should be useful in demonstrating the future size and composition of the population in these countries, especially the numbers of persons in the working ages; in answering such questions as how severe the manpower shortage is likely to be in Czechoslovakia and East Germany, how taut the supply is likely to be in Bulgaria and Hungary, or how much surplus manpower is likely in Poland and Romania; and in evaluating the various projections given in the economic plans and literature of the various countries.

In a paper included in the previous compendium on Eastern Europe issued by the Joint Economic Committee, the present author gave a comprehensive survey of demographic trends in the six countries and the region as a whole from 1938 to 1970, and presented population projections for each subsequent year to 1990.¹ The paper surveyed the effects of World War II and postwar migrations on the population of each country. It showed and commented on the general decline in mortality, the increase in urbanization, and the changing patterns of population distribution since the late 1930's, and discussed the increase in ethnic homogeneity resulting from the war and postwar migrations. The main thrust of the paper, however, was focused on the dramatic drop in fertility which occurred during the late 1950's and the factors associated with this drop. The effect of abortion on the level of fertility was examined, and the decline in numbers of births was analyzed in regard to age and parity of mothers and changes in the numbers of women of childbearing age and in their marital status. The analysis and conclusions contained in this earlier paper are still generally valid today.

The present paper consists first of a brief description of the trends in the population and vital rates in Eastern Europe since 1950. This is followed by the presentation of a series of population projections for each of the six countries. The focus then shifts to the labor force, or the economically active population. There is initially a discussion of trends in the total labor force and its sectoral distribution since 1956 followed by a discussion of the labor force projections and the policy implications of the results. Labor force projections by major branches are given for each of the six countries and for the six countries combined for each year of the period 1973-96. They are based on a necessarily simplistic view of the future. They do not take into account any sudden socioeconomic changes that may occur, especially changes in policies regarding investment, full employment, management and profitability, worktime, and regional development. Nor do they provide for any windfalls or crippling blows to the economies of the various countries; for instance an energy shortage may well emerge as a significant problem in the future. The projects do take account of the expected declines

¹ Paul F. Myers, "Demographic Trends in Eastern Europe," U.S. Congress, Joint Economic Committee, *Economic Developments in Countries of Eastern Europe*, Washington, D. C., 1970, pp. 68-148.

in labor force participation by youth, resulting from the broadening of opportunities for secondary and higher education, and by older people, as more and more of them become eligible for pensions and the pensions increase in value.

All of the basic data used in preparing the labor force projections are given and the methodology used is described in detail in appendix A; thus the reader may judge the validity of the assumptions or prepare alternative projections to better suit his needs or proclivities. It should also be noted that the 5-year groupings used for labor force data in the text tables are in accord with those covered by the 1971-76 plan period and preceding and succeeding 5-year periods. Thus, the discussion of future trends in both the population and the labor force is oriented to 5-year periods starting with 1971-76 and terminating with 1991-96. Source citations generally are not given in the tables or the text for those figures taken directly or derived from the various official publications of the governments concerned or from the publications of the United Nations.

II. POPULATION CHANGES SINCE 1950

The total population of the six countries of Eastern Europe under discussion here has been growing at a slightly slower rate than that of the rest of Europe, excluding the U.S.S.R. Between 1950 and 1972, the population of the region as a whole increased from 88.5 million to 104.2 million, or by 17.8 percent, while the population of Northern and Western Europe increased by 18.8 percent and that of Southern Europe by 19 percent (table 1). In addition, the rate of population growth in Eastern Europe has been declining since 1950. During the period 1950-55, the population increased at a rate slightly less than 1 percent per year, but the rate went down to 0.8 and then to 0.7 during the next two 5-year periods, and finally to 0.6 percent per year during the 1965-72 period.

Poland had the most rapid population growth (33 percent) during these 22 years followed by Romania (27 percent). With a far larger population than the other five countries, Poland accounted for 52 percent of the population increase in the entire region; Poland and Romania together accounted for 80 percent. In contrast, East Germany actually had 1.3 million fewer people in 1972 than in 1950—due primarily to the large numbers who left prior to the building of the Berlin wall in 1961. Even though migration has virtually stopped since that time, the population of East Germany increased by less than 1 percent during the 1962-72 period and actually declined during 3 of the 4 years in the 1969-72 period. The populations of the other three countries increased moderately, with rates ranging between 11 and 18 percent for the period.

TABLE 1.—POPULATION AND POPULATION CHANGE—REGIONS AND SELECTED COUNTRIES OF EUROPE: 1950-72

[Figures are in thousands and refer to midyear]

Year	Eastern Europe								Southern Europe ¹	Northern and Western Europe ²
	Total	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania			
1950	88,501	7,251	12,389	18,388	9,338	24,824	16,311	108,965	194,592	
1951	89,292	7,258	12,532	18,344	9,423	25,271	16,464	109,951	195,784	
1952	90,148	7,275	12,683	18,303	9,504	25,753	16,630	110,838	196,946	
1953	91,027	7,346	12,820	18,164	9,595	26,255	16,847	111,768	198,288	
1954	91,875	7,423	12,952	17,993	9,706	26,761	17,040	112,722	199,751	
1955	92,855	7,499	13,093	17,832	9,825	27,281	17,325	113,685	201,123	
1956	93,791	7,576	13,299	17,607	9,911	27,815	17,583	114,343	202,792	
1957	94,357	7,651	13,358	17,370	9,839	28,310	17,829	115,427	204,571	
1958	95,116	7,728	13,474	17,206	9,882	28,770	18,056	116,329	206,325	
1959	95,898	7,798	13,565	17,132	9,937	29,240	18,226	117,333	208,070	
1960	96,527	7,867	13,654	17,058	9,984	29,561	18,403	118,281	209,912	
1961	97,231	7,943	13,778	16,938	10,029	29,976	18,567	119,300	212,085	
1962	97,831	8,013	13,852	16,903	10,063	30,319	18,681	120,214	214,550	
1963	98,513	8,078	13,937	16,951	10,091	30,643	18,813	121,228	216,756	
1964	99,164	8,144	14,037	16,983	10,124	30,949	18,927	122,236	218,759	
1965	99,759	8,201	14,130	17,020	10,153	31,228	19,027	123,222	220,713	
1966	100,339	8,258	14,206	17,058	10,185	31,491	19,141	124,163	222,427	
1967	100,907	8,310	14,267	17,082	10,223	31,740	19,285	125,135	223,732	
1968	101,744	8,370	14,319	17,084	10,264	31,986	19,721	126,022	224,977	
1969	102,343	8,434	14,290	17,076	10,303	32,230	20,010	126,889	226,560	
1970	102,946	8,490	14,334	17,058	10,338	32,473	20,253	127,708	228,111	
1971	103,647	8,536	14,407	17,061	10,368	32,805	20,470	128,561	229,732	
1972	104,231	8,579	14,481	17,043	10,397	33,068	20,663	129,715	231,219	
Absolute change:										
1950-55	4,354	248	704	-556	487	2,457	1,014	4,720	6,531	
1955-60	3,672	368	561	-774	159	2,280	1,078	4,586	8,789	
1960-65	3,232	334	476	-38	169	1,667	624	4,941	10,801	
1965-70	3,187	289	204	38	185	1,245	1,226	4,486	7,398	
1970-72	1,285	89	147	-15	59	595	410	2,007	3,108	
1950-72	15,730	1,328	2,092	-1,345	1,059	8,244	4,352	20,750	36,627	
Percent change:										
1950-55	4.9	3.4	5.7	-3.0	5.2	9.9	6.2	4.3	3.4	
1955-60	4.0	4.9	4.3	-4.3	1.6	8.4	6.2	4.0	4.4	
1960-65	3.3	4.2	3.5	-2	1.7	5.6	3.4	4.2	5.1	
1965-70	3.2	3.5	1.4	.2	1.8	4.0	6.4	3.6	3.4	
1970-72	1.2	1.0	1.0	-1	.6	1.8	2.0	1.6	1.4	
1950-72	17.8	18.3	16.9	-7.3	11.3	33.2	26.7	19.0	18.8	

¹ Includes Albania, Greece, Italy, Malta, Portugal, Spain, and Yugoslavia. Excludes Andorra, Gibraltar, and San Marino.² Includes all countries west of the U.S.S.R. not included in Southern or Eastern Europe. Excludes the Channel Islands, the Faeroe Islands, Iceland, Isle of Man, Liechtenstein, Monaco, and Turkey.

Lower growth rates during the 1960's were primarily due to the significant declines in the birth rates which began during the 1950's and continued until the mid-1960's in most of the countries.² For the region as a whole, the birth rate dropped from 24.4 per 1,000 in 1950 to 15.5 in 1966, rose to 17.7 in 1967 and 1968, then declined to 15.4 in 1972 (table 2). The increase in 1967 was due to the sharp rise in the Romanian birth rate which resulted from governmental action restricting abortion and the importation and sale of contraceptives. The birth rate in Romania was 27.4 per 1,000 in 1967, almost double the level in the previous year. Since 1967 the rate has declined steadily, falling to 18.8 in 1972. Birth rates in all the countries except East Germany declined by a third or more between 1950 and the mid-1960's but the changes since then have been minor except in Romania. The rate in East Germany has continued to fall steadily and, based

² These declines have been attributed to such factors as social mobility, emancipation and increased employment of women, competition in the minds of married couples between the desire for consumer goods and that for children, advances in education, severe housing shortages, and the availability of contraceptives and abortion.

on data for the first 8 months of 1973, reached the extremely low level of 9.8 per 1,000 during that year.

Mortality also declined after 1950, but not as much as fertility. The death rate for the region decreased from 12 per 1,000 in 1950 to 9 in the mid-1960's, then rose slightly to 10 in 1972. The amount of decline was not the same for every country. Poland and Romania experienced the largest declines—36 and 31 percent, respectively—between 1950 and 1965. On the other hand, in Hungary the 1965 rate was only a little below the 1950 rate and in East Germany the 1965 rate was actually higher than that in 1950. In all countries, the rates in 1972 were higher than they were 7 years before. Although there have been some increases in age-specific mortality rates, especially among middle-aged and older males, most of the rise in the death rates is due to the larger numbers of persons in the older ages where mortality is highest. The same phenomenon has occurred in the rest of Europe where the death rates have remained relatively constant at the same time that mortality for most age groups has continued to improve.

TABLE 2.—VITAL RATES—REGIONS AND SELECTED COUNTRIES OF EUROPE: 1950-72

(Rates per 1,000 population)

Year	Eastern Europe						Southern Europe ¹	Northern and Western Europe ¹	
	Total	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland			Romania
Birth:									
1950	24.4	25.2	23.3	16.5	20.9	30.7	26.2	21.8	17.9
1955	23.2	20.1	20.3	16.4	21.4	29.1	25.6	20.7	16.9
1960	18.8	17.8	15.9	17.2	14.7	22.6	19.1	20.6	17.7
1965	16.0	15.3	16.4	16.5	13.1	17.5	14.6	20.2	17.9
1966	15.5	14.9	15.7	15.7	13.6	16.8	14.3	20.0	17.7
1967	17.7	15.0	15.1	14.8	14.6	16.4	27.4	19.4	17.1
1968	17.7	16.9	14.9	14.3	15.1	16.4	26.7	19.1	16.7
1969	17.2	17.0	15.6	14.0	15.0	16.5	23.3	18.9	16.2
1970	16.8	16.3	15.9	13.9	14.7	16.8	21.1	18.2	15.5
1971	16.6	16.0	16.5	13.8	14.5	17.2	19.5	18.3	15.4
1972	15.4	15.4	17.3	11.7	14.7	17.4	18.8	17.9	14.4
Death:									
1950	11.7	10.2	11.5	11.9	11.4	11.6	12.4	10.5	11.3
1955	10.1	9.0	9.6	12.0	10.0	9.6	9.7	9.6	11.2
1960	9.4	8.1	9.2	13.7	10.2	7.6	8.7	9.4	11.2
1965	9.4	8.1	10.0	13.5	10.7	7.4	8.6	9.3	11.1
1966	9.2	8.3	10.0	13.2	10.0	7.4	8.2	9.0	11.1
1967	9.7	9.0	10.1	13.3	10.7	7.8	9.3	9.2	10.9
1968	10.0	8.6	10.7	14.2	11.2	7.6	9.6	9.4	11.4
1969	10.4	9.5	11.3	14.3	11.4	8.2	10.1	9.6	11.6
1970	10.3	9.1	11.5	14.1	11.7	8.2	9.5	9.2	11.2
1971	10.4	9.0	11.5	13.8	11.9	8.7	9.5	9.3	11.2
1972	10.1	9.8	11.1	13.8	11.4	8.0	9.2	9.1	11.2
Natural increase:									
1950	12.7	15.0	11.8	4.6	9.5	19.1	13.8	11.3	6.6
1955	13.1	11.1	10.7	4.4	11.4	19.5	15.9	11.1	5.7
1960	9.4	9.7	6.7	3.5	4.5	15.0	10.4	11.2	6.5
1965	6.6	7.2	6.4	3.0	2.4	10.1	6.0	10.9	6.8
1966	6.3	6.6	5.7	2.5	3.6	9.4	6.1	11.0	6.6
1967	8.0	6.0	5.0	1.5	3.9	8.6	18.1	10.2	6.2
1968	7.7	8.3	4.2	.2	3.9	8.8	17.1	9.7	5.3
1969	6.8	7.5	4.3	-.3	3.6	8.3	13.2	9.3	4.6
1970	6.5	7.2	4.4	-.2	3.0	8.6	11.6	9.0	4.3
1971	6.2	7.0	5.0	0	2.6	8.5	10.0	9.0	4.2
1972	5.3	5.6	6.2	-2.1	3.3	9.4	9.6	8.8	3.2

¹ For the countries included, see table 1.

Natural increase rates for the region reflect the trends of both the birth and the death rates (figure 1). For Eastern Europe as a whole, the rate of natural increase dropped from 12.7 per 1,000 in 1950 to 6.3 in 1966, rose to 8.0 in 1967, and then declined to 5.3 in 1972. Rates for all of the countries decreased by more than 35 percent between 1950 and 1965; those for Bulgaria, Hungary, and Romania dropped by more than 50 percent. Except for Romania, the rates in 1972 were either about the same as or lower than in the mid-1960's, and even in Romania the rate has declined substantially since the sharp rise in 1967. Nonetheless, the 1972 rate for Romania of 9.6 per 1,000 was still the highest for any of the six countries. In contrast, the balance of births and deaths in East Germany actually resulted in a slight natural decrease during 1969 and 1970, and a more severe decrease during 1972. Estimated numbers of births and deaths during 1973, based on data for the first 8 months of the year, indicate 64,000 more deaths than births, and a natural decrease rate of 3.8 per 1,000. This is a unique demographic phenomenon among the major political entities of the world.

RATE PER 1,000
POPULATION

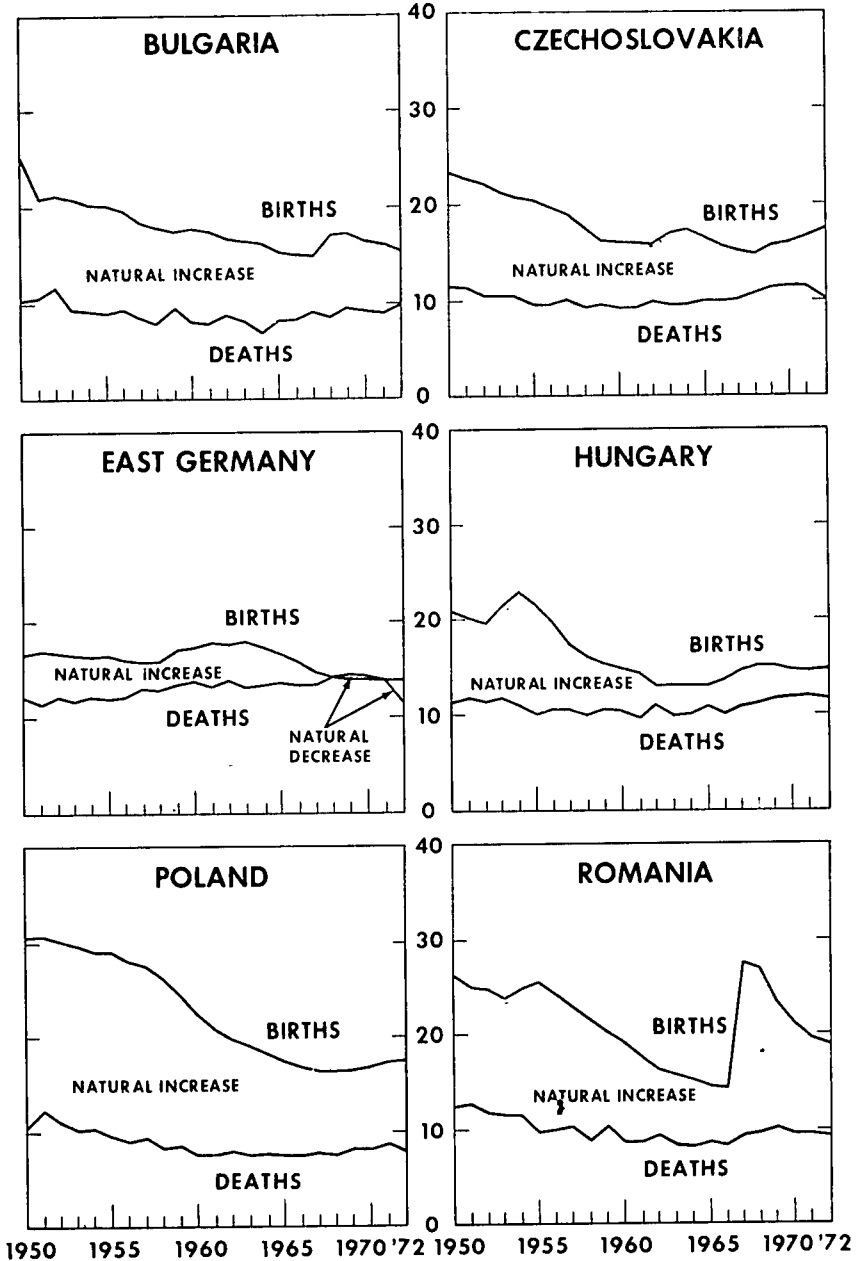


Figure 1-- Vital rates — Six Eastern European Countries:
1950–1972

Since 1950, all of the countries have experienced at least one period of significant net emigration, but migration was the crucial factor in population change only for East Germany. Net emigration from that country between 1950 and 1972 amounted to about 2.5 million persons, or more than 13 percent of the 1950 population. Practically all of this emigration occurred before the erection of the Berlin Wall in August 1961. Emigration was significant for Bulgaria in 1950-51 when part of the Turkish minority was expelled; for Czechoslovakia in 1968-69 as a result of the Soviet intervention during August 1968; for Hungary in 1956-57 as an aftermath of the revolt in late 1956; and for Poland and Romania during much of the period, but especially in 1957-58 for Poland and 1950-51 for Romania.

As a result of the different rates of growth experienced by the six countries in the 1950-72 period, their percentage shares of the total population of the region has changed. Poland's share increased from 28 to 32 percent and Romania's increased from 18 to 20 percent. Czechoslovakia's proportion (14 percent), Hungary's (10 percent), and Bulgaria's (8 percent) have remained about the same but East Germany's share fell from 21 to 16 percent. Romania exchanged places with East Germany in 1957 as the second most populous country of the region.

III. FUTURE TRENDS IN THE POPULATION

The population projections presented here were prepared by the cohort-component method. This method involves carrying forward recently reported or estimated distributions of the population, by age and sex, to future years on the basis of various assumptions concerning fertility, mortality, and migration.

Migration to and from Bulgaria, Hungary, and Romania has been negligible over the past few years but there has been a small but persistent net emigration from Czechoslovakia and East Germany. However, since the extent of migration into and out of these five countries cannot be foreseen, migration was assumed to be negligible for each of them during the projection period.³ For Poland, however, it was assumed that emigration would amount to 50,000 persons for each of the 4 years, 1974-77. This assumption was based on reports that Poland and the Federal Republic of Germany have concluded arrangements for the resettlement of those Germans still remaining in Poland. It has been agreed that 50,000 would leave during 1974 and that the others would leave within 5 years. The total numbers involved is conjectural. Bonn's figure of 250,000-280,000 potential emigrants (the West German Red Cross is reported to be holding applications from 183,000) is regarded as highly exaggerated by the Poles, who speak of the numbers involved as several scores of thousands.⁴ What the actual numbers will turn out to be is unknown, of

³ There may, of course, be significant emigration from these countries in the future. For example, there may be some upswing of emigration of ethnic Germans from Czechoslovakia as a result of the December 1973 bilateral normalization treaty between Czechoslovakia and the Federal Republic of Germany. One of the first steps in this normalization is to be the resettlement of ethnic Germans living in Czechoslovakia; applications are expected to total between 16,000 and 25,000. Although the assumption of negligible migration may not be valid, the effect of future emigration on the populations of these countries is likely to be minor.

⁴ Radio Free Europe Research, "Survey of East European Developments October-December 1973," January 18, 1974, p. 43. The number of resettlers rose from a trickle to about 25,000 in 1971 after the December 1970 treaty between the two countries recognizing the present frontier. The number declined to 13,000 in 1972, and to 7,000 in the first 10 months of 1973.

course, but the assumption made here regarding this migration bridges the two positions.⁵

Only one assumption was made concerning the future course of mortality, namely that it will decrease at a modest rate. The four series of projections prepared for each country therefore differ only as a result of varying assumptions about future fertility in that country. Series A projections assume an increase in the level of fertility; series B projections assume constant fertility at the current level; and series C and D projections assume declining fertility. Details concerning the starting dates for the projections and the specific fertility and mortality assumptions used are given in appendix A.

Total Population

As compared with an estimated total of slightly less than 104 million in 1971, the population of Eastern Europe is expected to number between 111 and 128 million by 1996 (table 3). The size of the future population will be determined primarily by the trend in fertility. If fertility remains at current levels, as assumed by projection series B, the total population of the six countries is expected to increase to 110 million by 1981 and to 118 million by 1996. If fertility declines in accordance with the series D assumptions, the projections show a population of 108 million by 1981 and 111 million by 1996. On the other hand, projection series A assumes a rise in fertility and postulates a population as large as 128 million by 1996. In terms of proportionate change, series A yields a 23-percent increase during the 25-year projection period, and series B, C, and D yield 14, 10, and 7 percent increases, respectively.

Among the individual countries, the largest relative increase in total population is expected to be in Romania, for which projection series B shows the population increasing by 24 percent over the projection period. Poland's population is shown as increasing by 23 percent, Czechoslovakia's by 16 percent, and Bulgaria's by 12 percent. The smallest increase is expected in Hungary (3 percent), and the East German population will decline by 7 percent if fertility remains at the 1973 level. If fertility drops as postulated for series D, the populations of East Germany and Hungary can be expected to decline and those of Bulgaria and Czechoslovakia to increase by 7-8 percent. Despite the declining levels of fertility on which it is based, series D yields an increase of 13 percent in Romania's population and 15 percent in Poland's.

⁵ It was further assumed that the age-sex distribution of the 200,000 emigrants will be the same as for the 30,000 emigrants from Poland in 1971. The latter distribution shows a sex ratio of 85 males per 100 females and the largest numbers of both sexes in the age groups 5 to 20 and 30 to 44.

TABLE 3.—PROJECTED TOTAL POPULATION—6 EASTERN EUROPEAN COUNTRIES: 1971-96

[Figures are in thousands and refer to midyear. See text for an explanation of the series]

Country and series	1971	1976	1981	1986	1991	1996	Percent change					1971-96
							1971-76	1976-81	1981-86	1986-91	1991-96	
Eastern Europe:												
A	103,647	107,416	112,423	117,615	122,532	127,703	3.6	4.7	4.6	4.2	4.2	23.2
B		106,744	110,085	113,068	115,747	118,447	3.0	3.1	2.7	2.4	2.3	14.3
C		106,440	109,052	111,099	112,806	114,467	2.7	2.5	1.9	1.5	1.5	10.4
D		106,098	108,059	109,363	110,320	111,156	2.4	1.8	1.2	.9	.8	7.2
Bulgaria:												
A	8,536	8,907	9,311	9,700	10,062	10,466	4.3	4.5	4.2	3.7	4.0	22.6
B		8,825	9,072	9,270	9,433	9,599	3.4	2.8	2.2	1.8	1.8	12.5
C		8,789	8,983	9,113	9,211	9,296	3.0	2.2	1.4	1.1	.9	8.9
D		8,758	8,919	9,016	9,081	9,124	2.6	1.8	1.1	.7	.5	6.9
Czechoslovakia:												
A	14,407	14,979	15,702	16,418	17,115	17,932	4.0	4.8	4.6	4.2	4.8	24.5
B		14,903	15,399	15,810	16,194	16,648	3.4	3.3	2.7	2.4	2.8	15.6
C		14,865	15,264	15,552	15,808	16,125	3.2	2.7	1.9	1.6	2.0	11.9
D		14,828	15,129	15,294	15,424	15,602	2.9	2.0	1.1	.8	1.2	8.3
East Germany:												
A	17,061	16,882	16,854	16,990	17,157	17,279	-1.0	-.2	.8	1.0	.7	1.3
B		16,792	16,510	16,296	16,113	15,889	-1.6	-1.7	-1.3	-1.1	-1.4	-6.9
C		16,769	16,425	16,124	15,848	15,543	-1.7	-2.1	-1.8	-1.7	-1.9	-8.9
D		16,749	16,360	16,014	15,693	15,345	-1.8	-2.3	-2.1	-2.0	-2.2	-10.1
Hungary:												
A	10,368	10,606	10,898	11,129	11,311	11,548	2.3	2.8	2.1	1.6	2.1	11.4
B		10,511	10,633	10,663	10,649	10,650	1.4	1.2	.3	-.1	0	2.7
C		10,472	10,530	10,492	10,412	10,341	1.0	.6	-.4	-.8	-.7	-3.0
D		10,438	10,458	10,386	10,274	10,162	.7	.2	-.7	-1.1	-1.1	-2.0
Poland:												
A	32,805	34,417	36,730	39,201	41,353	43,377	4.9	6.7	6.7	5.5	4.9	32.2
B		34,244	36,003	37,694	39,080	40,320	4.4	5.1	4.7	3.7	3.2	22.9
C		34,160	35,677	37,057	38,134	39,063	4.1	4.4	3.9	2.9	2.4	19.1
D		34,076	35,354	36,419	37,190	37,810	3.9	3.8	3.0	2.1	1.7	15.3
Romania:												
A	20,470	21,625	22,928	24,177	25,534	27,101	5.6	6.0	5.4	5.6	6.1	32.4
B		21,469	22,468	23,335	24,278	25,341	4.9	4.7	3.9	4.0	4.4	23.8
C		21,385	22,173	22,761	23,393	24,099	4.5	3.7	2.7	2.8	3.0	17.7
D		21,249	21,839	22,234	22,658	23,113	3.8	2.8	1.8	1.9	2.0	12.9

For the region as a whole, the rate of population growth during each 5-year period from 1971 to 1996 is expected to be relatively constant for the first two periods and to decline during the next three. For example, in the series B projection, the growth rate of about 3 percent during the first two periods declines to 2.7 during the next period and then to 2.4 and to 2.3 percent during the last two periods. This composite growth configuration also generally depicts the patterns of change projected for each country except East Germany. For the latter country, the population is projected to decline during each 5-year period with the highest rates of decline during the period until 1981. These varying rates of population change, under the assumption of constant fertility levels, result from anticipated changes in the age-sex composition of the population, the most important of which are the numbers of women in the prime reproductive ages of 20 to 29.

As a result of expected changes in population size, the proportionate distribution of population within the region will shift by 1996. According to series B, Poland and Romania will grow much faster than the other four countries and each will make up a larger share of the total population. Conversely, each of the other four countries will make up a smaller share. Poland's population constituted 31.7 percent of the total for the region in 1971, and by 1996 it can be expected to comprise about 34 percent. Because of the preponderance of the Polish population in Eastern Europe, the demographic characteristics of the region as a whole are heavily weighted by those of Poland.

Age-Sex Structure

The broad changes in the age-sex structure of the population in each of the six countries can be foreseen fairly clearly for that portion consisting of persons already alive at the start of the projection (approximately those aged 25 and older as of 1996). The greater predictability of the older part of the population is due to the fact that its size and structure are dependent solely on the future trend of mortality, assuming that the influence of migration is negligible (except for Poland), and this trend can be ascertained with some confidence for a relatively short period. The size and structure of the younger population, however, depend very largely on future trends in fertility, which are much less predictable than mortality trends. In order to simplify the discussion that follows, the age-sex structure of the future population as calculated from the series B projections have been used. This choice was made for convenience and not because the assumption of constant fertility at the current level is considered to be more probable than other assumptions for any or all of the countries.

War and the changing patterns of births and deaths are dramatically reflected in the age-sex pyramids for the six countries (figure 2). The most significant distortions in these structures have resulted from reductions in the numbers of births. Indentations in the 1971 pyramids which center around ages 52-55 and ages 25-28 stem from depressed birth rates during World Wars I and II. East Germany's population structure also reflects the very substantial military losses from the two wars—the male side of the pyramid for 1971, beginning at about age 44, is markedly shorter than the female side. The extremely severe war losses suffered by Poland in World War II are not readily discernible because the great bulk of the losses were suffered by

civilians of both sexes and of all ages, both Polish and Jewish. The pyramid for Poland does reflect however, the greatly increased and high birth rates during postwar years to the mid-1950's as well as the drop in the rate since then.

Figure 2-- Population, by age and sex-- six Eastern European Countries: 1971 and 1996

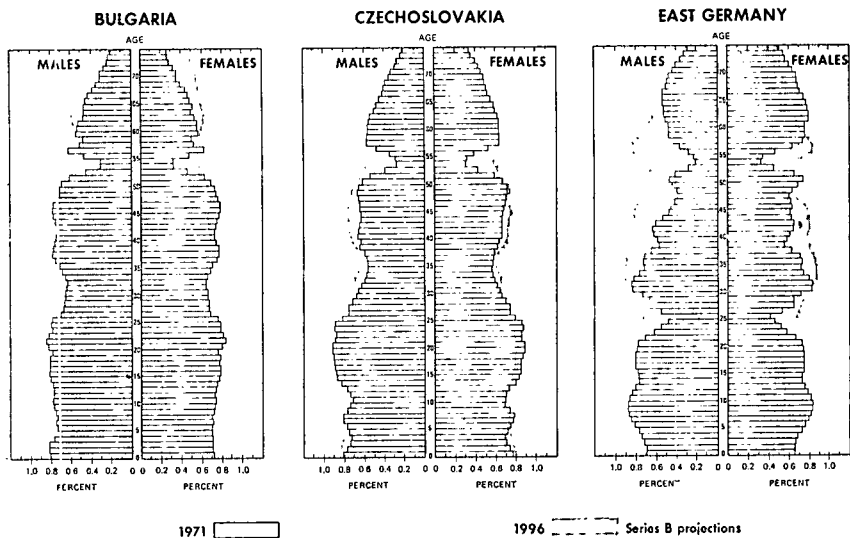
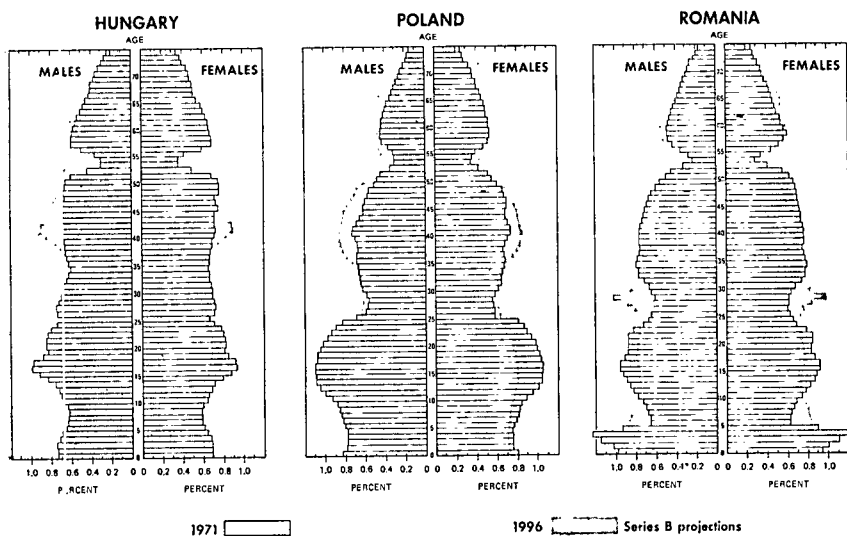


Figure 2-- Population, by age and sex-- six Eastern European Countries: 1971 and 1996



The pattern of indentations and bulges usually follows through from one generation to the next as small or large birth cohorts reach the prime reproductive ages. Such a cyclical pattern may continue to affect the age structure over long time spans, finally being dampened by the interaction of changing fertility with fluctuations in the size of the cohorts. This "ripple" effect and its dampening may be seen readily in the two pyramids for Bulgaria. In the 1971 pyramid, the bulge in the size of the cohorts around age 22 reflects the bulge around age 46 a generation earlier. In the 1996 pyramid, the recurrent pattern of indentations and bulges is not nearly so apparent.

Special note must be made of the 1996 pyramid for Romania which has a tremendous bulge in the cohorts below age 30. This pattern shows dramatically the effect of the increase in the birth rate in 1967 and its subsequent decline, as well as the effect of the assumption of constant fertility at the 1972 level. Should the fertility assumption on which the projection is based hold true, one can see that the age structure of the Romanian population will be changed drastically. And even if the assumption does not hold true over the long run, the very large cohorts already born will affect the society for years to come through increased demands for school facilities, housing, and jobs, and the ripple effect will cause further reverberations in the next generation as well. The opposite situation obtains in East Germany whose population structure at the end of the century would rest on a very small proportion in the younger ages—should the present level of fertility continue.

Selected age-sex characteristics for various postwar years, 1971, 1981, and 1996 are presented in table 4. The percent distributions by broad age groups indicate the differences that exist among the various countries and some of the changes to be expected during the years until 1996. In general, the directions of change are the same for all six countries—the proportions in the 0–14 and 15–39 age groups will decline and the proportions in the two older age groups will increase. As a result of these shifts, the proportion that the 15–39 age group is of the working age group (15–64 years) will be lower for each country at the end of the projection period and thus the labor force will be older. The same is true for the total population, as indicated by the large increases in the median age.

TABLE 4.—SELECTED AGE-SEX CHARACTERISTICS OF THE POPULATION—6 EASTERN EUROPEAN COUNTRIES; VARIOUS YEARS: 1946-96

[Percentages may not add to totals due to rounding. Figures for 1981 and 1996 are based on projection series B]

Country and year	Percent distribution by age group					Median age (in years)	Males per 100 females
	All ages	0 to 14	15 to 39	40 to 64	65 and over		
Bulgaria:							
1946.....	100	27.9	42.3	24.0	5.8	26.3	100.1
1956.....	100	26.6	39.5	26.7	7.2	29.3	99.6
1971.....	100	22.6	37.1	30.4	9.9	33.4	100.0
1981.....	100	22.0	35.4	30.7	11.9	34.4	99.7
1996.....	100	20.5	33.7	31.1	14.7	36.8	99.3
Czechoslovakia:							
1950.....	100	25.4	36.8	29.9	7.8	30.6	94.6
1961.....	100	27.3	35.2	28.8	8.8	31.5	95.2
1971.....	100	23.0	36.8	28.8	11.5	31.8	95.0
1981.....	100	24.3	37.5	26.3	12.0	32.0	95.0
1996.....	100	23.2	35.3	29.7	11.8	33.4	95.4
East Germany:							
1950.....	100	22.8	31.0	35.6	10.6	37.3	79.8
1964.....	100	23.8	32.0	29.7	14.5	35.0	83.7
1971.....	100	23.2	34.2	26.9	15.7	34.4	85.6
1981.....	100	17.9	36.8	29.2	16.1	36.5	87.9
1996.....	100	16.2	35.4	34.0	14.5	39.0	92.6
Hungary:							
1949.....	100	24.9	38.8	28.8	7.5	29.9	92.5
1960.....	100	25.4	36.8	28.9	8.9	32.0	93.2
1971.....	100	20.3	37.4	30.6	11.7	34.2	94.0
1981.....	100	20.9	36.1	29.9	13.0	34.8	94.4
1996.....	100	18.6	33.4	33.7	14.3	38.7	95.3
Poland:							
1950.....	100	29.7	39.2	25.6	5.4	26.2	88.4
1960.....	100	33.8	35.8	24.4	5.9	26.9	93.7
1971.....	100	26.2	39.1	26.2	8.6	28.4	94.5
1981.....	100	24.4	39.5	26.3	9.8	29.8	95.2
1996.....	100	23.2	36.1	29.3	11.4	34.1	96.2
Romania:							
1956.....	100	27.5	39.9	26.3	6.4	27.4	94.6
1965.....	100	26.3	39.5	26.3	7.9	30.2	95.9
1971.....	100	25.6	38.0	27.6	8.8	31.1	96.6
1981.....	100	27.0	34.2	28.7	10.1	31.0	97.4
1996.....	100	24.5	35.4	28.4	11.7	31.7	98.5

The number of males per 100 females will probably be larger in 1996 in all countries except Bulgaria, whose sex ratio historically has been high relative to sex ratios in other European countries. The increase will be especially large in East Germany which, as a result of heavy military losses during World War II, had the extremely low sex ratio of 85.6 males per 100 females in 1971. By 1996, however, this ratio is expected to be almost as high as those for Czechoslovakia, Hungary, and Poland, but still significantly lower than those for Bulgaria and Romania.

IV. LABOR FORCE CHANGES SINCE 1956

The term "labor force" is used here interchangeably with the term "economically active population." The latter varies in concept and usage from country to country and even from census to census within a country. As defined in the various population censuses, the term refers to those persons engaged in socially useful work. As a rule, it includes the armed and security forces and those civilians employed in all sectors of the economy, homeworkers, apprentices, helping family members, self-employed, employed prisoners, persons engaged in personal services, and persons temporarily unemployed. Exceptions are common, however, and these are indicated in the general note applicable to each of the six countries given in table I. In all cases,

persons with several jobs are counted only once, usually in those activities from which they derive the greatest part of their income.

The category "helping family members" accounts, particularly in agriculture, for the major share of conceptual differences in reporting on the economically active population among the six countries. Unfortunately, the information available on the coverage of this category is too scanty to permit intercensal or international adjustments. Generally all countries report as helping family members in agriculture those who live in the same household as the head of the family, who regularly help with at least the major field work, and who are unpaid. This broad coverage is explicitly restricted in some countries by placing age limits on the category of helpers (as well as on persons in other employment categories), thus excluding from the count those active participants who are either above or below the working ages.

The general survey of labor force trends presented here is limited to the 15 years prior to the beginning of the present 1971-76 plan period.⁶ This discussion, essentially centering around table 5, is intended primarily as background for the discussion of the labor force projections in the next section, and to enable the reader to better judge the assumptions made in their preparation.

⁶ Labor force data are also given for 1950 and for each year of the 1955-96 period in table I. The availability of data required that estimates and projections of the labor force be on a midyear basis.

TABLE 5.—ESTIMATES OF THE LABOR FORCE, BY MAJOR BRANCHES—6 EASTERN EUROPEAN COUNTRIES: 1956-71

[Figures refer to midyear. Absolute figures are in thousands]

Country and major branch	Number				Absolute change				Percent change			
	1956	1961	1966	1971	1956-61	1961-66	1966-71	1956-71	1956-61	1961-66	1966-71	1956-71
Eastern Europe:												
Total labor force.....	47,314	48,383	50,341	52,607	1,069	1,958	2,266	5,293	2.3	4.0	4.5	11.2
Agriculture.....	21,869	20,196	18,388	16,592	-1,673	-1,808	-1,796	-5,277	-7.7	-9.0	-9.8	-24.1
Nonagricultural branches.....	25,445	28,187	31,953	36,015	2,742	3,766	4,062	10,570	10.8	13.4	12.7	41.5
Industry.....	11,822	13,213	14,984	16,875	1,391	1,771	1,891	5,033	11.8	13.4	12.6	42.7
Other.....	13,623	14,974	16,969	19,140	1,351	1,995	2,171	5,517	9.9	13.3	12.8	40.5
Bulgaria:												
Total labor force.....	4,147	4,341	4,368	4,543	194	27	175	396	4.7	.6	4.0	9.5
Agriculture.....	2,693	2,349	1,876	1,579	-344	-473	-297	-1,114	-12.8	-20.1	-15.8	-41.4
Nonagricultural branches.....	1,454	1,992	2,492	2,964	538	500	472	1,510	37.0	25.1	18.9	103.9
Industry.....	613	946	1,221	1,062	333	275	141	749	54.3	29.1	11.5	122.2
Other.....	841	1,046	1,271	1,602	205	225	331	761	24.4	21.5	26.0	90.5
Czechoslovakia:												
Total labor force.....	6,357	6,503	6,890	7,337	146	387	447	980	2.3	6.0	6.5	15.4
Agriculture.....	2,094	1,598	1,468	1,382	-496	-130	-86	-712	-23.7	-8.1	-5.9	-34.0
Nonagricultural branches.....	4,263	4,905	5,422	5,955	642	517	533	1,692	15.1	10.5	9.8	39.7
Industry.....	2,126	2,446	2,665	2,801	320	219	136	675	15.1	9.0	5.1	31.7
Other.....	2,137	2,459	2,757	3,154	322	298	397	1,017	15.1	12.1	14.4	47.6

East Germany:												
Total labor force.....	8,691	8,452	8,406	8,462	-239	-46	56	-229	-2.7	-.5	.7	-2.6
Agriculture.....	1,936	1,532	1,349	1,041	-404	-183	-308	-895	-20.9	-11.9	-22.8	-46.2
Nonagricultural branches.....	6,755	6,920	7,057	7,421	165	137	364	666	2.4	2.0	5.2	9.9
Industry.....	3,417	3,437	3,447	3,556	20	10	109	139	.6	.3	3.2	4.1
Other.....	3,338	3,483	3,610	3,865	145	127	255	527	4.3	3.6	7.1	15.8
Hungary:												
Total labor force.....	4,653	4,700	4,805	5,041	47	105	236	388	1.0	2.2	4.9	8.3
Agriculture.....	1,939	1,652	1,413	1,207	-287	-239	-206	-732	-14.8	-14.5	-14.6	-37.8
Nonagricultural branches.....	2,714	3,048	3,392	3,834	334	344	442	1,120	12.3	11.3	13.0	41.3
Industry.....	1,226	1,411	1,608	1,930	185	197	322	704	15.1	14.0	20.0	57.4
Other.....	1,488	1,637	1,784	1,904	149	147	120	416	10.0	9.0	6.7	28.0
Poland:												
Total labor force.....	13,697	14,328	15,490	16,556	631	1,162	1,066	2,859	4.6	8.1	6.9	20.9
Agriculture.....	6,577	6,616	6,385	6,080	39	-230	-306	-497	.6	-3.5	-4.8	-7.6
Nonagricultural branches.....	7,120	7,712	9,104	10,476	592	1,392	1,372	3,356	8.3	18.0	15.1	47.1
Industry.....	2,981	3,298	4,010	4,690	317	712	680	1,709	10.6	21.6	17.0	57.3
Other.....	4,139	4,414	5,094	5,786	275	680	692	1,647	6.6	15.4	13.6	39.8
Romania:												
Total labor force.....	9,769	10,059	10,382	10,668	290	323	286	899	3.0	3.2	2.8	9.2
Agriculture.....	6,650	6,449	5,896	5,303	-181	-553	-593	-1,327	-2.7	-8.6	-10.1	-20.0
Nonagricultural branches.....	3,139	3,610	4,486	5,365	471	876	879	2,226	15.0	24.3	19.6	70.9
Industry.....	1,459	1,675	2,053	2,556	216	358	503	1,077	14.8	21.4	24.7	73.8
Other.....	1,680	1,935	2,453	2,829	255	518	376	1,149	15.2	26.8	15.3	68.4

Source: Table I.

The total labor force in Eastern Europe increased from 47.3 million in 1956 to 52.6 million in 1971, or by 11.2 percent. The rate of growth for the region as a whole increased during each successive 5-year period—from 2.1 percent in the 1956–61 period to 4.0 and 4.5 percent during the following 5-year periods. Czechoslovakia and Hungary, however, were the only two countries that followed this overall trend; Poland and Romania had their largest increases in the middle period and Bulgaria had its largest increase in the initial period. In East Germany, the labor force actually declined by nearly 3 percent in the 1956–61 period, declined by another 5 percent in the following 5 years, and then increased by less than 1 percent in the latest period. The overall decrease of 2.6 percent in East Germany's labor force is in marked contrast to the increases of 17.2 percent in Poland's and 15.4 percent in Czechoslovakia's. Poland's labor force rose by 2.9 million, a figure which represented 54 percent of the region's total increase during these 15 years. The increase for Bulgaria (9 percent) and for Hungary and Romania (both 8 percent) were only about half those for Poland and Czechoslovakia.

The agricultural labor force in the six countries declined from 21.9 million in 1956 to 16.6 million in 1971, or by 24.1 percent. The decline for the six countries combined accelerated during each successive 5-year period—from -7.7 percent to -9.0 and then to -9.8 percent. Again, however, only two countries followed the overall trend—Poland and Romania. Bulgaria had its fastest decline in the middle period; Czechoslovakia had proportionately fewer persons leave agriculture during each successive 5-year period; East Germany had its slowest decline in the middle period; and Hungary had about the same proportion leaving agriculture during each period. There was no relationship between the rate of decline and the proportion of the total labor force engaged in agriculture. East Germany with the smallest proportion in agriculture had the sharpest decline, 46 percent, whereas Romania, with the largest proportion in agriculture, had the second smallest decline—20 percent. At the same time, however, Romania and Bulgaria, with the highest proportions in agriculture, had the largest absolute declines in this sector. The decline of 1.3 million in Romania and 1.1 million in Bulgaria represented 46 percent of the total regional decline of 5.3 million. It should be noted that in Poland, the only country of the six in which agriculture has been permitted to remain largely in private hands, the decline in the agricultural labor force, 8 percent, was much lower than that in the other five countries.

The proportion of the total labor force in agriculture declined from 46 to 31 percent during the 15 years in the region as a whole. In 1971, Romania was the last country of the six to have its agricultural labor force equal to less than half of the total (table IV). At the other end of the range, only 12 percent of East Germany's labor force was engaged in agriculture in 1971. As compared with other European countries, however, East Germany's labor force was more agricultural than that of the United Kingdom (3 percent), Belgium (4 percent), Sweden (8 percent), the Federal Republic of Germany (8 percent), the Netherlands, Denmark, and Switzerland (each with 11 percent), and was at about the same level as that of France.⁷ The proportion of Czechoslovakia's labor force in agriculture was at the

⁷ International Labour Office, "Yearbook of Labour Statistics, 1972," Geneva, 1972, table 2.

same level as Italy's and Norway's; Hungary's proportion was lower than Spain's and Ireland's; and Bulgaria's and Poland's proportions were lower than Greece's and Portugal's. Romania remains the most agricultural country in Europe after Albania. The two most agricultural countries in Eastern Europe at present—Poland and Romania—together accounted for 60 percent of the region's agricultural labor force in 1956 and 69 percent in 1971. Thus, total agricultural manpower of the region has become increasingly concentrated in these two countries.

The nonagricultural labor force in Eastern Europe grew from 25.4 million in 1956 to 32.0 million in 1971, an increase of 41.5 percent. As might be expected, the highest rates of increase were registered by the two countries which were the least industrialized in 1956—Bulgaria and Romania. The number of persons engaged in nonagricultural activities in Bulgaria increased by 104 percent and in Romania by 71 percent. Increases in Poland, Hungary, and Czechoslovakia of between 40 and 50 percent, were less spectacular but nonetheless considerable. In the most industrialized country of the region, East Germany, nonagricultural manpower grew by only 10 percent; as a consequence, its share of the region's nonagricultural labor force declined from 27 to 21 percent during these 15 years. The increases in the nonagricultural labor force were faster in the earliest of the three 5-year period for Bulgaria, Czechoslovakia, and Poland, and in the latest period for the other three countries.

Almost half of the increase in the region's nonagricultural labor force occurred in industry, the branch with priority in the economic plans of all countries. East German industry, largely because of its relatively advanced stage of development in 1956, absorbed only 21 percent of the increase in the nonagricultural labor force. By way of contrast, in Hungary, 63 percent of the increase was absorbed by industry. The proportion in Czechoslovakia amounted to 40 percent, and in the other three countries to about 50 percent. The growth of the industrial labor force between 1956 and 1971 in Bulgaria (122 percent) was sufficiently fast to move its position from that of least industrialized among the six countries in 1956 to a place above both Romania and Poland in 1971.

As of 1971, almost one-third of all economically active persons in Eastern Europe were engaged in industry. An indication of the importance of industry within the region can be seen through some international comparisons. East Germany, with 42 percent of its labor force in industry, is, according to this indicator, the most highly industrialized country in the world. Its proportion in industry slightly exceeds that for the Federal Republic of Germany, Switzerland, or Hong Kong. Hungary and Czechoslovakia, both with 38 percent of their labor force in industry, are the next two most highly industrialized countries. Both Bulgaria, with 30 percent of its labor force engaged in industry, and Poland, with 28 percent, are more highly industrialized than Denmark, Australia, Spain, France, Japan, the United States, the U.S.S.R., and Finland. Even Romania, with 23 percent, is more highly industrialized than Portugal, South Africa, Greece, Israel, and Ireland.⁸

⁸ *Ibid.*

V. FUTURE TRENDS IN THE LABOR FORCE

Total Labor Force

According to the projections prepared on the basis of the assumptions and methods described in appendix A, the total labor force of the region is expected to increase from 52.6 million in 1971 to between 60.5 million and 61.8 million in 1996 (table 6). Should labor force participation rates remain at 1972 levels (series II), the higher figure would obtain and the increase would be 9.2 million, or 17.5 percent, over the 25-year period. Should participation rates change in the future as assumed here, the lower figure would obtain, and the increase would be 7.9 million, or 14.9 percent. Since the population base was identical for both sets of projections, the differences in the labor force totals for any or all countries indicate the net effect of expected changes in the level of labor force participation.

TABLE 6.—PROJECTIONS OF THE LABOR FORCE AND THE TOTAL AND WORKING AGE POPULATIONS—6 EASTERN EUROPEAN COUNTRIES: 1971-96

[Figures refer to midyear. Absolute figures are in thousands. Population figures are based on projection series B]

Country and item	Number						Absolute change						Percent change					
	1971	1976	1981	1986	1991	1996	1971-76	1976-81	1981-86	1986-91	1991-96	1971-96	1971-76	1976-81	1981-86	1986-91	1991-96	1971-96
Eastern Europe:																		
Total population.....	103,647	106,744	110,085	113,068	115,747	118,447	3,097	3,341	2,983	2,679	2,700	14,800	3.0	3.1	2.7	2.4	2.3	14.3
Population, 15 years plus.....	78,475	82,084	84,358	86,910	89,483	92,514	3,609	2,252	2,574	2,573	3,031	14,039	4.6	2.7	3.1	3.0	3.4	17.9
Labor force, series I.....	52,667	54,662	56,106	57,793	59,068	60,463	2,055	1,444	1,687	1,275	1,395	7,856	3.9	2.6	3.0	2.2	2.4	14.9
Labor force, series II.....	52,607	55,064	56,953	58,908	60,249	61,807	2,457	1,889	1,955	1,341	1,558	9,200	4.7	3.4	3.4	2.3	2.6	17.5
Bulgaria:																		
Total population.....	8,536	8,825	9,072	9,270	9,433	9,599	289	247	198	163	166	1,063	3.4	2.8	2.2	1.8	1.8	12.5
Population, 15 years plus.....	6,609	6,876	7,078	7,274	7,458	7,632	267	202	196	184	174	1,023	4.0	2.9	2.8	2.5	2.3	15.5
Labor force, series I.....	4,543	4,670	4,690	4,742	4,772	4,838	127	20	52	30	66	295	2.8	.4	1.1	.6	1.4	6.5
Labor force, series II.....	4,543	4,727	4,820	4,923	4,965	5,039	184	93	103	42	74	496	4.1	2.0	2.1	.9	1.5	10.9
Czechoslovakia:																		
Total population.....	14,407	14,903	15,399	15,810	16,194	16,648	496	496	411	384	454	2,241	3.4	3.3	2.7	2.4	2.8	15.6
Population, 15 years plus.....	11,094	11,414	11,658	11,857	12,294	12,789	320	244	199	437	495	1,695	2.9	2.1	1.7	3.7	4.0	15.3
Labor force, series I.....	7,337	7,520	7,606	7,799	8,013	8,349	183	86	193	214	336	1,012	2.5	1.1	2.5	2.7	4.2	13.8
Labor force, series II.....	7,337	7,552	7,700	7,897	8,139	8,478	215	148	197	242	339	1,141	2.9	2.0	2.6	3.1	4.2	15.6
East Germany:																		
Total population.....	17,061	16,792	16,510	16,296	16,113	15,889	-269	-282	-214	-183	-224	-1,172	-1.6	-1.7	-1.3	-1.1	-1.4	-6.9
Population, 15 years plus.....	13,094	13,296	13,559	13,623	13,441	13,312	202	263	64	-182	-129	218	1.5	2.0	.5	-1.3	-1.0	1.7
Labor force, series I.....	8,462	8,622	8,935	9,239	9,228	8,957	160	313	304	-11	-231	535	1.9	3.6	3.4	-1.1	-2.5	6.3
Labor force, series II.....	8,462	8,633	8,940	9,198	9,154	8,940	171	307	258	-44	-214	478	2.0	3.6	2.9	-1.5	-2.3	5.6
Hungary:																		
Total population.....	10,368	10,511	10,633	10,663	10,649	10,650	143	122	30	-14	1	282	1.4	1.2	.3	-1.1	0	2.7
Population, 15 years plus.....	8,257	8,398	8,406	8,478	8,572	8,669	141	8	72	94	97	412	1.7	.1	.9	1.1	1.1	5.0
Labor force, series I.....	5,041	5,099	5,040	5,033	5,044	5,072	58	-59	-7	11	28	31	1.2	-1.2	-1	.2	.6	.6
Labor force, series II.....	5,041	5,144	5,130	5,156	5,171	5,210	103	-14	26	15	39	169	2.0	-3	.5	.3	.8	3.4
Poland:																		
Total population.....	32,805	34,244	36,003	37,694	39,080	40,320	1,439	1,759	1,691	1,386	1,240	7,515	4.4	5.1	4.7	3.7	3.2	22.9
Population, 15 years plus.....	24,184	26,090	27,233	28,169	29,415	30,976	1,906	1,143	936	1,246	1,561	6,792	7.9	4.4	3.4	4.4	5.3	28.1
Labor force, series I.....	16,556	17,779	18,771	19,520	20,055	20,805	1,223	992	749	535	750	4,249	7.4	5.6	4.0	2.7	3.7	25.7
Labor force, series II.....	16,556	17,864	18,930	19,687	20,257	21,091	1,308	1,066	757	570	834	4,535	7.9	6.0	4.0	2.9	4.1	27.4
Romania:																		
Total population.....	20,470	21,469	22,468	23,335	24,278	25,341	999	999	867	943	1,063	4,871	4.9	4.7	3.9	4.0	4.4	23.8
Population, 15 years plus.....	15,237	16,010	16,402	17,509	18,303	19,136	773	392	1,107	794	833	3,899	5.1	2.4	6.7	4.5	4.6	25.6
Labor force, series I.....	10,668	10,972	11,064	11,460	11,956	12,402	304	92	396	496	446	1,734	2.8	.8	3.6	4.3	3.7	16.3
Labor force, series II.....	10,668	11,144	11,433	12,047	12,563	13,049	476	289	614	516	486	2,381	4.5	2.6	5.4	4.3	3.9	22.3

Whatever the level of participation, it is clear that the largest increase in the size of the total labor force over the 25-year projection period will be during the present plan period (1971-76). In the next 5-year plan period, 1976-81, it is projected that about 600,000 fewer persons will be added than during the present plan period. This level should increase slightly during the 5 years following 1981, and in the next 5 years, 1986-91, the smallest number of persons will be added before the number increases again. This pattern of growth, of course, is the composite of the pattern for each of the six countries, none of which is identical to it. The differences in these patterns in the series II projections are due entirely to the varying numbers of persons in the different age groups each year of the projection period (see table II). In the series I projections, the differences are also affected by the levels and changes in participation rates, although only in a minor way.

Limiting the discussion to the series I projections, the contrast between the absolute and proportionate increases from one country to another is remarkable. These are summarized below for the 1971-96 period:

Country	Absolute increase (thousands)	Percent increase	Average annual increase (percent)
Hungary.....	31	0.6	0.02
East Germany.....	535	6.3	.24
Bulgaria.....	295	6.5	.25
Czechoslovakia.....	1,012	13.8	.52
Romania.....	1,734	16.3	.60
Poland.....	4,249	25.7	.92
Eastern Europe.....	7,856	14.9	.56

Thus, Hungary's labor force will not be appreciably larger 25 years hence than it is today, whereas Poland's labor force is expected to be 26 percent larger. The two countries with the largest labor forces and with the greatest slack in the effective utilization of labor, Poland and Romania, are expected to experience the largest absolute and relative increases. The total increase in the other four countries together will equal less than a third of Poland's and Romania's combined. As a result of these differential increases, the share of the region's total labor force in Poland and Romania will increase from 51.7 percent in 1971 to 54.9 percent in 1996.

Despite what appears to be a relatively high rate of overall increase for Poland and moderately high rates for Romania and Czechoslovakia, these increases are quite modest on an annual basis. Thus, Czechoslovakia's moderate overall increase amounts to about one-half percent per year and Poland's relatively high overall increase amounts to less than 1 percent per year.

A comparison of the growth during the 15 years prior to 1971 with that projected for the following 15 years (tables 5 and 6) shows that the region's total labor force is projected to increase by 9.9 percent as compared with the 11.2 percent increase during the previous 15 years. The rates for Poland and Romania will be slightly lower, those for Bulgaria and Czechoslovakia will be cut to less than half, and that for Hungary will be cut to zero. These reduced rates are in contrast to the change in East Germany where the labor force is expected to increase by 9 percent rather than continue to decline as it did during the previous 15 years.

According to series I, the total labor force will increase by 7.4 million between 1972 and 1996. This figure is net of decreases totaling 1.1 million in the 15-19 year group and 406,000 in the 20-24 year group, and increases in the other age groups. The 65 and over age group will increase only slightly but there is a 1.3 million increase in the 55-64 year group, a 2.3 million increase in the 45-54 year group, and a 5.3 million increase in the 25-44 group (table 7). This pattern of change will result in a somewhat older labor force in the future. On the basis of the assumption that the labor force is distributed equally within a given age group, the median age of the labor force will increase from 37.8 years in 1972 to 39.1 years in 1996 (table III).

TABLE 7.—CHANGES IN THE PROJECTED LABOR FORCE, BY AGE GROUP—6 EASTERN EUROPEAN COUNTRIES: 1972-96
[Figures are in thousands and refer to midyear; they are based on projection series I]

Age group	Eastern Europe	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania
15 to 19 years.....	-1,109	-56	-87	-348	-167	-274	-177
20 to 24 years.....	-406	-32	+34	-225	-80	-217	+114
25 to 44 years.....	+5,257	+97	+622	+714	+151	+2,800	+873
45 to 54 years.....	+2,290	+88	+428	+325	+134	+1,042	+273
55 to 64 years.....	+1,337	+99	-10	+196	+7	+563	+482
65 years and over.....	+63	+46	-30	-149	-42	+126	+112
Total.....	+7,432	+242	+957	+513	+3	+4,040	+1,677

Source: Table III.

The differing patterns of change in the labor force by age for the individual countries are largely due to the numbers of persons in the various age groups at the two points in time; changes in participation rates have only a minor effect. As a result of the varying changes, the aging of the labor force is expected to be most significant for East Germany and least significant for Czechoslovakia as may be noted below:

Country	Median age of labor force (years)	
	1972	1996
Bulgaria.....	39.2	40.4
Czechoslovakia.....	36.8	37.7
East Germany.....	37.5	39.2
Hungary.....	38.3	39.6
Poland.....	37.7	39.1
Romania.....	38.1	39.3

As measured by changes in median age, the labor forces of Bulgaria, Czechoslovakia, Poland, and Romania will become older until the mid-1980's, become somewhat younger in the late 1980's and early 1990's, and then start to age again. East Germany's labor force will become younger until about 1978 and then steadily become older, and Hungary's labor force will become older throughout the entire projection period (table III).

Sectoral Distribution

Increments to the nonagricultural labor force will consist not only of additional persons in the working ages but also of those persons who will withdraw from agriculture. It is projected that the nonagricultural labor force will be augmented by 14.1 million during the 1971-96 period, of whom 6.3 million will have transferred from agriculture (table 8). In accordance with the assumptions made in regard to the decline of the agricultural labor force in each country, the decline for the region as a whole will decelerate over the last 10 years of the projection period. This pattern, in conjunction with that of changes in the total labor force, will result in a constantly declining rate of growth in the nonagricultural branches. Thus, an increase of 10.2 percent is projected for the present plan period, 7.6 percent during the next 5 years, and 7.2, 5.0, and 4.3 percent during the following 5-year periods, respectively. The series I projections for the 25-year period show a 38 percent decline in agriculture and a 39 percent increase in the nonagricultural branches. The projections further show that industry will grow less rapidly (33 percent) than the other nonagricultural branches (44 percent).

The critical set of figures insofar as the future labor supply of a particular country is concerned is that relating to nonagricultural branches. This is the premise of the various economic development plans to date and implies that the present level of agricultural production can be maintained or increased in the future even with expected decreases in the agricultural labor force. The latter implication is presumably based on recognized underemployment, a high degree of inefficiency, and a low level of mechanization in agriculture that are expected to be overcome. Whatever the case, the projected figures for the nonagricultural branches given here constitute one view of the labor force that will be available to carry forward the essential parts of the economic development plans of the six countries.

TABLE 8.— PROJECTIONS OF THE LABOR FORCE, BY MAJOR BRANCHES—6 EASTERN EUROPEAN COUNTRIES: 1971-96

[Figures refer to projection series I and to midyear. Absolute figures are in thousands]

Country and major branch	Number						Absolute change						Percent change					
	1971	1976	1981	1986	1991	1996	1971-76	1976-81	1981-86	1986-91	1991-96	1971-96	1971-76	1976-81	1981-86	1986-91	1991-96	1971-96
Eastern Europe:																		
Total labor force.....	52,607	54,662	56,106	57,793	59,068	60,463	2,055	1,444	1,687	1,275	1,395	7,856	3.9	2.6	3.0	2.2	2.4	14.9
Agriculture.....	16,592	14,981	13,403	12,026	11,016	10,337	-1,611	-1,578	-1,377	-1,010	-679	-6,255	-9.7	-10.5	-10.3	-8.4	-6.2	-37.7
Nonagricultural.....	36,015	39,681	42,703	45,767	48,052	50,126	3,666	3,022	3,064	2,285	2,074	14,111	10.2	7.6	7.2	5.0	4.3	39.2
Industry.....	16,875	18,212	19,306	20,512	21,542	22,472	1,337	1,094	1,206	1,030	930	5,597	7.9	6.0	6.2	5.0	4.3	33.2
Other.....	19,140	21,469	23,397	25,255	26,510	27,654	2,329	1,928	1,858	1,255	1,144	8,514	12.2	9.0	7.9	5.0	4.3	44.5
Bulgaria:																		
Total labor force.....	4,543	4,670	4,690	4,742	4,772	4,838	127	20	52	30	66	295	2.8	.4	1.1	.6	1.4	6.5
Agriculture.....	1,579	1,356	1,189	1,069	986	933	-223	-167	-120	-83	-53	-646	-14.1	-12.3	-10.1	-7.8	-5.4	-40.9
Nonagricultural.....	2,964	3,314	3,501	3,673	3,786	3,905	350	187	172	113	119	941	11.8	5.6	4.9	3.1	3.1	31.7
Industry.....	1,362	1,487	1,549	1,603	1,629	1,656	125	62	54	26	27	294	9.2	4.2	3.5	1.6	1.7	21.6
Other.....	1,602	1,827	1,952	2,070	2,157	2,249	225	125	118	87	92	647	14.0	6.8	6.0	4.2	4.3	40.4
Czechoslovakia:																		
Total labor force.....	7,337	7,520	7,606	7,799	8,013	8,349	183	86	193	214	336	1,012	2.5	1.1	2.5	2.7	4.2	13.8
Agriculture.....	1,382	1,292	1,216	1,145	1,078	1,015	-90	-76	-71	-67	-63	-367	-6.5	-5.9	-5.8	-5.9	-5.8	-26.6
Nonagricultural.....	5,955	6,228	6,390	6,654	6,935	7,334	273	162	264	281	399	1,379	4.6	2.6	4.1	4.2	5.8	23.2
Industry.....	2,801	2,868	2,892	2,958	3,028	3,144	67	24	66	70	116	343	2.4	.8	2.3	2.4	3.8	12.2
Other.....	3,154	3,360	3,498	3,696	3,907	4,190	206	138	198	211	283	1,036	6.5	4.1	5.7	5.7	7.2	32.8

East Germany:																		
Total labor force.....	8,462	8,622	8,935	9,239	9,228	8,997	160	313	304	-11	-231	535	1.9	3.6	3.4	-1	-2.5	6.3
Agriculture.....	1,041	887	775	711	687	686	-154	-112	-64	-24	-1	-355	-14.7	-12.6	-8.3	-3.4	-1	-34.1
Nonagricultural.....	7,421	7,735	8,160	8,528	8,541	8,311	314	425	368	13	-230	890	4.2	5.5	4.5	.2	-2.7	12.0
Industry.....	3,556	3,672	3,836	3,969	3,936	3,791	116	164	133	-33	-145	235	3.3	4.5	3.5	-.8	-3.7	6.6
Other.....	3,865	4,063	4,324	4,559	4,605	4,520	198	261	235	46	-85	655	5.1	6.4	5.4	1.0	-1.8	16.9
Hungary:																		
Total labor force.....	5,041	5,099	5,040	5,033	5,044	5,072	58	-59	-7	11	28	31	1.2	-1.2	-.1	.2	.6	.6
Agriculture.....	1,207	1,042	937	864	818	793	-165	-105	-73	-46	-25	-414	-13.7	-10.1	-7.8	-5.3	-3.1	-34.3
Nonagricultural.....	3,834	4,057	4,103	4,169	4,226	4,279	223	46	66	57	53	445	5.8	1.1	1.6	1.4	1.3	11.6
Industry.....	1,930	2,005	2,030	2,055	2,080	2,107	75	25	25	25	27	177	3.9	1.2	1.2	1.2	1.3	9.2
Other.....	1,904	2,052	2,073	2,114	2,146	2,172	148	21	41	32	26	268	7.8	1.0	2.0	1.5	1.2	14.1
Poland:																		
Total labor force.....	16,556	17,779	18,771	19,520	20,055	20,805	1,223	992	749	535	750	4,249	7.4	5.6	4.0	2.7	3.7	25.7
Agriculture.....	6,080	5,805	5,410	4,925	4,544	4,299	-275	-395	-485	-381	-245	-1,781	-4.5	-6.8	-9.0	-7.7	-5.4	-29.3
Nonagricultural.....	10,476	11,974	13,361	14,595	15,511	16,506	1,498	1,387	1,234	916	995	6,030	14.3	11.6	9.2	6.3	6.4	57.6
Industry.....	4,690	5,138	5,554	6,007	6,497	7,027	448	416	453	490	530	2,337	9.6	8.1	8.2	8.2	8.2	49.8
Other.....	5,786	6,836	7,807	8,588	9,014	9,479	1,050	971	781	426	465	3,693	18.1	14.2	10.0	5.0	5.2	63.8
Romania:																		
Total labor force.....	10,668	10,972	11,064	11,460	11,956	12,402	304	92	396	496	446	1,734	2.8	.8	3.6	4.3	3.7	16.3
Agriculture.....	5,303	4,599	3,876	3,312	2,903	2,611	-704	-723	-564	-409	-292	-2,692	-13.3	-15.7	-14.6	-12.3	-10.1	-50.8
Nonagricultural.....	5,365	6,373	7,188	8,148	9,053	9,791	1,008	815	960	905	738	4,426	18.8	12.8	13.4	11.1	8.2	82.5
Industry.....	2,536	3,042	3,445	3,920	4,372	4,747	506	430	475	452	375	2,211	20.0	13.2	13.8	11.5	8.6	87.2
Other.....	2,829	3,331	3,743	4,228	4,681	5,044	502	412	485	453	363	2,215	17.7	12.4	13.0	10.7	7.8	78.3

Source: Table I.

According to the series I projections, increases in the nonagricultural labor forces in the six countries will range from 445,000, or 12 percent, for Hungary over the 1971-96 period to 6 million, or 58 percent, for Poland. The nonagricultural labor force in Romania, with a 4.4 million increase, will grow at the highest rate—82 percent. As is the case for the total labor force, Poland and Romania are expected to gain a large share of the total increase for the region—Poland's share of the total is projected to be 43 percent, Romania's to be about 31 percent, and the other four countries combined to be about 26 percent. The increases for Bulgaria, Czechoslovakia, East Germany, and Hungary as a group will be nearly 700,000 less than that for Romania and 2.4 million less than that for Poland. Confining our attention to the four countries, the largest increase in any of the 5-year periods is the present one during which it is projected that 1.2 million will be added to the nonagricultural labor force. The additions will then decline to 800-900,000 during each of the next two periods and further decline to about 460,000 and 340,000 during each of the last two periods, respectively.

Table 9 translates the gross figures into average annual rates, which give a much clearer picture of the projected year-to-year increases in nonagricultural employment. For Czechoslovakia, Hungary, and East Germany, these rates are quite low, and especially so after the present plan period. Those for Bulgaria are generally higher, but are still very much below the rates for Poland and Romania. If the size of the nonagricultural labor force of these four countries should change as indicated, the lion's share of any increase in production would have to come from higher labor productivity. For example, should a particular plan call for a 6 percent rise in nonagricultural production, a 0.25 percent increase in the labor force—a figure representative of those for Hungary—would mean that 96 percent of the rise would have to come from increased labor productivity. Whatever the case, the small increases in nonagricultural manpower expected in Bulgaria, and the especially small increases in Czechoslovakia, East Germany, and Hungary, almost certainly will have a dampening effect on their economic growth. This would not be true for Poland and Romania which, in the future, appear to have manpower to spare.

TABLE 9.—AVERAGE ANNUAL INCREASE IN THE NONAGRICULTURAL LABOR FORCE—6 EASTERN EUROPEAN COUNTRIES, 1971-96

[In percent; figures are based on projection series I]

Period	Eastern Europe	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania
1971-76.....	1.96	2.26	0.90	0.83	1.14	2.71	3.50
1976-81.....	1.48	1.10	.51	1.08	.23	2.22	2.44
1981-86.....	1.40	.96	.81	.89	.32	1.78	2.54
1986-91.....	.98	.61	.83	.04	.27	1.24	2.13
1991-96.....	.85	.62	1.12	-.55	.25	1.25	1.58
1971-96.....	1.33	1.11	.84	.45	.44	1.83	2.44

Source: Table 8.

Policy Implications

These labor force projections cannot be considered as forecasts or predictions for at least several reasons. First, they are based on the implicit premise that the economic futures of these six countries will see a continuation of the development experienced during the past 10 to 15 years, as the smooth curves in figure 3 and the data in table IV indicate. This premise probably will not hold; thus, for example, the present energy shortage is only one variable that will probably have a major impact on Eastern Europe along with the rest of the world.⁹ Second, many policy decisions can and probably will be made that will affect the supply of, as well as the demand for, manpower. Policy decisions on the demand side might include those connected with the better utilization of manpower at hand, labor turnover, underemployment and labor hoarding, length of the workweek, and absenteeism. Policy decisions on the supply side might include those connected with dispersion or concentration of industry so as to tap available manpower, raising the age for retirement or increasing incentives to induce older workers to continue on their jobs rather than retire, restricting educational opportunities beyond primary school, wages and monetary incentives, the employment of women (especially policies with respect to the encouragement of women—and therefore working women—to have children), and international migration of labor. The last two policies will be discussed here.

⁹ Because the U.S.S.R., the region's major supplier of energy, has indicated its inability to meet higher than present demands, all East European governments have warned their peoples that there is a difficult time ahead and that the consumption of energy must be held in check.

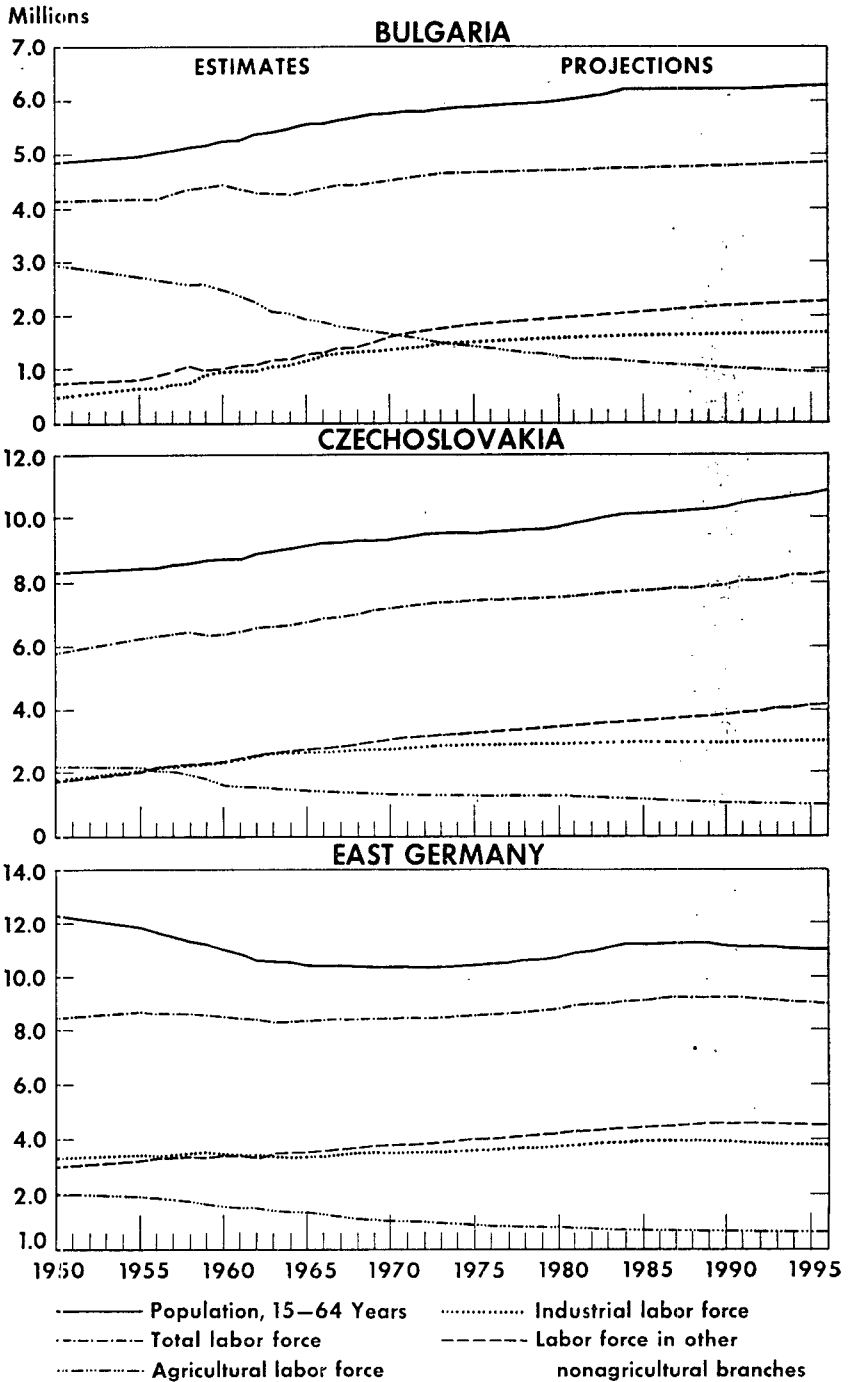


Figure 3-- Estimated and Projected Labor Force, by Major Branches— Six Eastern European countries: 1950 to 1996

The governments of Bulgaria, Czechoslovakia, Hungary, and Romania have been increasingly concerned with the low levels of fertility and the low rates of population growth since the mid-1960's when the numbers of births declined markedly. Since that time, population commissions or committees have been established, and population policies have been redesigned with the aim of increasing the numbers of babies born and of insuring the four countries concerned with an adequate supply of manpower in the future. In general, recent population policies include: tightening the laws regarding abortions so that they are no longer available on demand; raising the monthly family allowance and the grant made at the birth of a child; and increasing the length of maternity leave for working women. Also, in Czechoslovakia and Hungary, working women have been given a stipend to remain at home to care for their babies, and in Czechoslovakia low-interest loans for household durables for young married couples have become available, part of which is written off on the first birthday of each child born. These four countries have obviously made the decision to maximize births at the expense of withdrawal of women from the labor force.

It appears that East Germany has made the opposite decision, which is to maximize the number of women workers now even though their manpower pool 15-20 years hence will be smaller than it might have been on the basis of strong pronatalist policies. It is true that East Germany's population policy explicitly aims at a higher birth rate; there is a family allowance system and a one-time grant on the birth of a child. At the same time, however, abortion on demand has been available since September 1973 and there is no evidence of plans to increase allowances or grants, or to follow Hungary's lead in granting stipends for working women to remain at home to care for their babies. East Germany is faced with the acute dilemma of witnessing its birth rate plummet at the same time it needs every available woman in the labor force now and in the future. The dilemma is exemplified by the present projections which show the labor force decreasing each year after 1988 because of declining numbers in the 15-19 and 20-24 year age groups.¹⁰ The latter declines are projected on the basis of the assumption that the level of fertility in the future will remain at the very low level estimated for 1973. Should fertility increase in accordance with the assumptions used here in the series A projection, i.e., by 20 percent in 1974 and then gradually to 40 percent 10 years later, and labor force participation rates remain at the same levels, the labor force would be some 200,000 larger in 1996. As a consequence of such a rise in fertility, however, the loss to the labor force of women would also be considerable; no estimate of the loss has been attempted here.¹¹

Population policy is still being discussed in Poland. The discussion centers around devising an effective pronatalist program that will be compatible with women's employment. Although no integrated population policies have yet been announced, several changes which took place in October 1973—extending the length of paid maternity leave and extending to 3 years unpaid leave for mothers to take care of small children—will make it easier for women to combine work and rearing children.

¹⁰ The series B projection shows a drop for the 15-19 year group from 1,315,000 in 1972 to 865,000 in 1996 and a drop for the 20-24 year group from 1,145,000 to 880,000 (table II).

¹¹ In this regard, however, 255,000 women were on maternity leave in Czechoslovakia at the end of 1972. Miloslav Kotek, "Development Tendencies in Employment in the C.S.S.R.," *Planovane Hospodarstvi (Planned Economy)*, no. 5, 1973, p. 64.

At present, the six countries differ markedly in the degree to which there is a labor shortage or labor surplus. Both Czechoslovakia and East Germany are severely short of labor and have been for some years. The labor supply situation in Bulgaria and Hungary is somewhat ambiguous. It has been reported from Bulgaria that there are shortages of experienced manpower in many sectors, that there are seasonal shortages in agriculture and permanent shortages in construction, and the shortages of qualified manpower are acute in construction, transportation, and mining. At the same time, it is acknowledged that agriculture can still supply sufficient workers. Reports from Hungary indicate alternatively that there is a serious manpower shortage, that the alleged manpower shortage is highly exaggerated, and that manpower shortages and surpluses exist side by side. The most authoritative statement comes from a Deputy Minister of Labor who states that “* * * there is no shortage of manpower on the national scale but, at today’s given management, leadership, and organizational levels, in a few sectors and branches of work the fact of a real manpower shortage cannot be questioned.”¹² Poland and Romania appear to have abundant manpower, and the primary labor problem, especially in Poland, is the creation of enough jobs for new workers entering the labor force.

As the labor force projections indicate, the present gulf between the labor supply situation in Poland and Romania, on the one hand, and the other four countries, on the other, will be even wider in the future. The obvious way to bridge this gulf is large-scale migration of labor among countries. There have been numerous reports of various numbers of foreign workers in Czechoslovakia and East Germany, but the only reliable data are for Czechoslovakia where 18,000 foreigners were reported to be working in 1972.¹³ Western newspaper stories give the numbers of foreign (mainly Polish) workers in East Germany as ranging from 20,000 to 100,000; the exact numbers have never been published. Whatever the numbers are, they are relatively small and there is a great reluctance to increase them in any of the labor-short countries because of ethnic differences, the costs involved, the shortage of housing, and the many social problems that may be anticipated based on Western European experience. There is also the political-economic argument against migration of labor between the Socialist countries in that these countries are supposed to be able to provide employment to all who require it, and consequently there is no need to move to another country to find work. Whether or not these and other considerations rule out large-scale international labor migration as a viable proposition is open to question at this time. This writer expects, however, that manpower supply and demand will be so out of balance in Czechoslovakia, East Germany, and Hungary that these countries will feel compelled to import the labor necessary to meet their needs. It may very well be that such labor could come from such countries as Greece, Italy, Spain, Turkey, and Yugoslavia, all of which have been exporting labor to Western Europe. This would seem to be a much more drastic step, however, than rationalizing labor supply

¹² Istvan Buda, “Labor Tasks in 1973,” *Munkaugyi Szemle (Labor Review)*, No. 1, January 1973, p. 2.

¹³ Dyna Tesarova, “Manpower Resources Under the Fifth Five-Year Plan,” *Statistika (Statistics)*, No. 10, October 1973, p. 407. Although the countries of origin of these workers are not given, other information suggests that the large majority are Poles.

and demand among the member countries of the Council for Economic Mutual Assistance (CEMA) themselves. Precedents for future labor migration on a relatively large scale have been established, this solution to labor imbalances is being discussed more and more openly in the various countries, and it would seem to be only a matter of time and acute need before bilateral or CEMA-wide agreements are reached in this regard.

APPENDIX TABLES

TABLE I-A.—ESTIMATED AND PROJECTED POPULATION 15-64 YR. AND LABOR FORCE, BY MAJOR BRANCHES: 6 EASTERN EUROPEAN COUNTRIES COMBINED, 1950-96

[Midyear figures in thousands; labor force projections are based on series I, i.e., changing participation rates]

Year	Population, 15-64 yr	Labor force				
		Total	Agriculture	Nonagricultural branches		
				Total	Industry	Other
ESTIMATES						
1950.....	58,494	44,012	22,812	21,200	10,022	11,178
1955.....	60,554	46,834	21,811	25,023	11,718	13,305
1956.....	60,910	47,314	21,869	25,445	11,822	13,623
1957.....	60,985	47,628	21,674	25,954	12,192	13,762
1958.....	61,190	47,882	21,597	26,285	12,446	13,839
1959.....	61,457	48,135	21,354	26,781	12,683	14,098
1960.....	61,600	48,191	20,769	27,422	12,935	14,487
1961.....	61,755	48,383	20,196	28,187	13,213	14,974
1962.....	62,091	48,666	19,657	29,009	13,582	15,427
1963.....	62,637	48,897	19,137	29,760	13,879	15,881
1964.....	63,218	49,185	18,893	30,292	14,136	16,156
1965.....	63,840	49,676	18,564	31,112	14,546	16,566
1966.....	64,472	50,341	18,388	31,953	14,984	16,969
1967.....	65,101	50,841	17,979	32,862	15,402	17,460
1968.....	65,706	51,367	17,672	33,695	15,812	17,883
1969.....	66,282	51,797	17,294	34,503	16,162	18,341
1970.....	66,895	52,114	16,944	35,170	16,426	18,744
1971.....	67,485	52,607	16,592	36,015	16,875	19,140
1972.....	68,123	53,031	16,290	36,741	17,221	19,520
PROJECTIONS						
1973.....	68,624	53,536	15,961	37,575	17,493	20,082
1974.....	69,059	53,979	15,633	38,346	17,750	20,596
1975.....	69,422	54,343	15,307	39,036	17,987	21,049
1976.....	69,837	54,662	14,981	39,681	18,212	21,469
1977.....	69,999	54,935	14,661	40,274	18,423	21,851
1978.....	70,273	55,205	14,341	40,864	18,636	22,228
1979.....	70,595	55,478	14,023	41,455	18,851	22,604
1980.....	71,005	55,758	13,708	42,050	19,068	22,982
1981.....	71,589	56,106	13,403	42,703	19,306	23,397
1982.....	72,418	56,560	13,108	43,452	19,592	23,860
1983.....	73,322	57,031	12,822	44,209	19,882	24,327
1984.....	73,983	57,367	12,546	44,821	20,119	24,702
1985.....	74,391	57,582	12,278	45,304	20,317	24,987
1986.....	74,683	57,793	12,026	45,767	20,512	25,255
1987.....	74,961	58,044	11,792	46,252	20,727	25,525
1988.....	75,220	58,314	11,576	46,738	20,945	25,793
1989.....	75,516	58,567	11,373	47,194	21,150	26,044
1990.....	75,812	58,817	11,187	47,630	21,349	26,281
1991.....	76,125	59,068	11,016	48,052	21,542	26,510
1992.....	76,463	59,336	10,855	48,481	21,735	26,746
1993.....	76,811	59,631	10,710	48,921	21,928	26,993
1994.....	77,132	59,905	10,576	49,330	22,111	27,219
1995.....	77,435	60,180	10,451	49,729	22,293	27,436
1996.....	77,741	60,463	10,337	50,126	22,472	27,654

Source: The sums of the figures for the 6 countries included. In tables I-B to G no sources are given for the populations 15-64 yr for the 1950-72 period or for any of the projection figures. The populations 15-64 yr were all based on published age-sex distributions or estimated on the basis of them. For the methods and assumptions used to derive the projection figures, see app. A. The labor force figures for 1950-72 in tables I-B to G are unpublished estimates by the Foreign Demographic Analysis Division, Bureau of Economic Analysis, U.S. Department of Commerce. For other than census years, they were based on the ratios of the reported employed populations to the economically active populations at the time of the various censuses applied to the reported employed populations for each year. Except where otherwise indicated in these tables, the source for all the latter figures is Andrew Elias, "Statistical Tables—Estimated Employment in Seven Eastern European Countries, by Branch and Sector: Circa 1950 to 1970," Foreign Demographic Analysis Division, Bureau of Economic Analysis, U.S. Department of Commerce, March 1973.

TABLE I-B.—ESTIMATED AND PROJECTED POPULATION 15-64 YEARS, AND LABOR FORCE, BY MAJOR BRANCHES—BULGARIA: 1950-96

[Midyear figures in thousands. Labor force projections are based on series I, i.e., changing participation rates]

Year	Population, 15-64 years	Labor force				
		Total	Agriculture	Nonagricultural branches		
				Total	Industry	Other
ESTIMATES						
1950	4, 805	4, 114	2, 982	1, 132	455	677
1955	4, 966	4, 142	2, 734	1, 408	614	794
1956	5, 016	4, 147	2, 693	1, 454	613	841
1957	5, 068	4, 245	2, 612	1, 633	701	932
1958	5, 123	4, 343	2, 598	1, 745	734	1, 011
1959	5, 175	4, 383	2, 584	1, 799	847	952
1960	5, 226	4, 422	2, 491	1, 931	932	999
1961	5, 284	4, 341	2, 349	1, 992	946	1, 046
1962	5, 345	4, 274	2, 230	2, 044	968	1, 076
1963	5, 406	4, 232	2, 092	2, 150	1, 019	1, 131
1964	5, 472	4, 242	2, 028	2, 214	1, 048	1, 166
1965	5, 540	4, 262	1, 926	2, 336	1, 121	1, 215
1966	5, 580	4, 368	1, 876	2, 492	1, 221	1, 271
1967	5, 625	4, 411	1, 789	2, 622	1, 276	1, 346
1968	5, 669	4, 400	1, 723	2, 677	1, 288	1, 389
1969	5, 707	4, 443	1, 679	2, 764	1, 301	1, 463
1970	5, 738	4, 493	1, 623	2, 870	1, 322	1, 548
1971	5, 764	4, 543	1, 579	2, 964	1, 362	1, 602
1972	5, 792	4, 596	1, 535	3, 061	1, 388	1, 673
PROJECTIONS						
1973	5, 820	4, 625	1, 486	3, 139	1, 420	1, 719
1974	5, 844	4, 647	1, 440	3, 207	1, 446	1, 761
1975	5, 864	4, 660	1, 397	3, 263	1, 468	1, 795
1976	5, 888	4, 670	1, 356	3, 314	1, 487	1, 827
1977	5, 907	4, 675	1, 318	3, 357	1, 502	1, 855
1978	5, 927	4, 684	1, 283	3, 401	1, 517	1, 884
1979	5, 959	4, 685	1, 249	3, 436	1, 529	1, 907
1980	5, 969	4, 681	1, 218	3, 463	1, 536	1, 927
1981	5, 998	4, 690	1, 189	3, 501	1, 549	1, 952
1982	6, 050	4, 704	1, 161	3, 543	1, 563	1, 980
1983	6, 109	4, 723	1, 136	3, 587	1, 578	2, 009
1984	6, 157	4, 733	1, 112	3, 621	1, 589	2, 032
1985	6, 177	4, 734	1, 090	3, 644	1, 595	2, 049
1986	6, 185	4, 742	1, 069	3, 673	1, 603	2, 070
1987	6, 188	4, 745	1, 050	3, 695	1, 608	2, 087
1988	6, 193	4, 752	1, 032	3, 720	1, 614	2, 106
1989	6, 195	4, 757	1, 015	3, 742	1, 619	2, 123
1990	6, 194	4, 764	1, 000	3, 764	1, 624	2, 140
1991	6, 193	4, 772	986	3, 786	1, 629	2, 157
1992	6, 193	4, 778	973	3, 805	1, 633	2, 172
1993	6, 201	4, 793	962	3, 831	1, 639	2, 192
1994	6, 206	4, 808	951	3, 857	1, 645	2, 212
1995	6, 213	4, 823	942	3, 881	1, 651	2, 230
1996	6, 221	4, 838	933	3, 905	1, 656	2, 249

Note: The labor force, or economically active population, includes the armed and security forces, private farmers, craftsmen, persons engaged in personal services, persons employed in confidential categories, and probably frictional unemployment, all of whom are usually excluded from reported annual employment figures.

Source for labor force estimates: Total: 1950, 1955-56: Interpolated between the totals of the economically active population for 1946, reported in Zora Prochazka, "The Labor Force of Bulgaria," U.S. Bureau of the Census, International Population Statistics Reports, series P-90, No. 16, p. 32, and for 1956, reported in "Prebroyavane na naseleniata y Narodna republika Bulgariya na 1.XII. 1956 godina, Obshti rezultati. Kniga IV. (Census of population of the Bulgarian People's Republic of Dec. 1, 1956. General Results, Volume IV.)," p. 6. 1957-65: Based on interpolation of the ratios of the numbers employed to the economically active populations in 1956 and 1965, and the numbers employed in the indicated years. The economically active population for 1965 was reported in "Statisticheski godishnik na Narodna republika Bulgariya 1969 (Statistical Yearbook of the People's Republic of Bulgaria, 1969)," p. 16. 1966-70: Based on the assumption that the trend of the ratios of the numbers employed to the economically active populations from 1957 to 1965 continued to 1970. 1971-72: Based on the expected decline in agricultural manpower between 1970 and 1975, as reported in Kh. Khristov and Y. Stoyanov, "Structure and Training of the Labor Force in Agriculture," "Novo vreme (New Times)," No. 2, 1971, p. 53, and the share of agriculture in total employment by 1975, as reported in Ivan Iliev, "The Sixth Five-Year Plan—A Major Step Toward the Building of a Developed Socialist Society in Bulgaria," (Naruchnik na Agitatora (Propagandist's Handbook)), December 1971, p. 16.

Agricultural branches: 1950, 1955-56: Computed by the same method and with the same sources as used in estimating the total economically active population. 1957-65: Based on interpolation of the ratios of the numbers employed to the economically active populations in agriculture and forestry in 1956 and 1965, and the numbers employed in agriculture and forestry in the indicated years. 1966-70: Based on the assumption that the trend of the ratios of the numbers employed to the economically active populations in agriculture and forestry between 1957 and 1965 continued to 1970. 1971-72: Based on the expected decline in agricultural manpower between 1970 and 1975, as reported in Khristov and Stoyanov, op. cit.

Nonagricultural branches: All years: Residuals.

Industry: 1950, 1955-56: Computed by the same method and with the same sources as used in estimating the total economically active population. 1957-65: Based on interpolation of the ratios of the numbers employed to the economically active populations in industry in 1956 and 1965, and the numbers employed in industry in the indicated years. 1966-70: Based on the assumption that the trend of the ratios of the numbers employed to the economically active populations in industry between 1957 and 1965 continued to 1970. 1971: Based on the increase in industrial employment in the first half of 1971, reported in "Rabotnichesko delo (Workers' Affairs)," July 25, 1971, p. 2. 1972: Based on the increase in industrial output and labor productivity during the first 6 months of 1972, reported in "Rabotnichesko delo," July 27, 1972, p. 2.

Other nonagricultural branches: All years: Residuals.

TABLE 1-C.—ESTIMATED AND PROJECTED POPULATION 15-64 YEARS, AND LABOR FORCE, BY MAJOR BRANCHES—CZECHOSLOVAKIA: 1950-96

[Milyear figures in the thousands. Labor force projections are based on series I, i.e., changing participation rates]

Year	Population, 15-64 years	Labor force				
		Total	Agriculture	Nonagricultural branches		
				Total	Industry	Other
ESTIMATES						
1950	8,243	5,832	2,188	3,644	1,823	1,821
1955	8,424	6,256	2,115	4,141	2,077	2,064
1956	8,476	6,357	2,094	4,263	2,126	2,137
1957	8,534	6,418	2,027	4,391	2,204	2,187
1958	8,602	6,437	1,980	4,457	2,222	2,235
1959	8,668	6,386	1,841	4,545	2,268	2,277
1960	8,732	6,396	1,685	4,711	2,379	2,332
1961	8,829	6,503	1,598	4,905	2,446	2,459
1962	8,917	6,593	1,554	5,039	2,523	2,516
1963	9,009	6,630	1,535	5,095	2,524	2,571
1964	9,039	6,679	1,503	5,176	2,550	2,626
1965	9,164	6,770	1,475	5,295	2,594	2,701
1966	9,239	6,890	1,468	5,422	2,665	2,757
1967	9,306	6,954	1,439	5,515	2,685	2,830
1968	9,368	7,048	1,414	5,634	2,721	2,913
1969	9,368	7,160	1,399	5,761	2,742	3,019
1970	9,410	7,261	1,390	5,871	2,760	3,111
1971	9,441	7,337	1,382	5,955	2,801	3,154
1972	9,527	7,392	1,356	6,036	2,818	3,218
PROJECTIONS						
1973	9,562	7,450	1,340	6,110	2,842	3,268
1974	9,578	7,485	1,324	6,161	2,857	3,304
1975	9,586	7,504	1,308	6,196	2,863	3,333
1976	9,597	7,520	1,292	6,228	2,868	3,360
1977	9,611	7,530	1,277	6,253	2,870	3,383
1978	9,633	7,542	1,261	6,281	2,872	3,409
1979	9,671	7,560	1,246	6,314	2,878	3,436
1980	9,734	7,588	1,231	6,357	2,887	3,470
1981	9,817	7,606	1,216	6,390	2,892	3,498
1982	9,910	7,665	1,202	6,463	2,915	3,548
1983	10,005	7,712	1,187	6,525	2,932	3,593
1984	10,072	7,749	1,173	6,576	2,945	3,631
1985	10,113	7,774	1,159	6,615	2,952	3,663
1986	10,139	7,799	1,145	6,654	2,958	3,696
1987	10,172	7,825	1,131	6,694	2,966	3,728
1988	10,219	7,856	1,118	6,738	2,974	3,764
1989	10,287	7,900	1,104	6,796	2,989	3,807
1990	10,360	7,956	1,091	6,865	3,009	3,856
1991	10,436	8,013	1,078	6,935	3,028	3,907
1992	10,517	8,076	1,065	7,011	3,050	3,961
1993	10,599	8,148	1,052	7,096	3,076	4,020
1994	10,678	8,219	1,040	7,179	3,101	4,078
1995	10,752	8,286	1,027	7,259	3,124	4,135
1996	10,823	8,349	1,015	7,334	3,144	4,190

See footnotes on page 457.

Footnotes from page 456, TABLE I-C.

Note: The labor force, or economically active population, includes the armed and security forces, home workers, the self-employed, employed prisoners, and probably persons employed in confidential categories and frictional unemployment, all of whom are usually excluded from reported annual employment figures. Apprentices, who are also excluded from employment data, were included in the 1950 census definition of the economically active but apparently not in the 1961 census definition. Helping family members were only partially covered in the 1961 census but probably fully counted in earlier censuses. Preliminary results of the 1970 census show a total of 6,989,411 economically active persons (International Labour Office [I.L.O.] "Year Book of Labour Statistics, 1972," p. 33). This total was based on a 2 percent sample of the census results and excludes helping family members in agriculture. Except for the figure for industry, the 1970 census results have not been used here.

Source for labor force estimates:

Total: 1950: Based on I.L.O., "Year Book, 1966," pp. 112-113. 1955-60: Based on interpolation of the ratios of the numbers employed to the economically active populations in 1950 and 1961, and the numbers employed during the indicated years. 1961: Based on I.L.O., "Year Book, 1970," pp. 126-127. 1962-71: Based on the ratio of the number employed to the economically active population in 1961, the assumption that this ratio would converge to 1.00 at about one-fourth of 1 percent per year, and the numbers employed during the indicated years. 1972: Based on the assumptions that the rate of growth in total employment from the end of 1970 to the end of 1971, reported in "Statisticka ročenka CSSR 1972 (Statistical Yearbook of the Czechoslovak Socialist Republic, 1972)," p. 130, will continue for another half year, and that the ratio of the number employed to the economically active population will continue to converge as for the 1962-71 period.

Agricultural branches: 1950: Based on I.L.O., "Year Book, 1966," pp. 112-113. 1955-60: Based on interpolation of the ratios of the numbers employed in agriculture and forestry to the economically active populations in agriculture and forestry in 1950 and 1961, and the numbers employed in agriculture and forestry in the indicated years. 1961: Based on I.L.O., "Year Book, 1970," pp. 126-127. 1962-71: Based on the ratio of the number employed in agriculture and forestry to the economically active population in agriculture and forestry in 1961, and the numbers employed in agriculture and forestry during the indicated years. 1972: Based on the expected decline in agricultural manpower between 1970 and 1975, as reported in Miroslav Parkan, "The Fifth Five-Year Plan in Czechoslovak Agriculture," "Planovane hospodarsty (Planned Economy)," No. 8, 1971, p. 48.

Nonagricultural branches: All years: Residuals.

Industry: 1950: Based on I.L.O., "Year Book, 1966," pp. 112-113. 1955-60: Based on interpolation of the ratios of the numbers employed to the economically active populations in industry in 1950 and 1961, and the numbers employed in industry during the indicated years. 1961: Based on I.L.O., "Year Book 1970," pp. 126-127. 1962-69 and 1971: Based on interpolation (extrapolation for 1971) of the ratios of the numbers employed in industry to the economically active populations in industry in 1961 and 1970, and the numbers employed in industry during the indicated years. 1970: Based on the economically active population in industry reported in "Stat. roc. 1972," p. 92, adjusted to midyear. 1972: Based on the increase in industrial output and labor productivity during the first 6 months of 1972, reported in "Rude pravo (Red Law)," July 25, 1972, p. 1.

Other nonagricultural branches: All years: Residuals.

TABLE I-D.—ESTIMATED AND PROJECTED POPULATION 15-64 YEARS, AND LABOR FORCE, BY MAJOR BRANCHES—EAST GERMANY: 1950-96

[Midyear figures—except those for 1950 which refer to August 31—in thousands. Labor force projections are based on series I, i.e., changing participation rates]

Year	Population, 15-64 years	Labor force				
		Total	Agriculture	Nonagricultural branches		
				Total	Industry	Other
Estimates:						
1950	12,243	8,477	2,069	6,408	3,343	3,065
1955	11,899	8,754	1,954	6,800	3,481	3,319
1956	11,725	8,691	1,936	6,755	3,417	3,338
1957	11,537	8,667	1,840	6,827	3,470	3,357
1958	11,363	8,645	1,761	6,884	3,558	3,326
1959	11,263	8,595	1,674	6,921	3,546	3,375
1960	11,112	8,512	1,562	6,950	3,487	3,463
1961	10,856	8,452	1,532	6,920	3,437	3,483
1962	10,682	8,437	1,536	6,901	3,409	3,492
1963	10,603	8,339	1,429	6,910	3,418	3,492
1964	10,520	8,343	1,399	6,944	3,409	3,579
1965	10,479	8,387	1,385	7,002	3,423	3,535
1966	10,464	8,406	1,349	7,057	3,447	3,610
1967	10,444	8,440	1,247	7,193	3,521	3,672
1968	10,435	8,442	1,167	7,275	3,548	3,727
1969	10,429	8,447	1,111	7,336	3,546	3,790
1970	10,423	8,445	1,065	7,380	3,546	3,834
1971	10,417	8,462	1,041	7,421	3,556	3,865
1972	10,438	8,484	1,029	7,455	3,567	3,888
Projections:						
1973	10,426	8,509	989	7,520	3,591	3,929
1974	10,436	8,545	952	7,593	3,619	3,974
1975	10,468	8,581	919	7,662	3,645	4,017
1976	10,517	8,622	887	7,735	3,672	4,063
1977	10,573	8,667	861	7,806	3,699	4,107
1978	10,633	8,720	836	7,884	3,728	4,156
1979	10,702	8,779	814	7,965	3,759	4,206
1980	10,790	8,848	793	8,055	3,794	4,261
1981	10,908	8,935	775	8,160	3,836	4,324
1982	11,039	9,024	759	8,265	3,878	4,387
1983	11,158	9,119	744	8,375	3,922	4,453
1984	11,246	9,183	732	8,451	3,949	4,502
1985	11,279	9,221	721	8,500	3,964	4,536
1986	11,289	9,239	711	8,528	3,969	4,559
1987	11,298	9,258	703	8,555	3,974	4,581
1988	11,284	9,263	697	8,566	3,971	4,595
1989	11,262	9,257	692	8,565	3,963	4,602
1990	11,236	9,242	689	8,553	3,949	4,604
1991	11,209	9,228	687	8,541	3,936	4,605
1992	11,177	9,204	686	8,518	3,917	4,601
1993	11,140	9,165	686	8,479	3,891	4,588
1994	11,094	9,107	686	8,421	3,857	4,564
1995	11,050	9,049	686	8,363	3,823	4,540
1996	11,012	8,997	686	8,311	3,791	4,520

Note: The labor force, or economically active population, includes the Armed Forces, employment in uranium mining and processing, employment in the Ministry of Interior and its subordinate enterprises, employment in special organizations, and unspecified other categories, all of whom are usually excluded from reported annual employment figures.

Source for labor force estimates:

Total: 1950: "Statistisches Jahrbuch der Deutschen Demokratischen Republik 1956 (Statistical Yearbook of the German Democratic Republic, 1956)" pp. 158-159, 1955-63: Based on interpolation of the ratios of the numbers of persons employed to the economically active populations in 1953 and 1964, and the numbers employed in the indicated years. 1964: "Stat. Jah. 1967," p. 527, adjusted to midyear. 1965-72: Based on the assumption that the trend of the ratios of the numbers of persons employed to the economically active populations from 1953-64 continued to 1972. For 1972, it was further assumed that the rate of growth in employment between Sept. 30, 1970, and Sept. 30, 1971, continued for an additional three-quarters of a year.

Agricultural branches: 1950: "Stat. Jah. 1956," pp. 158-159, 1955-63: Based on interpolation of the ratios of the numbers employed in agriculture and forestry to the economically active populations in agriculture and forestry in 1953 and 1964, and the numbers employed in agriculture and forestry in the indicated years. 1964: Based on the proportion of the economically active population in agricultural branches, reported in Hans Gerhard Nultsch, "Problems of Manpower Supply in the Economy of the German Democratic Republic," "Studia Demograficzne (Demographic Studies)," No. 15, 1968, p. 98 1965-72: Based on the assumption that the trend of the ratios of the numbers employed to the economically active populations from 1953-64 continued to 1972. For 1972, it was further assumed that the rate of growth in employment between Sept. 30, 1970, and Sept. 30, 1971, continued for an additional three-quarters of a year.

Nonagricultural branches: All years: Residuals.

Industry: 1950: "Stat. Jah. 1956," pp. 158-159, 1955-63: Based on interpolation of the ratios of the numbers employed in industry and industrial handicrafts to the economically active populations in industry and industrial handicrafts in 1953 and 1964, and the numbers employed in industry and industrial handicrafts in the indicated years. 1964: Based on the proportion of the economically active population in industry and industrial handicrafts, reported in Nultsch, loc. cit., 1965-72: Based on the assumption that the trend of the ratios of the numbers employed to the economically active populations from 1953-64 continued to 1972. For 1972, it was further assumed that the rate of growth in employment between Sept. 30, 1970, and Sept. 30, 1971, continued for an additional three-quarters of a year.

Other nonagricultural branches: All years: Residuals.

TABLE 1-B.—ESTIMATED AND PROJECTED POPULATION 15-64 YEARS, AND LABOR FORCE, BY MAJOR BRANCHES—
HUNGARY: 1960-96

[Midyear figures in thousands; labor force projections are based on series I, i.e., changing participation rates]

Year	Population, 15-64 years	Labor force				
		Total	Agriculture	Nonagricultural branches		
				Total	Industry	Other
Estimates:						
1950.....	6,281	4,277	2,109	2,168	865	1,303
1955.....	6,499	4,589	1,910	2,679	1,219	1,460
1956.....	6,528	4,653	1,939	2,714	1,226	1,488
1957.....	6,460	4,628	1,937	2,691	1,240	1,451
1958.....	6,487	4,663	1,901	2,762	1,273	1,489
1959.....	6,527	4,719	1,853	2,866	1,310	1,556
1960.....	6,554	4,737	1,751	2,986	1,369	1,617
1961.....	6,579	4,700	1,652	3,048	1,411	1,637
1962.....	6,611	4,645	1,525	3,120	1,454	1,666
1963.....	6,653	4,688	1,461	3,227	1,509	1,718
1964.....	6,697	4,773	1,435	3,338	1,565	1,773
1965.....	6,740	4,775	1,423	3,352	1,580	1,772
1966.....	6,784	4,805	1,413	3,392	1,608	1,784
1967.....	6,822	4,835	1,384	3,451	1,663	1,788
1968.....	6,867	4,968	1,349	3,619	1,802	1,817
1969.....	6,931	5,003	1,311	3,692	1,857	1,835
1970.....	6,992	5,013	1,260	3,753	1,877	1,876
1971.....	7,045	5,041	1,207	3,834	1,930	1,904
1972.....	7,073	5,069	1,155	3,914	1,985	1,929
Projections:						
1973.....	7,080	5,087	1,124	3,963	1,990	1,973
1974.....	7,081	5,101	1,095	4,006	1,995	2,011
1975.....	7,075	5,104	1,067	4,037	2,000	2,037
1976.....	7,061	5,099	1,042	4,057	2,005	2,052
1977.....	7,042	5,088	1,018	4,070	2,010	2,060
1978.....	7,019	5,072	995	4,077	2,015	2,062
1979.....	6,999	5,055	974	4,081	2,020	2,061
1980.....	6,996	5,041	955	4,086	2,025	2,061
1981.....	7,026	5,040	937	4,103	2,030	2,073
1982.....	7,073	5,043	920	4,123	2,035	2,088
1983.....	7,126	5,048	904	4,144	2,040	2,104
1984.....	7,162	5,049	890	4,159	2,045	2,114
1985.....	7,164	5,039	876	4,163	2,050	2,113
1986.....	7,154	5,033	864	4,169	2,055	2,114
1987.....	7,144	5,029	853	4,176	2,060	2,116
1988.....	7,137	5,030	843	4,187	2,065	2,122
1989.....	7,139	5,034	833	4,201	2,070	2,131
1990.....	7,142	5,040	825	4,215	2,075	2,140
1991.....	7,142	5,044	818	4,226	2,080	2,146
1992.....	7,144	5,051	811	4,240	2,086	2,154
1993.....	7,149	5,061	805	4,256	2,091	2,165
1994.....	7,149	5,065	801	4,264	2,096	2,168
1995.....	7,146	5,070	797	4,273	2,101	2,172
1996.....	7,143	5,072	793	4,279	2,107	2,172

Note: The labor force, or economically active population, includes the armed and security forces, apprentices, private farmers, and the unemployed, all of whom are usually excluded from reported annual employment figures.

Source for labor force estimates:

Total: 1950, 1960, and 1970: Based on the economically active populations from the censuses of Jan. 1, 1949, 1960, and 1970, reported in "1970. évi Népszámlálás (The 1970 Census of the Population)," vol. 2, p. 68, adjusted to July 1 of the indicated years. 1955-59: Based on interpolation of the ratios of the numbers employed to the economically active populations as of the censuses of 1949 and 1960, and the numbers employed in the indicated years. 1961-69: Based on interpolation of the ratios of the numbers employed to the economically active populations as of the censuses of 1960 and 1970, and the numbers employed in the indicated years. 1971-72: Based on the assumptions that the trend in the ratios of the numbers employed to the economically active populations between the censuses of 1960 and 1970 continued to 1972, and that the numbers employed increased by the same amount in 1971 and 1972 as the annual average amount between 1960 and 1970.

Agricultural branches: 1950, 1960, and 1970: Based on the economically active populations in agriculture and forestry from the censuses of 1949, 1960, and 1970, adjusted to July 1 of the indicated years. 1955-59: Based on interpolation of the ratios of the numbers employed in agriculture and forestry to the economically active populations in agriculture and forestry as of the censuses of 1949 and 1960, and the numbers employed in agriculture and forestry in the indicated years. 1961-69: Based on interpolation of the ratios of the numbers employed in agriculture and forestry to the economically active populations in agriculture and forestry as of the censuses of 1960 and 1970, and the numbers employed in agriculture and forestry in the indicated years. 1971-72: Based on the assumptions that the trend in the ratios of the numbers employed in agriculture and forestry to the economically active populations in agriculture and forestry between the censuses of 1960 and 1970 continued to 1972 and that the numbers employed in agriculture and forestry decreased by the same amount in 1971 and 1972 as the annual average amount between 1960 and 1970.

Nonagricultural branches: All years: Residuals.

Industry: All years: Computed by the same methods and with the same sources as used in estimating the economically active in the agricultural branches.

Other nonagricultural branches: All years: Residuals.

TABLE I-F.—ESTIMATED AND PROJECTED POPULATION 15-64 YEARS, AND LABOR FORCE, BY MAJOR BRANCHES—
POLAND: 1950-96

[Midyear figures in thousands. Labor force projections are based on series I, i.e., changing participation rates]

Year	Population, 15-64 years	Labor force				
		Total	Agriculture	Nonagricultural branches		
				Total	Industry	Other
Estimates:						
1950	16,230	12,718	7,113	5,605	2,282	3,323
1955	17,324	13,372	6,469	6,903	2,869	4,034
1956	17,542	13,697	6,577	7,120	2,981	4,139
1957	17,662	13,852	6,570	7,282	3,107	4,175
1958	17,772	13,928	6,610	7,318	3,166	4,152
1959	17,905	14,121	6,653	7,468	3,193	4,275
1960	17,962	14,129	6,659	7,470	3,192	4,278
1961	18,151	14,328	6,616	7,712	3,298	4,414
1962	18,418	14,595	6,549	8,046	3,455	4,591
1963	18,729	14,836	6,494	8,342	3,573	4,769
1964	19,067	14,925	6,460	8,465	3,676	4,789
1965	19,407	15,209	6,388	8,821	3,867	4,954
1966	19,741	15,490	6,386	9,104	4,010	5,094
1967	20,082	15,776	6,324	9,452	4,167	5,285
1968	20,405	16,040	6,292	9,748	4,306	5,442
1969	20,745	16,231	6,170	10,061	4,470	5,591
1970	21,070	16,346	6,130	10,216	4,554	5,662
1971	21,383	16,556	6,090	10,476	4,690	5,786
1972	21,744	16,765	6,031	10,734	4,826	5,908
Projections:						
1973	22,070	17,056	5,983	11,073	4,902	6,171
1974	22,358	17,323	5,929	11,394	4,980	6,414
1975	22,592	17,560	5,870	11,690	5,059	6,631
1976	22,785	17,779	5,805	11,974	5,138	6,836
1977	22,942	17,979	5,735	12,244	5,216	7,028
1978	23,101	18,178	5,661	12,517	5,299	7,218
1979	23,281	18,381	5,582	12,799	5,382	7,417
1980	23,477	18,572	5,498	13,074	5,467	7,607
1981	23,698	18,771	5,410	13,361	5,554	7,807
1982	23,922	18,956	5,318	13,638	5,642	7,996
1983	23,152	19,135	5,222	13,913	5,731	8,182
1984	24,344	19,288	5,123	14,165	5,821	8,344
1985	24,497	19,409	5,021	14,388	5,913	8,475
1986	24,642	19,520	4,925	14,595	6,007	8,588
1987	24,785	19,624	4,836	14,788	6,102	8,686
1988	24,922	19,724	4,754	14,970	6,198	8,772
1989	25,079	19,830	4,678	15,152	6,296	8,856
1990	25,236	19,939	4,608	15,331	6,396	8,935
1991	25,410	20,055	4,544	15,511	6,497	9,014
1992	25,606	20,186	4,484	15,702	6,600	9,102
1993	25,804	20,330	4,431	15,899	6,704	9,195
1994	25,999	20,483	4,382	16,101	6,810	9,291
1995	26,184	20,638	4,338	16,300	6,918	9,382
1996	26,374	20,805	4,299	16,506	7,027	9,479

See footnotes on page 461.

Footnotes from page 450, TABLE I-F.

Note: The labor force, or economically active population, as defined here on the basis of information from the 1950 and 1960 censuses, includes the armed and security forces, civilian employees of the Ministries of National Defense and Internal Affairs, private farmers, unpaid family workers, the unemployed, and some additional minor categories, all of whom are usually excluded from the reported annual employment figures. The definition used in the 1970 census is not yet available and the preliminary totals which are used here may not include all of the above categories. See "Rocznik Statystyczny 1971 (Statistical Yearbook, 1971)", p. 88.

Source for labor estimates:

Total: 1950, 1960: Based on the economically active population from the censuses of Dec. 3, 1950, and Dec. 6, 1960, reported in "Biuletyn Statystyczny (Statistical Bulletin)," series "L", No. 23, June 1964, pp. 5 and 39, adjusted to include the armed forces and to midyear 1955-59: Based on interpolation of the ratios of the numbers employed to the economically active populations as of the censuses of 1950 and 1960, and the numbers employed in the indicated years 1961-69: Based on interpolation of the ratios of the numbers employed to the economically active populations as of the censuses of 1960 and 1970, and the numbers employed in the indicated years. 1970: Based on the economically active population from the census of Dec. 8, 1970, reported in "Rocz. Stat. 1971," p. 88, adjusted to midyear. 1971-72: Based on the assumptions that the trend in the ratios of the numbers employed to the economically active populations between the censuses of 1960 and 1970 continued to 1972, and that the numbers employed increased by the same amount in 1971 and 1972 as the annual average amount between 1960 and 1970.

Agricultural branches: 1950, 1960: Based on data from the censuses of 1950 and 1960 reported in "Biul. Stat.," series "L," No. 23, June 1964, pp. 5 and 34-35, adjusted to include the Armed Forces and to midyear. 1955-59: Based on interpolation of the ratios of the numbers employed in agriculture and forestry to the economically active populations in agriculture and forestry as of the censuses of 1950 and 1960, and the numbers employed in agriculture and forestry in the indicated years. 1961-69: Based on interpolation of the ratios of the numbers employed in agriculture and forestry to the economically active populations in agriculture and forestry as of the censuses of 1960 and 1970, and the numbers employed in agriculture and forestry in the indicated years. 1970: Based on the data from the census of 1970 reported in "Rocz. Stat. 1971," p. 88, adjusted to include persons economically active in forestry and to midyear. 1971-72: Based on the assumptions that the trend in the ratios of the numbers employed to the economically active populations between the censuses of 1960 and 1970 continued to 1972, and that the numbers employed in agriculture and forestry decreased by the same amount in 1971 and 1972 as the annual average amount between 1960 and 1970.

Nonagricultural branches: All years: Residuals.

Industry: 1950, 1960: Computed by the same method and using the same source as for agricultural branches. 1955-59: Based on interpolation of the ratios of the numbers employed in industry and industrial handicrafts to the economically active populations in industry as of the censuses of 1950 and 1960, adjusted to midyear, and the numbers employed in industry and industrial handicrafts in the indicated years. 1961-70: Based on the ratio of the number employed in industry and industrial handicrafts to the economically active population in industry and industrial handicrafts as of the 1960 census, adjusted to midyear, and the numbers employed in industry and industrial handicrafts in the indicated years. 1971-72: Based on the same ratio as for 1951-70 and the estimated numbers employed in industry and industrial handicrafts in 1971 and 1972. The latter were estimated on the basis of the assumption that the increase in each of these 2 years was the same as the annual average amount between 1960 and 1970.

Other nonagricultural branches: All years: Residuals.

TABLE I-G.—ESTIMATED AND PROJECTED POPULATION 15-64 YEARS, AND LABOR FORCE, BY MAJOR BRANCHES—ROMANIA: 1950-96

[Midyear figures in thousands. Labor force projections are based on series I, i.e., changing participation rates]

Year	Population, 15-64 years	Labor force				
		Total	Agriculture	Nonagricultural branches		
				Total	Industry	Other
Estimates:						
1950	10,692	8,594	6,351	2,243	1,254	989
1955	11,442	9,721	6,629	3,092	1,458	1,634
1956	11,623	9,769	6,630	3,139	1,459	1,680
1957	11,724	9,818	6,688	3,130	1,470	1,660
1958	11,843	9,866	6,747	3,119	1,493	1,626
1959	11,919	9,931	6,749	3,182	1,519	1,663
1960	12,014	9,995	6,621	3,374	1,576	1,798
1961	12,056	10,059	6,449	3,610	1,675	1,935
1962	12,118	10,122	6,263	3,859	1,773	2,086
1963	12,237	10,172	6,136	4,036	1,836	2,200
1964	12,373	10,223	6,068	4,155	1,888	2,267
1965	12,510	10,273	5,967	4,306	1,961	2,345
1966	12,664	10,382	5,896	4,486	2,033	2,453
1967	12,822	10,425	5,796	4,629	2,090	2,539
1968	12,962	10,469	5,727	4,742	2,147	2,595
1969	13,102	10,513	5,624	4,889	2,246	2,643
1970	13,262	10,556	5,476	5,080	2,367	2,713
1971	13,435	10,668	5,303	5,365	2,536	2,829
1972	13,549	10,725	5,184	5,541	2,637	2,904
Projections:						
1973	13,666	10,809	5,039	5,770	2,748	3,022
1974	13,762	10,878	4,893	5,985	2,853	3,132
1975	13,837	10,934	4,746	6,188	2,952	3,236
1976	13,889	10,972	4,599	6,373	3,042	3,331
1977	13,924	10,996	4,452	6,544	3,126	3,418
1978	13,950	11,009	4,305	6,704	3,205	3,499
1979	13,983	11,018	4,158	6,860	3,283	3,577
1980	14,039	11,028	4,013	7,015	3,359	3,656
1981	14,142	11,064	3,876	7,188	3,445	3,743
1982	14,424	11,168	3,748	7,420	3,559	3,861
1983	14,772	11,294	3,629	7,665	3,679	3,986
1984	15,002	11,365	3,516	7,849	3,770	4,079
1985	15,161	11,405	3,411	7,994	3,843	4,151
1986	15,274	11,460	3,312	8,148	3,920	4,228
1987	15,374	11,563	3,219	8,344	4,017	4,327
1988	15,465	11,689	3,132	8,557	4,123	4,434
1989	15,554	11,789	3,051	8,738	4,213	4,525
1990	15,644	11,876	2,974	8,902	4,296	4,606
1991	15,735	11,956	2,903	9,053	4,372	4,681
1992	15,826	12,041	2,836	9,205	4,449	4,756
1993	15,918	12,134	2,774	9,360	4,527	4,833
1994	16,006	12,224	2,716	9,508	4,602	4,906
1995	16,090	12,314	2,661	9,653	4,676	4,977
1996	16,168	12,402	2,611	9,791	4,747	5,044

Note: The labor force, or economically active population, includes the armed and security forces, private and cooperative farmers, apprentices, and the unemployed, all of whom are usually excluded from reported annual employment figures. Private and cooperative farmers, however, apparently are included in separately reported percentage distributions of the employed population.

Source for labor force estimates:

Total, 1950, 1955: Based on extrapolation of the ratios of the numbers employed to the economically active populations in 1956 (after adjustment as noted for 1956 below) and 1966, and the numbers employed in the indicated years. 1956: Results of the 1956 census reported in "Recensamintul Populatiei din 21 Februarie 1956. Rezultate Generale (Census of the Population of February 21, 1956, General Results)," p. 642, adjusted to midyear. The census figure for the economically active was reduced by an assumed total of 700,000 (600,000 helping family members in agriculture and 100,000 students in technical schools) to adjust coverage of the census to that of the 1966 census. 1957-65: Based on interpolation of the ratios of the numbers employed to the economically active populations in 1956 (after adjustment) and 1966, and the numbers employed in the indicated years. 1966: Results of the 1966 census as reported in "Recensamintul Populatiei si Locuintelor din 15 Martie 1966. Rezultate Generale (Census of the Population and Housing of March 15, 1966, General Results)," vol. I, p. 153, adjusted to midyear. 1967-71: Based on the extrapolation of the ratios of the numbers employed to the economically active populations of the 1956 and 1966 censuses and the numbers employed in the indicated years. 1972: Based on the assumptions that the extrapolated ratios of the numbers employed to the economically active population between 1966 and 1971 followed the same trend to 1972, and that the number employed increased by the same amount between 1971 and 1972 as the annual average amount between 1966 and 1971.

Agricultural branches: 1956: Results of the 1956 census, adjusted to midyear and for coverage as noted above. Of the 100,000 students removed from the economically active population, 25,000 were taken from agriculture and forestry on the basis of the number specializing in agricultural subjects. Other years: Computed by the same methods and with the same sources as used in estimating the total economically active population.

Nonagricultural branches: All years: Residuals.

Industry: 1956: Results of the 1956 census, adjusted to midyear and for coverage as noted above. The number of students removed from industry in 1956 (38,000) was based on the number specializing in industrial subjects. Other years: Computed by the same methods and with the same sources as used in estimating the total economically active population.

Other nonagricultural branches: All years: Residuals.

TABLE II.—PROJECTED POPULATION, BY AGE GROUP—6 EASTERN EUROPEAN COUNTRIES: 1972-96

[Figures are in thousands and refer to midyear. They are based on projection series B]

Country and year	All ages	0 to 14	15 to 19	20 to 24	25 to 44	45 to 54	55 to 64	65 and over
Eastern Europe:								
1972	104,223	24,848	9,524	8,818	28,010	11,773	9,998	11,252
1973	104,847	24,678	9,459	9,052	28,189	12,466	9,458	11,545
1974	105,479	24,594	9,302	9,250	28,412	12,977	9,118	11,826
1975	106,111	24,584	9,067	9,393	28,682	13,252	9,028	12,105
1976	106,744	24,660	8,796	9,463	29,006	13,418	9,054	12,347
1977	107,389	24,816	8,516	9,473	29,375	13,512	9,123	12,574
1978	108,057	25,013	8,267	9,406	29,808	13,554	9,238	12,771
1979	108,744	25,237	8,071	9,250	30,288	13,588	9,398	12,912
1980	109,422	25,486	7,901	9,021	30,764	13,625	9,694	12,931
1981	110,085	25,749	7,771	8,754	31,218	13,645	10,201	12,747
1982	110,726	25,876	7,825	8,479	31,640	13,667	10,807	12,432
1983	111,343	25,906	7,985	8,235	32,019	13,657	11,426	14,115
1984	111,945	25,985	8,092	8,039	32,340	13,624	11,888	11,977
1985	112,523	26,072	8,202	7,869	32,601	13,573	12,146	12,060
1986	113,068	26,158	8,315	7,741	32,829	13,495	12,303	12,227
1987	113,617	26,234	8,309	7,795	33,074	13,386	12,397	12,422
1988	114,145	26,286	8,237	7,954	33,317	13,277	12,435	12,639
1989	114,677	26,307	8,255	8,062	33,531	13,198	12,470	12,854
1990	115,206	26,299	8,324	8,171	33,742	13,068	12,507	13,095
1991	115,747	26,264	8,431	8,286	33,891	12,986	12,531	13,358
1992	116,279	26,201	8,556	8,281	34,008	13,067	12,551	13,615
1993	116,841	26,134	8,677	8,207	34,111	13,270	12,546	13,896
1994	117,380	26,057	8,776	8,226	34,071	13,537	12,522	14,191
1995	117,912	25,985	8,846	8,297	33,931	13,879	12,482	14,492
1996	118,447	25,933	8,888	8,404	33,734	14,297	12,418	14,773
Bulgaria:								
1972	8,596	1,929	675	692	2,437	1,131	857	875
1973	8,655	1,932	670	693	2,440	1,200	817	903
1974	8,711	1,938	663	687	2,450	1,243	801	929
1975	8,767	1,943	656	677	2,465	1,258	808	960
1976	8,825	1,949	649	673	2,477	1,261	828	988
1977	8,877	1,955	643	673	2,480	1,261	850	1,015
1978	8,930	1,964	638	668	2,482	1,265	884	1,029
1979	8,980	1,976	632	661	2,484	1,265	917	1,045
1980	9,028	1,984	629	654	2,487	1,259	940	1,075
1981	9,072	1,994	622	647	2,500	1,244	985	1,080
1982	9,117	2,008	613	641	2,514	1,229	1,053	1,050
1983	9,158	2,012	615	637	2,530	1,212	1,115	1,037
1984	9,200	2,007	629	631	2,548	1,194	1,155	1,036
1985	9,235	2,000	640	627	2,564	1,177	1,169	1,058
1986	9,270	1,996	650	621	2,581	1,162	1,171	1,089
1987	9,303	1,993	664	611	2,593	1,147	1,173	1,122
1988	9,337	1,988	670	613	2,605	1,129	1,176	1,156
1989	9,368	1,983	668	627	2,612	1,111	1,177	1,190
1990	9,401	1,979	666	638	2,615	1,103	1,172	1,228
1991	9,433	1,975	668	648	2,606	1,112	1,159	1,265
1992	9,464	1,970	670	663	2,588	1,127	1,145	1,301
1993	9,501	1,968	672	668	2,583	1,148	1,130	1,332
1994	9,533	1,966	672	666	2,578	1,177	1,113	1,361
1995	9,565	1,965	671	665	2,569	1,211	1,097	1,387
1996	9,599	1,967	669	667	2,564	1,237	1,084	1,411
Czechoslovakia:								
1972	14,481	3,284	1,256	1,280	3,785	1,710	1,496	1,670
1973	14,582	3,309	1,231	1,278	3,850	1,801	1,402	1,711
1974	14,689	3,362	1,194	1,279	3,909	1,860	1,336	1,749
1975	14,797	3,425	1,150	1,278	3,967	1,876	1,315	1,786
1976	14,903	3,489	1,110	1,267	4,032	1,870	1,318	1,817
1977	15,009	3,554	1,073	1,251	4,103	1,849	1,335	1,844
1978	15,111	3,610	1,057	1,226	4,176	1,821	1,353	1,868
1979	15,210	3,652	1,070	1,188	4,253	1,789	1,371	1,887
1980	15,309	3,693	1,087	1,146	4,335	1,759	1,407	1,882
1981	15,399	3,741	1,095	1,105	4,416	1,728	1,473	1,841
1982	15,485	3,792	1,097	1,068	4,494	1,699	1,552	1,783
1983	15,572	3,845	1,087	1,053	4,558	1,676	1,631	1,722
1984	15,654	3,891	1,069	1,065	4,599	1,657	1,682	1,691
1985	15,734	3,926	1,062	1,082	4,625	1,647	1,697	1,695
1986	15,810	3,953	1,071	1,091	4,640	1,645	1,692	1,718
1987	15,887	3,966	1,099	1,093	4,652	1,654	1,674	1,749
1988	15,962	3,962	1,150	1,083	4,659	1,678	1,649	1,781
1989	16,039	3,942	1,209	1,065	4,671	1,720	1,622	1,810
1990	16,115	3,921	1,261	1,058	4,680	1,766	1,595	1,834
1991	16,194	3,900	1,307	1,067	4,665	1,829	1,568	1,858
1992	16,275	3,878	1,343	1,095	4,621	1,916	1,542	1,880
1993	16,365	3,863	1,359	1,146	4,571	2,003	1,520	1,903
1994	16,457	3,854	1,360	1,205	4,531	2,078	1,504	1,925
1995	16,551	3,852	1,356	1,257	4,498	2,144	1,497	1,947
1996	16,648	3,859	1,348	1,303	4,465	2,210	1,497	1,966

TABLE II.—PROJECTED POPULATION, BY AGE GROUP—6 EASTERN EUROPEAN COUNTRIES: 1972-96—Continued
 [Figures are in thousands and refer to midyear. They are based on projection series B]

Country and year	All ages	0 to 14	15 to 19	20 to 24	25 to 44	45 to 54	55 to 64	65 and over
East Germany:								
1972	17,043	3,915	1,315	1,145	4,468	1,664	1,846	2,690
1973	16,980	3,832	1,307	1,216	4,446	1,760	1,697	2,722
1974	16,915	3,728	1,306	1,279	4,430	1,837	1,584	2,751
1975	18,855	3,614	1,318	1,310	4,443	1,864	1,533	2,773
1976	18,792	3,496	1,340	1,315	4,483	1,863	1,516	2,779
1977	16,730	3,375	1,370	1,310	4,540	1,864	1,489	2,782
1978	16,673	3,256	1,403	1,300	4,605	1,878	1,447	2,784
1979	16,616	3,142	1,424	1,299	4,648	1,920	1,411	2,772
1980	16,560	3,039	1,425	1,311	4,664	1,982	1,408	2,731
1981	16,510	2,951	1,407	1,333	4,671	2,042	1,455	2,651
1982	16,464	2,877	1,372	1,364	4,675	2,100	1,528	2,548
1983	16,418	2,817	1,325	1,396	4,670	2,154	1,613	2,463
1984	16,377	2,766	1,273	1,417	4,659	2,214	1,683	2,365
1985	16,338	2,719	1,225	1,418	4,645	2,282	1,708	2,340
1986	16,296	2,673	1,187	1,400	4,644	2,350	1,738	2,334
1987	16,261	2,643	1,146	1,365	4,681	2,395	1,711	2,320
1988	16,222	2,645	1,082	1,319	4,741	2,421	1,721	2,293
1989	16,183	2,659	1,010	1,267	4,799	2,428	1,758	2,262
1990	16,147	2,669	945	1,220	4,885	2,369	1,872	2,242
1991	16,113	2,672	884	1,182	5,006	2,265	1,817	2,232
1992	16,072	2,667	841	1,141	5,095	2,175	1,925	2,237
1993	16,033	2,656	833	1,077	5,152	2,103	1,975	2,237
1994	15,988	2,637	843	1,006	5,183	2,030	2,032	2,257
1995	15,940	2,609	853	941	5,179	1,980	2,097	2,281
1996	15,889	2,577	865	880	5,152	1,954	2,161	2,300
Hungary:								
1972	10,390	2,082	929	848	2,844	1,319	1,133	1,235
1973	10,418	2,078	902	861	2,858	1,387	1,072	1,260
1974	10,451	2,083	851	889	2,876	1,429	1,036	1,287
1975	10,484	2,096	792	916	2,897	1,436	1,034	1,313
1976	10,511	2,113	741	928	2,920	1,431	1,041	1,337
1977	10,542	2,139	702	925	2,945	1,419	1,051	1,361
1978	10,572	2,167	673	899	2,980	1,408	1,059	1,386
1979	10,596	2,191	653	848	3,035	1,398	1,065	1,406
1980	10,615	2,212	639	789	3,093	1,385	1,090	1,407
1981	10,633	2,227	633	738	3,144	1,365	1,146	1,380
1982	10,645	2,231	642	699	3,176	1,349	1,207	1,341
1983	10,653	2,225	663	670	3,192	1,334	1,267	1,302
1984	10,661	2,212	685	650	3,200	1,323	1,304	1,287
1985	10,663	2,198	705	636	3,197	1,315	1,311	1,301
1986	10,663	2,185	719	631	3,186	1,312	1,306	1,324
1987	10,660	2,169	728	640	3,165	1,315	1,296	1,347
1988	10,656	2,149	731	661	3,140	1,320	1,285	1,370
1989	10,654	2,127	734	683	3,112	1,333	1,277	1,388
1990	10,650	2,102	741	702	3,087	1,346	1,266	1,406
1991	10,649	2,077	750	717	3,075	1,351	1,249	1,430
1992	10,647	2,052	758	725	3,059	1,369	1,233	1,451
1993	10,650	2,030	762	728	3,040	1,398	1,221	1,471
1994	10,649	2,009	761	731	3,019	1,427	1,211	1,491
1995	10,649	1,993	756	738	2,993	1,454	1,205	1,510
1996	10,650	1,981	747	747	2,964	1,482	1,203	1,526
Poland:								
1972	33,056	8,409	3,498	3,156	8,700	3,551	2,839	2,903
1973	33,355	8,275	3,505	3,258	8,821	3,758	2,728	3,010
1974	33,654	8,185	3,482	3,341	8,943	3,938	2,654	3,111
1975	33,944	8,139	3,412	3,408	9,067	4,073	2,632	3,213
1976	34,244	8,154	3,296	3,450	9,218	4,189	2,632	3,305
1977	34,554	8,222	3,149	3,471	9,401	4,267	2,654	3,390
1978	34,890	8,322	2,995	3,477	9,619	4,297	2,713	3,467
1979	35,261	8,452	2,858	3,456	9,862	4,312	2,793	3,528
1980	35,633	8,603	2,741	3,389	10,112	4,317	2,918	3,553
1981	36,003	8,770	2,652	3,278	10,361	4,319	3,088	3,535
1982	36,363	8,945	2,591	3,135	10,614	4,323	3,259	3,496
1983	36,717	9,113	2,546	2,984	10,872	4,304	3,446	3,452
1984	37,056	9,273	2,512	2,848	11,111	4,262	3,611	3,439
1985	37,384	9,411	2,506	2,731	11,320	4,201	3,739	3,476
1986	37,694	9,525	2,526	2,642	11,503	4,122	3,849	3,527
1987	37,996	9,617	2,569	2,582	11,677	4,035	3,922	3,594
1988	38,280	9,671	2,638	2,536	11,845	3,951	3,952	3,687
1989	38,556	9,694	2,728	2,503	11,997	3,885	3,966	3,783
1990	38,819	9,691	2,822	2,497	12,126	3,822	3,969	3,892
1991	39,080	9,665	2,921	2,518	12,177	3,822	3,972	4,005
1992	39,332	9,619	3,021	2,561	12,134	3,914	3,976	4,107
1993	39,585	9,559	3,106	2,629	12,050	4,060	3,959	4,222
1994	39,832	9,489	3,180	2,719	11,946	4,232	3,922	4,344
1995	40,075	9,415	3,242	2,813	11,828	4,433	3,868	4,476
1996	40,320	9,344	3,290	2,912	11,697	4,678	3,797	4,602

TABLE II.—PROJECTED POPULATION, BY AGE GROUP—6 EASTERN EUROPEAN COUNTRIES: 1972-96—Continued

[Figures are in thousands and refer to midyear. They are based on projection series B]

Country and year	All ages	0 to 14	15 to 19	20 to 24	25 to 44	45 to 54	55 to 64	65 and over
Romania:								
1972	20,657	5,229	1,851	1,697	5,776	2,398	1,827	1,879
1973	20,857	5,252	1,844	1,746	5,774	2,560	1,742	1,939
1974	21,059	5,298	1,806	1,775	5,804	2,670	1,707	1,999
1975	21,264	5,367	1,739	1,804	5,843	2,745	1,706	2,060
1976	21,469	5,459	1,660	1,830	5,876	2,804	1,719	2,121
1977	21,677	5,571	1,579	1,843	5,906	2,852	1,744	2,182
1978	21,881	5,694	1,501	1,836	5,946	2,885	1,782	2,237
1979	22,081	5,824	1,434	1,798	6,006	2,904	1,841	2,274
1980	22,277	5,955	1,380	1,732	6,073	2,923	1,931	2,283
1981	22,468	6,066	1,362	1,653	6,126	2,947	2,054	2,260
1982	22,652	6,023	1,510	1,572	6,167	2,967	2,208	2,205
1983	22,825	5,894	1,749	1,495	6,197	2,977	2,354	2,159
1984	22,997	5,836	1,924	1,428	6,223	2,974	2,453	2,159
1985	23,169	5,818	2,064	1,375	6,249	2,951	2,522	2,190
1986	23,335	5,826	2,162	1,356	6,275	2,904	2,577	2,235
1987	23,510	5,846	2,103	1,504	6,306	2,840	2,621	2,290
1988	23,688	5,871	1,966	1,742	6,327	2,778	2,652	2,352
1989	23,877	5,902	1,906	1,917	6,340	2,721	2,670	2,421
1990	24,074	5,937	1,889	2,056	6,349	2,662	2,688	2,493
1991	24,278	5,975	1,901	2,154	6,362	2,607	2,711	2,568
1992	24,489	6,015	1,923	2,096	6,511	2,566	2,730	2,648
1993	24,707	6,058	1,945	1,959	6,715	2,558	2,741	2,731
1994	24,921	6,102	1,960	1,899	6,814	2,593	2,740	2,813
1995	25,132	6,151	1,968	1,883	6,864	2,657	2,718	2,891
1996	25,341	6,205	1,969	1,895	6,892	2,736	2,676	2,968

Note: Some of the population totals given here are slightly different from official figures published after these estimates and projections were prepared. The official figures which are different are as follows: for midyear 1972—8,579,000 for Bulgaria, 10,397,000 for Hungary, 33,068,000 for Poland, and 20,663,000 for Romania; for midyear 1973—14,578,000 for Czechoslovakia, 10,429,000 for Hungary, and 33,363,000 for Poland. The official figures for 1972 have been used in table 1.

TABLE III.—PROJECTED LABOR FORCE, BY AGE GROUP—6 EASTERN EUROPEAN COUNTRIES: 1972-96

[Figures are in thousands and refer to midyear. They are based on projection series I]

Country and year	All ages	15 to 19	20 to 24	25 to 44	45 to 54	55 to 64	65 and over	Median age ¹ (years)
Eastern Europe:								
1972	53,031	4,591	7,003	23,298	9,454	6,086	2,599	37.8
1973	53,536	4,490	7,187	23,480	9,579	5,739	2,612	37.9
1974	53,979	4,347	7,343	23,695	9,459	5,514	2,621	37.9
1975	54,343	4,172	7,452	23,954	9,701	5,439	2,625	38.0
1976	54,662	3,993	7,501	24,253	9,858	5,440	2,617	38.1
1977	54,935	3,818	7,502	24,590	10,957	5,467	2,601	38.1
1978	55,205	3,665	7,444	24,984	11,011	5,525	2,576	38.2
1979	55,478	3,538	7,319	25,413	11,062	5,609	2,537	38.3
1980	55,758	3,421	7,138	25,837	11,114	5,776	2,472	38.4
1981	56,106	3,325	6,931	26,253	11,129	6,076	2,392	38.6
1982	56,560	3,303	6,718	26,641	11,179	6,431	2,288	38.7
1983	57,031	3,321	6,533	27,007	11,188	6,794	2,188	38.8
1984	57,367	3,310	6,384	27,313	11,174	7,066	2,120	38.9
1985	57,582	3,297	6,253	27,576	11,146	7,219	2,091	39.0
1986	57,793	3,338	6,154	27,772	11,084	7,321	2,124	39.0
1987	58,044	3,327	6,189	27,985	10,993	7,384	2,166	38.9
1988	58,314	3,288	6,298	28,197	10,904	7,413	2,214	38.9
1989	58,567	3,282	6,369	28,385	10,833	7,438	2,260	38.8
1990	58,817	3,299	6,440	28,571	10,727	7,465	2,315	38.8
1991	59,068	3,329	6,522	28,703	10,658	7,487	2,369	38.7
1992	59,336	3,368	6,515	28,801	10,726	7,502	2,424	38.8
1993	59,631	3,410	6,458	28,883	10,895	7,502	2,483	38.8
1994	59,906	3,445	6,470	28,946	11,114	7,490	2,541	38.9
1995	60,180	3,469	6,520	28,726	11,398	7,464	2,603	39.0
1996	60,463	3,482	6,597	28,555	11,744	7,423	2,662	39.1

See footnote at end of table.

TABLE III.—PROJECTED LABOR FORCE, BY AGE GROUP—6 EASTERN EUROPEAN COUNTRIES: 1972-96—Continued

[Figures are in thousands and refer to midyear. They are based on projection series I.]

Country and year	All ages	15 to 19	20 to 24	25 to 44	45 to 54	55 to 64	65 and over	Median age ¹ (years)
Bulgaria:								
1972	4,596	256	510	2,157	958	508	207	39.2
1973	4,625	250	509	2,158	1,016	482	210	39.4
1974	4,647	243	504	2,165	1,053	470	212	39.6
1975	4,660	236	496	2,177	1,065	472	214	39.7
1976	4,670	229	492	2,186	1,067	481	215	39.8
1977	4,675	223	490	2,187	1,067	492	216	39.9
1978	4,684	217	486	2,188	1,070	509	214	40.0
1979	4,685	210	480	2,188	1,070	525	212	40.1
1980	4,681	205	473	2,189	1,065	536	213	40.2
1981	4,690	200	468	2,200	1,052	560	210	40.2
1982	4,704	193	462	2,212	1,039	595	202	40.3
1983	4,723	191	459	2,225	1,025	629	194	40.4
1984	4,733	192	453	2,240	1,010	649	189	40.0
1985	4,734	195	450	2,254	995	654	189	40.3
1986	4,742	195	445	2,269	983	655	195	40.3
1987	4,745	199	438	2,280	970	657	201	40.2
1988	4,752	201	440	2,290	955	658	208	40.2
1989	4,757	200	450	2,296	939	659	213	40.1
1990	4,764	199	457	2,299	933	656	220	40.0
1991	4,772	200	465	2,291	940	649	227	40.0
1992	4,778	201	475	2,275	953	641	233	40.1
1993	4,793	201	479	2,271	971	632	239	40.1
1994	4,808	201	478	2,267	995	623	244	40.2
1995	4,823	201	477	2,259	1,024	614	248	40.3
1996	4,838	200	478	2,254	1,046	607	253	40.4
Czechoslovakia:								
1972	7,392	754	1,073	3,167	1,393	809	196	36.8
1973	7,450	729	1,073	3,226	1,468	758	196	36.9
1974	7,485	697	1,075	3,279	1,517	721	196	36.9
1975	7,504	661	1,076	3,332	1,531	709	195	37.0
1976	7,520	629	1,068	3,391	1,528	710	194	37.2
1977	7,530	599	1,056	3,454	1,512	718	191	37.2
1978	7,542	581	1,037	3,519	1,490	727	188	37.2
1979	7,560	579	1,006	3,588	1,466	736	185	37.2
1980	7,588	579	972	3,661	1,443	754	179	37.2
1981	7,606	575	937	3,733	1,401	789	171	37.3
1982	7,665	568	906	3,802	1,396	831	162	37.4
1983	7,712	554	894	3,860	1,379	872	153	37.5
1984	7,749	537	904	3,899	1,364	899	146	37.5
1985	7,774	525	919	3,924	1,357	906	143	37.5
1986	7,799	530	927	3,937	1,356	904	145	37.4
1987	7,825	544	929	3,947	1,363	894	148	37.4
1988	7,856	569	920	3,953	1,383	881	150	37.3
1989	7,900	598	905	3,963	1,415	866	153	37.3
1990	7,956	624	899	3,971	1,455	852	155	37.4
1991	8,013	646	906	3,958	1,507	839	157	37.4
1992	8,076	664	930	3,921	1,579	823	159	37.5
1993	8,148	672	974	3,878	1,651	812	161	37.5
1994	8,219	673	1,024	3,845	1,712	803	162	37.5
1995	8,286	671	1,068	3,817	1,767	799	164	37.6
1996	8,349	667	1,107	3,789	1,821	799	166	37.7
East Germany:								
1972	8,484	802	1,016	3,884	1,317	1,119	346	37.5
1973	8,509	789	1,080	3,876	1,400	1,024	340	37.3
1974	8,545	780	1,137	3,873	1,469	952	334	37.2
1975	8,581	778	1,166	3,895	1,499	917	326	37.0
1976	8,622	783	1,171	3,938	1,508	905	317	37.0
1977	8,667	791	1,168	3,996	1,518	888	306	36.9
1978	8,720	801	1,160	4,062	1,539	862	296	36.8
1979	8,779	804	1,160	4,108	1,584	839	284	36.8
1980	8,848	795	1,172	4,130	1,645	836	270	36.9
1981	8,935	776	1,193	4,143	1,700	868	255	37.1
1982	9,024	747	1,222	4,149	1,752	916	238	37.3
1983	9,119	713	1,252	4,158	1,802	972	222	37.5
1984	9,183	676	1,273	4,151	1,855	1,019	209	37.7
1985	9,221	643	1,275	4,146	1,917	1,039	201	38.0
1986	9,239	623	1,259	4,144	1,974	1,039	200	38.2
1987	9,258	601	1,228	4,177	2,012	1,041	199	38.4
1988	9,263	568	1,186	4,231	2,034	1,047	197	38.6
1989	9,257	530	1,140	4,283	2,040	1,070	194	38.8
1990	9,242	496	1,097	4,359	1,990	1,106	194	38.9
1991	9,228	464	1,063	4,467	1,903	1,139	192	38.8
1992	9,204	441	1,026	4,547	1,827	1,172	191	38.8
1993	9,165	437	969	4,598	1,767	1,202	192	38.8
1994	9,107	442	905	4,625	1,705	1,237	193	38.9
1995	9,049	447	846	4,622	1,663	1,276	195	39.0
1996	8,997	454	791	4,598	1,642	1,315	197	39.2

See footnote at end of table.

TABLE III.—PROJECTED LABOR FORCE, BY AGE GROUP—6 EASTERN EUROPEAN COUNTRIES: 1972-96—Continued
 [Figures are in thousands and refer to midyear. They are based on projection series I]

Country and year	All ages	15 to 19	20 to 24	25 to 44	45 to 54	55 to 64	65 and over	Median age ¹ (years)
Hungary:								
1972	5,069	496	627	2,123	946	561	316	38.3
1973	5,087	475	636	2,138	996	528	314	38.4
1974	5,101	442	656	2,155	1,028	507	313	38.5
1975	5,104	405	675	2,175	1,034	504	311	38.5
1976	5,099	374	683	2,196	1,032	506	308	38.6
1977	5,088	349	681	2,219	1,025	509	305	38.6
1978	5,072	330	661	2,250	1,018	511	302	38.7
1979	5,055	315	623	2,296	1,012	512	297	38.8
1980	5,041	304	579	2,344	1,004	522	288	39.0
1981	5,040	297	541	2,388	990	548	276	39.1
1982	5,043	296	512	2,419	980	575	261	39.2
1983	5,048	301	491	2,437	970	602	247	39.2
1984	5,049	306	476	2,449	963	618	237	39.2
1985	5,039	310	465	2,454	958	619	233	39.2
1986	5,033	316	462	2,445	956	617	237	39.2
1987	5,029	320	468	2,429	958	612	242	39.2
1988	5,030	322	484	2,409	962	607	246	39.2
1989	5,034	323	500	2,388	971	603	249	39.2
1990	5,040	326	514	2,369	981	598	252	39.2
1991	5,044	330	525	2,359	984	590	256	39.1
1992	5,051	333	531	2,347	998	582	260	39.2
1993	5,061	335	533	2,333	1,019	577	264	39.2
1994	5,065	335	535	2,316	1,040	572	267	39.4
1995	5,070	333	540	2,297	1,060	569	271	39.5
1996	5,072	329	547	2,274	1,080	568	274	39.6
Poland:								
1972	16,765	1,295	2,471	7,291	2,938	1,898	871	37.7
1973	17,056	1,282	2,548	7,409	3,116	1,818	883	37.7
1974	17,323	1,258	2,610	7,528	3,271	1,764	892	37.7
1975	17,560	1,217	2,659	7,650	3,390	1,744	900	37.8
1976	17,779	1,160	2,689	7,793	3,494	1,741	902	37.9
1977	17,979	1,094	2,702	7,964	3,567	1,751	901	38.0
1978	18,178	1,027	2,703	8,165	3,600	1,787	896	38.1
1979	18,381	967	2,684	8,388	3,620	1,835	887	38.2
1980	18,572	914	2,629	8,617	3,632	1,913	867	38.3
1981	18,771	873	2,542	8,851	3,642	2,020	843	38.5
1982	18,956	841	2,430	9,090	3,653	2,127	815	38.7
1983	19,135	814	2,312	9,334	3,645	2,244	786	38.9
1984	19,288	792	2,206	9,562	3,618	2,346	764	38.9
1985	19,409	778	2,114	9,766	3,574	2,424	753	39.0
1986	19,520	785	2,045	9,924	3,507	2,495	764	39.0
1987	19,624	798	1,999	10,074	3,433	2,542	778	38.9
1988	19,724	819	1,963	10,219	3,362	2,562	799	38.9
1989	19,830	847	1,938	10,350	3,305	2,571	819	38.6
1990	19,939	877	1,933	10,461	3,252	2,573	843	38.7
1991	20,055	907	1,949	10,505	3,252	2,575	867	38.7
1992	20,186	938	1,983	10,468	3,330	2,577	890	38.7
1993	20,330	965	2,035	10,336	3,454	2,566	914	38.8
1994	20,483	988	2,105	10,305	3,601	2,542	941	38.9
1995	20,638	1,007	2,178	10,204	3,772	2,507	970	39.0
1996	20,805	1,022	2,254	10,031	3,980	2,461	997	39.1
Romania:								
1972	10,725	987	1,306	4,676	1,902	1,191	663	38.1
1973	10,809	965	1,341	4,673	2,032	1,129	669	38.3
1974	10,878	927	1,361	4,695	2,121	1,100	674	38.4
1975	10,934	875	1,380	4,725	2,182	1,093	679	38.6
1976	10,972	818	1,398	4,749	2,229	1,097	681	38.8
1977	10,995	762	1,405	4,770	2,268	1,109	682	39.0
1978	11,009	709	1,397	4,800	2,294	1,129	680	39.2
1979	11,018	663	1,366	4,845	2,310	1,162	672	39.4
1980	11,028	624	1,313	4,896	2,325	1,215	655	39.6
1981	11,064	604	1,250	4,938	2,344	1,291	637	39.9
1982	11,168	658	1,186	4,969	2,359	1,386	610	40.1
1983	11,294	748	1,125	4,993	2,367	1,475	586	40.1
1984	11,365	807	1,072	5,012	2,364	1,535	575	40.2
1985	11,405	849	1,030	5,032	2,345	1,577	572	40.2
1986	11,460	889	1,016	5,053	2,308	1,611	583	40.1
1987	11,563	865	1,127	5,078	2,257	1,638	598	39.9
1988	11,689	809	1,305	5,095	2,203	1,658	614	39.6
1989	11,789	784	1,436	5,105	2,163	1,669	632	39.4
1990	11,876	777	1,540	5,112	2,116	1,680	651	39.2
1991	11,956	782	1,614	5,123	2,072	1,695	670	39.0
1992	12,041	791	1,570	5,243	2,039	1,707	691	39.0
1993	12,134	800	1,468	5,407	2,033	1,713	713	39.1
1994	12,224	806	1,423	5,487	2,061	1,713	734	39.2
1995	12,314	810	1,411	5,527	2,112	1,699	755	39.2
1996	12,402	810	1,420	5,549	2,175	1,673	775	39.3

¹ Based on the assumption that the distribution of the labor force within the 25 to 44 year group is rectangular.

TABLE IV.—SUMMARY MEASURES OF THE TREND OF THE LABOR FORCE—6 EASTERN EUROPEAN COUNTRIES: 1950-96

[Figures refer to midyear. Those for the 1973-96 period are based on the series I labor force projections]

Year	Ratio of total labor force to population 15 to 64 years (X100)						Percent of total labor force in agriculture						Percent of nonagricultural labor force in industry					
	Bulgaria	Czecho- slovakia	East Germany	Hungary	Poland	Romania	Bulgaria	Czecho- slovakia	East Germany	Hungary	Poland	Romania	Bulgaria	Czecho- slovakia	East Germany	Hungary	Poland	Romania
Estimates:																		
1950.....	85.6	70.8	69.2	68.1	78.4	80.4	72.5	37.5	24.4	49.3	55.9	73.9	40.2	50.0	52.2	39.9	40.7	55.9
1955.....	83.4	74.3	73.6	70.6	77.2	85.0	66.0	33.8	22.3	41.6	48.4	68.2	43.6	50.2	51.2	45.5	41.6	47.2
1956.....	82.7	75.0	74.1	71.3	78.1	84.0	64.9	32.9	22.3	41.7	48.0	67.9	42.2	49.9	50.6	45.2	41.9	46.5
1957.....	83.8	75.2	75.1	71.6	78.4	83.7	61.5	31.6	21.2	41.9	47.4	68.1	42.9	50.2	50.8	46.1	42.7	47.0
1958.....	84.8	74.8	76.1	71.9	78.4	83.3	59.8	30.8	20.4	40.8	47.5	68.4	42.1	49.9	51.7	46.1	43.3	47.9
1959.....	84.7	73.7	76.3	72.3	78.9	83.3	59.0	28.8	19.5	39.3	47.1	68.0	47.1	49.9	51.2	45.7	42.8	47.7
1960.....	84.6	73.2	76.6	72.3	78.7	83.2	56.3	26.3	18.4	37.0	47.1	66.2	48.3	50.5	50.2	45.8	42.7	46.7
1961.....	82.2	73.7	77.9	71.4	78.9	83.4	54.1	24.6	18.1	35.1	46.2	64.1	47.5	49.9	49.7	46.3	42.8	46.4
1962.....	80.0	73.9	79.0	70.3	79.2	83.5	52.2	23.6	18.2	32.8	44.9	61.9	47.4	50.1	49.4	46.6	42.9	45.9
1963.....	78.3	73.6	78.6	70.5	79.2	83.1	49.2	23.2	17.1	31.2	43.8	60.3	47.4	49.5	49.5	46.8	42.8	45.5
1964.....	77.5	73.5	79.3	71.3	78.3	82.6	47.8	22.5	16.8	30.1	43.3	59.4	47.3	49.3	49.1	46.9	43.4	45.4
1965.....	76.9	73.9	80.0	70.8	78.4	82.1	45.2	21.8	16.5	29.8	42.0	58.1	48.0	49.0	48.9	47.1	43.8	45.5
1966.....	78.3	74.6	80.3	70.8	78.5	82.0	42.9	21.3	16.0	29.4	41.2	56.8	49.0	49.2	48.8	47.4	44.0	45.3
1967.....	78.4	74.7	80.8	70.9	78.6	81.3	40.6	20.7	14.8	28.6	40.1	55.6	48.7	48.7	48.7	48.2	44.1	45.2
1968.....	77.6	75.2	80.9	72.3	78.6	80.8	39.2	20.1	13.8	27.2	39.2	54.7	48.1	48.3	48.8	49.8	44.2	45.3
1969.....	77.9	76.4	81.0	72.2	78.2	80.2	37.8	19.5	13.2	26.2	38.0	53.5	47.1	47.6	48.3	50.3	44.4	45.9
1970.....	78.3	77.2	81.0	71.7	77.6	79.6	36.1	19.1	12.6	25.1	37.5	51.9	46.1	47.0	48.0	50.0	44.6	46.6
1971.....	78.8	77.7	81.2	71.6	77.4	79.5	34.8	18.8	12.3	23.9	36.7	49.7	46.0	47.0	47.9	50.3	44.8	47.3
1972.....	79.4	77.4	81.3	71.7	77.1	79.1	33.4	18.3	12.1	22.8	36.0	48.3	45.3	46.7	47.8	50.7	45.0	47.6

Projections:

1973	79.5	77.9	81.6	71.9	77.3	79.1	32.1	18.0	11.6	22.1	35.1	45.6	45.2	46.5	47.8	50.2	44.3	47.6
1974	79.5	78.1	81.9	72.0	77.5	79.0	31.0	17.7	11.1	21.5	34.2	45.0	45.1	46.4	47.7	49.8	43.7	47.7
1975	79.4	78.3	82.0	72.1	77.7	79.0	30.0	17.4	10.7	20.9	33.4	43.4	45.0	46.2	47.6	49.5	43.3	47.7
1976	79.3	78.4	82.0	72.2	78.0	79.0	29.0	17.2	10.3	20.4	32.5	41.9	44.9	46.1	47.5	49.4	42.9	47.7
1977	79.1	78.3	82.0	72.3	78.4	79.0	28.2	17.0	9.9	20.0	31.8	40.5	44.7	45.9	47.4	49.4	42.6	47.8
1978	78.9	78.3	82.0	72.3	78.7	78.9	27.4	16.7	9.6	19.6	31.0	39.1	44.6	45.7	47.3	49.4	42.3	47.8
1979	78.6	78.2	82.0	72.2	79.0	78.8	26.7	16.5	9.3	19.3	30.2	37.7	44.5	45.6	47.2	49.5	42.1	47.8
1980	78.4	78.0	82.0	72.1	79.1	78.6	26.0	16.2	9.0	18.9	29.4	36.4	44.4	45.4	47.1	49.6	41.8	47.9
1981	78.2	77.5	81.9	71.7	79.2	78.2	25.4	16.0	8.7	18.6	28.7	35.0	44.2	45.3	47.0	49.5	41.6	47.9
1982	77.8	77.3	81.7	71.3	79.2	77.4	24.7	15.7	8.4	18.2	27.9	33.6	44.1	45.1	46.9	49.4	41.4	48.0
1983	77.3	77.1	81.7	70.8	79.2	76.5	24.1	15.4	8.2	17.9	27.2	32.1	44.0	44.9	46.8	49.2	41.2	48.0
1984	76.9	76.9	81.7	70.5	79.2	75.8	23.5	15.1	8.0	17.6	26.4	30.9	43.9	44.8	46.7	49.2	41.1	48.0
1985	76.6	76.9	81.8	70.3	79.2	75.2	23.0	14.9	7.8	17.4	25.8	29.9	43.8	44.6	46.6	49.2	41.1	48.1
1986	76.7	76.9	81.8	70.4	79.2	75.0	22.5	14.7	7.7	17.2	25.1	28.9	43.6	44.5	46.5	49.3	41.2	48.1
1987	76.7	76.9	81.9	70.4	79.2	75.2	22.1	14.5	7.6	17.0	24.5	27.8	43.5	44.3	46.5	49.3	41.3	48.1
1988	76.7	76.9	82.1	70.5	79.1	75.6	21.7	14.2	7.5	16.8	24.0	26.8	43.4	44.1	46.4	49.3	41.4	48.2
1989	76.8	76.8	82.2	70.5	79.1	75.8	21.3	14.0	7.5	16.5	23.5	25.9	43.3	44.0	46.3	49.3	41.6	48.2
1990	76.9	76.8	82.3	70.6	79.0	75.9	21.0	13.7	7.5	16.4	23.0	25.0	43.1	43.8	46.2	49.2	41.7	48.3
1991	77.0	76.8	82.3	70.6	78.9	76.0	20.7	13.5	7.4	16.2	22.6	24.3	43.0	43.7	46.1	49.2	41.9	48.3
1992	77.1	76.8	82.3	70.7	78.8	76.1	20.4	13.2	7.5	16.1	22.2	23.6	42.9	43.5	46.0	49.2	42.0	48.3
1993	77.3	76.9	82.3	70.8	78.8	76.2	20.1	12.9	7.5	15.9	21.8	22.9	42.8	43.3	45.9	49.1	42.2	48.4
1994	77.5	77.0	82.1	70.8	78.8	76.4	19.8	12.7	7.5	15.8	21.4	22.2	42.7	43.2	45.8	49.2	42.3	48.4
1995	77.6	77.1	81.9	70.9	78.8	76.5	19.5	12.4	7.6	15.7	21.0	21.8	42.5	43.0	45.7	49.2	42.4	48.4
1996	77.8	77.1	81.7	71.0	78.9	76.7	19.3	12.2	7.6	15.6	20.7	21.1	42.4	42.9	45.6	49.2	42.6	48.5

Source: Tables I-B through I-G.

APPENDIX A

METHODS AND ASSUMPTIONS USED IN PREPARING THE PROJECTIONS

Population

The population projections presented here for Czechoslovakia, East Germany, Poland, and Romania supersede those prepared by the Foreign Demographic Analysis Division in March 1972 and published in December of that year.¹⁴ An evaluation of subsequent information indicated that the published projections for Bulgaria and Hungary were consistent with the latest information regarding the total population, the distribution of population by age and sex, and births, and deaths, and therefore did not require updating. The projections for the remaining four countries, however, did require updating for a variety of reasons. The starting dates for the projections are January 1, 1972, for Bulgaria and Hungary; January 1, 1973, for Romania; and January 1, 1974, for Czechoslovakia, East Germany, and Poland. For each country, the most recent distribution by single years of age and sex was used as the base population—1969 for Czechoslovakia, 1971 for Bulgaria and Hungary, 1972 for Romania and Poland, and 1973 for East Germany. In each instance, the distribution was updated to the starting date of the projection by using reported and estimated data on fertility, mortality, and total population for the intervening time period.

For each country, mortality was assumed to decline to the extent that life expectancy at birth would increase by 2.5 years during the projection period. This was accomplished by using families of life tables prepared by Coale and Demeny.¹⁵ For each country, the family of life tables was selected that most closely matched the estimated survival rates by age and sex for the year prior to the start of the projection period. The latter rates were estimated by adjusting survival rates derived from recent mortality data to yield the reported or estimated number of deaths, by sex, for that year. For each sex, two sets of survival rates were derived from the selected family of tables. The first set was chosen such that the associated life expectancy would be equal to the estimated life expectancy as calculated from the adjusted survival rates. The second set was selected on the basis of an associated life expectancy 2.5 years higher. The implied changes by age between the two sets of survival rates were then used to adjust the estimated survival rates for the base year to produce the survival rates for the year 2000 (the terminal year). Survival rates for each of the intervening years were interpolations and were used to calculate the numbers of deaths, by age and sex, for that year.

The fertility assumptions for each of the four series of projections were represented by an assumed maternal gross reproduction rate¹⁶ for each year of the projection period. These rates were used to adjust recently reported or estimated female age-specific fertility rates, which, in turn, were applied to the female population in the reproductive ages to give the projected numbers of births.

The fertility assumptions for each of the six countries are given in table A-1, both as ratios of the gross reproduction rate for the year prior to the start of the projection period (which is the way the assumptions were formulated) and in terms of the gross reproduction rates those ratios imply. These assumptions can be stated as follows:

Assumption A.—That the gross reproduction rate will rise from its level in the base year to that shown for the following year and continue to increase by a constant annual amount for 10 years, after which it will stabilize at the level shown until the end of the projection period.

Assumption B.—That the gross reproduction rate will remain constant at the base year level throughout the projection period.

¹⁴ Godfrey S. Baldwin, *Projections of the Population of the Communist Countries of Eastern Europe, by Age and Sex: 1972 to 2000*, U.S. Department of Commerce, International Population Reports, Series P-91, No. 22, Washington, D.C., December 1972.

¹⁵ Ansley J. Coale and Paul Demeny, *Regional Model Life Tables and Stable Populations*, Princeton, N.J., Princeton University Press, 1966. The end of the projection period was the year 2000, but the results given here extend only to 1996 to accord with the time limit of the labor force projections.

¹⁶ The gross reproduction rate is defined as the number of females that will be born to 100 women during their reproductive lifetime if a given set of birth rates by age of mother remains in effect.

Assumptions C and D.—That the gross reproduction rate will decline from its level in the base year to the values shown for the following year and continue to decline by constant annual amounts for 10 years, after which they will stabilize at the levels shown until the end of the projection period.

TABLE A-1.—ASSUMED GROSS REPRODUCTION RATES—6 EASTERN EUROPEAN COUNTRIES: 1972-96

Country and projection series	Ratio of the assumed gross reproduction rate to that estimated for the base year ¹		Gross reproduction rate	
	For year following base year	For period 11 years following base year to 1996	For year following base year	For period 11 years following base year to 1996
Bulgaria:				
A.....	1.10	1.30	114	134
B.....	1.00	1.00	103	103
C.....	.95	.90	98	93
D.....	.90	.85	93	88
Czechoslovakia:				
A.....	1.10	1.25	126	143
B.....	1.00	1.00	115	115
C.....	.95	.90	109	103
D.....	.90	.80	103	92
East Germany:				
A.....	1.20	1.40	84	98
B.....	1.00	1.00	70	70
C.....	.95	.90	67	63
D.....	.90	.85	63	60
Hungary:				
A.....	1.10	1.30	102	121
B.....	1.00	1.00	93	93
C.....	.95	.90	88	84
D.....	.90	.85	84	79
Poland:				
A.....	1.10	1.25	119	136
B.....	1.00	1.00	109	109
C.....	.95	.90	103	98
D.....	.90	.80	98	87
Romania:				
A.....	1.10	1.20	136	148
B.....	1.00	1.00	124	124
C.....	.95	.85	118	105
D.....	.85	.75	105	93

¹ The base years were 1971 for Bulgaria and Hungary, 1972 for Romania, and 1973 for Czechoslovakia, East Germany, and Poland.

In formulating the assumptions, the projected changes for a particular country were related to its current rate. For example, the 1973 rate for East Germany is very low; therefore, series A provides for a 40 percent increase by 1984 and series D allows for only a 15 percent decrease. On the other hand, the current rate for Romania is high, and the assumed changes for series A and D provide for a 20 percent increase and a 25 percent decrease, respectively, for the latter part of the projection period.

LABOR FORCE

The projections of the total labor force were prepared by applying labor force participation rates (LFPR's) to the series B projections of the population, by age group. Two series of labor force projections were prepared: series I was based on projected changes in the LFPR's, and series II was based on constant rates estimated for 1972. The series I projections were then disaggregated into the three sectors of agriculture, industry, and other nonagricultural activities. The projected agricultural labor force for each of the six countries was based on hypothetical average annual rates of decline. The projected industrial labor forces for Hungary and Poland were based on the expected size of this labor force at some future time as expressed by analysts in these countries; those for the other four countries were based on the assumption that the proportion of the nonagricultural labor force in industry would continue to change at one-half the rate by which this proportion changed between 1960 and 1972. The labor force in other nonagricultural branches for each year and for each country was derived as a residual.

TOTAL LABOR FORCE

The LFPR's were derived from those published by the International Labour Office (ILO) for each of the six countries for 1970, 1975, 1980, and 1985.¹⁷ For each country, the 1970 and 1975 rates for both sexes combined were interpolated linearly as a first estimate of the rates for 1972. These rates were then adjusted pro rata so as to yield the estimated labor force total for midyear 1972 as presented in table I. The resulting rates were used throughout the projection period for the series II projections; this series was prepared to show the effect of the expected changes in the rates. For the series I projections, LFPR's for each year of the 1973-85 period were based on the absolute changes in the ILO rates between 1970 and 1975, 1975 and 1980, and 1980 and 1985. These changes were interpolated linearly for each year and applied to the estimated rates for 1972. LFPR's for the 1986-96 period were assumed to be the same as those estimated for 1975. The rates for 1972, 1975, 1980, and 1985 used for each country are given in table A-2; linear interpolation will yield the rates used for intervening years. In general, the rates for the 15-19 and 65 and over age groups decline rather sharply, those for the 20-24 and 55-64 age groups decline slightly, and those for the 24-44 and 45-54 age groups increase slightly. The overall effects of the change in rates was, for each country except East Germany, to decrease labor force participation, as may be noted by comparing series I with series II totals in table 6.

TABLE A-2.—ESTIMATED AND PROJECTED LABOR FORCE PARTICIPATION RATES, BY AGE GROUPS—6
EASTERN EUROPEAN COUNTRIES: 1972-85

[Percent of population of the indicated ages in the labor force]

Country and year	15 to 19 years	20 to 24 years	25 to 44 years	45 to 54 years	55 to 64 years	65 years and older
Bulgaria:						
1972	37.92	73.65	88.50	84.72	59.29	23.69
1975	35.94	73.20	88.32	84.66	58.42	22.31
1980	32.64	72.40	88.02	84.56	57.02	19.81
1985	29.94	71.70	87.92	84.56	55.97	17.91
Czechoslovakia:						
1972	60.06	83.81	83.67	81.46	54.11	11.72
1975	57.51	84.20	84.00	81.61	53.90	10.94
1980	53.26	84.80	84.45	82.01	53.60	9.49
1985	49.46	84.95	84.85	82.41	53.40	8.44
East Germany:						
1972	61.01	88.69	86.94	79.15	60.62	12.85
1975	59.06	88.99	87.66	80.41	59.81	11.77
1980	55.81	89.39	88.56	83.01	59.36	9.87
1985	52.46	89.94	89.24	84.01	60.86	8.57
Hungary:						
1972	53.35	73.94	74.66	71.69	49.50	25.57
1975	51.19	73.73	75.08	72.02	48.72	23.68
1980	47.59	73.33	75.78	72.47	47.92	20.48
1985	43.99	73.18	76.73	72.87	47.22	17.93
Poland:						
1972	37.04	78.29	83.80	82.75	66.84	30.02
1975	35.66	78.02	84.37	83.23	66.27	28.01
1980	33.36	77.57	85.22	84.13	65.57	24.41
1985	31.06	77.42	86.27	85.08	64.82	21.66
Romania:						
1972	53.35	76.94	80.96	79.31	65.17	35.29
1975	50.29	76.52	80.87	79.49	64.06	32.95
1980	45.19	75.82	80.62	79.54	62.91	28.70
1985	41.14	74.92	80.52	79.48	62.51	26.10

Source: See text.

The ILO rates, and thus the pattern of change of the LFPR's used here, were based on a uniform methodology applied to all countries of the world which involved an extensive comparative analysis of labor force structure at different points of time. The basic assumption was that the magnitude and direction of change in the pattern and level of LFPR's in a given country will be similar to that

¹⁷ International Labour Office, *Labor Force Projections, 1985-1985*, part IV, Geneva, 1971. The labor force, or the economically active population, was defined in the source as comprising all employed and unemployed persons, including those seeking work for the first time. It covers employers, persons working on their own account, salaried employees, wage workers, unpaid family workers, members of producers' cooperatives, and members of the armed forces.

observed in countries which had undergone similar changes as among agriculture, industry, and services in their labor force structures. Thus, the changes for the six Eastern European countries would have been based on those that had occurred in those countries of the world, and especially those Western European countries, whose economies are less agricultural.

These changes would seem to be reasonable for the six countries concerned. For the younger ages, it may reasonably be assumed that more and more persons beyond age 15 will continue their education and thus lower LFPR's appreciably for the 15-19 year group and slightly for the 20-24 year group. For the older ages, it may also reasonably be assumed that larger proportions will take advantage of their eligibility to retire,¹⁵ especially if retirement benefits are increased to a level whereby retirees can live comfortably; based on past liberalizations of the pension systems, this may be expected. Also, the LFPR's for the older ages should decline by reason of the proportionate decline of the agricultural labor force, where participation of older persons is higher than it is in nonagricultural branches. The assumption of lower LFPR's for the older age groups may not be reasonable, however, if, in a critically tight manpower situation, strong efforts are made and inducements offered to have older workers remain active for as long as possible. This has been occurring, specially for skilled workers and others hard to replace and may intensify in the future. It should be noted, however, that even if the rates for the 65 and over age group continue at the 1972 level, the size of the labor force in the six countries would be larger in 1996 by only 0.8 percent in Czechoslovakia ranging upward to 2.3 percent in Hungary, and thus the effect of the assumed drop in activity rates for that age group is slight.

It would have been desirable to project the male and female labor force separately, rather than basing the projection on both sexes combined as was done here. The separate projections for each sex would have explicitly taken into account changes in the sex structure of, and in the LFPR's for, each age group. The results, however, would not have been significantly different from those presented here, because the rates used for both sexes combined are weighted averages for males and females, the sex ratios in the age groups below 55 years do not change appreciably, and the changes in rates for each sex do not differ significantly.¹⁶ Both sexes combined were used primarily because information was insufficient to determine the sex composition of the labor force in 1972. It would also have been desirable to have prepared the projections on the basis of 5-year age groups rather than the broad age groups used here. The latter are those used by the ILO in their estimates of activity rates and, since these were the only systematic set of rates available, they dictated the breadth of the age classes used.

Various schemes were tried in projecting the agricultural and industrial labor forces for each country. For agriculture, these included reductions of absolute numbers, reductions based on average annual rates of decline between 1960 and 1972, and reductions based on rates of decline in the proportions of the total labor force in agriculture. For industry, such schemes included the use of arbitrary proportions of the total increments to the nonagricultural labor force and the use of average annual rates of growth based on past experience. The methods finally used, which are detailed below, produced more stable and what appeared to be more reasonable results.

AGRICULTURAL LABOR FORCE

This sector was assumed to decline to the end of the projection period in accordance with the annual average rates given in table A-3. For Bulgaria and East Germany, these hypothetical rates were based on the proportion of the labor force engaged in agriculture in 1972 and on the trend of the rates of decline of the agricultural labor force during the 1957-72 period. For the other four countries, what might be considered to be logical hypothetical rates based on these criteria were modified to better fit the projected declines as expressed or calculated by analysts of the individual countries.

¹⁵ Generally, at age 55 for women and age 60 for men with at least 25 years of covered employment.

¹⁶ This assertion was tested by projecting the labor force for East Germany separately for males and females. The latter projection results in equivalent series I figures of 9,228,000 in 1986 and 9,019,000 in 1996 as compared with the figures of 9,239,000 and 8,997,000 presented here for the two dates, respectively. Thus, the differences are very small for this country, which has the most unbalanced sex ratios of any of the six countries and, aside from Hungary, had the largest differences between male and female LFPR's in 1970.

TABLE A-3.—ESTIMATED AND PROJECTED AVERAGE ANNUAL RATES OF DECREASE IN THE AGRICULTURAL LABOR FORCE—6 EASTERN EUROPEAN COUNTRIES: 1957-97

Period	Bulgaria	Czecho- slovakia	East Germany	Hungary	Poland	Romania
Based on estimates:						
1957-62-----	3.2	5.5	3.7	4.5	0.1	1.3
1952-67-----	4.5	1.6	4.3	1.9	.7	1.6
1957-72-----	3.1	1.2	3.9	3.7	.9	2.3
Projected:						
1972-77-----	3.0	1.2	3.5	2.5	1.0	3.0
1977-82-----	2.5	1.2	2.5	2.0	1.5	3.5
1982-87-----	2.0	1.2	1.5	1.5	2.0	3.0
1987-92-----	1.5	1.2	.5	1.0	1.5	2.5
1992-97-----	1.0	1.2	0	.5	1.0	2.0

Note: The apparent inconsistencies between the average annual rates given here for East Germany and Hungary and the percent changes given in table 5 are due to the difference in time intervals.

Source: 1957-72: Based on data in tables I-3 through I-G, 1972-97: See text.

For Czechoslovakia, Kotek indicates that the labor force in the "primary sector" will amount to 16 percent in 1975, 14 percent in 1980, 13 percent in 1985, and 11 percent in 1990.²⁰ Accepting the series I projections of the total labor force presented here, Kotek's proportions for 1990 would represent an average annual decline of 2.3 percent between 1970 and 1990. In another source, Brhlovic states that extrapolation of previous trends results in a 26.5-percent reduction in the agricultural labor force between 1970 and 1990 but that better results (a 47.2-percent decrease) are obtained by a regression analysis of the relationship of economic quantities which starts with the assumption of a dynamic growth in labor productivity.²¹ Although these projections appear to be overly optimistic as to the withdrawal of persons from agriculture, they nonetheless indicate the expectation of a larger withdrawal than that which would result from a more logical progression of ever-decreasing rates (for example 1 percent for 1972-77, 0.75 percent for 1977-82, and 0.5 percent for each year thereafter). These latter declining rates would have resulted in a total decrease of 200,000 in the agricultural labor force, or 14.7 percent, between 1972 and 1996, whereas the constant rate of -1.2 percent used here results in a decrease of 341,000, or 25.1 percent.

For Hungary, the rates of decline shown in table A-3 produce estimates of the agricultural labor force that are fairly well in line with figures given by Hungarian analysts. For the period January 1, 1971-76, Rozsa projects a decrease of 150,000,²² and the present figures project a decrease of 165,000 for the period midyear 1971-76. Huszar projects an agricultural labor force of 800,000 to 1,000,000 by 1985 or 15-18 percent of the total labor force,²³ and Hoch and Kovacs indicate that the number will probably decrease to 1 million by 1985, or a decline of 20 percent.²⁴ These latter two sets of figures may be compared with the present projection of 876,000 in the agricultural labor force in 1985, which represents 17.4 percent of the total labor force at that time and a decrease of 279,000, or 24.2 percent, since 1972. Had higher and seemingly more logical rates of decline been used—0.5 percentage points higher than those shown in table A-3—the agricultural labor force would number 820,000 in 1985 and 702,000 in 1996.

For Poland, it was initially assumed that the annual rates of decline would be as follows: 1972-77, 1.5 percent; 1977-82, 2 percent; 1982-87, 2.5 percent, and for the following years, 3 percent. These rates were modified downward to those shown in table A-3 to accord with a forecast of the labor force in sector I (agriculture, forestry, and mining) of 4.8 million in 1985,²⁵ and of 4.7 million in 1990.²⁶

²⁰ Kotek, *op. cit.*, p. 71.

²¹ Bernhard Brhlovic, "Forecasting Problems in a Long-Range Development of Labor Forces in Czechoslovak Agriculture," *Ekonomicky Casopis (Economic Journal)*, No. 8, 1973, pp. 733-734.

²² Josef Rozsa, "Employment and Manpower Situation in the Fourth Five-Year Plan Period," *Kozgazdasági Szemle (Economic Review)*, No. 3, 1971, p. 258.

²³ Istvan Huszar, "Hypotheses on the Development of Employment and the Standard of Living Up to 1985," *Gazdaság (Economy)*, No. 3, 1969, pp. 17-41.

²⁴ Robert Hoch and Janos Kovacs, "Fifteen Year Plan for Employment and Living Standards," *Napszava (People's Voice)*, January 4, 1970, p. 7.

²⁵ Wojciech Padowicz, "Prospective Forecasts of Structural Shifts in Employment," *Gospodarka Planowa (Planned Economy)*, No. 5, 1973, pp. 331-338.

²⁶ Kazimierz Secomski, "Prospects for Long-Range Economic Development," *Gospodarka Planowa (Planned Economy)*, No. 11, 1971, pp. 640-45.

The rates of decline used here result in a projection of 5.0 million in agriculture alone by midyear 1985, and 4.6 million by 1990.

For Romania, the rates of decline given in table A-3 may also be considered to be somewhat higher than might reasonably be expected for the 1972-77 period and somewhat lower for the 1987-96 period. The present rates were adopted as the best approximation to the Romanian forecasts that the agricultural labor force would constitute 40 percent of the total in 1975,²⁷ 30-35 percent in 1980,²⁸ and 20 percent in the 1990-2000 period.²⁹ The projections presented here indicate that the agricultural labor force represents 43.4 percent of the series I total in 1975, 36.4 percent in 1980, and 21.1 percent in 1996.

As in many other countries, the exodus from agriculture in Eastern Europe has resulted in an agricultural labor force that is old, unskilled, and generally consisting of an unusually large proportion of women and of persons unemployable elsewhere. In Czechoslovakia, over 20 percent of the agricultural labor force are over 60 years of age, and in Poland, 32 percent.³⁰ Because of the preponderance of old people in the agricultural labor forces of the six countries, the numbers of deaths and retirements because of old age will, for most countries at least, be larger than the projected reductions. In Czechoslovakia, for example, where an estimated 273,000 of the agricultural labor force were 60 years and older in 1972, the numbers of deaths and of those reaching age 70 in the 1972-82 period would amount to about 339,000, whereas the projections of the agricultural labor force show a decline of 154,000. Thus, even without taking into account transfers to nonagricultural work during the 10 years, 185,000 new workers would have to be added if the agricultural labor force were to be reduced to the projected level of 1,202,000 in 1982. Although this number amounts to only about 8 percent of the 2.2 million who will reach age 15 during the period, repeated attempts to recruit young people for agricultural work in Czechoslovakia, as in the other five Eastern European countries, has met with little success; in Czechoslovakia, for example, less than 50,000 of those working in agriculture are 15-19 years old. It may be concluded, therefore, that the projected reductions in the agricultural labor force are conservative; they may be much larger.

INDUSTRIAL LABOR FORCE

The assumption that the proportion of the nonagricultural labor force in industry would continue to change at one-half the rate by which this proportion changed between 1960 and 1972 was used to project the industrial labor force for Bulgaria, Czechoslovakia, East Germany, and Romania.³¹ For Hungary, however, the use of this assumption resulted in a growth of 394,000 in industry and a decline of 29,000 in other nonagricultural branches during the 1972-96 period. This unreasonable growth pattern was due to the 1960-72 trend of an increasing share of the nonagricultural labor force in industry and a very low increase in all nonagricultural branches. The projection was therefore made on the basis of the expectation by Hungarian writers that the industrial labor force will increase to about 2 million by the mid-1980's.³² Accordingly, the industrial labor force was set at 2.05 million in 1985 and the yearly increase determined by the change between that number and the number in 1972. The first scheme devised to project the yearly increase was to decrease the proportion that the industrial labor force was of the nonagricultural labor force each year and continue the same rate of decrease to the end of the projection period. This was abandoned because the industrial labor force varied only between 2,046,000 and 2,056,000 for each year of the 1983-96 period and because the 2,052,000 in the industrial labor force in 1996 was the same size as it was 12 years before. It was therefore decided to use

²⁷ Mircea Bulgaru, "Changes in Structure of the Population Working in Agriculture," *Romania Libera* (Free Romania), July 6, 1971, pp. 1, 3.

²⁸ Constantin I. Necu, "Labor Force Statistics Projected to 1990," *Probleme Economice* (Economic Problems), No. 12, December 1972, pp. 126-133.

²⁹ E. V. Topala, L. Tureti, and A. Cumara, "Long-Range Predictions Concerning the Labor Force," *Probleme Economice* (Economic Problems), No. 5, May 1972, pp. 144-148.

³⁰ For Czechoslovakia, official figures; for Poland, Anna Szembek, "The Present and Future Structure of Farming," *Zycie Gospodarcze* (Economic Life), Jan. 13, 1974, p. 6.

³¹ These proportions for each country since 1950 are given in table IV.

³² Ivan Pal and Zsuzsa Mausecs, "Demographic and Employment Policy—A Prognosis for 1985," *Gazdasag* (Economy), No. 3, 1971, pp. 7-23, and Hoch and Kovacs, *op. cit.* Pal and Mausecs indicate that experts dealing with the long-term development of industry estimate that industry will need 2.0 to 2.1 million workers by 1986 and that other experts feel that 2.1 to 2.2 million will be needed. Hoch and Kovacs state that the increase in industrial workers will decelerate; nonetheless, their number will increase to 2 million by 1985.

the average annual rate of growth between the 1972 and 1985 figures (0.248 percent) and apply it each year to the 1972 figure. This procedure resulted in more reasonable projections of the two major nonagricultural branches whereby industry absorbed one-third of the total gain of 365,000 in the nonindustrial labor force. It also resulted in industry declining as a proportion of the non-agricultural labor force from 50.7 percent in 1972 to 49.2 percent in 1996, as indicated in table IV, which is in accord with the expectation of Hungarian analysts that the growth of employment in industry will decelerate and that employment in the services sector will be promoted.

For Poland, following the method used for four of the countries noted above resulted in an increase in the industrial labor force from 4.8 million in 1972 to 6.7 million in 1985 and to 7.2 million in 1990. These figures were much higher than the expected numbers as given by Padowicz and by Secomski for industry and construction combined. Subtracting 20 percent of their figures to represent construction, the approximate proportion of construction workers and employees in the combined category in 1970, resulted in figures of 5.5 million for 1985³³ and 6.4 million for 1990³⁴ for industry alone. Since both figures represent different average annual rates of increase, Secomski's value for 1990 was accepted and the industrial labor force was increased to the end of the projection period at the rate (1.58 percent per year) required to produce this value.

COMPARISONS WITH OTHER SYSTEMATIC PROJECTIONS

The only recent systematic projections available for the countries included here were those prepared by Janos Timar,³⁵ of the Hungarian National Planning Bureau, and by the ILO.³⁶ The latter projections were part of a worldwide set and may be compared with the present projections and the Timar projections only for 1980; the present projections and the Timar projections may also be compared for 1990 (table A-4). Each projection starts off with a different labor force total in 1970, the base year, although the Timar base figures are much lower overall. Also, the differences in the amount of change between the series I projections and the ILO projections for the 1970-80 period are very small as compared with those of the Timar projections. Comparing the series I projections with the Timar projections for the 1970-80 and the 1980-90 periods indicate that the levels of the increments are distinctly different.

TABLE A-4.—COMPARISON OF THREE LABOR FORCE PROJECTIONS—6 EASTERN EUROPEAN COUNTRIES: 1970
1980, AND 1990

(In thousands)

	Eastern Europe	Bulgaria	Czecho- slovakia	East Germany	Hungary	Poland	Romania
1970:							
Series I	52,114	4,493	7,261	8,445	5,013	16,346	10,556
ILO	52,487	4,544	7,124	7,908	5,131	16,392	11,388
Timar	50,380	4,150	7,030	8,170	4,970	16,180	9,880
1980:							
Series I	55,758	4,681	7,588	8,848	5,041	18,572	11,028
ILO	56,579	4,692	7,434	8,277	5,171	18,978	12,027
Timar	56,770	4,870	7,160	8,180	5,310	19,320	11,930
1990:							
Series I	58,817	4,764	7,956	9,242	5,040	19,939	11,876
Timar	58,500	4,800	7,290	8,600	5,410	20,260	12,140
Difference, 1970-80:							
Series I	3,644	188	327	403	28	2,226	472
ILO	4,092	148	310	369	40	2,586	639
Timar	6,390	720	130	10	340	3,140	2,050
Difference, 1980-90:							
Series I	3,059	83	368	394	-1	1,367	848
Timar	1,730	-70	130	420	100	940	210
Difference, 1970-90:							
Series I	6,703	271	695	797	27	3,593	1,320
Timar	8,120	650	260	430	440	4,080	2,260

Source: Series I: Tables I-A through I-G, ILO: ILO, op cit., pp. 122-127. Timar: See text.

³³ Padowicz, *op. cit.*

³⁴ Secomski, *op. cit.*

³⁵ Janos Timar, "Development of Employment in the CEMA Countries from 1950 to 1990," *Kozgazdasagi Szemle (Economic Review)*, No. 3, March 1973, pp. 285-310.

³⁶ ILO, *op. cit.*

Timar states that his projections were prepared by applying LFPR's for each sex separately to population projections published by the CEMA Permanent Commission on Statistics. The CEMA population projections by age and sex are not available, but totals were published by Timar and are compared below for 1990 with the total populations used here as the bases for the series I labor force projections (in millions):

	Series B projection	CEMA projection
Bulgaria.....	9.4	9.5
Czechoslovakia.....	16.1	15.1
East Germany.....	16.1	17.8
Hungary.....	10.6	11.2
Poland.....	38.8	38.8
Romania.....	24.1	24.0

It is probable that some of the differences in increments between the series I and the Timar projections are due to differences in the numbers in the various age groups as reflected in these totals. For example, Timar's projected total population for Hungary is 600,000 higher than series B and his labor force increment between 1970 and 1990 is 400,000 higher than series I. This explanation cannot hold for East Germany, however, since the difference in the total population and the labor force increment is in the opposite direction; the total population for 1990 used here is 1.7 million lower than the total used by Timar, yet the labor force increase in series I is 367,000 higher than Timar's figure.

Since assumptions regarding fertility constitute the crucial variable in population projections, most of the differences in the projected totals noted above would involve the numbers of persons born since the starting date of the projections. Assuming that the starting date for the CEMA projections was 1970 or later, such persons would be under 20 years of age as of 1990 and large differences in their numbers would have only a minor effect on labor force projections. This assertion was tested by projecting the labor force for East Germany by applying the same LFPR's used in series I to the various age groups of a previously published but superseded population projection whose total was 17.6 million for 1990,³⁷ or only 0.2 million lower than the CEMA total. This projection resulted in a total labor force in 1990 of 9,344,000, or only 102,000 more than the series I total of 9,242,000. Thus, the major part of the differences between the series I and the Timar projections must be attributable to factors other than the population bases.

In an attempt to determine what these factors are, Bulgaria's labor force was projected to 1980 and 1990 using series B population projections by age and sex and Timar's LFPR's (as determined from the graphics, in which form the rates are presented).³⁸ It was found that projecting each sex separately, rather than both sexes combined, resulted in a total different by only 12,000 from that given by Timar for 1980 and 6,000 for 1990. Timar's results also were nearly replicated by using LFPR's for both sexes combined (by averaging male and female rates) and series B population projections; for 1980, a labor force of 4,804,000 resulted as compared with Timar's published figure of 4,870,000, and for 1990—4,778,000 as compared with 4,800,000. Thus, the differences between Timar's projections and those presented here for Bulgaria, are due almost entirely to the LFPR's used and the difference in the base figures for 1970. His total for 1970 seems too low and inconsistent with his LFPR's for that year, especially since the latter are identical with the ILO rates which correspond to a labor force some 400,000 higher. Also, the pattern of change of the LFPR's appears to be abrupt and quite different from that used here, as may be noted below for both sexes combined:

³⁷ Series B projection in Baldwin, *op cit.*

³⁸ The series B total population in 1990 was essentially the same as the CEMA total for Bulgaria, Poland, and Romania and therefore the numbers in the various age groups are probably also very close. Bulgaria was selected for this analysis because the labor force increments between 1970 and 1990 in the series I and the Timar projections are proportionately larger for Bulgaria than they are for Poland and Romania.

Age	LFPR's—Timar			LFPR's—Series I	
	1970	1980	1990	1980	1990
15 to 19.....	39	49	46	33	30
20 to 24.....	74	80	80	72	72
25 to 44.....	88	86	87	88	88
45 to 54.....	84	83	83	85	85
55 to 64.....	60	61	55	57	56
65 plus.....	26	20	10	20	18

Timar shows the Bulgarian labor force declining by 70,000 between 1980 and 1990 whereas series I shows it increasing by 83,000. The largest part of this difference (98,000 of the 153,000) is accounted for by the age group 65 and over, and 48,000 of the remaining difference is accounted for by the 55- to 64-year group. This is to say that the steeper declines of Timar's LFPR's for these ages and their lower levels in 1990 account for almost all the difference between the projected changes in the labor force totals at these two points in time.

Although the analysis just described was not repeated for the other five countries, it is probable that the major part of the differences between the two sets of projections are due essentially to the same factors.

EDUCATION AND ECONOMIC GROWTH: THE POSTWAR EXPERIENCE IN HUNGARY AND POLAND*

By MARJORY E. SEARING

CONTENTS

	Page
I. Main Findings and Methodological Notes.....	480
A. Introduction.....	480
B. Summary and conclusions.....	481
C. Assumptions and shortcomings.....	483
II. The Contribution of Education to Economic Growth: The Denison Technique.....	486
III. The Contribution of Education to Economic Growth: The Schultz Technique.....	502
Appendix Tables.....	511
Appendix: Estimates of Gross National (Domestic) Product in Hungary, 1950 to 1959.....	523
Bibliography.....	523

TABLES

1. Relative wages by level of education in Hungary and Poland in 1967...	491
2. Relative wages in Poland by level of education assuming $\sigma=2$: 1950 to 1970.....	492
3. Relative wages in Hungary by level of education assuming $\sigma=2$: 1950 to 1970.....	493
4. Relative wages in the material production sphere of the Hungarian economy by level of education assuming $\sigma=2$: 1950 to 1970.....	493
5. Rates of growth of the labor quality index due to increases in education for $\sigma=2$ and $\sigma=\infty$: 1950 to 1970.....	493
6. Contribution of factor inputs to economic growth in Hungary: 1950 to 1970.....	496
7. Contribution of factor inputs to economic growth in the material production sphere of the Hungarian economy: 1950 to 1970.....	497
8. Contribution of factor inputs to economic growth in Poland: 1950 to 1970.....	499
9. Rates of return to investment in education in Poland: 1950 to 1970...	506
10. Rates of return to investment in education in Hungary: 1950 to 1970..	507
11. Rates of return to investment in education in the material production sphere of the Hungarian economy: 1950 to 1970.....	507
12. Contribution of factor inputs to economic growth in Hungary and Poland under alternative rates of return to the investment in education: 1950-55 and 1965-70.....	510

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I. MAIN FINDINGS AND METHODOLOGICAL NOTES

A. Introduction

A great deal of literature has emerged in recent years concerning the economics of education and, within this field, the contribution of increases in the educational level of the labor force to economic growth. While this relationship has been examined in several studies for nonsocialist countries, little has been done for the countries with socialist economic systems, particularly in Eastern Europe, either by Western or East European economists themselves. As is well known, when these governments emerged after World War II, economic growth and development was adopted as a major goal. Toward this end, the need for increasing the level of education of the labor force was acknowledged, and expansionary efforts in education are evident in the economic plans and investment allocations of the postwar period. Because educational development was emphasized in this way, the degree of its impact on the growth of the socialist economies should be significant.

The purpose of this study is to assess the role of education in the economic development of Hungary and Poland. The first aspect of the investigation consists of determining the changes in the levels of educational attainment of the total and economically active populations within these countries. Since the distributions of these populations by educational level are usually available from censuses only, previous studies for other countries have been limited to changes in these levels over one or two intercensal periods. Relating these broad trends in educational attainment levels to the growth in output has the disadvantage of obscuring the impact of year-to-year changes in these levels on year-to-year changes in economic growth. To overcome this shortcoming, estimates were derived for the levels of educational attainment of the population and labor force in both countries for every year beginning with 1950.¹

Using the educational attainment data for the economically active population, figures on output, and figures on the value of the physical capital stock, the contribution to economic growth of the growth of each of these factors can be determined. One technique utilized in this study follows a procedure originally proposed by Edward Denison adjusted to fit the Hungarian and Polish cases. In the Denison work, he used data on income differentials by level of education and, assuming a certain percentage of these differentials is due to differences in educational attainment of the individual, he calculated the effect of increased education on past growth in several countries. Unlike Denison's approach, the calculations done here include results derived as in a study for other countries by Marcelo Selowsky for the case when relative wages by level of education cannot be assumed constant because they are sensitive to changes in the educational distribution of the labor force.

¹ The derivation of the estimates are given in Marjory E. Searing, *Estimates of Educational Attainment in Poland: 1950-1969*, International Population Reports Series P-95, No. 68, U.S. Department of Commerce, Washington, D.C.: U.S. Government Printing Office (GPO), 1970; Marjory E. Searing, *Estimates of Educational Attainment of the Population and Labor Force in Hungary: 1949-1971*, International Population Reports Series P-95, No. 71, U.S. Department of Commerce, Washington, D.C., GPO, 1972; and Marjory E. Searing, "Education and Its Contribution to Economic Growth Under Socialism: The Experience in Hungary and Poland," Unpublished Ph.D. dissertation, Georgetown University, 1972.

A procedure originally undertaken by Theodore W. Schultz for estimating the contribution of education to growth consisted of evaluating the stock of human capital and dividing the increase in this value into the changes due to increases in the size of the labor force and to increases in the educational level of the labor force. Then assuming various rates of return on this investment in education of the labor force, he calculated several estimates of the contribution of increased education to economic growth. It is shown in this study that the Schultz and Denison procedures are the same under certain conditions, namely, when the rates of return for investment in each educational level are assumed equal to the wage differential accruing to this level divided by the cost of educating a person up to this level. Using Schultz' technique, various other rates of return are applied and the results are compared.

B. Summary and Conclusions

If one can take the liberty to generalize the experience in Poland and Hungary to all Socialist countries, significant differences in the structure of the real resource costs of education, and investment in human capital have been found in the preparation of this study relative to those found in previous work for the United States. Whether or not they represent a generalized distinction between Socialist and Capitalist education policies can only be determined if similar research is undertaken for other countries in the future. Nevertheless several major findings were derived in the preparation of this study which provide enlightening contrasts between the Socialist countries and the United States:²

(1) Because the Socialist countries have developed using centralized economic planning, and the need for skilled and semiskilled manpower to meet the economic plans was recognized, expansion of the educational system was an active part of the development program. This had the effect of producing rapid gains in educational attainment at all levels, but especially the vocational secondary level in Poland and the primary level in Hungary. Since students in Hungary who finish primary schools as well as attain some vocational training are included among the primary school graduates in the attainment figures used in this study, the increase in educational attainment at the primary level in Hungary and the vocational in Poland reveal the emphasis placed on functional education, i.e., that training which provided the vocational skills needed in both economies to achieve the goals of the economic plans.

(2) An item that represents a significant component of the direct costs of education in Socialist countries which is a negligible factor in U.S. educational expenditures are the allocations of material aid primarily from the State budget to students in the form of stipends or living allowances. In Hungary stipends constituted over 20 percent of expenditures on higher education in each of the last 11 years, and in Poland they represented about 12 percent of both higher and secondary educational expenditures. These allotments, which were netted out in a determination of the real resource costs of education, kept the private cost of education at fairly low levels.

² All of these findings are discussed in detail in Searing, "Education and Growth," op. cit., pp. 195-209.

(3) The valuation of physical plant relative to current educational costs in the United States is less than in Hungary or Poland. It was found that annual costs of the charge on educational capital in each of these Socialist countries represents over 21 percent of total current expenditures in Poland, and over 26 percent of those in Hungary, percentages which are larger than those calculated in other studies for the United States.

(4) The proportion of the real resource cost of education represented by income foregone by students was found to be significantly less in each of these countries than indicated in other studies for the United States. Moreover, adjusting the figure in another study on the U.S.S.R. to make it comparable to those for the United States, Poland, and Hungary, indicated that income foregone in that country was as little as in the other two Socialist countries examined. Thus, the opportunity cost of increasing levels of educational attainment has been less for these countries than for the United States.

(5) The ranges of relative wages by level of education in Hungary and Poland were found to be significantly narrower than those in non-Socialist countries for which data are available. As a result, the use of differentials of wages of persons in the ages 25 to 29 by level of education rather than those for the entire labor force changed estimates of education's contribution based on these wages very little.

In the analysis of the contribution of education to economic growth presented in this paper, assuming that labor is paid a wage equal to its marginal product, and taking the differences in wages by level of education as due to differences in education only (thereby representing the contribution of education to output), the effect of education was divided into three factors: (a) The contribution of increases in educational attainment of the labor force at levels above the less-than-primary level; (b) the contribution of maintaining the levels of educational attainment above the less-than-primary level at a constant height; and (c) the contribution of raw labor, i.e., the labor force as if it had attained only the minimum level of schooling—the less-than-primary level. In this analysis the following results were obtained:

(1) The contribution of increases in educational attainment of the labor force at levels above the less-than-primary level to economic growth in both countries was and has become increasingly significant over the past 20 years. The magnitude of the contribution depends, however, upon the value of the elasticity of substitution among labor groups, σ , that is, the sensitivity of relative wages to changes in the distribution of the labor force by level of education. The more sensitive are relative wages to these changes, that is, the lower the value assumed for σ , the lower has been the level of this contribution and its rate of increase over time, given that the wage differentials represent the contribution of education to differences in productivity, and therefore output.

(2) The contribution of the maintenance factor has been relatively small, partly because of the relatively narrow range of relative wages in these countries, but also because of the relatively few persons in the labor force who had until recently attained levels of education above the less-than-primary level. This kept the contribution of maintaining

as constant the educational attainment levels above the minimum at a low level.

(3) The contribution of the raw labor force has generally been substantial throughout the period in both countries, with its significance higher in Poland and the material production sphere of the Hungarian economy in the last 5 years than in the first 5 years of the 20 year period.

(4) The contribution of the growth of the physical capital stock in Hungary and Poland has been larger than the contribution of the other three factors combined and has increased significantly over the past two decades, with that in Hungary during the early 1960's being extremely high (about 60 percent), and for the material production sphere, in excess of the growth of output.

(5) The residual has become much smaller over the period under review in both countries, indicating that more of the growth of output can be explained by a more rapid increase in inputs than by increases in such factors as efficiency, organization or technological progress.

(6) Calculating annual rates of return on the investment in education per unit of labor assuming that labor is paid a wage equal to its marginal product, and that the contribution to output due to differences in education is represented by the wage differentials by level of education, reveals that their trends over the 20-year period depend upon the elasticity of substitution among the labor groups. If relative wages have been completely insensitive to changes in the size of the labor groups by level of education during the postwar years, that is, if σ has been infinite, then the returns to the investment in education at all levels per person in the labor force have steadily increased in both countries, with those in Poland higher at every level than those in Hungary. On the other hand, the more sensitive are relative wages to changes in the input mix, that is, the lower the value of σ , the smaller the rise in the rates of return, and taking the elasticity of substitution as equal to a lower limit of two yields steadily declining rates of return to investment in education per person in the labor force at all levels above the less-than-primary level.

(7) Applying different assumptions about the relationship between differences in productivities of persons at different levels of attainment and differences in wages, does not change the estimated contributions of increasing levels of educational attainment above the minimum level of schooling to economic growth nor the contributions of the maintenance factor nearly as much as do different assumptions about the value of the elasticity of substitution among labor groups.

C. Assumptions and Shortcomings

There are a few limitations of the study which should be mentioned at the outset. First, the emphasis on formal education does not take account of other factors such as experience, on the job training, and even improvements in nutrition and health, all of which add to the quality of the population and labor force and therefore to the value of the human capital stock and its contribution to production. These other factors are, however, far more difficult to measure than even the factor presented here, so that omitting them was unavoidable. The

increase in formal educational investment in human capital determined here, therefore, constitutes only one part of the change in the value of human capital in these countries during the past 2 decades. Second, all expenditures on education with the exception of transfer payments are taken in this study as investment expenditures, that is, as part of the total investment in human capital, whereas many would argue that educational expenditures are also for consumption purposes. Clearly much education is undertaken for noneconomic reasons such as prestige or social value and would not be considered an investment type of expenditure by those funding it. Nevertheless, the above procedure was adopted, without regard for the motivations behind the resource formation. Third are the limitations of the statistics used, themselves. Most of the analytical findings derived in this study rest to a greater or lesser degree on the accuracy of the statistical information utilized. This information is either reported in Hungarian and Polish statistical sources or else estimated and pieced together from various publications and official statistical documents. The reliability of many of the findings therefore rests upon the accuracy of the estimates made.

In addition to problems with the statistical data, both reported and estimated, several major assumptions have been made in the course of the investigation which should be singled out, and their impact on the foregoing conclusions noted. First, in the calculation of total current expenditures on education in each of these countries needed for this study an estimate of the annual charge for the use of educational capital was derived by applying 8 percent to the value of educational property in Hungary and Poland as was done in a similar study for the United States. This 8 percent represents the combined cost of depreciation of plant and equipment as well as an implicit interest rate charged on the use of educational capital. One would however, expect real interest in both of these countries to be considerably higher than the 5.1 percent used to derive the composite percentage in the U.S. study; perhaps an interest rate on the order of 15 percent would be more realistic given the stages of economic development in these two countries and the scarcity of capital relative to the United States. If a higher composite rate had been estimated, incorporating some higher real interest rate with the same depreciation charges, and applied to the value of educational property in these two countries, the valuation of physical plant relative to current costs in these two countries would have been larger. For example, the annual costs of the charge on educational capital in Hungary and Poland for 1970 would have risen to 34 and 26 percent, respectively, of total current expenditures on education if a composite rate of 12 percent (for both depreciation and interest) was applied to the value of educational capital.

A second assumption adopted in the calculations of the real resource costs of education used in this paper concerns the amount of income foregone by students. Specifically, it was assumed that youths currently attending school would otherwise be employed and therefore forego income while in school. If, however, in Poland, where unemployment has existed over the past few years, students are in actuality encouraged to stay in school because employment is not available to them, the opportunity cost of attending school would be zero. Taking

this view, the real cost of education in Poland can be contrasted with that in Hungary, where unemployment has not been a problem and students would therefore presumably be employed if not in school. If the estimates of income foregone in Poland were subtracted from the total real resource cost of education estimated for 1970 for use in this study, this would reduce its share in estimated Polish gross national product from 5.7 to 4.7 percent, a proportion closer to that achieved in Hungary with no adjustment to its total real resource costs of education in that year.

A third major assumption incorporated in the analysis of the contribution of education to the growth of output is that labor is paid a wage equal to its marginal product. This assumption combined with Euler's Theorem has been used to determine the portion of total output represented by the wage bill and thereby the total contribution of labor to output, the remainder being attributed to physical capital. If, as one might expect, the wage paid to labor is not equal to but less than the marginal product of labor in these countries, the results derived here understate the total contribution of labor to the growth in output. In addition, since the results for the contribution of the growth of physical capital were derived on the basis of both the marginal product assumption and Euler's Theorem, which probably does not hold for these economies, they too are tentative.

Finally, because of another major assumption, namely, that wage differentials by education equal differences in productivities due to differences in education only, not only may the total contribution of labor be underestimated, but the division of this contribution between the educational components and the raw labor component may be inaccurate. In reality, one would expect the range of relative wages in these countries to understate the real differences in productivities due to education, so that the contribution of the educational component to the growth of output should be larger, and that for raw labor smaller than computed in the main results of the study. One alternative larger range of differences in productivities was applied to the data to illustrate the impact of a change in this last assumption upon the main findings, and these latter figures are undoubtedly closer to reality than those depending upon the wage differentials in these countries.

It should also be mentioned that one would expect the existence of some waste in the composition of the output of educated people by specialty or type of skill relative to the needs of every country. There is always the possibility that too many people possessing a certain skill emerge from the educational system and too few with another than required by a changing and developing economy. In Hungary and Poland, however, where educational planning suffered from shortsightedness, particularly in the early years, this problem may be more significant. One is not hard pressed to find instances mentioned in the literature written on these countries in which an individual trained as an engineer, for example, is working at a job requiring a much more limited educational background. To the extent that the increase in educational levels attained by persons in the labor force is underutilized in this or any other manner, the contribution of education to the growth in output would be less than implied by the increases in educational attainment actually achieved in these countries.

In view of the problems with the statistical data and the assumptions adopted in deriving the findings presented in this investigation, they must be considered tentative. On the other hand, it would be unwise to reject these results because of the uncertainty of the data and assumptions utilized. Rather, in this attempt to apply the economics of education to two countries in Eastern Europe, the problems are formulated, and approximate solutions are derived. In so doing, several findings are presented which are unlike those found previously in the work on nonsocialist countries and which have had an impact on the role of education in the economic development of each of these countries during the years under socialism. It is hoped that in future research, the validity and impact of the data and assumptions as well as many of the findings will be analyzed and the results expanded to more fully assess this role.

II. THE CONTRIBUTION OF EDUCATION TO ECONOMIC GROWTH: THE DENISON TECHNIQUE

To estimate the contribution of education to economic growth a model will be used relating growth of output to growth of various inputs. That part of growth not explained by any of the variables will be taken as the residual and includes the contributions of such factors as informal training, health improvements, institutional factors, public policies, etc.

In the Denison approach, which has since been reapplied, revised, and expanded, he examined income differentials by level of education in the U.S. for one year, 1949, and assuming that three-fifths of the differential was due to differences in education, he calculated the effects of increased education on past growth. For each year that a distribution of persons by level of education was available, he calculated what the average earnings of males over 25 would have been assuming relative wages by educational level remained the same as in 1949. The differences in the computed earnings from period to period were then used to isolate the effect of changes in the level of schooling on average income (or output).³ Crucial to the accuracy of this procedure, however, is the validity of the assumption that three-fifths of the wage differentials can be attributed to differences in educational attainment. This will be discussed further below.

To apply the Denison approach to Hungary and Poland, it is assumed in this study that there exists for each of these two countries, an aggregate production function such that aggregate output, Y , is related to the flow of services of the factors capital, K , raw labor, L , and education, E , of the form: ⁴ $Y = F(K, L, E)$
Assuming also that the function is twice differentiable and differentiating first with respect to time, this becomes:

$$(1) \quad Y' = f_k K' + f_l L' + f_e E'$$

where the primes indicate time derivatives and the f 's are partial derivatives, or marginal products of the various factors. Assuming

³ Jon T. Innes, Paul B. Jacobson and Roland J. Pelligrini, *The Economic Returns to Education: A Survey of the Findings* (Eugene: University of Oregon, 1965), p. 33.

⁴ It is not the purpose of this study to explore aggregate production function theory and thus the problem of the existence of such a function will not be examined. For a survey of the literature on this subject see M. Ishaq Nadiri, "Some Approaches to the Theory and Measurement of Total Factor Productivity: A Survey," *Journal of Economic Literature* (December 1970).

that wages reflect these marginal productivities, and taking e_0 as the wage paid for raw labor, and e_i as the real wage of persons who attained the i th level of education, one gets: ⁵

$$(2) \quad Y' = f_k K' + e_0 L' + \sum_{i=0}^n (e_i - e_0) L_i'$$

Thus, we are assuming that the contribution to growth of education is reflected in the wage differential between that paid to raw labor, that is, labor that has attained no formal schooling, and that to labor with education up to the i th level. Clearly, this is Denison's approach. In the equation, $f_k K'$ represents the contribution of capital to growth, $e_0 L'$ is the contribution of the raw labor force to growth and

$\sum_{i=0}^n (e_i - e_0) L_i'$ is the contribution of education to growth. For Poland and Hungary, this model has been slightly modified so that $e_0 L'$ represents the contribution of the labor force with the minimum level of schooling, that is, the less-than-primary level, to growth, and $\sum_{i=0}^n (e_i - e_0) L_i'$ is the contribution of education above the minimum educational level. As Marcelo Selowsky shows in an article on the subject, the last term on the right can be further divided into two components, namely, since $(e_0 - e_0) = 0$ we have:

$$(3) \quad \sum_{i=0}^n (e_i - e_0) L_i' = L' \sum_{i=1}^n (e_i - e_0) L_i / L + L \sum_{i=1}^n e_i (L_i / L)'$$

where the first term on the right is the contribution to growth of maintaining constant the distribution of the labor force by level of education above the minimum level, while the second term is the contribution of increasing the levels of educational attainment above the minimum level.⁶ Thus, equation (2) can be written as:

$$(4) \quad Y' = f_k K' + \left\{ e_0 + \sum_{i=1}^n (e_i - e_0) L_i / L \right\} L' + L \sum_{i=1}^n e_i (L_i / L)'$$

Again, since $(e_0 - e_0) = 0$ this is the same as:

$$(5) \quad Y' = f_k K \left\{ e_0 + \sum_{i=0}^n (e_i - e_0) L_i / L \right\} L' + L \sum_{i=1}^n e_i (L_i / L)'$$

⁵ This function is Cobb-Douglas in form. In empirical studies of aggregate production for western countries, primarily the U.S., a function of this or the C.E.S. form is generally used to estimate the relationship between the factor inputs, capital and labor, adjusted or not for technological change and/or labor quality improvements, and output. The original basis of the use of the Cobb-Douglas function and later the C.E.S. functions as representative of the aggregate production function for the U.S. is the observed constancy of labor's share in the distribution of total product. In the analysis presented here, however, we are dealing with socialist countries and the contribution of changes in factor inputs to economic growth, but have no a priori basis for applying a function of the Cobb-Douglas or C.E.S. form to the input-output relationship. Nevertheless, an examination further below of labor's share indicates that a fairly stable proportion has existed in these countries as well during the period under review.

⁶ It should be noted that while this derivation rests on Selowsky's study, there is a slight difference in interpretation being used here. In Selowsky's work, e_0 was the wage to raw labor with no formal schooling, while here it is the wage paid to persons who attained the less-than-primary level of education. See Marcelo Selowsky, "On the Measurement of Education's Contribution to Growth," *The Quarterly Journal of Economics* (August 1969), pp. 450-452.

Letting the average wage be represented by E , it is equal to

$$\sum_{i=0}^n e_i L_i / L$$

so that equation (5) can be written as:

$$(6) \quad Y'/Y = a_1 K'/K + (b_1 + c_1) L'/L + d_1 Q'/Q + R$$

where $a_1 = f_k K/Y$; the share of capital in total output,

$b_1 = e_0 L/Y$; the share of the quantity of the labor force in total output, i.e., the share if all persons had attained only the minimum level of schooling,

$c_1 = (E - e_0) L/Y$; the share of educational inputs in total output,

$d_1 = b_1 + c_1 = EL/Y$; the share of labor in total output,

$Q'/Q = \sum_{i=1}^n (e_i/E)(L_i/L)'$; the relative change in an index of quality of the labor force,

$R =$ a residual including the contribution of other factors to growth.

This model incorporates the basic assumptions of the Denison approach including a few modifications by Selowsky. As mentioned previously, however, Denison assumed that only three-fifths of the income differential by level of education was attributed to differences in formal education. He made this assumption recognizing that innate ability, on the job training, experience, age, and other factors, many of which are correlated with the level of an individual's formal educational attainment, also contribute to the wage differential. Others, such as Fritz Machlup criticize the use of income differentials as the measure of the contribution of education to output altogether. He argues that as the supply of persons with higher levels of educational attainment increases faster than the demand, income differentials will decline and estimates of the contribution of education based on them will decline also.⁷ Basing one's estimates of education's contribution to growth purely on the premise that it is entirely reflected in the earnings and hence the marginal productivities of the educated, however, omits the contribution of education to productivity through its impact on technological, managerial, and organizational progress.⁸ But to account for the latter contribution, an adequate measure of this factor is needed, and since no such measure is available, one is forced to fall back on the more traditional approach, despite the valid shortcomings mentioned by Machlup.

In applying this model to the data for Hungary and Poland, the variable Y represents the gross national products of the two countries, K the value of the physical capital stocks, L the economically active populations, and Q'/Q the quality index defined above.

For Poland, figures are published for every year since 1950 on the total net material product of that country in 1961 prices. The Marxist concept of net material product, also called national income in Eastern

⁷ This will become apparent later when estimates are made of changes in relative wages due to changes in the educational distribution of the labor force.

⁸ Fritz Machlup, "Universal Higher Education: Promise or Illusion?," Unpublished paper presented at a Symposium of the UCRA, New York, Feb. 18, 1972, p. 13.

Europe, excludes so-called nonproductive services, i.e., direct governmental and private services for the population or the state (administration, defense, health, education, finance, etc.). It includes, however, services for the material production sphere of the economy such as freight transportation (in Poland also passenger transportation) and that part of communications which is serving production.⁹ To adjust the reported figures to roughly correspond to the U.S. concept of gross national product, which includes all services, the ratio of gross national product estimated for Poland in 1965 to the reported net material product in that year was applied to the reported figures in all other years.¹⁰ The results are given in appendix table I.

For Hungary, two series of figures or indices are reported. The first is a net material product or national income series in comparable prices similar in coverage to the series for Poland. These figures, given in appendix table I, will be used in the model when estimates are made further below of the contribution of the various factor inputs employed in the material production sphere of the Hungarian economy to the growth in output of that sphere. The other series reported for Hungary is a gross domestic product series in comparable prices which roughly corresponds to the same concept as U.S. gross national product. The data are available only for the years 1960 through 1970, however, and the years 1950-59 had to be estimated.¹¹ The complete series is presented in appendix table I.

A series of the value of the physical stock of capital, K , in Poland since 1950 is given in appendix table II. These figures are reported, but there is a possibility that they contain an upward bias.¹² It is assumed, however, that if such a bias exists, it will not affect the results.

The values of the physical capital stock in Hungary from 1950 to 1970 are also presented in appendix table II. These figures, as well as a series of the value of physical capital in the material production sphere of the Hungarian economy, were derived from the official indices and figures on fixed assets, some of which had to be adjusted to make them comparable to the figures reported using the most recent valuation practices.

The economically active populations, L , of the two countries by level of educational attainment in all years are presented in appendix tables III and IV. The economically active population in the material production sphere of the Hungarian economy by level of education is presented in appendix table V.

To derive the quality index, $Q'/Q = (e_i/E)(L_i/L)'$, income or wage data, by level of education are needed. If the income differentials are to reflect the differences in education only, it would be better if the figures used are the income differentials received by individuals immediately upon joining the labor force after completing their educa-

⁹ Maurice Ernst, "Postwar Economic Growth in Eastern Europe," in U.S. Congress, Joint Economic Committee, *New Directions in the Soviet Economy, Part IV: The World Outside* (Washington, D.C.: GPO, 1966), p. 879; Andrew Elias, *Soviet Practice in the Classification of Economic Activity* (Washington, D.C.: GPO, 1961), pp. 2-3. See the above sources for a more complete discussion of the components of material product in the socialist countries.

¹⁰ This same procedure was applied in The Project on National Income in East Central Europe, "Estimates of GNP, Defense, Education, and Health Expenditures of East European Countries, 1966-1970," Unpublished task report prepared for the U.S. Arms Control and Disarmament Agency, Washington, D.C., 1971.

¹¹ See Searing, "Education and Growth," op. cit., pp. 293-295.

¹² *Ibid.*, p. 125.

tion. The longer a person is active in the economy, the more important become other factors such as experience, age, creativity, intelligence, dependability, and ambition in determining the differential in earnings, and thus the differences in contributions to output, given the assumption that earnings reflect marginal productivities.¹³ While such data are not available for either country, rough approximations exist for Hungary using figures given in a sample survey of 16,000 Hungarian households taken in March of 1968.¹⁴ The survey provides data on monthly wages by level of education of persons in broad age groups. Taking the data for the group between the ages of 25 and 29, the youngest age group for which education at all levels has generally been completed, and calculating e_i/E for all $i=0, \dots, n$, where i is the level of education, gives a set of wage differentials that comes as close as possible to reflecting differences in productivity due to differences in education only. These relative wages are presented in table 1. Wage differentials for the entire economically active population covered in the survey are also presented in this table, and will be used to calculate an alternate set of results comparable to those derived for Poland, described further below.

Since no data are available for Poland on wage differentials by level of education, let alone broken down by age, the figures presented in table 1 were pieced together from the reported average wage of all persons employed in the socialized economy, that of persons with higher education and that of persons with vocational secondary education, with the remaining levels derived on the basis of the figures for Hungary.

Using the same set of relative wages to calculate the quality index for every year requires the assumption that relative wages are independent of changes in the input mix, i.e., changes in the distribution of persons in the labor force by level of educational attainment. This is the same as assuming that the elasticity of substitution among labor groups is infinite. Selowsky has assumed various alternative values for the elasticity of substitution and computed the resulting relative wages for two countries in the years for which educational distributions of the labor forces were available, using these elasticities. The use of different elasticities changes the relative wages as the input mix changes, and thus changes the estimated contribution of education to the annual growth rate considerably in his work. The same procedure will be applied here to determine the impact of the value of the elasticity upon the estimated contributions derived further below. Since, however, estimates of the educational distribution of the labor force have been made for this study for every year, unlike those in Selowsky's work, a series of relative wages has also been constructed for every year.

¹³ It should be noted that these factors are themselves largely an outgrowth of the education an individual obtains, i.e., as education becomes better assimilated and more relevant, it enhances their development.

¹⁴ Központi Statisztikai Hivatal (KSH), *A keresetek szóródása és szerepe a munkásalkalmazotti háztartások jövedelmében* (Distribution of Earnings of Workers and Employees and Their Role in Household Income), Budapest: Statisztikai Kiadó Vallalat, 1971.

TABLE 1.—RELATIVE WAGES, BY LEVEL OF EDUCATION IN HUNGARY AND POLAND IN 1967

Hungary			Poland	
Educational level	Active population, 25 to 29 yr	Total active population	Educational level	Total active population
e_0/E^1	0.936	0.931	e_0/E^1	0.845
e_1/E^2.....	.988	.945	e_1/E^2.....	.963
e_2/E^3	1.031	1.093	e_{2a}/E^4	1.073
e_j/E^6	1.143	1.511	e_{2b}/E^5	1.073
			e_3/E^6	1.665

¹ e_0 represents the less-than-primary level.

² e_1 represents the primary level.

³ e_2 represents the secondary level.

⁴ e_{2a} represents the general secondary level.

⁵ e_{2b} represents the vocational secondary level.

⁶ e_3 represents the higher level.

Source: Hungary: KSH, "A keresetek szóródása," p. 99; Poland: Główny Urząd Statystyczny (GUS), "Rocznik Statystyczny 1971" (Statistical Yearbook 1971), (Warsaw: GUS, 1972), pp. 588 and 592, and the figures for Hungary.

Selowsky derives an equation for calculating relative wages in any year as a function of the educational distribution of the labor force in that year using an aggregate production function, Cobb-Douglas in form:

$$(1) \quad Y = K^a (L^*)^{1-a}$$

where L^* is itself a C.E.S. function with L^* an index of labor input as a function of the educational distribution of the labor force.¹⁵ That is,

$$(2) \quad L^* = \left(\sum_i d_i L_i^\rho \right)^{1/\rho}$$

where d_i is a distribution parameter of the i th level of schooling, and $\rho = (\sigma_L - 1)/\sigma_L$, σ_L being the elasticity of substitution among labor groups, assumed constant. The choice of these two functional forms for the production and labor functions was based on two patterns that have emerged in empirical evidence, mentioned by Selowsky: (1) Time series data on most countries show that labor's share of national income has remained roughly constant despite significant changes in the capital-labor ratio; and (2) time series and inter country data show a low sensitivity of relative wages classified by schooling to changes in the educational distribution of the labor force and to changes in the over-all capital-labor ratio.¹⁶ Selowsky shows, assuming the marginal product of any labor category L_i equals the observed wage rate, e_i , that the equation used to calculate the relative wages for any educational level is:

$$(3) \quad e_i/E = d_i \left(\sum_i L_i \right) / L_i (L_i/L^*)^\rho$$

¹⁵ Selowsky, "Education's Contribution," op. cit., pp. 453-455.

¹⁶ *Ibid.*, p. 452.

where the values of d_i are derived from the educational distribution of the labor force in the year for which the data on earnings by level of education are available. That is, each d_j is determined from the equation:

$$(4) \quad d_j = e_j L_j^{1-\rho} / \sum_i e_i L_i^{1-\rho}$$

TABLE 2.—RELATIVE WAGES IN POLAND BY LEVEL OF EDUCATION, ASSUMING $\sigma=2$: 1950 TO 1970

	Level of education				
	Higher	Vocational secondary	General secondary	Primary	Less-than-primary
1950.....	2.588	2.138	1.230	1.111	0.764
1955.....	2.167	1.619	1.225	1.090	.772
1960.....	1.957	1.471	1.192	1.058	.792
1965.....	1.804	1.270	1.168	.975	.857
1970.....	1.651	1.035	1.079	.990	.915

Source Based on the relative wage distribution given in table 1, the distribution of the economically active population by level of education in each year, given in appendix table III and the formula: $e_i/E = d_i (\sum_i L_i/L_i) (L_i/L_i)^{1/2}$.

Since, as will be seen later, labor's share in output in both Hungary and Poland has been relatively stable, one can perhaps be justified in applying these two functional forms to their data. Taking the elasticity of substitution at a value of 2, representing a lower limit, yields values of the d_i for each country in 1967 which can be used to calculate relative wages in all other years by substituting into equation (3) above, the d_i and the appropriate figures from the educational distribution of the labor force in each year. The resulting relative wages in 1950, 1955, 1960, 1965, and 1970 in Poland are given in table 2. Those for the total economy and the material production sphere in Hungary in the same years are presented in tables 3 and 4, respectively.

Using the data on relative wages, two sets of quality indices for each country can be determined. The first set is calculated assuming constant relative wages throughout the period, or that the elasticity of substitution among labor groups, σ , is infinite.¹⁷ The second set is calculated for each 5 year interval, 1950-55 and so on, taking σ at a lower limit of 2.¹⁸ The former set is presented in appendix table VI while the growth indices over 5 year intervals for both sets are given in table 5.

$$d_i = e_i / \sum_i e_i$$

and using equation (3) to find the e_i'/E' for all other years, one gets:

$$e_i'/E' = e_i / \sum_i e_i (\sum_i L_i'/L_i') L_i'/L_i' = e_i' / \sum_i e_i' (\sum_i L_i'/L_i') = e_i / \sum_i e_i (\sum_i L_i' / \sum_i e_i) (L_i') = e_i \sum_i L_i' / \sum_i e_i L_i'$$

so that $e_i' / \sum_i e_i' L_i' = e_i / \sum_i e_i L_i'$, and, thus, relative wages are constant.

¹⁸ Estimates of σ in previous studies indicate that the elasticities are much higher than 2 (usually around 12), so this can be taken as a representation of a lower limit. See Samuel Bowles, "Aggregation of Labor Inputs in the Economics of Growth and Planning: Experiments with a Two-Level C.E.S. Function," *Journal of Political Economy* (January/February, 1970). Selowsky uses the value 2 as a lower limit also.

¹⁷ If σ is infinite then $(\sigma-1)/\sigma$ approaches 1 as a limit. Taking ρ as 1, equation (4) reduces to:

TABLE 3.—RELATIVE WAGES IN HUNGARY BY LEVEL OF EDUCATION, ASSUMING $\sigma=2$: 1950 TO 1970

Year	Level of education			
	Higher	Secondary	Primary	Less-than-primary
Wages for ages 25 to 29:				
1950.....	2.011	1.877	1.688	0.778
1955.....	1.716	1.609	1.461	.789
1960.....	1.527	1.424	1.304	.809
1965.....	1.285	1.157	1.094	.886
1970.....	1.143	.999	.965	1.015
Wages for all ages:				
1950.....	2.032	1.898	1.640	.786
1955.....	1.735	1.628	1.421	.798
1960.....	1.545	1.442	1.270	.820
1965.....	1.303	1.174	1.067	.899
1970.....	1.161	1.016	.942	1.031

Source: Based on the relative wage distributions given in table 1, the distribution of the economically active population by level of education in each year given in appendix table IV and the formula: $e_i/E = d_i (\sum L_i/L_i) (L_i/L_i)^{1/2}$.

TABLE 4.—RELATIVE WAGES IN THE MATERIAL PRODUCTION SPHERE OF THE HUNGARIAN ECONOMY BY LEVEL OF EDUCATION ASSUMING $\sigma=2$: 1950 TO 1970

Year	Level of education			
	Higher	Secondary	Primary	Less-than-primary
Wages for ages 25 to 29:				
1950.....	2.449	2.412	1.988	0.796
1955.....	1.857	1.801	1.561	.803
1960.....	1.579	1.537	1.367	.821
1965.....	1.261	1.170	1.101	.900
1970.....	1.119	1.000	.970	1.020
Wages for all ages:				
1950.....	3.274	2.568	1.917	.796
1955.....	2.481	1.916	1.504	.802
1960.....	2.108	1.635	1.317	.821
1965.....	1.683	1.244	1.060	.899
1970.....	1.492	1.063	.934	1.018

Source: Based on the relative wage distributions given in table 1, the distribution of the population economically active in the material production sphere given in appendix table V and the formula: $e_i/E = d_i (\sum L_i/L_i) (L_i/L_i)^{1/2}$.

TABLE 5.—RATES OF GROWTH OF THE LABOR QUALITY INDEX DUE TO INCREASES IN EDUCATION FOR $\sigma=2$ AND $\sigma=\infty$: 1950 TO 1970

[In percent]

Year and elasticity	Hungary				
	Poland, total economy	Total economy		Material production sphere	
		Wages for ages 25 to 29	Wages for all ages	Wages for ages 25 to 29	Wages for all ages
1950-55:					
$\sigma=\infty$	4.26	6.23	6.35	8.18	8.16
$\sigma=2$	2.35	3.83	3.82	5.80	5.84
1955-60:					
$\sigma=\infty$	3.97	6.21	6.32	6.50	6.49
$\sigma=2$	1.85	3.50	3.50	4.07	4.09
1960-65:					
$\sigma=\infty$	8.68	13.32	13.55	15.00	14.98
$\sigma=2$	3.95	6.93	6.94	8.02	8.04
1965-70:					
$\sigma=\infty$	6.50	13.25	13.47	12.75	12.73
$\sigma=2$	2.78	6.35	6.36	6.15	6.18

Source: Tables 1, 2, 3, 4 and appendix tables III-V.

As mentioned previously, Denison assumed that only three-fifths of the wage differential reflected differences in productivity due to education. Some would argue that a similar assumption should be applied here, especially for Poland where wages for the entire economy are used, and in the calculation of the second quality index for Hungary. Since, on the one hand, Denison's assumption was fairly arbitrary, and moreover, because the results derived here may understate the contribution of education to growth by ignoring its impact on technology, organizational progress, and so forth, it was decided not to make this assumption. The use of different quality indices for Hungary, one of which has been calculated using wages that reflect as nearly as possible the contribution of education only to growth, may serve to indicate whether or not this gives results that overstate the contribution of education to growth.¹⁹ Moreover, the effects of using wage differentials three-fifths of those used here will be seen when the second form of the model is discussed in chapter III.

In addition to figures for all of the variables which have now been supplied, data must also be derived for the relevant coefficients in the model. Dealing first with b_1 , c_1 , and d_1 , the three coefficients relating to education and labor, $c_1 = (E - e_0)L/Y$, the share of educational inputs in total output, is the contribution to output resulting from maintaining the educational attainment levels above the minimum level of schooling of a changing labor force as constant, and $b_1 = e_0L/Y$ is the contribution of the labor force at the minimum level of schooling. The coefficient d_1 is the share of the contribution of labor in total output, or labor's share in gross output. Figures are reported for Poland on the gross average wage in all years from 1950 through 1970 for persons employed in the socialized economy; the comparable figures for Hungary are reported for 1955, and 1960 through 1970.²⁰ Using these data, and letting $d_1 = EL/Y$, where E represents the reported wage for each year, gives the share for each year. The ratio in the missing years for Hungary was taken as equal to the 1955 ratio for the years 1951-54, and the 1960 ratio for the years 1956-59. To determine b_1 and c_1 , e_0 is taken as the wage going to labor in the less-than-primary category, and E , the average wage. Then $b_1 = e_0/E(d_1)$, and $c_1 = d_1 - b_1$. Lastly, Euler's Theorem permits us to conclude that $a_1 + d_1 = 1$, so that the coefficient a_1 is determined.²¹

With the data provided for all of the variables and the coefficients used in the model, the results of the computations can be presented. Five different sets of data for each of two values of σ , 2 and ∞ , were examined, and summary tables of the results follow. In the first set for Hungary, the values of the variables for the total economy were used together with the first quality index; that is, the one derived

¹⁹ In fact, it can be seen in table 5 that the effect of using wage data for the age group 25-29 years changes the growth in the quality index very little and therefore has little impact on its contribution to economic growth.

²⁰ See GUS, *Rocznik Statystyczny 1971*, p. 588, and KSH, *Statisztikai évkönyv 1970* (Statistical Yearbook 1970), Budapest: Statisztikai Kiadó Vallalat, 1971, p. 110.

²¹ Given two factors of production, capital (K) and labor (L), total output can be written as:

$$Y = f_k K + f_l L$$

where the F 's are the marginal products of each of the factors. Letting r be the rate of return per unit of capital, and E the wage per unit of labor, and assuming each factor is paid its marginal product, this equation becomes:

$$Y = rK + EL$$

Dividing through by Y , we get:

$$1 = rK/Y + EL/Y = a_1 + d_1$$

using relative wages for the population 25 to 29 years of age. The elasticity of substitution among the labor groups was taken as equal to ∞ . The complete results are given in appendix table VII. Using all of the above but taking the quality indices derived using the relative wages for the total active population yields the results given in appendix table VIII. The variables for the material production sphere of the Hungarian economy, together with the first and the second set of quality indices with $\sigma = \infty$, give the figures presented in appendix tables IX and X, respectively. Lastly, appendix table XI contains all four cases above for 5-year intervals with $\sigma = 2$. The results for Poland with $\sigma = \infty$ and $\sigma = 2$ are presented in appendix tables XII and XIII, respectively. All of the above computations are summarized for 5-year intervals in tables 6 through 8.

From table 6 and 7, it can be seen that the use of the two sets of relative wages, one derived for the age group 25-29 years, and the other for the total economically active population, changes the estimates of the contribution of education to economic growth only slightly when the elasticity is taken as infinite, and virtually not at all when it is taken as two. This is due primarily to the relatively small differences between the two sets of relative wage distributions used. This becomes more apparent when the distributions given in table 1 are compared with those for Chile, Mexico, and India, given in Selowsky's work, and for the U.S. given in Denison's study. Relative wages in Chile range from a low of .451 for those persons in the labor force with 0-2 years of schooling, to 11.288 for those who completed 17 or more years of schooling (the higher educational level), while in Mexico the range is .574 to 7.080, and in India, .861 to 9.268.²² The range of relative wages for the United States, going from 0.5 to 2.35, is not as broad as in these three countries, but still exceeds that in either of the Hungarian sets or in Poland.²³ It appears, therefore, that the range of relative wages for Hungary and Poland are significantly narrower than those in nonsocialist countries at varied stages of development. In socialist countries, wages are generally determined by the economic planners and not the market forces, however imperfect, of the capitalist countries, to cause socialist labor to flow into the productive processes which need it to fulfill planned output.²⁴ As a result, wage differentials by level of education are designed for the same purpose, i.e., to channel the flow of persons into those processes which need the education and training they possess. Until recently, this need was not determined on the basis of economic considerations such as profitability or efficiency in operation, but more or less on the aims of the planners, and the sometimes arbitrary decisions of the enterprise managers. The economic reforms introduced in many of the East European countries in the late 1960's are designed to reduce the practice of setting wages arbitrarily, and thereby the resulting inefficiency in the allocation of labor resources, by introducing a profit system into enterprise management. This may also result in increasing wage differentials, but the results of these new systems remain to be seen, and at present the narrow ranges of wage differentials given above prevail.

²² Selowsky, *Education's Contribution*, op. cit., p. 452.

²³ Innes, Jacobson, and Pelligrini, *Returns to Education*, op. cit., p. 34.

²⁴ See George N. Halm, *Economic Systems-A Comparative Analysis* (New York: Holt, Rinehart and Winston, Inc., 1968), pp. 270 and 311-312.

TABLE 6.—CONTRIBUTION OF FACTOR INPUTS TO ECONOMIC GROWTH IN HUNGARY: 1950 TO 1970

[In percent]

Year and elasticity	Y'/Y	Education					Labor		Capital		Total as a percent of Y'/Y	
		d _i Q'/Q	As a percent of Y'/Y	c _i L'/L	As a percent of Y'/Y	Total education	As a percent of Y'/Y	b _i L'/L	As a percent of Y'/Y	a _i K'/K		As a percent of Y'/Y
Wages for ages 25 to 29:												
1950-55:												
σ=∞	43.24	{	2.87	6.6	0.24	0.6	3.11	7.2	3.38	7.8	{	41.2
σ=2			1.76	4.1	.78	1.8	2.54	5.9	2.63	6.5		38.6
1955-60:												
σ=∞	40.46	{	2.92	7.2	.14	.3	3.06	7.5	2.12	5.2	{	35.5
σ=2			1.65	4.1	.43	1.1	2.08	5.2	1.83	4.5		32.5
1960-65:												
σ=∞	24.17	{	5.73	23.7	.01	0	5.74	24.1	.18	.7	{	85.2
σ=2			2.97	12.3	.02	.1	2.99	12.4	.17	.7		73.5
1965-70:												
σ=∞	36.02	{	5.43	15.1	.14	.4	5.57	15.5	1.74	4.8	{	60.0
σ=2			2.60	7.2	-.05	-.1	2.55	7.1	1.92	5.3		52.1
Wages for all ages:												
1950-55:												
σ=∞	43.24	{	2.92	6.8	.24	.6	2.98	7.4	3.38	7.8	{	41.4
σ=2			1.76	4.1	.71	1.6	2.47	5.7	2.91	6.7		38.6
1955-60:												
σ=∞	40.46	{	2.97	7.3	.14	.3	3.11	7.6	2.12	5.2	{	35.6
σ=2			1.65	4.1	.39	1.0	2.04	5.1	1.88	4.6		32.5
1960-65:												
σ=∞	24.17	{	5.83	24.1	.01	0	5.84	24.1	.18	.7	{	85.2
σ=2			2.97	12.3	.02	.1	2.99	12.4	.18	.7		73.5
1965-70:												
σ=∞	36.02	{	5.52	15.3	.14	.4	5.66	15.7	1.74	4.8	{	60.2
σ=2			2.60	7.2	-.05	-.1	2.55	7.1	1.92	5.3		52.1

TABLE 7.—CONTRIBUTION OF FACTOR INPUTS TO ECONOMIC GROWTH IN THE MATERIAL PRODUCTION SPHERE OF THE HUNGARIAN ECONOMY: 1950 TO 1970

[In percent]

Year and elasticity	Education						Labor		Capital		Total as a percent of Y'/Y		
	Y'/Y	d ₁ Q'/Q	As a Percent of Y'/Y	c ₁ L'/L	As a Percent of Y'/Y	Total Education	As a percent of Y'/Y	b ₁ L'/L	As a percent of Y'/Y	a ₁ K'/K		As a percent of Y'/Y	
Wages for ages 25 to 29:													
1950-55:													
σ=∞	32.00	{	3.68	11.5	0.24	0.8	3.92	12.3	3.34	10.4	15.39	{	70.8
σ=2			2.61	8.2	.72	2.3	3.33	10.4	2.86	8.9			48.1
1955-60:													
σ=∞	33.79	{	3.19	9.4	.21	.6	3.40	10.0	3.20	9.5	11.17	{	52.6
σ=2			1.99	5.9	.63	1.9	2.62	7.8	2.79	8.3			33.1
1960-65:													
σ=∞	12.20	{	6.60	54.1	-.14	-1.1	6.46	53.0	-1.98	-16.2	17.85	{	183.1
σ=2			3.53	28.9	-.19	-1.6	3.34	27.4	-1.93	-15.8			146.3
1965-70:													
σ=∞	13.92	{	5.23	37.6	.27	1.9	5.50	39.5	3.45	24.8	16.51	{	182.9
σ=2			2.52	18.1	-.09	-.6	2.43	17.5	3.82	27.4			118.6
Wages for all ages:													
1950-55:													
σ=∞	32.00	{	3.67	11.5	.24	.8	3.91	12.3	3.34	10.4	15.39	{	70.8
σ=2			2.63	8.2	.72	2.3	3.35	10.5	2.86	8.9			48.1
1955-60:													
σ=∞	33.79	{	3.18	9.4	.21	.6	3.39	10.0	3.20	9.5	11.17	{	52.6
σ=2			2.00	5.9	.70	2.1	2.70	8.0	2.72	8.9			33.1
1960-65:													
σ=∞	12.20	{	6.59	54.0	-.14	-1.1	6.45	52.9	-1.98	-16.2	17.85	{	183.0
σ=2			3.54	29.0	-.19	-1.6	3.35	27.5	-1.93	-15.8			146.3
1965-70:													
σ=∞	13.92	{	5.22	37.5	.27	1.9	5.49	39.4	3.45	24.8	16.51	{	182.8
σ=2			2.53	18.2	-.09	-.6	2.44	17.5	3.82	27.4			118.6

Source: Appendix tables IX, X, and XI.

In addition, because wages are set in a somewhat arbitrary manner, they probably do not reflect the actual marginal productivities of the labor groups and, therefore, their contributions to output. Since the differentials have been generally kept to a minimum in socialist countries, this will tend to reduce the estimates of the contribution of education to economic growth.²⁵ On the other hand, the shares of the contribution of labor in total output—for both Poland and Hungary, (the d_1 derived in the calculations) while less than the 0.75 generally measured for the United States, were not unusually low when compared with the shares in Mexico of 0.41, and Chile of 0.50.²⁶ Thus, the total contribution of the growth in the labor force to economic growth estimated for Hungary and Poland appears to be reasonable, even though the breakdown into the educational contribution and the contribution of labor with the minimum level of schooling may be biased in favor of the latter. This is substantiated by pointing out that the contributions of the education and labor variables combined, obtained above for the total economies of both countries, are in line with the labor input contribution derived by Boretsky in a factor productivity study on the U.S.S.R.²⁷ He found that the contribution of labor, regardless of educational level (that is the education and labor variables combined) contributed an average of 17 to 19 percent of the total growth of GNP in that country from 1940 through 1962, as compared with an average of 19 percent for Poland and 18 percent for Hungary between 1950 and 1970 derived here for $\sigma = \infty$.

²⁵ Another set of estimates is derived further below, assuming that the contribution of education to the growth in output is somewhat greater than that implied by the wage differentials.

²⁶ Solowsky, "Education's Contribution," p. 455, and Searing, "Education and Growth," pp. 244-257.

²⁷ Michael Boretsky, "Comparative Progress in Technology, Productivity, and Economic Efficiency: U.S.S.R. Versus U.S.A.," in U.S. Congress, Joint Economic Committee, *New Directions in the Soviet Economy Part A: Economic Performance* (Washington, D.C.: GPO, 1966), p. 202.

TABLE 8.—CONTRIBUTION OF FACTOR INPUTS TO ECONOMIC GROWTH IN POLAND: 1950 TO 1970

[In percent]

Year and elasticity	Education						Labor		Capital		Total as a percent of Y'/Y	
	Y'/Y	d ₁ Q'/Q	As a percent of Y'/Y	c ₁ L'/L	As a percent of Y'/Y	Total education	As a percent of Y'/Y	b ₁ L'/L	As a percent of Y'/Y	a ₁ K'/K		As a percent of Y'/Y
1950-55:												
σ=∞	51.09 {	2.13	4.2	0.63	1.2	2.76	5.4	3.28	6.4	5.88	11.5 {	23.3
σ=2		1.18	2.3	.86	1.7	2.04	4.0	3.05	6.0			21.5
1955-60:												
σ=∞	37.33 {	2.42	6.5	.34	.9	2.76	7.4	1.96	5.3	5.94	15.9 {	28.6
σ=2		1.13	3.0	.49	1.3	1.62	4.3	1.80	4.8			25.0
1960-65:												
σ=∞	34.89 {	5.38	15.4	.69	2.0	6.07	17.4	3.60	10.3	7.35	21.1 {	48.8
σ=2		2.45	7.0	.62	1.8	3.07	8.8	3.67	10.5			40.4
1965-70:												
σ=∞	33.55 {	3.84	11.4	.69	2.1	4.53	13.5	3.86	11.5	10.46	31.1 {	56.1
σ=2		1.64	4.9	.39	1.2	2.03	6.1	4.16	12.4			49.6

Source: Appendix tables XII and XII I.

Comparing the value of the b_1 —the share of the contribution of labor with the minimum level of schooling in total output—derived in the appendix tables with those implied in Selowsky's study provides little evidence as to whether the former are biased upward or not, because the raw labor category used here, i.e., the labor force with a minimum level of schooling, differs significantly from that in the Selowsky work in that his represents the labor force as if it had no formal education rather than the less-than-primary level. As a result, a substantial portion of the contribution to growth by education, specifically education through all of the less-than-primary grades, included in the d_1 and c_1 coefficients of Selowsky's study (his a_L and a_E), are in the b_1 coefficient in this work. One cannot determine, therefore, from the previous work whether or not the resulting estimates of the contribution of increases in educational attainment of the labor force above the less-than-primary level to economic growth, derived here, understate this contribution. It seems apparent, however, that since the b_1L/L reflect the contribution of the growth of labor as if it had attained only the minimum level of schooling, which in most years under review constituted the level that more than half of the labor force had attained (see appendix tables III and IV), the resulting estimates for this factor are not excessively high relative to the estimates of the contribution of education above the less-than-primary level.

Examining the results given in tables 6 through 8, one can see that the contribution of increases in educational attainment of the labor force at levels above the less-than-primary educational level to economic growth has increased in all three cases for $\sigma = \infty$ and in all but the material production sphere of the Hungarian economy when $\sigma = 2$, from the 1950-55 interval to the 1965-70 interval. The trend in this contribution has not been steadily rising, however, since in all cases the estimates for 1960-65 exceed those for 1965-70, reflecting a slowdown since 1965 in the rate of acceleration of the number of people with higher levels of schooling as a proportion of the total labor force. This can be seen in the annual rates of growth of the labor quality indices Q'/Q , presented in appendix table VI.²⁸ It is also evident from the next seven appendix tables that the rate of increase of Q'/Q , and therefore of d_1Q'/Q , is higher when the value of σ , the elasticity of substitution among labor groups, is taken as infinity than when it is taken as two. This is because, when the elasticity is infinite, the relative wages of the groups with higher educational attainment levels do not decline as their relative numbers increase.²⁹ On the other hand, when the elasticity is two, relative wages are extremely sensitive to increases in the relative size of the more educated groups, and therefore decline significantly over time. Thus, since the Q'/Q are determined by the change in the distribution of the labor force by level of educational attainment above the less-than-primary level, weighted by the relative wage at each educational level, their values increase more slowly when the elasticity is two. Since the elasticity has been taken to approximate upper and lower limits, the actual contribution to economic growth represented by d_1Q'/Q lies within the range of these estimates.

²⁸ This is primarily due to the smaller cohorts born since World War II entering the labor force in the late 1960's.

²⁹ Selowsky, "Education's Contribution," p. 460.

One may therefore conclude that, for the Hungarian economy, the contribution of increases in educational attainment of the labor force above the less-than-primary level as a percentage of the rate of growth of output, has increased by as little as 76 or as much as 129 percent from 1950-55 to 1965-70 when $\sigma=2$ and infinity, respectively; for the material production sphere, the range of comparable percentages is 120 to 227, and for Poland, 113 to 171. It should be mentioned that part of these spectacular gains is due to the relatively lower rate of economic growth in all cases for the years 1965-70, than in the 5 preceding years. Nevertheless, the results show that in all three cases, the contribution of the increase in educational attainment of the labor force at levels above the less-than-primary level, has increased substantially over the period under review.

The relatively small value for the maintenance factor, c_1L'/L , is due to the relatively small difference between the average wage, and the wage paid to labor with less-than-primary education and, hence, the low value of c_1 . This is demonstrated in that the highest estimates of the contribution of this factor to growth in all three cases are those for the interval 1950-55, and σ is 2, for it is then when the estimated wage differentials are the greatest (see tables 2 through 4). In addition, since the variable c_1L'/L represents the contribution to growth of maintaining a growing labor force at a constant level of attainment above the minimum level of schooling, and because in most years the majority of those in the labor force had not attained more than a less-than-primary education, the contribution of maintaining the attainment levels above the minimum level of schooling as constant should have been low. As more persons reach the higher levels, the contribution of maintaining these levels will become more important.³⁰

The contribution to economic growth of increases in the labor force as if it had attained only the less-than-primary educational level has generally been substantial throughout the period in all three cases. In Poland, and in the material production sphere of the Hungarian economy, its importance has risen from 1950-55 to 1965-70, whereas in the Hungarian economy as a whole, it has declined. All of these trends primarily reflect the growth in the respective labor forces during the period, and the decline registered in Hungary is due to the slower rate of increase of the economically active population in 1965-70 as compared with 1950-55. Since participation rates of the populations in both countries are reaching their maximum feasible limits, and because the rate of population growth is generally declining, the rates of growth in the economically active populations must be lower in the next few years, so that a decline in the contribution of this factor may well occur in both countries in the near future.

The contribution of the rates of growth of the physical capital stocks, a_1K'/K have been included in the table for completeness. Since the accuracy of the reported and estimated physical capital stock series used in the calculations is unknown and have not been investigated by this researcher, conclusions based on these results must be tentative. Nevertheless, it appears that the contribution of the growth in the value of the physical capital stock in both Poland and Hungary

³⁰ In Selowsky's study this factor is as important as the contribution of the d_1Q'/Q . This is because (1) unlike the c_1 used above, his are measured by the difference between the average wage and the wage received by persons with no formal schooling, and (2) relative wages cover a much wider range in Chile and Mexico than in Hungary and Poland.

has increased over the past two decades, with that in Hungary during the 1960's being extremely high, and for the material production sphere, in excess of the growth of output over the same period. Whether or not this reflects inefficiencies in investment or inflated capital stock figures is a question which is beyond the scope of the present study. Comparing the contributions of physical capital to growth in the total economies derived here with those in Boretsky's study for the U.S.S.R., however, reveals that the figures for Hungary are within the same range, and those for Poland are somewhat lower than these found for the U.S.S.R.³¹ The results, therefore, do not seem unreasonable, at least relative to those in previous work.

Summing the percentage contribution of each of the factors to growth, one can see that the residual has become smaller over the period under review in both Poland and Hungary, indicating that more and more of the growth in output can be explained by a more rapid increase in the factor inputs than by increases in organizational and technological progress. This discovery is an indication of the reasons for the concern in the late 1960's in both of these countries to improve factor productivities through increased efficiency in management and operation.

One of the main shortcomings of the above model is that it requires the use of relative wages as measures of the contribution of improvements in the quality of the labor force to economic growth. Deriving a model based on Schultz's approach, however, avoids this shortcoming since his concern with evaluating human capital in terms of its costs steers away from using earnings as a measure of the contribution to output. This will be illustrated in chapter III.

III. THE CONTRIBUTION OF EDUCATION TO ECONOMIC GROWTH: THE SCHULTZ TECHNIQUE

The initial pioneering effort to determine the contribution of education to growth is found in a study by Theodore W. Schultz. In his analysis for the United States, after determining the value of the human capital stock in the U.S., he proceeded to estimate its contribution to growth in the following manner: (1) On the basis of a study by I. B. Kravis on relative income shares, Schultz attributed 75 percent of the increase in U.S. real income from 1929 to 1957 to human effort (i.e., labor's share);³² (2) he then determined how much additional income labor received in 1957 due to increases in earnings per worker, and how much of the increase in the value of human capital was attributable to increases in the stock of education per worker; (3) lastly, by assuming various rates of return on the investment in education, some of which he derived from Gary S. Becker's study on human capital, he determined how much of the increase in labor's earnings was due to increases in education.³³

³¹ Boretsky, "Comparative Progress," p. 202.

³² It has been found that labor's share of U.S. real income has been more or less constant throughout the twentieth century. In addition to the Kravis work mentioned above, see Paul H. Douglas, "The Cobb-Douglas Production Function," in Murray Brown, ed., *The Theory and Empirical Analysis of Production* (New York: Columbia University Press, 1967), p. 17; and Robert M. Solow, "Technical Change and the Aggregate Production Function," *Review of Economics and Statistics*, vol. 34 (August, 1957), pp. 312-330.

³³ Theodore W. Schultz, "Education and Economic Growth," in Nelson B. Henry, ed., *Social Forces Influencing American Education*. (The Sixtieth Yearbook of the National Society for the Study of Education) (Chicago: Chicago University Press, 1961), pp. 79-82.

This analysis has been criticized in an article by Mary Jean Bowman, because of its misapplication of the internal-rate-of-return measures derived by Becker. According to Bowman, “. . . when the purpose is to measure education's contribution to national income growth, to discount returns is logically incorrect; what is relevant is sequential current inputs of ‘Eds’ and their contributions as these emerge in a series of undiscounted presents.”³⁴ While her criticism seems valid, the Schultz technique for computing the value of human capital and estimating its contribution to growth, using the proper rates of return on this investment, is analogous to the procedure used in investment models incorporating physical capital. The approach is therefore undertaken in this chapter, using various alternative rates of return to determine upper and lower limits of the contribution of education to growth.

Starting with the original function of chapter II for the relationship between factor inputs and the resulting output, namely:

$$Y = F(K, L, E)$$

and again differentiating with respect to time, this becomes:

$$(1) \quad Y' = f_k K' + f_l L' + f_e E'$$

Letting r_i represent the rate of return on the investment into education of a person in the labor force who attained the i th level of schooling, and c_i the cost above the cost of the minimum level of schooling, this equation can be written as:

$$(2) \quad Y' = f_k K' + r_0 c_0 L' + \sum_{i=1}^n r_i (c_i L_i)'$$

where $f_k K'$ represents the contribution to output of physical capital, and $r_0 c_0 L'$, the contribution of labor with the minimum level of education, while the last term is the contribution to growth of education above the minimum. Clearly, if it is assumed that $r_0 c_0$ is equal to e_0 , the wage received by persons with the minimum level of schooling, and that $\sum_{i=1}^n r_i (c_i L_i)'$ is equal to $\sum_{i=1}^n (e_i - e_0) L_i'$, the two models are identical.³⁵ Thus, if the return on the investment in a person who attained the i th level of education exactly equals the wage differential accruing to a person with education at the i th level, $(e_i - e_0)$, the results of the models will be the same.³⁶ Moreover, a series of rates of returns implied by these results can be constructed from the relationship:

$$r_i = (e_i - e_0) / c_i \text{ for } i = 1, \dots, n$$

and

$$r_0 c_0 = e_0$$

³⁴ Mary Jean Bowman, “Schultz, Denison, and the Contribution of ‘Eds’ to National Income Growth,” *The Journal of Political Economy* (October, 1964), p. 453.

³⁵ Since the c_i are constant over time, $\sum_{i=1}^n r_i (c_i L_i)'$ equals $\sum_{i=1}^n r_i c_i (L_i)'$, and since $(e_0 - e_0) = 0$, the models are identical when for each i , $(e_i - e_0) = r_i c_i$.

³⁶ See Bowman, “Contribution of ‘Eds’ to National Income Growth,” p. 453.

The last term of equation (2) can be rewritten as:

$$\sum_{i=1}^n r_i c_i (L_i)'$$

as seen in the note, and this can be divided into components analogous to those in the previous model; namely:

$$\sum_{i=1}^n r_i c_i (L_i)' = L' \sum_{i=1}^n (r_i c_i) L_i / L + L \sum_{i=1}^n (r_i c_i + r_0 c_0) (L_i / L)'$$

So equation (2) becomes:

$$(3) \quad Y' = f_k K' + r_0 c_0 L' + L' \sum_{i=1}^n (r_i c_i) L_i / L + L \sum_{i=1}^n (r_i c_i + r_0 c_0) (L_i / L)'$$

where the third term on the right represents the contribution to output of maintaining the growing labor force at constant levels of educational attainment above the minimum level of schooling, and the last term reflects the contribution of increasing levels of educational attainment above the minimum level. Rewriting equation (3), we get:

$$(4) \quad Y' = f_k K' + \left\{ r_0 c_0 + \sum_{i=1}^n (r_i c_i) L_i / L \right\} L' + L \sum_{i=1}^n (r_i c_i + r_0 c_0) (L_i / L)'$$

Letting R represent the average return to investment in schooling above the minimum level per person in the labor force; it is equal to

$$\sum_{i=1}^n r_i c_i L_i / L$$

and (4) becomes:

$$(5) \quad Y' / Y = a_2 K' / K + (b_2 + c_2) L' / L + d_2 (Q' / Q)^* + R$$

where $a_2 = f_k K / Y$; the share of physical capital in total output,
 $b_2 = r_0 c_0 L / Y$; the share of the quantity of the labor force in total output; that is, the share if all persons had attained only the minimum level of schooling,
 $c_2 = R L / Y$; the share of the contribution of educational inputs above the minimum educational level in total output,
 $d_2 = b_2 + c_2 = (R + r_0 c_0) L / Y$; the share of labor in total output,
 $(Q' / Q)^* = \left\{ \sum_{i=1}^n (r_i c_i + r_0 c_0) / (R + r_0 c_0) \right\} (L_i / L)'$; the relative change in an index of quality of the labor force,
 $R =$ a residual including the contribution of other factors to growth.

Again all of these coefficients are the same as in the first model when $e_0 = r_0 c_0$ and $r_i c_i = (e_i - e_0)$ for all $i = 1, \dots, n$. This is easily seen in

the formula for b_2 . Substituting e_0 for r_0c_0 gives e_0L/Y , the expression for b_1 . Since $c_2 = RL/Y$, this can be rewritten as:

$$RL/Y = \sum_{i=1}^n r_i c_i L_i / L(L/Y) = \sum_{i=1}^n r_i c_i L_i / Y$$

substituting $(e_i - e_0)$ for $r_i c_i$, this becomes:

$$\sum_{i=1}^n (e_i - e_0) L_i / Y$$

and since $(e_0 - e_0) = 0$, this is the same as:

$$\sum_{i=0}^n (e_i - e_0) L_i / Y = \left\{ \sum_{i=0}^n (e_i L_i) / L_i - e_0 \right\} L / Y = (E - e_0) L / Y = c_1$$

In the same way, the expression for d_2 can be written as:

$$(R + r_0 c_0) L / Y = \left\{ \sum_{i=0}^n (e_i - e_0) L_i / L + e_0 \right\} L / Y = \left\{ \sum_{i=0}^n (e_i - e_0) L_i + e_0 \sum_{i=0}^n L_i \right\} / Y = \sum_{i=0}^n e_i L_i / Y = EL / Y = d_1$$

Finally, it can be shown that under the same conditions, $(Q'/Q)^* = Q'/Q$. This is true since:

$$\begin{aligned} (Q'/Q^*) &= \left\{ \sum_{i=1}^n r_i c_i + r_0 c_0 \right\} / (R + r_0 c_0) (L_i / L)' = \\ &\quad \left\{ \sum_{i=1}^n (e_i - e_0 + e_0) / E \right\} (L_i / L)' = \\ &\quad \sum_{i=1}^n (e_i / E) (L_i / L)' = Q' / Q \end{aligned}$$

Thus, the models are the same when the return on the investment per person at the i th level of education is taken as equal to the wage differential received by a person with that level of attainment. Since the previous estimates of the contribution of the various factor inputs to growth were derived under this assumption, using rates of return in this model that meet the necessary conditions, will yield the same estimates. As mentioned previously, however, it would be desirable to move away from the use of relative wages as a measure of the contribution to output of education factors, and this second model permits such a move.

On the basis of the real resource costs per student given in appendix tables XIV and XV for each educational level, and the relation between wages and the rates of return to investment in education when

the contribution of education to output is reflected in the wage differentials, the rates of return implied by the wage differentials used above can be determined. Then applying rates of return larger or smaller than these to the data using the second model, estimates of the contribution of the various factor inputs to economic growth can be derived when differences in productivities due to differences in education are greater or less than implied by the relative wages used in the first model.

To derive the series of r_i implied by the assumption that the contribution to output arising from differences in educational attainment is reflected in the wage differentials, $r_o = e_o/c_o$ and $r_i = (e_i - e_o)c_i$ for all $i=1, \dots, n$. Taking the elasticity of substitution among labor groups as infinite, the r_i in each year can be determined from the b_1 , given in appendix tables VII through X and XII and the knowledge that $b_1 = b_2 = r_o c_o L/Y$, where, as before, L is the total economically active population in each year, Y the gross national product and c_o the cost of educating a person at the L_o or less-than-primary level in constant prices. This will yield figure for r_o for every year that are a function of the labor force and the level of output, since c_o is constant. The value of e_i in each year is determined by the expression $b_1 Y/L$, and using the relative wages given in table 1, the rest of the e_o can be found. With these wages and taking the c_i as the additional investment required to educate a person up to the i th level beyond the cost of the minimum education, the r_i can be derived for every year. When the elasticity of substitution among labor groups is taken as equal to two, the relative wages are no longer constant but equal to the figures given in tables 2 through 4. The procedure for deriving the r_i is essentially the same, however, and need not be discussed again. The resulting rates of return on educational investment in Poland, Hungary, and the material production sphere for Hungary, are given in tables 9 through 11.

TABLE 9.—RATES OF RETURN TO INVESTMENT IN EDUCATION IN POLAND: 1950 TO 1970

[In percent]

Year and elasticity	r_{0^1}	r_{1^2}	r_{20^3}	r_{20^4}	r_{3^5}
1950-51:					
$\sigma = \infty$	129.0	24.0	5.6	4.5	4.0
$\sigma = 2$	120.0	65.8	32.0	39.0	14.1
1955-60:					
$\sigma = \infty$	222.0	41.4	9.7	7.8	6.9
$\sigma = 2$	205.0	91.9	16.8	22.9	9.6
1960-63:					
$\sigma = \infty$	283.0	52.6	12.3	9.9	8.8
$\sigma = 2$	288.0	52.9	16.9	18.1	10.2
1965-70:					
$\sigma = \infty$	343.0	63.9	15.0	12.1	10.6
$\sigma = 2$	371.0	40.5	10.7	6.3	9.5

¹ Represents the return to investment in the less-than-primary level.

² Represents the return to investment in the primary level.

³ Represents the return to investment in the general secondary level.

⁴ Represents the return to investment in the vocational secondary level.

⁵ Represents the return to investment in the higher level.

Source: See text.

TABLE 10.—RATES OF RETURN TO INVESTMENT IN EDUCATION IN HUNGARY: 1950 TO 1970

[In percent]

Year and elasticity	r_0^1	r_1^2	r_2^3	r_3^4
Wages for ages 25 to 29:				
1950-55:				
$\sigma = \infty$	70.3	11.7	1.3	1.1
$\sigma = 2$	58.8	150.3	11.1	4.8
1955-60:				
$\sigma = \infty$	90.1	15.0	1.7	1.4
$\sigma = 2$	77.8	173.0	12.7	5.6
1960-65:				
$\sigma = \infty$	112.6	18.6	2.1	1.7
$\sigma = 2$	106.0	74.7	5.9	3.3
1965-70:				
$\sigma = \infty$	133.0	22.2	2.5	2.0
$\sigma = 2$	147.0	-21.7	-4	1.3
Wages for all ages:				
1950-55:				
$\sigma = \infty$	70.3	3.2	2.2	3.0
$\sigma = 2$	60.5	141.6	11.4	4.9
1955-60:				
$\sigma = \infty$	90.1	4.1	2.8	3.9
$\sigma = 2$	79.8	131.4	11.0	4.9
1960-65:				
$\sigma = \infty$	112.6	5.0	3.5	4.8
$\sigma = 2$	108.8	61.0	6.0	3.4
1965-70:				
$\sigma = \infty$	133.0	6.1	4.2	5.8
$\sigma = 2$	147.0	-38.1	-4	1.3

¹ Represents the return to investment in the less-than-primary level.² Represents the return to investment in the primary level.³ Represents the return to investment in the secondary level.⁴ Represents the return to investment in the higher level.

Source: See text.

TABLE 11.—RATES OF RETURN TO INVESTMENT IN EDUCATION IN THE MATERIAL PRODUCTION SPHERE OF THE HUNGARIAN ECONOMY: 1950 TO 1970

[In percent]

Year and elasticity	r_0^1	r_1^2	r_2^3	r_3^4
Wages for age 25 to 29:				
1950-55:				
$\sigma = \infty$	73.5	12.3	1.4	1.1
$\sigma = 2$	63.0	178.5	14.2	5.8
1955-60:				
$\sigma = \infty$	92.8	15.5	1.7	1.4
$\sigma = 2$	80.7	161.0	12.8	5.2
1960-65:				
$\sigma = \infty$	113.2	18.9	2.1	1.7
$\sigma = 2$	110.4	73.9	6.0	3.1
1965-70:				
$\sigma = \infty$	132.3	22.1	2.4	2.0
$\sigma = 2$	146.3	-21.5	-5	1.0
Wages for all ages:				
1950-55:				
$\sigma = \infty$	73.5	3.3	2.3	3.2
$\sigma = 2$	63.0	165.5	15.9	9.2
1955-60:				
$\sigma = \infty$	92.8	4.2	2.9	4.0
$\sigma = 2$	78.7	142.6	14.2	8.6
1960-65:				
$\sigma = \infty$	113.2	5.1	3.6	4.9
$\sigma = 2$	110.4	59.3	7.7	6.7
1965-70:				
$\sigma = \infty$	132.3	6.0	4.2	5.7
$\sigma = 2$	146.3	-36.2	1.2	4.7

¹ Represents the return to investment in the less-than-primary level.² Represents the return to investment in the primary level.³ Represents the return to investment in the secondary level.⁴ Represents the return to investment in the higher level.

Source: See text.

Assuming that wages reflect the marginal productivities, these rates of return represent increases in output of the economy annually over each time period as a result of the amount of investment in human capital the societies have undertaken in the form of formal education. They do not represent the internal rates of return to an individual or society calculated by others on the basis of total and private resource costs and expected (discounted) lifetime earnings.³⁷ Rather, they are the annual returns on the cost of educating an input of a unit of labor up to specific educational levels beyond the minimum level of schooling, as reflected in wages accruing to the units of labor with those levels of education. Thus, for example, the return r_i represents the wage differential paid to a person at the i th level of schooling divided by the additional cost or investment per person in this educational category. If the wage represents that person's contribution to output, the return is society's annual gain in output due to this investment. As can be seen in the tables, the returns at all levels and in all cases have been steadily rising over time when the elasticity of substitution among labor groups is taken as infinite, whereas the reverse is true when the elasticity is taken as two. In the former case, relative wages are constant so that as e_0 rises so does $e_i - e_0$, and since costs are constant, the rates must rise. On the other hand, it has been seen above (tables 2 through 4) that taking σ as 2 changes the distribution of relative wages significantly in all cases as one goes back in time and the proportions of persons at the higher educational levels are smaller. Thus, $e_i - e_0$ is smaller in more recent years, causing the rates in more recent years to be lower. The range of values for each time interval should be viewed as an upper and lower limit of the return to investment in education represented by the wage differential for each educational level.

One can see in the tables that the return arising from investing the additional cost to educate a person up to the complete primary level has been relatively high in all three cases throughout the period, with the exception of the large negative values recorded for the 1965-70 interval in both the material production sphere and the total economy of Hungary, when the elasticity is taken as two. These arise because wages in the less-than-primary category surpass those in the complete primary category in the late 1960's when $\sigma=2$, since laborers in the latter category have become more abundant. Thus, investing in a person to complete the primary level yields a negative return because that person would have earned a higher wage without the additional education. Assuming that the wage reflects his productivity, the higher education has the effect of reducing rather than increasing his productivity. Clearly this is a limiting case and not likely to occur, but it does indicate the trends that wages will take as persons with more education become more abundant. In reality, it is unlikely that the elasticity would be as low as two, and with a higher elasticity of substitution, relative wages would be less sensitive to changes in the educational distribution of the labor force. Nevertheless, as persons in the higher levels become more abundant, one would expect their relative wages to decline, and not remain constant. The most reasonable estimate, therefore, lies between the limits provided in the table.

³⁷ See Innes, Jacobson, and Pellegrini, *Returns to Education*, pp. 25-30.

The returns in all three cases at the secondary and higher levels are considerably lower than at the primary level because of the much higher cost (a much larger investment) required to educate a unit of labor up to these levels. The returns in Poland to the secondary and higher levels are slightly higher than those in Hungary, however, reflecting both relatively lower costs in the former, but also larger wage differentials accruing to persons with these attainment levels.

All of the above returns were calculated on the assumption that the wage differentials ($e_i - e_0$) reflect the increase in marginal productivity of a laborer in a labor category having education at the i th level over what his productivity would have been if he attained only the minimum level of schooling. Earlier in the study two conflicting thoughts were mentioned in regard to the relevance of the wage differential as a reflection of the increase in productivity due to increases in educational attainment levels. On the one hand, Denison assumed that only three-fifths of this differential could be attributed to increases in productivity due to increases in educational attainment, whereas the other portion represents increases in productivity arising from other attributes of a worker such as innate ability, informal training, experience, age, et cetera. On the other hand, it has been suggested that the wage differentials for Socialist countries may understate the real differences in productivities since the wages are set and not determined by market forces. In fact, many of the wages probably understate the total productivity of workers, at least in certain professions. To handle the Denison assumption, the returns in the previous tables were multiplied by three-fifths, thereby reducing the wage differentials by the same amount, and the contribution of the educational factors was recalculated for $\sigma = \infty$, using the second model, to illustrate the impact of his assumption on the results in tables 6 through 8.³⁸ The results are presented in table 12. Comparing the relevant figures from the earlier tables with those in table 12 indicates that the impact is appreciable in that all of the percentages are reduced, but the effects of the assumption concerning the elasticity of substitution among labor groups were far more significant. Hence, a Denison type adjustment produces figures within the ranges arrived at previously for the two values of σ .

³⁸ It should be noted that the choice of three-fifths as the reduction factor may or may not be an accurate adjustment for the purposes of incorporating increases in productivity due to increases in educational attainment levels only. It nevertheless serves as an example of the impact on the results if such an adjustment is made.

TABLE 12.—CONTRIBUTION OF FACTOR INPUTS TO ECONOMIC GROWTH IN HUNGARY AND POLAND UNDER ALTERNATIVE RATES OF RETURN TO THE INVESTMENT IN EDUCATION: 1950-55 AND 1965-70

[In percent]

Year and return	Y'/Y	$(d_2Q'/Q)^*$	Education				Labor		Capital		Total as a percent of Y'/Y			
			As a percent of Y'/Y	c_2L'/L	As a percent of Y'/Y	Total education	As a percent of Y'/Y	b_2L'/L	As a percent of Y'/Y	a_2K'/K				
Poland:														
1950-55:														
0.6(r_1).....	51.09	{	1.86	3.6	0.16	0.3	2.02	4.0	3.28	6.4	5.88	11.5	{	21.9
1.6(r_2).....			2.46	4.8	.47	.9	2.93	5.7						23.7
1965-70:														
0.6(r_1).....	33.55	{	3.41	10.2	.31	.9	3.72	11.1	3.86	11.5	10.46	31.1	{	46.0
1.6(r_2).....			4.47	13.3	.85	2.5	5.32	15.9						47.4
Hungary: ¹														
1950-55:														
0.6(r_1).....	43.24	{	2.81	6.5	.08	.2	2.89	6.7	3.38	7.8	11.33	26.2	{	40.7
1.6(r_2).....			2.96	6.9	.08	.2	3.05	7.1						41.1
1965-70:														
0.6(r_1).....	36.02	{	5.22	14.5	.05	.1	5.27	14.6	1.74	4.8	14.30	39.7	{	59.2
1.6(r_2).....			5.67	15.7	.14	.4	5.81	16.1						60.7
Material production sphere:														
1950-55:														
0.6(r_1).....	32.00	{	3.58	11.2	.03	.1	3.61	11.3	3.34	10.4	15.39	48.1	{	69.9
1.6(r_2).....			3.83	12.0	.80	.3	3.91	12.2						70.8
1965-70:														
0.6(r_1).....	13.92	{	5.03	36.1	.07	.5	5.11	36.7	3.45	24.8	16.51	118.6	{	180.1
1.6(r_2).....			5.37	38.6	.18	1.3	5.55	39.9						183.3

¹ Because the use of different wages affects the resulting estimates of contributions only slightly, the procedures were applied to the wages for ages 25 to 29 yr only.

Source: See text.

The other set of results in table 12 is designed to offer one of many possible adjustments for the second assumption mentioned above—the possibility that the wage differentials used for Hungary and Poland understate the differences in productivities due to education. Adjusting the returns in tables 9 through 11 upward by an arbitrary amount, three-fifths, thereby adjusting the wage differentials upward by this amount, and applying the resulting returns to the second model gives estimates of the contribution of increases in education to economic growth for one of the many possible sets of larger returns one could apply.

Again, the increases are apparent in comparison with the original results, but not nearly as significant as the differences in the estimates of the contribution of education using two different elasticities of substitution. Thus, since one would expect the actual elasticity to produce estimates somewhere within the ranges originally derived for the upper and lower limits of σ , upward and downward adjustments for these other two possibilities would probably not yield estimates of the contribution above or below the limits previously established.³⁰

APPENDIX TABLES

TABLE I.—NET MATERIAL PRODUCT AND GROSS NATIONAL PRODUCT IN HUNGARY AND POLAND: 1950 TO 1970
[In constant prices]

Year	Poland		Hungary	
	Net material product (billions of zlotys)	Gross national product (billions of zlotys)	Net material product (millions of forints)	Gross national product (millions of forints)
	(1)	(2)	(3)	(4)
1950.....	183.0	216.3	86,667	92,647
1951.....	196.7	232.5	100,534	109,683
1952.....	209.0	247.0	98,800	109,668
1953.....	230.7	272.7	110,934	125,134
1954.....	255.1	301.5	105,734	121,065
1955.....	296.0	326.8	114,400	132,704
1956.....	296.0	349.9	101,400	119,044
1957.....	327.8	387.5	124,800	148,013
1958.....	345.8	408.7	131,734	157,686
1959.....	363.9	430.1	140,401	169,324
1960.....	379.7	448.8	152,059	186,395
1961.....	410.7	485.4	160,113	195,247
1962.....	419.3	495.6	169,679	207,149
1963.....	448.4	530.0	178,834	218,934
1964.....	478.7	565.8	186,572	229,256
1965.....	512.2	605.4	186,782	231,443
1966.....	548.6	648.4	202,033	248,648
1967.....	549.8	685.3	218,469	267,399
1968.....	632.0	747.0	229,388	280,620
1969.....	650.4	768.8	247,667	299,895
1970.....	684.0	808.5	260,000	314,800

SOURCES

Col. 1: GUS, "Rocznik Dochodu Narodowego 1965-68" ("Yearbook of National Income 1965-68") (Warsaw: Główny Urząd Statystyczny, 1969), pp. 11 and 14; and GUS, "Rocznik Statystyczny 1971," p. 588.

Col. 2: Derived by multiplying col. 1 by 1.182; for explanation, see text.

Cols. 3 and 4: Appendix.

³⁰ In the unlikely event that $\sigma=2$, a downward adjustment would give results less than the lower limit of those presented here. As mentioned before, however, it is probable that σ , while less than infinity, is greater than two.

TABLE II.—GROSS VALUE OF FIXED ASSETS IN POLAND AND HUNGARY: 1950 TO 1970

[As of Jan. 1]

Year	Hungary			Poland		
	Total (billions of forints)	Index of growth, 1960=100	Ratio of human to fixed capital	Total (billions of zlotys)	Index of growth, 1960=100	Ratio of human to fixed capital
	(1)		(2)	(3)		(4)
1950.....	499.2	70	21	1,725.0	78	12
1951.....	512.2	72	22	1,761.6	79	12
1952.....	530.2	75	22	1,799.0	81	12
1953.....	554.1	78	22	1,839.1	83	13
1954.....	581.6	82	21	1,881.1	85	13
1955.....	604.0	85	21	1,927.7	87	13
1956.....	636.5	90	21	1,979.3	89	13
1957.....	664.4	94	20	2,033.6	92	13
1958.....	694.4	98	20	2,093.0	94	13
1959.....	701.7	99	20	2,154.2	97	13
1960.....	708.9	100	21	2,221.4	100	13
1961.....	737.3	104	21	2,304.9	104	13
1962.....	772.7	109	20	2,379.0	107	13
1963.....	808.1	114	20	2,462.1	111	13
1964.....	850.7	120	20	2,552.9	115	13
1965.....	890.6	126	20	2,651.1	119	13
1966.....	928.7	131	20	2,756.7	124	13
1967.....	971.2	137	20	2,881.8	130	13
1968.....	1,013.7	143	19	3,015.1	136	13
1969.....	1,063.3	150	19	3,159.1	142	14
1970.....	1,106.4	156	19	3,327.3	150	14

Source: Col. 1: 1950, 1955, 1960-70: KSH, "Statistikai evkonyv 1970," p. 89; 1951-54 and 1956-58: KSH, "Statistical Yearbook 1957" (English edition), p. 57; 1959: estimated by averaging the figure for 1958 and 1960. Col. 2: Derived from the value of the human capital in the labor force given in Searing, "Education and Growth," op. cit., p. 111, and col. 1, above. Col. 3: 1950: Estimated by extrapolating the increase from 1951 to 1952 back 1 yr to 1950; 1951-70: GUS, "Rocznik Statystyczny 1971," p. 161. Col. 4: Derived from the value of human capital in the labor force given in Searing, "Education and Growth," p. 116, and Col. 3, above.

TABLE III.—LEVEL OF EDUCATION ATTAINED BY THE ECONOMICALLY ACTIVE POPULATION IN POLAND: 1950 TO 1970

[In thousands; as of Jan. 1]

Year	Total economically active (A)	Level of education attained					Median school years attained (6)
		Higher	General secondary	Vocational secondary	Primary	Less than primary	
		(1)	(2)	(3)	(4)	(5)	
1950.....	12,614	202	482	671	4,229	7,030	6.3
1951.....	12,809	213	487	750	4,272	7,087	6.3
1952.....	13,006	231	501	838	4,333	7,103	6.4
1953.....	13,204	261	494	1,011	4,366	7,072	6.5
1954.....	13,401	280	498	1,115	4,439	7,069	6.6
1955.....	13,600	297	502	1,202	4,511	7,088	6.7
1956.....	13,797	317	506	1,273	4,584	7,117	6.8
1957.....	13,865	334	512	1,339	4,643	7,037	6.9
1958.....	13,929	347	520	1,387	4,699	6,976	7.0
1959.....	14,030	359	528	1,419	4,782	6,942	7.1
1960.....	14,112	370	536	1,481	4,879	6,846	7.2
1961.....	14,217	384	540	1,535	5,019	6,739	7.3
1962.....	14,352	399	545	1,619	5,229	6,560	7.5
1963.....	14,556	411	554	1,726	5,447	6,418	7.6
1964.....	14,817	429	567	1,868	5,708	6,245	7.8
1965.....	15,089	449	583	2,057	5,945	6,055	8.0
1966.....	15,314	465	607	2,266	6,129	5,847	8.2
1967.....	15,527	483	634	2,507	5,885	5,618	8.2
1968.....	15,774	507	659	2,773	5,867	5,368	8.3
1969.....	16,022	534	684	3,034	5,973	5,197	8.5
1970.....	16,252	567	717	3,274	6,077	5,617	8.7

Source: Searing, "Education and Growth," op. cit., pp. 25-26.

TABLE IV.—LEVEL OF EDUCATION ATTAINED BY THE ECONOMICALLY ACTIVE POPULATION IN HUNGARY: 1949 TO 1970

[In thousands; as of Jan. 1]

Year	Total economically active (A)	Level of education attained				Median school years attained (5)
		Higher (1)	Secondary (2)	Primary (3)	Less than primary (4)	
1949.....	4,085	77	176	629	3,203	5.1
1950.....	4,210	84	193	684	3,249	5.2
1951.....	4,344	92	211	742	3,299	5.3
1952.....	4,392	98	225	787	3,282	5.4
1953.....	4,431	104	239	832	3,256	5.4
1954.....	4,477	111	253	878	3,235	5.5
1955.....	4,541	118	269	929	3,225	5.6
1956.....	4,626	125	286	986	3,229	5.7
1957.....	4,587	129	296	1,016	3,146	5.8
1958.....	4,643	137	312	1,068	3,126	5.9
1959.....	4,707	144	329	1,112	3,112	6.1
1960.....	4,760	151	346	1,175	3,087	6.2
1961.....	4,713	160	373	1,247	2,933	6.4
1962.....	4,698	170	403	1,325	2,800	6.7
1963.....	4,722	181	436	1,415	2,690	7.0
1964.....	4,757	192	470	1,508	2,587	7.4
1965.....	4,782	204	504	1,601	2,473	7.7
1966.....	4,815	215	538	1,696	2,366	8.1
1967.....	4,853	228	574	1,795	2,256	8.4
1968.....	4,895	240	611	1,896	2,148	8.6
1969.....	4,979	255	654	2,016	2,054	8.9
1970.....	5,001	267	690	2,113	1,933	9.1

Source: Searing, *Educational Attainment in Hungary*, op. cit., p. 26.

TABLE V.—LEVEL OF EDUCATION ATTAINED BY PERSONS ECONOMICALLY ACTIVE IN THE MATERIAL PRODUCTION SPHERE OF THE HUNGARIAN ECONOMY: 1949 TO 1970

[In thousands; as of Jan. 1]

Year	Total economically active (A)	Level of education attained			
		Higher (1)	Secondary (2)	Primary (3)	Less than primary (4)
1949.....	3,480	21	77	407	2,975
1950.....	3,523	23	87	455	2,958
1951.....	3,621	29	100	509	2,983
1952.....	3,701	32	115	571	2,983
1953.....	3,646	34	129	615	2,868
1954.....	3,728	37	145	679	2,867
1955.....	3,803	40	153	727	2,883
1956.....	3,885	42	163	774	2,906
1957.....	3,906	44	168	799	2,895
1958.....	3,987	48	184	863	2,892
1959.....	4,042	52	198	904	2,858
1960.....	4,068	56	215	976	2,820
1961.....	3,945	59	238	1,042	2,606
1962.....	3,877	65	258	1,104	2,450
1963.....	3,874	69	284	1,188	2,333
1964.....	3,864	73	313	1,272	2,206
1965.....	3,872	79	336	1,350	2,107
1966.....	3,896	83	360	1,428	2,025
1967.....	3,934	87	384	1,513	1,950
1968.....	4,031	94	417	1,625	1,895
1969.....	4,134	101	457	1,748	1,828
1970.....	4,224	108	491	1,863	1,764

Source: Searing, "Education and Growth," op. cit., p. 281.

TABLE VI.—ANNUAL RATES OF GROWTH OF THE LABOR QUALITY INDEX DUE TO INCREASES IN EDUCATION :
1951 TO 1970

[In percent]

Year	Hungary				
	Poland	Total economy		Material production sphere	
		Wages for ages 25 to 29	Wages for all ages	Wages for ages 25 to 29	Wages for all ages
1951.....	0.48	1.25	1.27	1.62	1.64
1952.....	.83	1.23	1.23	1.78	1.77
1953.....	1.30	1.27	1.29	2.24	2.22
1954.....	.92	1.24	1.26	1.75	1.74
1955.....	.72	1.26	1.28	1.10	1.09
1956.....	.64	1.22	1.24	1.01	1.00
1957.....	.93	1.23	1.26	.69	.70
1958.....	.74	1.28	1.31	1.58	1.57
1959.....	.64	1.02	1.05	1.11	1.13
1960.....	1.02	1.46	1.47	2.11	2.09
1961.....	1.27	2.67	2.71	3.29	3.28
1962.....	1.74	2.67	2.70	2.89	2.91
1963.....	1.59	2.66	2.66	2.98	2.96
1964.....	2.02	2.62	2.79	3.14	3.13
1965.....	2.11	2.70	2.64	2.70	2.70
1966.....	1.97	2.60	2.74	2.44	2.43
1967.....	1.58	2.69	2.66	2.42	2.40
1968.....	1.02	2.62	2.72	2.56	2.56
1969.....	1.84	2.67	2.72	2.08	2.80
1970.....	1.82	2.67	2.72	2.53	2.53

Source: Calculated from the figures in table 1, appendix tables III, IV, and V, and the formula:

$$Q'/Q = \sum_{i=1}^n (e_i/E) (L_i/L)'$$

TABLE VII.—CONTRIBUTION OF FACTOR INPUTS TO ECONOMIC GROWTH IN HUNGARY WITH $\sigma = \infty$ AND WAGES FOR AGES 25 TO 29: 1951-70

[In percent]

Year	Education									Labor			Capital			
	Y'/Y	Q'/Q	d _t	d _t Q'/Q	As a percent of Y'/Y	L'/L	c ₁	c ₁ L'/L	As a percent of Y'/Y	b ₁	b ₁ L'/L	As a percent of Y'/Y	K'/K	a ₁	a ₁ K'/K	As a percent of Y'/Y
1951	18.39	1.25	0.46	0.58	3.2	3.18	0.03	0.10	0.5	0.43	1.36	7.4	2.60	0.54	1.40	7.6
1952	— 01	1.23	.46	.57	(¹)	1.10	.03	.03	(¹)	.43	.47	(¹)	3.51	.54	1.90	(¹)
1953	14.10	1.27	.46	.58	4.0	.89	.03	.03	.2	.43	.38	2.7	4.51	.54	2.44	17.3
1954	-3.25	1.24	.46	.57	(¹)	1.04	.03	.03	(¹)	.43	.45	(¹)	4.96	.54	2.68	(¹)
1955	9.61	1.26	.46	.58	6.0	1.43	.03	.04	.4	.43	.61	6.3	3.85	.54	2.08	21.6
1956	-10.29	1.22	.47	.57	(¹)	1.87	.03	.06	(¹)	.44	.82	(¹)	5.38	.53	2.85	(¹)
1957	24.33	1.23	.47	.58	2.4	— .84	.03	— .03	— 1	.44	— .37	— 1.5	4.38	.53	2.32	9.5
1958	6.53	1.28	.47	.60	9.2	1.22	.03	.04	.6	.44	.54	8.3	4.51	.53	2.39	36.6
1959	7.38	1.02	.47	.48	6.5	1.38	.03	.04	.5	.44	.61	8.3	1.05	.53	.56	7.6
1960	10.08	1.46	.47	.69	6.8	1.13	.03	.03	.3	.44	.49	4.9	1.03	.53	.55	5.5
1961	4.75	2.67	.45	.69	1.20	25.3	— .99	.03	— .03	.42	— .42	— 8.8	4.01	.55	2.21	46.5
1962	6.10	2.67	.44	1.17	19.2	— .32	.03	.01	— 2	.41	— .13	— 2.1	4.80	.56	2.69	44.1
1963	5.69	2.66	.43	1.14	20.0	.51	.03	.02	.4	.40	.20	3.5	4.58	.57	2.61	45.9
1964	4.71	2.62	.42	1.10	23.4	.74	.03	.02	.4	.39	.29	6.2	5.27	.58	3.06	65.0
1965	9.54	2.70	.43	1.16	12.2	.53	.03	.02	.2	.40	.21	2.2	4.69	.57	2.67	28.0
1966	7.43	2.60	.42	1.09	14.7	.69	.03	.02	.3	.39	.27	3.6	4.28	.58	2.48	33.4
1967	7.54	2.69	.41	1.10	14.6	.79	.03	.02	.3	.38	.30	4.0	4.58	.59	2.70	35.8
1968	4.94	2.62	.40	1.05	21.3	.87	.03	.03	.6	.37	.32	6.5	4.38	.60	2.63	53.2
1969	6.87	2.67	.40	1.07	15.6	1.72	.03	.05	.7	.37	.64	9.3	4.89	.60	2.93	42.6
1970	4.97	2.67	.41	1.09	21.9	.44	.03	.01	.2	.38	.17	3.4	4.05	.59	2.39	48.1

¹ Growth less than zero.

Source: See text.

TABLE VIII.—CONTRIBUTION OF FACTOR INPUTS TO ECONOMIC GROWTH IN HUNGARY WITH $\sigma = \infty$ AND WAGES FOR ALL AGES: 1951-70

[In percent]

Year	Education							Labor				Capital				
	Y'/Y	Q'/Q	d ₁	d ₁ Q'/Q	As a percent of Y'/Y	L'/L	c ₁	c ₁ L'/L	As a percent of Y'/Y	b ₁	b ₁ L'/L	As a percent of Y'/Y	K'/K	a ₁	a ₁ K'/K	As a percent of Y'/Y
1951	18.39	1.27	0.46	.58	3.2	3.18	0.03	0.10	0.5	0.43	1.36	7.4	2.60	0.54	1.40	7.6
1952	— .01	1.23	.46	.57	(1)	1.10	.03	.03	(1)	.43	.47	(1)	3.51	.54	1.90	(1)
1953	14.10	1.29	.46	.59	4.2	.89	.03	.03	.2	.43	.38	2.7	4.51	.54	2.44	17.3
1954	— 3.25	1.26	.46	.58	(1)	1.04	.03	.03	(1)	.43	.45	(1)	4.96	.54	2.68	(1)
1955	9.61	1.28	.46	.59	6.1	1.43	.03	.04	.4	.43	.61	6.3	3.85	.54	2.08	21.6
1956	— 10.29	1.24	.47	.58	(1)	1.87	.03	.06	(1)	.44	.82	(1)	5.38	.53	2.85	(1)
1957	24.33	1.26	.47	.59	2.4	— .84	.03	— .03	— .1	.44	— .37	— 1.5	4.38	.53	2.32	9.5
1958	6.53	1.31	.47	.62	9.5	1.22	.03	.04	.6	.44	.54	8.3	4.51	.53	2.39	36.6
1959	7.38	1.05	.47	.49	7.4	1.38	.03	.04	.5	.44	.61	8.3	1.05	.53	.56	7.6
1960	10.08	1.47	.47	.69	6.8	1.13	.03	.03	.3	.44	.49	4.9	1.03	.53	.55	5.5
1961	4.75	2.71	.45	1.22	25.7	— .99	.03	— .03	— .6	.42	— .42	— 8.8	4.01	.55	2.21	46.5
1962	6.10	2.72	.44	1.20	19.7	— .32	.03	.01	— .2	.41	— .13	— 2.1	4.80	.56	2.69	44.1
1963	5.69	2.70	.43	1.16	20.4	.51	.03	.02	.4	.40	.20	3.5	4.58	.57	2.61	45.9
1964	4.71	2.66	.42	1.12	23.8	.74	.03	.02	.4	.39	.29	6.2	5.27	.58	3.06	65.0
1965	9.54	2.79	.43	1.20	12.6	.53	.03	.02	.2	.40	.21	2.2	4.69	.57	2.67	28.0
1966	7.43	2.64	.42	1.11	14.9	.69	.03	.02	.3	.39	.27	3.6	4.28	.58	2.48	33.4
1967	7.54	2.74	.41	1.12	14.9	.79	.03	.02	.3	.38	.30	4.0	4.58	.59	2.70	35.8
1968	4.94	2.66	.40	1.06	21.5	.87	.03	.03	.6	.37	.32	6.5	4.38	.60	2.63	53.2
1969	6.87	2.72	.40	1.09	15.9	1.72	.03	.05	.7	.37	.64	9.3	4.89	.60	2.93	42.6
1970	4.97	2.72	.41	2.12	22.5	.44	.03	.01	.2	.38	.17	3.4	4.05	.59	2.39	48.1

¹ Less than zero.

Source: See text.

TABLE IX.—CONTRIBUTION OF FACTOR INPUTS TO ECONOMIC GROWTH IN THE MATERIAL PRODUCTION SPHERE OF THE HUNGARIAN ECONOMY WITH $\sigma = \infty$ AND WAGES FOR AGES 25-29: 1951 TO 1970

[In percent]

Year	Education							Labor			Capital					
	Y'/Y	Q'/Q	d ₁	d ₁ Q'/Q	As a percent of Y'/Y	L'/L	c ₁	c ₁ L'/L	As a percent of Y'/Y	b ₁	b ₁ L'/L	As a percent of Y'/Y	K'/K	a ₁	a ₁ K'/K	As a percent of Y'/Y
1951	16.00	1.62	0.45	0.73	4.6	2.78	0.03	0.08	0.5	0.42	1.17	7.3	2.17	0.55	1.19	7.4
1952	-1.72	1.78	.45	.80	(¹)	2.21	.03	.07	(¹)	.42	.93	(¹)	4.74	.55	2.61	(¹)
1953	12.28	2.24	.45	1.01	8.2	-1.49	.03	-.04	-.3	.42	.63	.05	7.16	.55	3.94	32.1
1954	-4.69	1.75	.45	.79	(¹)	2.25	.03	-.07	(¹)	.42	.95	(¹)	6.95	.55	3.82	(¹)
1955	8.20	1.10	.45	.50	6.1	2.01	.03	.06	.7	.42	.84	10.2	4.35	.55	2.39	29.1
1956	-11.36	1.01	.49	.49	(¹)	2.16	.03	.06	(¹)	.46	.99	(¹)	3.69	.51	1.88	(¹)
1957	23.08	.69	.49	.34	1.5	5.41	.03	.16	.7	.46	2.49	10.8	2.13	.51	1.09	4.7
1958	5.56	1.58	.49	.77	13.8	2.07	.03	.06	1.1	.46	.95	17.1	3.80	.51	1.94	34.9
1959	6.58	1.11	.49	.54	8.2	1.38	.03	.04	.6	.46	.63	9.6	3.63	.51	1.85	28.1
1960	9.02	2.11	.49	1.03	11.4	.64	.03	.02	.2	.46	.29	3.2	7.01	.51	3.58	39.7
1961	4.61	3.29	.46	1.51	32.8	-3.02	.03	-.09	-2.0	.43	-1.30	-28.2	5.01	.54	2.71	58.8
1962	5.97	2.89	.44	1.27	21.3	-1.72	.03	-.05	.8	.41	-.71	-11.9	4.75	.56	2.66	44.6
1963	5.40	2.98	.43	1.28	23.7	-.08	.03	-.0	0	.40	0	0	5.47	.57	3.12	57.8
1964	4.33	3.14	.43	1.35	31.2	-.26	.03	-.01	-.2	.40	.01	-.2	6.89	.57	3.93	90.8
1965	.11	2.70	.43	1.16	954.5	.21	.03	.01	9.1	.40	.01	9.1	6.35	.57	3.62	3190.9
1966	8.17	2.44	.42	1.02	12.5	.62	.03	.02	.2	.39	.24	2.9	5.39	.58	3.13	38.3
1967	8.14	2.42	.41	.99	12.2	.98	.03	.03	.4	.38	.37	4.5	5.77	.59	3.40	41.8
1968	5.00	2.56	.40	1.02	20.4	2.47	.03	.07	1.4	.37	.91	18.2	4.07	.60	2.44	48.8
1969	7.97	2.80	.40	1.12	14.1	2.56	.03	.08	1.0	.37	.95	11.9	6.53	.60	3.92	49.2
1970	4.98	2.53	.42	1.06	21.3	2.18	.03	.07	1.4	.39	.85	17.1	3.55	.58	2.06	41.4

¹ Growth less than zero. Source: See text.

TABLE X.—CONTRIBUTION OF FACTOR INPUTS TO ECONOMIC GROWTH IN THE MATERIAL PRODUCTION SPHERE OF THE HUNGARIAN ECONOMY WITH $\sigma = \infty$ AND WAGES FOR ALL AGES: 1951-70

[In percent]

Year	Education							Labor			Capital					
	Y'/Y	Q'/Q	d ₁	d ₁ Q'/Q	As a percent of Y'/Y	L'/L	c ₁	c ₁ L'/L	As a percent of Y'/Y	b ₁	b ₁ L'/L	As a percent of Y'/Y	K'/K	a ₁	a ₁ K'/K	As a percent of Y'/Y
1951	16.00	1.64	0.45	0.74	4.6	2.78	0.03	0.08	0.5	0.42	1.17	7.3	2.17	.55	1.19	7.4
1952	-1.72	1.77	.45	.80	(¹)	2.21	.03	.07	(¹)	.42	.93	(¹)	4.74	.55	2.61	(¹)
1953	12.28	2.22	.45	1.00	8.1	-1.49	.03	-.04	-.3	.42	.63	.05	7.16	.55	3.94	32.1
1954	-4.69	1.74	.45	.78	(¹)	2.25	.03	.07	(¹)	.42	.95	(¹)	6.95	.55	3.82	(¹)
1955	8.20	1.09	.45	.49	6.0	2.01	.03	.06	.7	.42	.84	10.2	4.35	.55	2.39	29.1
1956	-11.36	1.00	.49	.49	(¹)	2.16	.03	.06	(¹)	.46	.99	(¹)	3.69	.51	1.88	(¹)
1957	23.08	.70	.49	.34	1.5	5.41	.03	.16	.7	.46	2.49	10.8	2.13	.51	1.09	4.7
1958	5.56	1.57	.49	.77	13.5	2.07	.03	.06	1.1	.46	.95	17.1	3.80	.51	1.94	34.9
1959	6.58	1.13	.49	.55	8.4	1.38	.03	.04	.6	.46	.63	9.6	3.63	.51	1.85	28.1
1960	9.02	2.09	.49	1.02	11.3	.64	.03	.02	.2	.46	.29	3.2	7.01	.51	3.58	39.7
1961	4.61	3.28	.46	1.51	32.8	-3.02	.03	-.09	-2.0	.43	-1.30	-28.2	5.01	.54	2.71	58.8
1962	5.97	2.91	.44	1.28	21.4	-1.72	.03	-.05	-.8	.41	-.71	-11.9	4.75	.56	2.66	44.6
1963	5.40	2.96	.43	1.27	23.5	-.08	.03	0	0	.40	0	0	5.47	.57	3.12	57.8
1964	4.33	3.13	.43	1.35	31.2	-.26	.03	-.01	-.2	.40	.01	.2	6.89	.57	3.93	90.8
1965	.11	2.70	.43	1.16	954.5	.21	.03	.01	9.1	.40	.01	9.1	6.35	.57	3.62	3190.9
1966	8.17	2.43	.42	1.02	12.5	.62	.03	.02	.2	.39	.24	2.9	5.39	.58	3.13	38.3
1967	8.14	2.40	.41	.98	12.0	.98	.03	.03	.4	.38	.37	4.5	5.77	.59	3.40	41.8
1968	5.00	2.56	.40	1.02	20.4	2.47	.03	.07	1.4	.37	.91	18.2	4.07	.60	2.44	48.8
1969	7.97	2.80	.40	1.12	14.1	2.56	.03	.08	1.0	.37	.95	11.9	6.53	.60	3.92	49.2
1970	4.98	2.53	.42	1.06	21.3	2.18	.03	.07	1.4	.39	.85	17.1	3.55	.58	2.06	41.4

¹ Growth less than zero. Source: See text.

TABLE XI.—CONTRIBUTION OF FACTOR INPUTS TO ECONOMIC GROWTH IN HUNGARY WITH $\sigma=2$: 1950-70
[In percent]

Year	Education									Labor			Capital			
	Y'/Y	Q'/Q	d ₁	d ₁ Q'/Q	As a percent of Y'/Y	L'/L	c ₁	c ₁ L'/L	As a percent of Y'/Y	b ₁	b ₁ L'/L	As a percent of Y'/Y	K'/K	a ₁	a ₁ K'/K	As a percent of Y'/Y
Total economy:																
Set I:																
1950-55.....	43.24	3.83	0.46	1.76	4.1	7.86	0.10	0.78	1.8	0.36	2.83	6.5	20.99	0.54	11.33	26.2
1955-60.....	40.46	3.50	.47	1.65	4.1	4.82	.09	.43	1.1	.38	1.83	4.5	17.37	.53	9.21	22.8
1960-65.....	24.17	6.93	.43	2.67	12.3	.46	.05	.02	.1	.38	.17	.7	25.63	.57	14.61	60.4
1965-70.....	36.02	6.35	.41	2.60	7.2	4.58	-.01	-.05	-.1	.42	1.92	5.3	24.23	.59	14.30	39.7
Set II:																
1950-55.....	43.24	3.82	.46	1.76	4.1	7.86	.09	.71	1.6	.37	2.91	6.7	20.99	.54	11.33	26.2
1955-60.....	40.46	3.50	.47	1.65	4.1	4.82	.08	.39	1.0	.39	1.88	4.6	17.37	.53	9.21	22.8
1960-65.....	24.17	6.94	.43	2.98	12.3	.46	.04	.02	.1	.39	.18	.7	25.63	.57	14.61	60.4
1965-70.....	36.02	6.36	.41	2.61	7.2	4.58	-.01	-.05	-.1	.42	1.92	5.3	24.23	.59	14.30	39.7
Material production:																
Set I:																
1950-55.....	32.00	5.80	.45	2.61	8.2	7.95	.09	.72	2.3	.36	2.86	8.9	27.99	.55	15.39	48.1
1955-60.....	33.79	4.07	.49	1.99	5.9	6.97	.09	.63	1.9	.40	2.79	8.3	21.90	.51	11.17	33.1
1960-65.....	12.20	8.02	.44	3.53	28.9	-4.82	.04	-.19	-1.6	.40	-1.93	-15.8	31.87	.56	17.85	146.3
1965-70.....	13.92	6.15	.41	2.52	18.1	9.09	-.01	-.09	-.6	.42	3.82	27.4	27.99	.59	16.51	118.6
Set II:																
1950-55.....	32.00	5.84	.45	2.63	8.2	7.95	.09	.72	2.3	.36	2.86	8.9	27.99	.55	15.39	48.1
1955-60.....	33.79	4.09	.49	2.00	5.9	6.97	.10	.70	2.1	.39	2.72	8.0	21.90	.51	11.17	33.1
1960-65.....	12.20	8.04	.44	3.54	29.0	-4.82	.04	-.19	-1.6	.40	-1.93	-15.8	31.87	.56	17.85	146.3
1965-70.....	13.92	6.18	.41	2.53	18.2	9.09	-.01	-.09	-.6	.42	3.82	27.4	27.99	.59	16.51	118.6

Note: Set I represents wages for ages 25 to 29. Set II represents wages for all ages.

Source: See text.

TABLE XII.—CONTRIBUTION OF FACTOR INPUTS TO ECONOMIC GROWTH IN POLAND WITH $\sigma = \infty$: 1951-70

[In percent]

Year	Education							Labor			Capital					
	Y'/Y	Q'/Q	d ₁	d ₁ Q'/Q	As a percent of Y'/Y	L'/L	c ₁	c ₁ L'/L	As a percent of Y'/Y	b ₁	b ₁ L'/L	As a percent of Y'/Y	K'/K	a ₁	a ₁ K'/K	As a percent of Y'/Y
1951	7.49	0.48	0.42	0.16	2.1	1.55	0.07	0.11	1.5	0.35	0.54	7.2	2.12	0.58	1.23	16.4
1952	6.24	.83	.44	.37	5.9	1.54	.07	.11	1.8	.37	.57	9.1	2.12	.56	1.19	19.1
1953	10.40	1.30	.57	.74	7.1	1.52	.09	.14	1.3	.48	.73	7.0	2.23	.43	.96	9.2
1954	10.56	.92	.55	.51	4.8	1.49	.09	.13	1.2	.46	.69	6.5	2.28	.45	1.03	9.8
1955	8.39	.72	.54	.39	4.6	1.48	.08	.12	1.4	.46	.68	8.1	2.47	.46	1.14	13.6
1956	7.07	.64	.57	.36	5.1	1.45	.09	.13	1.8	.48	.70	9.9	2.68	.43	1.15	16.3
1957	10.76	.93	.60	.56	5.2	.49	.09	.04	.4	.51	.25	2.3	2.74	.40	1.10	10.2
1958	5.47	.74	.62	.46	8.4	.46	.10	.05	1.9	.52	.24	4.4	2.92	.38	1.11	20.3
1959	5.24	.64	.64	.41	7.8	.73	.10	.07	1.3	.54	.39	7.4	2.92	.36	1.05	20.0
1960	4.35	1.02	.64	.60	13.8	.58	.10	.06	1.4	.54	.31	7.1	3.12	.36	1.12	25.7
1961	8.16	1.27	.62	.79	9.7	.74	.10	.07	4.8	.52	.38	4.7	3.76	.38	1.43	17.5
1962	2.10	1.74	.63	1.10	52.4	.95	.10	.10	10	.53	.50	2.4	3.21	.37	1.19	56.7
1963	6.94	1.59	.62	.99	14.3	1.42	.10	.14	2.0	.52	.74	10.7	3.49	.38	1.33	19.2
1964	6.75	2.02	.61	1.23	18.2	1.79	.09	.16	2.4	.52	.93	13.8	3.69	.39	1.44	21.3
1965	7.00	2.11	.60	1.27	18.1	1.84	.09	.17	2.4	.51	.94	13.4	3.85	.40	1.54	22.0
1966	7.10	1.97	.59	1.16	16.3	1.49	.09	.13	1.8	.50	.75	10.6	3.96	.41	1.63	23.0
1967	5.69	1.58	.60	.95	16.7	1.39	.09	.13	2.3	.51	.71	12.5	4.54	.40	1.82	32.0
1968	9.00	1.02	.58	.59	6.6	1.59	.09	.14	1.6	.49	.78	8.7	4.63	.42	1.94	21.6
1969	2.92	1.84	.60	1.10	37.7	1.57	.09	.14	4.8	.51	.80	27.4	4.78	.40	1.91	65.4
1970	5.16	1.82	.59	1.07	20.7	1.44	.09	.13	2.5	.50	.72	14.0	5.32	.41	2.18	42.2

Source: See text.

TABLE XIII.—CONTRIBUTION OF FACTOR INPUTS TO ECONOMIC GROWTH IN POLAND WITH $\sigma=2$: 1950-70

Year	Education						Labor			Capital						
	Y'/Y	Q'/Q	d ₁	d ₁ Q'/Q	As a percent of Y'/Y	L'/L	c ₁	c ₁ L'/L	As a percent of Y'/Y	b ₁	b ₁ L'/L	As a percent of Y'/Y	K'/K	a ₁	a ₁ K'/K	As a percent of Y'/Y
1950-55.....	51.09	2.35	0.50	1.18	2.3	7.82	0.11	0.86	1.7	0.39	3.05	6.0	11.75	0.50	5.88	11.5
1955-60.....	37.33	1.85	.61	1.13	3.0	3.76	.13	.49	1.3	.48	1.80	4.8	15.24	.39	5.94	15.9
1960-65.....	34.89	3.95	.62	2.45	7.0	6.92	.09	.62	1.8	.53	3.67	10.5	19.34	.38	7.35	21.1
1965-70.....	33.55	2.78	.59	1.64	4.9	7.71	.05	.39	1.2	.54	4.16	12.4	25.51	.41	10.46	31.1

Source: See text.

TABLE XIV.—RESOURCE COSTS PER STUDENT IN HUNGARY THROUGH PRIMARY, SECONDARY AND HIGHER SCHOOL AT 1960 PRICES

[In millions of forints]

School level	School inputs (1)	Earnings foregone (2)	Additional expenditures (3)	Total (1)+(2)+(3)	School inputs (4)	Earnings foregone (5)	Additional expenditures (6)	Total (4)+(5)+(6)
Total through 8 years of primary school.....	21,312	None	None	21,312	21,312	None	None	21,312
1 year secondary school.....	13,773	None	120	13,893				
2 years secondary school.....	27,546	9,029	240	36,815				
3 years secondary school.....	41,319	18,058	360	59,737				
4 years secondary school.....	55,092	27,087	480	82,659	55,092	27,087	480	82,659
Total through secondary school.....					76,404	27,087	480	103,971
In percent.....					73	26	1	100
1 year higher school.....	25,490	9,618	399	35,507				
2 years higher school.....	50,980	19,236	798	71,014				
3 years higher school.....	76,470	28,854	1,197	106,521				
4 years higher school.....	101,960	38,471	1,596	142,027	101,960	38,471	1,496	142,027
Total through higher school.....					178,364	65,558	2,076	245,998
In percent.....					73	27	2	100

Source: Searing, "Education and Growth," op. cit., p. 239.

TABLE XV.—RESOURCE COSTS PER STUDENT IN POLAND THROUGH PRIMARY, SECONDARY AND HIGHER SCHOOL AT 1961 PRICES

[In millions of zlotys]

School level	School inputs (1)	Earnings foregone (2)	Additional expenditures (3)	Total (1)+(2)+(3)	School inputs (4)	Earnings foregone (5)	Additional expenditures (6)	Total (4)+(5)+(6)
Total through 7 years of primary school.....	11,543	None	None	11,543	11,543	None	None	11,543
1 year general secondary.....	5,369	None	72	5,441				
2 years general secondary.....	10,738	None	144	10,882				
3 years general secondary.....	16,107	1,699	216	18,022				
4 years general secondary.....	21,476	14,068	288	35,832	21,476	14,066	288	35,832
Total through general secondary.....					33,019	14,068	288	47,375
In percent.....					70	30	2	100
1 year higher school.....	24,288	8,574	347	33,209				
2 years higher school.....	48,576	17,148	694	66,418				
3 years higher school.....	72,864	25,722	1,041	99,627				
4 years higher school.....	97,152	34,297	1,388	132,837				
5 years higher school.....	121,440	42,871	1,735	166,046	121,440	42,871	1,735	166,046
Total through higher school.....					154,459	56,937	2,023	213,419
In percent.....					72	27	1	100
Total through 7 years of primary school.....	11,543	None	None	11,543	11,543	None	None	11,543
1 year vocational secondary school.....	7,852	None	59	7,911				
2 years vocational secondary school.....	15,704	None	118	15,822				
3 years vocational secondary school.....	23,556	6,699	117	30,432	23,556	6,699	177	30,432
Total through basic vocational secondary.....					35,099	6,699	177	41,975
In percent.....					84	16	2	100
4 years vocational secondary school.....	7,852	7,369	59	15,280				
5 years vocational secondary school.....	15,704	16,412	118	32,234	15,704	16,412	118	32,234
Total through technical vocational secondary.....					50,803	23,111	295	74,209
In percent.....					68	31	1	100

Source: Searing, "Education and Growth," op. cit., pp. 239-240.

APPENDIX

ESTIMATES OF GROSS NATIONAL (DOMESTIC) PRODUCT IN HUNGARY, 1950-59

As mentioned in the text, gross domestic product in Hungary is reported for the years 1960 through 1970, and figures and indices of net material product are reported for the years 1950 through 1970, both in comparable prices. Thus, gross national (domestic) product in earlier years could be estimated by first taking the ratio of it to net material product in all years for which both are available, 1960 through 1970, and fitting a parabolic trend line using the method of least squares through the 11 ratios. The resulting equation of the parabola is $Y = 1.23 - .00054t - .00075t^2$, where Y represents the ratio of gross domestic to net material product, and t , time, 1960 being taken as equal to -5 , 1961 to -4 , and so on.¹ Using this equation, the ratio between the two products was calculated for every year from 1950 through 1959, and applied to the net material product reported in each year to obtain figures for gross national (domestic) product in Hungary for all years since 1950. These data are presented in appendix table I.

TABLE A-1.—REPORTED NET MATERIAL PRODUCT AND GROSS DOMESTIC PRODUCT IN HUNGARY: 1950-70

[In millions of forints. At constant prices]

Year	Net material product (1)	Gross national product (2)	Col. 2 ÷ col. 1
1950	86,667	(0)	(0)
1951	100,534	(0)	(0)
1952	98,800	(0)	(0)
1953	110,934	(0)	(0)
1954	105,734	(0)	(0)
1955	114,400	(0)	(0)
1956	101,400	(0)	(0)
1957	124,800	(0)	(0)
1958	131,734	(0)	(0)
1959	140,401	(0)	(0)
1960	153,059	186,395	1.218
1961	160,113	195,247	1.219
1962	169,679	207,149	1.221
1963	178,834	218,934	1.224
1964	186,572	229,256	1.229
1965	186,782	231,443	1.239
1966	202,033	248,648	1.231
1967	218,469	267,399	1.224
1968	229,388	280,620	1.223
1969	247,667	299,895	1.211
1970	260,000	314,800	1.211

¹ Not available.

Source: Col. 1: Derived from the figures and indices reported in KSH, "Statiztikai évkönyv 1967", p. 37, and KSH, "Statiztikai évkönyv 1970", pp. 74-75. Col. 2: KSH, "Statiztikai évkönyv 1970," pp. 74-75.

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¹ A parabolic trend was used because it was closest to the trend exhibited by the ratios (see table A-1).

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Part III. COMMERCIAL RELATIONS

(529)

LEGISLATIVE, INSTITUTIONAL, AND NEGOTIATING ASPECTS OF UNITED STATES-EAST EUROPEAN TRADE AND ECONOMIC RELATIONS*

By BONNIE M. POUNDS and MONA F. LEVINE

CONTENTS

	Page
I. Introduction.....	531
II. Historical Background.....	532
Cold War Restrictions.....	532
Thaw.....	534
Normalization of Trade and Economic Relations.....	539
III. Institutional Mechanisms for the Normalization of Trade and Economic Relations.....	541
IV. Major Negotiating Issues.....	544
V. Outlook for the Future.....	554

TABLES

1. U.S. Trade With East Europe, 1946-73.....	535
2. U.S. Trade With Individual East European Countries, 1970-73.....	540
3. Status of Commercial Relations With Socialist Countries.....	545

I. INTRODUCTION

U.S. Government efforts to normalize economic relations with East Europe, to put them on the same basis now existing between socialist countries and the rest of the developed world, have created an environment which is heightening general U.S. trading interest in the area. Today, trade statistics as well as the growing number of long-term contracts concluded between U.S. firms and socialist governments and the interest of American businessmen in establishing commercial representation in East European countries confirm the emerging commercial and economic relationship, which is an important element in the growing political détente with the East.

At variance with the policy of economic normalization and promotion of peaceful trade with East Europe is, on the U.S. side, restrictive trade legislation of early cold war vintage. Progress in removing this legislation has been understandably slow because of the complex nature of trade between centrally planned and free market economies and because of the fluctuating climate of total East-West relations.

While there has been a major liberalization of export controls on trade with East Europe since the cold war period, the United States still only extends most-favored-nation (MFN) treatment to one East European country, (Poland), and has only begun to grant Eximbank credits and guarantees to a few countries of the area.

Efforts to remove restrictive legal impediments were incorporated in a comprehensive trade bill submitted to Congress in April of last

* Bonnie Pounds wrote secs. I, II, III, and V, and Mona Levine wrote sec. IV.

year. A major factor clouding the future of the bill is an amendment passed by the House of Representatives in December which, if it becomes law, would deny MFN tariff treatment and Eximbank credits to all East European countries, with the exception of Poland, which do not permit free emigration.

Section II of this chapter recounts U.S. Government policies governing trade with East European countries during the cold war period, their gradual liberalization from 1959 to 1971, and the present policy of normalization of economic relations.

Section III details the principal institutional mechanisms through which normalization of economic relations with East European countries is taking place.

Section IV summarizes major trade and economic issues being negotiated, and the final section presents an outlook for U.S. trade and economic relations with East Europe.

II. UNITED STATES-EAST EUROPEAN COMMERCIAL RELATIONS: HISTORICAL BACKGROUND

Eastern Europe (Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Romania) has historically been a minor trading area for American business with the exception of a small group of U.S. firms which have maintained a continuing interest in trading there. In addition to the practical problems limiting conventional two-way trade, such as the East European lack of hard currency and the nature of their product line, the low level of U.S.-East European trade has reflected Eastern Europe's traditionally established trade pattern with Western Europe, the more general self-sufficient character of the American economy, and East European economic institutions and trading practices that generally restrain commerce with the West.

But beyond these factors, the small share of U.S. trade with Eastern Europe has been the result of our overall political relationship with the Soviet Union and the socialist countries of Eastern Europe. While the climate of total East-West relationships has fluctuated over the past decades, neither the policies of peaceful coexistence, peaceful engagement, nor the era of détente as yet have been powerful enough to remove from the books the residual discriminatory U.S. restrictions on trade with the socialist countries erected at the height of the cold war.

Cold War Restrictions

From the early post-World War II period to the present time, the Congress has given the President broad discretionary authority to restrict exports to the U.S.S.R. and the other socialist countries of Eastern Europe.

Export controls had been used extensively during World War II to prevent U.S. goods from reaching enemy hands and to assure an equitable distribution to friendly countries of the relatively limited supplies for commercial export. At the end of the War, export controls were continued because of existing scarcities, but the United States treated exports to the Soviet Union and Eastern Europe no differently than exports to other countries. Post-war improvement of economic conditions both in the United States and abroad probably

would have brought about a dismantling of the export control apparatus had the cold war not developed.

As part of the U.S. opposition to the rapid expansion of Soviet influence and control in Eastern Europe, and in response to other incidents resulting in what is commonly known as the cold war, the United States found it appropriate to continue controls over exports and to make these controls more restrictive toward the U.S.S.R. and the other socialist countries of Eastern Europe. Legislation enabling the President to control strategic trade with East Europe as well as other communist areas was embodied in the Export Control Act of February 28, 1949. The Act also directed the President to develop, in cooperation with certain of our allies, a system of parallel strategic controls. The allies included all NATO countries, except Iceland, plus Japan. This directive was instrumental in the establishment of COCOM (Coordinating Committee on Export Controls) in 1949, when the United States and its major allies agreed to multilateral controls over exports of selected commodities and technology to the "Sino-Soviet bloc."

When the Export Control Act was first passed, an American firm could export only a few goods to the U.S.S.R. or Eastern Europe under a general license (without prior specific license authorization from the Department of Commerce). This requirement continued throughout the Korean war.

Treaties and agreements according most-favored-nation (MFN) tariff treatment to the East European countries were terminated during the Korean war when Congress passed the Trade Agreements Extension Act of 1951. The act directed the President, as soon as practicable, to "suspend, withdraw, or prevent the application of MFN treatment to imports from the Soviet Union and from any nation or area dominated or controlled by the foreign organization controlling the world communist movement." As a result, imports from the East European socialist countries lost their automatic entitlement to conditions of entry comparable with those accorded products of other nations. (Yugoslavia, having demonstrated its independent aspirations in the 1948 Tito-Stalin rupture, was the only East European country to escape the restrictions.)

The most important piece of legislation affecting private credit to the Eastern Europe today is the Johnson Debt Default Act of 1934, a measure which prohibits private credit to countries in default on their debts to the U.S. Government. Although not aimed at the socialist countries of Eastern Europe as such, the Act's present application is confined almost exclusively to them. International Monetary Fund and World Bank members were exempted in 1948, but since none of the East European countries was a member at that time, the credit restrictions remained applicable to those countries in East Europe which were considered to be in default of payments. This included all of the East European countries, except Bulgaria and Albania.

A further discriminatory restriction on trade with East Europe was contained in the Agricultural Trade Development and Assistance Act of 1954, better known as Public Law 480, which prohibited credit sales repayable in local currencies of agricultural commodities to any country "dominated or controlled by a communist government."

Mainly as a result of these Cold War trade restrictions and, on the other side, of the East European reorientation of trade to maximize

trade exchanges among themselves, U.S. exports to Eastern Europe were severely curtailed, falling from \$133 million annually in 1946-50 (on the average) to \$3 million annually (on the average) from 1951 to 1955. U.S. imports from East Europe were less affected, only dropping from an annual average of \$29 million in the 1946-50 period to an annual average of \$26 million in the period 1951 to 1955. This was mainly because our principal import from East Europe, canned cooked ham from Poland, was dutiable at the same rate with or without MFN, and ham imports from Poland increased substantially from 1951 to 1955, offsetting decreases in imports from other East European countries.

Thaw

With the end of the Korean war, the emergence of the concept of peaceful coexistence, and the deemphasis by Stalin's successors of economic self-sufficiency goals, the U.S. Government began to gradually relax some of its trade restrictions as a way to improve relations with the U.S.S.R. and Eastern Europe.

The Western European countries, whose post-war economies had experienced rapid economic recovery, were beginning at this time to resume their historic trading relations with East Europe. The socialist countries in turn viewed this trade as a means of hastening their economic growth and of meeting their planning goals. These developments created pressure on the part of our allies to ease the internationally agreed Western restrictions on exports to the East. As a result, the International Embargo List was gradually narrowed and the West European nations reduced their controls accordingly. The United States did not reduce its export controls as rapidly.

In the United States there still existed strong public anticommunist feelings, and trading with East Europe was considered tantamount to trading with the enemy. Not until 1956 was the Department of Commerce able to publish a list of about 700 items in 57 different commodity categories that could be exported to East Europe and the U.S.S.R. without prior license authorization.

SELECTIVE LIBERALIZATION

At about this same time, it was becoming clear to U.S. Government policymakers that Eastern Europe could not be regarded as a monolithic bloc dominated and controlled from one country. The individual East European countries showed considerable differences among themselves, both in their internal systems and in their relations with one another and with the non-Communist world. Our trade policy toward individual East European countries became, therefore, one of selective liberalization.

In specific response to favorable internal and external policy changes made by Poland, the Eisenhower administration in 1957 introduced a more liberal system of export licensing to that country. The United States significantly expanded the type of commodities that could be exported to Poland without specific prior license authorization and permitted the approval, on a case-by-case basis, of export applications to Poland of certain strategic items, denied to other countries of Eastern Europe, when it could be determined that the goods were reasonable and necessary for the Polish economy. Since 1957, Poland

has received more favorable export control treatment than other East European countries, except, since 1964, Romania.

The United States also responded to the changes in Polish policies with sales of agricultural products through Public Law 480 programs repayable in dollars. Eximbank credits were also extended for the purchase in 1957-59 of some \$60 million worth of agricultural commodities, polio vaccine, and farm machinery.

In 1960 President Eisenhower restored MFN treatment to Poland after having determined that it was not Soviet-dominated within the meaning of the 1951 Trade Agreement Extension Act, and after Poland had agreed to a settlement of the claims of U.S. nationals whose property had been nationalized. In the same year, an agreement was signed with Romania which provided for the reciprocal settlement of claims and other financial questions with that country.

The partial relaxation of policy between 1956 and 1960 permitted a modest increase in trade (see table 1).

TABLE 1.—U.S. TRADE WITH EAST EUROPE¹ 1946-73

[In millions of dollars]

Year	U.S. exports to east Europe	U.S. imports from east Europe
1946-50 (average).....	133	29
1951-55 (average).....	3	26
1956-60 (average).....	87	48
1961-65 (average).....	105	71
1966-70 (average).....	162	141
1971.....	222	166
1972.....	272	225
1973.....	606	305

¹ Includes East Germany, Czechoslovakia, Hungary, Poland, Romania, and Bulgaria.

Source: U.S. Department of Commerce.

KENNEDY AND JOHNSON ADMINISTRATIONS

In the early and mid-sixties, East-West European trade began to open up and a substantial U.S. business interest also began to develop in trading with Eastern Europe. American businessmen began increasingly to chafe under the special U.S. restrictions which placed them at a disadvantage vis-a-vis their competitors in the other major industrial countries. The West European business communities were benefiting, for example, from a more liberal policy of export controls, the availability of long-term credits, and a bilateral trade framework easing Eastern access to their markets and facilitating export sales to East Europe.

The Kennedy and Johnson administrations generally supported the growing U.S. business interest. In addition to policy statements in support of East-West trade, they continued the previous efforts at "treating different Communist countries differently." Like Poland in the 1950's, Romania was singled out in the 1960's for more liberal treatment. In response to the Romanian initiative to improve its relations with the West, the United States entered into bilateral negotiations with the Romanian Government in Washington in 1964 to increase trade and improve relations. As a result of the negotiations the United States relaxed its export controls on all but goods and

technology of direct or significant military potential, and Romania gave assurances that it would not permit the re-export of U.S. goods and technology, and would protect industrial property rights and processes. Also, several key decisions were made during the Kennedy administration with regard to private and Government credit and several positive measures were undertaken as part of President Johnson's policy of "building new bridges to Eastern Europe."

Congressional support, while sensitive to this growing business interest as evidenced in a number of hearings on East-West trade, was more responsive to domestic political and ideological opposition to doing business with East Europe, and this opposition rose sharply during political-military confrontations. Public objection to trade with East Europe also manifested itself in pressure on American firms interested in or engaged in trade with East Europe. In the midsixties this situation caused the Secretaries of the Departments of Commerce, State, and Defense to issue public statements to the effect that American businessmen who chose to engage in peaceful trade with the East European countries and the USSR were acting within their rights and in accord with the policy of the U.S. Government. The American Government strengthened its position by removing, in 1966, 400 items from the export control list and by supporting a series of trade missions to and from Eastern Europe. During this mixed environment of the 1960's, some Congressional restrictions on credit sales, the export of agricultural goods, and MFN were tightened. Others, on the export of commodities, were substantially reduced.

TRADE LEGISLATION IN THE 1960'S

MFN

Section 231 of the Trade Expansion Act of 1962 provided for withdrawal of MFN as soon as practicable from those East European countries (Poland and Yugoslavia) benefiting from it at the time. Before the full rates were applied to these two countries, the Congress modified this provision, enabling the President to determine that extension of nondiscriminatory treatment to Poland and Yugoslavia was important to the U.S. national interest and would promote the independence of these two countries from domination or control by international communism. At the same time, however, the Congress removed the discretion to extend MFN status to the other East European countries which was previously available to the President.

The Johnson administration-sponsored East-West Trade Relations Act of 1966 would have given the President the authority to restore MFN treatment to individual socialist countries under a commercial agreement negotiation. The principal stumbling block to this plan to dismantle trade restrictions was congressional opposition to the Vietnam war. Similar legislation was reintroduced in 1969 by Senator Magnuson and again in 1971 through the administration's East-West Trade Relations Act. Both attempts were unsuccessful. As a result, Poland (and Yugoslavia) are the only East European countries today receiving MFN status and the President presently has no authority to extend MFN to any other socialist country. Passage of the 1973 trade reform bill currently in Congress would, however, give the President the necessary authority to restore MFN to individual

East European countries, permitting their products to pay duty at the reduced rates applicable to products from most other countries, rather than at the tariff rates prescribed in the Tariff Act of 1930.

Export credit

A significant step forward in the private credit area was made during the Kennedy administration when the Attorney General interpreted the Johnson Act to permit short- and medium-term credits linked to U.S. export transactions. Sales in which the Export-Import Bank participates with guarantees or insurance were also specifically exempted by statute from the prohibitions of the Johnson Act. This ruling removed a barrier to the sale of East European countries of capital goods, where medium-term credits of up to 5 years are common.

However, the Johnson Act, still on the books, continues to serve as an impediment to investment-type activity in East Europe, since there is always the potential for litigation. The Nixon administration proposed in the 1973 Trade Reform Act that the Johnson Act be stricken from the books. Because of a lack of jurisdiction by the Ways and Means Committee, this step was not taken in the bill ultimately passed by the House. In testimony before the Senate Finance Committee, however, administration witnesses proposed that this committee reinsert the repeal of the Johnson Act into the bill.

A step backward in the Government credit area in the 1960's was the congressional restriction, effective beginning in 1964, prohibiting Eximbank loans or guarantees to any Communist state, unless the President specifically determines it to be in the national interest.

Prior to the imposition of this restriction in 1964, there were no congressional restraints on the Bank's ability to extend normal credits to the Eastern European countries and the U.S.S.R. For example, immediately following World War II the Eximbank extended credits to Czechoslovakia and Poland before the Communist regimes were established there. These credits were serviced by the successor Communist governments. Three credits valued at \$60 million in the 1957-59 period were also extended to Poland.

In February 1964, forward movement was picked up again when the President determined that the bank could support, through guarantees, credit sales of U.S. agricultural products to East European countries with the exception of East Germany, with which we had no relations. Later, in June 1964, a determination was issued permitting the Export-Import Bank to provide normal commercial credit guarantees for the sale of all peaceful goods to Romania. Pursuant to the determination, the Eximbank engaged in a transaction involving a \$20 million guarantee for a petrochemical plant. In October 1964, the President extended the authorization to include Poland, Hungary, Bulgaria, and Czechoslovakia. In opening up the availability of credit guarantees for industrial export transactions, the competitiveness of the U.S. exporter to obtain a larger share of the East European market was increased. The policy of the United States on guarantees of long-term loans still placed U.S. firms at a disadvantage in competition for sales in connection with major projects to the East.

Later, in 1968, in response to the Vietnam War, and the year of the invasion of Czechoslovakia, the Fino amendment to the Eximbank Act was passed prohibiting all Bank financing to Communist countries

giving assistance to a nation (North Vietnam) engaged in armed conflict with U.S. Armed Forces. All Eximbank financing to Eastern Europe was stopped (except for Yugoslavia).

Agricultural exports

Legislation governing Public Law 480 shipments to Eastern Europe was also tightened in the mid-sixties. In 1964, Public Law 480 credit was reduced to 5-year terms for Communist countries provided they were not "dominated or controlled by the foreign government or foreign organization controlling the world Communist movement." Until 1964 only Poland had been found to qualify. From 1957, the year in which Poland became eligible for Public Law 480 credit, until 1964, the United States concluded eight Public Law 480 agreements with Poland aggregating \$538 million worth of agricultural commodities.

In 1966 the Findley amendment to the Agricultural Trade and Development and Assistance Act (Public Law 480) took effect. It absolutely prohibited Public Law 480 agreements for the sale of surplus agricultural commodities with foreign governments that trade with, or permit their ships or aircraft to transport goods to, North Vietnam. Since 1966 no East European country has received Public Law 480 commodities.

However, there have never been any discriminatory legal restrictions on Commodity Credit Corporation (CCC) credits for exports to Eastern Europe or the U.S.S.R. Under the CCC, set up in 1962 to provide export financing of specified U.S. agricultural commodities from privately owned stocks, grains, cotton, and vegetable oil have been shipped to East Europe, mainly to Poland and Romania.

Export controls

The election of President Nixon and the subsequent reduction of U.S. combat forces in Vietnam appeared to blunt public and congressional criticism of trade with the socialist countries of East Europe. The Congress, in enacting the Export Administration Act of 1969, for the first time since the Cold War urged the expansion of East-West trade while reaffirming Presidential authority to control such trade for a variety of purposes, including national security and foreign policy.

With the passage into law of the Export Administration Act, as amended by the Equal Export Opportunity Act of 1972, the Department of Commerce promptly intensified its review of the controlled commodities and began a review of the licensing procedures. The general trend in the administration of export controls since 1969 has been toward the liberalization of controls in all but the most definitely strategic-sensitive items.

FIRST OFFICIAL GOVERNMENT POSTWAR TRADE SURVEY MISSION

Against this improved background for trade the then Deputy Assistant Secretary of Commerce Harold C. Scott led the first official Government postwar trade survey mission to Eastern Europe in June of 1970. It was a low-key, factfinding mission to Bulgaria,

Czechoslovakia, Hungary, Poland and Romania. The discussions were exploratory in nature and did not extend to negotiations. The purpose of the mission was to concentrate on identifying areas where possible improvement of trade relations under existing circumstances were feasible and in such areas to discuss specific plans of action.

The mission brought back "shopping lists" consisting of major technology or plants which each country was interested in buying or coventuring. Using these shopping lists the Department of Commerce began working with the East European embassies and their foreign trade officials to identify qualified American companies, determine their interest and arrange introductions. This trip was followed up the next year by Secretary of Commerce Stans, who visited Romania in the spring and Poland in the fall to explore ways of furthering trade.

The year 1971 saw further liberalization in the exercise of U.S. export control regulations and stepped up trade promotion efforts by the U.S. Government to increase the opportunities for peaceful trade with Communist countries. In mid-1971, Congress eliminated the Fino Amendment of 1968 to the Eximbank Act and made Export-Import Bank financing of sales to Communist countries possible upon a determination that such financing would be in the national interest. This enabled President Nixon on November 30, 1971, to issue a determination which made Romania eligible for Export-Import Bank financing. Similar determinations were made for the U.S.S.R. and Poland in October and November of 1972.

An amendment to the Foreign Assistance Act of 1971 authorized Overseas Private Investment Corporation (OPIC) programs in Romania (and Yugoslavia) if the President determined it to be in the national interest. In March of 1972 the President made this determination for Romania and now OPIC's loan guaranty and investment insurance programs are available there.

The Normalization of Trade and Economic Relations

Through a variety of Presidential initiatives opening the way for political and economic rapprochement with the U.S.S.R. in May of 1972, the basis was laid for the normalization of our relationships with the East European countries. Following the Moscow summit, the President visited Poland, where an American-Polish Trade Commission was formed. Two Joint Commission meetings, one in Warsaw and the other in Washington, were held that year to facilitate trading relations between the countries.

Also, in response to the willingness of Hungary and Romania to normalize their commercial and trade relations, the Secretary of State visited these two East European countries. In Bucharest, Secretary Rogers signed a consular convention and liberalized the regulations for Romanian ships calling on U.S. ports; in Budapest agreement was reached to start talks on settling Post-World War II American claims.

Late in 1972 the first U.S. Government Trade Development Office in East Europe was opened in Warsaw, and the Bureau of East-West Trade was established within the Department of Commerce. The Bureau's main objective has been to help equalize the odds American enterprise faces in dealings with centrally planned economies. This objective has been furthered through business assistance and trade

promotion programs tailored to the East European countries, and the provision of staff support for the Joint Commissions established thus far with the U.S.S.R. and Poland and Romania (see section II).

Efforts to normalize economic relations on both sides were reflected in additional intergovernmental trade discussions in 1973 resulting in the further reduction of impediments to trade and the acceleration of trade promotion activities.

In June of 1973, the Department of Commerce opened the East-West Trade Center in Vienna to coordinate U.S. trade promotion activities throughout Eastern Europe and to serve as an Eastern Europe trade information center for U.S. businessmen.

Economic and trade talks were held during the course of 1973 in Poland, Hungary, and Czechoslovakia, and in the United States with Romania and Bulgaria. In Poland, the U.S. delegation attended the third session of the American-Polish Trade Commission, in which progress was made on business facilitation questions as well as on maritime matters and industrial cooperation. The Hungarian talks centered on the interest of Hungary in technological and production links with U.S. companies, and the discussions in Prague on settling outstanding financial claims.

A visit of the Romanian President to the United States lent great importance to the Washington talks with the Romanians, which were highlighted by the issuance of a joint statement on economic, industrial and technological cooperation, including a provision establishing a Joint Economic Commission. In July 1973, during the visit of the Bulgarian delegation, headed by Deputy Minister of Foreign Trade Andrei Lukanov, specific steps for improving our economic and trade relations were discussed. Other notable achievements in United States-Bulgarian relations in the fall of last year included the negotiation of a consular agreement, an agreement to create a United States-Bulgarian Economic Council, and the signing of a \$1 million contract by an American firm to provide Bulgaria with agricultural equipment and technology.

As a result of U.S. efforts in the 1970's to normalize our relationships with the socialist countries, our two-way trade with individual East European countries is showing a steady upward trend (see table 2).

TABLE 2.—U.S. TRADE WITH EASTERN EUROPE, 1970-73

(In millions of dollars)

Country	U.S. exports to—				U.S. imports from—			
	1970	1971	1972	1973	1970	1971	1972	1973
Bulgaria.....	15.3	4.4	3.4	6.5	2.4	2.6	2.9	4.5
Czechoslovakia.....	22.5	38.7	49.4	72.1	23.9	23.6	28.0	35.2
German Democratic Republic.....	32.5	25.4	14.9	28.0	9.4	10.1	10.3	10.5
Hungary.....	28.3	27.9	22.6	33.0	6.2	7.8	12.7	16.4
Poland.....	69.9	73.3	111.8	350.0	97.9	107.6	139.2	181.9
Romania.....	66.4	52.5	69.4	116.6	13.4	13.8	31.5	55.7
Total.....	234.9	222.2	271.5	606.2	153.2	165.5	224.6	304.2
U.S.S.R.....	118.7	162.0	546.8	1,190.2	72.3	57.2	95.5	213.9
Grand total.....	353.6	384.2	818.3	1,796.4	225.5	222.7	320.1	518.1

Source: U.S. Department of Commerce.

III. INSTITUTIONAL MECHANISMS FOR THE NORMALIZATION OF TRADE, JOINT TRADE, AND ECONOMIC COMMISSIONS

The Joint Commissions established by President Nixon and the leaders of the Soviet Union, Poland, and Romania are the inter-governmental instrumentalities through which the normalization of trade and economic relationships with these countries is taking place. The cold war legacy and the complex problems inherent in trading between centrally planned and free market economies called for an institutional mechanism which would highlight the trend of détente and allow for a more definitive and responsive interface between the widely differing economic systems.

While the use of the Joint Commissions represents a new departure for the United States, the West European countries have used the Commission mechanism in their relations with the East European countries since the 1960's.

The Joint Commissions with the Soviet Union¹ and Poland were established at the summit meetings in Moscow and Warsaw in mid-1972 and they are today providing an effective mechanism for resolving outstanding economic and commercial matters. The first American-Romanian Economic Commission meeting, established during President Ceausescu's visit to Washington in December 1973, took place in Bucharest in April of this year.

The American-Polish Trade Commission

STRUCTURE AND COMPOSITION

The American-Polish Trade Commission consists of a United States and a Polish section, each with its own chairman. The cochairmen are the Polish Minister of Foreign Trade and the U.S. Secretary of Commerce. Other members of the U.S. section include the Under Secretary of the Department of State, as vice chairman; the Under Secretary of the Treasury Department; the Deputy Legal Advisor of the Department of State as counsel; and the Deputy Assistant Secretary of Commerce for East-West Trade, as executive secretary.

The Secretariat for the U.S. section is in the Department of Commerce's Bureau of East-West Trade. Commission rules and procedures provide for meetings at least once a year.

FUNCTIONS

Following the establishment of the Commission, two meetings were held in 1972, one in early August in Warsaw, and the other in November in Washington, D.C. At the November meeting, agreements were reached on a number of basic commercial and economic issues, including the reciprocal availability of trade credits; expanded arrange-

¹ For information on the structure and functions of the U.S.-U.S.S.R. Commercial Commission, see "United States-Soviet Commercial Relations," *Soviet Economic Prospects for the Seventies: A Compendium of Papers Submitted to the Joint Economic Committee*, Congress of the United States, June 28, 1973, Joint Committee Print, 93d Congress, 1st Session (Washington, D.C.: U.S. Government Printing Office, 1973), pp. 656-58.

ments for business facilities; and third country arbitration. As a result of these agreements, United States and Polish officials anticipated that trade between the two countries would at least triple during the next 5 years, which would mean a two-way trade of \$600 million.

The delegates to the third session led by Secretary of Commerce Frederick B. Dent in September of last year took up some of the more practical problems confronting businessmen of each country. Among the matters discussed were long-term industrial cooperation, including joint ventures, business facilitation, maritime issues and agricultural purchases. During the meeting, Polish officials informed the U.S. delegation that construction of the Warsaw International Trade Center and housing complex, scheduled for completion in September 1975, had been initiated, and advised of their country's pending publication of regulations for joint ventures and taxes. The Commission also exchanged notes providing access to U.S. ports for Polish vessels and the U.S. delegation authorized the opening of a trade office in San Francisco by the Polish Chamber of Foreign Trade.

During Joint Commission meetings, much of the work is accomplished in special working group sessions. At the last Commission meeting, joint working groups on business facilitation, commercial matters and agricultural commodities trade were created to take up most of the items on the agenda. The working group approach has proved effective in bringing together the experts in these areas from both sides.

Special Commission working groups can also meet between plenary sessions. For example, in March 1973, the Trade Commission's Joint Working Group on Business Facilities met in Warsaw to discuss in detail the framework for business representation in the respective countries.

During the time the Joint Commission has existed, United States-Polish trade has soared. U.S. exports to Poland were \$73 million in 1971, increased to \$114 million in 1972, and reached \$350 million in 1973. Polish exports to the United States were \$108 million in 1971, \$139 million in 1972, and have reached \$182 million in 1973. With these gains continuing, the goal to triple overall American-Polish trade in 5 years, established at the second Joint Commission meeting, will be achieved well ahead of schedule.

The Secretariat has recently published a report entitled "American-Polish Commercial Accords 1972-73." The report is basically a chronology of American-Polish trade relations since the formation of the Joint Commission in June 1972. Contained in the report are texts of the series of agreements and understanding reached at the first three Commission meetings, together with summaries and relevant communications between the principal representatives of the American and Polish Governments.

Joint Economic Commission With Romania

An American-Romanian Economic Commission to assist the growing economic and commercial relationships between the two countries was established during the visit of Romania's President Nicolae Ceausescu to the United States in December 1973. The Joint Economic Commission, announced in a "Joint Statement on Economic, Indus-

trial and Technological Cooperation," will consider questions and problems relating to the reciprocal establishment of business facilities to promote economic cooperation, as well as any other matters arising in the course of economic, industrial, and technological cooperation.

The Joint Economic Commission is similar in structure to the Joint Trade Commissions with Poland and the membership of the U.S. section of the Commission is the same. The Secretary of Commerce heads up the U.S. side. Ion Patan, Vice President of the Council of Ministers and the Minister of Foreign Trade, was named Chairman of the Romanian section. The first Commission meeting took place in Bucharest in April 1974.

Joint Chambers of Commerce

Another approach to business cooperation between the American private sector and the East European countries is through Joint Chambers of Commerce.

In November of last year, the U.S. Chamber of Commerce and the Bulgarian Chamber of Commerce and Industry agreed to establish a Bulgarian-United States Economic Council to stimulate and broaden trade and industrial cooperation between the two countries.

During President Ceausescu's visit to Washington in December 1972, the United States-Romanian Economic Council was formed through an agreement by the Chamber of Commerce of the United States and the Romanian Chamber of Commerce. The Council is considering ways to expand trade and economic cooperation between the two countries, eliminate obstacles to the flow of trade, and facilitate the exchange of commercial information. The Council's first joint meeting was held in Bucharest beginning May 31.

A preliminary agreement has also been signed between the Polish Chamber of Foreign Trade and the U.S. Chamber of Commerce to form a United States-Polish Economic Council which will seek to develop solutions to problems experienced by either party in doing business with the other.

East-West Trade Policy Committee

In order to anticipate and more expeditiously deal with policy questions as they arise, President Nixon created in the spring of 1973 an East-West Trade Policy Committee under the chairmanship of his then principal economic advisor, George Shultz, Secretary of the Treasury. The President also designated the Secretary of Commerce, Frederick B. Dent, to serve as Vice Chairman of the Committee. Other members of the Policy Committee include: the Secretary of State, the Executive Director of the Council on International Economic Policy, and the Special Representative for Trade Negotiations.

The Policy Committee has a working group chaired by the Under-Secretary of the Treasury which meets more frequently. Representatives from the member agencies participate as do other Government agencies, such as the Departments of Defense, Agriculture and Eximbank, when appropriate. The working group can be assembled quickly to reconcile any interagency differences on East-West trade matters and to obtain a consensus on anticipated issues.

The Policy Committee Working Group has proven to be very ef-

fective in bringing together a variety of expertise not readily available in a single-agency effort. It has also facilitated coordination of policy development through lines into the U.S. Government agencies furnishing working group members.

IV. MAJOR NEGOTIATING ISSUES

President Nixon's visit to the U.S.S.R. and Poland in the spring of 1972 signaled the beginning of negotiations for normal commercial relations with most of the countries of Eastern Europe. In order for American companies to do business in this area of the world on the same basis as their foreign competitors, the outstanding economic and commercial issues must be resolved. Some of these unresolved issues such as the absence of Export-Import Bank credits directly affect the ability of U.S. companies to do business. The lack of agreement on other issues may be considered by the country involved as evidence of discrimination by the United States in its commercial policy. The effect on American business is equally important. In centrally directed economies where the price of product is not the principal factor in the purchasing decision, the contract often goes to the firm of the country with which the Eastern European country has a normal relationship.

The following discussion outlines the economic and commercial issues outstanding between the United States and the Eastern European countries. The state of U.S. commercial relationships ranges from the near normality of our relationships with Poland and Romania to East Germany and Albania with which the United States has yet to establish diplomatic relations.

TABLE 3.—STATUS OF COMMERCIAL RELATIONS WITH SOCIALIST COUNTRIES

	Albania	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania	U.S.S.R.	People's Republic of China	Yugoslavia
Diplomatic Recognition.....	No.....	Yes.....	Yes.....	(1).....	Yes.....	Yes.....	Yes.....	Yes.....	No.....	Yes.
MFN.....	No.....	No.....	No.....	No.....	(2).....	Yes.....	(2).....	(2).....	No.....	Yes.
Exim-bank.....	No.....	No.....	No.....	No.....	No.....	Yes.....	Yes.....	Yes.....	No.....	Yes.
OPIC.....	No.....	No.....	No.....	No.....	No.....	No.....	Yes.....	No.....	No.....	Yes.
Maritime Agreement.....	No.....	No.....	No.....	No.....	No.....	(3).....	No.....	Yes.....	No.....	No.
Double Taxation Treaty.....	No.....	No.....	No.....	No.....	No.....	(4).....	Yes.....	No.....	No.....	No.
Consular Convention.....	No.....	Yes.....	Yes.....	No.....	Yes.....	Yes.....	Yes.....	Yes.....	No.....	Yes.
Civil Aviation Agreement.....	No.....	No.....	Yes.....	No.....	(4).....	Yes.....	Yes.....	Yes.....	No.....	(5).
Defaulted Bonds Outstanding.....	No.....	(1).....	(1).....	Yes.....	(1).....	(1).....	(1).....	Yes.....	Yes.....	No.
Financial Claims Outstanding.....	Yes.....	No.....	(1).....	Yes.....	No.....	No.....	No.....	No.....	Yes.....	No.
Johnson Act Applicability.....	No.....	No.....	Yes.....	(2).....	Yes.....	Yes.....	No.....	Yes.....	Yes.....	No.
Fisheries Agreement.....	No.....	No.....	No.....	No.....	No.....	Yes.....	Yes.....	Yes.....	No.....	No.
Science, Technology Agreement.....	No.....	No.....	No.....	No.....	No.....	Yes.....	No.....	Yes.....	No.....	Yes.
Joint Commercial Commission.....	No.....	No.....	No.....	No.....	No.....	Yes.....	Yes.....	Yes.....	No.....	No.
Joint Trade Council (Private).....	No.....	(7).....	(4).....	No.....	(2).....	(7).....	(7).....	Yes.....	Yes.....	(1)
Trade Agreement.....	No.....	No.....	No.....	No.....	No.....	No.....	No.....	(2).....	No.....	No.
Long-Term Economic Cooperation Agreement.....	No.....	No.....	No.....	No.....	No.....	No.....	No.....	Yes.....	No.....	No.

¹ Under negotiation.

² Commitments; congressional action required.

³ Discussion initiated.

⁴ Preliminary agreement reached.

⁵ Unilateral permit only.

⁶ Subject to legal interpretation.

⁷ With U.S. Chamber of Commerce.

Most-Favored-Nation Status

The most important outstanding issue is the U.S. denial of Most-Favored-Nation (MFN) tariff treatment to imports from Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, and Romania, as well as from the U.S.S.R. MFN status was withdrawn from these countries in the Trade Agreements Extension Act of 1951, at the height of the cold war. Of the Eastern European countries, only Poland, which was also subject to this restriction until 1960, is now exempt. In December of that year, the President determined that Poland had shown the requisite independence from the world Communist movement and restored MFN to that country.

The Eastern European countries view the denial of MFN status by the United States as discriminatory. They resent treatment as "second class trading partners" and have made it known that this issue must be resolved before our trade can increase substantially.

The Trade Reform Act of 1973, as introduced in the House of Representatives, provided for extension of MFN to the socialist countries. After amendment in the House of Representatives, the bill now authorizes the extension of MFN to any nonmarket economy country only after the President determines that it does not deny its citizens the right or opportunity to emigrate and imposes no more than nominal exit taxes, fees, or similar charges. Either the House or the Senate may vote to deny the extension of MFN by a simple majority within 90 days of the President's notification to the Congress of the extension.

Furthermore, after MFN is extended, the President must continue to submit to Congress a determination on the emigration policies of the countries receiving MFN every 6 months. Congress then may withdraw the nondiscriminatory treatment within 90 days. Poland and Yugoslavia are exempt from this provision of the legislation, since they received MFN status prior to introduction of this bill.

MFN status can be extended either by Presidential determination (subject to congressional approval) or by commercial agreement. Commercial agreements concluded with nonmarket economies involving the extension of MFN are limited to a 3-year duration, with a 3-year renewal period permitted if a satisfactory balance of trade concessions has been maintained. Agreements must contain provisions for suspension or termination on the bases of national security, market disruption (with corresponding import relief measures), protection of patents, settlement of commercial disputes and consultations for review of operation of the agreement and other aspects of bilateral relations.²

Aside from the symbolic importance which the Eastern European countries place on nondiscriminatory tariff treatment, the extension of MFN can be expected to have the economic impact of increasing U.S. exports to these countries, as well as enlarging imports from them. The economic impact of MFN extension on the earnings of hard currency will vary widely by country due primarily to the kinds of products which it is likely to export. As imports from Eastern Europe become more competitive in the United States (as a result of lower tariffs), additional hard currency reserves will be generated, permitting these countries to purchase additional U.S. exports.

² H.R. 10710, "Trade Reform Act of 1973," 93d Congress, 1st Session, Dec. 12, 1973, title IV, pp. 129-137.

Although the provisions of the Trade Reform Act of 1973 restricting MFN were directed originally toward the Soviet Union, the burden of higher tariffs has tended to fall more heavily on the Eastern European countries.

A 1972 Tariff Commission report³ points out that of the total imports from all the socialist countries, more than half continue to enter at rates virtually the same as those applied to imports from countries accorded MFN status.

In 1951, when MFN was withdrawn, imports from Eastern Europe totaled \$71 million. Only 43 percent of this total became subject to substantially higher duties at the time of withdrawal. In 1966 about 70 percent of U.S. imports from these countries entered at duty-free rates or at rates which were similar to MFN rates. In 1970, only one-third of the total imports entered at the higher rates. However, of the \$88.3 million total imports from the socialist countries in 1966, more than half consisted of articles from the U.S.S.R., which avoided the higher tariff. U.S. imports from the Soviet Union have traditionally consisted of raw materials, which enter at reduced duty rates. The Eastern European countries, on the other hand, increasingly have exported industrial goods to the United States, which are subject to the full column 1 rates. This trend is due to the gradual economic development which has led to concentration of production in a few industries.

Thus, in the 3 years mentioned, 1951, 1966, and 1970, virtually all imports from the U.S.S.R. escaped the higher duty rates; whereas one-third of the total imports from the U.S.S.R. and the other Eastern European countries were subject to higher rates.

Credits

The availability of financial credits is also of importance in the normalization of commercial relations. Facilities of the U.S. Export-Import Bank are extended by Presidential determination. In November 1971, President Nixon determined that Eximbank facilities should be made available to Romania. Eximbank authorized its first direct loan to Romania amounting to \$1.2 million in September 1972. The loan was made to help finance a \$3.2 million sale of U.S. equipment and services for an offshore drilling platform. In April 1973, Eximbank authorized a \$20 million direct loan in support of a \$44 million sale of three Boeing 707 jet aircraft to Romania. More recently, a \$13 million loan was authorized for construction of a tire production facility in Floresti, Romania. In addition, Eximbank also will provide a financial guarantee for about \$13 million if required. Total exposure to date (mid-March 1974) in Romania amounts to \$80 million.

A similar determination to extend Eximbank facilities was made by the President with respect to Poland in November 1972. The extension of credits to Poland was part of a reciprocal arrangement agreed upon at the second session of the American-Polish Trade Commission. In return, credit facilities of the Bank Handlowy W. Warszawie S.A. and the Polish foreign trade organizations were made available to American importers.⁴

³ Anton F. Malish, Jr., *United States-East European Trade. Considerations Involved in Granting Most-Favored-Nation Treatment to the Countries of Eastern Europe*, Staff Research Studies, No. 4, U.S. Tariff Commission, 1972, pp. 14-19.

⁴ "Fact Sheet on Joint American-Polish Trade Commission, Second Session, November 4-8, 1972." U.S. Department of Commerce.

Exposure in Poland at this time (mid-March 1974) totals \$126 million. Of this amount, \$41.7 million was extended for construction of five meat processing plants (three separate loans). Other large loans include \$13.5 million for construction of an iron foundry and \$24.9 million for equipment and technical assistance for brass and copper rolling and processing.

To date, only Poland and Romania are eligible for Eximbank credits. Other Eastern European countries may be made eligible if the President determines that it is in the national interest to do so, under the Export Expansion Finance Act of 1971.

In addition to Eximbank credits, Eastern European countries have utilized Commodity Credit Corporation credits to finance agricultural purchases in the U.S. A moratorium was placed on new credits in March 1973, due to the tight world commodity supply situation and market conditions.

Another source of credit, Overseas Private Investment Corporation (OPIC) loan guaranty and investment insurance programs, has been made available to Romania. Extension of OPIC programs to Romania (and Yugoslavia) was authorized in a January 1972 amendment to the Foreign Assistance Act of 1971. President Nixon made the determination that such an extension would be in the national interest in March 1972, and an implementing procedural agreement was signed in April 1973. OPIC programs include: Pre-investment survey cost-sharing; war, expropriation and inconvertibility risk insurance; long-term loan guarantees and a limited amount of small, direct loans.

The extension of credit facilities to the Eastern European countries could be restricted by the terms of the Trade Reform Act of 1973. The legislation, as approved by the House of Representatives in November 1973, requires that the Eastern European countries be subject to the same restrictions concerning availability of credits as they are concerning extension of Most-Favored-Nation tariff treatment.⁵

Business Facilitation

The day-to-day problems of transacting business in the socialist systems of the Eastern European countries remain impediments to normalized commercial relations in all countries, even Poland, where the basic issues of MFN and credits have been resolved. U.S. firms face major obstacles in dealing with the state foreign trade organizations. Consequently, the U.S. Government seeks to resolve problems in areas of business facilitation such as establishment of offices and access to end-users on a bilateral government-to-government basis.

A special effort is being made by the U.S. Government to assist American firms in resolving day-to-day operating problems in the Eastern European countries. Because American firms must negotiate with local governments, the U.S. Government assists American firms in establishing themselves in these markets to a greater extent than is the case in Western markets.

TRADE REPRESENTATION

U.S. firms may want to open permanent sales offices in these countries. For many firms, using the services provided through the state representation agencies and making frequent visits are not sufficient.

⁵ H.R. 10710, "Trade Reform Act of 1973."

At the beginning of 1974, Poland and Romania were the only Eastern European countries permitting the establishment of representational offices by foreign firms.

Under a Romanian decree issued in 1971 permitting the establishment of offices by foreign firms, five U.S. firms currently operate offices.⁶ Two, East Europe Import and Export, Inc., and Moody International, operate representational offices. The offices of the other companies (IBM, Singer Corp. and Ingersoll-Rand) are sales offices.

Costs of authorization and annual fees usually total more than \$1,000. Firms operating offices are also subject to a sliding turnover tax. In addition, the hiring of Romanian personnel is done through the Romanian Chamber of Commerce, and salaries and wages must be paid in convertible currency to the Chamber, which in turn pays the employee in Romanian currency.

Polish regulations on establishment of offices are similar to Romanian rules. Again, license fees are high, and must be paid in hard currency at the official exchange rate, which is significantly lower than the tourist rate. The accreditation procedures can take several months. Seven U.S. firms have accredited offices: Monsanto Corp., Control Data Corp., IBM, Singer Corp., Hewlett-Packard, Dow Chemical Corp., and Pullman, Inc.

Hungary, Czechoslovakia, and Bulgaria do not permit the establishment of offices by foreign firms. Such permission from these governments and improvement in procedures and facilities in all the countries are sought by the United States.

OFFICE FACILITIES AND HOUSING

In all the Eastern European countries, office facilities and housing are difficult to obtain. Communication needs, such as telephones and telex, office supplies, and suitable housing for visitors are expensive and not readily available.

ACCESS TO END-USERS

Most negotiations for business transactions are carried on between The U.S. firm and the foreign trade organizations. It is difficult for the foreign businessmen to deal directly with the end-users in the appropriate ministry or industry until the most advanced stages of negotiation, if at all. Better access to end-users is another issue being discussed with the individual Eastern European countries.

RELAXATION OF VISA RESTRICTIONS

Both the United States and the individual Eastern European countries are interested in obtaining less-restrictive visa policies for their citizens. The issue is currently under negotiation with the different countries.

These business facilitation issues will continue to be discussed in the bilateral commissions which the United States has formed with Poland and Romania and through direct negotiations with the other countries.

⁶ "Decree on Authorization and Working Regulations of Commercial Agencies Set Up by Foreign Trading Firms and Economic Organizations in the Socialist Republic of Romania," Decree No. 15 of January 25, 1971, *Official Bulletin of the Socialist Republic of Romania*, No. 10, January 27, 1971.

Industrial Cooperation and Joint Ventures

The U.S. Government encourages the establishment of cooperative projects between U.S. firms and the industrial organizations of the Eastern European countries. Romania and Hungary have published implementing regulations permitting foreign equity participation of up to 49 percent. The original law passed by the Romanian Council of State on March 17, 1971, specified that joint ventures could be formed in the fields of industry, agriculture, tourism, transport and scientific and technological research.⁷ Production is to be intended particularly for export.

Because the initial legislation was rather vague as to terms and conditions of joint venture operations, the Romanian Government issued two detailed implementing regulations on November 3, 1972.

The first regulation specifies procedures to be followed in the establishment, organization, and functioning of a joint company.⁸ Chapter I of the regulation defines eligible participants, areas of activity and goals, and guarantees transfer abroad in hard currency of all profits and the participating investment quota after deduction of taxes and other obligations. It also stipulates that the companies must develop annual and 5-year economic and financial plans.

Chapter II outlines the constitution and organization of a joint company. The company may be set up as either a joint stock or a limited liability company. The contract of association and statutes must stipulate the contracting parties, legal form, name, objective, registered office, and duration. It must also designate the capital and subscriptions, transfer of shares, number and value of shares, rights and obligation of partners, and the first management bodies. The statutes must also include provisions for the organization and operation of the company, including general and board of directors meetings, method of voting, appointment and remuneration of officials, and accounting procedures.

The contribution of the foreign partner to the subscribed capital may be in the form of financial capital, a share in goods, or industrial property or other rights. In addition, the Romanian contribution may include the equivalent value of the right of use of ground which the Romanian state makes available to the joint company. The financial capital will be deposited in the Romanian Bank for Foreign Trade in the currency agreed upon.

The Romanian partner must obtain the approval of the State Planning Committee, the Ministry of Finance, the Ministry of Foreign Trade, the Ministry of Labor, and the Romanian Foreign Trade Bank before entering into a joint company. The two partners must then seek the approval of the Council of State by decree, at the proposal of the Council of Ministers.

In chapter III, the legislation details the actual operations of joint companies. Expenses are to be paid in the currency agreed upon in the contract. Small expenses may be paid through a lei account with the Romanian Foreign Trade Bank. Raw materials and supplies can be purchased internally in the agreed upon currency or imported. Output

⁷ "Law on Foreign Trade and Economic and Technico-Scientific Cooperation Activities in the Socialist Republic of Romania," Law No. 1, *Official Bulletin of the Socialist Republic of Romania*, No. 33, Mar. 11, 1971.

⁸ "Decree on Constitution, Organization and Operation of Joint Companies in the Socialist Republic of Romania," *Official Bulletin of the Socialist Republic of Romania*, No. 424, Nov. 2, 1972.

can be sold in the agreed upon currency in the domestic market and either directly or through foreign trade organizations in foreign markets. All foreign currency payments must be paid from the company's own currency or from loans.

A reserve fund must be set up with a portion of the profits. Remaining profits after deduction of the reserve funds and legal taxes will be distributed in proportion to the shares of capital investment, with a portion being set aside for future development of the company.

Finally, the Joint Company must transfer the currency for the salaries of its Romanian personnel to its Romanian bank. In return, the Bank will hold the corresponding amounts of lei at the company's disposal.

Chapter IV requires that all partners be given financial information upon request and that one or two persons from the Ministry of Finance belong to the body which controls the joint company's financial and accounting activity.

The final three chapters provide the rights and obligations of personnel, consistent with Romanian law and procedures for litigation and for dissolution and liquidation of the joint company.

The second decree regarding taxation of joint companies requires that profits be taxed 30 percent annually, calculated on profit before distribution.⁹ The Romanian Council of Ministers may grant an exemption for the first year of profitable operation and reduce the tax by half for the following two calendar years. In addition, taxes on profits which are reinvested within 5 years in the same joint company or other joint companies with Romanian participation may be reduced by 20 percent.

Provisional taxes must be paid in quarterly installments based on the profit forecast.

Finally, the decree specifies that a fee of 5,000 lei (U.S.=\$900) be paid for registration of the joint company with the Ministry of Foreign Trade and the Ministry of Finance.

The Hungarian decree issued on October 3, 1972, details similar regulations for formation of companies with foreign equity participation, though in less detail.¹⁰ The joint company may be an unlimited partnership, share company, limited company or joint company. The foreign ownership is again limited to 49 percent, and the contract must be approved by the Minister of Finance. As in the case of Romania, risk funds must be established continuously until they constitute 10 percent of the partnership funds. Profit-sharing funds may not exceed 15 percent of the total wages paid annually by the company.

Annual profits after deduction of risk and profit-sharing funds, are to be taxed 40 percent if the profits do not exceed 20 percent of the invested capital and 60 percent if they do exceed 20 percent.

The Hungarian National Bank will transfer 50 percent of the foreign partner's income abroad in the currency set in the contract. The foreign partner is also entitled to certain Hungarian National Bank guarantees for damages or obligations with stipulations. If risk funds are insufficient to cover losses, or the company has outstanding debts in the event of insolvency, the Minister of Finance will order liquidation and appoint the liquidator.

⁹"Decree Regarding Tax on Profits of Joint Companies in the Socialist Republic of Romania," *Official Bulletin of the Socialist Republic of Romania*, No. 425, November 2, 1972.

¹⁰"Decree of the Minister of Finance, No. 28/1972 (X, 3) PM, about the Economic Companies with Foreign Participation," *Hungarian Gazette*, No. 76, October 3, 1972.

Poland is in the process of preparing similar legislation, but has not yet released any information. Additional information which would clarify and expand current regulations is desirable. To date, one equity joint venture has been concluded between a U.S. firm, Control Data Corp., and a socialist state organization, a Romanian industrial central. East Germany, Poland, Czechoslovakia, and Bulgaria, do not have legislation permitting equity participation. Various licensing and coproduction operations exist in all the Eastern Europe countries.

Arbitration

The Eastern European countries historically favored arbitration of commercial disputes in the home country. Agreements to seek third country arbitration have been encouraged by the United States. In an exchange of notes signed during the second session of the American-Polish Trade Commission, the two countries encouraged that adoption of arbitration of commercial disputes between U.S. persons and firms and Polish foreign trade organizations be provided for in individual contracts or separate agreements to accompany contracts.¹¹ The letters suggest the use of two mechanisms: the rules of arbitration of the International Chamber of Commerce and of the Economic Commission for Europe. In the case of the arbitration rules of the ECE, the agreement should also designate an appointing authority in a country other than the United States or Poland for the appointment of an arbitrator(s), and specify the place of arbitration in a third country which is a party to the 1958 Convention on the Recognition and Enforcement of Foreign Arbitral Awards.

The letters also note that the two parties involved may agree on any other form of arbitration they mutually prefer.

A similar suggestion for arbitration under the rules of the International Chamber of Commerce was made in the Joint Statement on Economic, Industrial, and Technological Cooperation issued by President Nixon and Romanian President Nicolae Ceausescu during the latter's visit in December 1973. Comparable arrangements are also favored with the other Eastern European countries.

Taxation

Agreement on a text of a convention for the avoidance of double taxation was reached with the Polish Government in November 1973, in Washington. This agreement, which is expected to be signed early this year, will ameliorate for U.S. businesses certain provisions of the Polish tax laws pertaining to business profits, dividends, royalties, interest, and construction activity.

More specifically, the treaty provides that business profits may be taxed only if the enterprise has a permanent establishment in that country, and only to the amount that is attributable to the permanent establishment. The permanent establishment is to be treated as a distinct and separate enterprise. Expenses (including executive and general administrative expenses, regardless of where they are incurred) are to be allowed as deductions in determining profits.

¹¹ "Fact Sheet on the Joint American-Polish Trade Commission Second Session, Nov. 4-8, 1972," Department of Commerce.

A permanent establishment is defined as a branch, an office, a factory, a workshop, a mine or quarry, or construction which lasts for more than 18 months, or a person who habitually exercises an authority to conclude contracts in the name of the enterprises, unless activities are limited to purchase of goods for the enterprise.

The maximum taxation which a country can place on dividends received by its residents from a company of the other country is set in the treaty at:

- (a) 5 percent of gross amount of dividend if the recipient is a company which holds directly at least 10 percent of the outstanding shares (joint ventures).
- (b) 15 percent of gross dividends in all other cases.

Also, in the treaty are provisions regulating taxation of interest, royalties, capital gains, independent and dependent personal services, and teachers, students and trainees.

A similar income tax treaty was signed with Romania during President Ceausescu's visit in December 1973.¹² It incorporates the same basic principles that are defined in recent U.S. tax conventions with other European countries with respect to taxation of business income, personal service income and income from investments. It also includes provisions for reciprocal administrative cooperation and nondiscriminatory tax treatment.

Under the treaty, withholding taxes on interest and cultural royalties derived by residents of the other country are reduced to not more than 10 percent. Interest paid to the other government or on loans granted by or guaranteed by a government instrumentality will be tax exempt at the source. The maximum rate on industrial royalties is set at 15 percent.

The reciprocal withholding rate for dividends is also limited to 10 percent. Equipment rentals are subject to tax only if connected with a permanent establishment.

Subject to Senate approval, the convention would take effect as of January 1, 1974, for a minimum period of 5 years. It would continue in force indefinitely subject to termination by either nation.

Similar conventions are desirable with the other Eastern European countries, particularly as trade relations develop. (See also: Taxation of equity joint ventures under Industrial Cooperation and Joint Ventures.)

Financial Claims

Government-to-government and private claims resulted principally from nationalization and seizures of assets by Eastern European governments after World War II. Bulgaria, Hungary, Romania and Poland have signed claims agreements. Government-to-government claims with Romania (and Poland) were settled in 1960. Bulgarian government claims were settled on a lump-sum basis in 1963; private claims are outstanding. The U.S. and Hungary settled financial claims in an agreement signed by former Secretary of State William Rogers and the late Deputy Premier of Hungary Peter Valyi, during the latter's March 1973 to Washington. A claims settlement with Czechoslovakia was initialed July 5, 1974.

¹² "Convention Between the Government of the United States and the Government of the Socialist Republic of Romania with Respect to Taxes on Income," Department of Treasury News Release, December 4, 1973.

Bonds

An issue related to claims is the settlement of outstanding dollar bonds held by U.S. citizens. Negotiations for settlement of these issues are conducted through a private organization, the Foreign Bondholders Protective Council, Inc.

Poland, Romania, Bulgaria, and Hungary formally agreed to negotiate outstanding bonds during bilateral settlement of financial claims. To date, Poland has submitted a temporary plan which has been accepted by the Council.

The Bondholders Council lists the following defaulted dollar bonds of Eastern European countries:¹³

Bulgaria.....	\$6, 467, 500
Czechoslovakia.....	2, 734, 300
Hungary.....	30, 129, 100
Poland (tentative settlement reached).....	41, 075, 410
Romania.....	15, 500, 000

According to the council, Germany is in default on approximately \$11 million worth of bonds, a portion of which came from the area now incorporated in East Germany.

Export Controls

The Eastern European countries often view U.S. export control restrictions administered by the Office of Export Administration of the Department of Commerce as an impediment to improved commercial relations. However, because export restrictions are determined for national security reasons, the U.S. Government is not free to negotiate relaxation of these restrictions with foreign governments. The Export Administration Act of 1969, as amended in 1972, restricts export of a small number of goods and technology to Eastern Europe. The number of strategic export controls, although still somewhat higher than the number of Coordinating Committee (COCOM) restrictions, is constantly being reduced.

Maritime Issues

The major maritime issue outstanding has been the length of the request period for access of foreign vessels to U.S. ports. In an exchange of notes at the third session of the American-Polish Trade Commission, the United States reduced the request period regarding access of Polish vessels to U.S. ports from 14 to 4 days. The request period was reduced to 7 days for Romanian vessels in 1972 and to 4 days in March 1974.

Formal agreements on maritime issues have not been concluded with any Eastern European countries. The United States traditionally has not had bilateral maritime agreements with Western European nations. However, Poland has initiated discussion of such a bilateral agreement.

V. OUTLOOK FOR THE FUTURE

Although the volume of trade between the United States and the countries of Eastern Europe is still relatively small, its importance as an element in the growing political détente exceeds its mere dollar

¹³ Report for the Years 1968 through 1970, Foreign Bondholders Protective Council, Inc.

expression. The rigid political and psychological attitudes toward trading with each other, which characterized the 1950's and early 1960's have eased considerably. The pace of the normalization of our economic relations with East Europe will depend on congressional action on MFN and progress on bilateral relations generally.

In the new improved political atmosphere, with strong incentives on both sides operating to normalize our economic relationships, American firms will still have to overcome the practical problems involved in trade between free market and centrally planned economies.

One of the solutions to overcoming the East-West trade payments problems of inconvertible currencies, lack of hard currency foreign exchange, and difficulties of the socialist countries in marketing abroad is to move beyond the level of two-way commodity trade and into broader economic cooperation relationships. The recent transformation in the political climate increasingly permits this more durable and interdependent relationship.

COMMERCIAL RELATIONS BETWEEN THE UNITED STATES AND EASTERN EUROPE: OPTIONS AND PROSPECTS

By PAUL MARER and EGON NEUBERGER*

CONTENTS

	Page
I. Introduction.....	557
II. Factual Background.....	557
Trade Statistics.....	557
Commercial Policy in the United States and Western Europe.....	558
Exports to Eastern Europe.....	559
Imports from Eastern Europe.....	562
III. Forecasting U.S. Trade With Eastern Europe.....	563
Data Problems—The “Mirror” Statistics Puzzle.....	563
Existing Forecasts.....	567
IV. Options to Finance Imports From the United States.....	570
Expanding Commodity Exports.....	570
MFN or Not?.....	570
Do Economic Reforms Make a Difference?.....	572
Expanding Exports of Invisibles.....	574
Labor Migration to the West.....	574
Tourism.....	575
Multilateral Exchange.....	577
Measuring Multilateralism.....	578
Patterns of Hard Currency Surpluses.....	581
Credits.....	582
Industrial Cooperation Agreements and Joint-Ownership Ventures (JOV).....	585
V. Summary and Conclusions.....	587
Appendix I. Survey of Selected East European Views and Attitudes on Commercial Relations with U.S.....	589
Appendix II. Appendix Tables.....	592

TABLES

1. Trade of United States With Eastern Europe and the U.S.S.R.....	558
2. Amount and Percent By Which East European Countries' Imports From OECD Countries Exceed OECD Countries' Exports to East European Countries, and Number of Years It Does So, Cumulative 1960-72.....	565
3. Amount and Percent By Which East European Countries' Exports of OECD Countries Exceed OECD Countries' Imports From East European Countries, and Number of Years It Does So, Cumulative 1960-72.....	565
4. Amount and Percent By Which East European Countries' Trade Balance With OECD Countries Based on East European Sources Exceeds Trade Balance Based On OECD Sources, and Number of Years It Does So, Cumulative 1960-72.....	566

*This study represents a substantial expansion of a paper presented at the American Economic Association meeting in December 1973, and published in the *American Economic Review*, May 1974. We are most grateful to Alan A. Brown who coauthored that paper with us. He intended to work on this contribution also and concentrate on some theoretical problems, but the shortness of time available to provide operationally meaningful answers to complex problems (such as the notion of “credit elasticity” has caused him to postpone this task. In view of this, he insisted that he not be listed as a coauthor here.

We are very grateful to the editor of the “Compendium,” John P. Hardt, who read our earlier version and provided extremely valuable suggestions and insights. To Thomas Wolf we owe a debt for helpful comments on an earlier version of this paper, and for allowing us to cite his most recent unpublished work. Akbar Nafari provided valuable help with statistical calculations.

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5. U.S. Exports To Eastern Europe and the Soviet Union, Actual, for 1971-73 and Projected for 1978.....	Page 568
6. Total and Hard Currency (HC) Tourist Revenues (Gross and Net) of East European Countries and Their Relation to Exports and Trade Deficits, 1971.....	576
7. Indices of Trade Irreciprocity (T_i) in East-East, East-West, and West-West Trade, 1960-71 by Subperiods.....	579
8. Ratios of Positive to Negative Components of T_i 's.....	580
9. Adjusted Ratios of positive to Negative Components of T_i 's.....	580

I. INTRODUCTION

What are the prospects for United States-East European trade, and how might possible policy changes affect the outlook? While we do not attempt to discuss the full complexities of these questions in the limited space available to us, we will touch on a number of relevant considerations in this paper. After presenting some factual background, we examine some problems associated with forecasting United States-East European trade. While forecasts vary, all indicate that the United States will almost certainly have a large trade surplus with East Europe. This leads us to consider the various options available to East Europe to finance its prospective deficit. We also report on a survey of the views of East European individuals and institutions on the future of trade with the United States. East European views and opinions on general issues are incorporated in the text; those which pertain to individual countries, such as shopping lists, trade prospects, and attitudes, are summarized in appendix I.

II. FACTUAL BACKGROUND

Trade Statistics

While the combined populations and GNP's of the six smaller European members of the Council for Mutual Economic Assistance (CEMA)—Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Romania—are much smaller than those of the U.S.S.R., they conduct much more trade with the West. We define East Europe as comprised of the six smaller European members of CEMA. Yugoslavia in this study is not lumped with East Europe because its politics, institutions, and trade patterns differ substantially from the East European members of CEMA. Whenever possible, data for Yugoslavia and the U.S.S.R. are shown for purposes of comparison.

In 1972 East Europe's total trade turnover (exports and imports) was about \$44 billion and its turnover with Organization for Economic Cooperation and Development (OECD) member countries was \$11.5 billion versus \$29 billion and \$6.4 billion, respectively, for the U.S.S.R. (by comparison, the combined value of U.S. exports and imports in 1972 was well over \$100 billion). Until the large 1972-73 grain deal and the significant rise in U.S. machinery sales to the U.S.S.R., the East European countries combined were also more important trading partners of the United States than was the Soviet Union, as shown in table 1.

Table 1 indicates (1) large discrepancies between the trade volume reported by the United States and the "mirror" statistics of some of our East European trade partners (see discussion below); (2) a very sharp break in the series on U.S.-U.S.S.R. trade in 1972 and a some-

what less sharp but still significant break in the United States-East Europe trade series in 1973; (3) very low levels of U.S. trade with both the Soviet Union and East Europe., in relation to total trade of both partners; (4) our largest East European trade partner continues to be Poland, although the one with the fastest growth is Romania; and (5) a continued U.S. trade surplus, which has recently risen dramatically due to the increased availability of credits from the United States. (Of the projected 1973 \$1.4 billion U.S. trade surplus with the U.S.S.R. and East Europe combined, roughly \$1 billion is being financed by governmental and private credits, as compared to \$138 million of credits in 1972, and only \$28 million in 1971.)

Information on the current volume and commodity structure of U.S. trade with individual East European countries is available in considerable detail in the monthly publication of the Trade Analysis Division, Bureau of East-West Trade, U.S. Department of Commerce, "U.S. Trade Status With Socialist Countries."

TABLE 1.—TRADE OF UNITED STATES WITH EASTERN EUROPE AND U.S.S.R.

[In millions of current dollars]

Trade partner	1960-63 average		1964-67 average		1968-71 average		1971		1972		1973 estimated	
	Ex-ports	Im-ports	Ex-ports	Im-ports	Ex-ports	Im-ports	Ex-ports	Im-ports	Ex-ports	Im-ports	Ex-ports	Im-ports
East Europe.....	122	59	144	109	109	182	221	167	271	226	600	300
U.S.S.R.....	32	21	73	39	110	60	161	57	547	95	1,300	200

Source: 1960-70: OECD, Statistics of Foreign Trade, series A, annual issues; 1971-73: U.S. Department of Commerce Bureau of East-West Trade, "U.S. Trade Status With Socialist Countries" (Nov. 30, 1973).

The volume and commodity structure of individual OECD countries' trade with individual EE countries is published by the OECD, Statistics of Foreign Trade (series A, B and C), which appear monthly, quarterly, and annually. Information based on our survey of East European exports on goods EE countries might want to import from and export to the United States is presented in appendix I.

Commercial Policy in the United States and Western Europe

U.S. commercial policy, particularly tariff, nontariff, and capital account restrictions, played a major role in determining the level of U.S. export and import trade with East Europe. The breaks in the series shown in table 1 as of the last few years are intimately tied with changes in U.S. commercial policy—those that have already taken place or are regarded as imminent. Therefore, it is of particular interest to highlight some of the key differences in commercial policies between the United States and our West European competitors.

Furthermore, in our discussion of the various options available for East Europe to assist them in reducing or financing their prospective trade deficit with the U.S. changes in tariff policies (MFN) and removal of credit restrictions will play a major role.

EXPORTS TO EASTERN EUROPE

The early basis for Western controls on exports to East Europe was the so-called COCOM embargo introduced in 1949, containing an extensive list of items. During the second half of the 1950's West European countries gradually reduced the embargo list to cover mainly military hardware and selected items of advanced technology. The United States has continued to control a much wider range of commodities than those on the COCOM list, although extensive revisions in 1966 and during the last few years have brought U.S. restrictions more closely in line with the COCOM list of controls applied by West European countries.

Another difference between West European and U.S. export control practice is that while the COCOM embargo applies uniformly to all EE countries, U.S. export controls differ by groups of EE countries. The U.S. Department of Commerce authorizes exports to any destination either by specific "validated" licenses, which is a formal document issued to an exporter for a specific item, or by "general" license which is a broad authorization to permit certain exports under specified conditions without a specific license document. For export control purposes, the EE countries are divided into three categories, Group Q (Romania), Group W (Poland), and Group Y (Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, as well as the U.S.S.R. and China). Exports to Groups Q and W countries require "validating" licenses for a smaller set of commodities than sales to the Group Y countries. Furthermore, the probability of obtaining export licenses for a Group Y country is thought to be less than for the other groups.

The purpose of unilateral controls by the United States is "to maintain controls at the minimum level consistent with national security, short supply, and/or foreign policy objectives."¹ The administrative inconvenience of the U.S. licensing procedure and the risks and uncertainties associated with it affect adversely the willingness of American exporters to sell to East Europe and the desire of East Europe to import from the United States. A recent econometric study determined that the volume of U.S. exports to East Europe and the U.S.S.R. has been adversely affected relative to our West European competitors by unilateral U.S. export licensing requirements. In addition, the share of machinery in our exports has been so small because of these restrictions. Calculations covering the period 1961-69 showed that the major hindrance to U.S. exports appears to have been the extent and application of "validating" license requirements for the Group Y countries, with the more limited licensing requirements for the other groups having no significant effect.²

A further difference between Western Europe and the United States is that our policy with respect to credits tends to be more restrictive. Up to 1963, credits by West European countries were limited to terms of not more than 5 years under the rules of the Berne Union, but since

¹ U.S. Department of Commerce, Bureau of East-West Trade, *Export Administration Report: East-West Trade*, Washington, Nov. 20, 1973.

² J. Brada, and L. Wipf, "The Impact of U.S. Trade Controls on Exports to the Soviet Bloc," *Southern Economic Journal*, July 1974, 41.

then loans up to 15 years have become quite common, most often with participation and/or guarantees by the respective West European governments.

In early 1974, an agreement has reportedly been reached by West European nations on the harmonization of export credit terms. With respect to state-trading countries, they agreed, in principle, not to extend long-term trade credits for more than 8½ years or at interest rates below 7 percent.³

In the United States, until quite recently, only short-term credits were permitted, with Eximbank loans and guarantees unavailable to East Europe. In August 1971, the Congress amended Eximbank's enabling legislation, the Export-Import Bank Act of 1945, to permit the Bank to support U.S. exports to all Communist countries if the President determines that such support is in the U.S. national interest. The Bank is now authorized to support U.S. exports to Romania,⁴ the U.S.S.R.,⁵ and Poland.⁶ But as this paper is going to press, the Bank has suspended export credits to the Communist countries, pending clarification of a legal issue over its lending authority, which involves whether the President must declare each individual loan to be in the national interest, as is maintained by the General Accounting Office, an arm of Congress, or whether a single "national interest" finding is sufficient, as is argued by the Administration.⁷

Private credits to several EE countries are affected by the Johnson Act of 1934 which prohibits private loans to foreign governments in default to the United States. The act is interpreted as allowing "normal commercial credits" whose terms vary with individual commodities, depending upon the prevailing business practice.

Still another difference between West European and U.S. export policies relates to bilateral trade agreements. These tend to promote exports (as well as imports) because they provide exporters with information on commodities the EE countries wish to buy and create for the EE importers the kind of certainty they favor in constructing their foreign trade plans. The number of long-term bilateral trade agreements in force during the first half of 1973 between the 7 CEMA and 18 West European countries was 93 out of a possible total of 126.⁸ The United States has no trade agreement with any EE country but it does have a recently signed one with the U.S.S.R., not yet fully implemented because of pending legislation before the U.S. Congress. There is an active joint United States-Polish Trade Commission, established in June 1972. The setting up of such commissions is often a precursor to negotiations leading to bilateral trade agreements.

We think it is important to recognize that trade agreements have positive, as well as negative consequences. The positive aspects are stressed by the U.N.'s Economic Commission for Europe:

Long-term bilateral trade agreements in many cases replace multilateral trading arrangements and in many other cases reinforce their operation * * * [They] incorporate an important body of mutually acceptable arrangements on

³ IMF Survey, Mar. 18, 1974, citing *Agence Economique et Financier*, Paris, Mar. 2, 1974;

⁴ Presidential determination made on Nov. 22, 1971, the first loan extended in Aug. 1972.

⁵ Presidential determination made on Oct. 18, 1972, the first loan extended in February 1973.

⁶ Presidential determination made on Nov. 8, 1972, the first loan extended on Feb. 1, 1973.

⁷ The New York Times, Mar. 13, 1974.

⁸ United Nations, Economic Commission for Europe, "A Review of Commercial Policy Developments Affecting East-West Trade, 1968 to 1973," *Economic Bulletin for Europe*, Vol. 25.

such essential issues * * * as MFN, quota regulations, anti-dumping procedures, and payments. In these respects they are important to those Eastern traders who are not yet parties to any multilateral and general trade and payments agreement * * * They are also * * * possible instruments for promoting multilateral solutions to unresolved problems such as the elimination of discriminatory quantitative restrictions or the introduction of convertible currency settlements * * * [They also] cover numerous and important new fields, such as * * * the establishment of joint commissions and arrangements for industrial cooperation.⁹

However, bilateral trade agreements might have important negative aspects, as well. A Western country might enter into bilateral trade agreements with state-trading countries among other reasons, to assure a "normal" volume of exports, that is, a volume that would occur if state-trading countries had a free and competitive market (protected only by effective, nondiscriminatory tariffs). But where does one draw the line between merely assuring such a "normal" volume of exports, on the one hand, and using government intervention to encroach on the market shares of competitors, or limiting imports from state-trading countries for the benefit of import competing domestic industries, on the other. This possibility of using bilateral trade agreements to increase the market share of the Western signatory, perhaps at the expense of other countries, is illustrated by the recommendation of the prestigious Committee for Economic Development (CED). Even though the United States will almost certainly continue to have a sizable trade surplus with East Europe without bilateral agreements, the CED recommends that:

The United States [should] propose agreements on a country-by-country basis with the USSR, the East European countries and China * * * [offering] entrance to our market on an MFN basis * * * and perhaps also more generous credit terms. In exchange, the United States could *seek agreement by the communist countries to purchase a defined and enlarged volume of exports from the United States* * * *.¹⁰

Trade agreements provide for a certain volume of trade, but they do not establish equality of trading opportunity. This point is underlined particularly by the action of countries where market forces would result in a large import surplus with state-trading countries. Such a Western country might force the countries of EE and the U.S.R. to buy more than they would have in the absence of a state-trading monopoly and bilateralism. This in turn discriminates against third countries, such as those which signed no trade agreements, and is also inefficient for the state-trading countries. As long as 30 years ago, Alexander Gerschenkron prophetically warned about this problem.¹¹ Evidence suggests that this is now an important practical problem. Interviews with experts in EE, who are in a position to know what the facts are, suggest that while surpluses accumulated by EE countries in some OECD countries can be freely converted into hard currency, in other OECD countries a surplus that is deemed "too large" often leads to an informal invitation to reduce the outstanding balance, preferably by importing more from the Western country.

⁹ Ibid.

¹⁰ Committee for Economic Development, *A New Trade Policy Toward Communist Countries*, New York, 1972, p. 33 (emphasis ours.)

¹¹ Gerschenkron predicted what is likely to happen if trade with state-trading countries is channeled bilaterally: "If Russia exports a considerable amount of goods to England, but does not import much from England, the latter may threaten to cut off imports from Russia unless Russia agrees to use all or most of the sterling she receives from England for purchases there * * * If Russia has to increase her purchases in England, she must decrease her purchases in another country * * * The worst feature of bilateralism is its inherent tendency to spread and to perpetuate itself" (A. Gerschenkron, *Economic Relations with the USSR*, New York, 1945, p. 31).

IMPORTS FROM EASTERN EUROPE

Nearly all West European countries have granted most-favored-nation treatment (MFN) to most state-trading countries, while MFN has been denied to these countries by the United States since 1951. Aside from Yugoslavia, which in this context is not considered a state-trading country, the only exception is Poland, granted MFN in 1960.

In EE's links with West European countries, MFN clauses apply either by virtue of inclusion of the clause in bilateral trade treaties or trade agreements or by virtue of some EE countries' accession to GATT. Czechoslovakia, Poland, Romania and Hungary, are members of GATT and therefore receive MFN treatment. Trade agreements are the basis of MFN treatment for Bulgaria by six West European countries. East Germany has been granted MFN only by Finland and Austria (as of 1973) but it is not subject to customs duties, import turnover taxes, or quantitative restrictions in its trade with West Germany, an important advantage for this most developed EE country.¹²

With respect to quantitative restrictions on imports, U.S. policy has been more liberal than that of Western Europe. In controlling imports, West European countries have placed primary emphasis on quantitative restrictions, which has played a part in Western Europe being able to maintain a liberal tariff policy toward EE. There has been a gradual but significant liberalization by West European countries, although important differences remain both as to the degree of liberalization among West European nations and the treatment of individual EE countries by some Western partners.¹³ The liberalization has taken place either by unilateral decisions by the Western partner, within the framework of bilateral trade agreements, or within the multilateral protocols of the GATT. Commitments toward further liberalization of quantitative restrictions have been made by West European countries, mostly to take effect by 1975. It is important to add, however, that quota liberalization may look more impressive on paper than it is in reality because liberalization often takes place in nonoperant quotas while restrictions are retained on items which constitute a large part of EE's exports, such as textiles, clothing, footwear, and of course agricultural raw materials and foodstuffs.

The Common Market's agricultural policy is a particularly serious problem for EE, as is the granting of associate status with preferential tariffs by the Common Market to a number of African and South European countries, EE countries will be adversely affected by the enlargement of the Common Market, particularly as it will be more difficult to export agricultural goods to the large, and to EE very important, United Kingdom market.

¹² Because of its special trade status, East German exports to West Germany are not subject to duties and import turnover taxes. It is estimated that in 1972 these advantages to East Germany were worth about 300 million DM, or approximately one-sixth of the value of its exports to West Germany. The comparable benefits to East Germany in 1970 and 1964 were approximately 300 million DM and 100 million DM, respectively. (S. Nehring and F. Weiss, "Domestic Price Distortions and Implicit International Transfers," paper presented at the American Economic Association—ASGE Meeting in December 1973).

¹³ For a discussion of West European import restrictions and liberalization in a comparative setting, see United Nations, Economic Commission for Europe, "A Review of Commercial Policy Developments Affecting East-West Trade, 1968 to 1973," Economic Bulletin for Europe, vol. 25, pp. 17-24. For a quantification of the effect of liberalization on CEMA exports to West Germany, see T. Wolf, "The Impact of Elimination of West German Quantitative Restrictions on Imports from Centrally Planned Economies," unpublished manuscript, March 1974.

III. FORECASTING U.S. TRADE WITH EASTERN EUROPE

Data Problems—The Mirror Statistics Puzzle

To develop a satisfactory forecast of future trends in U.S. trade with Eastern Europe one would need a good model and reliable data. Data on certain key variables, such as invisibles and capital transactions, are not available. There are also such questions as: How much of the recent Soviet grain purchases from the United States found their final destination in EE. During 1961-70, as much as 20 percent of total wheat reported as imports by the U.S.S.R. from all sources was transshipped, most of it to EE and Cuba.¹⁴ Similarly, some of EE purchases from Western Europe are from subsidiaries of U.S. multinational corporations based in Western Europe.

Certainly one of the most fascinating, and perhaps also the most important of the data problems is the "mirror" statistics puzzle.¹⁵ Official trade statistics of a given country reporting on the flow of trade between itself and another country, often differ substantially from the data on this flow as mirrored in the official trade statistics of the other country. In our investigation of this problem in East-West trade and J. M. Montias's study on the geographic orientation of CEMA trade (see *infra*. pp. 662-681), we found this to be a major problem.

In this section, we identify the approximate orders of magnitude involved, make some tentative statements about the possible causes, and deal with some implications in a comparative setting.

We have reconstructed the annual and the cumulative 1960 to 1972 balance of trade of individual EE countries with OECD countries, first on the basis of EE and then on the basis of Western statistics. We find that the combined cumulative balance of trade for 1960-72 of the six EE countries obtained from EE statistics shows a \$5.7 billion deficit; on the basis of OECD sources, a \$2.7 billion deficit. The difference is \$2.6 billion or 7 percent of cumulative 1960-72 EE exports to the OECD group. That this large difference is not just a quirk of EE statistics is shown by an examination of U.S.S.R. and OECD data, which are included for comparison in the tables below. The U.S.S.R.'s cumulative balance of trade for 1960-72 with all OECD countries obtained from Soviet statistics shows a \$1.9 billion deficit; on the basis of OECD sources, a \$2.9 billion surplus. The difference is \$4.8 billion, or 20 percent of cumulative 1960 to 1972 Soviet exports to the OECD group.

Most Western analysts and EE planners probably rely on EE and Soviet data to calculate these countries' balance of trade, with a view toward estimating their balance of payments. However, in analyzing the trends and geographic and commodity composition of East-West trade flows, most Western analysts rely on the much more detailed and comprehensive statistics of Western countries. We believe that uncritical acceptance of either set of statistics might lead to unwarranted conclusions about important issues, such as the credit-worthi-

¹⁴ V. Zabijaka, "The Soviet Grain Trade 1961-70: A Decade of Change," *The ACES Bulletin*, spring 1974, 16. In 1972 the U.S.S.R. stopped reporting grain imports and exports. Based on Soviet sources, a forthcoming Commerce Department publication estimated 1972 grain imports as about \$900 million, grain exports as about \$360 million, a good portion of which probably comprised of transshipments from the United States to EE. (B. L. Kostinsky, *Description and Analysis of Soviet Foreign Trade Statistics*, Foreign Demographic Analysis Division, U.S. Department of Commerce, Foreign Economic Report No. 5, Washington 1974).

¹⁵ Mirror statistics and similar problems in trade and balance of payments in intra-Western trade were discussed by Oskar Morgenstern in *On the Accuracy of Economic Observation*, Princeton 1963.

ness of an EE country, or the competitive position of the United States vis-a-vis other OECD countries in E-W trade.

Differences between the two sets of balance of trade estimates can be divided into differences between estimates of (1) EE imports and their mirror—OECD exports—and (2) EE exports and their mirror—OECD imports. Table 2 compares cumulative 1960-72 EE imports with corresponding exports by the United States, OECD, and its two major components, EEC and EFTA; table 3 EE exports with corresponding Western imports, and table 4 the two sets of balance of trade figures. Tables A, B, and C in appendix II correspond to tables 2, 3, and 4 in the text, but provide more detailed information on the mirror statistics of each EE country with each OECD country. Presented elsewhere in greater detail are the results of the analysis and the attempts to explain the differences.¹⁶ At this point, only some summary results are presented and briefly discussed.

¹⁶ Paul Marer, "Foreign Trade," In C. Beck and C. Mesa-Lago (eds.), *Essays on Comparative Socialist Systems*. Pittsburgh, 1974 (forthcoming).

TABLE 2.—AMOUNT AND PERCENT BY WHICH EAST EUROPEAN COUNTRIES' IMPORTS FROM OECD COUNTRIES EXCEED OECD COUNTRIES' EXPORTS TO EAST EUROPEAN COUNTRIES, AND NUMBER OF YEARS IT DOES SO, CUMULATIVE 1960-72

[In millions of current dollars, percent, and number of years]

OECD country	Imports of East Europe less exports of OECD country							
	Total East Europe ¹	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania	U.S.S.R.
United States.....	-\$11 (-1%, 39)	-\$24 (-97%, 5)	\$14 (5%, 10)	\$61 (21%, 5)	\$83 (34%, 11)	-\$150 (-16%, 1)	\$6 (2%, 7)	\$54 (2%, 9)
OECD total.....	3,156 (7%, 66)	304 (11%, 12)	834 (11%, 13)	-77 (-1%, 6)	942 (16%, 12)	426 (4%, 10)	726 (11%, 13)	1,838 (7%, 12)
EFTA.....	4,042 (26%, 78)	281 (27%, 13)	1,214 (37%, 13)	563 (22%, 13)	629 (27%, 13)	854 (20%, 13)	502 (25%, 13)	670 (8%, 12)
EEC.....	-932 (-4%, 39)	44 (2%, 9)	-492 (-15%, 1)	-758 (-12%, 2)	187 (6%, 12)	-162 (-4%, 3)	249 (6%, 12)	696 (7%, 12)

¹ Excludes U.S.S.R.

Source: Indiana University, International Development Research Center, International Trade Information Management System (based on official East European and OECD sources).

TABLE 3.—AMOUNT AND PERCENT BY WHICH EAST EUROPEAN COUNTRIES' EXPORTS TO OECD COUNTRIES EXCEED OECD COUNTRIES' IMPORTS FROM EAST EUROPEAN COUNTRIES, AND NUMBER OF YEARS IT DOES SO, CUMULATIVE 1960-72

[In millions of current dollars, percent, and number of years]

OECD country	Exports of East Europe less imports of OECD country							
	Total East Europe ¹	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania	U.S.S.R.
United States.....	-\$15 (-1%, 49)	\$2 (9%, 9)	\$0 (0%, 6)	\$5 (6%, 10)	\$27 (34%, 13)	-\$67 (-7%, 2)	\$18 (17%, 9)	-\$28 (-5%, 5)
OECD total.....	525 (1%, 47)	440 (17%, 12)	445 (6%, 13)	-454 (-5%, 2)	594 (12%, 11)	-764 (-8%, 0)	264 (5%, 9)	-2,960 (-13%, 0)
EFTA.....	1,387 (11%, 62)	336 (42%, 13)	398 (14%, 13)	182 (9%, 11)	458 (23%, 12)	-202 (-5%, 0)	216 (16%, 13)	-770 (-8%, 2)
EEC.....	-637 (-3%, 39)	100 (7%, 9)	119 (4%, 11)	-628 (-11%, 1)	87 (3%, 11)	-354 (-10%, 0)	39 (1%, 7)	-1,213 (-14%, 0)

¹ Excludes U.S.S.R.

Source: Indiana University, International Development Research Center, International Trade Information Management System (based on official East European and OECD sources).

TABLE 4.—AMOUNT AND PERCENT BY WHICH EAST EUROPEAN COUNTRIES' TRADE BALANCE WITH OECD COUNTRIES BASED ON EAST EUROPEAN SOURCES EXCEEDS TRADE BALANCE BASED ON OECD SOURCES, AND NUMBER OF YEARS IT DOES SO, CUMULATIVE 1960-72

[In millions of current dollars, percent, and number of years]

OECD country	Trade balance based on East European source less trade balance based on OECD source							
	Total East Europe ¹	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania	U.S.S.R.
United States.....	-\$4 (0%, 46)	\$26 (93%, 10)	-\$14 (-6%, 3)	-\$56 (-64%, 9)	-\$55 (-62%, 7)	\$83 (9%, 9)	\$12 (11%, 8)	-\$81 (-15%, 1)
OECD total.....	-2,631 (-7%, 15)	136 (5%, 7)	-389 (-6%, 2)	-377 (-5%, 4)	-347 (-7%, 4)	-1,190 (-13%, 0)	-462 (-9%, 2)	-4,799 (-21%, 0)
EFTA.....	-2,655 (-20%, 11)	54 (7%, 7)	-816 (-29%, 0)	-381 (-19%, 1)	-170 (-9%, 2)	-1,057 (-26%, 0)	-286 (-21%, 1)	-1,440 (-15%, 2)
EEC.....	295 (1%, 33)	57 (4%, 6)	611 (18%, 13)	130 (2%, 8)	-101 (-4%, 2)	-192 (-5%, 2)	-210 (7%, 2)	-1,909 (-22%, 0)

¹ Excludes U.S.S.R.

Source: Indiana University, International Development Research Center, International Trade Information Management System (based on official East European and OECD sources).

When we look at the differences between EE statistics and mirror statistics for the trade between the United States and EE, we find that the discrepancies are relatively small for U.S. trade with the area as a whole, but this hides the significant discrepancies in the trade of individual countries with the United States. Since EE does not trade as a bloc, it is the discrepancies in the trade of the United States with individual EE countries that matter. The difference between EE countries' data on imports from the United States and U.S. data on exports to these countries is very significant in the case of Bulgaria, Hungary, East Germany, and Poland, while differences between EE exports and U.S. imports are relatively large only in the case of Hungary and Romania. Moreover, there is no consistency in the differences; for some countries U.S. data show larger imports or exports, while in other cases, the trade statistics of the EE country show larger trade flows.

When we look at the trade balance as seen in EE data and in U.S. data, we find that the difference is particularly important in the case of Bulgaria, East Germany, and Hungary, although when we combine all of EE, the positive and negative deviations exactly cancel out.

Just as the aggregation of all the EE countries reduced the differences between the two sets of statistics, the same is true when the OECD countries are aggregated. Therefore, the data on individual countries, presented in the appendix tables, are more useful than the summary data. For example, the very striking differences between the discrepancies in the case of the EEC and EFTA are explained primarily by the substantial mirror problem for the trade of EE with the United Kingdom.

What are some of the explanations for the existence of the mirror problem? The obvious case of a possible lag between a shipment being recorded in the export statistics of one country and the import statistics of another is eliminated as a significant explanation by the use of cumulative trade over a 13-year period rather than trade in a given year. The remaining problems are: (1) valuation problems, including conversion of statistics to a common dollar unit; (2) treatment of transport and related expenses (f.o.b. vs. c.i.f.); (3) method of showing "provenance" of imports and destination of exports; (4) systems of recording trade, which differ chiefly in their treatment of re-exports; and (5) coverage of merchandise trade.

The potential significance of the first four of these possible explanations was examined. It was found that valuation problems, and f.o.b. vs. c.i.f. do not appear to explain as much of the differences as do the methods showing "provenance" and the treatment of re-exports.¹⁷ However, the analysis is merely suggestive and much more detailed work would have to be done before the "mirror problem" is fully explained.

Existing Forecasts

Despite the problems bedeviling a would-be forecaster, for Government policy and business decision it is essential to engage in the art of forecasting. The forecast by Erast Borissoff and Stephen Sind¹⁸ and a more recent quantitative assessment in the present volume (see *infra*, pp. 599-661 by Andrew Elias and Marjorie Searing) represent

¹⁷ *Ibid.*

¹⁸ E. Borissoff and S. Sind, "Projections of U.S. Exports to U.S.S.R. and Eastern Europe," Res. note 3, Analysis Division, Bureau of East-West Trade, U.S. Department of Commerce, May 1973

carefully constructed attempts by staff of the Department of Commerce to provide detailed forecasts. Here we shall merely summarize the Borissoff-Sind projections and the methodology underlying them.

Table 5 forecasts U.S. exports to individual CEMA countries. Two forecasts are given. One under the assumption that there is no major change in U.S. trade policy with respect to existing restrictions on trade with CEMA; the other, that U.S. trade policy will be "normalized" by the removal of discriminatory restrictions. The methodology follows closely that of Thomas Wolf.¹⁹

TABLE 5.—U.S. EXPORTS TO EASTERN EUROPE AND THE SOVIET UNION, ACTUAL FOR 1971-73 AND PROJECTED FOR 1978

[In millions of current dollars]

Trade partner	Actual exports				1978 if trade is "maintained" ¹	1978 if "normalized" ²
	1971	1972	1973 (estimate)	Estimate		
Bulgaria.....	4	3	8	High.....	25	85
				Mid.....	21	71
Czechoslovakia.....	38	49	80	Low.....	21	70
				High.....	58	276
East Germany.....	25	15	28	Mid.....	55	262
				Low.....	19	93
Hungary.....	28	23	34	High.....	73	159
				Mid.....	62	135
Poland.....	73	112	355	Low.....	50	107
				High.....	75	242
Romania.....	52	70	115	Mid.....	74	239
				Low.....	48	155
East Europe.....	220	272	620	High.....	159	340
				Mid.....	133	285
U.S.S.R. ³	162	547	1,250	Low.....	119	254
				High.....	218	448
				Mid.....	120	246
				Low.....	101	208
				High.....	607	1,550
				Mid.....	465	1,239
				Low.....	356	888
				High.....	357	1,051
				Mid.....		
				Low.....	232	684

¹ Assumes that the commodity composition would remain the same as in 1970 and that the U.S. percentage share of 15 industrialized countries' exports to individual EE countries remains fixed.

² Assumes elimination of discriminatory export and credit controls; that for SITC categories 0-4 and 0-9, exports would be the same as if trade is "maintained"; and that for SITC categories 5 to 8, exports would be determined as outlined below.

³ "Actual" includes grain.

Source: Actual, as cited for table 1; 1978: Borissoff and Sind, op. cit.

Note: The procedure underlying the forecasts is (1) to exclude the abnormal 1972-73 grain deal, which explains why the forecasts seem low in comparison to actual 1972-73 U.S. exports to the U.S.S.R.; (2) to present 2 principal variants: with and without relaxation of discriminatory controls, and, within each variant, high, middle, and low estimates, representing the fitting of different curves to different time periods; and (3) to make the assumption that the "normalized" U.S. share in manufactured goods imports by EE and the Soviet Union would be the same as the U.S. share in imports of these goods by advanced Western countries, thus assuming the United States will have the same competitive position in EE markets as in Western markets. "Normalization" includes abolition of all U.S. export controls that are more severe than those of principal competitors and of the limitations on Export-Import Bank credit guarantees.

The projections were made in early 1973, before some of the spectacular recent trade developments; they also exclude extraordinary grain purchases by the U.S.S.R. and EE.

¹⁹ T. Wolf, "The Quantitative Impact of Liberalization of United States Unilateral Restrictions on Trade with the Socialist Countries of Eastern Europe," prepared for the U.S. Department of State, XR/RECS-3 Feb. 16, 1972. Wolf analyzed the effect on U.S. exports of removal of unilateral export controls and of prohibition on Export-Import Bank (Eximbank) support and showed that in 1968 the former would have added \$342 million to the actual level of \$217 million of U.S. exports to CEMA, the latter would have added \$48 million; but the two jointly would have an important interaction term, therefore, adding \$589 million. Export controls are primarily on high technology items and these are generally only purchased on credit, this explaining why elimination of restrictions on both exports and credits to finance them increases exports more than the sum of the two actions in isolation. Wolf also estimated that U.S. imports from EE in 1968 would have gone up from \$220 million to \$418 million if all EE countries were granted MFN.

Table 5 indicates that: (1) if trade is normalized, United States export to EE by 1978 would be two to three times greater than if U.S. trade policy remains restrictive; (2) U.S. exports to EE in 1978 can be expected to be well above the \$1 billion mark (over \$1.2 billion according to the midlevel forecast); (3) exports to EE are projected to be larger by almost 50 percent than exports to the U.S.S.R., excluding extraordinary grain deals; (4) Poland is expected to remain our most important trade partner within EE, although, according to the high estimate, exports to Romania would surpass those to Poland by a substantial margin.

When compared to the general statements about trade prospects provided by our EE respondents (see appendix I), we find that the forecasts in table 5 under the normalization assumptions are in the same ball park as their estimates for Poland and Romania and are comparable to the low estimates in table 5 for Hungary. No quantitative estimates were provided by East Europeans for the other countries.

As forecasts of U.S.-EE trade become more comprehensive, they will have to incorporate additional assumptions about trends in total EE imports, and in the share of these imports purchased from the West. This is because of the fact that the present method is based on the assumption of a normalized constant U.S. share in total EE imports from the West. Moreover, as price changes are becoming more important than they were during the 1960's, attention will have to be paid to differences between the value and the real volume of trade.

Even if all the data were available, the mirror puzzle solved, and the assumptions reasonable about the variables mentioned above, it would still be difficult to determine, for forecasting purposes, the proper specification of the trend line (see note to table 5) because there are sharp breaks in the U.S.-EE trade series, as shown in table 1. Because the relationship underlying past trends may itself be changing, it would be dangerous to extrapolate the earlier relationship, foolhardy to assume a continuation of the most recent one, and worse yet to fit a single regression to the whole series and to ignore the discontinuity. The problem is further complicated by the existence of fluctuations in East-West trade. A preliminary econometric study determined that during 1955-69 OECD exports to CEMA and OECD nonagricultural imports from CEMA fluctuated more than total OECD exports and imports due to both demand and supply conditions, and that the fluctuations tended to have some cyclical elements.²⁰

Equally important with forecasting the level of trade between the United States and EE is projecting the probable commodity composition. It is quite clear that a movement toward normalization of U.S. commercial relations with these countries will substantially alter the structure of our exports, in favor of a larger share for machinery and equipment. J. M. Montias estimated in his 1970 congressional testimony that if the United States could sell the same fraction of its machinery and equipment exports to CEMA (including U.S.S.R.) as in 1928 (the last year in which the pattern of exchanges was hampered solely by tariff barriers), then in 1970 these exports would have risen about tenfold, to over \$600 million.²¹ Some of the specific items on the

²⁰ J. Stankovsky, *Bestimmungsgründe im Handel Zwischen Ost und West*, Vienna 1972.

²¹ Statement of John M. Montias in A Foreign Economic Policy for the 1970's Hearings before the Subcommittee on Foreign Economic Policy of the Joint Economic Committee, Part 6—East-West Economic Relations, December 7, 8, and 9, 1970, p. 1238.

shopping list of EE countries, as well as their offering list for exports are shown in appendix I.

To conclude, United States as well as EE forecasts agree that the United States will have a relatively large prospective trade surplus with EE countries. This basic conclusion would certainly not be altered by making the forecasts more comprehensive. Therefore, the key factor influencing the level of U.S. trade with EE will be the ability of EE to earn the necessary foreign exchange to cover this projected deficit. To the various options open to EE to accomplish this task we now turn.

IV. OPTIONS TO FINANCE IMPORTS FROM THE UNITED STATES

Expanding Commodity Exports

MFN OR NOT?

Granting MFN and removal of some nontariff barriers (NTB's) may have substantial impacts on the ability of EE to provide the type and quantity of exports salable in the United States. A study by a staff member of the U.S. Tariff Commission concluded that lack of MFN has hurt EE much more than the U.S.S.R. and the industrial countries of EE much more than the less-advanced countries.²² Thus, the dynamic effects of lack of MFN is that, as countries industrialize, they suffer more from this type of discrimination. Another study concluded that the rise in Polish exports was not systematically related to the theoretical gain in price competitiveness caused by reduction of the duties of MFN levels in 1960, when Poland became the first CEMA country to receive MFN. This overall negative conclusion is modified by Wolf's finding that there was a positive relationship between lower duties after MFN and increased Polish exports of finished products. This finding is important because finished manufactures is the commodity category in which import demand in the United States tends to grow most rapidly.²³

We surveyed leading Polish economists on their views on MFN, asking them to comment on the studies cited above. The respondents agreed with the findings of the Malish study but stressed that its conclusions should not be accepted as the basis for evaluating the future prospects of trade with the United States. With respect to the Wolf study, they emphasized that the supply response to MFN cannot be divorced from the general climate of economic relations between the two countries, which became rather cloudy right after MFN was granted. For example, Congressional action threatened continued MFN, there was an organized boycott of Polish goods; in 1973 there was a restriction and in 1966 a complete ban on Polish import of U.S. agricultural surpluses; and in 1968 a ban on Eximbank credits and guarantees. Another respondent cited a Polish study which showed that in spite of the poor climate, MFN did help Polish exports to the United States: "Out of \$55 million of increased exports to the United States between 1963 and 1967, about 59 percent was earned in goods which mostly gained from the

²² A. Malish, Jr., "An Analysis of Tariff Discrimination on Soviet and East European Trade," the ACES Bulletin, Spring 1973, 15, 43-56.

²³ T. Wolf, "Effects of U.S. Granting of Most Favored Nation Treatment to Imports from Eastern Europe: The Polish Experience," The ACES Bulletin, Spring 1973, 15, 23-42.

reduction of duties. Of 46 items with greatest reduction of duty, 26 represented industrial goods (sections 5-8 of SITC). Consequently, the share of those goods in Polish exports to the U.S. increased from 23.2 percent in 1963 to 46.1 percent in 1972."²⁴

With respect to EE countries individually and as a group the most recent and comprehensive U.S. assessment of the effect of granting MFN on EE's exports to the United States can be found in the contribution that follows our study in the Compendium. But it is important to stress that there are alternative estimates, as well as views, on this issue.

Western experts tend to doubt that the granting of MFN would have a significant impact on the ability of EE countries to increase their sales of manufactured goods to the United States. On the other hand, all of our EE respondents placed great emphasis on MFN, arguing that, in addition to the benefit of lower tariffs on those goods where demand and supply elasticities are high, there would also be very important political and psychological benefits. According to them, the U.S. market is very large, sophisticated and segmented; penetrating it will require a heavy investment in market research, advertising, and other selling costs, as well as the allocation of a large portion of output. The absence of an acceptable political framework, symbolized by lack of MFN, reduces greatly the willingness of planners to bear the high costs of entering the U.S. market with a wide range of manufactured products. Thus, they stress the importance of the dynamic effects of goodwill created by the granting of MFN, which they see as a precondition to changes in existing trade patterns.

Thus, one of the crucial, as yet unresolved issues is the prospective supply response of EE countries to the liberalization of tariff and quantitative restrictions by Western countries. A pioneering empirical study of the actual supply response of EE countries to the massive liberalization of West German quantitative restrictions on imports from CEMA after 1966 has just been completed.²⁵ Although this study deals with the supply response in the nonagricultural sector to the removal of quantitative restrictions, rather than the granting of MFN, the results are relevant because in both cases the issue at stake is the validity of the EE claim that they could increase their exports of manufactured goods substantially were it not for discriminatory Western import restrictions, tariff and nontariff.

In May 1966 *de facto* liberalization was accorded by West Germany to Bulgaria, Hungary, Poland, and Romania, and a year later to Czechoslovakia, involving in each case an identical list of approximately 3,600 products out of 7,000 industrial goods West Germany imported from CEMA countries. During the course of 1967-69, an additional thousand, in April 1970, an additional 1,200 products were *de facto* liberalized (East Germany long has had a special preferential trade relationship with West Germany; see footnote 12).

Wolf compared percentage changes in each CEMA country's share of the West German import market by product or product group, with the level of disaggregation corresponding as closely as possible to the level at which actual liberalization decisions were made. He

²⁴ Surveys of EE views had been conducted on the agreement that no direct attribution will be made.

²⁵ T. Wolf, "The Impact of Elimination of West German Quantitative Restrictions on Imports from Centrally Planned Economies," unpublished manuscript, March 1974.

found that the increase in market share for those products on which barriers were removed was 1.5 times as great as products still subject to quotas. Over the 1966-72 period, Poland, Hungary, and Czechoslovakia, in that order, performed relatively better than Bulgaria or Romania, although there are some qualifications to these findings which we do not wish to detail for the purpose of this study. Relatively strong evidence was found that CEMA countries were best able to take advantage of liberalization for chemicals and chemical products. Of particular interest, too, was the ability of the EE countries to increase their market share in machinery, a category which conventional wisdom tends to brush aside as a viable export product of EE.

Clearly, much more empirical work needs to be done before the final verdict is in on the issue of the supply elasticity of EE exports. EE themselves are aware that the granting of MFN is not a panacea. A Romanian expert places the MFN issue in the following perspective:

We in Romania are quite aware that MFN is not the only condition required for the expansion of Romanian-American economic cooperation. We know very well that our ability to increase our U.S. market share, the placing of the economic relations between our two countries on a stable and lasting basis, requires on our part better market research, improved promotional activity, product specialization, and higher capacity to adjust to the rapid shifts of the American market. Since most of these efforts would necessitate special programs for the U.S. market (which in many ways is different from other Western markets), it is unlikely that Romanian industry would engage itself in such programs while prospects are very much in doubt.

Maybe in the perspective of history, MFN treatment is not the main condition for the expansion of trade between Romania and the United States, but at any rate, it is the first.²⁶

DO ECONOMIC REFORMS MAKE A DIFFERENCE?

EE experts readily agree that their countries' ability to increase rapidly exports of manufactures to the West are hindered by the oft-cited problems of quality, modernity, reliability, servicing, packaging, and marketing. Western economists trace the origin of these problems to the inflexibilities of strict central planning. During the last decade there has been much discussion of economic reforms in EE and some reform measures have been implemented in every country. Do these reforms make a difference in EE's ability to increase manufactures exports? What are the future prospects for reforms?

Discussions about reforms in EE invariably stress prevailing inefficiencies of foreign trade and the necessity of allowing greater market orientation and decentralized decisionmaking. Nonetheless, political considerations and fear of external instability are important reasons why only partial reforms have been implemented so far, with the exception of Hungary, which introduced a comprehensive reform in 1968. Yugoslavia is somewhat of a special case in EE: its trade is concentrated with Western partners; it is not a regular member of CEMA, and thus is not bound by CEMA's institutional rules; it alone permits substantial international mobility of both capital and labor; and it is in a somewhat stronger position than CEMA members to tolerate either inflation or unemployment which might accompany comprehensive reforms. While partial reform measures

²⁶ C. Bogdan, "U.S.-Romanian Trade Relations," *The ACES Bulletin*, summer-fall 1973, p. 15.

(reducing the number of plan targets, gradually linking foreign and domestic markets by meaningful exchange rates, and granting direct trading rights to enterprises) do bring distinct improvement in some areas, they do not change the essential features of the traditional centrally planned economy (CPE) and thus cannot be counted upon to make a significant dent in the quality and related problems which inhibit EE's manufactures exports to Western markets.²⁷

Has Hungary been able to do "better" because of its comprehensive reform? Before the reform, foreign trade enterprises (FTE's) traded according to plan directives and for their own account which was almost always "balanced" by automatic subsidies and taxes. FTE's were by and large independent from producing enterprises, which was cumbersome and bureaucratic and effectively isolated domestic producing units from foreign suppliers and buyers. A principal objective of the 1968 reform was to use foreign trade as an instrument for improving the production and consumption efficiency of industrial and trading enterprises. To this end, the wall separating domestic from foreign markets was dismantled with some backstops to be sure, by (1) letting profits be a principal guide to export and import decisions, after introducing price, exchange rate, and tax reforms; (2) increasing the number of producing enterprises with direct foreign trading rights (more than 100 had such rights in 1973 versus about 40 before 1968); and (3) transforming FTE's to become agents or partners of producing enterprises.

While not solving all the problems (for example, the investment cycle with many adverse effects has not been moderated, investment decisions are often still independent of market considerations, the relationship between profits and efficiency is often tenuous, foreign trade subsidies are increasing although reduction was planned), these reforms have made it possible for Western firms to have more direct contact, and market considerations to have a more direct influence on the actions of Hungarian enterprises. This is good for efficiency and helps to reduce the bureaucratic difficulties Western firms often complain about.

Recently an interesting new organizational experiment has been reported: the setting up of a joint stock foreign trade firm, fully owned by the five leading Hungarian producers of telecommunications equipment. It reportedly has new flexibilities and decisionmaking powers, such as the right to act in behalf of the industrial enterprises and the Ministry in joint ventures negotiations.²⁸

To the extent that flexibility is a key requirement for successfully entering and continually adapting to the requirements of the U.S. market for manufactures, Hungarian firms should have an edge over their East European counterparts. But whether the reform has made a considerable difference in alleviating some of the well-known quality and marketing problems of firms in traditional centrally planned economies, we are not able to say with confidence. It would be informative to collect and evaluate the judgments of Hungarian and Western business practitioners on this issue.

²⁷ A. Brown and P. Marer, "Foreign Trade in the East European Reforms," in M. Bornstein (ed.), *Plan and Market*, New Haven, 1973.

²⁸ Magyar Hirlap, 23 November 1973.

Expanding Exports of Invisibles

LABOR MIGRATION TO THE WEST

After the possibility of increasing earnings from exports of commodities, the next obvious possibility is to increase earnings from invisibles. For some countries, such as Yugoslavia, two major sources are emigrants' remittances and tourism.

There are about 1 million Yugoslavs working in the West, four-fifths in Western Europe, the rest overseas, who are sending home \$1 billion a year, thereby making a major contribution to Yugoslavia's balance of payments. There is nothing like this in the other countries of EE; with the exception of Polish and Romanian construction crews working in West Europe, primarily in West Germany, no movement of labor is allowed by CEMA countries.²⁹ What are the chances that some other EE countries might begin to follow the Yugoslav example during the rest of this decade?

The concept of a labor shortage or surplus is partly a demographic and partly a systemic issue.

With respect to demography, according to a study of past and future employment trends in CEMA, there will be a considerable shortage of labor during the remainder of the 1970's and the shortage will intensify during the 1980's.³⁰ The labor situation is even tighter if the Soviet Union is excluded. During 1950-70, labor force grew in the six smaller CEMA countries by about 5 million in each decade; during the 1970's the absolute increase will be about the same, but the projection is that during the 1980's the increase will be only 1.6 to 1.7 million, with the labor situation expected to be particularly tight in Czechoslovakia, Hungary, and Bulgaria. Thus, with the possible exception of Poland, demographic trends do not indicate pressure in CEMA to allow labor migration to the West. Polish demographic trends provide the most favorable manpower base in EE. If agricultural efficiency can be improved substantially, releasing labor, this might give rise to unemployment in which case one option for the Poles would be to emulate the Yugoslavs by providing temporary workers to labor-short countries such as East or West Germany.³¹

With respect to economic system, one major reason why Yugoslav citizens work in the West is unemployment at home. Since the 1965 reforms introduced a visible-hand market economy, full employment has not been assured by the state. In spite of the large labor emigration, currently there are still more than 300,000 unemployed (9 percent).³²

²⁹ Within CEMA, a small movement of guest workers between countries has begun, fully controlled of course by the authorities. East Germany and Czechoslovakia now import Polish construction crews (up to 50,000 in East Germany and up to about half that number in Czechoslovakia); Poles in the GDR-Polish border zone work in GDR factories, crossing over in the morning and returning in the evening, with similar arrangements on a smaller scale at the Polish-Czechoslovak and Czechoslovak-Hungarian borders. There are several thousand young Hungarian workers acquiring skills in East Germany, and the U.S.S.R. has about 12,000 Bulgarian construction and forestry workers employed in 23 establishments.

³⁰ J. Timár, "A foglalkoztatottság alakulása a KGST-országokban 1960-tól 1990-ig" [Development of Employment in the CEMA countries from 1960 to 1990], *Közgazdasági Szemle* (Budapest), March 1973, 22, pp. 285-310.

³¹ Hubert H. Humphrey and Henry Bellmon, *Observations on Soviet and Polish Agriculture: A Trip Report*, U.S. Congress, Committee on Agriculture and Forestry, U.S. Government Printing Office, 1973, p. 18.

³² A Yugoslav study finds that there is no correlation between a region's level of development and the proportion of emigrant workers it sends abroad; the proportion of emigrant workers from the more developed northern tier is larger than from the less developed south. According to a sample survey, the basic reason for taking jobs in the West is the approximately 2½ times larger real wage that can be obtained, although about two-fifths of the sample gave as the primary reason the inadequate housing situation at home. M. Nicolic, "Certain Characteristics of Yugoslavia's Foreign Migration," as reviewed in *Közgazdasági Szemle*, November, 1972, 21, p. 1378.

If the Yugoslavs had continued the Soviet-type system, almost certainly they would be employing practically all their workers at home. They, like the other EE countries, would be facing the issue of underemployment in the industrial sector. As long as a CPE follows a policy of overfull employment, taut planning, and disregard of profits, workers feel that they have a right not only to work but also to their present job, skill classification and geographic location. Thus whatever the demographic trends, the argument of labor-shortage ultimately depends on the assumption that there will be no comprehensive reforms in EE. Since the likelihood of such reforms during the next few years does not appear to be great at this time, and external migration is likely to be discouraged for political reasons, our projection is that exporting labor to the West on a substantial scale is not an option outside of Yugoslavia, although some movement of labor on a relatively small scale, particularly from Poland, is possible.

An alternative to external migration would be internal migration. If there were an internal restructuring of the economy, that is, some labor sent back to agriculture in the light of previous misallocation of resources and new developments in world trade, this would make it possible to increase agricultural-food exports to the West substantially.

TOURISM

While the export of temporary labor is not a promising source of foreign exchange to pay for excess imports on the commodity account, earnings from foreign tourists is such a source. Though all our EE respondents, save the Yugoslavs, dismissed the former option as unrealistic, experts of most EE countries agreed that the latter is important.

Several less developed European countries, such as Yugoslavia, Greece, Portugal, and Spain, earn hard currency (HC)³³ through tourism to finance commodity imports.

³³ Convertible currencies which can be used freely for purchases in any country are called here hard currencies.

TABLE 6.—TOTAL AND HARD-CURRENCY (HC) TOURIST REVENUES (GROSS AND NET) OF EAST EUROPEAN COUNTRIES AND RELATION TO EXPORTS AND TRADE DEFICITS, 1971

[Dollar amounts in millions of current dollars]

Country	Total tourist revenue	As percent of total exports	Total HC tourist revenue	As percent of HC exports	HC net revenues		Net HC earnings as percent of average 1969-71 trade deficit	Net HC earnings as percent of average 1969-71 imports from United States
					Net of direct expenditure (net earnings)	Net earnings less induced imports		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bulgaria.....	\$113	5.2	\$46	15.3	\$45	\$41	\$115	\$1,154
Czechoslovakia.....	61	1.5	31	3.7	23	22	24	92
Hungary.....	100	4.0	45	7.1	32	28	33	104
Poland.....	36	.9	16	1.4	12	11	(?)	19
Romania.....	86	4.1	57	7.8	50	45	28	1,351
Yugoslavia.....	359	19.8	349	36.9	164	133	18	109
U.S.S.R.....	(?)	(?)	96	3.5	75	72	45	60

¹ Imports from United States as reported by East Europe, which may differ from U.S. reported exports to East Europe.

² Trade surplus.

³ Not available.

Source: Paul Marer and John W. Tilley, "The Tourism Industry in the Soviet Union and Eastern Europe: Travel Flows, Earnings, and Prospects." Bloomington, Indiana University, International Development Research Center, forthcoming.

Table 6 summarizes the results from Paul Marer and John Tilley's study of tourism in EE and indicates the situation as of 1971, the latest date for which complete data are available. Several findings are worthy of note: (1) only in Yugoslavia were total tourist revenues large relative to total exports; (2) when, however, we concentrate on HC tourist revenues, which is a much more important category for our purposes, these revenues become important also in Bulgaria, Hungary, and Romania, accounting for 7 percent or more of exports to hard currency areas; (3) when we compare net HC earnings from tourism (total HC earnings minus expenditures of the EE country's tourists in HC areas and the HC import content of services provided to HC tourists) to the average HC trade deficits, we find that net HC tourist earnings covered a large proportion of this deficit in all countries, except in Czechoslovakia; (4) if we made the admittedly extreme assumption that all of the net HC earnings would be used to finance imports from the United States, then it is clear that a large expansion of these imports would be feasible beyond the relatively low 1971 levels. The assumption is less unreasonable in the case of tourism than it would be for commodity exports, since commodity trade between EE and WE is frequently tied under formal or informal bilateral agreements, while this is not true for tourism.

Tourist revenues of each of the EE countries, except Czechoslovakia, grew more rapidly than their exports during the 1960's. Equally impressive is the comparison between the ratios of tourist revenues and revenues from commodity exports in EE and WE. This ratio is higher in most WE countries than in EE and is extremely high in the smaller and/or less-developed countries, like Spain, Greece, Austria, and Portugal (with ratios ranging from 20 percent for Portugal to 70 percent for Spain). Setting aside the political constraints on the expansion of EE tourism, it would appear that if WE provides any indicator of the potential for the tourist industry, there is considerable room for further expansion of EE earnings from tourism.

In view of the past dynamics of EE tourism, the comparative statistics of EE and WE tourism, and the ambitious plans to encourage Western tourism in all EE countries except Czechoslovakia,³⁴ it is possible to argue that the tourist industry is one of the more important potential earners of foreign exchange to pay for potential increased EE imports from the United States, and that its importance relative to commodity exports to HC areas is likely to rise in the future.

Multilateral Exchange

A potential source of foreign exchange to finance the prospective EE deficit with the United States is the use of HC earned by exporting to other countries. This requires the existence of multilateral trading and clearing patterns. Little systematic work has been done so far on the question of how multilateral is East-West trade, and experts disagree. Franklyn Holzman maintains that East-West trade is largely multilateral, while Samuel Pizar concludes that bilateralism is a permanent feature of East-West trade.³⁵

The basic problem in settling this question is that multilateralism requires a priori agreement to allow multilateral clearing, while sta-

³⁴ See contribution by Marer and Tilley in this Compendium.

³⁵ F. Holzman, "East-West Trade and Investment Policy Issues: Past and Future," in Joint Economic Committee, U.S. Congress, *Soviet Economic Prospects for the Seventies*, Washington 1973, 684, and S. Pizar, *Coexistence and Commerce*, New York, 1970, p. 169.

tistical analysis can only deal with an ex post evaluation of actual trade patterns.

To shed some empirical light on the viability of the option for EE to finance prospective import surpluses with the United States with HC trade surpluses earned elsewhere, we have investigated the actual degree of multilateralism in E-W trade, calculated the past pattern of EE's trade surpluses in HC countries, and obtained the views of EE experts. Some of the forces and pressures for, as well as against, multilateral trading and clearing, as well as some of the methodological problems involved in attempts to measure M are discussed elsewhere.³⁶ Here we summarize the results.

MEASURING MULTILATERALISM

Multilateralism (M) is a concept which refers to the freedom of a country to finance import surpluses with one set of trading partners with export surpluses with any other set. This requires convertibility of trade and other balances that result from transactions between countries.³⁷ Published trade statistics cannot measure M. They can measure only the degree of trade reciprocity, with perfectly reciprocal trade (j 's exports to country s equal j 's imports from country s) being consistent with M or B. Thus, one has to use statistical measures of trade reciprocity because one cannot measure M directly. In the long run, continued irreciprocity usually implies M, unless there are offsetting service or credit transactions. In the absence of comprehensive balance of payments data for EE, we must rely on trade data only.

The most frequently used index of irreciprocity (T_j) is that of Michaely; other, similar measures have been employed by the League of Nations, (LN) and Pryor.³⁸ Each measure ranges from zero, indicating perfect reciprocity, to 100, defined as perfect irreciprocity (that is, multilateral balancing).

The description of these three indexes, the numerical results, as well as the problems connected with the use of annual data, the appropriate weights to attach, the problem of dealing with "switch" arrangements, and the question of what is relatively multilateral or relatively bilateral are discussed elsewhere.³⁹ In order to deal with some of the weaknesses of the existing indices, we have developed our own index, which (1) uses data for 4-year periods to avoid the problem of an imbalance in 1 year being offset by the opposite imbalance in the next, and (2) gives all partner countries equal weight to avoid one large country from dominating the index.

Our index is

$$T_j = 100 \frac{\sum_s \left| \frac{X_{sj}}{M_{sj}} - 1 \right|}{N},$$

where

T_j = degree of irreciprocity in a given year;
 X_{sj}, M_{sj} = country j 's exports to or imports from country s ;
 $X_{.j}, M_{.j}$ = country j 's total exports or total imports.
 N = number of countries.

³⁶ Paul Marer, "Foreign Trade," op. cit.

³⁷ Bilateralism, (B) on the other hand, may refer to a variety of arrangements, from explicit barter deals to trade agreements which seek to foster mutual trade. But bilateralism in the present context is interpreted as the opposite of M, that is, the inconvertibility of balances.

³⁸ M. Michaely, "Multilateral Balancing in International Trade," American Economic Review, September 1962, 52, 685-702; League of Nations, Review of World Trade, Geneva, 1933; F. Pryor, The Communist Foreign Trade System, Cambridge, Mass, 1963, p. 190.

³⁹ Paul Marer, "Foreign Trade," op. cit.

What follows is a preliminary attempt to shed some light on the degree of M in E-W trade, attempting to deal with some of the measurement problems, while disregarding others. Two sets of T_j indices were calculated, one according to the LN formula, the other on the basis of our formula, for trade among (1) eight Eastern countries (comprised of the seven CEMA countries plus Yugoslavia); (2) eight West European countries (EE's principal trade partners in West Europe) and (3) between the eight Eastern and all OECD countries, except Iceland, Ireland, Turkey and Portugal.⁴⁰ For each group of countries and each type of T_j index, calculations were made for cumulative four-year subperiods: 1960-63 (subperiod A), 1964-67 (subperiod B), 1968-71 (subperiod C). The East-West indices were computed both according to OECD and according to EE sources. Because of differences in the T_j formulas, the absolute values of T_j 's are not directly comparable. But the broad interrelationship of E-E, E-W and W-W indices, averaged for each group of countries, is shown in table 7 below. The unweighted average of E-E indices in each subperiod is taken as the base. Also included in the tabulation are the results obtained by Wilczynski.⁴¹

TABLE 7.—INDEXES OF TRADE IRRECIPROCITY (T_j) IN EAST-EAST, EAST-WEST, AND WEST-WEST, TRADE, 1960-71 BY SUBPERIODS

[East-East=1.0]

T_j measure	East-East, 1960-63	East-West, 1960-63	West-West, 1960-63
LN:			
OECD-based.....	1.0	2.9	3.4
EE-based.....	1.0		
Our:			
OECD-based.....	1.0	2.3	2.4
EE-based.....	1.0	2.1	
Wilczynski.....	1.0	2.7	2.1
	East-East, 1964-67	East-West, 1964-67	West-West, 1964-67
LN:			
OECD-based.....	1.0	5.2	4.2
EE-based.....	1.0		
Our:			
OECD-based.....	1.0	3.7	2.7
EE-based.....	1.0	2.8	
Wilczynski.....	1.0	4.2	2.7
	East-East, 1968-71	East-West, 1968-71	West-West, 1968-71
LN:			
OECD-based.....	1.0	4.7	4.1
EE-based.....	1.0		
Our:			
OECD-based.....	1.0	3.7	2.4
EE-based.....	1.0	3.0	
Wilczynski.....	(¹)	(¹)	(¹)

¹ Not available.

Source: P. Marer, "Foreign Trade," op. cit. and J. Wilczynski, "The Economics and Politics of East-West Trade," New York 1969, p. 209.

The tabulation shows that E-E trade, as expected, is the most reciprocal, and we can safely conclude, the most bilateral. We also find that during the 1964-67 and 1968-71 periods W-W trade is

⁴⁰ Trade with omitted OECD countries has been very small or highly imbalanced due to the miniscule volume either of imports or exports.

⁴¹ Wilczynski used a weighted average of country indices, and a formula practically the same as Pryor's, which he applied to annual data. His country coverage is greater than ours: the East is comprised of CEMA plus Albania and the five Asian CPEs; the West, the 26 developed countries of West Europe, North America, Japan, South Africa and Oceania.

measured to be more reciprocal than E-W trade; during 1960-63 there appears no significant difference between W-W and E-W. Without bringing additional evidence to bear on these findings, the results would seem to substantiate Holzman's assertion that E-W trade is largely multilateral rather than Pizar's that it is relatively bilateral.

We have established that E-W trade appears to be as, if not more "multilateral" than W-W trade, regardless of the formula used whether annual or cumulative data are employed, how many countries are included in the respective country groups, weighted or unweighted averages of country indices are considered, and whether Western or Eastern trade data are used for the calculations.⁴²

How about Western credits? To ascertain whether the observed relatively large trade irreciprocity in E-W trade might be due to persistent EE import surpluses being financed by Western Credits, the T_i indices have been partitioned into positive and negative components. Their ratios, averaged for the three groups of countries and the subperiods, are shown in the tabulation below:

TABLE 8.—RATIOS OF POSITIVE TO NEGATIVE COMPONENTS OF T_i's

Period	East-West			West-West
	East-East	OECD source	East Europe source	
1960-63.....	1.0:0.7	1.0:1.1	1.0:2.4	1.0:0.6
1964-67.....	1.0:0.8	1.0:1.0	1.0:2.1	1.0:0.7
1968-71.....	1.0:0.7	1.0:0.8	1.0:1.4	1.0:0.8

We find that the positive and negative components are in relatively close balance in E-E and W-W trade, but for E-W trade the results depend upon which set of statistics is used. (This highlights the importance of the mirror statistics problem discussed earlier.) Based on OECD sources, the number of positive and negative deviations are closely matched; based on EE sources, import surpluses occur anywhere from 40 to 140 percent more often than export surpluses, depending upon the subperiod. Since in our previous analysis of mirror statistics we tentatively concluded that the use of EE sources is preferable, these results suggest that increasing indebtedness of EE countries has played a significant role in yielding T_i's which correspond more closely to those calculated for W-W than for E-E trade. Thus, if we base our conclusions on EE statistics and assume that the extent to which negative imbalances exceed the positive ones reflects a flow of long-term credits, and adjust the T_i's accordingly, the following results are obtained:

TABLE 9.—ADJUSTED RATIOS OF POSITIVE TO NEGATIVE COMPONENTS OF T_i's

Year	East-East	East-West	West-West
1960-63.....	1.0	1.2	2.4
1964-67.....	1.0	1.8	2.7
1968-71.....	1.0	2.5	2.4

⁴² To be sure, we find that the degree of irreciprocity based on EE data sources is consistently and notably lower than that obtained on the basis of OECD data sources.

We find that during 1960-63 and 1964-67, E-W trade was not as "bilateral" as EE and not as "multilateral" as W-W trade. During 1968-71, however, E-W trade appears to be about as "multilateral" as W-W trade.

We have not been able to resolve conclusively the original question: how multilateral is E-W trade? As Peter Wiles pointed out, the extent of bilateral balancing is a question of government policy or central banking arrangement, so the only way to find out for sure is to ask the central banks.⁴³ But this is an issue on which central bankers are not particularly communicative.

PATTERNS OF HARD CURRENCY SURPLUSES

Perhaps the simplest and most direct approach to shed light on the question: can EE finance some of its prospective deficit with the United States by the use of HC earned by exporting to other countries? is to look at the sources and amounts of HC it has been able to generate through exports up to now. Tables D and E in appendix II show individual EE countries' cumulative 1960-72 surplus with individual OECD countries, table D based on OECD, table E on EE sources. The U.S.S.R. is included in the last column of each table for comparison, but is not included in the EE total. Also shown is the percent of the trade surplus relative to the volume of EE exports to (OECD imports from) the respective trade partner, which serves as the basis for ranking the OECD countries.

Appendix table D, first row, first column, shows that the combined exports of the six EE countries during 1960-72 to Ireland exceed EE's imports from Ireland by \$173 million, an amount which represents 81 percent of Ireland's cumulative imports from EE. The second number in the parentheses shows the number of country-years in which a trade balance in favor of EE occurred. We find that in trade with Ireland, EE's exports exceed Irish exports in *each* EE country (also the U.S.S.R.) for *most* years, and on the average by amounts which range from a low of 26 percent of exports for Hungary to a high of about 90 percent of exports for East Germany, Romania and the U.S.S.R. That these results are not a quirk of Ireland's statistics is confirmed by EE sources (table E), according to which Ireland also ranks as the country with which EE accumulates the largest surplus relative to the volume of EE exports to that country.

Other OECD countries where EE regularly earns substantial trade surpluses include Italy (\$1.1 billion according to Italian and about half that amount according to EE sources) and Norway (\$175 or \$127 million, depending upon sources). In trade with Ireland, Italy and Norway practically all EE countries regularly cumulate trade surpluses according to both sets of trade statistics.

There are other OECD countries which appear to be important HC sources for individual CEMA countries, although the two sets of statistics often lead to opposite conclusions. For example, the United Kingdom shows that EE has had a cumulative 1960-72 surplus of \$622 million; in contrast, no EE country shows the United Kingdom as a country with which they had earned a trade surplus.⁴⁴

⁴³ P. Wiles, *Communist International Economics*, London, 1968, p. 255.

⁴⁴ The discrepancy between United Kingdom and Polish statistics is particularly intriguing. No such discrepancy exists, however, in U.K.-U.S.S.R. comparison—both sides show that the U.S.S.R. had a surplus approaching \$2 billion during 1960-72.

The last row of appendix tables D and E shows the combined cumulative trade surpluses of EE with all OECD countries, total and annual average. If the past is a prologue, then we do not find evidence that the volume of trade surplus EE has been able to generate would indicate a strong possibility that this could be an important source of revenue to finance imports from the United States. Based on EE statistics, EE's average annual HC trade surplus with OECD countries, where surpluses were apparently earned regularly during 1960-72, was only \$125 million (\$263 million based on OECD sources). Even if we make the admittedly extreme assumption that all this could be transferred to the United States, this amount would not enable EE to increase its purchases from the United States substantially—since that amount represents only one-fifth of EE's relatively small 1973 imports of \$600 million from this country.

We have tried to ascertain the views of EE experts on the prospects of EE using HC earned elsewhere to finance enlarged purchases from the United States. The typical reply we received was:

It seems rather doubtful to rely on the possibility of paying for imports from the United States with export surpluses to third countries, although such possibility cannot be absolutely excluded. But for the time being, [our country] has a trade deficit with Western Europe, which is our main source of earning convertible currency. The surpluses in trade with this area * * * will be used in the first instance to repay the borrowings from this area * * *. There are also no prospects for switching to free currency in trade with other CEMA countries before 1980.

Consequently, the only real possibility to speed up our imports from the States, above the limits set by the level of our exports, are credits.

To be sure, one should take into account that EE views are cautiously expressed. Since EE is faced with a continuous shortage of HC and is therefore pushing exports to all HC markets, it would not be politic to stress that U.S. exports to EE could expand without a corresponding expansion of U.S. imports. Furthermore, to the extent that EE can earn HC in certain OECD markets, this is probably not a fact they wish to advertise, if for no other reason, to avoid rousing bilateralist tendencies which are always dormant. But a careful assessment of empirical evidence gives no reason to doubt the EE statement.

CREDITS

When we moved from the discussion of invisibles to the possibility of using HC earned in multilateral exchange, we had shifted from the current account of the balance of payments to the capital account. The most important capital account item is credits.

A prime catalyst for increasing significantly the trade between the United States and EE is the availability of credits from the United States on terms competitive with those provided by other OECD countries. Sales of machinery and equipment generally require credits terms of 3-5 years, and sales of heavy capital equipment and complete plants financing of up to 15 years. If credit is made available, then a large increase in U.S. exports of machinery and equipment is virtually certain as shown by the recent increase in U.S. exports to the U.S.S.R. and some EE countries, particularly Poland. This is confirmed by the statements of our EE respondents who indicated strong interest in EE in U.S. technology. It is also in line with historical precedents; the present share of U.S. machinery imports by EE is much below its historical pattern, a point made forcefully by J. M. Montias.⁴⁵

⁴⁵ J. M. Montias, *op. cit.*, pp. 662-681.

The increasing importance of credit terms is also suggested by policy developments in EE. Some countries which have not made extensive use of Western credits during the 1960's are now looking to imports of capital equipment. They regard these as a prime stimulus to maintain or accelerate their rate of growth while restructuring their economy with the help of these imports to improve efficiency and to be in a position to repay credits with increased exports. Our largest EE partner, Poland, is in this category (under Gomulka Poland utilized primarily short- and medium-loans). At the second session of the joint Polish-American Trade Commission in 1972, the Poles announced they intended to increase purchases of U.S. industrial goods from \$2-\$3 million to \$150 million annually, provided credit on competitive terms is available. Poland also proposed in writing that it would like to import substantial quantities of grain and other agricultural products if adequate governmental credit facilities were made available.⁴⁶

Other EE countries, namely Romania, Bulgaria, as well as Yugoslavia, have large HC indebtedness. The more indebtedness a country has and the more capital hungry a country is—as EE countries all are—the more its import decisions will be influenced by the availability and terms of credit—considerations which may often override price and technical issues.

To date, West European and Japanese banks have been more aggressive in granting medium-term and long-term credit than were U.S. banks. Many Western countries, where exports are sought not only to finance imports but also as a means of reducing unemployment and increasing business profits and tax revenues, have engaged in competition to grant or guarantee credit. Desire to promote exports, in some cases political considerations, has led to competition in providing government credits and credit guarantees.⁴⁷

A potentially important role in financing U.S. exports to EE is played by the Eximbank. The Bank was established in 1934 to finance expected trade between the United States and the U.S.S.R., but due to the failure of the two Governments to reach agreement on settling certain prerevolutionary debts, no credits to the U.S.S.R. were extended by the Bank. Before 1971 the Bank concentrated on other areas of the world and extended credits and guarantees only to Yugoslavia and Poland. In 1968 Congress enacted legislation prohibiting the Bank from making loans to any country assisting North Vietnam. All CEMA as well as other CPE's except Yugoslavia were included in this category, with no discretion vested in the President to waive this absolute prohibition. In 1971 Congress repealed this prohibition; since then the Bank has been free to act after a Presidential determination that Bank support of financing exports to Communist countries is in the national interest, which has been made with regard to Romania, the U.S.S.R., and Poland.⁴⁸

Eximbank authority and resources are used for assuming political risks that cannot appropriately be taken by the exporter or private

⁴⁶ H. Humphrey and H. Bellmon, *Observations on Soviet and Polish Agriculture: A Trip Report*. U.S. Congress, Committee on Agriculture and Forestry, U.S. Government Printing Office, 1973.

⁴⁷ It is interesting to note that while West Germany wants to increase credits to EE for political reasons (Ostpolitik) but is constrained by economic considerations (large export surplus and inflation, so it does not need to stimulate exports artificially), the United States wants to provide credit largely for economic reasons (to push exports, to improve the balance of payments, to compete with other exporters) but is constrained by political considerations.

⁴⁸ W. C. Sauer, "Eximbank Credits Back East-West Trade," *The Columbia Journal of World Business*, Winter 1973. Cf. footnote 7 for a March 1974 apparently temporary suspension of Eximbank credit authority to all Communist countries.

banks, for lowering the cost of financing, either to meet foreign competition or to provide an incentive for the buyer to purchase from a U.S. supplier, and for assuring exporters and potential exporters that financing will be available. The three basic activities through which the Eximbank offers assistance are loans, guarantees, and insurance.

The total exposure of the Bank to EE and the U.S.S.R. as of December 31, 1973 was (in millions):⁴⁹

Yugoslavia.....	\$411. 1
U.S.S.R.....	197. 8
Poland.....	74. 3
Romania.....	62. 9

Many economists, Congressmen and the general public believe that Eximbank credits to EE involve U.S. Government subsidies. This appears not to be true. In essence, this is because (a) Eximbank interest rates to all borrowers are the same; (b) the Bank borrows the money it relends on the open capital and money markets; (c) over any reasonable period, for example at the end of each year, it makes a profit (it does not allow its lending rate to fluctuate with the money market rate in the short run), part of which it turns over to the Treasury. Thus, the only sense in which Eximbank lending to EE involves a domestic cost is that it adds to the overall demand for funds and thus raises the rate of interest. But present volume of lending is so small that the effect of interest rates is probably infinitesimal, and this cost should be weighed against economic benefits derived from exports.

Eximbank can borrow at a lower rate than any private institution, so it does lower the credit costs to EE because it reduces the risk.

A significant recent development is the move by the two CEMA banks and also by an individual EE country to tap new, multilateral sources of financing imports from the West. Last year the two CEMA banks borrowed \$200 million in the West European money markets.⁵⁰ To the extent the EE countries obtain a share of these loans, they benefit from having the credit of the U.S.S.R. behind them, which probably makes the terms somewhat more favorable and the credits easier to obtain.

An important new development is Romania's recent membership in the IMF and the World Bank. Romania's IMF quota has been set at the equivalent of SDR 190 million, its subscription to the capital of IBRD at 1,621 shares, with a total value of \$162.1 million. With membership, Romania will receive the facilities of SDR's and the possibilities of long-term credit. Now that some of the technical hurdles of a CEMA country joining IMF has been cleared, the possibility of other EE countries becoming members is enhanced.

One important aspect of these new developments is that they represent new mechanisms for increasing the scope for multilateral exchange, and thereby provide a possibility of increased imports from the United States being financed by borrowings in other countries and from international institutions.

⁴⁹ Compiled from Eximbank press releases.

⁵⁰ \$140 million by the CEMA Bank and \$60 million by the CEMA Investment Bank.

*Industrial Cooperation Agreements (ICA) and Joint-Ownership Ventures (JOV)*⁵¹

These new and rapidly expanding forms of E-W commercial relations can serve as an important vehicle for EE not only to import modern technology but also to produce and export high-quality products to Western markets. Although the number of agreements between EE and Western firms probably approaches the 1,000 mark, so far these have not significantly stimulated Eastern exports. This is because so far the contracts tended to be small and served mainly as new modes of importing technology.⁵² But what makes ICA's, and particularly JOV's, potentially significant options as a source of HC for EE is that these relatively new components of East-West commercial relations are the most dynamic ones, that our survey reveals that EE countries are very interested in promoting them, and that they might provide a unique vehicle to break through the present constraints—economic, organizational, and political—on East-West trade expansion. And what makes this option of particular interest to the United States is that we might have a long-run comparative advantage in this form of East-West economic cooperation, because we have the technology, the management, and the capital being sought by EE. Many U.S. businessmen have not yet seriously considered entering into such arrangements because of unfamiliarity with the possibilities and potentials of this market and uncertainty as to how to deal with problems that might arise.

From the point of view of the Western partner, ICA's and JOV's offer potential advantages which include: a vehicle to enter the large EE market, an instrument of mutual benefit when trade is not a significant alternative, and dependable access to raw materials and inexpensive skilled labor. To the EE partner, these arrangements may be partial substitutes for conventional foreign trade as well as for direct capital transfers in countries whose currencies are inconvertible and where existing production patterns constrain the volume of goods which can be produced for export. And, as Emile Benoit pointed out, they would have the advantage of benefitting from the implicit calculations by the Western partner as to what is worth producing and can be exported for HC.⁵³

The term "industrial cooperation agreements" covers a wide range of alternative forms, such as wage-processing, technical assistance, licensing, management contracts, and turnkey plants. ICA's are distinguished from JOV's by the type of financing involved. JOV's are financed by the investment of risk capital by both host country and Western partner, with payment principally in the form of a share in the earnings and possibly long-term capital gains. A company created through JOV's is owned and operated by a private Western firm and a

⁵¹ For some interesting and up to date comparative discussions of ICA's and JOV's, see J. Holt, "Joint Ventures in Yugoslavia: West German and American Experience," MSU Business Topics, Spring 1973 and J. Holt, "New Roles for Multinationals in Eastern Europe and Yugoslavia," Columbia Journal of World Business, fall 1973.

⁵² Only about 1/2 percent of Poland's and about 2 percent of Hungary's total exports to the Industrial West are comprised of commodities produced under cooperative agreements (Figyelő, Nov. 21, 1973).

⁵³ R. W. Campbell and P. Marer (eds.), *East-West Trade and Technology Transfer: An Agenda of Needed Research*. Bloomington, 1974.

state enterprise of the East—christened “transideological corporation” by Pissar. ICA’s on the other hand are generally financed through loans and credits.

There are important and fascinating differences among EE countries with respect to their attitude, practice, and legislation toward alternative forms of ICA’s and JOV’s, although one of the most important features of these agreements is their continually evolving nature. Perhaps the single most important prospective “technology” that is being transferred within EE today is the transfer of the experience of one EE country to others about different kinds of cooperation agreements and the advantages and disadvantages of each type.

At the present time only Yugoslavia and Romania have been experimenting with full-fledged JOV’s. Romania alone so far allows the establishment of separate, joint production enterprises on its soil. Yugoslavia has had the longest experience and largest number of contracts concluded—since 1967 more than 80—but many have been quite small, with the total volume of foreign investment not much in excess of \$100 million—less than the capital flow associated with a single major joint venture in the West.⁵⁴

Of particular interest both to EE and to the United States is the recent Romanian experience; to EE because it may demonstrate that JOV’s are compatible with central planning of the traditional kind, and to the United States because one of the first to take advantage of the new opportunity was the U.S. based Control Data Corp.⁵⁵

Hungary has experimented successfully with all kinds of industrial cooperation but so far has not allowed equity participation, except in trade and services, allegedly because it believes that Western technology can be obtained less expensively through ICA’s. But aspects of the Hungarian joint venture law are even more liberal than the Yugoslav code, for example, with respect to government guarantees of the repatriation of profits and indemnity to Western companies for unforeseen future actions by the Hungarian Government.⁵⁶

Poland is contemplating the pros and cons of JOV’s and is studying carefully the experience of other EE countries. Poland appears to opt for pragmatic experimentation with alternative forms, and has not so far codified the do’s and don’ts of its options. It is reportedly willing to entertain any proposal from Western firms.

Bulgaria, Czechoslovakia, and East Germany are participating in ICA’s (licensing, turnkey, and other economic cooperation agreements) but—apparently influenced by the present Soviet posture, are not yet discussing the possibility of JOV’s. We know that Hungary, Poland, Romania, and Yugoslavia are studying carefully each other’s agreements. Does the Soviet Union also?⁵⁷

⁵⁴ C. H. McMillan, D. P. St. Charles, *Joint East-West Ventures in Production and Marketing: A Three Country Comparison*. Ottawa Institute of Soviet and East European Studies, Carleton University, Working Paper No. 1, August 1973.

⁵⁵ Control Data Corporation formed with its Romanian counterpart, ROM Control Data S.R.L., a company 45 percent owned by CDC and 55 percent by a state enterprise of the Government of Romania, to manufacture card readers, card punchers and a line printer in Romania (for interesting background and details by a CDC executive, see H. P. Donaghue, “Control Data’s Joint Venture in Romania,” *Columbia Journal of World Business*, winter 1973).

⁵⁶ J. Holt, “New Roles for Multinationals in Eastern Europe and Yugoslavia,” *Columbia Journal of World Business*, fall 1973.

⁵⁷ On May 21, 1973, Brezhnev publicly stated in West Germany that mixed companies or JOV’s would not be permitted in the U.S.S.R. (Holt, *op. cit.*, p. 136). More recently, however, it is reportedly considering forms of cooperation not hitherto permitted, such as paying royalties to prospective American investors for building new hotels (*The New York Times*, Feb. 6, 1974). There is precedent for JOV’s in the Soviet Union, which were permitted in the 1920’s (the “concessions”). Should the Soviet Union make such a move once again, Bulgaria, Czechoslovakia, and East Germany would be expected to follow suit (McMillan and St. Charles, *op. cit.*, p. 3).

V. SUMMARY AND CONCLUSIONS

The prospect, in general, is for substantially increased trade between the United States and EE, but also for a deficit in the trade account of the EE countries. In this connection, it is important to note that, despite the usual stress on Soviet-U.S. trade, until the massive Soviet grain purchases in 1972-73, it was the trade between the United States and the six European members of CEMA which has been quantitatively the more significant and is projected to become again, according to one forecast we cite.

We have indicated that considerable methodological and measurement problems exist in attempting to forecast the volume of U.S. trade with EE. One of the least known and understood aspects of the measurement problem is the problem of the divergences in the "mirror statistics". This represents not merely a question about the interpretation of the past, but is also important for future-oriented policy recommendations and business decisions. One of the key variables determining the future level of U.S.-EE trade is the availability of credit, and the evaluation of credit worthiness is one important input into the decision on credit extension. The fact that the measured trade balance of a given country (which in the absence of data on balance of payments becomes the key indicator) depends on which set of statistics is used is a problem which influences, to some extent, the future level of trade.

Given the expectation that both the United States and the EE countries will wish to increase the flow of goods from the United States to EE, what are the options for financing this flow?

The most obvious option to consider is a potential increase in EE exports to the United States. In this connection, we examine the impact of the prospective granting of MFN by the United States to the EE countries that do not now receive this treatment. We find that East Europeans place great stress on this issue as a precondition for engaging in the massive costs of entering the U.S. market. Another factor that might bring about an increase in the level of EE exports is economic reforms in EE. However, there is insufficient evidence, at this point, to forecast the potential impact of such reforms on the level of EE exports to the United States.

The second option is the increase in EE exports of invisibles. There appears to be small likelihood of EE countries following in the footsteps of Yugoslavia where the remittances of Yugoslav workers abroad play a major role in financing Yugoslav imports. On the other hand, increased earnings of hard currencies from Western tourists represent a large potential source of financing commodity imports from the West.

A third option for financing imports from the United States is to utilize foreign exchange earned from potential export surpluses of commodities or invisibles to third countries. Although there exists no fully satisfactory method for measuring the extent of ex ante multilateralism, we have examined various ex post measures and devised one that meets some of the objections. Our calculations suggest that during 1960-63 and 1964-67 East-West trade was not as "bilateral" as East-East trade or as "multilateral" as West-West trade. During 1968-71, however, the degree of multilateralism in East-West trade increased considerably, making it comparable to

that in West-West trade. This suggests that there already appears to be a sufficient degree of multilateralism so that EE countries could finance purchases from the United States by surpluses with other OECD countries. However, our analysis of EE trade with individual OECD countries indicates that even if payments are multilateral, EE would not have surpluses large enough to provide an important means for financing expanding imports from the United States, particularly since some of these surpluses would be needed to repay past credits. This conclusion is seconded by the assessments provided by our East European respondents.

The fourth, and perhaps most significant, option is to be found in the capital account. The nature of U.S. exports, with capital equipment accounting for a large proportion of present and future exports to EE, requires that the U.S. grant credit facilities. It is customary in international trade to sell capital equipment on credit and our competitors have used credit terms as an effective competitive weapon. As indicated in the study, a primary factor behind the increase in recent U.S. exports to CEMA has been the change in U.S. Government policy on credits. All of our EE respondents have stressed the importance of U.S. Government action in removing restrictions on credits, as well as tariff and nontariff barriers. The forecasts of future levels of U.S. trade with EE have also shown that a major expansion is tied to the simultaneous removal of export controls on high technology items and the granting of credit facilities to finance their export.

Some economists, particularly Gregory Grossman, have pointed out the danger to the United States of providing massive credits to the Soviet Union; a large debtor would be in a position to use its debtor status to influence the creditor's economic policies and political options.⁵⁸ However, the EE countries are much too small and too weak economically and politically to pose any such danger.

As economists, we would naturally ask the question of the costs to the United States of providing credit by the Eximbank to finance U.S. exports to EE. As indicated in this study, there does not appear to exist any subsidy by U.S. taxpayers, so that this apparent cost does not have to be balanced against the economic and political benefits of expanded U.S.-EE trade.

The fifth option, closely connected with credits, is the provision to EE of Western capital, technology, organizational know-how, as well as marketing facilities, by means of industrial cooperation agreements and joint ownership ventures. While this has not been a major source of financing the import of U.S. goods, the long-term significance of this approach should not be underrated.

U.S. firms are continually searching for new, relatively undeveloped markets. Despite the rise in U.S. sales to EE during recent years, this region still represents one of the untapped market areas of the world. While the domestic markets of individual EE countries are small by West European standards, this is counterbalanced to some extent by two considerations. First, as one advantage of dealing with state organizations, a Western firm has a good opportunity to capture a large share of the total imports of an EE country. More importantly, marketing in a single EE country can often be the entering wedge into

⁵⁸ R. W. Campbell and P. Marer (eds.), *op. cit.*

the other EE market, and perhaps more importantly, also to the much larger Soviet market. Among the potential benefits to U.S. firms are gains of expertise and marketing economies of scale in dealing with state-trading countries, enhanced by the "demonstration effect" on other CEMA countries of a Western partner being successful in EE.

The primary purpose of this study is to provide a framework within which to analyze the problems and prospects of U.S. trade with EE and to examine, quantifying where possible, the longrun options of these countries to finance increased purchases from the United States.

APPENDIXES

I. SURVEY OF EAST EUROPEAN VIEWS AND ATTITUDES ON COMMERCIAL RELATIONS WITH THE UNITED STATES⁶⁹

Bulgaria

We received no replies.

Czechoslovakia

Shopping List.—U.S. engineering goods and equipment embodying advanced technology, including machinery whose export has hitherto been prohibited or permitted only under special circumstances.

Possible Sales in the United States.—See appendix table I-A.

Credits.—A serious obstacle to increasing U.S. exports. In some cases U.S. commercial banks have found ways to finance exports to Czechoslovakia even without Eximbank support, but owing to the "political risk" involved they charge a higher interest rate than the Eximbank. Eximbank requirement that detailed balance-of-payment statistics be disclosed is unacceptable to Czechoslovakia.

Industrial Cooperation and Joint Ventures.—With some other western trade partners, traditional exchange of goods is being increasingly supplemented and stimulated by technological cooperation and coproduction agreements. We are not interested in and do not permit investment of foreign capital in Czechoslovakia but are prepared to consider cooperative ventures and joint ventures in third markets.

Special Problems.—The absence of MFN is particularly painful in the case of manufactured products. The ad valorem equivalent of duties collected on imports from Czechoslovakia is estimated to be, on the average, 3-4 times higher than that collected on U.S. imports from other sources (see app. table I-A). For these and other reasons, the restoration of MFN is indispensable for any significant expansion of trade.

During a September-October 1972 visit to the United States by a trade delegation it was found that U.S. industry representatives had very limited knowledge of the Czechoslovak market and were afraid that there would be insufficient protection of the industrial rights ceded to Czechoslovak enterprises. In fact, however, Czechoslovakia scrupulously adheres to the Paris Convention on the protection of industrial property.

Trade prospects.—If the existing tariff discrimination is removed, and subject to other market conditions being favorable in the United States, it would be fair to expect a sustained, dynamic growth, so that trade could easily double or treble within the span of several years. By way of comparison, the present value of Austrian exports to the United States, which are not discriminated against, is approximately five times higher than that of Czechoslovakia.

Attitudes.—Czechoslovak enterprises lack intimate knowledge of the U.S. market (with the exception of a few traditional lines), and are unwilling to invest large sums in research into the U.S. market and in advertising as long as there is a political risk which could make such investments unprofitable. That the U.S. Government had demonstrated its serious desire to expand trade relations with the Soviet Union raises the hope that Czechoslovak-U.S. trade-political relations will soon come up for discussion. This depends primarily upon a favorable settlement of U.S.-U.S.S.R. relations (statement made in November 1972). The long-term prospects toward improved economic and trade relations appear to be irreversible (statement made in March 1974).

⁶⁹ The information is based on replies to questionnaires sent by the authors of leading foreign trade specialists and officials of EE countries, supplemented by articles and speeches by these specialists. The opinions expressed are those of the individual respondents.

East Germany

We received no replies.

Hungary

Shopping List.—It is probable that we will import considerable quantities of protein fodder and concentrates, agricultural machinery, agro-technical chemicals, pedigree stock, electronic equipment, computers, instruments and complete factory installations. The present structure of Hungary's imports does not reflect the high level of U.S. technology. The improvement in Hungarian-American relations should change this.

Possible Sales in United States.—It is important to concentrate on a few promising fields, such as products of the food industry (canned meat, beverages), pharmaceuticals, products of vacuum-tube technology, textiles, tools, books, bicycles, and other mass-produced items. If MFN is granted, our exports of textile fabrics, clothing, footwear, steel products, leather coats, camping equipment, light bulbs, and some machinery should increase.

Industrial Cooperation and Joint Ventures.—Already concluded agreements include: closed-system corn production, Intercontinental and Hilton Hotels, Coke, and Pepsi contracts, cooperation in the production of plastic contact lenses. Would like to develop further production and marketing cooperation with U.S. firms. There are possibilities in the manufacture of agricultural machinery, the aluminum industry, automobiles, chemical fertilizer production, and the chemical industry. Our primary interest is acquiring technological knowledge and opening up marketing opportunities, in some cases through joint exports to third countries. During the last few years Hungary has entered into about 240 cooperation agreements with western firms (primarily in engineering, the chemical and food industries, and agriculture). The overwhelming majority of these are very satisfactory to both sides.

Special Problems.—Hungary has an operational tariff system. Because of mutual tariff discrimination, this impedes the entry of Hungarian goods to the United States and the entry of American goods to the Hungarian market. Duty on U.S. goods is on the average 15 percent higher than that on goods from countries that grant us MFN (which means, in practice, all our other trade partners).

Trade Prospects.—If Hungary is granted MFN, trade volume could triple or quadruple in about 4 years, with imports from United States remaining higher than our exports.

Attitudes.—After congressional authorization of MFN, a trade agreement should be negotiated, dealing with mutual reduction of customs duties, the elimination of other discrimination, economic arbitration procedures, trade, and business representation, et cetera. The foundation for the development of trade can be considered to have been laid only if these preconditions have been fulfilled.

Respondents in general in favor of normalization of relations and are optimistic about prospects, but some also point out that in Hungary, too, there are those who argue that it would not be advisable to undertake new risks and investments to enter the U.S. market because Hungary could sell the same goods in its closer, more traditional markets.

Poland

Shopping List.—Machinery and equipment for priority sectors, including machinery for nonferrous ore mines; engineering industry; rolling mills; construction; chemical and petrochemical processes (plastics, synthetic fibers), food processing and packaging, automotive services, data processing equipment, electronics and advanced industrial instrumentation. Another important category consists of grain and feedstuffs.

Possible Sales in United States (see also under "Special Advantages").—Engineering products such as building machinery (excavators, leveling machines), mining machinery (particularly for collieries), electric tools, universal machine tools for metalworking, lighting fixtures and fittings, assemblies and parts of

various kinds of engineering products (see "Joint Ventures"). In other branches most promising seem to be such products as sporting and tourist articles, gliders, yachts, bicycles, musical instruments, toys, cosmetics, some pharmaceuticals, and semi-finished products for pharmaceutical industry, leather manufactures, some types of clothing, furniture and other wood manufactures and even some agricultural products (e.g. race and sporting horses). This list should be treated as a very provisional one.

With regard to sales of invisibles, the employment in the United States of Polish specialists (through the intermediary of the "PolSERVICE" enterprise) and constructive crews (in cooperation with American enterprises) might become an eventuality. Such business opportunities have proved to be successful recently in West Germany.

Industrial Cooperation and Joint Ventures.—Large-scale exports to United States of engineering products and parts will be possible only within the framework of industrial cooperation, which we would like to see further developed.

Special Advantages.—An important and positive element of the U.S. market for Polish exports is a large group of Americans of Polish origin (5.4 million according to 1971 census), who tend to buy Polish products to preserve ties with the "old country." This should also help increase tourism, although we would like to attract other U.S. population groups as well.

With respect to processed agricultural products, the use of natural fodder and the low degree of environmental pollution result in a unique quality of many of our food products. We expect to maintain or even increase the importance of these products (especially canned ham) in exports to the United States.

Credits.—Considered very important for facilitating imports from United States. Poland wants to buy on credit when there is a real possibility of repaying it by increased exports of goods (particularly industrial) or services.

Special Problems.—There are \$41 million worth of Polish bearer bonds outstanding, dating from the 1920's, many held by Americans of Polish descent, on which settlement negotiations are pending. Poland is affected by the Johnson Debt Default Act of 1934 which prohibits private loans, other than normal commercial credits, to foreign governments in payment default. Bill is pending in U.S. Congress to repeal financing restrictions under the Johnson Act.

U.S. pollution, sanitary, safety, and other standards are more rigid than in other countries; many of which, we feel, represent discriminatory nontariff barriers.

Trade Prospects.—At the second session of the joint Polish-American Trade Commission in 1972, it was forecast that trade should triple in the next 5 years to \$600 million, with annual Polish purchases of U.S. industrial goods at least \$150 million. Sizable U.S. surplus, financed in part by credits, is expected.

Attitudes.—Very businesslike, strong support for trade expansion and joint ventures.

Romania

Shopping List.—Romania wants to import industrial equipment and technological know-how.

Possible Sales in United States.—See appendix table I-B.

Joint Ventures.—Has signed several agreements with U.S. firms, including with Control Data Corp. [see text], providing for part ownership for the U.S. corporation. Romania is interested in further developing this form of cooperation, including cooperation to supply third countries.

Trade Prospects.—If Romania received MFN treatment, trade turnover could reach in the next 3-4 years a half billion dollars. This would represent about 6-7 percent of Romania's total foreign trade, as compared with the 2 percent U.S. share today.

Attitudes.—Considers very important receiving MFN and tariff status as a developing country.

II. APPENDIX TABLES

TABLE I-A.—TYPICAL PRODUCTS EXPORTED BY CZECHOSLOVAKIA WHICH FACE FORMIDABLE TARIFF BARRIERS IN THE UNITED STATES

Commodity	U.S. rate of duty (percent ad valorem unless specified)	
	Full	Most favored nation
Gear cutting machine tools.....	40.0	10.0
Boring and drilling metalworking machine tools.....	30.0	6.0
Metalworking machine tools, not boring or drilling.....	30.0	7.5
Parts of metalworking machine tools.....	35.0	7.0
Printing presses.....	25.0	6.0
Spinning machines.....	40.0	6.0
Weaving machines.....	40.0	7.0
Circular knitting machines, not hosiery.....	40.0	6.0
Motorcycles.....	10.0	5.0
Motorcycle parts except engines.....	25.0	6.0
Glider aircraft.....	27.5	4.5
Bicycles.....	30.0	(1)
Air rifles and parts.....	70.0	17.5
Air pistols and parts.....	27.5	4.5
Tires for motor vehicles.....	10.0	4.0
Ice hockey equipment, except skates.....	30.0	4.5
Toys and parts.....	70.0	17.5
Photographic enlargers.....	20.0	7.5
Bentwood furniture and parts.....	42.5	12.5
Wooden chairs.....	40.0	8.5
Men's leather welt footwear, specified value.....	20.0	(2)
Do.....	20.0	5.0
Men's leather footwear, unspecified.....	20.0	8.5
Leather handbags.....	35.0	10.0
Brasswind instruments.....	40.0	10.0
Woven fabrics, not cotton, specified weight.....	40.0	5.0
Woven towels, not cotton, specified thread counts.....	55.0	20.0
Damask tablecloths and napkins, not cotton.....	55.0	5.0
Tablecloths, unspecified, not cotton.....	40.0	6.5
Other articles of vegetable fiber, not cotton.....	40.0	6.5
Unspecified cyclic organic compounds.....	(3)	(4)
Unspecified antibiotics.....	25.0	5.0
Ceramic statues by professional sculptors.....	20.0	4.0
Inexpensive glass Christmas ornaments.....	60.0	20.0
Other glass Christmas ornaments.....	60.0	12.5
Leaded glassware, specified value.....	60.0	14.0
Do.....	60.0	10.5
Glassware, unspecified, inexpensive.....	60.0	50.0
Glassware, unspecified, specified value.....	60.0	30.0
Glassware, unspecified, cut or engraved.....	60.0	15.0
Beads, bugles, and spangles.....	40.0	7.0
Imitation gemstones.....	20.0	3.5
Articles of beads, etc.....	60.0	12.5
Glass buttons.....	45.0	12.5
Jewelry and parts, except watchbands.....	110.0	27.5
Sausage casings.....	40.0	6.0
Bryndza cheese.....	35.0	8.5
Chocolate, sweetened.....	40.0	5.0
Confectionery, without chocolate.....	40.0	7.0
Beer.....	(5)	(6)
Fermented beverages, unspecified.....	(7)	(8)
Brandy.....	(9)	(10)
Cordials, liqueurs.....	(9)	(9)
Wood moldings, etc., decorating.....	40.0	8.5
Light fixtures, except brass.....	45.0	19.0
Enameled cookingware.....	(11)	(12)

¹ 11 percent, or \$1.50 each.

² 17 percent per pair.

³ 40 percent, or 7 cents per pound.

⁴ 12.5 percent, or 1.7 cents per pound.

⁵ 50 cents per gallon.

⁶ 6 cents per gallon.

⁷ \$1.25 per gallon.

⁸ 25 cents per gallon.

⁹ \$5 per gallon.

¹⁰ 62 cents per gallon.

¹¹ 30 percent, or 5 cents per pound.

¹² 2.5 percent, or 1 cent per pound.

Source: Reply to authors' questionnaire by a foreign trade official of Czechoslovakia.

TABLE I-B.—TYPICAL PRODUCTS EXPORTED BY ROMANIA WHICH FACE FORMIDABLE TARIFF BARRIERS IN THE UNITED STATES

Commodity	U.S. rate of duty (percent ad valorem unless specified)	
	Full	MFN
Metalworking machine tools.....	30.....	6.
Electric engines.....	32.....	5.
Ball bearings and parts.....	35.....	6.
Radio receivers.....	35.....	11.
Lightings, fixtures.....	35.....	8.5.
Electronic components.....	35 to 60.....	6 to 15.
Steel products.....	20 to 45.....	6 to 11.
Steel tubes.....	20 to 45 percent plus 0.2 to 1.75 cents per pound.	7.5 to 13 percent plus 0.1 to 0.8 cents per pound.
Caustic soda solide.....	\$11 per ton.....	\$2.6 per ton.
Vinyl-acetate monomer.....	30 percent plus 6 cents per pound	3 percent plus 3 cents per pound.
Synthetic resins:		
Polyethylene.....	\$140 per ton.....	\$45 per ton.
Polyvinylchloride.....	\$210 per ton.....	\$21 per ton.
Plastic (polyethylene bags).....	45.....	11.
Dioctylphthalate.....	\$150 per ton.....	\$63 per ton.
Synthetic fibers.....	25 to 50.....	10 percent or 1 cent per pound.
Furniture, wooden.....	40 to 42.....	10 to 12.
Plywood.....	40.....	10.
Hardboard.....	30.....	7.5.
Canned vegetables.....	35.....	17.5.
Canned fruits.....	35.....	7.5.
Tomato paste.....	50.....	13.6.
Wines.....	\$1.25 per gallon.....	35 cents per gallon.
Cheese.....	35.....	9 to 15.
Beef, canned.....	20.....	5 to 10.
Wool fabrics.....	75.....	35.
Linen fabrics.....	40.....	5.
Knitwear:		
Cotton.....	45.....	25.
Synthetic.....	45 to 65 cents per pound.....	25 to 35 cents per pound.
Cotton, synthetic fabrics:		
Cotton.....	20.....	10.
Synthetic.....	47.....	20.
Clothing, garments.....	37 to 75.....	17 to 35.
Gloves (dress).....	35.....	7.
Glassware.....	60.....	30.
Carpets.....	45.....	11.
Handicraft (textile).....	90.....	35.

Source: Corneliu Bogdan (Ambassador of Romania to the United States), "U.S.-Romanian Trade Relations," The ACES Bulletin, Summer-Fall 1973, 15, pp. 16-17.

TABLE II-A.—AMOUNT AND PERCENT BY WHICH EAST EUROPEAN COUNTRIES' IMPORTS FROM OECD COUNTRIES EXCEED OECD COUNTRIES' EXPORTS TO EAST EUROPEAN COUNTRIES, AND NUMBER OF YEARS IT DOES SO, CUMULATIVE 1960-72

[In millions of current dollars, percent, and number of years]

OECD country	Imports of East Europe less exports of OECD country									
	Total East Europe ¹	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania	U.S.S.R.		
Switzerland	\$1,268 (49%, 76)	\$84 (44%, 11)	\$415 (56%, 13)	\$324 (64%, 13)	\$162 (43%, 13)	\$164 (39%, 13)	\$118 (34%, 13)	\$149 (31%, 10)		
United Kingdom	2,148 (39%, 78)	111 (39%, 13)	533 (51%, 13)	327 (47%, 13)	316 (45%, 13)	558 (29%, 13)	303 (34%, 13)	109 (5%, 9)		
Netherlands	557 (28%, 72)	0 (0%, 9)	186 (38%, 13)	114 (23%, 13)	52 (18%, 11)	125 (31%, 13)	80 (34%, 13)	265 (36%, 13)		
Austria	704 (20%, 75)	87 (24%, 13)	230 (28%, 13)	53 (13%, 12)	117 (19%, 12)	135 (22%, 13)	81 (17%, 12)	227 (22%, 12)		
Belgium	259 (18%, 53)	16 (16%, 8)	-3 (-1%, 7)	114 (35%, 12)	52 (24%, 11)	6 (2%, 6)	73 (28%, 9)	160 (24%, 12)		
Italy	319 (8%, 62)	40 (8%, 10)	-2 (0%, 6)	80 (25%, 13)	84 (11%, 12)	-4 (-1%, 9)	122 (14%, 12)	132 (6%, 10)		
Japan	59 (6%, 51)	8 (5%, 10)	21 (18%, 11)	37 (25%, 12)	21 (25%, 12)	-23 (-13%, 0)	-5 (-2%, 6)	47 (2%, 11)		
France	150 (4%, 52)	9 (2%, 8)	-25 (-5%, 8)	-5 (-1%, 7)	71 (13%, 12)	6 (1%, 8)	95 (11%, 9)	466 (17%, 13)		
Canada	31 (4%, 37)	4 (8%, 5)	73 (30%, 13)	25 (30%, 11)	12 (20%, 6)	-69 (-24%, 1)	-15 (-6%, 3)	382 (19%, 12)		
United States	-11 (-1%, 39)	-24 (-97%, 5)	14 (5%, 10)	61 (21%, 5)	83 (34%, 11)	-150 (-16%, 1)	6 (2%, 7)	54 (2%, 9)		
Greece	-9 (-1%, 33)	6 (6%, 8)	2 (1%, 7)	-3 (-3%, 4)	4 (3%, 8)	-9 (-7%, 3)	-2 (-3%, 6)	43 (1%, 9)		
Finland	-9 (-1%, 38)	-3 (-12%, 2)	3 (2%, 10)	-15 (-12%, 2)	11 (11%, 12)	-3 (-1%, 6)	9 (5%, 7)	105 (10%, 12)		
Sweden	-20 (-1%, 33)	5 (6%, 7)	12 (4%, 7)	-55 (-12%, 1)	7 (4%, 7)	3 (1%, 4)	-2 (-15%, 1)	34 (14%, 11)		
Norway	-13 (-3%, 30)	0 (-1%, 0)	15 (13%, 13)	-27 (-29%, 1)	6 (1%, 12)	-4 (-3%, 4)	-3 (-3%, 4)	-12 (-13%, 7)		
Spain	-21 (-5%, 23)	-15 (-31%, 2)	0 (0%, 4)	-44 (-19%, 1)	6 (8%, 9)	-10 (-7%, 4)	-5 (-1%, 2)	3 (1%, 7)		
Denmark	-54 (-6%, 28)	-3 (-13%, 3)	2 (1%, 7)	-44 (-19%, 1)	10 (11%, 10)	-14 (-4%, 5)	-5 (-1%, 2)	3 (1%, 7)		
West Germany	-2,218 (-20%, 18)	-21 (-3%, 6)	-648 (-43%, 0)	-1,062 (-24%, 0)	-72 (-6%, 5)	-294 (-19%, 0)	-121 (-7%, 7)	-326 (-10%, 3)		
OECD total ²	3,156 (7%, 66)	304 (11%, 12)	834 (11%, 13)	-77 (-1%, 6)	942 (16%, 12)	426 (4%, 10)	726 (11%, 13)	1,838 (7%, 12)		
EFTA	4,042 (26%, 78)	281 (27%, 13)	1,214 (37%, 13)	563 (22%, 13)	629 (2%, 13)	854 (20%, 13)	502 (25%, 13)	670 (8%, 12)		
EEC	-932 (-4%, 39)	44 (2%, 9)	-492 (-15%, 1)	-75 (-81%, 2)	187 (67%, 12)	-16/ (-4%, 3)	249 (6%, 12)	696 (7%, 12)		

¹ Excludes U.S.S.R.

² Sum of countries listed differs slightly from OECD total because the latter also includes Iceland, Ireland, and Portugal, not listed in this table, and because of rounding.

Source: Indiana University, International Development Research Center, International Trade Information Management System (based on official East European and OECD sources).

TABLE II-B.—AMOUNT AND PERCENT BY WHICH EAST EUROPEAN COUNTRIES' EXPORTS TO OECD COUNTRIES EXCEED OECD COUNTRIES' IMPORTS FROM EAST EUROPEAN COUNTRIES, AND NUMBER OF YEARS IT DOES SO, CUMULATIVE 1960-72

[In millions of current dollars, percent, and number of years]

Exports of East Europe less imports of OECD country								
OECD country	Total East Europe ¹	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania	U.S.S.R.
Switzerland.....	\$1,217 (55%, 78)	\$214 (85%, 13)	\$227 (41%, 13)	\$191 (62%, 13)	\$262 (51%, 13)	\$158 (48%, 13)	\$165 (62%, 13)	\$31 (14%, 9)
Netherlands.....	239 (14%, 68)	38 (43%, 13)	36 (9%, 11)	51 (10%, 10)	31 (12%, 11)	34 (12%, 11)	49 (28%, 12)	550 (45%, 12)
Austria.....	349 (13%, 59)	75 (35%, 13)	96 (14%, 13)	0 (0%, 5)	83 (13%, 13)	-20 (-4%, 2)	114 (30%, 13)	-40 (-5%, 4)
Greece.....	100 (12%, 44)	9 (6%, 7)	-14 (-9%, 0)	21 (20%, 12)	10 (9%, 8)	30 (20%, 8)	45 (27%, 9)	-18 (-5%, 5)
United Kingdom.....	368 (9%, 53)	57 (23%, 10)	180 (21%, 13)	21 (5%, 7)	142 (35%, 11)	-25 (-1%, 6)	-7 (-1%, 6)	-39 (-1%, 2)
France.....	116 (5%, 48)	46 (22%, 11)	57 (13%, 11)	3 (1%, 7)	6 (2%, 8)	-59 (-11%, 2)	62 (11%, 9)	-548 (-33%, 0)
Belgium.....	53 (5%, 43)	16 (25%, 9)	4 (2%, 8)	-7 (-2%, 4)	14 (11%, 9)	-19 (-9%, 2)	45 (32%, 11)	87 (10%, 10)
Canada.....	12 (2%, 45)	0 (3%, 3)	2 (1%, 10)	1 (3%, 9)	7 (11%, 12)	7 (5%, 10)	-4 (-13%, 1)	24 (17%, 11)
United States.....	-15 (-1%, 49)	2 (9%, 9)	0 (0%, 6)	5 (6%, 10)	27 (34%, 13)	-67 (-7%, 2)	18 (17%, 9)	-28 (-5%, 5)
Italy.....	-206 (-4%, 29)	23 (4%, 7)	-23 (-4%, 3)	0 (0%, 8)	18 (2%, 9)	-141 (-14%, 0)	-83 (-8%, 2)	-493 (-21%, 0)
West Germany.....	-838 (-8%, 34)	-22 (-4%, 6)	45 (3%, 11)	-675 (-16%, 1)	18 (2%, 10)	-169 (-11%, 0)	-34 (-3%, 6)	-810 (-34%, 0)
Sweden.....	-140 (-10%, 6)	-7 (-29%, 0)	-36 (-14%, 0)	-14 (-4%, 3)	-9 (-5%, 2)	-61 (-13%, 0)	-14 (-17%, 1)	-262 (-25%, 0)
Norway.....	-60 (-10%, 12)	2 (7%, 3)	-20 (-14%, 1)	6 (4%, 3)	-9 (-16%, 4)	-35 (-19%, 0)	-4 (-27%, 1)	-63 (-21%, 0)
Spain.....	-55 (-11%, 19)	-2 (-3%, 6)	-11 (-15%, 0)	2 (5%, 1)	4 (7%, 9)	-37 (-24%, 1)	-12 (-13%, 2)	-9 (-6%, 4)
Denmark.....	-155 (-17%, 7)	-4 (-28%, 0)	-31 (-17%, 0)	0 (0%, 4)	-5 (-6%, 3)	-110 (-31%, 0)	-6 (-28%, 0)	-80 (-24%, 0)
Finland.....	-156 (-19%, 8)	-3 (-12%, 3)	-16 (-12%, 1)	-22 (-11%, 1)	-7 (-8%, 3)	-90 (-26%, 0)	-17 (-30%, 0)	-318 (-10%, 3)
Japan.....	-193 (-31%, 20)	-5 (-6%, 3)	-39 (-43%, 0)	-1 (3%, 7)	1 (3%, 7)	-74 (-55%, 0)	-36 (-30%, 3)	-921 (-28%, 0)
OECD total ²	525 (1%, 47)	440 (17%, 12)	445 (6%, 13)	-454 (-5%, 2)	594 (12%, 11)	-764 (-8%, 0)	264 (5%, 9)	-2,960 (-13%, 0)
EFTA.....	1,387 (11%, 62)	336 (42%, 13)	398 (14%, 13)	182 (9%, 11)	458 (23%, 12)	-202 (-5%, 0)	216 (16%, 13)	-770 (-8%, 2)
EEC.....	-637 (-3%, 39)	100 (7%, 9)	119 (4%, 11)	-628 (-11%, 1)	87 (3%, 11)	-354 (-10%, 0)	39 (1%, 7)	-1,213 (-14%, 0)

¹ Excludes U.S.S.R.

² Sum of countries listed differs slightly from OECD total because the total includes Iceland, Ireland, and Portugal, not listed in this table, and because of rounding.

Source: Indiana University, International Development Research Center, International Trade Information Management System (based on official East European and OECD sources).

TABLE II-C.—AMOUNT AND PERCENT BY WHICH EAST EUROPEAN COUNTRIES' TRADE BALANCE WITH OECD COUNTRIES BASED ON EAST EUROPEAN SOURCES EXCEEDS TRADE BALANCE BASED ON OECD SOURCES, AND NUMBER OF YEARS IT DOES SO, CUMULATIVE 1960-72

[In millions of current dollars, percent, and number of years]

OECD country	Trade balance based on East European source less trade balance based on OECD source							
	Total East Europe ¹	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania	U.S.S.R.
West Germany.....	\$1,380 (13% 53)	-\$2 (0% 6)	\$693 (42% 13)	\$387 (9% 10)	\$90 (8% 10)	\$125 (8% 9)	\$87 (7% 5)	-\$484 (-20% 1)
Greece.....	107 (13% 49)	2 (1% 7)	-16 (-10% 4)	24 (23% 12)	5 (4% 7)	39 (28% 10)	54 (32% 9)	-17 (-40% 1)
United States.....	-4 (0% 46)	26 (93% 10)	-14 (-6% 3)	-56 (-64% 9)	-55 (-62% 7)	83 (9% 9)	12 (11% 8)	-81 (-15% 1)
France.....	-35 (-1% 39)	37 (18% 8)	82 (19% 13)	8 (2% 5)	-65 (-23% 3)	-64 (-12% 4)	-32 (-5% 6)	-1,014 (-60% 0)
Switzerland.....	-50 (-2% 47)	130 (51% 13)	-188 (-34% 7)	-133 (-43% 2)	100 (19% 10)	-6 (-2% 6)	47 (18% 9)	-118 (-52% 3)
Canada.....	-19 (-4% 34)	-3 (-30% 1)	-72 (-29% 0)	-25 (-81% 2)	-6 (-10% 8)	76 (54% 12)	10 (31% 11)	-358 (-245% 2)
Spain.....	-34 (-7% 21)	13 (28% 7)	-11 (-14% 2)	2 (4% 1)	-2 (-3% 7)	-27 (-17% 1)	-9 (-9% 3)	3 (2% 4)
Norway.....	-46 (-8% 16)	2 (7% 4)	-35 (-25% 1)	33 (20% 6)	-15 (-28% 0)	-30 (-16% 1)	-2 (-13% 4)	-97 (-32% 0)
Sweden.....	-120 (-9% 18)	-12 (-50% 2)	-48 (-19% 1)	41 (11% 9)	-15 (-8% 2)	-64 (-13% 1)	-22 (-27% 3)	-366 (-36% 0)
Denmark.....	-101 (-11% 24)	0 (0% 5)	-33 (-18% 0)	45 (18% 11)	-16 (-17% 0)	-96 (-27% 1)	-1 (-5% 7)	-83 (-24% 0)
Italy.....	-526 (-12% 13)	-18 (-3% 5)	-21 (-3% 4)	-80 (-24% 1)	-66 (-7% 3)	-136 (-14% 0)	-205 (-21% 0)	-625 (-26% 0)
Austria.....	-355 (-13% 18)	-12 (-6% 6)	-134 (-20% 1)	-52 (-17% 2)	-34 (-6% 2)	-155 (-28% 0)	33 (9% 7)	-267 (-35% 0)
Finland.....	-147 (-18% 11)	0 (0% 3)	-20 (-14% 2)	-7 (-4% 5)	-18 (-21% 1)	-88 (-26% 0)	-15 (-27% 0)	-361 (-12% 0)
Belgium.....	-206 (-18% 32)	0 (0% 6)	7 (3% 10)	-121 (-36% 1)	-38 (-30% 2)	-26 (-12% 4)	-28 (-20% 9)	-72 (-8% 1)
Netherlands.....	-318 (-18% 19)	38 (43% 11)	-150 (-36% 0)	-64 (-13% 1)	-22 (-9% 4)	-90 (-30% 0)	-31 (-18% 3)	286 (23% 7)
Japan.....	-254 (-41% 14)	-13 (-14% 3)	-60 (-67% 0)	-68 (-52% 6)	-20 (-61% 2)	-60 (-39% 0)	-32 (-26% 3)	-968 (-29% 0)
United Kingdom.....	-1,781 (-42% 3)	-54 (-22% 3)	-353 (-42% 0)	-308 (-69% 0)	-173 (-43% 0)	-584 (-34% 0)	-310 (-59% 0)	-148 (-4% 2)
OECD total ²	-2,631 (-7% 15)	136 (5% 7)	-389 (-6% 2)	-377 (-5% 4)	-347 (-7% 0)	-1190 (-13% 0)	-462 (-9% 2)	-4,799 (-21% 0)
EFTA.....	-2,655 (-20% 11)	54 (7% 7)	-816 (-29% 0)	-381 (-19% 1)	-170 (-9% 2)	-1057 (-26% 0)	-286 (-21% 1)	-1,440 (-15% 0)
EEC.....	295 (1% 33)	57 (4% 6)	611 (18% 13)	130 (2% 8)	-101 (-4% 2)	-192 (-5% 2)	-210 (-7% 2)	-1,909 (-22% 0)

¹ Excludes U.S.S.R.

² Sum of countries listed differs slightly from OECD total because the total also includes Iceland, Ireland, and Portugal, not listed in this table, and because of rounding.

Source: Indiana University, International Development Research Center, International Trade Information Management System (based on official East European and OECD sources).

TABLE II-D.—AMOUNT AND PERCENT OF EAST EUROPEAN COUNTRIES' TRADE SURPLUS WITH OECD COUNTRIES, AND NUMBER OF SURPLUS YEARS, CUMULATIVE 1960-72, BASED ON OECD SOURCES

[In millions of dollars, percent, and number of years]

OECD country	Total ¹	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania	U.S.S.R.
Ireland.....	\$173 (81%, 64)	\$1 (50%, 6)	\$24 (75%, 12)	\$29 (89%, 13)	\$2 (26%, 10)	\$109 (84%, 13)	\$9 (89%, 10)	\$54 (91%, 13)
Portugal.....	69 (33%, 35)	0 (5%, 3)	2 (6%, 9)	-- (.., 2)	-- (.., --)	52 (75%, 12)	15 (41%, 9)	8 (73%, 9)
Iceland.....	27 (28%, 41)	-- (.., 1)	12 (37%, 13)	9 (42%, 10)	-- (.., 4)	6 (17%, 9)	1 (12%, 4)	21 (14%, 10)
Norway.....	175 (27%, 56)	-- (.., 3)	57 (35%, 13)	37 (24%, 10)	12 (20%, 10)	63 (29%, 9)	5 (27%, 11)	157 (43%, 13)
Italy.....	1,081 (23%, 63)	36 (7%, 9)	42 (6%, 10)	83 (25%, 11)	305 (31%, 10)	324 (29%, 12)	292 (27%, 11)	722 (25%, 11)
Denmark.....	195 (18%, 37)	-- (.., 2)	75 (35%, 12)	-- (.., 2)	12 (12%, 9)	108 (23%, 12)	-- (.., --)	117 (28%, 11)
Finland.....	174 (17%, 54)	-- (.., 8)	16 (10%, 9)	29 (14%, 11)	2 (2%, 6)	114 (26%, 11)	13 (17%, 9)	381 (11%, 10)
Canada.....	85 (16%, 31)	-- (.., 6)	77 (31%, 8)	-- (.., 5)	7 (13%, 7)	-- (.., 1)	0 (1%, 4)	-- (.., 1)
United Kingdom.....	622 (16%, 44)	15 (8%, 8)	146 (22%, 13)	50 (12%, 7)	-- (.., --)	412 (23%, 11)	-- (.., 5)	1,985 (48%, 13)
Japan.....	122 (15%, 33)	-- (.., 2)	36 (28%, 9)	49 (30%, 11)	-- (.., --)	37 (16%, 6)	-- (.., 5)	1,434 (34%, 12)
Greece.....	104 (14%, 44)	21 (17%, 8)	35 (21%, 12)	-- (.., 3)	-- (.., 7)	-- (.., 2)	48 (39%, 12)	70 (17%, 13)
Spain.....	68 (12%, 35)	-- (.., 3)	1 (1%, 7)	-- (.., 3)	-- (.., 3)	47 (23%, 9)	22 (21%, 10)	59 (36%, 10)
Belgium.....	126 (12%, 22)	-- (.., 1)	-- (.., --)	126 (37%, 12)	-- (.., 2)	-- (.., 3)	-- (.., 4)	291 (37%, 13)
Netherlands.....	153 (10%, 44)	-- (.., 3)	76 (21%, 11)	75 (17%, 11)	-- (.., 6)	-- (.., 7)	-- (.., 6)	216 (32%, 12)
Sweden.....	111 (7%, 28)	-- (.., 1)	13 (4%, 7)	-- (.., --)	5 (3%, 9)	93 (17%, 11)	-- (.., --)	352 (27%, 11)
Switzerland.....	50 (5%, 24)	-- (.., --)	9 (3%, 9)	-- (.., 2)	41 (13%, 10)	-- (.., 3)	-- (.., --)	-- (.., --)
Austria.....	89 (4%, 26)	-- (.., --)	6 (1%, 7)	-- (.., 5)	-- (.., 1)	82 (15%, 11)	-- (.., 2)	-- (.., 4)
West Germany.....	-- (.., 20)	-- (.., 3)	-- (.., 1)	-- (.., 6)	-- (.., 1)	-- (.., 8)	-- (.., 2)	-- (.., 4)
United States.....	-- (.., 26)	-- (.., 4)	-- (.., 9)	-- (.., 11)	-- (.., 3)	-- (.., 8)	-- (.., 1)	-- (.., 2)
France.....	-- (.., 7)	-- (.., --)	-- (.., 1)	-- (.., 2)	-- (.., 1)	-- (.., 1)	-- (.., 2)	51 (2%, 6)
Total ²	3,424	73	627	487	386	1,447	405	5,918
Annual average.....	263	6	48	37	30	111	31	455

¹ Excludes U.S.S.R.

² Small discrepancies due to rounding.

Source: OECD, "Statistics of Foreign Trade" Annual.

TABLE II-E.—AMOUNT AND PERCENT OF EAST EUROPEAN COUNTRIES' TRADE SURPLUS WITH OECD COUNTRIES, AND NUMBER OF SURPLUS YEARS, CUMULATIVE 1960-72, BASED ON EAST EUROPEAN SOURCES

[In millions of dollars, percent, and number of years]

OECD country	Total ¹	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania	U.S.S.R.
Ireland.....	\$116 (77%, 63)	\$1 (50%, 6)	\$20 (71%, 11)	\$23 (90%, 13)	\$2 (26%, 10)	\$61 (79%, 13)	\$9 (89%, 10)	\$51 (90%, 13)
Norway.....	127 (22%, 46)	0 (0%, 4)	21 (15%, 11)	70 (43%, 9)	---	33 (18%, 8)	3 (18%, 8)	60 (20%, 12)
Greece.....	177 (21%, 56)	23 (17%, 10)	19 (12%, 9)	---	6 (5%, 8)	27 (18%, 7)	102 (60%, 13)	53 (14%, 10)
Iceland.....	15 (17%, 29)	---	4 (16%, 8)	10 (48%, 10)	---	0 (0%, 5)	---	---
Portugal.....	18 (16%, 24)	0 (3%, 3)	0 (0%, 4)	---	---	18 (35%, 8)	---	8 (73%, 9)
Italy.....	556 (12%, 51)	18 (3%, 7)	21 (3%, 8)	3 (1%, 6)	---	239 (24%, 10)	187 (19%, 10)	98 (4%, 9)
Switzerland.....	200 (9%, 40)	59 (23%, 12)	0 (0%, 8)	---	141 (27%, 13)	---	---	---
Denmark.....	74 (8%, 37)	---	42 (23%, 12)	20 (8%, 10)	---	12 (3%, 9)	---	33 (10%, 8)
Spain.....	30 (6%, 33)	---	---	---	---	18 (11%, 8)	13 (13%, 8)	62 (40%, 7)
Finland.....	48 (6%, 37)	---	---	21 (11%, 11)	---	27 (8%, 7)	---	20 (1%, 5)
Canada.....	18 (3%, 31)	---	6 (2%, 8)	---	---	---	11 (34%, 6)	---
Sweden.....	29 (2%, 22)	---	---	---	---	29 (6%, 10)	---	---
West Germany.....	193 (2%, 41)	---	143 (9%, 11)	---	---	49 (3%, 11)	---	---
Netherlands.....	11 (1%, 23)	---	---	11 (2%, 8)	---	---	---	502 (41%, 11)
Belgium.....	5 (0%, 21)	---	---	5 (1%, 6)	---	5 (1%, 1)	---	219 (25%, 10)
United States of America.....	4 (0%, 31)	4 (13%, 9)	---	---	---	---	---	---
Japan.....	---	---	---	---	---	---	---	---
France.....	---	---	---	---	---	---	---	---
Austria.....	---	---	---	---	---	---	---	---
United Kingdom.....	---	---	---	---	---	---	---	1,837 (44%, 13)
Total ²	1,621	105	276	163	393	461	225	2,943
Annual average.....	125	8	21	13	30	35	17	226

¹ Excludes U.S.S.R.

² Small discrepancies due to rounding.

Source: International Development Research Center, Indiana University, "International Trade Information Management System" (based on official East European sources).

A QUANTITATIVE ASSESSMENT OF U.S. CONSTRAINTS ON TRADE WITH EASTERN EUROPE AND THE U.S.S.R.*

By ANDREW ELIAS and MARJORY E. SEARING

CONTENTS

	Page
I. Introduction.....	600
A. Scope.....	600
B. Summary and Conclusion.....	601
C. Data Sources and Limitations.....	604
II. Concepts and Methodology.....	605
A. Most-Favored-Nation Principle.....	605
B. Non-Tariff Barriers to U.S. Imports From the Socialist Countries.....	606
C. Methodology of the Study.....	610
1. Previous research.....	610
2. Methodology.....	611
III. Estimates of "Normalized" U.S. Imports From the Socialist Countries: 1966 and 1971.....	616
A. Total Imports Under "Normalized" Conditions.....	616
B. Commodity Structure Under "Normalized" Conditions.....	619
C. Estimated Effect of U.S. Trade Restrictions.....	621
1. Total effect.....	621
2. The MFN cost to the socialist countries.....	622
3. Nontariff barrier effects on the socialist countries.....	627
IV. Projections of U.S. Imports From the Socialist Countries: 1976 and 1980.....	632
A. Total Imports.....	632
B. Commodity Structure.....	635
Appendix Tables.....	638

FIGURES

1. U.S. Imports From the U.S.S.R. and Eastern Europe: 1971.....	617
2. Cost of U.S. Trade Restrictions to the U.S.S.R. and Eastern Europe by Country: 1971.....	628
3. Cost of U.S. Trade Restrictions to the U.S.S.R. and Eastern Europe by Commodity Group: 1971.....	631
4. Projections of U.S. Imports From the U.S.S.R. and Eastern Europe, by Country: 1976 and 1980.....	633

TABLES

1. "Normalized" Imports From the Socialist Countries: Major Commodities, 1971.....	602
2. Value Differential Between "Normalized" and Actual Imports Due to MFN Denial to the Socialist Countries: Major Commodities, 1971.....	602
3. Value Differential Between "Normalized" and Actual Imports due to Nontariff Restrictions Against Socialist Countries: Major Commodities, 1971.....	602
4. Projected Increase in U.S. Imports From the Socialist Countries: 1973-76 and 1973-80.....	603

*The views expressed in this study do not necessarily represent an official position of the Bureau of East-West Trade or the U.S. Department of Commerce.

	Page
5. Projected U.S. Imports From the Socialist Countries Under "Normalized" Conditions by Major Commodities, 1976 and 1980.....	603
6. Estimates of U.S. Imports From the Socialist Countries Under Normalized Conditions, by Country, 1966 and 1971.....	618
7. Estimates of U.S. Imports From the Socialist Countries Under "Normalized" Conditions, by Major Commodity Group: 1966 and 1971....	619
8. Estimated Cost of U.S. Trade Restrictions to Socialist Countries, by Country: 1966 and 1971.....	622
9. Total Effects of Import Restrictions on Major Commodity Groups: 1971.....	622
10. Estimated Cost of U.S. Trade Restrictions to Socialist Countries, by Selected Commodity Group: 1966 and 1971.....	623
11. Estimated Losses due to MFN Denial on Iron and Steel, by Country: 1971.....	624
12. Percent Distribution of the Cost of U.S. Trade Restrictions to the Socialist Countries: 1966 and 1971.....	626
13. Estimated Cost of the Non-MFN Factors to Socialist Countries by Selected Commodity Group: 1966 and 1971.....	629
14. Projections of U.S. Imports from the Socialist Countries Under "Normalized" Conditions, by Country: 1976 and 1980.....	634
15. Projected Annual Rates of Growth of U.S. Imports From the Socialist Countries Under "Normalized" Conditions 1971-80.....	635
16. Projections of U.S. Imports From the Socialist Countries Under "Normalized" Conditions, by Major Commodity Group: 1976 and 1980.....	636

I. INTRODUCTION

A. Scope

An important feature of détente with the Soviet Union and other socialist countries has been the opening of new commercial contacts and a rapid expansion in volume of United States-East European and U.S.-U.S.S.R. trade. In fact, however, the new trade relationships have been dominated by U.S. shipments to the socialist countries, dwarfing their exports to the United States. During the 1972-73 period, U.S. imports from the U.S.S.R., the socialist countries of Eastern Europe and the Peoples' Republic of China were only 27.8 percent of the \$3.4 billion of U.S. exports to these same countries, yielding the United States a surplus of over \$2.4 billion on this portion of its trade.

The large U.S. surplus in this trade reflects the urgent current needs of the socialist countries, and it is likely that continuation of détente and further expansion of these new trading relationships will find the United States a net exporter for many years to come. However, over the longer term, the ability of the socialist countries to buy U.S. goods, and perhaps to some extent the maintenance of détente itself, both rest in part on our ability to absorb some imports from the socialist countries.

Existing U.S. laws and regulations discriminate against imports from most of the socialist countries, making it difficult in some instances and impossible in others, for them to compete against other nations for sales in the United States. This discrimination is evidenced in two general forms. Probably best known is the U.S. failure to extend most-favored-nation (MFN) tariff treatment to certain socialist countries, thereby giving a competitive edge to those nations which do enjoy MFN treatment in U.S. markets. Less known perhaps, are a variety of other actions such as embargoes against socialist country goods or the failure to grant them import quotas on those items where we use quotas to control the volume of U.S. imports.

From the viewpoint of the socialist countries, existing U.S. discriminations against their goods are important for two reasons, one of which imposes a real cost on them, while the other imposes a psychological burden. In real terms, U.S. restrictions hamper and limit their ability to sell to us and hence, given the shortage of hard currency they face, limit their ability to buy from us the goods they need. Second, U.S. discrimination against their goods gives them cause to question the sincerity with which we approach both the expansion of trade, in the sense of a two-way flow of goods, and détente itself.

This paper focuses on the examination of various U.S. barriers to imports from Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Romania, and the Soviet Union. It describes the origin and background of these restrictions, attempts to quantify their effect in terms of dollar values of exports to the United States lost to the countries concerned, estimates the division of the lost exports between "MFN" and other U.S. restrictions, and projects the 1976 and 1980 volume of U.S. imports from the countries concerned under an assumption of "normalized" trading relationships, wherein U.S. discriminatory laws, regulations, and actions have been removed.

For the purposes of this paper, lack of extension of MFN treatment to the socialist countries is termed a "tariff barrier," while all other discriminatory barriers to U.S. imports from the socialist countries are considered to be "non-tariff barriers."

B. Summary and Conclusion

The results of this study indicate that the constraints that existed on East-West trade during the 1966-71 period caused a substantial reduction from the level of "normalized" trade.

The total dollar value loss of socialist countries' exports to the United States due to U.S. trade restrictions on imports discussed in this study was estimated to have been \$321 million in 1966 and \$524 million in 1971, with more than one-half of the 1966 total loss and about one-third of the 1971 loss borne by the U.S.S.R. Of the above totals, it is estimated that \$124 million in 1966 and \$292 million in 1971 were caused by the tariff differential—lack of MFN—and the remainder by other factors such as quotas or embargoes. Compared with our actual imports from the socialist countries, the estimates indicate that "normalized" U.S. imports from Eastern Europe and the U.S.S.R. would have been in excess of four times larger in 1966 and nearly six times larger in 1971 than they actually were. With respect to individual countries on a percentage basis, the 1971 increase would have been largest for Bulgaria, 1,100 percent; Hungary, 1,000 percent; and Romania, 700 percent. In dollar figures, however, the increase would have been largest for the Soviet Union, \$174 million; Czechoslovakia, \$111 million; Romania, \$90 million; and Hungary, \$74 million. Large as these estimated increases appear, when compared to U.S. imports from the traditional trading partners, they are still relatively small. For instance, our actual imports from Belgium-Luxembourg in 1971 were about 25 percent larger than the estimates of our "normalized" imports from the total of all six socialist countries for that year.

The commodity group that would have ranked first from Eastern Europe and the U.S.S.R. was iron and steel. It is estimated that,

under "normalized" conditions, in 1971 we would have imported about \$92 million of this commodity from all six countries. This would have represented slightly less than 3.4 percent of our actual iron and steel imports in 1971.

The second ranked group of our "normalized" imports from the socialist countries, in terms of value, would have been petroleum and petroleum products, primarily—88 percent—from the Soviet Union, followed by clothing, meat and meat preparations, nonferrous metals, and miscellaneous manufactured articles—see table 1.

TABLE 1.—NORMALIZED IMPORTS FROM THE SOCIALIST COUNTRIES: MAJOR COMMODITIES, 1971

[In millions of dollars]

Rank and commodity group	Estimated value
1 Iron and steel.....	92
2 Petroleum and products.....	87
3 Clothing.....	47
4 Meat and meat preparations.....	38
5 Nonferrous metals.....	32
6 Miscellaneous manufactures.....	29

Source: Table 7.

These figures seem to indicate that, even under "normalized" trading conditions, U.S. imports from traditional suppliers would not have been substantially displaced by goods of Soviet or East European origin. Moreover, a number of commodities which we could have imported from that area are becoming items of short supply in the United States.

The dollar value of export losses stemming from MFN denial to the U.S.S.R. and Eastern Europe for the six largest commodity groups is shown in table 2. Similar data for losses attributed to nontariff restrictions are presented in table 3.

TABLE 2.—VALUE DIFFERENTIAL BETWEEN NORMALIZED AND ACTUAL IMPORTS DUE TO MFN DENIAL TO THE SOCIALIST COUNTRIES: MAJOR COMMODITIES, 1971

[In millions of dollars]

Rank and commodity group	Differential
1 Iron and steel.....	61
2 Clothing.....	31
3 Transport equipment.....	19
4 Electrical machinery, apparatus.....	18
5 Miscellaneous manufactures.....	16
6 Footwear.....	15

Source: Table 10.

TABLE 3.—VALUE DIFFERENTIAL BETWEEN NORMALIZED AND ACTUAL IMPORTS DUE TO NONTARIFF RESTRICTIONS AGAINST SOCIALIST COUNTRIES: MAJOR COMMODITIES, 1971

[In millions of dollars]

Rank and commodity group	Differential
1 Petroleum and products.....	83
2 Iron and steel.....	27
3 Meat and meat preparations.....	24
4 Nonferrous metals.....	21
4 Fish and fish preparations.....	16
6 Nonmetallic manufactures.....	14

Source: Table 10.

Assuming that the trade relations between the United States and the six Socialist countries will be normalized in the near future, our imports from this area may reach \$946 million in 1976, and \$1,183 million in 1980. These projected volumes are probably conservative in view of the increase in the formation of joint ventures and the expansion of production for the U.S. market that are expected to occur in Eastern Europe and the U.S.S.R. with the normalization of our trading relationships.

The fastest growth in exports to the United States between 1973 and 1976 is expected to be achieved by Bulgaria, closely followed by the German Democratic Republic, and Hungary. During the 1976-80 period, Romanian exports to the United States are expected to grow most rapidly—30 percent—followed by the increase in shipments from Hungary and Czechoslovakia, around 27 percent each; U.S.S.R., 23 percent; German Democratic Republic, 22 percent; and Bulgaria, 17 percent. In terms of the dollar increase of U.S. imports from the Socialist countries under "normalized" conditions, the Soviet Union ranks first and Bulgaria last during both the 1973-76 and 1973-80 periods. (See table 4.)

The commodity groups projected as potentially the largest U.S. imports from the Socialist countries in 1976 and 1980 are shown in table 5.

TABLE 4.—PROJECTED INCREASE IN U.S. IMPORTS FROM THE SOCIALIST COUNTRIES: 1973-76 AND 1973-80
(In millions of dollars)

Country	Values	
	1973-76	1973-80
U.S.S.R.	176	267
Czechoslovakia	145	194
Hungary	101	133
Romania	88	130
German Democratic Republic	69	86
Bulgaria	31	37

Source: Table 14.

TABLE 5.—PROJECTED U.S. IMPORTS FROM THE SOCIALIST COUNTRIES UNDER NORMALIZED CONDITIONS: MAJOR COMMODITIES, 1976 AND 1980

(In millions of dollars)

Commodity group	1976	1980	Leading country(ies)
Petroleum and products thereof	152	194	U.S.S.R.
Iron and steel	102	128	Czechoslovakia.
Clothing	74	102	Romania, Hungary.
Nonferrous metals	65	76	U.S.S.R.
Meat and preparations thereof	45	53	Hungary.
Nonelectric machinery	42	56	Czechoslovakia.
Miscellaneous manufactured products	40	49	German Democratic Republic.

Source: Table 16.

Given the assumptions on which this study is based and allowing for the shortcomings necessarily inherent in the methodology, the findings suggest several conclusions regarding U.S. restrictions on East-West trade. First of all, U.S. imports from the U.S.S.R. and the five socialist countries of Eastern Europe under normalized conditions would still remain relatively small and, with existing or additional

precautions—possible escape clause or market disruption safeguards—would probably not cause any serious market dislocation in this country. Second, the structure of our potential imports from these socialist countries indicates that they could export to us considerable quantities of those commodities which are or may be in short supply here. This is particularly true of our potential imports from the Soviet Union which may to some extent be understated in this paper, as explained elsewhere in the text. Major commodities on the Soviet supply list, as derived in this study, include petroleum and petroleum products, nonferrous metals, nonmetallic mineral manufactures, fish and fish preparations, metalliferous ores, and wood and lumber. Third, the lack of MFN status appears to be relatively more significant to the five Eastern European countries than to the U.S.S.R., although the gap seems to be getting smaller, due to the apparent gradual structural change in Soviet exports from predominantly raw materials and semimanufactures to finished products. In contrast to our imports from the U.S.S.R., U.S. shipments from Eastern Europe would be expected to include mostly iron and steel, clothing, meat and meat preparations, footwear, and miscellaneous manufactured articles.

C. Data Sources and Limitations

The entire study relied, almost exclusively, on the annual publication of the OECD, *Trade by Commodities—Imports*, for the years 1966 through 1971. The selection of this source was necessitated by the comprehensiveness of its statistics and by the need to maintain consistency of the scope of the data in deriving the estimates for the past and the projections for the future.

The OECD publications, which served as a basic source for the two-digit commodity composition of imports in East-West trade, were supplemented by volume 1 of the 1970 Supplement to the *World Trade Annual*, prepared by the Statistical Office of the United Nations and published by Walker and Company in New York, and by *Tariff Schedules of the United States Annotated* (1972). Statistical yearbooks for the U.S.S.R. and Eastern European countries were also examined, especially with respect to the total production and trade volumes. In addition, a number of books, journals, laws, and regulations relating to the topic discussed were surveyed and utilized either for background information or for direct citation.

Use of the OECD data themselves introduces the possibility of several forms of bias. Perhaps most important, in determining the volume of U.S. imports that would result from removal of U.S. discrimination against socialist exports to the U.S., and in deriving the projections of normalized import volumes for 1976 and 1980, the actual 1966–71 Western European and Canadian market penetrations achieved by the socialist countries serve as the basis for all calculations. Implicit in this use is the assumption that the 1966–71 Western European, Canadian and OECD import volumes from the socialist countries occurred in a completely “normalized” environment, free of Western European, Canadian and OECD discrimination against socialist imports. While the imports of other OECD countries from the socialist countries during the data period were significantly larger than U.S. trade, it is probably incorrect to assume that there was no discrimination by them against socialist country imports. To the

extent that there was, in fact, discrimination against socialist countries by the data base countries, U.S. "normalized" imports calculated for 1966-71 and projected for 1976-80 are biased downward.

It should also be noted that the estimates of U.S. imports from the German Democratic Republic based on Western European market shares are understated, perhaps considerably, because of the exclusion of inter-German trade data from the Western European trade statistics. In addition, for the purpose of this paper, the analysis and the tables exclude special transactions not classified according to kind and those commodity groups for which the high estimates—or actual imports, if higher—amounted to less than \$100,000. Finally, most of the import data used relate to declared c.i.f. transactions, with the exception of the United States and Canada, which refer to f.o.b. values.

II. CONCEPTS AND METHODOLOGY

A. Most-Favored-Nation Principle

The most-favored-nation clause has been, in one form or another, a permanent feature of international commercial and navigational treaties for at least three centuries. Its scope varied according to the policies pursued or maintained by different states at different times. It may be defined as "A provision, generally inserted in a commercial agreement between two states, which obligates the contracting parties to extend all concessions or favors made by each in the past, or which might be made in the future, to the articles, agents, or instruments of commerce of any other state in such a way that their mutual trade will never be on a less favorable basis than is enjoyed by that state whose commercial relations with each is on the most favorable basis.¹ Thus, the granting of most-favored-nation treatment does not offer the grantee—if this term is correctly used here, since the grants are usually mutual or reciprocal—more advantages, but rather, not less advantages than those which are presently, or may in the future, be accorded by the grantor to its other trading partners. Put more simply, the most-favored-nation principle in international commercial agreements represents a proviso against discrimination and favoritism in foreign trading.²

The most-favored-nation clause can have a number of forms depending on four basic characteristics and their combinations: positive or negative; reciprocal or unilateral; limited or unlimited; and conditional or unconditional.³ The two more important forms of the most-favored-nation clause are:

(1) Limited, in which case only certain concessions are granted or the clause can cover only specific states; or unlimited, in which case all the favors and privileges granted to any nation are extended in their entirety to all other nations; and

(2) Conditional, where granting of the MFN status by one State to another is made contingent on receiving reciprocal favors in return;

¹ Richard Carlton Snyder, *The Most-Favored-Nation Clause*, New York, King's Crown Press, 1948, p. 10.

² For an excellent discussion of the MFN status, especially the recent Congressional debate on extending such status to the Soviet Union, see Theodore C. Sorensen, "Most-Favored-Nation and Less Favorite Nations," *Foreign Affairs*, January 1974, pp. 273-286.

³ Snyder, *op. cit.*, p. 19.

or unconditional, where extension of the MFN treatment by one nation to another does not specifically require any favors or privileges in return.⁴

In general, the United States has followed, since the 1920's, an unlimited and unconditional most-favored-nation policy toward its trading partners. A major exception to this rule has been our withdrawal of the most-favored-nation treatment from all European Socialist countries, save Yugoslavia, in 1951. In that year the Trade Agreement Extension Act of 1951 (Public Law 82-50) directed the President to withdraw the most-favored-nation status from all countries "under the control of international communism." By that definition, Yugoslavia, and, since 1960, Poland were determined to be eligible to retain the MFN status. The denial of trade concessions to the Socialist countries was later extended in the Trade Expansion Act of 1962 to cover "all Communist countries", not just those controlled by international communism.⁵ However, to date Poland and Yugoslavia have been allowed to retain their MFN status.

In recent years, several unsuccessful attempts have been made to extend MFN treatment to the U.S.S.R. and other Socialist countries of Eastern Europe. Because of the differing economic systems of the U.S. and the Socialist countries, evaluations of the losses and benefits to the parties concerned in a granting of MFN status are more complex than they would be if the countries involved had the same kinds of economic systems. Since imports of the Socialist countries are planned by government agencies and implemented by State-owned foreign trade companies, tariff reductions on imports from the United States by the Socialist countries would not necessarily result in increased imports of American goods. Consequently, unless a specific provision is included in the agreement with respect to its reciprocity, the MFN status may have a one-sided rather than mutual benefit.⁶

On the other hand, the Soviet Union, as well as other Socialist countries lacking the MFN status, feel that they are entitled to the treatment accorded to other U.S. trade partners. Whether for economic, psychological, political, or other reasons, they believe that they are being discriminated against.⁷ For these reasons, the growth of their commercial relationships with the United States may slow down and, eventually, reverse itself, if they are not granted MFN treatment.

B. Nontariff Barriers to U.S. Imports From the Socialist Countries

In addition to the impact of the "tariff barrier" that results from the lack of MFN treatment, socialist country exports to the United States face a variety of other constraints. These encompass quantitative restrictions imposed by the U.S. Government including em-

⁴ *Ibid.*, pp. 20-21; and Vladimir N. Pregelj, *Most-Favored-Nation Principle: Definition, Brief History, and Use by the United States*, Congressional Research Service, Library of Congress, Washington, D.C., p. 2.

⁵ John P. Hardt and George D. Holliday, *U.S.-Soviet Commercial Relations: The Interplay of Economics, Technology Transfer and Diplomacy*, Committee on Foreign Affairs, U.S. House of Representatives, Washington, D.C., U.S. Government Printing Office, 1973, p. 52.

⁶ *Ibid.*, pp. 52-53. See also Gunnar Adler-Karlsson, "Problems of East-West Trade—A General Survey," *Economics of Planning*, No. 2, 1967, pp. 149-151.

⁷ See, for example, the interview with U.S.S.R. Deputy Minister of Foreign Trade A. N. Manzhulo by V. Drannikov, "The Call of the Times," *Gudok* (Whistle), November 22, 1973, p. 3; and longer discussions on tariff and non-tariff discrimination by Janos Nyerges, "Significance of GAAT Membership," *Külgazdasag* (Foreign Economy), No. 11, November 1973, pp. 805-812; and Jerzy Juszkiewicz, "The Influence of Trade Discrimination on the East-West Economic Relations," *Gospodarka Planowa* (Planned Economy), No. 8, August 1972, pp. 470-474.

bargoes, voluntary agreements to restrict imports, and the discriminatory application of quotas and tariff-rate quotas, as well as barriers to entry into the U.S. market such as public hostility toward Communist-made products, prevalent especially during the cold war years, the possible lack of U.S. demand for certain major commodity exports from Eastern Europe and/or the U.S.S.R., the use of shadow pricing by socialist countries to compete in price in our domestic market and its relation to the problem of dumping charges, quality and technical standards, the FDA certification requirements on certain food products, and the lack of knowledge in Eastern Europe and the U.S.S.R. of the U.S. market.

With the beginning of the cold war years, the U.S. Government instituted several quantitative restrictions on imports from the Socialist world. An embargo was imposed on the importation of seven types of furskins from the U.S.S.R. and the People's Republic of China at the time of the withdrawal of MFN status from the Communist countries in the Trade Agreements Extension Act of 1951. The foreign assets control regulations of 1950, forbidding U.S. trade with the Socialist countries of the Far East, also embargoed "Chinese-type" goods sold by the U.S.S.R. Moreover, the United States stopped buying Soviet crabmeat because it was considered to be produced by forced labor. This embargo was rescinded in 1961. Restrictive discriminatory legislature was also instituted during the postwar years by our State and local jurisdictions against the sale of Communist-made products. In addition, since 1935, embargoes, general quotas, and tariff-rate quotas have been imposed by the U.S. on the imports of certain commodities from any country, with shares of the quotas generally allotted to a country according to the distribution of U.S. imports of that commodity by country of origin during some base period, or on a first-come-first-served basis. In several cases the allocations discriminated against products from the Socialist countries. Other international agreements have been negotiated which have also established quotas on certain commodities. Products from Socialist countries not a party to the agreements suffered discrimination in the quota allocations. The quantitative restrictions in existence during the years 1966 through 1971, which had or could have affected Socialist countries, are summarized in the discussion which follows.

In 1966-71, embargoes existed on the import of mink, fox, muskrat, marten, weasel, ermine, and kolinsky furskins from the U.S.S.R. and the People's Republic of China, on certain imports from Rhodesia, and on the imports from any country of products containing 45 percent or more butterfat, feathers and skin of certain birds, certain eggs of wild birds, pepper shells, impure tea, and white phosphorous matches. Only the embargo on articles containing 45 percent or more butterfat was imposed for economic reasons. In the same period, quotas existed on four categories of agricultural products under section 22 of the Agricultural Adjustment Act of 1935, as amended. According to its provisions, the President may regulate on the basis of an investigation and report by the U.S. Tariff Commission the importation of agricultural commodities whenever he finds that such importation tends to materially interfere with any domestic production control, price support, or other agricultural commodity program.⁸ During the

⁸ 12th Annual Report of the President of the United States on the Trade Agreements Program for 1967, 90th Cong., 2d sess., House Document No. 394, Washington, D.C., 1968, p. 47.

period 1966 through 1971, the United States maintained import restrictions on wheat and milled wheat products, cotton of specified staple lengths, cotton waste and picker lap, peanuts, and certain manufactured dairy products. The quotas covering dairy products were extended to several additional commodities in this category during the 6-year period.

The Sugar Act of 1948 provided the quotas in effect throughout the period 1966-71, serving as the primary method for controlling imports of sugar. All sugar for the U.S. market has been limited by absolute quotas which are allocated to specified foreign and domestic supplying areas in accordance with formulas set forth in the act. During each year, unfilled area quotas are reallocated also in accordance with legislative provisions, keeping import quotas completely filled.⁹ Since mid-1966, the quotas were extended to imports of mixtures of sugar, flour and/or butterfat containing more than 25 percent sugar.

The mandatory oil import program, in effect from 1959 through 1973, regulated imports of crude oil, unfinished oils, and finished products using officially fixed quotas. The program was originally instituted under the national security provision of the Trade Expansion Act, which authorizes the President to adjust imports if he receives a report from the Director of the Office of Emergency Planning, following an investigation, that imports of the products involved are threatening to impair the national security.¹⁰ Oil imports were regulated using licenses issued by the Department of the Interior with allocations of the quotas given to individual companies on the basis of the amount of domestic crude processed the previous year. Many changes in the original controls were made during the years the program was in effect, increasing the volume of imports permitted both absolutely and relatively, to keep up with changes in U.S. supply and demand for crude petroleum and petroleum products. The whole program was terminated in 1973, because the United States required more oil than it was producing or could import at that time. In place of the program, a license fee system was instituted.

The Meat Import Act of 1964, effective January 1, 1965, requires the President to impose quotas on fresh, chilled or frozen beef, veal, mutton, and goat's meat if the Secretary of Agriculture estimates that meat imports for the year will total 110 percent of the annually adjusted base quota stipulated in the act. The President may suspend or increase the quotas if he determines that such action is required by overriding economic or national security interests or in order to insure adequate supplies at reasonable prices.¹¹ In the fall of 1968, the United States negotiated agreements with the major supplying countries to limit their meat exports to the United States to specified amounts, effectively keeping our total imports at a level below the quota trigger point. The need for quotas was thus avoided through mid-1970, when the President first imposed, but later suspended them in the national economic interest permitting imports to rise above the restraint program limits. In 1971 imports of meat subject to quotas

⁹ See U.S. Tariff Commission. *Quantitative Import Restrictions of the United States*, TC Publication 243, Washington, D.C., April 1968, pp. 42-46.

¹⁰ For a complete review of the oil import program see U.S. Tariff Commission. *World Oil Developments and U.S. Oil Import Policies*, TC Publication 632, Washington, D.C., October 1973.

¹¹ *The 15th Annual Report on the Trade Agreements Program, fiscal year 1970*, 92d Cong., 1st sess., House Document No. 92-178, Washington, D.C., 1971, p. 12.

were once more set at a revised level, but the President deemed it necessary to suspend them for economic reasons. In 1972 and 1973 the quotas and import restraints were again suspended to supplement domestic meat supplies.

For all of the quotas described above, which were in effect during most if not all of the estimation period, 1966-71, the allocations of the shares would have had to be adjusted to eliminate discrimination against the Socialist countries, if trade relations with these countries had been "normalized" to the degree assumed in this study. The discriminatory nature of the several international agreements, covering the exchange of certain commodities, which were in effect during the 6 years, would also have had to have been removed. These agreements include the long-term arrangement regarding international trade in cotton textiles, negotiated in 1962 by the GATT Cotton Textile Committee. It was suggested by the United States as a means of insuring a more orderly development of trade in cotton textiles than had occurred in the 1950's when the United States, as one of the few open markets, bore the brunt of sharply rising exports from new suppliers.¹² The agreement allowed for growing access to world markets for cotton textiles from exporting countries, while providing for avoidance of disruption of established markets in importing countries. The principal means for regulating imports of cotton textiles into the United States under the arrangement has been bilateral agreements. At the close of 1971, the United States had 28 bilateral cotton textile agreements to control our cotton imports, including one with Romania negotiated in that year. If normalized conditions had prevailed in our trading relations with the Socialist countries during the estimation period, nondiscriminatory bilateral agreements probably would have existed with all the Socialist countries that would have exported cotton textiles to the United States.

From 1969 on, the leading integrated steel producers of Japan and the first six member countries of the European Economic Community have decided to voluntarily restrict their exports of steel mill products to the United States because of their concern about the possibility of legislated import quotas. Had trade conditions been normalized with the Socialist countries at that time, they might have felt compelled to participate in this voluntary agreement for the same reason.

Most tariff-rate quotas in effect during the estimation period were the result of concessions granted by the United States in trade agreements. Since they do not specifically discriminate against the Socialist countries, they are not covered by this study. Tariff-rate quotas employed for the purpose of restricting aggregate imports of certain articles have resulted from both escape-clause actions and legislation. Those existing in 1966 through 1971 were generally administered on a first-come-first-served basis and were therefore not discriminatory.¹³

¹² *14th Annual Report of the President of the United States on the Trade Agreements Program—1969*, 91st Cong., 2d sess., House Document No. 91-133, Washington, D.C., 1970, p. 31.

¹³ There is also the International Coffee Agreement, effective as of December 1963, which does not concern the Socialist countries since they are not exporters of coffee. It is designed to stabilize the price of coffee at a level equitable to producers and reasonable to consumers and to achieve long-term equilibrium of production and consumption through an export quota system administered by the International Coffee Council. The signatory countries accounted for about 97 percent of world exports, and 92 percent of world imports of coffee in 1961, the base year of the agreement. See U.S. Tariff Commission *Quantitative Import Restrictions*, op. cit., p. 62.

C. Methodology of the Study

I. PREVIOUS RESEARCH

Several previous studies have examined the probable impact on U.S. imports of granting MFN status and eliminating other barriers to trade with one or more of the Socialist countries. Some investigated the composition of exports to the industrial West from the Socialist countries and indicated potential general areas for expansion of U.S. imports on the basis of the structure of our imports from both the West and the Socialist countries, without attempting to quantify the volumes involved.¹⁴ Others looked into the impact of the 1960 restoration of MFN status to Poland on the volume of our imports from that country as a possible indication of the potential impact of establishing normalized conditions with the other Socialist countries. Little discernible effect of MFN status on Polish exports to the United States has been observed, however, suggesting that the removal of MFN tariff barriers alone may not be sufficient to appreciably alter the patterns of our trade with the rest of the Socialist countries. On the other hand, the recent improvement in the political climate for East-West trade, the expressed interest on the part of the Socialist countries for increased trade with the United States, and the accompanying removal of other trade barriers, puts the restoration of MFN treatment to the Socialist countries at this time in a different atmosphere than it was when granted to Poland.

In those studies which have attempted to quantify the impact on our imports of normalizing trade relations with the Socialist countries, several different methodologies have been used. A review of these studies and the research for this paper makes it evident that there is no perfect methodology and perhaps none which is clearly "best" for this type of undertaking.

The granting of MFN status represents a reduction in the tariff on many products from the Socialist countries which, in turn, should lead to increased sales of those products in the importing country. These increased sales are derived primarily from two effects: (1) The substitution of products from the Socialist countries for those produced by our import competing industries, and (2) the substitution of products from the Socialist countries for those previously purchased from other foreign countries which were already receiving MFN treatment. Research that attempts to quantify the effects of granting MFN aims to capture both effects. One method that has been tried for estimating these effects separately uses previously estimated price elasticities of U.S. import demand and the MFN and non-MFN tariff rates in deriving the substitution of imports for U.S. produced goods, while the share of exports from the Socialist countries in OECD imports, excluding the United States, is used to determine the substitution of imports from Socialist countries for those of other nations.¹⁵ While having the advantage of estimating both effects, this technique has several shortcomings, one of them being that the estimates of the former effect as derived do not include the expected increase in the

¹⁴ See for example Anton F. Mallish, Jr., *United States East European Trade*, Staff Research Studies No. 4, U.S. Tariff Commission, Washington, D.C., 1972.

¹⁵ See Dr. Thomas A. Wolf, *The Quantitative Impact of Liberalization of United States Unilateral Restrictions on Trade with the Socialist Countries of Eastern Europe*, external research study, XR/RECS-3, U.S. Department of State, Washington, D.C., Feb. 16, 1972.

volume of U.S. imports of those commodities for which the non-MFN rate has been prohibitive.

In most studies surveyed, however, the methodologies utilized have avoided the distinction between the substitution of Soviet and East European commodities for those we produce domestically and those we import from the non-Socialist world. Instead, the simpler concept of a potential share of the U.S. import market that would be supplied by the socialist countries has been employed. That is, it has been generally assumed that under "normalized" conditions the share of U.S. imports supplied by each of the Socialist countries would equal some share attained by that country in a comparable market, however defined; for example, the share of the EEC import market, the share of the Canadian import market, or the share attained in the U.S. market prior to the withdrawal of MFN treatment. Previous analyses were generally confined to deriving the impact of "normalized" conditions on the total volume of U.S. imports and, in some cases, the imports of a few major commodities, omitting a detailed treatment of changes in the commodity composition of trade. This study utilizes the "Socialist share in a comparable market" methodology, with certain Western European nations and Canada serving as the "comparable markets."

Of the studies reviewed, only three had methodologies which produced quantitative results. Of those, two provided estimates of only the total trade values. The third provided a two-digit commodity breakdown, but it used estimated average ad valorem equivalents of U.S. rates of duty based exclusively on the composition of total U.S. imports in each commodity group. In an attempt to improve overall accuracy and obtain added details, the rates of duty used for this paper were based on the five-digit structure of West European—and to a small extent U.S.—imports from the Socialist countries.

2. METHODOLOGY

This paper attempts to (1) define in terms of dollars of lost Socialist country exports to the United States, the cost to them of U.S. barriers to their exports; (2) to allocate these costs between MFN and other—non-MFN—causal factors; and (3) to project 1976 and 1980 U.S. imports from the Socialist countries under the assumption of "normalization" of trade relationships; that is, removal of the barriers, both MFN and other that result in discriminatory treatment of imports from the Socialist countries.

a. Method of estimating 1966-71 loss of Socialist exports to the United States caused by U.S. discriminatory trade barriers

The technique used in estimating the impact of MFN denial and other nontariff barriers on Socialist country exports to the United States during the period 1966-71 essentially involves a comparison of the Socialist countries' market penetration in the United States with their market penetration in other economies which:

- (1) Resemble the United States as closely as possible;
- (2) Did grant MFN status to the Socialist countries; and
- (3) Did not raise against the Socialist countries nontariff barriers similar to those of the United States.

Two sets of estimates were made for each Socialist country, each year, and each commodity group. They attempt to provide higher and lower estimates of Socialist country exports to the United States under "normalized" conditions of trade.

The countries selected for use in the derivation of the higher estimates were the Western Europe (WE) 1966 members of the European Economic Community (EEC) plus the United Kingdom. Canada was used in establishing the lower estimates. The reasoning behind these selections is provided later. However, in notation, for each individual year, 1966 through 1971, the higher estimate derivation is as follows:

$$\left(\hat{M}_{us, sc}\right)_t = \left[\frac{(M_{we, sc})_t}{(M_{wh})_t} \right] \times [M_{us} - (M_{us, c})]_t$$

Where

$\left(\hat{M}_{us, sc}\right)_t$ = Higher estimate of U.S. imports of commodity i from each socialist country under "normalized" trade conditions.

$(M_{we, sc})_t$ = West European imports of commodity i from each Socialist country.

$(M_{we})_t$ = Total West European imports of commodity i .

$[M_{us} - (M_{us, c})]_t$ = Total U.S. imports of commodity i less U.S. imports of commodity i from Canada.

The reader will note from the above that, essentially, the technique is to calculate for each socialist country, commodity, and year, the market share of socialist country exports in Western European imports in the form of a ratio and to multiply that ratio times total U.S. imports, less the portion of imports coming from Canada.

Removal of imports originating in Canada from the U.S. total was deemed necessary based on the reasoning that the socialist countries would have difficulty in displacing U.S. imports from Canada for a variety of reasons, including Canada-United States proximity and resulting transportation cost savings, long-established trading relationships and the fact that U.S.-owned Canadian subsidiaries are probably responsible for many of the U.S. imports from Canada.

For some commodities, especially those which both the Soviet Union and Canada export in large quantities,¹⁶ or which are in "short supply," the resulting higher estimates may be too low.¹⁷

To derive the lower set of estimates for each year 1966-71, the commodity share of each socialist country in Canadian imports was computed and then applied to total U.S. imports of those commodities:

$$\left(\hat{M}_{us, sc}\right)_t = \left[\frac{(M_{c, sc})_t}{(M_c)_t} \right] \times [(M_{us})_t]$$

Where

$\left(\hat{M}_{us, sc}\right)_t$ = Lower estimate of U.S. imports of commodity i from each Socialist country under "normalized" trade conditions.

¹⁶ These commodities include wood and lumber, petroleum and petroleum products, fish and fish preparations, metalliferous ores, and nonferrous metals, some of which have become short supply commodities in the United States.

¹⁷ In cases in which the actual U.S. imports from the Socialist countries were larger than applications of the methodology indicated, the actual import figures were used.

$(M_{c, sc})_i$ = Canadian imports of commodity i from each Socialist country.

$(M_c)_i$ = Total Canadian imports of commodity i .

$(M_{us})_i$ = Total U.S. imports of commodity i .

Using the Canadian imports as a base for establishing the lower estimates seems to have merit in that Canada and the United States are roughly equidistant from the six Socialist countries, and thus pose similar transportation costs and problems. Further, Soviet and East European products have to compete with U.S. products in Canadian markets as they must in U.S. markets. Thus, to the extent that they are competitive in Canadian markets, it seems reasonable to assume that they will be similarly competitive in a U.S. market with "normalized" trading conditions.

The two sets of estimates thus derived were reviewed and where necessary, adjusted to reflect a commonsense appraisal of economic realities. For example, the Western European demand for imports of East European fruit, vegetables, and live animals is relatively high, while socialist opportunities for exports of those commodities to the United States are relatively negligible and quite small in the case of Canada, a major limiting factor here being the distance and the nature of the cargo. The same is true to some degree of such other commodity groups as sugar and sugar preparations, natural and manufactured gas, not to mention electric energy. In such cases the commodity groups were either adjusted according to the Canadian shares, the actual import values were used, or the commodity group was excluded from the estimate of U.S. imports from the socialist countries.

On the other hand, the import shares of the socialist countries in Canadian imports of certain commodities appeared to be much too high to be realistically applied to total U.S. imports. In such cases, the WE trade penetration factors were used in the calculation of both sets of estimates.

Actual U.S. imports of each commodity group from each socialist country were subtracted from both the upper and lower estimates of "normalized" trade condition imports in order to provide estimates of the socialist country exports to the United States lost by reason of discriminatory U.S. tariff and nontariff barriers.

b. Allocation of Socialist export losses between "MFN" and "other" causal factors

The export loss stemming from denial of MFN treatment was isolated from the loss due to nontariff barriers by determining the portion of imports in each commodity group which suffered significant tariff discrimination (more than 5 percent difference ad valorem between the MFN and non-MFN rate).¹⁸ These portions were then multiplied by the estimates of the total costs of all barriers to U.S.

¹⁸ The 5 percent dividing line was derived from sec. 202 of the Trade Expansion Act of 1962, as amended, cited in Malish, *op. cit.*, p. 14.

imports from the Socialist countries to obtain dollar estimates of the Socialist country export losses stemming from U.S. MFN denial.¹⁹

The residual loss for each commodity group, after deduction of the "MFN loss", was assumed to represent the impact of the nontariff trade barriers. Use of this technique obviously attributes all of the estimated cost of U.S. trade barriers to the MFN factor in those commodities that have differentials of more than 5 percent between the MFN rate and the non-MFN rate, even though very strong nontariff barriers might exist on these same commodities. Conversely, the technique attributes no tariff impact to those commodities with differentials of less than 5 percent between the MFN and the non-MFN rates.

Alternative methods of estimating the relative effects of MFN and non-MFN restrictions were investigated, including the reverse procedure of calculating non-MFN costs first and leaving MFN costs as the residual. However, these appeared to be less promising than the technique used, with all its limitations. The opportunities for bias in the results obtained are evident, and the method utilized can be seen as only a means of providing a rough estimate of the relative effects of the two kinds of barriers.

c. Projections of U.S. imports in 1976 and 1980 under "normalized" trading conditions

The projections of U.S. imports from the socialist countries in the study were obtained by the following procedure:

(1) 1976 and 1980 socialist exports to the OECD countries were projected by extending a "least squares" linear regression fit through actual OECD import data for the years 1966 through 1971. Projections were made on a commodity by commodity basis at the two-digit level.

(2) The U.S. shares of total OECD imports of each commodity from each socialist country that would have resulted from "normalized" trading conditions in each of the years during the period 1966-71 were calculated, averaged, and multiplied times the projected 1976 and 1980 OECD imports from the socialist countries.

In notation:

The linear regression is of the form:

$$[(M_{occd, sc})_i]_t = a + bt$$

¹⁹ The derivation of tariff rates is based mostly on the four- or five-digit SITC commodity groupings and, therefore, involves varying degrees of value judgments, since the U.S. rates of duty are based on the seven-digit commodity listings. These judgments were further extended to the two-digit SITC aggregations, as presented in this paper, in order to reduce the number of commodity groups to a manageable size. For example, based on the five-digit commodity breakdown, the 1970 West European imports from the U.S.S.R. showed that, if aggregated to the two-digit level, none of the metalliferous ores (SITC 28), four-fifths of the chemical elements and compounds (#50), and all of the transport equipment (#73) would have had a significant tariff differential. These ratios may have been different on imports from other Socialist countries. In addition, due to the limitations of time, the U.S. tariff rates were derived for the 1970 imports only, and then applied to the U.S. imports from the Socialist countries for the other 5 years, under the implied assumption that the commodity structure of U.S. imports during the whole 6-year period remained unchanged within each two-digit group.

Where $(M_{oecd, sc})_i = OECD$ country imports of commodity i ; a and b are derived coefficients; and t are the years 1966 through 1971. Both higher and lower projections for 1976 and 1980 are derived by:

$$[(M_{us, sc})_i] = \left(\frac{\sum_{t=1966}^{1971} \left[\frac{(\hat{M}_{us, sc})_{iH \text{ or } L}}{(M_{oecd, sc})_i} \right]_t}{6} \right) (M_{oecd, sc})$$

H 1976 _p	1976 _p
or or	or
L 1980 _p	1980 _p

Where

$[(M_{us, sc})_i]$ = Projected higher or lower U.S. imports of commodity i from the Socialist country in 1976 or 1980; under normalized trade conditions

H 1976_p or or L 1980_p

$(\hat{M}_{us, sc})_{iH \text{ or } L}$ = Higher or lower estimates of U.S. imports of commodity i from the Socialist country, based on normalized conditions.

$(M_{oecd, sc})_i$ = Actual OECD imports of commodity i from the Socialist country; and

$(M_{oecd, sc})$ 1976_p or 1980_p = Projected OECD imports of commodity i from the Socialist country in 1976 or 1980

The methodology utilized is necessarily simplistic and subject to several criticisms. For example, it fails to take account of many political and economic factors which may have an impact on our future imports from the Eastern European countries and the U.S.S.R. since it is based on the assumption that growth of exports of the commodities involved will follow the 1966-71 trend in the trade with OECD countries.

If détente with the United States and Western Europe and the trend toward normalizing trade conditions continue, however, the growth rates of exports from the socialist countries to the OECD area are expected to rise, at least during the period of adjustment to new higher levels of trade, as Eastern Europe and the U.S.S.R. seek to earn hard currency to finance their increased imports, and as the output from joint venture projects and other forms of East-West economic cooperation is exported to western markets. Possible adjustments in production for export to the OECD area may also occur as a result of changes in the orientation of the economic plans in Eastern Europe and/or the U.S.S.R. either for domestic purposes, for integration within COMECON, or to meet new market demands emerging in the West with the onset of commodities in short supply.²⁰

The methodology for projections is also open to criticism because it uses exports to the OECD area for only 6 years (1966-71) to derive a

²⁰ It should be noted that progress in integration foreseen by the members of COMECON is not expected to cause any difficulties in the expansion of trade with the West. According to an eminent Polish economist, implementation of a program for intensification of economic integration of the COMECON countries may even introduce some additional incentives for a further expansion of trade between East and West. See Zbigniew Kamecki, "Economic Integration of the COMECON Countries and Possibilities of Expanding Trade Between East and West" *Sprawy Międzynarodowe* (International Affairs), September 1973.

regression line which is extended through 1980. Extrapolation on the basis of so few years has its shortcomings but the use of relatively recent data was considered more valid than older data that would probably provide a less accurate reflection of lessening of cold war tensions and hence a less valid basis for future projections.

The data on total imports to Western Europe, Canada, the United States, and the OECD area and imports from each of the socialist countries included in this study, used in deriving the estimates for 1966 and 1971 and the projections for 1976 and 1980, were all in current prices. As a result, the rate of inflation inherent in the statistics used for 1966 through 1971 is also present in the projections derived. To the extent that the actual rate of inflation that occurs between 1972 and 1980 is greater or lesser than that reached during the 6 preceding years, the projections will be biased downward or upward.

III. ESTIMATES OF "NORMALIZED" U.S. IMPORTS FROM THE SOCIALIST COUNTRIES: 1966 AND 1971

A. Total Imports Under "Normalized" Conditions

Our actual imports from the six socialist countries under review in 1966 amounted to only slightly more than one-third of 1 percent of our total imports. By 1971, in spite of the increase in our imports from most of these countries—Bulgaria and Czechoslovakia being the two exceptions—their overall share in our rapidly growing imports dropped to one-fourth of 1 percent. In contrast, the proportions of Great Britain's imports from these countries in 1971 amounted to 2 percent, that of France 2.26 percent, and that of Japan 2.78 percent, representing a combined value of over \$1.5 billion. When compared with the \$115 million of our imports, and bearing in mind that the size of the U.S. population in 1971 roughly approached the combined size of the population of Great Britain, France, and Japan, it becomes clear that our trade with Eastern Europe and the U.S.S.R. was very much under what may be called a normal or expected level. This was caused by various factors, most of which are discussed in this chapter.

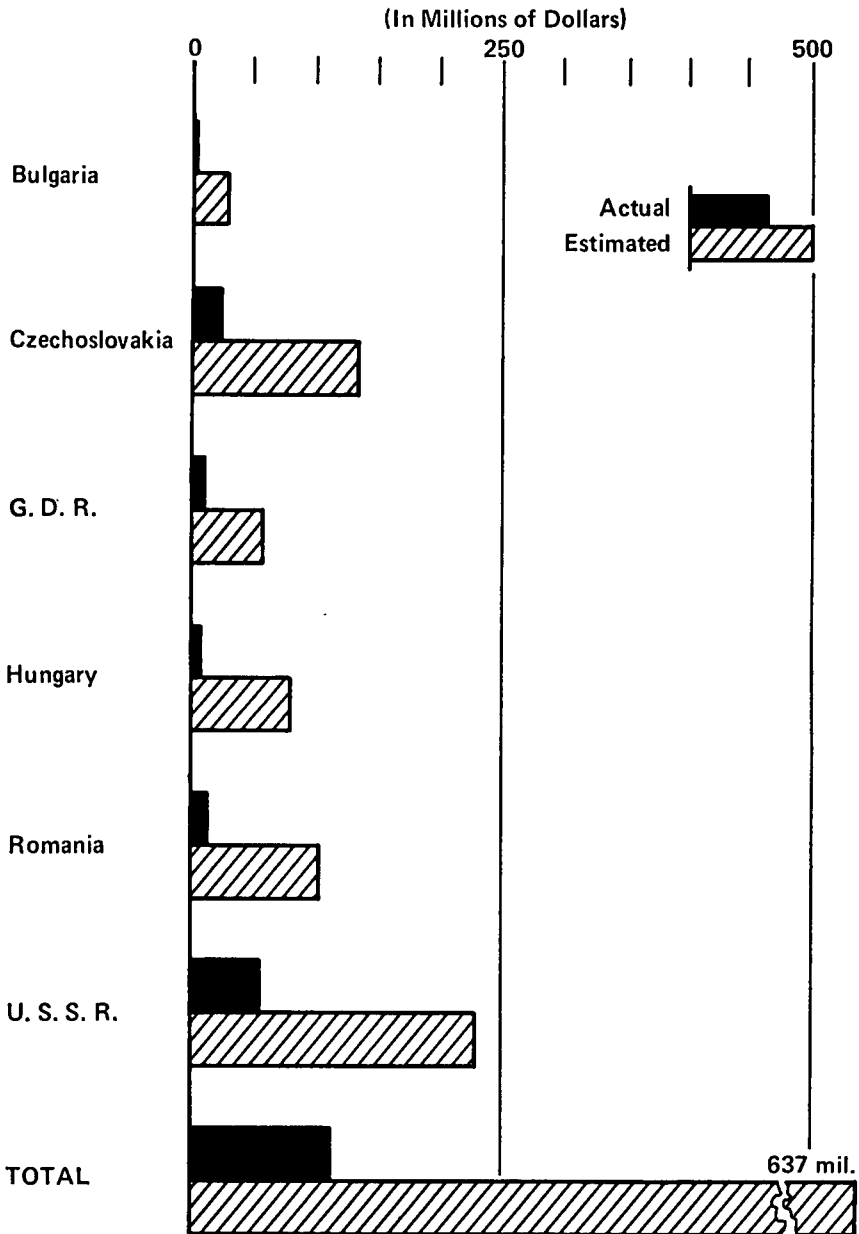
The two sets of estimates of what U.S. imports from Eastern Europe and the U.S.S.R. would have been under "normalized" conditions, shown in table 6, are based on Western European and Canadian import shares, respectively, as explained in the methodology portion of this paper. The results are the higher and lower estimates of our imports from each socialist country in 1966 and 1971, had our conditions for trading with these countries been the same as those that existed between them and Western Europe and Canada.

The discussion of our "normalized" 1966-71 imports in this chapter will be focused on the higher estimates since they seem to be much more realistic than those based on the Canadian import shares.²¹ Further, these higher estimates will generally be more interesting for policy-making purposes since they represent, from the viewpoint of the socialist countries, the larger sum of their losses, while from the standpoint of U.S. manufacturers, they also represent the more pessimistic view of what they might fear would be a flood of socialist goods released by the granting of MFN.

²¹ The Canadian demand for East European and Soviet goods appears to be erratic and in many—if not most—cases the low estimates of particular commodities are equal to our actual imports. However, in a few instances, the figures based on the Canadian import shares were judged to be more reasonable than those derived from the Western European import shares and were used for both the high and low estimates.

FIGURE 1.

U.S. Imports from the U.S.S.R. and Eastern Europe: 1971



SOURCE: Table 6

82-765-74-40

As indicated in table 6 and figure 1, had our trade relations been normalized; our imports from Eastern Europe and the Soviet Union have been calculated to have been about 4.3 times larger in 1966 and about 5.6 times larger in 1971 than they actually were. However, at a total of \$636.9 million of 1971 imports, the normalized volume would still have been relatively small indeed. And, when compared with the volume of transactions with our traditional trading partners, the high estimates of our imports from the socialist countries look surprisingly small. For instance, the estimates of our imports from all six countries in 1971 amount to only about 75 percent of our actual imports from Belgium-Luxembourg, and our 1971 imports from Switzerland were larger than the combined estimates for the German Democratic Republic, Hungary, Romania, and the Soviet Union.²²

TABLE 6.—ESTIMATES OF U.S. IMPORTS FROM THE SOCIALIST COUNTRIES UNDER NORMALIZED CONDITIONS, BY COUNTRY: 1966 AND 1971

[In thousands of dollars]

	Actual U.S. imports ¹	Percent of total U.S. imports ²	Estimated U.S. imports		Percent of total U.S. imports ²		Estimated U.S. imports as a percent of actual O.E.C.D. imports ³	
			High estimate	Low estimate	High estimate	Low estimate	High estimate	Low estimate
1966:								
Bulgaria.....	2,518	0.02	19,515	3,754	0.13	0.02	9.97	1.92
Czechoslovakia.....	27,315	.12	65,867	44,322	.29	.19	14.26	9.60
German Democratic Republic.....	8,071	.04	38,008	10,954	.17	.05	13.47	3.88
Hungary.....	3,548	.02	40,370	14,677	.19	.07	12.32	4.48
Romania.....	4,766	.02	39,364	6,862	.19	.03	11.77	2.05
U.S.S.R.....	49,325	.26	213,879	63,508	1.11	.33	12.28	3.65
1971:								
Bulgaria.....	2,489	.01	29,314	5,929	.12	.01	11.86	2.40
Czechoslovakia.....	23,208	.06	134,169	89,295	.32	.22	16.41	10.92
German Democratic Republic.....	9,888	.03	57,778	15,159	.15	.04	13.72	3.60
Hungary.....	7,673	.02	81,609	37,003	.21	.09	14.23	6.45
Romania.....	13,665	.03	103,668	43,434	.25	.11	16.67	6.98
U.S.S.R.....	56,210	.14	230,343	83,113	.57	.21	8.11	2.93

¹ Excludes special transactions not classified according to kind and certain other commodities of which the estimates of actual imports were under \$100,000.

² Based on a sum of U.S. imports of those commodities for which the high estimates in a particular year and country amounted to at least \$100,000, or for which the high estimates in any year during the 1966-71 period reached \$1,000,000.

³ Based on a sum of O.E.C.D. imports of the commodities as defined in footnote 1.

Source: Tables A1-A6.

In general, the estimates of overall U.S. imports from Eastern Europe and the Soviet Union appear to be reasonable when compared to actual OECD imports from the same six countries. The highest estimate of our imports in terms of the OECD imports in 1966 was registered for Czechoslovakia and in 1971 for Romania. In the first case, Czechoslovak exports to the OECD countries were about seven times larger than our estimated imports would have been, while in the second case the Romanian shipments were six times larger than

²² This may suggest that the application of West European import shares to the U.S. imports, reduced by the shipments from Canada, may in some cases underestimate our potential imports from the socialist countries. This may be particularly true with respect to those commodities of which both they and Canada are large exporters. One of the most obvious of such commodities is wood which we import almost exclusively (93 percent in 1971) from Canada. Under normalized conditions, the Soviet Union may very well become a complementary or alternative supplier of wood and lumber.

our estimates. It seems, therefore, that a partial redirection of the Soviet and East European exports prior to their developing expanded production, if it were necessary, would not have caused any major disruption to the OECD market.

B. Commodity Structure Under "Normalized" Conditions

The commodity group highest on the potential import lists of the United States from most of the socialist countries, in 1971, was iron and steel (cf., tables A1-A6.) The total amount of the estimates for all six countries of slightly over \$92 million would have represented less than 3.4 percent of our actual 1971 iron and steel imports (see table 7). Based on the examination of production and total export statistics, it appears that none of the socialist countries would have experienced insoluble difficulties in meeting its share of estimated deliveries. Transportation costs would probably not have been higher than those of our other distant iron and steel suppliers, such as Japan, South Africa, or Poland.

TABLE 7.—ESTIMATES OF U.S. IMPORTS FROM THE SOCIALIST COUNTRIES UNDER NORMALIZED CONDITIONS BY MAJOR COMMODITY GROUP: 1966 AND 1971

(In thousands of dollars)

SITC No.	Commodity group	Total U.S. imports	Actual U.S. imports from Socialist countries	Estimated U.S. imports		Percent of total U.S. imports		
				High estimate	Low estimate	Actual	Estimated High Low	
1966								
67	Iron and steel.....	1,304,955	12,028	33,461	18,046	0.92	2.56	1.38
33	Petroleum and petroleum products.....	2,127,136	392	61,717	392	.02	2.90	.02
84	Clothing.....	607,570	304	8,330	7,865	.05	1.37	1.29
C1	Meat and meat preparations...	599,513	1,293	20,910	1,406	.22	3.49	.23
68	Nonferrous metals.....	1,551,721	20,133	51,347	20,155	1.30	3.31	1.30
89	Miscellaneous manufactured articles.....	905,710	3,850	15,536	6,240	.43	1.72	.69
85	Footwear.....	189,906	4,211	6,482	4,367	2.22	3.41	2.30
66	Nonmetallic mineral manu- facturing.....	716,649	9,597	27,299	15,162	1.34	3.81	2.12
71	Machinery other than electric...	1,677,143	10,173	15,067	10,476	.61	.90	.62
73	Transport equipment.....	2,134,611	1,703	7,597	1,703	.08	.36	.08
03	Fish and fish preparations.....	552,936	644	12,520	644	.12	2.26	.12
72	Electrical machinery, appara- tus and appliances.....	1,015,886	212	4,704	251	.02	.46	.02
1971								
67	Iron and steel.....	2,725,402	4,087	92,076	35,237	.15	3.38	1.29
33	Petroleum and petroleum products.....	3,323,321	4,393	86,910	4,393	.13	2.62	.13
84	Clothing.....	1,521,123	2,091	46,884	43,427	.14	3.08	2.85
01	Meat and meat preparations...	1,050,363	5,175	38,308	5,175	.49	3.65	.49
68	Nonferrous metals.....	1,552,716	22,762	31,964	22,762	1.47	2.06	1.47
89	Miscellaneous manufactured articles.....	1,968,884	5,751	29,017	9,116	.29	1.47	.46
85	Footwear.....	758,095	6,181	24,552	17,152	.82	3.24	2.26
66	Nonmetallic mineral manu- facturing.....	1,010,444	18,478	23,410	25,861	1.83	2.32	2.56
71	Machinery other than electric...	3,411,260	7,840	22,473	10,940	.23	.66	.32
73	Transport equipment.....	7,935,979	2,719	21,989	2,759	.03	.28	.03
03	Fish and fish preparations.....	879,154	111	20,856	145	.01	2.37	.02
72	Electrical machinery, appara- tus and appliances.....	2,556,548	1,109	19,010	2,911	.04	.74	.11

Source: Tables A1-A6.

The second commodity, in terms of value, that the United States could have imported from the socialist countries is petroleum and petroleum products. The 1971 estimate of our "normalized" petroleum imports from this area was almost \$87 million of which \$76.3 million, or about 88 percent, would have come from the Soviet Union and most of the rest (9.8 percent) from Romania. However, the estimates of our imports of petroleum, like the estimates of our imports of wood and lumber, fish and fish preparations, metalliferous ores, nonferrous metals, or of any other commodity of which Canada is our large supplier, may be considerably understated, as mentioned in chapter II. As in the case of wood, the understatement of the volume of petroleum that would have been shipped affects almost exclusively the estimates of our imports from the U.S.S.R.

A distant third on our potential shopping list from Eastern Europe and the U.S.S.R. is clothing. The 1971 estimate is close to \$47 million, with Hungary, Romania (each supplying about \$16 million worth), and Czechoslovakia (\$12 million) being the primary exporters. The "normalized" total of clothing imports from these three countries would add up to less than 3 percent of our actual imports of clothing in 1971.

The next three commodities in rank order of U.S. imports under "normalized" conditions are meat and meat preparations (\$38 million), nonferrous metals (\$32 million), and miscellaneous manufactured articles (\$29 million). All five East European countries are already exporters of meat, primarily pork, products to the United States, but their shipments could have been substantially increased. Ham from Czechoslovakia, like that from Poland, is of excellent quality and Hungarian dry salami, like Sibiu salami from Romania, are world famous delicacies. Most of the estimates of our imports of nonferrous metals consist of our actual imports from the U.S.S.R. (over \$22 million), supplemented by the estimates coming primarily from Romania (\$3.3 million) and Bulgaria (\$2.7 million). U.S. imports in 1971 of miscellaneous manufactured products from all six countries amounted to \$5.8 million. This value could have been raised considerably, especially by increasing our imports from the German Democratic Republic (to \$9.5 million), Czechoslovakia (to \$8.2 million), and Hungary (to \$5 million).

To sum up, the estimates of our imports from the six socialist countries covered in this paper show that, even under "normalized" trading conditions, our current import suppliers would not have been substantially displaced by goods of Soviet or East European origin. Of the 12 commodity groups shown in table 7, the four largest would have accounted for between 3 and 4 percent of our total imports, while the shares of the next four categories in U.S. imports would have been only between 2 and 3 percent, and three of the remaining four amounted to less than 1 percent.

C. Estimated Effect of U.S. Trade Restrictions

1. TOTAL EFFECT

For the purpose of this paper, the effect of trade restrictions to the socialist countries is defined in terms of the value of their unrealized shipments to the United States, and derived as the difference between our estimates of the "normalized" and actual imports from each of the six countries in 1966 and 1971. However, it should be pointed out that the effect or loss due to the lack of normal trading relations between the two areas has not been entirely borne by just one of the two potential trading partners. On the one hand, U.S. exports have suffered because of retaliatory (high) tariff rates and practices against our products imposed by the socialist countries²³ and by their restricted possibilities to earn more dollars in order to buy more from us. Instead, they have either reduced their overall purchases or purchased more from our competitors, except in special or emergency cases, where we may have been the only available supplier. On the other hand, the socialist countries may have withheld from us, as a retaliation for our restrictions, some commodities which may be in short supply on the U.S. market, such as certain raw materials and various metals, which they readily could sell to other buyers and thus may have forced us to pay more elsewhere.

The total effect of U.S. trade restrictions to the six socialist countries discussed in this report was estimated to have been \$321 million losses of exports to the United States in 1966 and \$524 million in 1971 (see table 8). More than one-half of the 1966 loss and about one-third of the 1971 loss was borne by the Soviet Union (table 12). Compared with actual shipments from each country to the United States in 1971, the highest relative loss was incurred by Bulgaria (92 percent of estimated imports) and Hungary (91 percent), followed by Romania (87 percent), the German Democratic Republic (83 percent), Czechoslovakia (83 percent), and the U.S.S.R. (76 percent). It seems to follow that under the restrictions existing in 1971, Soviet products found a larger market in the United States than the products offered for export by the other five countries. In 1966, the products from Czechoslovakia were proportionately most successful on our market. This may have been due to particular demands, increased marketing efforts, or a combination of these and other factors bearing on the composition of our imports in those years.

²³ Since the Hungarian tariff schedules differentiate tariff rates by three columns, with column II being applicable to imports from the countries having the MFN agreement with Hungary, while column I contains preferential rates of duty (none is listed in the schedules), the MFN status may make importation of certain products from Western countries still difficult, even though it may be harmful to the Hungarian economy. See Jozsef Kovacs, "One Obstacle to the Production System," *Függetlő* (Observer), Nov. 21, 1973, p. 13.

TABLE 8.—ESTIMATED COST OF U.S. TRADE RESTRICTIONS TO SOCIALIST COUNTRIES, BY COUNTRY: 1966 AND 1971

[In thousands of dollars]

Country	Cost of MFN denial and of non-MFN factors					
	Total		MFN		Non-MFN cost	
	High estimate	Low estimate	High estimate	Low estimate	High estimate	Low estimate
1966:						
Bulgaria.....	16,997	1,236	12,745	808	4,252	428
Czechoslovakia.....	38,552	17,007	26,750	12,467	11,802	4,540
German Democratic Republic.....	29,937	2,883	22,659	2,763	7,278	120
Hungary.....	36,822	11,129	19,414	7,222	17,408	3,907
Romania.....	34,620	2,096	13,291	930	21,329	1,166
U.S.S.R.....	164,554	14,183	29,622	4,604	134,932	9,579
Total.....	321,482	48,534	124,481	28,794	197,001	19,740
1971:						
Bulgaria.....	26,825	3,440	20,111	2,668	6,714	772
Czechoslovakia.....	110,961	66,087	79,210	46,531	31,751	19,556
German Democratic Republic.....	47,900	5,271	38,653	3,762	9,247	1,509
Hungary.....	73,946	29,330	42,401	18,971	31,545	10,359
Romania.....	90,003	29,769	64,409	25,372	25,594	4,397
U.S.S.R.....	174,133	26,903	47,573	21,806	126,560	5,097
Total.....	523,768	160,800	292,357	119,110	231,411	41,690

Source: Tables C1-C6.

The commodity group affected most by the U.S. restrictions on imports from the socialist countries was iron and steel. The effect of our restrictions on iron and steel from those countries in 1971 was estimated at \$88 million. It was closely followed by the effect of restrictions on our imports of petroleum, \$82.5 million. Clothing was the distant third commodity group in terms of the effects of our import restrictions, \$44.8 million (see table 9).

TABLE 9.—Total Effects of Import Restrictions on Major Commodity Groups: 1971

[In millions of dollars]

Commodity group	Unrealized imports
Iron and steel.....	88.0
Petroleum and petroleum products.....	82.5
Clothing.....	44.8
Meat and meat preparations.....	33.1
Miscellaneous manufactures.....	23.3
Fish and fish preparations.....	20.7
Transport equipment.....	19.3
Footwear.....	18.4
Electrical machinery and apparatus.....	17.9

Source: Table 10.

2. THE MFN COST TO THE SOCIALIST COUNTRIES

As shown in tables C1-C6, and as summarized in table 12, the largest portion of the differential between potential and actual imports was caused by our denial of most-favored-nation treatment. Only in the case of the U.S.S.R. was the fraction of the differential due to the nontariff factors larger in both 1966 and 1971 and in the case of Romania in 1966. Moreover, the value of the trade not realized due to

MFN vis-a-vis the nontariff factors between 1966 and 1971 rose considerably for five of the socialist countries, Bulgaria being the only exception. An especially dramatic increase in the proportions of lost potential exports due to the lack of MFN, from 39 to 72 percent, was registered for Romania, perhaps indicating a fundamental restructuring of Romanian exports to Western Europe during the 5-year period. This restructuring appeared to lead Romania toward commodities for which the U.S. tariff rate differential is significant. The second largest increase due to MFN denial, from 18 to 27 percent, was shown by the estimates derived for the U.S.S.R. If this trend of U.S.S.R. exports moving toward commodities on which the MFN tariff advantage is significant continues, the providing or withholding of MFN treatment to the Soviet Union may determine whether trade between the two countries will grow, stagnate, or decline. The relative size of the value of unrealized exports due to MFN denial for the other five socialist countries also points to the issue of MFN status as potentially crucial with respect to the future expansion of our trading relationships with these nations.

TABLE 10.—ESTIMATED COST OF U.S. TRADE RESTRICTIONS TO SOCIALIST COUNTRIES, BY SELECTED COMMODITY GROUP: 1966 AND 1971

[In thousands of dollars]

SITC No.	Commodity group	Cost of MNF denial and of non-MFN factors		Cost of MFN denial		Cost of non-MFN factors	
		High esti- mate	Low esti- mate	High esti- mate	Low esti- mate	High esti- mate	Low esti- mate
1966							
	Total.....	321,482	48,534	124,481	28,794	197,001	19,740
67	Iron and steel.....	21,433	6,018	13,996	4,014	7,437	2,004
33	Petroleum and petroleum products.....	61,325	0	0	0	61,325	0
84	Clothing.....	7,990	7,525	5,035	4,239	2,995	3,286
01	Meat and meat preparations.....	19,617	113	4,916	23	14,701	90
68	Nonferrous metals.....	31,216	24	10,418	12	20,798	12
89	Miscellaneous manufactured articles, n.e.s.....	11,091	1,795	7,350	1,052	3,741	743
85	Footwear.....	2,271	156	1,599	111	672	45
66	Nonmetallic mineral manufactures, n.e.s.....	17,702	5,565	3,514	5,560	14,188	5
71	Machinery other than electric.....	4,894	303	4,186	273	706	30
73	Transport equipment.....	5,894	0	5,894	0	0	0
03	Fish and fish preparations.....	11,876	0	2,867	0	9,009	0
72	Electrical machinery, apparatus and appliances.....	4,492	39	4,492	39	0	0
	Other.....	121,681	26,996	60,214	13,717	61,467	13,525
1971							
	Total.....	523,768	160,800	229,357	119,110	131,411	41,090
67	Iron and steel.....	87,989	31,150	61,294	20,661	26,695	10,489
33	Petroleum and petroleum products.....	82,517	0	0	0	82,517	0
84	Clothing.....	44,793	41,336	31,116	28,534	13,677	12,802
01	Meat and meat preparations.....	33,133	0	9,263	0	23,870	0
68	Nonferrous metals.....	9,202	0	6,353	0	2,849	0
89	Miscellaneous manufactured articles, n.e.s.....	23,266	3,365	15,552	1,807	7,714	1,558
85	Footwear.....	18,371	10,971	15,303	9,009	3,068	1,962
66	Nonmetallic mineral manufactures, n.e.s.....	4,932	7,383	4,932	7,383	0	0
71	Machinery other than electric.....	14,633	3,100	11,223	2,502	3,410	598
73	Transport equipment.....	19,270	40	19,270	40	0	0
03	Fish and fish preparations.....	20,745	34	4,917	8	15,828	26
72	Electrical machinery, apparatus, and appliances.....	17,901	1,802	17,901	1,802	0	0
	Other.....	147,016	61,619	95,233	47,364	51,783	14,255

Source: Tables C1—C6.

The total value of unrealized exports due to MFN denial to the U.S.S.R. and the five Eastern European countries for 1966 was estimated at \$124 million. In the subsequent 5 years these effects more than doubled, reaching \$292 million in 1971 (table 10). The single commodity group most affected by the lack of MFN status in 1966 and 1971 was iron and steel. Table 11 shows the losses incurred by each of the countries.

TABLE 11.—*Estimated losses due to MFN denial on iron and steel, by country: 1971*

<i>Country</i>	[In millions of dollars]	<i>Unrealized exports</i>
Czechoslovakia.....		20.6
Romania.....		16.0
U.S.S.R.....		9.4
Bulgaria.....		7.2
Hungary.....		7.2
G.D.R.....		1.0
Total.....		61.4

Source: Tables C1-C6.

The second commodity most affected by the U.S. withdrawal of MFN treatment from the socialist countries was clothing, for which the 1971 estimated cost was \$31.1 million. Although our imports of clothing from Czechoslovakia and Hungary would have probably been higher than those estimated for Romania, the lack of MFN treatment was, in this case, more costly to Romania (\$14.9 million, or 47.9 percent of the total) than to any other East European country. This was caused by the differences in particular proportions of clothing items estimated to have been shipped to the U.S. by the five countries; the U.S.S.R. was found not to have been among the potential important exporters of clothing. Romanian exports, as well as much smaller estimated exports from the German Democratic Republic and Bulgaria, would have consisted mostly of outerwear, underwear, and clothing accessories on which the tariff rate differentials are significant, while a large portion of our estimated imports from Czechoslovakia and Hungary would have contained those textile manufactures on which the tariff differentials were either small or none.

The next commodity ranked according to the differential between potential and actual imports caused by the absence of an MFN agreement with Eastern Europe and the U.S.S.R. was transport equipment. The value in 1971 was estimated at \$19.3 million, in which Czechoslovakia had 35.2 percent (mostly passenger motor vehicles, lorries, trucks, motorcycles and bicycles), the German Democratic Republic 34.7 percent (roughly the same items as those shown for Czechoslovakia), the U.S.S.R. 18.1 percent (mostly ships and boats, aircraft, and passenger motor vehicles), and Romania about 12.0 percent (mostly ships and boats).

Other commodity groups high on our potential import list and also bearing a substantial reduction due to MFN denial included electrical machinery, apparatus, and appliances (estimated cost \$17.9 million in 1971), miscellaneous manufactured articles (\$15.6 million in 1971), and footwear (\$15.3 million). In the first of the three commodity groups, Hungary (electric lamps, bulbs, transistors, switchgear, telecommunications equipment), would have had the largest share of exports (27.4 percent); followed by the German Democratic Republic (electric power machinery, insulated wire, cable, switchgear), and Czechoslovakia (electric power machinery, telecommunications equipment, transistors).

The export loss of miscellaneous manufactured articles was borne primarily by the German Democratic Republic (46.8 percent, mostly musical instruments, sporting goods, and toys), and Czechoslovakia (24.4 percent, mostly musical instruments, toys, sporting goods and printed matter). The loss of unrealized exports of footwear due to the lack of the MFN status was estimated to have been costliest to Romania (\$7.0 million, or 45.8 percent of total cost).

Of the remaining commodity groups shown in table 10, the most important, in terms of the estimated MFN loss, were nonelectric machinery (\$11.2 million in 1971), meat and meat preparations (\$9.3 million), and nonferrous metals (\$6.4 million). Czechoslovakia and the Soviet Union were most discriminated against with respect to nonelectric machinery, bearing 35.7 and 33.0 percent, respectively, of the total loss. The Czechoslovak shipments would probably have consisted mostly of textile machinery, machine and powered tools, office machines, heating and cooling equipment, and pumps and centrifuges. The estimated shipments from the Soviet Union would have included machine tools, nonroad tractors, mechanical handling equipment, and nonair piston engines. The MFN loss of meat and meat preparations was shared essentially by Bulgaria (\$3.2 million, or 34.4 percent), Hungary (26.9 percent), Romania (20.4 percent), and Czechoslovakia (16.1 percent). Although our actual imports of nonferrous metals from the U.S.S.R. in 1971 were larger than the combined estimates for all five Eastern European countries, the MFN loss was shared exclusively by the East European states, especially Romania (40.6 percent of the total) and Bulgaria (28.1 percent). This was caused, aside from the definition of the MFN effect in this paper, by the differences in the composition of nonferrous metals that were or would have been imported from each of the six countries. The Soviet shipments consisted mostly of platinum group metals, which are duty-free, and nickel, on which the rate of duty differential is non-significant. On the other hand, the estimated shipments from Romania, Bulgaria, and other East European countries would have included considerable quantities of aluminum alloys, refined copper, zinc alloys, and silver for which the difference between the full and MFN tariff rates is significant.

TABLE 12.—PERCENT DISTRIBUTION OF THE COST OF U.S. TRADE RESTRICTIONS TO THE SOCIALIST COUNTRIES: 1966 AND 1971

[Figures are estimated]

	Total		Bulgaria		Czechoslovakia		G.D.R.		Hungary		Romania		U.S.S.R.	
	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
1966¹														
Total cost.....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
MFN cost.....	38.72	59.33	74.98	65.37	69.39	73.31	75.69	95.84	52.72	64.89	38.39	44.37	18.00	32.46
Non-MFN cost.....	61.28	40.67	25.02	34.63	30.61	26.69	24.31	4.16	47.28	35.11	61.61	55.63	82.00	67.54
1971¹														
Total cost.....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
MFN cost.....	55.82	74.07	74.97	77.56	71.39	70.41	80.70	71.37	57.34	64.68	71.56	85.23	27.32	81.05
Non-MFN cost.....	44.18	25.93	25.03	22.44	28.61	29.59	19.30	28.63	42.66	35.32	28.44	14.77	72.68	18.95
1966²														
Total cost.....	100.00	100.00	5.29	2.55	11.99	35.04	9.31	5.94	11.45	22.93	10.77	4.32	51.19	29.22
MFN cost.....	100.00	100.00	10.24	2.81	21.49	43.30	18.20	9.59	15.59	25.08	10.68	3.23	23.80	15.99
Non-MFN cost.....	100.00	100.00	2.16	2.17	5.99	23.00	3.69	.61	8.84	19.79	10.83	5.91	68.49	48.52
1971²														
Total cost.....	100.00	100.00	5.12	2.14	21.18	41.10	9.15	3.28	14.12	18.24	17.18	18.51	33.25	16.73
MFN cost.....	100.00	100.00	6.88	2.24	27.10	39.06	13.22	3.16	14.50	15.93	22.03	21.30	16.27	18.31
Non-MFN cost.....	100.00	100.00	2.90	1.85	13.72	46.91	4.00	3.62	13.63	24.85	11.06	10.55	54.69	12.22
1966³														
Total cost.....	77.09	33.69	87.10	32.92	58.53	38.37	78.76	26.32	91.21	75.83	87.95	30.55	76.94	22.33
MFN cost.....	29.85	19.99	65.31	21.52	40.61	28.13	59.62	25.22	48.09	49.21	33.76	13.75	13.85	7.25
Non-MFN cost.....	47.24	13.70	21.79	11.40	17.92	10.24	19.14	1.10	43.12	26.62	54.19	17.00	63.09	15.08
1971³														
Total cost.....	82.25	58.70	91.51	58.02	82.70	74.01	82.90	34.77	90.61	79.26	86.82	68.54	75.60	32.37
MFN cost.....	45.90	43.48	68.61	44.50	59.04	52.11	66.90	24.82	51.96	51.27	62.13	58.42	20.65	26.24
Non-MFN cost.....	36.34	15.22	22.90	13.52	23.66	21.90	16.00	9.95	38.65	27.99	24.69	10.12	54.95	6.13

¹ Country by kind of cost.² Cost by country.³ Cost as a proportion of estimated U.S. imports from each country.

Source: Based on tables A1-A6 and C1-C6.

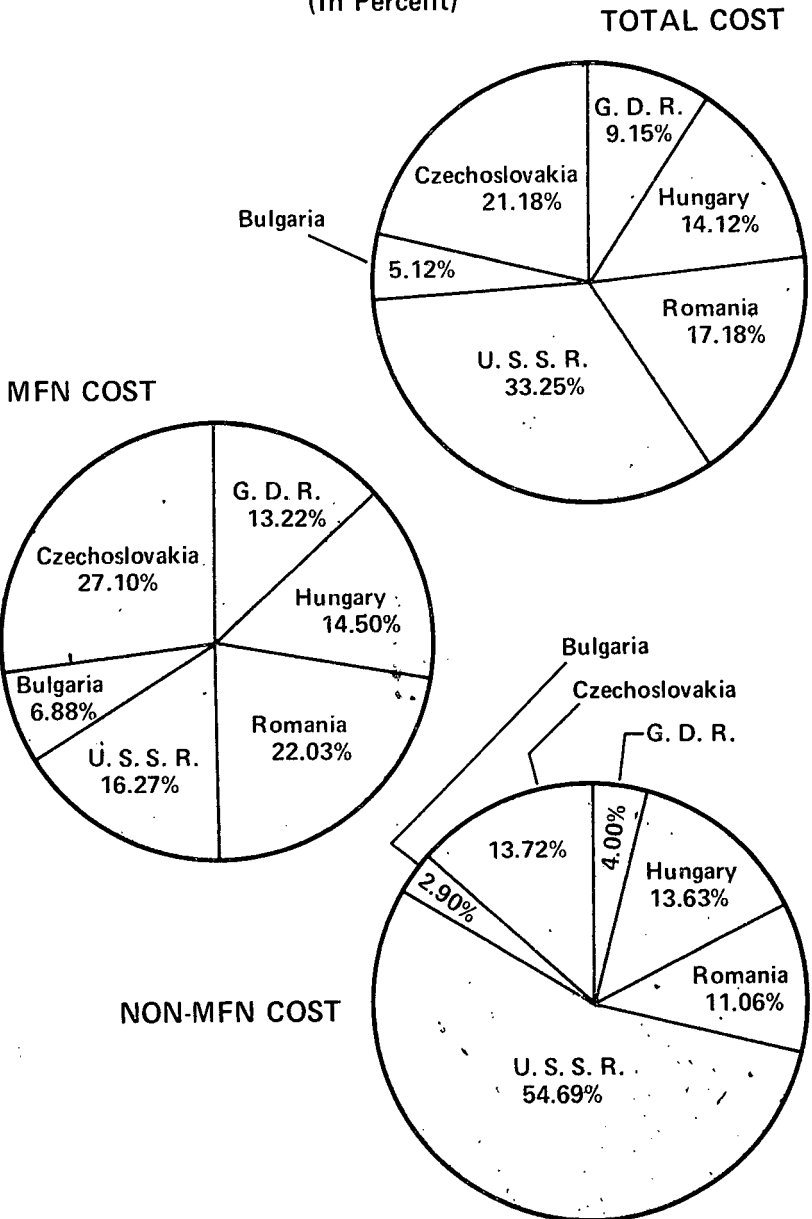
3. NONTARIFF BARRIER EFFECTS ON THE SOCIALIST COUNTRIES

As mentioned in section 2, the export losses due to nontariff barriers to trade with the United States were greater for the U.S.S.R. than the cost of our denial of the MFN treatment in both 1966 and 1971. The same was true for Romania in 1966. For the other countries, although the denial of the MFN status was more significant, nontariff barriers still had a considerable impact on their exports. The nontariff barriers effect in 1966 ranged from 24 percent of the total export loss due to U.S. restrictions to trade with the German Democratic Republic to 82 percent of the total for the U.S.S.R. By 1971, the range was from 19 percent for the German Democratic Republic to 73 percent for the U.S.S.R., reflecting the increasing importance of the MFN status in our trade with the Socialist countries (see fig. 2). While the effects

FIGURE 2.

Cost of U.S. Trade Restrictions to the U.S.S.R. and Eastern Europe by Country: 1971

(In Percent)



of the non-MFN factors declined in importance over the estimating period relative to the MFN effects for all countries except Bulgaria, the losses increased significantly in absolute terms for all countries with the exception of the U.S.S.R. According to the estimates (see table 8) the effects of our non-MFN barriers to trade with Czechoslovakia increased by far the most, rising 2½ times during the years 1966 through 1971. The non-MFN effects for Hungary rose 81 percent during the same 6 years, those for Bulgaria grew 58 percent, those for the German Democratic Republic and Romania increased more than 20 percent, while the cost to the U.S.S.R. of the non-MFN factors declined 6 percent. As a result, the total value lost due to our nontariff barriers to trade with the Socialist countries rose by 17 percent during the estimating period, from \$197 million to over \$231 million.

The single commodity group by far the most affected by the existence of our nontariff barriers in 1966 and 1971 was petroleum and petroleum products (table 13). Since the MFN tariff differential for this commodity group is insignificant, all of the import losses due to U.S. restrictions are considered non-MFN effects. These effects, attributable in part to U.S. quotas on petroleum imports and their allocation, are estimated at \$61 million in 1966 and \$83 million in 1971. The Soviet Union, being by far the largest shipper of petroleum and petroleum products among the Socialist countries bore 79 percent of the 1966 reduction and 92 percent of the 1971 reduction, with Romania absorbing almost all of the remainder.

TABLE 13.—ESTIMATED COST OF THE NON-MFN FACTORS TO SOCIALIST COUNTRIES (SELECTED COMMODITY GROUP): 1966 AND 1971

[In thousands of dollars]

SITC No.	Commodity group	Cost of non-MFN factors		Percent of total costs	
		High estimate	Low estimate	High estimate	Low estimate
1966					
33	Petroleum and petroleum products.....	61,325	0	100.0	100.0
68	Nonferrous metals.....	20,798	12	66.6	50.0
01	Meat and meat preparations.....	14,701	90	74.9	79.6
66	Nonmetallic mineral manufactures, not elsewhere specified.....	14,188	5	80.1	.1
24	Wood, lumber and cork.....	11,418	0	100.0	100.0
03	Fish and fish preparations.....	9,009	0	75.9	100.0
26	Textile fibres, not manufactured, and waste.....	8,110	8,110	90.0	90.0
67	Iron and steel.....	7,437	2,004	34.7	33.3
27	Crude fertilizers and crude minerals, not elsewhere specified.....	6,773	87	100.0	100.0
21	Hides, skins and furskins, undressed.....	5,310	0	100.0	100.0
1971					
33	Petroleum and petroleum products.....	82,517	0	100.0	100.0
01	Meat and meat preparations.....	23,870	0	72.0	100.0
67	Iron and steel.....	26,695	10,489	30.3	33.7
03	Fish and fish preparations.....	15,828	26	76.3	76.5
24	Wood, lumber and cork.....	8,640	0	100.0	100.0
84	Clothing.....	13,677	12,802	30.5	31.0
89	Miscellaneous manufactured articles, not elsewhere specified.....	7,714	1,558	33.2	46.3
42	Fixed vegetable oils and fats.....	6,614	76	50.0	50.0
27	Crude fertilizers and crude minerals, not elsewhere specified.....	6,163	0	100.0	100.0
65	Textile Yarn, fabrics, made-up articles, etc.....	4,739	6,369	30.6	34.1

Source: Tables C1-C6.

Second on the list of commodities most affected by the non-MFN factors in our trade with Eastern Europe and the U.S.S.R. in 1966 was nonferrous metals. Over 79 percent of the effects were borne by the Soviet Union. The \$21 million reduction in 1966 represented 67 percent of the total reduction of U.S. trade restrictions on our imports of nonferrous metals from this area. In 1971, when our actual imports of non-ferrous metals from the U.S.S.R. were larger than the volume estimated using West European or Canadian shares, the losses due to the non-MFN trade restrictions on our imports of nonferrous metals from the 6 countries were much lower than for any of the 10 commodities listed in table 13.

The losses due to the non-MFN barriers on our imports of meat and meat preparations from the Socialist countries, arising in part from inspection requirements of the FDA and from the quota on fresh, frozen and chilled meat, were \$15 million in 1966 and \$24 million in 1971, placing this commodity group third on the list in both years. These amounts represented over 70 percent of the total due to our restrictions on meat and meat preparations imports from Eastern Europe and the Soviet Union.

The fourth commodity on the list for which the 1966 non-MFN effects were the largest is nonmetallic mineral manufactures, supplied exclusively by the Soviet Union. The \$14 million differential which occurred in 1966, and which represented all of the total loss caused by U.S. restrictions on this commodity group since the tariff differential was insignificant, dropped to zero in 1971. In that year, actual U.S. imports from the U.S.S.R. were greater than the estimates derived using West European or Canadian shares.

Iron and steel, eighth on the list of the 1966 non-MFN losses, moved up to second in 1971 with the losses reaching almost \$27 million, or over 30 percent of the total of U.S. restrictions on iron and steel imports. Although this commodity group is supplied by all of the Socialist countries, the Soviet Union bore 51 percent of the 1966 and 23 percent of the 1971 export losses. Czechoslovakia, on the other hand, bore 27 percent of the export losses incurred in 1966, but 39 percent of those registered for 1971.

Our nontariff barriers on fish and fish preparations cost the Socialist countries \$9 million in 1966 and \$16 million in 1971, moving this commodity from sixth to fourth on the list of commodities most affected by non-MFN factors. Almost all of the losses due to our barriers on this commodity group were borne by the U.S.S.R. In 1966, the Soviet Union accounted for 95 percent of the total non-MFN costs, and 93 percent in 1971, with the remainder incurred by Hungary. Over three-fourths of the losses of all the restrictions on our imports of fish and fish preparations from this area were due to non-MFN factors.

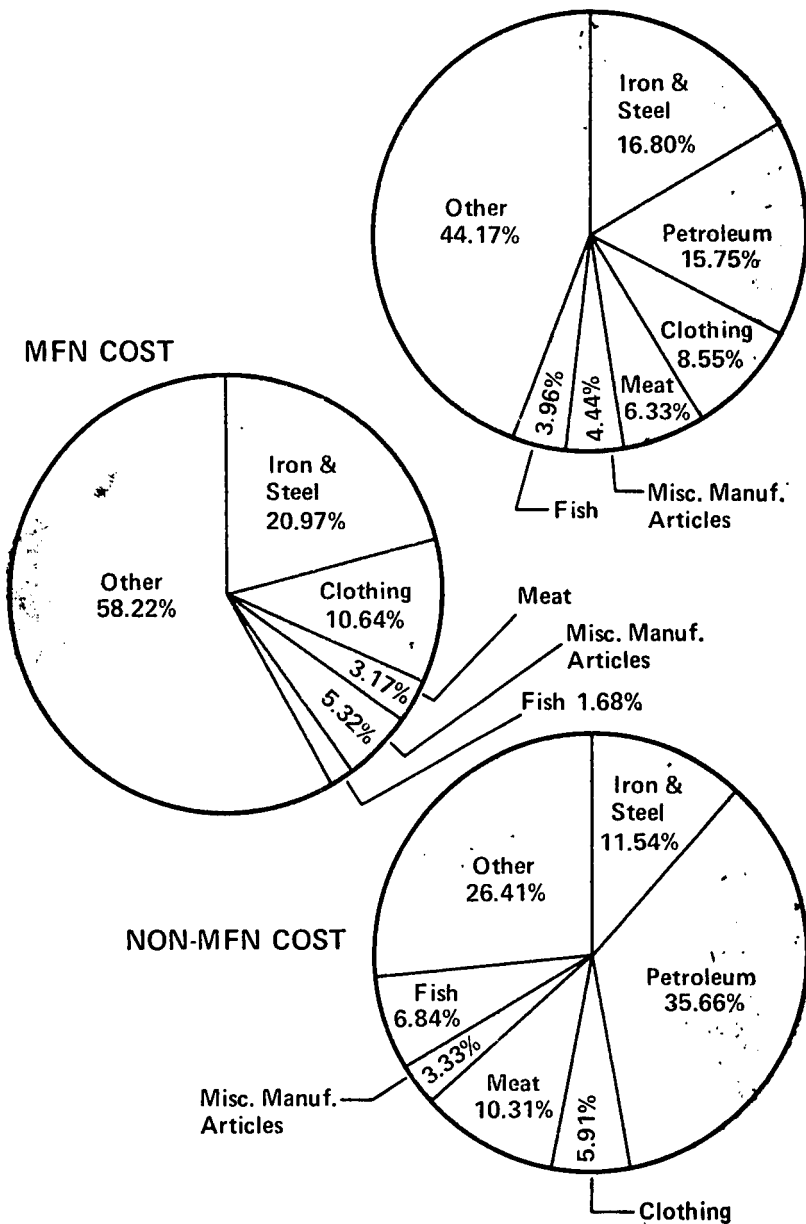
The impact on other commodities in 1966 and 1971 can be seen in table 13, figure 3, and appendix tables C1-C6. They are wood, lumber, and cork, borne largely by the Soviet Union with a smaller amount by Romania; textile fibers, not manufactured and waste; clothing; miscellaneous manufactured articles; crude fertilizers and crude minerals; fixed vegetables, oils and fats; undressed hides, skins, and furskins; and textile yarn, fabrics, and made-up articles.

FIGURE 3.

Cost of U.S. Trade Restrictions to the U.S.S.R. and Eastern Europe by Commodity Group: 1971

(In Percent)

TOTAL COST



SOURCE: Table 10

IV. PROJECTIONS OF U.S. IMPORTS FROM THE SOCIALIST COUNTRIES: 1976 AND 1980

The effect on the future volume of our imports of establishing "normalized" conditions with the socialist countries of Eastern Europe and the U.S.S.R. can be divided into three stages. Initially, in the short run when their supplies are reasonably fixed, the granting of MFN treatment and the removal of our other discriminatory trade barriers would probably result in a small increase in exports to the United States from these countries, supplied from a redirection of their current exports or from a possible surplus. In the medium run when some increases in supplies can be accomplished through changes in Eastern European and Soviet production plans, and as these countries become more familiar with marketing in the United States, imports should rise more rapidly. Finally, in the long run, after all of the output changes and marketing channels have been established, the volume of our imports from the socialist countries will reach new higher levels due to the achievement of the full effects of "normalization", and the growth of our imports from the socialist countries should continue at some relatively slower rate of increase.

For the projections presented in this study, it is assumed that by 1976, this long-term adjustment process will have been completed. It is very doubtful that this could actually be accomplished in 2 years even if MFN is granted at an early date and other "normalization" steps proceed rapidly. Consequently, the 1976 projections are probably biased upward. The figures for 1980, however, should not suffer very much from this shortcoming.

A. Total Imports

Two sets of projections of U.S. imports from Eastern Europe and the U.S.S.R. have been derived under the assumption that "normalized" conditions will be established with the socialist countries in the near future. As explained in the methodology section, these estimates are based on (1) the average annual share of total shipments to the OECD area from the socialist countries in 1966 through 1971 that would have gone to the United States under "normalized" conditions, and (2) projected exports from the socialist countries to the OECD area. The projections provide upper and lower estimates of our imports from each socialist country in 1976 and 1980, assuming U.S. trading relationships with these countries are fully adjusted to "normalized" conditions by 1976. Following the procedure adopted in chapter III, the discussion of our projected imports will focus on the high estimates.

According to the projections shown in table 14, and figure 4, if our trade relations are "normalized," imports from the five countries of Eastern Europe and the U.S.S.R. will equal \$946 million in 1976, 2.8 times the level of actual U.S. imports from these countries in 1973. By 1980 the figure should grow another 25 percent, reaching \$1,183 million. Percentagewise, Bulgaria, followed closely by the German Democratic Republic and Hungary show the largest 1976 projected increases from actual 1973 levels. In absolute terms, however, U.S. imports from the U.S.S.R. are projected to achieve the largest rise between 1973 and 1976, if normalized conditions are soon established.

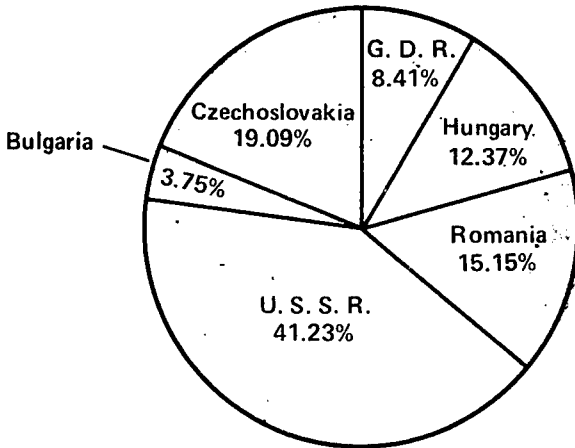
FIGURE 4.

Projections of U.S. Imports from the U.S.S.R. and Eastern Europe by Country: 1976 and 1980

(In Percent)

1976

Total = \$946 mil.



1980

Total = \$1,183 mil.

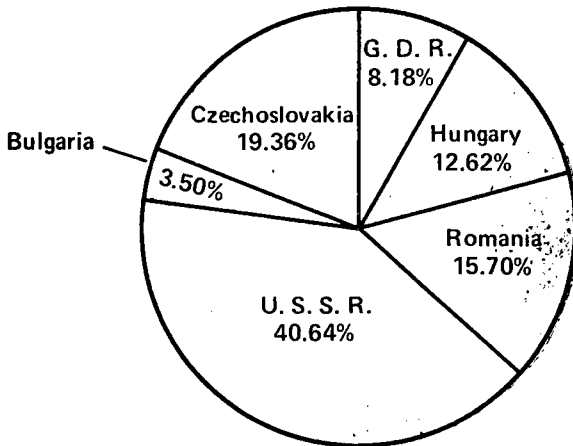


TABLE 14.—PROJECTIONS OF U.S. IMPORTS FROM THE SOCIALIST COUNTRIES UNDER NORMALIZED CONDITIONS, BY COUNTRY: 1976 AND 1980

[In thousands of dollars]

Country	Projected U.S. imports ¹		Projected OECD imports	Projected U.S. imports as a percent of OECD imports ²		Actual U.S. imports in 1973
	High estimate	Low estimate		High estimate	Low estimate	
1976:						
Bulgaria.....	35, 443	11, 620	286, 872	12. 35	4. 05	4, 500
Czechoslovakia.....	180, 535	126, 178	1, 160, 024	15. 56	10. 88	35, 200
German Democratic Republic.....	79, 560	24, 721	579, 917	13. 72	4. 26	10, 500
Hungary.....	116, 995	52, 286	839, 571	13. 94	6. 23	16, 400
Romania.....	143, 204	60, 590	875, 369	16. 36	6. 92	55, 700
U.S.S.R.....	389, 835	124, 348	3, 948, 822	9. 87	3. 15	213, 700
Total.....						336, 600
1980:						
Bulgaria.....	41, 403	14, 880	327, 430	12. 64	4. 54	
Czechoslovakia.....	228, 949	161, 401	1, 451, 399	15. 78	11. 12	
German Democratic Republic.....	96, 720	22, 593	696, 933	13. 88	3. 24	
Hungary.....	149, 224	67, 579	1, 056, 679	14. 12	6. 40	
Romania.....	185, 740	80, 211	1, 077, 348	17. 24	7. 45	
U.S.S.R.....	480, 728	151, 145	4, 866, 790	9. 88	3. 11	

¹ Figures are projections of the sums of U.S. imports of those commodities for which the high estimates for a country in each year in the period 1966-71 amounted to at least \$100,000, or for which the high estimates reached \$1,000,000 in any one year in the period.

² Figures are projections of the sums of OECD imports of the commodities defined in footnote 1.

Source: Tables B1-B6.

From 1976 to 1980, after the effects of normalization have stabilized, our imports from Romania are expected to grow most rapidly, increasing almost 30 percent in 4 years. The percentage increase in exports to the United States from Hungary will be second, followed by those from Czechoslovakia, U.S.S.R., German Democratic Republic, and Bulgaria. The U.S. share of projected total exports from each of these countries to the OECD area, will range from 9 percent from the U.S.S.R. to 16-17 percent of OECD imports from Romania. These shares are in marked contrast to those the United States actually attained in 1966 and 1971, which ranged from as little as 1 percent of OECD imports from Hungary in both 1966 and 1971 to highs of 6 percent and 3 percent of the exports shipped to the OECD area from Czechoslovakia in 1966 and 1971. These comparisons indicate that establishing normalized trading relationships with the Socialist countries will, in the absence of any major unforeseen changes in the trends of their exports to the OECD area, make the U.S. market a relatively significant outlet for products from the Socialist world. This, in turn, will make it easier for those countries to finance the huge increases in their purchases of U.S. products envisioned by American businessmen. At the same time, however, the relative impact on U.S. markets given their large size, should not be unsettling, in the aggregate.

Annual rates of growth of U.S. imports from the Socialist countries from their estimated "normalized" levels in 1971 to their projected "normalized" levels in 1980 can be seen in table 15. Exports from the U.S.S.R. are expected to increase most rapidly, followed by the increases from Hungary, Romania, Czechoslovakia, the German Democratic Republic, and Bulgaria:²⁴

TABLE 15.—*Projected annual rates of growth of U.S. imports from the Socialist countries under normalized conditions, 1971–80*¹

[In percent per year]	
Total.....	7.1
Bulgaria.....	3.9
Czechoslovakia.....	6.1
German Democratic Republic.....	5.9
Hungary.....	6.9
Romania.....	6.7
U.S.S.R.....	8.5

¹ These years represent high estimates for 1971.

Source: Tables A1–A6, and B1–B6.

B. Commodity Structure

The commodity structure of projected U.S. imports from Eastern Europe and the U.S.S.R. appears to be similar to that indicated by the estimates of U.S. imports that would have occurred in 1966 and 1971 under "normalized" conditions. Assuming no political factors limit the supplies that would be forthcoming from the Socialist countries, the commodity group highest on the list of projected exports to the United States is petroleum and petroleum products—see table 16. The total volume of petroleum imports from these countries in 1976 is projected to be \$151 million, and \$194 million by 1980, representing 11 percent of total exports of this commodity group from Eastern Europe and the U.S.S.R. to the OECD area.²⁵ According to the projection, the major supplier of our oil imports among the Socialist countries would be the U.S.S.R., which is expected to ship 92 percent of the 1976 total and 94 percent of the 1980 total. The energy crisis and the unknown consequences of the policies of the Middle Eastern oil producing nations on the exports of oil from Eastern Europe and the Soviet Union make, however, any projections of our imports from them highly conjectural.

²⁴ For a comparison of these rates with those for total planned exports of each Socialist country during 1971–75, see "COMECON Countries' Goal for 1971/75: Achieving More Rapid Improvement of Living Standards Without Constraining Growth," *Wochebericht* (Weekly Report), No. 1, Jan. 4, 1973, p. 9.

²⁵ As explained in chapter 11 regarding inflation, if the huge recent increases in prices of petroleum and petroleum products not accounted for in these projections continue at present or even higher levels, the value of our projected oil imports will be biased downward.

TABLE 16.—PROJECTIONS OF U.S. IMPORTS FROM THE SOCIALIST COUNTRIES UNDER NORMALIZED CONDITIONS, BY MAJOR COMMODITY GROUP: 1976 AND 1980

[In thousands of dollars]

SITC No.	Commodity group	Projected U.S. imports ¹		Projected OECD imports	Projected U.S. imports as a percent of OECD imports	
		High estimate	Low estimate		High estimate	Low estimate
1976						
33	Petroleum and petroleum products.....	151,560	4,926	1,345,345	11.27	0.37
67	Iron and steel.....	101,611	50,057	519,450	19.56	9.64
84	Clothing.....	74,239	71,355	258,892	28.68	27.56
68	Nonferrous metals.....	65,065	34,919	473,177	13.75	7.38
01	Meat and meat preparations.....	45,306	5,480	193,282	23.44	2.84
71	Machinery other than electric.....	42,464	15,014	398,854	10.65	3.76
89	Miscellaneous manufactured articles, not elsewhere specified.	39,588	14,494	115,960	34.14	12.50
66	Nonmetallic mineral manufactures, not elsewhere specified.	36,318	42,991	118,108	30.75	36.40
28	Metalliferous ores and metal scrap.....	32,124	20,783	267,715	12.00	7.76
73	Transport equipment.....	29,809	3,510	181,196	16.45	1.94
72	Electrical machinery, apparatus, and appliances.	28,590	3,369	149,426	19.13	2.25
51	Chemical elements and compounds.....	27,835	5,291	242,327	11.49	2.18
85	Footwear.....	26,133	18,593	53,539	48.81	34.73
65	Textile yarn, fabrics, made-up articles, etc..	23,853	28,613	171,115	13.94	16.72
03	Fish and fish preparations.....	21,629	957	44,957	48.11	2.13
1980						
33	Petroleum and petroleum products.....	194,205	5,600	1,722,753	11.27	0.33
67	Iron and steel.....	128,011	65,189	643,402	19.90	10.13
84	Clothing.....	102,199	98,543	356,292	28.68	27.66
68	Nonferrous metals.....	76,349	41,534	557,973	13.68	7.44
71	Machinery other than electric.....	55,575	19,492	523,562	10.61	3.72
01	Meat and meat preparations.....	53,136	6,720	227,292	23.38	2.96
89	Miscellaneous manufactured articles, not elsewhere specified.	49,071	17,874	143,384	34.22	12.47
66	Nonmetallic mineral manufactures, not elsewhere specified.	44,792	52,720	141,040	31.76	37.38
28	Metalliferous ores and metal scrap.....	41,108	26,622	342,503	12.00	7.78
73	Transport equipment.....	38,657	4,407	237,736	16.26	1.85
72	Electrical machinery, apparatus and appliances.	38,121	4,435	198,534	19.20	2.23
51	Chemical elements and compounds.....	35,451	6,741	309,139	11.47	2.18
85	Footwear.....	33,306	23,588	64,759	49.37	34.97
65	Textile yarn, fabrics, made-up articles, etc..	30,563	37,144	217,759	14.04	17.06
42	Fixed vegetable oils and fats.....	26,487	10,112	148,918	17.79	6.79

¹ Figures include projections of exports of the commodity from those socialist countries for which the high estimates reached \$1,000,000 in any year in the period 1966-71.

Source: Table B1-B6.

Second in volume among the commodity groups expected to be exported to the United States from the Socialist countries in 1976 and 1980 will be iron and steel, provided no trade barriers are established arising from market disruption complaints. Our imports of iron and steel from Eastern Europe and the U.S.S.R. are projected to reach \$102 million in 1976 and \$128 million by 1980, equaling almost 20 percent of total projected Socialist country exports of iron and steel to the OECD area. All of the countries will be supplying large quantities of this commodity group, with 45 percent coming from Czechoslovakia in 1976 and 47 percent in 1980.

Clothing will be the third largest commodity group which we are expected to import from the Socialist countries in both 1976 and 1980. Our imports are projected to reach \$74 million and \$102 million in the

2 years, respectively, comprising over 28 percent of total exports of clothing from these countries to the OECD area. With the exception of the U.S.S.R., all of the countries will be supplying significant amounts of this commodity group.

Soviet and East European exports of nonferrous metals are projected to be fourth on the list of our imports from these countries, reaching \$65 million in 1976, and \$76 million by 1980, or 14 percent of total OECD area imports of this commodity group from the six countries. Almost three-fourths of the metals we import from these countries in this commodity group will be supplied by the Soviet Union, although some shipments will be coming from all of the Socialist countries.

The commodity group fifth on the list of our projected 1976 imports, meat and meat preparations, is expected to drop back to sixth by 1980, being surpassed by our projected imports of nonelectric machinery. It is expected that meat and meat preparations will be exported to the United States from all five Eastern European countries, provided that they meet the inspection requirements of the U.S. Food and Drug Administration. Our total imports of meat and meat preparations from these countries are projected to reach \$45 million in 1976 and \$53 million by 1980. Almost half of the commodities in this category are expected to be supplied by Hungary. Our imports of meat and meat preparations are expected to comprise 23 percent of all exports in this commodity group to the OECD area from the five East European countries.²⁶

The exports of nonelectric machinery are expected to grow rapidly during the projection period, moving the category from sixth to fifth place on our list of projected imports from the socialist countries between 1976 and 1980. U.S. imports of this commodity group from Eastern Europe and the U.S.S.R. are projected to equal \$42 million in 1976 and \$56 million in 1980. Excluding Bulgaria, all of the countries will be shipping substantial quantities of the commodities in this category to the United States, with by far the largest volume coming from Czechoslovakia. In 1976 that country is expected to provide 43 percent of the total, and 42 percent in 1980.

Import volumes of other commodities which are estimated to be shipped to the United States in substantial amounts during the projection period can be seen in table 16 and appendix tables B1-B6. Miscellaneous manufactured articles are expected to be seventh, with the largest quantities coming from the German Democratic Republic. Nonmetallic mineral manufactures will probably be eighth, with most of the shipments to come from the U.S.S.R. Other commodities to be imported in substantial amounts include metalliferous ores and metal scrap; transport equipment; electrical machinery, apparatus and appliances; chemical elements and compounds; footwear; textile yarns; fish and fish preparations; and fixed vegetable oils and fats.

²⁶ Although some countries, e.g., Bulgaria, are planning to curtail their future food industry exports to the West, it appears that the cutback will not affect meat and meat preparations. See Stefan Balkanski, "Export Trends by Some Branches of the Food Industry," *Khranitelna promyshlennost* (Food Industry), No. 5, 1973, pp. 9-11.

APPENDIX TABLES

TABLE A-1.—UNITED STATES IMPORTS FROM BULGARIA: 1966 AND 1971

[Dollar amounts in thousands]

Commodity group	SITC No.	Total United States imports	Actual United States imports from Bulgaria	Percent of total United States imports	Estimated United States imports from Bulgaria		Percent of total United States imports		Actual OECD ¹ imports from Bulgaria	Estimated United States imports as a percent of actual OECD imports from Bulgaria	
					High	Low	High	Low		High	Low
Total²		1966									
		\$15,494,368	\$2,518	0.02	\$19,515	\$3,754	0.13	0.02	\$195,690	9.97	1.92
Iron and steel.....	67	1,304,955	0	.....	706	0	.05	.....	16,091	4.39	.....
Meat and meat preparation.....	1	599,513	0	.....	2,361	0	.39	.....	14,597	16.17	.....
Nonferrous metals.....	68	1,551,721	0	.....	4,981	0	.32	.....	22,542	22.10	.....
Electrical machinery, apparatus, and appliances.....	72	1,015,886	0	.....	264	20	.03	(³)	1,466	18.01	1.36
Tobacco and tobacco manufacturing.....	12	144,178	0	.....	4,278	0	2.97	.....	22,552	18.97	.....
Fruits and vegetables.....	5	538,624	94	.02	592	592	.11	.11	26,310	2.25	2.25
Chemical elements and compounds.....	51	474,971	1	(⁴)	219	9	.05	(⁴)	2,560	8.55	.35
Clothing.....	84	607,570	2	(⁴)	304	304	.05	.05	2,063	14.74	14.74

Fixed vegetable oils and fats.....	42	128,209	0	-----	359	0	.28	-----	1,422	25.25	-----
Oil seeds, oil nuts, and oil kernels.....	22	53,218	33	.06	611	33	1.15	.06	12,078	5.06	.27
Sugar, sugar preparations, and honey.....	6	559,034	94	.02	94	94	.02	.02	511	18.40	18.40
Other ¹		8,516,489	2,294	.03	4,746	2,702	.06	.03	73,498	6.46	3.68
Total ².....		24,420,746	2,489	.01	29,314	5,929	.12	.01	247,183	11.86	2.40
Iron and steel.....	67	2,725,402	0	-----	8,991	0	.33	-----	23,775	37.82	-----
Meat and meat preparation.....	1	1,050,363	190	.02	4,971	190	.47	.02	20,414	24.35	.93
Nonferrous metals.....	68	1,552,716	0	-----	2,667	0	.17	-----	17,515	15.23	-----
Electrical machinery, apparatus, and appliances.....	72	2,556,548	0	-----	1,582	12	.06	(³)	5,314	29.77	.23
Tobacco and tobacco manufacturing.....	12	108,242	0	-----	1,333	11	1.23	.01	14,257	9.35	.08
Fruits and vegetables.....	5	746,687	113	.02	971	971	.13	.13	39,280	2.47	2.47
Chemical elements and compounds.....	51	826,437	573	.07	922	573	.11	.07	8,304	11.10	6.90
Clothing.....	84	1,521,123	0	-----	819	819	.05	.05	20,160	4.06	4.06
Fixed vegetable oils and fats.....	42	151,704	0	-----	682	152	.45	0.10	4,309	15.83	3.53
Oil seeds, oil nuts, and oil kernels.....	22	48,374	0	-----	237	0	.49	-----	8,755	2.71	-----
Sugar, sugar preparations, and honey.....	6	842,900	0	-----	0	0	-----	-----	1,086	0	0
Other ³		12,290,250	1,613	.01	6,139	3,201	.05	.03	84,014	7.31	3.81

¹ The Organization for Economic Cooperation and Development (OECD) includes the following countries: Austria, Belgium-Luxembourg, Canada, Denmark, Finland, France, Germany, Iceland, Italy, Japan, Netherlands, Norway, Portugal, Sweden, Switzerland, United Kingdom, and United States.

² Includes all commodity groups for which the high estimates or actual imports, if higher, amounted to at least \$100,000 in the year listed.

³ Represents the difference between the total and the sum of the listed commodities.

⁴ Represents less than 0.005 percent.

Source: Based on OECD, Commodity Trade: Imports, January-December 1966, passim, and OECD, Trade by Commodities-Market Summaries: Imports, vol. 1, January-December 1971, passim.

TABLE A-2.—UNITED STATES IMPORTS FROM CZECHOSLOVAKIA: 1966 AND 1971

[Dollar amounts in thousands]

Commodity group	SITC No.	Total U.S. imports	Actual United States imports from Czechoslovakia	Percent of total U.S. imports	Estimated United States imports from Czechoslovakia		Percent of total U.S. imports		Actual OECD imports from Czechoslovakia	Estimated United States imports as a percent of OECD imports from Czechoslovakia	
					High	Low	High	Low		High	Low
Total.....	1966	\$22,913,257	\$27,315	0.12	\$65,867	\$44,322	0.29	0.19	\$461,820	14.26	9.60
Iron and steel.....	67	1,304,955	2,222	.17	8,240	8,240	.63	.63	41,189	20.01	20.01
Clothing.....	84	607,570	248	.04	2,396	2,396	.39	.39	9,504	25.21	25.21
Machinery other than electric.....	71	1,677,143	8,924	.53	8,924	8,924	.53	.53	48,560	18.38	18.38
Transport equipment.....	73	2,134,611	1,456	.07	4,549	1,456	.21	.07	21,563	21.10	6.75
Footwear.....	85	189,906	3,474	1.83	3,474	3,474	1.83	1.83	13,852	25.08	25.08
Miscellaneous manufactured articles, n.e.s.....	89	905,710	1,709	.19	5,865	2,989	.65	.33	18,867	31.09	15.84
Textile yarn, fabrics, made-up articles, etc.....	65	908,539	418	.05	3,107	3,107	.34	.34	22,911	13.56	13.56
Nonmetallic mineral manufactures, n.e.s.....	66	716,649	4,001	.56	5,497	6,235	.76	.87	29,895	18.39	20.86
Meat and meat preparations.....	1	599,513	1,217	.20	2,202	1,217	.37	.20	10,696	20.59	11.38
Electrical machinery, apparatus and appliances.....	72	1,015,886	23	(1)	704	23	.07	(1)	5,241	13.43	.44
Chemical elements and compounds.....	51	474,971	287	.06	2,442	287	.51	.06	16,177	15.10	1.77
Wood and cork manufactures, excluding furniture.....	63	307,980	86	.03	2,190	86	.71	.03	4,767	45.94	1.60
Manufactures of metals, n.e.s.....	69	410,617	367	.09	567	575	.14	.14	4,784	11.85	12.02
Travel goods, handbags and similar articles.....	83	56,243	51	.09	660	1,271	1.17	2.26	1,652	39.95	76.94
Nonferrous metals.....	68	1,551,721	0	-----	2,014	16	.13	(1)	8,378	24.04	.19
Beverages.....	11	479,545	76	.02	628	192	.13	.04	1,597	39.32	12.02
Crude fertilizers and crude minerals, n.e.s.....	27	282,925	0	-----	1,649	0	.58	-----	9,585	17.20	-----
Metalliferous ores and metal scrap.....	28	1,019,812	0	-----	977	0	.10	-----	6,645	14.70	-----
Wood, lumber and cork.....	24	437,972	0	-----	1,404	0	.32	-----	41,815	3.37	-----
Scientific and control instruments, photographic goods, clocks.....	86	403,111	66	.02	631	66	.16	.02	3,042	20.74	2.17
Coffee, tea, cocoa, spices and manufactures thereof.....	7	1,344,506	83	.01	669	403	.05	.03	931	71.86	43.29

Furniture.....	82	80,763	394	.49	641	751	.79	.93	5,327	12.03	14.10
Petroleum and petroleum products.....	33	2,127,136	18	(¹)	540	18	.03	(¹)	13,801	3.91	.13
Sanitary, plumbing, heating and lighting fixtures.....	81	39,086	825	2.11	825	825	2.11	2.11	5,720	14.42	14.42
Other.....		3,277,353	1,370	.04	5,072	1,771	.15	.05	115,321	4.40	1.54
Total.....		41,377,891	23,208	.06	134,169	89,295	.32	.22	817,815	16.41	10.92
Iron and steel.....	67	2,725,402	4,068	.15	34,964	34,964	1.28	1.28	126,964	27.54	27.54
Clothing.....	84	1,521,123	394	.03	12,069	10,318	.79	.68	33,646	35.87	30.67
Machinery other than electric.....	71	3,411,260	3,632	.11	9,630	3,632	.28	.11	94,924	10.14	3.83
Transport equipment.....	73	7,935,979	2,596	.03	9,430	2,596	.12	.03	32,355	29.15	8.02
Footwear.....	85	758,095	3,984	.53	9,179	9,179	1.21	1.21	19,769	46.43	46.43
Miscellaneous manufactured articles, n.e.s.....	89	1,968,884	1,229	.06	8,222	3,938	.42	.20	25,211	32.61	15.62
Textile yarn, fabrics, made-up articles, etc.....	65	1,392,019	487	.03	6,930	6,930	.50	.50	46,791	14.81	14.81
Nonmetallic mineral manufactures, n.e.s.....	66	1,010,444	2,881	.29	6,211	6,669	.61	.66	37,419	16.60	17.82
Meat and meat preparations.....	1	1,050,363	1,314	.13	5,849	1,314	.56	.13	23,161	25.25	5.67
Electrical machinery, apparatus, and appliances.....	72	2,556,548	46	(¹)	3,842	767	.15	.03	16,104	23.86	4.76
Chemical elements and compounds.....	51	826,437	0	-----	3,752	661	.45	.08	28,822	13.02	2.29
Wood and cork manufactures excluding furniture.....	63	496,339	125	.03	2,449	447	.49	.09	5,855	41.83	7.63
Manufactures of metals, n.e.s.....	69	836,822	396	.05	2,447	1,004	.29	.12	12,811	19.10	7.84
Travel goods, handbags, and similar articles.....	83	119,411	39	.03	2,029	1,613	1.70	1.35	3,588	56.55	44.96
Nonferrous metals.....	68	1,552,716	156	.01	1,807	156	.12	.01	12,919	13.99	1.21
Beverages.....	11	767,254	125	.02	1,508	614	.20	.08	3,180	47.42	19.31
Crude fertilizers and crude minerals, n.e.s.....	27	276,467	24	.01	1,458	442	.53	.16	14,266	10.22	3.10
Metalliferous ores and metal scrap.....	28	1,043,637	0	-----	1,372	0	.13	-----	8,105	16.93	-----
Wood, lumber, and cork.....	24	779,687	0	-----	1,134	0	.15	-----	49,590	2.29	-----
Scientific and control instruments, photographic goods, clocks.....	86	697,369	47	.01	1,127	223	.16	.03	5,667	19.89	3.94
Coffee, tea, cocoa, spices, and manufactures thereof.....	7	1,616,519	65	(¹)	1,121	647	.07	.04	1,580	70.95	40.95
Furniture.....	82	261,020	477	.18	1,111	1,122	.43	.43	10,054	11.05	11.16
Petroleum and petroleum products.....	33	3,323,321	0	-----	753	0	.02	-----	23,321	3.23	-----
Sanitary, plumbing, heating and lighting fixtures.....	81	58,197	370	.64	452	278	.78	.65	5,720	7.90	6.61
Other.....		3,549,678	753	.02	5,323	1,681	.15	.05	175,993	3.02	.96

¹ Represents less than 0.005 percent.

Note: See footnotes to table A-1.

Source: Based on OECD, Commodity Trade: Imports January-December 1966, passim and OECD, "Trade by Commodities—Market Summaries: Imports," vol. I, January-December 1971, passim.

TABLE A-3.—UNITED STATES IMPORTS FROM THE GERMAN DEMOCRATIC REPUBLIC: 1966 AND 1971

[Dollar amounts in thousands]

Commodity group	SITC No.	Total U.S. imports	Actual U.S. imports from German Democratic Republic	Percent of total U.S. imports	Estimated U.S. imports from German Democratic Republic		Percent of total U.S. imports		Actual OECD imports from German Democratic Republic	Estimated U.S. imports as a percent of actual OECD imports from German Democratic Republic	
					High	Low	High	Low		High	Low
1966											
Total.....		\$21,740,311	\$8,071	0.04	\$38,008	\$10,954	0.17	0.05	\$282,072	13.47	3.88
Miscellaneous manufactured articles, n.e.s.....	89	905,710	300	.03	5,164	815	.57	.09	17,601	29.34	4.63
Transport equipment.....	73	2,134,611	231	.01	2,007	231	.09	.01	12,285	16.34	1.88
Electrical machinery, apparatus and appliances.....	72	1,015,886	186	.02	1,937	186	.19	.02	12,372	15.66	1.50
Machinery other than electric.....	71	1,677,143	1,230	.07	3,314	1,230	.20	.07	29,993	11.05	4.10
Iron and steel.....	67	1,304,955	3,245	.25	3,296	3,245	.25	.25	18,147	18.16	17.88
Chemical elements and compounds.....	51	474,971	120	.03	1,932	120	.41	.03	20,555	9.40	.58
Scientific and control instruments, photographic goods, clocks.....	86	403,111	410	.10	1,894	484	.47	.12	10,826	17.49	4.47
Travel goods, handbags and similar articles.....	83	56,243	1	(¹)	725	45	1.29	.08	1,775	40.85	2.54
Footwear.....	85	189,906	0	0	318	38	.17	.02	871	36.51	4.36
Meat and meat preparations.....	1	559,513	69	.01	2,477	69	.44	.01	11,400	21.73	.61
Textile yarn, fabrics, made-up articles, etc.....	65	908,539	4	(¹)	1,332	91	.15	.01	11,373	11.71	.80
Nonmetallic mineral manufactures, n.e.s.....	66	716,649	464	.06	2,018	2,437	.28	.34	12,601	16.01	19.34
Clothing.....	84	607,570	2	(¹)	1,078	122	.18	.02	4,824	22.35	2.63
Furniture.....	82	80,763	1	(¹)	389	7	.48	.01	2,602	14.95	.27
Crude rubber, including synthetic and reclaimed.....	23	207,328	0	0	531	0	.26	0	2,224	23.88	0
Nonferrous metals.....	68	1,551,721	42	(¹)	2,226	42	.14	(¹)	9,187	24.23	.46
Manufactures of metal, n.e.s.....	69	410,617	21	.01	567	25	.14	.01	4,126	13.74	.61
Fertilizers, manufactured.....	56	130,768	0	.0	1,130	0	.86	0	17,155	6.59	0

Petroleum and petroleum products.....	33	2, 127, 136	372	.02	720	372	.03	.02	6, 226	11. 56	5. 97
Hides, skins, and fur skins, undressed.....	21	214, 642	883	.41	883	883	.41	.41	1, 808	48. 84	48. 84
Fixed vegetable oils and fats.....	42	128, 209	0	0	128	0	.19	0	680	18. 82	0
Other.....		5, 934, 320	490	.01	3, 942	512	.07	.01	73, 441	5. 37	. 70
Total.....		39, 208, 685	9, 888		57, 778	15, 159	.15	.04	420, 986	13. 72	3. 60
Miscellaneous manufactured articles, n.e.s.....	89	1, 968, 884	481	.02	9, 530	591	.48	.03	29, 115	32. 73	2. 03
Transport equipment.....	73	7, 935, 979	17	(¹)	6, 680	17	.03	(¹)	35, 051	19. 06	.05
Electrical machinery, apparatus and appliances.....	72	2, 556, 548	962	.04	5, 198	1, 790	.20	.07	29, 358	17. 71	6. 10
Machinery other than electric.....	71	3, 411, 260	3, 907	.11	5, 044	3, 907	.15	.11	54, 493	9. 26	7. 17
Iron and steel.....	67	2, 725, 402	19	(¹)	3, 996	273	.15	.01	15, 990	24. 99	1. 71
Chemical elements and compounds.....	51	826, 437	803	.10	2, 831	803	.34	.10	30, 415	9. 31	2. 64
Scientific and control instruments, photographic goods, clocks.....	86	697, 369	1, 425	.20	2, 717	1, 554	.39	.22	17, 806	15. 26	8. 73
Travel goods, handbags and similar articles.....	83	119, 411	0	0	2, 252	128	1. 89	.11	4, 547	49. 53	2. 82
Footwear.....	85	758, 095	0	0	2, 239	0	.30	0	2, 664	84. 05	0
Meat and meat preparations.....	01	1, 050, 363	57	.01	2, 047	57	.19	.01	8, 903	22. 99	.64
Textile yarn, fabrics, made-up articles, etc.....	65	1, 392, 019	40	(¹)	2, 038	139	.15	.01	16, 725	12. 19	.83
Nonmetallic mineral manufactures, n.e.s.....	66	1, 010, 444	772	.08	1, 947	2, 728	.19	.27	16, 080	12. 11	16. 97
Clothing.....	84	1, 521, 123	1	(¹)	1, 766	60	.12	(¹)	7, 237	24. 40	.83
Furniture.....	82	261, 020	23	.01	1, 261	23	.48	.01	12, 095	10. 43	.19
Crude rubber, including synthetic and reclaimed.....	23	275, 439	0	0	1, 043	0	.38	0	3, 989	26. 15	0
Nonferrous metals.....	68	1, 552, 716	9	(¹)	860	9	.06	(¹)	5, 527	15. 56	.16
Manufactures of metal, n.e.s.....	69	836, 822	21	(¹)	992	396	.12	.05	6, 728	14. 74	5. 89
Fertilizers, manufactured.....	56	205, 326	0	0	823	0	.40	0	23, 055	3. 57	0
Petroleum and petroleum products.....	33	3, 323, 321	798	.02	798	798	.02	.02	8, 821	8. 13	8. 13
Hides, skins and fur skins, undressed.....	21	105, 368	167	.16	167	1, 444	.16	1. 37	1, 344	12. 43	107. 44
Fixed vegetable oils and fats.....	42	151, 704	0	0	30	0	.02	0	497	6. 09	0
Other.....		6, 523, 635	386	.01	3, 529	442	.05	.01	89, 546	3. 94	.49

¹ Represents less than 0.005 percent.

Note: See footnotes to table A-1.

Source: Based on OECD, Commodity Trade: Imports, January-December 1966, passim, and DECD, Trade by Commodities-Market Summaries Imports, vol. I, January-December 1971, passim.

TABLE A-4.—UNITED STATES IMPORTS FROM HUNGARY: 1966 AND 1971

[Dollar amounts in thousands]

Commodity group	SITC No.	Total U.S. imports	Actual United States imports from Hungary	Percent of total U.S. imports	Estimated United States imports from Hungary		Percent of total United States imports		Actual OECD imports from Hungary	Estimated United States imports as a percent of actual OECD imports from Hungary	
					High	Low	High	Low		High	Low
Total.....		\$20,989,336	\$3,548	0.02	\$40,370	\$14,677	0.19	0.07	\$327,722	12.32	4.48
Clothing.....	84	607,570	35	(¹)	3,833	4,496	.63	.74	13,096	29.26	34.33
Meat and meat preparations.....	1	599,513	7	(¹)	9,467	120	1.58	.02	47,071	20.11	.25
Iron and steel.....	67	1,304,955	0	0	3,884	0	.30	0	22,567	17.21	0
Miscellaneous manufactured articles, n.e.s.....	89	905,710	1,114	.12	2,714	1,709	.30	.19	8,664	31.33	19.73
Electrical machinery, apparatus and appliances.....	72	1,015,886	1	(¹)	1,232	20	.12	(¹)	7,618	16.17	.26
Footwear.....	85	189,906	1	(¹)	1,588	114	.84	.06	3,426	46.35	3.33
Textile yarn, fabrics, made-up articles, etc.....	65	908,539	221	.02	2,042	2,544	.22	.28	15,610	13.08	16.30
Coffee, tea, cocoa, spices, and manufactures thereof.....	7	1,344,506	120	.01	2,008	1,344	.15	.10	3,163	63.48	42.49
Manufactures of metal, n.e.s.....	69	410,617	17	(¹)	496	82	.12	.02	3,185	15.57	2.57
Metalliferous ores, and metal scrap.....	28	1,019,812	0	0	1,527	0	.15	0	5,718	26.71	0
Crude animal and vegetable materials, n.e.s.....	29	180,723	147	.08	1,209	236	.67	.13	6,489	18.63	3.64
Beverages.....	11	479,545	190	.04	960	1,247	.20	.26	2,677	35.86	46.58
Machinery other than electric.....	71	1,677,143	4	(¹)	800	4	.05	(¹)	5,552	14.41	.07
Chemical elements and compounds.....	51	474,971	17	(¹)	401	47	.08	.01	7,646	5.24	.61
Nonferrous metals.....	68	1,551,721	2	(¹)	1,060	8	.07	(¹)	7,241	14.64	.11
Nonmetallic mineral manufactures, n.e.s.....	66	716,649	232	.03	696	1,577	.10	.22	3,567	19.51	44.21

Fish and fish preparations.....	03	552,936	0	0	407	0	.07	0	671	60.66	0
Petroleum and petroleum products.....	33	2,127,136	0	0	900	0	.04	0	9,964	9.03	0
Other.....		4,921,498	1,120	.02	5,146	1,129	.10	.02	153,797	3.35	.73
1971											
Total.....		39,545,486	7,673	.02	81,609	37,003	.21	.09	573,561	14.23	6.45
Clothing.....	84	1,521,123	453	.03	16,134	16,134	1.06	1.06	49,378	32.67	32.67
Meat and meat preparations.....	1	1,050,363	3,327	.32	15,888	3,327	1.51	.32	69,032	23.02	4.82
Iron and steel.....	67	2,725,402	0	0	10,739	0	.39	0	46,840	22.93	0
Miscellaneous manufactured articles, n.e.s.....	89	1,968,884	0	0	4,972	0	.19	0	14,122	35.72	11.15
Electrical machinery, apparatus and appliances.....	72	2,556,548	1,043	.05	5,045	1,575	.26	.08	20,711	24.01	1.24
Footwear.....	85	758,095	27	(¹)	3,134	1,166	.41	.15	4,287	73.10	27.20
Textile yarn, fabrics, made-up articles, etc.....	65	1,392,019	16	(¹)	2,853	1,810	.20	.13	22,848	12.49	7.92
Coffee, tea, cocoa, spices, and manufactures thereof.....	7	1,616,519	270	.02	2,242	1,293	.14	.08	4,199	53.39	30.79
Manufactures of metal, n.e.s.....	69	836,822	22	(¹)	1,852	84	.22	.01	10,518	17.61	8.80
Metalliferous ores and metal scrap.....	28	1,043,637	5	0	1,790	0	.17	0	10,983	16.30	0
Crude animal and vegetable materials, n.e.s.....	29	204,622	96	.05	1,777	471	.87	.23	13,193	13.47	3.57
Beverages.....	11	767,254	259	.03	1,688	3,913	.22	.51	5,227	32.29	74.86
Machinery other than electric.....	71	3,411,260	58	(¹)	1,605	58	.05	(¹)	14,335	11.20	1.40
Chemical elements and compounds.....	51	826,437	354	.04	1,317	354	.16	.04	23,804	5.53	1.49
Nonferrous metals.....	68	1,552,716	0	0	1,118	0	.07	0	13,495	8.28	0
Nonmetallic mineral manufactures, n.e.s.....	66	1,010,444	0	0	1,112	2,324	.11	.23	6,522	17.05	35.63
Fish and fish preparations.....	3	879,154	0	0	1,077	0	.12	0	1,568	68.69	0
Petroleum and petroleum products.....	33	3,323,321	0	0	502	0	.02	0	7,247	6.93	0
Other.....		12,100,866	1,058	.01	6,774	4,238	.06	.04	235,252	2.88	1.80

¹Represents less than 0.005 percent.

Note: See footnotes to table A-1.

Source: Based on OECD, "Commodity Trade: Imports", January-December 1966, passim, and OECD, "Trade by Commodities-Market Summaries: Imports," vol. I. January-December 1971, passim.

TABLE A-5.—U.S. IMPORTS FROM ROMANIA: 1966 AND 1971

[Dollar amounts in thousands]

Commodity group	SITC No.	Total U.S. imports	Actual U.S. imports from Romania	Percent of total U.S. imports	Estimated U.S. imports from Romania		Percent of total U.S. imports		Actual OECD imports from Romania	Estimated U.S. imports as a percent of actual OECD imports from Romania	
					High	Low	High	Low		High	Low
Total.....	1966	\$20,461,668	\$4,766	0.02	\$39,364	\$6,862	0.19	0.03	\$334,486	11.77	2.05
Iron and steel.....	67	1,304,955	956	.07	2,119	956	.16	.07	8,993	23.56	10.63
Clothing.....	84	607,570	17	(¹)	719	547	.12	.09	2,342	30.70	23.36
Footwear.....	85	189,906	736	.39	1,102	741	.58	.39	2,920	37.74	25.38
Meat and meat preparations.....	1	599,513	0	0	4,403	0	.73	0	21,028	20.94	0
Petroleum and petroleum products.....	33	2,127,136	0	0	10,988	0	.52	0	65,787	16.70	0
Fixed vegetable oils and fats.....	42	128,209	0	0	1,256	0	.98	0	6,893	18.22	0
Wood and cork manufactures, excluding furniture.....	63	307,980	31	.01	2,167	31	.70	.01	4,857	44.62	.64
Miscellaneous manufactured articles, n.e.s.....	89	905,710	295	.03	788	295	.09	.03	2,019	39.03	14.61
Nonferrous metals.....	68	1,551,721	0	0	4,558	0	.29	0	20,301	22.45	0
Furniture.....	82	80,763	392	.49	392	392	.49	.49	2,602	15.07	15.07
Textile yarn, fabrics, made-up articles, etc.....	65	908,539	144	.02	444	144	.05	.02	2,576	17.24	5.59
Chemical elements and compounds.....	51	474,971	517	.11	1,823	517	.38	.11	10,436	17.47	4.95
Transport equipment.....	73	2,134,611	0	0	0	0	0	0	0	0	0
Machinery other than electric.....	71	1,677,143	14	(¹)	343	14	.02	(¹)	2,896	11.84	.48
Wood, lumber, and cork.....	24	437,972	0	0	2,319	0	.53	0	70,928	3.27	0
Manufactures of metal, n.e.s.....	69	410,617	0	0	0	0	0	0	73	0	0

Electrical machinery, apparatus, and appliances.....	72	1,015,886	1	(1)	88	1	.01	(1)	461	19.09	.22
Nonmetallic mineral manufactures, n.e.s.....	66	716,649	417	.06	417	430	.06	.06	5,928	7.03	7.25
Crude rubber, including synthetic and reclaimed.....	23	207,328	0	0	76	0	.04	0	528	14.39	0
Other.....		4,674,489	1,246	.03	5,362	2,794	.11	.06	102,918	5.21	2.71
1971											
Total.....		41,134,317	13,665	.03	103,668	43,434	.25	.11	621,996	16.67	
Iron and steel.....	67	2,725,402	0	0	17,732	0	6.51	0	45,014	39.39	0
Clothing.....	84	1,521,123	1,243	.08	16,096	16,096	1.06	1.06	47,646	33.78	33.78
Footwear.....	85	758,095	2,181	.29	10,000	6,807	1.32	.90	12,949	77.23	52.57
Meat and meat preparations.....	1	1,050,363	287	.03	9,553	287	.91	.03	33,375	28.63	.86
Petroleum and petroleum products.....	33	3,323,321	2,943	.09	8,529	2,943	.26	.09	72,284	11.80	4.07
Fixed vegetable oils and fats.....	42	151,704	0	0	3,832	0	2.53	0	30,823	12.43	0
Wood and cork manufactures, excluding furniture.....	63	496,339	229	.05	3,655	397	.74	.08	8,640	42.30	4.59
Miscellaneous manufactured articles, n.e.s.....	89	1,968,884	142	.01	3,364	156	.17	.01	6,444	52.20	2.42
Nonferrous metals.....	68	1,552,716	354	.02	3,269	354	.21	.02	25,187	12.98	1.41
Furniture.....	82	261,020	1,274	.49	3,034	2,480	1.16	.95	23,249	13.05	10.67
Textile yarn, fabrics, made-up articles, etc.....	65	1,392,019	618	.04	2,853	4,733	.20	.34	14,957	19.07	31.64
Chemical elements and compounds.....	51	826,437	1,047	.13	2,831	1,047	.34	.13	18,964	14.93	5.52
Transport equipment.....	73	7,935,979	106	(1)	2,358	106	.03	(1)	7,639	19.41	.87
Machinery other than electric.....	71	3,411,260	397	.01	2,064	3,070	.06	.09	17,666	11.68	17.38
Wood, cork, and lumber.....	24	779,687	0	0	1,829	0	.23	0	77,922	2.35	0
Manufactures of metal, n.e.s.....	69	836,822	10	(1)	1,323	84	.16	.01	5,876	22.52	1.43
Electrical machinery, apparatus, and appliances.....	72	2,556,548	0	0	1,277	12	.05	(1)	4,233	30.17	.28
Nonmetallic mineral manufactures, n.e.s.....	66	1,010,444	1,265	.13	1,265	1,265	.13	.13	5,308	23.83	23.83
Crude rubber, including synthetic and reclaimed.....	23	275,439	0	0	1,237	0	.45	0	4,563	27.11	0
Other.....		8,300,715	1,769	.02	7,567	3,597	.09	.04	159,257	4.75	2.26

¹ Represents less than 0.005 percent.

Note: See footnotes to table A-1.

Source: Based on OECD, "Commodity Trade: Imports," January-December 1966, passim, and OECD, "Trade by Commodities-Market Summaries: Imports," vol. 1, January-December 1971, passim.

TABLE A-6.—U.S. IMPORTS FROM U.S.S.R.: 1966 AND 1971

[Dollar amounts in thousands]

Commodity group	SITC No.	Total U S imports	Actual United States imports from U.S.S.R.	Percent of total U.S. imports	Estimated United States imports from U.S.S.R.		Percent of total U.S. imports		Actual OECD imports from U.S.S.R.	Estimated United States imports as a percent of OECD imports from U.S.S.R.	
					High	Low	High	Low		High	Low
Total.....		\$19,332,644	\$49,325	0.26	\$213,879	\$63,508	1.11	0.33	\$1,741,378	12.28	3.65
1966											
Petroleum and petroleum products.....	33	2,127,136	2	(¹)	48,569	2	2.28	(¹)	343,232	14.15	(¹)
Nonferrous metals.....	68	1,551,721	20,089	1.29	36,508	20,089	2.35	1.29	199,825	18.27	10.05
Fish and fish preparations.....	3	552,936	644	.12	12,113	644	2.19	.12	27,355	44.28	2.35
Iron and steel.....	67	1,304,955	5,605	.43	15,216	5,605	1.17	.43	108,138	14.07	5.18
Nonmetallic mineral manufactures, n.e.s.....	66	716,649	4,483	.63	18,671	9,483	2.61	.63	55,952	33.37	8.01
Metalliferous ores and metal scrap.....	28	1,019,812	7,062	.69	12,337	7,062	1.21	.69	78,000	15.82	9.05
Wood and cork manufactures excluding furniture.....	63	307,980	9	(¹)	8,937	1,469	2.90	.48	17,996	49.66	8.16
Fixed vegetable oils and fats.....	42	128,209	3	(¹)	5,445	3	4.25	(¹)	30,292	17.98	.01
Crude fertilizers and crude minerals, n.e.s.....	27	282,925	20	.01	6,793	107	2.40	.04	47,036	14.44	.23
Wood, lumber and cork.....	24	437,972	0	0	7,695	0	1.76	0	319,343	2.41	0
Hides, skins and fur skins, undressed.....	21	214,642	6,315	2.94	11,625	6,315	5.42	2.94	57,325	20.28	11.02
Chemical elements and compounds.....	51	474,971	1,239	.26	2,892	1,239	.61	.26	20,724	13.95	5.98
Machinery other than electric.....	71	1,677,143	1	(¹)	1,686	304	.10	.02	17,681	9.54	1.72
Transport equipment.....	76	2,134,611	16	(¹)	1,041	16	.05	(¹)	13,671	7.61	.12
Textile fibres, not manufactured and waste.....	26	436,297	1,518	.35	10,529	10,529	2.41	2.41	92,274	11.41	11.41
Miscellaneous manufactured articles, n.e.s.....	89	905,710	432	.05	1,005	432	.11	.05	2,963	33.92	14.58
Fruits and vegetables.....	05	538,624	72	.01	3,468	72	.64	.01	21,515	16.12	.33
Textile yarn, fabrics, made-up articles, etc.....	65	908,539	9	(¹)	1,410	2,261	.16	.25	6,590	21.40	34.31
Electrical machinery, apparatus and appliances.....	72	1,015,886	1	(¹)	479	1	.05	(¹)	2,780	17.23	.04
Scientific-control instruments, photographic goods, clocks.....	86	403,111	50	.01	1,148	242	.28	.06	4,925	23.31	4.91
Beverages.....	11	479,545	33	.01	297	310	.06	.06	859	34.58	36.09
Coffee, tea, cocoa, spices and manufactures thereof.....	07	1,344,506	11	(¹)	44	24	(¹)	(¹)	135	32.59	17.78
Leather, leather manufactures, n.e.s., and dressed fur skins.....	61	102,969	21	.02	1,077	609	1.05	.59	7,121	15.12	8.55

Crude animal and vegetable materials, n.e.s.	29	180,723	1,487	.82	1,487	1,487	.82	4,253	34.96	34.96
Feed-stuff for animals, excluding unmilled cereals	8	85,072	6	.01	696	6	.82	25,975	2.68	.02
Other		1,337,467	197	.01	2,711	197	.20	235,418	1.15	.08
Total		40,108,549	56,210	.14	230,343	83,113	.57	2,840,966	8.11	2.93
1971										
Petroleum and petroleum products	33	3,323,321	652	.02	76,328	652	2.30	844,050	9.04	.08
Nonferrous metals	68	1,552,716	22,243	1.43	22,243	22,243	1.43	250,993	8.86	8.86
Fish and fish preparations	3	879,154	111	.01	19,779	145	2.25	35,670	55.45	.41
Iron and steel	67	2,725,402	0	0	15,654	0	.57	94,251	16.61	0
Nonmetallic mineral manufactures, n.e.s.	66	1,010,444	12,875	1.27	12,875	12,875	1.27	26,813	48.02	48.02
Metalliferous ores and metal scrap	28	1,043,637	12,439	1.19	12,826	12,439	1.23	153,342	8.36	8.11
Wood and cork manufactures excluding furniture	63	496,339	277	.06	9,233	2,955	1.86	20,627	44.76	14.33
Fixed vegetable oils and fats	42	151,704	1	(¹)	8,685	1	5.72	55,347	15.69	0
Crude fertilizers and crude minerals, n.e.s.	27	276,467	22	.01	6,185	22	2.24	82,041	7.54	.03
Wood, lumber and cork	24	779,687	0	0	5,677	0	.73	461,171	1.23	0
Hides, skins and fur skins, undressed	21	105,368	2,731	2.59	5,060	2,731	4.80	46,876	10.79	5.83
Chemical elements and compounds	51	826,437	813	.10	4,279	13,455	.52	44,945	9.52	29.94
Machinery other than electric	71	3,411,260	46	(¹)	4,130	273	.12	74,713	5.53	.37
Transport equipment	73	7,935,979	0	0	3,521	40	.04	48,737	7.22	.08
Textile fibres, not manufactured and waste	26	158,400	25	.02	2,887	139	1.82	90,083	3.20	.15
Miscellaneous manufactured articles, n.e.s.	89	1,968,884	2,856	.15	2,856	2,856	.15	9,449	30.23	30.23
Fruits and vegetables	5	746,687	1	(¹)	2,503	85	.34	16,462	15.20	.52
Textile yarn, fabrics, made-up articles, etc.	65	1,392,019	110	.01	2,359	6,435	.17	17,443	13.52	36.89
Electrical machinery apparatus and appliances	72	2,556,548	74	(¹)	2,139	74	.08	11,122	19.23	.67
Scientific-control instruments, photographic goods, clocks	86	697,369	139	.02	2,008	1,444	.29	10,034	20.01	14.39
Beverages	11	767,254	152	.02	1,916	1,406	.25	3,959	48.40	35.51
Coffee, tea, cocoa, spices and manufactures thereof	7	1,616,519	0	0	1,367	40	.08	1,800	75.94	2.22
Leather, leather manufactures n.e.s. and dressed fur skins	61	114,564	146	.13	972	146	.85	7,372	13.19	1.98
Crude animal and vegetable materials, n.e.s.	29	204,622	171	.08	433	171	.21	8,385	5.16	2.04
Feed-stuff for animals excluding unmilled cereals	8	78,779	0	0	17	0	.02	3,651	.47	0
Other		5,288,989	326	.01	4,411	2,486	.08	421,630	1.05	.59

¹ Represents less than 0.005.

Note: See footnotes to table A-1.

Source: Based on OECD, "Commodity Trade: Imports," January-December 1966, passim, and OECD, "Trade by Commodities-Market Summaries: Imports," vol. 1, January-December 1971, passim.

TABLE B-1.—PROJECTED U.S. IMPORTS FROM BULGARIA: 1976 AND 1980

[Dollar amounts in thousands]

Commodity group	SITC No.	1976					1980		
		Projected U.S. imports from Bulgaria		Projected OECD imports from Bulgaria	Estimated U.S. imports as a percent of projected OECD imports from Bulgaria ¹		Projected U.S. imports from Bulgaria		Projected OECD imports from Bulgaria
		High	Low		High	Low	High	Low	
Total		\$35,443	\$11,620	\$286,872	12.35	4.05	\$41,403	\$14,880	\$327,430
Iron and steel	67	4,956	0	24,515	20.22	-----	5,873	0	29,047
Meat and meat preparations	01	5,762	232	24,898	23.14	.93	6,851	275	29,608
Nonferrous metals	68	3,553	42	18,440	19.27	.23	3,394	41	17,612
Electrical machinery, apparatus and appliances	72	2,308	47	9,484	24.34	.50	3,118	64	12,812
Tobacco and tobacco manufactures	12	956	6	6,202	15.41	.10	43	0	278
Fruit and vegetables	05	1,361	1,361	51,556	2.64	2.64	1,626	1,626	61,608
Chemical elements and compounds	51	1,730	272	15,258	11.34	1.78	2,332	366	20,562
Clothing	84	6,639	6,639	38,333	17.32	17.32	9,330	9,330	53,869
Fixed vegetable oils and fats	42	1,589	131	7,231	21.97	1.81	2,044	168	9,299
Oil seeds, oil nuts and oil kernels	22	458	15	9,104	5.03	.16	314	10	6,248
Other		6,131	3,217	81,851	7.49	3.93	6,478	3,399	86,487

¹ The same rates were applied to the 1980 OECD projections.

Source: Based on OECD, "Trade by Commodities: Imports." Annual volumes for 1966-71 were used. See text.

TABLE B-2.—PROJECTED U.S. IMPORTS FROM CZECHOSLOVAKIA: 1976 AND 1980

[Dollar amounts in thousands]

Commodity group	SITC No.	1976 ¹					1980			
		Projected U.S. imports from Czechoslovakia		Projected OECD imports from Czechoslovakia	Estimated U.S. imports as a percent of projected OECD imports from Czechoslovakia ¹		Projected U.S. imports from Czechoslovakia		Projected OECD imports from Czechoslovakia	
		High	Low		High	Low	High	Low		
Total.....		\$180,535	\$126,178	\$1,160,024	15.56	10.88	\$228,949	\$161,401	\$1,451,399	
Iron and steel.....	67	45,556	45,556	211,300	21.56	21.56	60,954	60,954	282,716	
Clothing.....	84	15,520	15,063	52,503	29.56	28.69	20,914	20,298	70,751	
Machinery other than electric.....	71	18,212	7,743	144,199	12.63	5.37	23,301	9,907	184,491	
Transport equipment.....	73	10,304	2,927	44,550	23.13	6.57	12,783	3,631	55,266	
Footwear.....	85	8,664	8,664	25,077	34.55	34.55	10,374	10,374	30,025	
Miscellaneous manufactured articles, not elsewhere specified.....	89	9,978	5,892	30,264	32.97	19.47	11,609	6,856	35,212	
Textile yarn, fabrics, made-up articles, etc.....	65	8,653	8,653	65,204	13.27	13.27	11,042	11,042	83,208	
Nonmetallic mineral manufactures, not elsewhere specified.....	66	7,981	10,489	43,851	18.20	23.92	9,098	11,958	49,991	
Meat and meat preparations.....	01	7,785	3,000	33,299	23.38	9.01	9,725	3,748	41,595	
Electrical machinery, apparatus and appliances.....	72	4,992	1,217	26,986	18.50	4.51	6,649	1,621	35,942	
Chemical elements and compounds.....	51	5,971	580	43,971	13.58	1.32	7,545	733	55,559	
Wood and cork manufactures excluding furniture.....	63	2,890	290	6,754	42.79	4.29	3,207	321	7,494	
Manufactures of metal, not elsewhere specified.....	69	4,413	2,580	20,708	21.31	12.46	5,824	3,405	27,328	
Travel goods, handbags and similar articles.....	83	2,568	3,727	4,953	51.85	75.25	3,258	4,729	6,285	
Nonferrous metals.....	68	3,357	80	18,690	17.96	0.43	4,094	98	22,794	
Beverages.....	11	2,093	1,240	4,578	45.72	27.09	2,653	1,571	5,802	
Crude fertilizers and crude minerals, not elsewhere specified.....	27	2,915	175	21,029	13.86	.83	3,584	215	25,861	
Metalliferous ores and metal scrap.....	28	1,775	17	12,126	14.64	.14	2,149	21	14,678	
Wood, lumber and cork.....	24	1,628	0	58,977	2.76	-----	1,852	0	67,093	
Scientific and control instruments, photography goods, clocks.....	86	1,459	301	7,370	19.80	4.08	1,812	375	9,158	
Coffee, tea, cocoa, spices and manufactures thereof.....	07	1,175	845	1,775	66.20	47.61	1,410	1,014	2,131	
Furniture.....	82	1,522	1,998	13,400	11.36	14.91	1,893	2,485	16,668	
Petroleum and petroleum products.....	33	1,042	9	29,700	3.51	.03	1,232	11	35,100	
Sanitary, plumbing, heating and lighting fixtures.....	81	837	824	5,884	14.23	14.00	864	851	6,079	
Other.....		9,245	4,308	232,876	3.97	1.85	11,123	5,183	280,172	

¹ The same rates were applied to the 1980 OECD projections.

Source: Based on OECD, "Trade by Commodities: Imports." Annual volumes for 1966-71 were used. See text.

TABLE B-3.—PROJECTED U.S. IMPORTS FROM THE GERMAN DEMOCRATIC REPUBLIC: 1976 AND 1980

[Dollar amounts in thousands]

Commodity group	SITC No.	1976				1980			
		Projected U.S. imports from German Democratic Republic		Projected OECD imports from German Democratic Republic	Estimated U.S. imports as a percent of projected OECD imports from German Democratic Republic ¹		Projected U.S. imports from German Democratic Republic		Projected OECD imports from German Democratic Republic
		High	Low		High	Low	High	Low	
Total.....		\$79,560	\$24,721	\$579,917	13.72	4.26	\$96,720	\$22,593	\$696,933
Miscellaneous manufactured articles, not elsewhere specified.....	89	12,981	1,477	40,239	32.26	3.67	16,106	1,832	49,927
Transport equipment.....	73	7,436	194	40,434	18.39	.48	9,413	246	51,186
Electrical machinery, apparatus, and appliances.....	72	7,002	1,860	47,831	14.64	3.89	9,120	2,423	62,295
Machinery other than electric.....	71	8,184	3,673	82,914	9.87	4.43	10,427	4,680	105,646
Iron and steel.....	67	4,470	1,582	37,128	12.04	4.26	5,014	1,774	41,644
Chemical elements and compounds.....	51	4,049	674	43,773	9.25	1.54	4,847	807	52,405
Scientific and control instruments, photographic goods, clocks.....	86	3,948	1,902	23,713	16.65	8.02	4,818	2,321	28,937
Travel goods, handbags, and similar articles.....	83	3,241	173	6,702	48.36	2.58	4,264	228	8,818
Footwear.....	85	2,348	457	3,792	61.91	12.06	3,143	612	5,076
Meat and meat preparations.....	01	1,749	26	6,762	25.87	.38	1,291	19	4,990
Textile yarn, fabrics, made-up articles, etc.....	65	2,351	215	20,497	11.47	1.05	2,791	255	24,333
Nonmetallic mineral manufactures, not elsewhere specified.....	66	2,714	4,383	18,586	14.60	23.58	3,092	4,994	21,178
Clothing.....	84	2,220	120	9,932	22.35	1.21	2,682	145	12,000
Furniture.....	82	2,602	50	19,818	13.13	0.25	3,583	68	27,286
Crude rubber, including synthetic and reclaimed.....	23	1,452	0	5,578	26.03	0	1,796	0	6,898
Nonferrous metals.....	68	1,552	25	8,425	18.42	.30	1,433	23	7,777
Manufactures of metal, not elsewhere specified.....	69	2,024	180	9,946	20.35	1.81	2,534	225	12,450
Fertilizers manufactured.....	56	1,337	0	26,171	5.11	0	1,552	0	30,367
Petroleum and petroleum products.....	33	1,300	695	14,132	9.20	4.92	1,444	772	15,700
Hides, skins, and fur skins, undressed.....	21	322	534	1,205	26.72	44.32	262	435	981
Fixed vegetable oils and fats.....	42	1,016	0	5,818	17.46	0	1,161	0	6,650
Other.....		5,262	650	106,521	4.94	.61	5,947	734	120,389

¹ The same rates were applied to the 1980 OECD projections.

Source: Based on OECD, "Trade by Commodities: Imports." Annual volumes for 1966-71 were used. See text.

TABLE B-4.—PROJECTED U.S. IMPORTS FROM HUNGARY: 1976 AND 1980

[Dollar amounts in thousands]

Commodity group	SITC No.	1976			Estimated U.S. imports as a percent of projected OECD imports from Hungary ¹		1980		
		Projected U.S. imports from Hungary		Projected imports from OECD	High	Low	Projected U.S. imports from Hungary		Projected imports from OECD
		High	Low				High	Low	
Total.....		\$116,995	\$52,286	\$839,571	13.94	6.23	\$149,224	\$67,579	\$1,056,679
Clothing.....	84	24,443	25,096	77,844	31.40	32.24	33,178	34,066	105,664
Meat and meat preparations.....	01	19,721	2,156	87,299	22.59	2.47	23,629	2,605	105,483
Iron and steel.....	67	12,688	8	83,422	15.21	.01	16,695	11	109,762
Miscellaneous manufactured articles, not elsewhere specified.....	89	6,773	2,350	19,341	35.02	12.15	8,276	2,871	23,633
Electrical machinery, apparatus and appliances.....	72	6,851	153	33,305	20.57	2.46	9,061	203	44,049
Footwear.....	85	3,479	1,109	5,306	65.56	20.90	4,040	1,288	6,162
Textile yarn, fabrics, made-up articles, etc.....	65	3,665	3,598	30,775	11.91	11.69	4,374	4,293	36,723
Coffee, tea, cocoa, spices and manufactures thereof.....	07	2,903	2,136	5,074	57.21	42.10	3,239	2,384	5,662
Manufactures of metal, not elsewhere specified.....	69	3,331	338	16,738	19.90	2.02	4,507	458	22,650
Metalliferous ores and metal scrap.....	28	4,356	0	22,359	19.57	0	5,663	0	28,939
Crude animal and vegetable materials, not elsewhere specified.....	29	3,203	633	18,506	16.94	3.35	4,082	807	24,094
Beverages.....	11	3,072	5,213	7,974	38.52	65.38	3,961	6,722	10,282
Machinery other than electric.....	71	2,787	366	23,319	11.95	1.57	3,728	490	31,195
Chemical elements and compounds.....	51	2,644	348	37,831	6.99	.92	3,559	468	50,915
Nonferrous metals.....	68	3,337	82	23,383	14.27	.35	4,300	105	30,135
Nonmetallic mineral manufactures, not elsewhere specified.....	66	1,742	4,316	19,910	18.69	46.31	2,192	5,432	11,729
Fish and fish preparations.....	03	1,216	79	9,910	63.69	4.13	1,573	102	2,470
Petroleum and petroleum products.....	33	577	0	9,457	6.10	0	461	0	7,565
Other.....		10,207	4,305	326,107	3.13	1.32	12,506	5,274	399,567

¹ The same rates were applied to the 1980 OECD projections.

Source: Based on OECD "Trade by Commodities: Imports." Annual volumes for 1966-71 were used. See text.

TABLE B-5.—PROJECTED U.S. IMPORTS FROM ROMANIA: 1976 AND 1980

[Dollar amounts in thousands]

Commodity group	SITC No.	1976				1980			
		Projected U.S. imports from Romania		Projected OECD imports from Romania	Estimated U.S. imports as a percent of projected OECD imports from Romania ¹		Projected U.S. imports from Romania		Projected OECD imports from Romania
		High	Low		High	Low	High	Low	
Total.....		\$143,204	\$60,590	\$875,369	16.36	6.92	\$185,740	\$80,211	\$1,077,348
Iron and steel.....	67	21,225	153	85,171	24.92	.18	29,155	211	116,995
Clothing.....	84	25,417	24,437	80,280	31.66	30.44	36,095	34,704	114,008
Footwear.....	85	11,642	8,363	19,364	60.12	43.19	15,749	11,314	26,196
Meat and meat preparations.....	01	10,289	66	41,024	25.08	.16	11,440	73	45,616
Petroleum and petroleum products.....	33	8,726	2,705	63,650	13.71	4.25	8,831	2,737	64,410
Fixed vegetable oils and fats.....	42	8,391	5,987	49,358	17.00	12.13	11,323	8,079	66,606
Wood and cork manufactures excluding furniture.....	63	5,435	234	12,599	43.14	1.86	6,709	289	15,551
Miscellaneous manufactured articles, not elsewhere specified.....	89	5,036	964	10,244	49.16	9.41	6,719	1,286	13,668
Nonferrous metals.....	68	5,916	74	30,814	19.20	.24	6,797	85	35,402
Furniture.....	82	6,927	5,366	47,742	14.51	11.24	7,354	5,697	50,685
Textile yarn, fabrics, made-up articles, etc.....	65	4,425	5,522	26,109	16.95	21.15	6,127	7,646	36,149
Chemical elements and compounds.....	51	4,652	918	28,436	16.36	3.23	5,913	1,167	36,144
Transport equipment.....	73	2,198	32	20,278	10.84	.16	3,043	45	28,070
Machinery other than electric.....	71	3,664	1,078	30,712	11.93	3.51	5,066	1,491	42,468
Wood, lumber and cork.....	24	2,228	0	80,732	2.76	0	2,415	0	87,496
Manufactures of metal, not elsewhere specified.....	69	1,129	70	10,414	23.19	.67	3,459	100	14,918
Electrical machinery, apparatus and appliances.....	72	2,793	14	9,654	28.93	.14	3,890	19	13,446
Nonmetallic mineral manufactures, not elsewhere specified.....	66	731	653	4,090	17.87	15.97	697	623	3,902
Crude rubber, including synthetic and reclaimed.....	23	2,226	0	8,639	25.77	0	3,026	0	11,743
Other.....		10,154	3,954	216,059	4.70	1.83	11,932	4,645	253,875

¹ The same rates were applied to the 1980 OECD projections.

Source: Based on OECD, "Trade by Commodities: Imports." Annual volumes for 1966-71 were used. See text.

TABLE B-6.—PROJECTED U.S. IMPORTS FROM U.S.S.R.: 1976 AND 1980

[Dollar amounts in thousands]

Commodity group	SITC No.	1976				1980			
		Projected U.S. imports from U.S.S.R.		Projected OECD imports from U.S.S.R.	Estimated U.S. imports as a percent of projected OECD imports from U.S.S.R. ¹		Projected U.S. imports from U.S.S.R.		Projected OECD imports from U.S.S.R.
		High	Low		High	Low	High	Low	
Total.....		\$389,835	\$124,348	\$3,948,822	9.87	3.15	\$480,728	\$151,145	\$4,866,790
Petroleum and petroleum products.....	33	139,915	1,517	1,228,406	11.39	.12	182,237	2,000	1,599,978
Nonferrous metals.....	68	47,350	34,616	373,425	12.68	9.27	56,331	41,182	444,253
Fish and fish preparations.....	03	20,413	878	43,047	47.42	2.04	23,605	1,015	49,779
Iron and steel.....	67	12,716	2,758	77,914	16.32	3.54	10,320	2,239	63,238
Nonmetallic mineral manufactures, not elsewhere specified.....	66	23,150	23,150	42,260	54.78	54.78	29,713	29,713	54,240
Wood and cork manufactures excluding furniture.....	28	25,993	20,766	233,330	11.14	8.90	33,296	26,601	298,886
Fixed vegetable oils and fats.....	63	12,671	3,715	24,913	50.86	14.91	13,930	4,084	27,389
Crude fertilizers and crude minerals, not elsewhere specified.....	42	10,154	1,583	56,351	18.02	2.81	11,959	1,865	66,363
Wood, lumber and cork.....	27	13,548	83	118,217	11.46	.07	16,689	102	145,625
Hides, skins and fur skins, undressed.....	24	10,943	0	639,919	1.71	-----	13,084	0	765,131
Chemical elements and compounds.....	21	5,546	3,417	36,582	15.16	9.34	4,617	2,845	30,458
Machinery other than electric.....	51	8,789	2,499	73,058	12.03	3.42	11,255	3,200	93,554
Transport equipment.....	71	9,617	2,154	117,710	8.17	1.83	13,053	2,924	159,762
Textile fibres, not manufactured and waste.....	73	9,871	357	75,934	13.00	.47	13,418	485	103,214
Miscellaneous manufactured articles, not elsewhere specified.....	26	3,633	3,178	60,658	5.99	5.24	2,464	2,155	41,134
Fruit and vegetables.....	89	4,820	3,811	15,872	30.37	24.01	6,361	5,029	20,944
Textile yarn, fabrics, made-up articles, etc.....	05	2,412	48	14,692	16.42	.33	2,336	47	14,224
Electrical machinery, apparatus and appliances.....	65	4,759	10,625	28,530	16.68	37.24	6,229	13,908	37,346
Scientific and control instruments photography goods, clocks.....	72	4,644	78	22,166	20.95	.35	6,283	105	29,990
Meat and meat preparations.....	86	2,799	1,199	12,324	22.71	9.73	3,344	1,433	14,724
Coffee, tea, cocoa, spices, and manufactures thereof.....	11	2,719	3,112	6,559	41.46	47.44	3,688	4,220	8,895
Leather, leather manufactures, not elsewhere specified and dressed fur skins.....	07	2,053	250	3,299	62.24	7.57	2,780	338	4,467
Crude animal and vegetable materials, not elsewhere specified.....	61	1,294	267	8,480	15.26	3.15	1,355	280	8,880
Feed-stuff for animals excluding unmilled cereals.....	29	1,984	1,856	11,744	16.89	15.80	2,451	2,293	14,512
Other.....	08	0	0	0	-----	-----	0	0	0
		8,042	2,431	623,432	1.29	.39	9,930	3,002	769,804

¹ The same rates were applied to the 1980 OECD projections.

Source: Based on OECD "Trade by Commodities: Imports." Annual volumes for 1966-71 were used. See text.

TABLE C-1.—ESTIMATED IMPACT OF MFN AND NON-MFN FACTORS ON UNITED STATES IMPORTS FROM BULGARIA: 1966 AND 1971

[In thousands of dollars]

Commodity group ¹	SITC No.	Cost ² of MFN denial and of non-MFN factors		Cost of MFN denial		Cost of non-MFN factors	
		High	Low	High	Low	High	Low
1966							
Total ³		16,997	1,236	12,745	808	4,252	428
Iron and steel	67	706	0	565	0	141	0
Meat and meat preparations	1	2,361	0	1,574	0	787	0
Nonferrous metals	68	4,981	0	3,322	0	1,659	0
Electrical machinery, apparatus and appliances	72	264	20	264	20	0	0
Tobacco and tobacco manufactures	12	4,278	0	4,278	0	0	0
Fruit and vegetables	5	498	498	166	166	332	332
Chemical elements and compounds	51	218	8	196	7	22	1
Clothing	84	302	302	302	302	0	0
Fixed vegetable oils and fats	42	359	0	180	0	179	0
Oil seeds, oil nuts, and oil kernels	22	578	0	0	0	578	0
Other ⁴		2,452	408	1,898	313	554	95
1971							
Total ³	67	26,825	3,440	20,111	2,668	6,714	772
Iron and steel	67	8,991	0	7,193	0	1,798	0
Meat and meat preparations	1	4,781	0	3,187	0	1,594	0
Nonferrous metals	68	2,667	0	1,778	0	889	0
Electrical machinery, apparatus and appliances	72	1,582	12	1,582	12	0	0
Tobacco and tobacco manufactures	12	1,333	11	1,333	11	0	0
Fruit and vegetables	5	858	858	286	286	572	572
Chemical elements and compounds	51	349	0	314	0	35	0
Clothing	84	819	819	819	819	0	0
Fixed vegetable oils and fats	42	682	152	341	76	341	76
Oil seeds, oil nuts, and oil kernels	22	237	0	0	0	237	0
Other ⁴		4,526	1,588	3,278	1,464	1,248	124

¹ Only those commodity groups are listed for which the high estimates—or actual imports, if higher—amounted to \$1,000,000 or more in at least 1 year of the 1966-71 period. It excludes special transactions not classified according to kind and certain commodities which by nature would not be exported to the United States in large quantities, or those on which U.S. restrictions are assumed not to be negotiable, as discussed in the text.

² Derived as the difference between the estimated and actual imports.

³ Includes all commodity groups for which the high estimates—or actual imports, if higher—amounted to at least \$100,000 in the year listed.

⁴ Represents the difference between the total and the sum of the listed commodities.

Source: Based on table A-1 and U.S. Tariff Commission, "Tariff Schedules of the United States Annotated" (1972) passim.

TABLE C-2.—ESTIMATED IMPACT OF MFN AND NON-MFN FACTORS ON UNITED STATES IMPORTS FROM CZECHOSLOVAKIA: 1966 AND 1971

[In thousands of dollars]

Commodity group ¹	SITC No.	Cost ² of MFN denial and of non-MFN factors		Cost of MFN denial		Cost of non-MFN factors	
		High	Low	High	Low	High	Low
Total ³ 1966		38,552	17,007	26,750	12,467	11,802	4,540
Iron and steel.....	67	6,018	6,018	4,014	4,014	2,004	2,004
Clothing.....	84	2,112	2,112	1,056	1,056	1,056	1,056
Machinery other than electric.....	71	0	0	0	0	0	0
Transport equipment.....	73	3,093	0	3,093	0	0	0
Footwear.....	85	0	0	0	0	0	0
Miscellaneous manufactured articles, n.e.s.....	89	4,156	1,280	2,078	640	2,078	640
Textile yarn, fabrics, made-up articles, etc.....	65	2,689	2,689	2,017	2,017	672	672
Nonmetallic mineral manufactures, n.e.s.....	66	1,496	2,234	1,496	2,234	0	0
Meat and meat preparations.....	1	985	0	328	0	657	0
Electrical machinery, apparatus, and appliances.....	72	681	0	681	0	0	0
Chemical elements and compounds.....	51	2,155	0	2,155	0	0	0
Wood and cork manufactures, excluding furniture.....	63	2,104	0	2,104	0	0	0
Manufactures of metals, n.e.s.....	69	200	208	200	208	0	0
Travel goods, handbags, and similar articles.....	83	609	1,220	609	1,220	0	0
Nonferrous metals.....	68	2,014	16	1,007	8	1,007	8
Beverages.....	11	552	116	552	116	0	0
Crude fertilizers and crude minerals, n.e.s.....	27	1,649	0	1,649	0	0	0
Metalliferous ores and metal scrap.....	28	997	0	977	0	0	0
Wood, lumber, and cork.....	24	1,404	0	0	0	1,404	0
Scientific and control instruments, photography goods, clocks.....	86	565	0	565	0	0	0
Coffee, tea, cocoa, spices, manufactures thereof.....	7	586	320	293	160	293	160
Furniture.....	82	247	357	247	357	0	0
Petroleum and petroleum products.....	33	522	0	0	0	522	0
Sanitary, plumbing, heating, and lighting fixtures.....	81	0	0	0	0	0	0
Other ⁴		3,738	437	1,629	437	2,109	0
Total ³ 1971		110,961	66,087	79,210	46,531	31,751	19,556
Iron and steel.....	67	30,896	30,896	20,597	20,597	10,299	10,299
Clothing.....	84	11,675	9,924	5,838	4,962	5,837	4,962
Machinery other than electric.....	71	5,998	0	3,999	0	1,999	0
Transport equipment.....	73	6,834	0	6,834	0	0	0
Footwear.....	85	5,195	5,195	4,156	4,156	1,039	1,039
Miscellaneous manufactured articles, n.e.s.....	89	6,993	2,709	3,497	1,355	3,496	1,354
Textile yarn, fabrics, made-up articles, etc.....	65	6,443	6,443	4,832	4,832	1,611	1,611
Nonmetallic mineral manufactures, n.e.s.....	66	3,330	3,788	3,330	3,788	0	0
Meat and meat preparations.....	1	4,535	0	1,512	0	3,023	0
Electrical machinery, apparatus, and appliances.....	72	3,796	721	3,796	721	0	0
Chemical elements and compounds.....	51	3,752	661	3,752	661	0	0
Wood and cork manufactures, excluding furniture.....	63	2,324	322	2,324	322	0	0
Manufactures of metals, n.e.s.....	69	2,051	608	2,051	608	0	0
Travel goods, handbags, and similar articles.....	83	1,990	1,574	1,990	1,574	0	0
Nonferrous metals.....	68	1,651	0	826	0	825	0
Beverages.....	11	1,383	489	1,383	489	0	0
Crude fertilizers and crude minerals, n.e.s.....	27	1,434	418	1,434	418	0	0
Metalliferous ores and metal scrap.....	28	1,372	0	1,372	0	0	0
Wood, lumber, and cork.....	24	1,134	0	0	0	1,134	0
Scientific and control instruments, photography goods, clocks.....	86	1,080	176	1,080	176	0	0
Coffee, tea, cocoa, spices, manufactures thereof.....	7	1,056	582	528	291	528	291
Furniture.....	82	634	645	634	645	0	0
Petroleum and petroleum products.....	33	753	0	0	0	753	0
Sanitary, plumbing, heating, and lighting fixtures.....	81	82	8	82	8	0	0
Other ⁴		4,570	928	3,363	928	1,207	0

¹ Only those commodity groups are listed for which the high estimates—or actual imports, if higher—amounted to \$1,000,000 or more in at least 1 year of the 1966-71 period. It excludes special transactions not classified according to kind and certain commodities which by nature would not be exported to the United States in large quantities, or those on which U.S. restrictions are assumed not to be negotiable, as discussed in the text.

² Derived as the difference between the estimated and actual imports.

³ Includes all commodity groups for which the high estimates—or actual imports, if higher—amounted to at least \$100,000 in the year listed.

⁴ Represents the difference between the total and the sum of the listed commodities.

Source: Based on table A-2 and U.S. Tariff Commission, "Tariff Schedules of the United States Annotated" (1972), passim.

TABLE C-3.—ESTIMATED IMPACT OF MFN AND NON-MFN FACTORS ON UNITED STATES IMPORTS FROM THE GERMAN DEMOCRATIC REPUBLIC: 1966 AND 1971

[In thousands of dollars]

Commodity group ¹	SITC No.	Cost ² of MFN denial and of non-MFN factors		Cost of MFN denial		Cost of non-MFN factors	
		High	Low	High	Low	High	Low
1966							
Total ³		29,937	2,883	22,659	2,763	7,278	120
Miscellaneous manufactured articles, n.e.s.	89	4,864	515	3,891	412	973	103
Transport equipment	73	1,776	0	1,776	0	0	0
Electrical machinery, apparatus, and appliances	72	1,751	0	1,751	0	0	0
Machinery other than electric	71	2,084	0	1,876	0	208	0
Iron and steel	67	51	0	13	0	38	0
Chemical elements and compounds	51	1,812	0	1,631	0	181	0
Scientific and control instruments, photography goods, clocks	86	1,484	74	1,484	74	0	0
Travel goods, handbags, and similar articles	83	724	44	724	44	0	0
Footwear	85	318	38	318	38	0	0
Meat and meat preparations	1	2,408	0	241	0	2,167	0
Textile yarn, fabrics, made-up articles, etc.	65	1,328	87	1,062	70	266	17
Nonmetallic mineral manufactures, n.e.s.	66	1,554	1,973	1,554	1,973	0	0
Clothing	84	1,076	120	1,076	120	0	0
Furniture	82	388	6	388	6	0	0
Crude rubber, including synthetic and reclaimed	23	531	0	531	0	0	0
Nonferrous metals	68	2,184	0	1,457	0	727	0
Manufactures of metal, n.e.s.	69	546	4	546	4	0	0
Fertilizers, manufactured	56	1,130	0	0	0	1,130	0
Petroleum and petroleum products	33	348	0	0	0	348	0
Hides, skins, and fur skins, undressed	21	0	0	0	0	0	0
Fixed vegetable oils and fats	42	128	0	64	0	64	0
Other ⁴		3,452	22	2,276	22	1,176	0
1971							
Total ³		47,900	5,271	38,653	3,762	9,247	1,509
Miscellaneous manufactured articles, n.e.s.	89	9,049	110	7,239	88	1,810	22
Transport equipment	73	6,663	0	6,663	0	0	0
Electrical machinery, apparatus, and appliances	72	4,236	828	4,236	828	0	0
Machinery other than electric	71	1,137	0	1,023	0	114	0
Iron and steel	67	3,977	254	994	64	2,983	190
Chemical elements and compounds	51	2,028	0	1,825	0	203	0
Scientific and control instruments, photography goods, clocks	86	1,292	129	1,292	129	0	0
Travel goods, handbags, and similar articles	83	2,252	128	2,252	128	0	0
Footwear	85	2,239	0	2,239	0	0	0
Meat and meat preparations	1	1,990	0	199	0	1,791	0
Textile yarn, fabrics, made-up articles, etc.	65	1,998	99	1,598	79	400	20
Nonmetallic mineral manufactures, n.e.s.	66	1,175	1,956	1,175	1,956	0	0
Clothing	84	1,765	59	1,765	59	0	0
Furniture	82	1,238	0	1,238	0	0	0
Crude rubber, including synthetic and reclaimed	23	1,043	0	1,043	0	0	0
Nonferrous metals	68	851	0	567	0	284	0
Manufactures of metal, n.e.s.	69	971	375	971	375	0	0
Fertilizers, manufactured	56	823	0	0	0	823	0
Petroleum and petroleum products	33	0	0	0	0	0	0
Hides, skins, and fur skins, undressed	21	0	1,277	0	0	0	1,277
Fixed vegetable oils and fats	42	30	0	15	0	15	0
Other ⁴		3,143	56	2,319	56	824	0

¹ Only those commodity groups are listed for which the high estimates—or actual imports, if higher—amounted to \$1,000,000 or more in at least 1 year of the 1966–71 period. It excludes special transactions not classified according to kind and certain commodities which by nature would not be exported to the United States in large quantities, or those on which U.S. restrictions are assumed not to be negotiable, as discussed in the text.

² Derived as the difference between the estimated and actual imports.

³ Includes all commodity groups for which the high estimates—or actual imports, if higher—amounted to at least \$100,000 in the year listed.

⁴ Represents the difference between the total and the sum of the listed commodities.

Source: Based on table A-3 and U.S. Tariff Commission, "Tariff Schedules of the United States Annotated" (1972), passim.

TABLE C-4.—ESTIMATED IMPACT OF MFN AND NON-MFN FACTORS ON UNITED STATES IMPORTS FROM HUNGARY: 1966 AND 1971

[In thousands of dollars]

Commodity group ¹	SITC No.	Cost ² of MFN denial and of non-MFN factors		Cost of MFN denial		Cost of non-MFN factors	
		High	Low	High	Low	High	Low
1966							
Total ³		36,822	11,129	19,414	7,222	17,408	3,907
Clothing.....	84	3,798	4,461	1,899	2,231	1,899	2,230
Meat and meat preparations.....	1	9,460	113	1,892	23	7,568	90
Iron and steel.....	67	3,884	0	2,591	0	1,293	0
Miscellaneous manufactured articles, n.e.s.....	89	1,005	0	670	0	335	0
Electrical machinery, apparatus, and appliances.....	72	1,231	19	1,231	19	0	0
Footwear.....	85	1,587	113	952	68	635	45
Textile yarn, fabrics, made-up articles, etc.....	65	1,821	2,323	1,215	1,549	606	774
Coffee, tea, cocoa, spices, manufactures thereof.....	7	1,888	1,224	944	612	944	612
Manufactures of metal n.e.s.....	69	479	65	479	65	0	0
Metalliferous ores and metal scrap.....	28	1,527	0	1,527	0	0	0
Crude animal and vegetable materials, n.e.s.....	29	1,062	89	0	0	1,062	89
Beverages.....	11	770	1,057	770	1,057	0	0
Machinery other than electric.....	71	796	0	531	0	265	0
Chemical elements and compounds.....	51	384	30	384	30	0	0
Nonferrous metals.....	68	1,060	8	530	4	530	4
Nonmetallic mineral manufactures, n.e.s.....	66	464	1,345	464	1,345	0	0
Fish and fish preparation.....	3	407	0	0	0	407	0
Petroleum and petroleum products.....	33	900	0	0	0	900	0
Other ⁴		4,299	282	3,335	219	964	63
1971							
Total ³		73,946	29,330	42,401	18,971	31,545	10,359
Clothing.....	84	15,681	15,681	7,841	7,841	7,840	7,840
Meat and meat preparations.....	1	12,561	0	2,512	0	10,049	0
Iron and steel.....	67	10,739	0	7,159	0	3,580	0
Miscellaneous manufactured articles, n.e.s.....	89	4,002	532	2,668	355	1,334	177
Electrical machinery, apparatus, and appliances.....	72	4,945	229	4,945	229	0	0
Footwear.....	85	3,118	1,150	1,871	690	1,247	460
Textile yarn, fabrics, made-up articles, etc.....	65	2,583	1,540	1,722	1,027	861	513
Coffee, tea, cocoa, spices, manufactures thereof.....	7	2,220	1,271	1,110	636	1,110	635
Manufactures of metal, n.e.s.....	69	1,847	79	1,847	79	0	0
Metalliferous ores and metal scrap.....	28	1,790	0	1,790	0	0	0
Crude animal and vegetable materials, n.e.s.....	29	1,681	375	0	0	1,681	375
Beverages.....	11	1,429	3,654	1,429	3,654	0	0
Machinery other than electric.....	71	1,547	0	1,031	0	516	0
Chemical elements and compounds.....	51	963	0	963	0	0	0
Nonferrous metals.....	68	1,118	0	559	0	559	0
Nonmetallic mineral manufactures, n.e.s.....	66	427	1,639	427	1,639	0	0
Fish and fish preparations.....	3	1,077	0	0	0	1,077	0
Petroleum and petroleum products.....	33	502	0	0	0	502	0
Other ⁴		5,716	3,180	4,527	2,821	1,189	359

¹ Only those commodity groups are listed for which the high estimates—or actual imports, if higher—amounted to \$1,000,000 or more in at least 1 year of the 1966-71 period. It excludes special transactions not classified according to kind and certain commodities which by nature would not be exported to the United States in large quantities, or those on which U.S. restrictions are assumed not to be negotiable, as discussed in the text.

² Derived as the difference between the estimated and actual imports.

³ Includes all commodity groups for which the high estimates—or actual imports, if higher—amounted to at least \$100,000 in the year listed.

⁴ Represents the difference between the total and the sum of the listed commodities.

Source: Based on table A-4 and U.S. Tariff Commission, "Tariff Schedules of the United States Annotated" (1972), passim.

TABLE C-5.—ESTIMATED IMPACT OF MFN AND NON-MFN FACTORS ON UNITED STATES IMPORTS FROM ROMANIA: 1966 AND 1971

[In thousands of dollars]

Commodity group ¹	SITC No.	Cost ² of MFN denial and of non-MFN factors		Cost of MFN denial		Cost of non-MFN factors	
		High	Low	High	Low	High	Low
1966							
Total ³		34,620	2,096	13,291	930	21,329	1,166
Iron and steel.....	67	1,163	0	1,047	0	116	0
Clothing.....	84	702	530	702	530	0	0
Footwear.....	85	366	5	329	5	37	0
Meat and meat preparations.....	1	4,403	0	881	0	3,522	0
Petroleum and petroleum products.....	33	10,988	0	0	0	10,988	0
Fixed vegetable oils and fats.....	42	1,256	0	628	0	628	0
Wood and cork manufactures, excluding furniture.....	63	2,136	0	2,136	0	0	0
Miscellaneous manufactured articles, n.e.s.....	89	493	0	329	0	164	0
Nonferrous metals.....	68	4,558	0	4,102	0	456	0
Furniture.....	82	0	0	0	0	0	0
Textile yarn, fabrics, made-up articles, etc.....	65	300	0	150	0	150	0
Chemical elements and compounds.....	51	1,306	0	871	0	435	0
Transport equipment.....	73	0	0	0	0	0	0
Machinery other than electric.....	71	329	0	263	0	66	0
Wood, lumber, and cork.....	24	2,319	0	0	0	2,319	0
Manufactures of metal, n.e.s.....	69	0	0	0	0	0	0
Electrical machinery, apparatus, and appliances.....	72	87	0	87	0	0	0
Nonmetallic mineral manufactures, n.e.s.....	66	0	13	0	8	0	5
Crude rubber, including synthetic and reclaimed.....	23	76	0	76	0	0	0
Other ⁴		4,138	1,548	1,690	387	2,448	1,161
1971							
Total ³		90,003	29,769	64,409	25,372	25,594	4,397
Iron and steel.....	67	17,732	0	15,959	0	1,773	0
Clothing.....	84	14,853	14,853	14,853	14,853	0	0
Footwear.....	85	7,819	4,626	7,037	4,163	782	463
Meat and meat preparations.....	1	9,266	0	1,853	0	7,413	0
Petroleum and petroleum products.....	33	5,586	0	0	0	5,586	0
Fixed vegetable oils and fats.....	42	3,832	0	1,916	0	1,916	0
Wood and cork manufactures, excluding furniture.....	63	3,426	168	3,426	168	0	0
Miscellaneous manufactured articles, n.e.s.....	89	3,222	14	2,148	9	1,074	5
Nonferrous metals.....	68	2,915	0	2,623	0	292	0
Furniture.....	82	1,760	1,206	1,760	1,206	0	0
Textile yarn, fabrics, made-up articles, etc.....	65	2,235	4,115	1,118	2,058	1,117	2,057
Chemical elements and compounds.....	51	1,784	0	1,189	0	595	0
Transport equipment.....	73	2,252	0	2,252	0	0	0
Machinery other than electric.....	71	1,867	2,873	1,494	2,298	373	575
Wood, lumber and cork.....	24	1,829	0	0	0	1,829	0
Manufactures of metal, n.e.s.....	69	1,313	74	1,182	67	131	7
Electrical machinery, apparatus, and appliances.....	72	1,277	12	1,277	12	0	0
Nonmetallic mineral manufactures, n.e.s.....	66	0	0	0	0	0	0
Crude rubber, including synthetic and reclaimed.....	23	1,237	0	1,237	0	0	0
Other ⁴		5,798	1,828	3,085	538	2,713	1,290

¹ Only those commodity groups are listed for which the high estimates—or actual imports, if higher—amounted to \$1,000,000 or more in at least 1 year of the 1966–71 period. It excludes special transactions not classified according to kind and certain commodities which by nature would not be exported to the United States in large quantities, or those on which U.S. restrictions are assumed not to be negotiable, as discussed in the text.

² Derived as the difference between the estimated and actual imports.

³ Includes all commodity groups for which the high estimates—or actual imports, if higher—amounted to at least \$100,000 in the year listed.

⁴ Represents the difference between the total and the sum of the listed commodities.

Source: Based on table A-5 and U.S. Tariff Commission, "Tariff Schedules of the United States Annotated" (1972), passim.

TABLE C-6.—ESTIMATED IMPACT OF MFN AND NON-MFN FACTORS ON U.S. IMPORTS FROM THE U.S.S.R.: 1966 AND 1971

[In thousands of dollars]

Commodity group ¹	SITC No.	Cost ² of MFN denial and of non-MFN factors		Cost of MFN denial		Cost of non-MFN factors	
		High estimate	Low estimate	High estimate	Low estimate	High estimate	Low estimate
1966							
Total ³		164,554	14,183	29,622	4,604	134,932	9,579
Petroleum and petroleum products.....	33	48,567	0	0	0	48,567	0
Nonferrous metals.....	68	16,419	0	0	0	16,419	0
Fish and fish preparations.....	03	11,469	0	2,867	0	8,602	0
Iron and steel.....	67	9,611	0	5,766	0	3,845	0
Nonmetallic mineral manufactures, n.e.s.....	66	14,188	0	0	0	14,188	0
Metalliferous ores and metal scrap.....	28	5,275	0	0	0	5,275	0
Wood and cork manufactures excluding furniture.....	63	8,928	1,460	8,928	1,460	0	0
Fixed vegetable oils and fats.....	42	5,442	0	2,721	0	2,721	0
Crude fertilizers and crude minerals, n.e.s.....	27	6,773	87	0	0	6,773	87
Wood, lumber, and cork.....	24	7,695	0	0	0	7,695	0
Hides, skins, and fur skins, undressed.....	21	5,310	0	0	0	5,310	0
Chemical elements and compounds.....	51	1,653	0	1,322	0	331	0
Machinery other than electric.....	71	1,685	303	1,516	273	169	30
Transport equipment.....	73	1,025	0	1,025	0	0	0
Textile fibers, not manufactured, and waste.....	26	9,011	9,011	901	901	8,110	8,110
Miscellaneous manufactured articles, n.e.s.....	89	573	0	382	0	191	0
Fruit and vegetables.....	05	3,396	0	679	0	2,717	0
Textile yarn, fabrics, made-up articles, etc.....	65	1,401	2,252	934	1,501	467	751
Electrical machinery, apparatus and appliances.....	72	478	0	478	0	0	0
Scientific and control instruments, photography goods, clocks.....	86	1,098	192	1,098	192	0	0
Beverages.....	11	264	277	264	277	0	0
Coffee, tea, cocoa, spices, and manufactures thereof.....	07	33	13	0	0	33	13
Leather, leather manufactures, n.e.s. and dressed fur skins.....	61	1,056	588	0	0	1,056	588
Crude animal and vegetable materials, n.e.s.....	29	0	0	0	0	0	0
Feed-stuff for animals excluding unmilled cereals.....	08	690	0	138	0	552	0
Other ⁴		2,514	0	603	0	1,911	0
1971							
Total ³		174,133	26,903	47,573	21,806	126,560	5,097
Petroleum and petroleum products.....	33	75,676	0	0	0	75,676	0
Nonferrous metals.....	68	0	0	0	0	0	0
Fish and fish preparations.....	03	19,668	34	4,917	8	14,751	26
Iron and steel.....	67	15,654	0	9,392	0	6,262	0
Nonmetallic mineral manufactures, n.e.s.....	66	0	0	0	0	0	0
Metalliferous ores and metal scrap.....	28	387	0	0	0	387	0
Wood and cork manufactures excluding furniture.....	63	8,956	2,678	8,956	2,678	0	0
Fixed vegetable oils and fats.....	42	8,684	0	4,342	0	4,342	0
Crude fertilizers and crude minerals, n.e.s.....	27	6,163	0	0	0	6,163	0
Wood, lumber, and cork.....	24	5,677	0	0	0	5,677	0
Hides, skins, and fur skins, undressed.....	21	2,329	0	0	0	2,329	0
Chemical elements and compounds.....	51	3,466	12,642	2,773	10,114	693	2,528
Machinery other than electric.....	71	4,084	227	3,676	204	408	23
Transport equipment.....	73	3,521	40	3,521	40	0	0
Textile fibers, not manufactured, and waste.....	26	2,862	114	286	11	2,576	103
Miscellaneous manufactured articles, n.e.s.....	89	0	0	0	0	0	0
Fruit and vegetables.....	05	2,502	84	500	17	2,002	67
Textile yarn, fabrics, made-up articles, etc.....	65	2,249	6,325	1,499	4,217	750	2,108
Electrical machinery, apparatus, and appliances.....	72	2,065	0	2,065	0	0	0
Scientific and control instruments, photographic goods, clocks.....	86	1,869	1,305	1,869	1,305	0	0
Beverages.....	11	1,764	1,254	1,764	1,254	0	0
Coffee, tea, cocoa, spices, and manufactures thereof.....	07	1,367	40	0	0	1,367	40
Leather, leather manufactures, n.e.s., and dressed fur skins.....	61	826	0	0	0	826	0
Crude animal and vegetable materials, n.e.s.....	29	262	0	0	0	262	0
Feed-stuff for animals excluding unmilled cereals.....	08	17	0	3	0	14	0
Other ⁴		4,085	2,160	2,010	1,958	2,075	202

¹ Only those commodity groups are listed for which the high estimates—or actual imports, if higher—amounted to \$1,000,000 or more in at least 1 year of the 1966-71 period. It excludes special transactions not classified according to kind and certain commodities which by nature would not be exported to the United States in large quantities, or those on which U.S. restrictions are assumed not to be negotiable, as discussed in the text.

² Derived as the difference between the estimated and actual imports.

³ Includes all commodity groups for which the high estimates—or actual imports, if higher—amounted to at least \$100,000 in the year listed.

⁴ Represents the difference between the total and the sum of the listed commodities.

Source: Based on table A-6 and U.S. Tariff Commission, "Tariff Schedules of the United States Annotated" (1972), passim.

THE STRUCTURE OF COMECON TRADE AND THE PROSPECTS FOR EAST-WEST EXCHANGES*

By J. M. MONTIAS

CONTENTS

	Page
I. Soviet Trade Statistics.....	662
II. The Commodity Composition of Intra-CMEA Trade.....	668
III. Some Hypotheses on the Direction of CMEA Trade in Manufactures.....	672
IV. Conclusions and Prospects.....	675
Appendix.....	677

This paper deals with fairly narrow but important empirical issues in the commodity trade of the members of the Council for Mutual Economic Assistance (CMEA).¹ It focuses on the division of CMEA members' imports and exports by broad commodity groups and on the shares of CMEA and of the rest of the world in exchanges within each of these groups. With the aid of statistical analysis, we attempt to isolate the chief factors influencing the respective shares of Comecon and of the West in the imports of machinery and of other manufactured goods by each CMEA member. On the basis of the structural characteristics of the direction of trade by commodity groups in the mid-1960's, we conclude by speculating on the long-run effects on East-West trade of continued industrialization in Eastern Europe and of the upsurge in Soviet-American exchanges.

I. SOVIET TRADE STATISTICS

The trade data regularly published by CMEA members by and large do not show how imports and exports in each commodity group are divided according to countries of origin or destination. Even in the case of the Soviet Union, which publishes quite detailed statistics of foreign trade, it is not possible to reconstruct this division with any accuracy, in view of substantial gaps in the breakdown of trade with each partner in the published statistics. Considerable progress has been made in the analysis of these gaps and, more generally, in the

*I am grateful to Dr. Jozef van Brabant who contributed his useful advice and kindly made available to me some of his unpublished data on the direction of CMEA trade by commodity groups and to Mr. Mark Allen for locating recently published Romanian and Bulgarian data that were not available to me.

¹The members of CMEA are Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Mongolia, Poland, Romania and the U.S.S.R. Insofar as possible, in all the data in this paper referring to CMEA trade prior to 1962, the trade of Albania which was still a member is included, but that of Mongolia, which joined the Council in 1962, is not. From 1962 on, data for Albania are excluded, data for Mongolia included. On some exceptions to this general rule, see the notes and sources to tables 4 and A1.

understanding of Soviet trade statistics in Paul Marer's book, "Soviet and East European Foreign Trade, 1946-1959," and, still more recently, in a paper written by B. Kostinsky for the U.S. Department of Commerce which will be published later this year.² Both Marer and Kostinsky have concluded that the major portion of the gaps consisted in "commercially traded strategic items" (Marer, p. 367). Since the U.S.S.R.'s partners in CMEA, as will presently be shown, do not include Soviet strategic exports in their import statistics in the same group or groups where these items were concealed in Soviet trade statistics, the unraveling of this problem is critical to a cross-country comparison of the relative importance of intra- and extra-Comecon trade in each group. Hitherto unpublished data discovered in a Soviet source generally confirm the earlier analyses of Marer and Kostinsky but also make it possible to narrow further the margin of uncertainty pertaining to the nature of the commodities omitted from the official Soviet foreign-trade annuals.³

Table 1 below presents the reconstructed breakdown by commodity groups of the U.S.S.R.'s trade with CMEA partners based primarily on this Soviet source. The gaps shown represent the difference between estimated total trade with CMEA in each group and the sum of the values of the items specified in Soviet foreign-trade annuals in trade with individual CMEA partners.

The gaps in groups I, III, and V are small and are presumed to fall within the margin of error of the independent calculations. Gaps in groups V and VI are presumed to reflect relatively minor omissions in coverage.⁴ The import gap in group II (CTN 2) is large (nearly one-third of imports in this group in 1967). A plausible hypothesis for this gap is that it consists mainly or exclusively of imports of uranium ores from Eastern Europe.⁵

The largest gaps are to be found in group VII, which is essentially a residual category. It contains building materials (CTN group 4), trade in which is small and almost completely itemized in the Soviet foreign-trade annuals (see Marer, p. 367), possibly group 6, which is negligible in the years 1964 to 1967, and unspecified items not entered in the published CTN nomenclature. The gaps in both imports and exports appear to consist almost entirely of such items. A plausible hypothesis is that this residual category represents arms and other manufactured military goods.

² Barry L. Kostinsky, "Description and Analysis of Soviet Foreign Trade Statistics," Foreign Demographic Analysis Division, Bureau of Economic Analysis, Social and Economic Statistics Administration, U.S. Department of Commerce, February 1974 (draft).

³ The original Soviet data are presented in tables A1 and A2 of appendix A.

⁴ Romania, for instance, exported large quantities of meat to the U.S.S.R. in the mid-1960's, which were not itemized in Soviet statistics.

⁵ According to Kostinsky's study (Department of Commerce), Czechoslovak exports of uranium ores to the Soviet Union in 1967 were about 63 million rubles or \$70 million (pp. 169-170).

TABLE 1.—SOVIET TRADE WITH CMEA MEMBERS: BREAKDOWN BY COMMODITY GROUPS

[In millions of U.S. dollars]

	Exports			Imports		
	Reconstructed from given breakdown	Sum of specified items	Gap	Reconstructed from given breakdown	Sum of specified items	Gap
I. Industrial machinery and equipment (CTN group 1):						
1960	440	415	25	1,184	1,209	-25
1964	850	851	-1	2,025	2,025	0
1965	842	845	-3	2,114	2,117	-3
1967	1,207	1,203	4	2,187	2,186	1
II. Fuels, mineral raw materials, metals (CTN group 2):						
1960	1,219	1,225	-6	584	451	33
1964	1,996	1,981	15	662	499	163
1965	2,012	1,975	37	701	569	182
1967	2,048	2,037	11	629	438	191
III. Chemicals, fertilizers, and rubber (CTN group 3):						
1960	106	104	2	96	91	5
1964	(1)	152	(1)	(1)	176	(1)
1965	164	159	5	166	166	3
1967	193	184	9	191	179	12
IV. Raw materials of vegetable and animal origin (other than food) (CTN group 5):						
1960	399	405	-6	130	104	26
1964	504	503	1	169	164	5
1965	538	533	5	152	146	6
1967	549	542	7	170	161	9
V. Foodstuffs and raw materials for foodstuffs (CTN groups 7-8):						
1960	533	506	27	226	189	37
1964	373	356	17	352	320	32
1965	398	382	16	450	409	41
1967	559	533	26	485	461	24
VI. Industrial consumer goods (other than foodstuffs), (CTN group 9):						
1960	112	76	37	513	512	1
1964	112	104	8	889	870	19
1965	112	101	11	895	884	11
1967	136	129	7	1,253	1,204	49
VII. Building materials, construction parts, and unspecified* (CTN groups 4 and residual):						
1960	309	6	303	87	18	69
1964	(1)	12	(1)	(1)	23	(1)
1965	613	17	596	256	22	234
1967	533	30	503	242	29	213
Total Soviet trade with CMEA						
1960	3,118	2,736	382	2,819	2,575	244
1964	4,638	3,959	679	4,508	4,077	431
1965	4,679	4,012	667	4,735	4,258	477
1967	5,225	4,658	567	5,155	4,658	497

¹ Not available.

² CTN group 6, live animals, may also be contained in this residual group, but trade in this category was negligible, except in 1960 when exports to CMEA amounted to \$2,000,000 (including Albania). This latter sum was added to the total of specified items for 1969.

Notes and sources: CTN groups are the 1-digit categories in the CMEA nomenclature. The reconstructed breakdown of trade by commodity groups is based on the data for 1964 in table A1 and on the percentages for 1960, 1965, and 1967 in table A2 of the appendix. These percentages were applied to total Soviet exports and imports from CMEA computed from Marer (pp. 87, 111) and, for Albania in 1960 and Mongolia thereafter, on "Vnesh. Torg. 1959-63, 1965, and 1967." (Total Soviet exports to CMEA members—were \$3,118,000 in 1960, \$4,638,000 in 1964 [table A1], \$4,679,000 in 1965, and \$5,225,000 in 1967. Total imports from CMEA members were \$2,819,000 in 1960, \$4,508,000 in 1964 (table A1), \$4,735,000 in 1965, and \$5,155,000 in 1967.) The sums of items specified in the foreign-trade annuals in exchanges with individuals countries are taken from Marer (pp. 87, 111) for trade with European members of CMEA other than Albania and are summed from disaggregated data in "Vnesh. Torg. 1959-63" for Albania and from "Vnesh. Torg. 1965" and 1967 for Mongolia in 1964, 1965, and 1967.

It is noteworthy that the gaps in group VII on the side of Soviet imports come quite close, for all the years covered in table 1, to the unspecified residuals in total Soviet imports computed by Marer (e.g. \$213 million in 1967 compared to Marer's residual for the year of \$222

million).⁶ On the export side, on the other hand, the gaps come to only 50 to 60 percent of Marer's computed residuals (\$503 million in 1967 as against Marer's \$1,091 million). This is consistent with the hypothesis that both the gaps and the residual represent trade in arms. Since the Soviet Union probably imports no arms from outside CMEA but sells large amounts to less developed countries outside the bloc, one would expect the CMEA gap to be appreciably smaller than the world residual.

Where do East European importers of Soviet arms conceal these imports in their foreign-trade statistics? One way may be to omit these imports altogether from published trade statistics. The German Democratic Republic's imports from the Soviet Union fell short of Soviet exports to the GDR by \$94 million in 1960, \$174 million in 1964, and \$158 million in 1965. These discrepancies are reasonably close to the estimates of the GDR's arms imports from the Soviet Union and Eastern Europe prepared by the U.S. Arms Control and Disarmament Agency (\$113 million in 1961, \$155 million in 1964, and \$148 million in 1965).⁷ The trade gap, however, virtually closed in 1967, which may indicate that the GDR aligned its statistical reporting in this respect with the rest of CMEA in that year. In the case of Bulgaria and Romania, table 2 below suggests that arms imports and exports are included in the machinery and equipment group. The excess of Bulgarian imports of machinery and equipment in 1966 (\$24 million) is somewhat larger than the U.S.A.C.D.A.'s estimate of Bulgaria's arms imports in that year (\$17 million), as is the excess for Romania (\$80 million in the table against \$69 million estimated by the U.S.A.C.D.A.).⁸

TABLE 2.—DISCREPANCIES IN MIRROR TRADE BY COMMODITY GROUPS FOR BULGARIA (1966) AND ROMANIA (1967)
[In millions of U.S. dollars]

	CTN broad divisions					Total
	I	II	III	IV	Unspecified	
Soviet exports to Bulgaria (1966).....	320	321	11	18	28	697
Bulgarian imports from the U.S.S.R. (1966).....	344	332	12	18	28	707
Excess of Bulgarian imports.....	24	11	1	-----	-----	10
Soviet imports from Bulgaria (1966).....	191	87	228	144	5	65
Bulgarian exports to the U.S.S.R. (1966).....	199	90	232	143	-----	66
Excess of Bulgarian exports.....	8	3	4	-1	-5	10
Soviet exports to Romania (1965).....	80	241	2	11	69	403
Romanian imports from the U.S.S.R. (1965).....	158	214	2	33	-----	406
Excess of Romanian imports.....	78	-27	-----	22	-69	3
Soviet imports from Romania (1965).....	81	205	52	88	15	441
Romanian exports to the U.S.S.R. (1965).....	80	171	60	128	-----	438
Excess of Romanian exports.....	-1	34	8	40	-15	-3

Note: CTN broad divisions are defined as follows: Division I, machinery and equipment; division II, fuels, mineral raw materials, and metals; division III, foodstuffs and raw material for foodstuffs; division IV, industrial consumer goods (other than food). Slight discrepancies in the totals are due to rounding errors.

Source: The commodity breakdowns of Soviet exports to and imports from Bulgaria and Romania are calculated from "Vnesh. Torg. 1965," "Vnesh. Torg. 1967," and "Vnesh. Torg. 1918-66." The Bulgarian statistics are reconstructed from a percentage of Bulgarian trade with the U.S.S.R. in "Popisakov," p. 95. The Romanian data are from "Romanian Press Survey" No. 961, 1973, p. 10.

⁶ Marer, p. 368.

⁷ Cited in Kostinsky, U.S. Department of Commerce, p. 100.

⁸ As cited in Kostinsky, U.S. Department of Commerce, p. 100. The estimates in this source are given in rubles. They have been translated into U.S. dollars at the official exchange rate. In 1972, the discrepancy between Soviet exports to Romania and Romanian exports from the U.S.S.R. in the machinery and equipment group increased to \$110.4 million, or 2.5 times as much as the U.S.A.C.D.A. estimate of total Romanian imports of arms in 1971 (Vnesh. Torg. 1972 and Romanian Press Survey No. 961, 1973, p. 10). The Agency's estimates appear to be seriously understated for recent years (see Kostinsky, U.S. Department of Commerce, p. 101). It may be noted in passing that a new gap has opened up in CTN Broad Division II on the Soviet import side. Instead of an excess of Soviet imports in this category over Romanian exports, as shown in table 3, there was an excess of Romanian exports over Soviet imports of \$66.4 million.

There is no obvious explanation for the large discrepancies between Soviet imports and Romanian exports in CTN broad divisions II and IV, which appear partly to offset each other. It may be that the Romanian statistics treat as finished consumer goods some items that are considered raw materials or semifabricates by the Soviets. That other members of CMEA besides Bulgaria and Romania include Soviet arms imports in the CTN machinery and equipment group emerges from a comparison of total imports by all CMEA members with total exports from CMEA members in this category. These two totals should of course be equal if all members of CMEA classified their trade in machinery, equipment, and arms in precisely the same way. The excess of total CMEA imports over total CMEA exports in the machinery and equipment category, however, is estimated at approximately \$156 million in 1960, \$188 million in 1964, \$168 million in 1965, and \$311 million in 1967.⁹ The large increase from 1965 to 1967, which appears out of line with the decline in the gap attributed to Soviet arms exports—\$503 million in 1967 as against \$596 million in 1965—may be due to the German Democratic Republic's inclusion of Soviet arms imports in its statistics starting in 1967. It may be inferred from the fact that the difference in the totals is appreciably smaller for all 4 years than the gaps in group VII of table 1 that some CMEA members conceal their imports of Soviet arms in other CTN categories. For example, according to Kostinsky—U.S. Department of Commerce, pages 168–169—Czechoslovakia combined arms imports from the Soviet Union with ores and metals imports in 1967.

In order to compute the division between CMEA and non-CMEA Soviet trade by commodity groups, the following assumptions have been made in accord with the above hypotheses on exports and imports of military goods. (1) Total Soviet exports to and imports from the entire world have been broken down into the seven groups of table 1 on the assumption that the overall residuals computed by Marer could be assigned entirely to trade in arms. (2) It is assumed that the breakdown of CMEA trade reconstructed from Zhukov and O'lsevich in table 1 is complete for all seven groups. (3) An eighth group presumed to consist of exports and imports of arms has been constructed from the gaps in group VII and Marer's overall residual. The results are shown in table 3.

⁹ Intra-CMEA imports and exports of machinery and equipment by the U.S.S.R., Bulgaria, Czechoslovakia, German Democratic Republic, Hungary, and Poland are computed from appendix tables A1 and A2. Romania's trade in machinery and equipment with CMEA in 1960, 1964, and 1965 is from Montias (1967). For 1967, the corresponding data are computed from Chamber of Commerce of the Socialist Republic of Romania, 1969, pp. 142–143, on the assumption that the ratio of imports from and exports to CMEA bore the same relation to imports from and exports to all Socialist countries as in 1965. It was assumed that 95 percent of Mongolia's imports of machinery and equipment came from the U.S.S.R. in 11 4 years. Albania's imports from those CMEA members which included Albania in their export totals to CMEA were very roughly estimated at \$33 million in 1969 and \$15 million in 1964, 1965, and 1967. Thus, total exports of machinery and equipment by CMEA members to CMEA partners (in millions of U.S. dollars) came to 2,493 in 1960, 4,358 in 1964, 4,653 in 1965, and 5,409 in 1967. Total imports in this category by CMEA members from CMEA partners (also in millions of U.S. dollars) came to 2,649 in 1960, 4,546 in 1964, 4,821 in 1965, and 5,720 in 1967.

TABLE 3.—SOVIET TRADE WITH CMEA AND NON-CMEA PARTNERS BY COMMODITY GROUPS (1960, 1965, AND 1967)

[In millions of U.S. dollars]

CTN group	1960			1965			1967		
	CMEA	Non-CMEA	World	CMEA	Non-CMEA	World	CMEA	Non-CMEA	World
Exports (to partners in):									
1.....	440	701	1,141	842	792	1,635	1,206	830	2,037
2.....	1,219	850	2,069	2,012	1,225	3,237	2,048	1,417	3,465
3.....	105	89	195	164	130	294	193	193	386
4.....	6	11	17	17	24	41	30	18	48
5.....	399	391	790	538	582	1,120	549	687	1,236
6 to 8.....	533	196	729	398	289	687	559	580	1,139
9.....	112	49	161	112	84	196	136	115	251
Special group (arms)....	303	159	462	596	369	965	503	589	1,091
Total.....	3,118	2,446	5,564	4,679	3,496	8,175	5,225	4,427	9,652
Imports (from partners in):									
1.....	1,184	493	1,677	2,114	577	2,691	2,187	733	2,920
2.....	581	609	1,193	701	306	1,007	629	319	948
3.....	96	242	338	166	334	500	191	330	521
4.....	18	27	45	22	26	48	29	31	60
5.....	130	523	653	152	654	806	170	675	845
6 to 8.....	226	455	681	450	1,178	1,628	485	864	1,349
9.....	513	455	968	895	249	1,144	1,253	420	1,673
Special group (arms)....	69	4	73	234	-----	234	213	9	222
Total.....	2,819	2,809	5,628	4,735	3,323	8,058	5,155	3,382	8,537

Note.—CTN groups are defined in the stub of table 1. Exports to and imports from CMEA partners are from table 1. Trade with the world is calculated from Marer, pp. 24, 34, 368. Small discrepancies between the sum of components and totals are due to rounding errors.

Soviet trade in manufactures (other than foodstuffs) may be estimated by summing CTN Groups 1 (machinery and equipment), 3 (chemicals), 4 (building materials), and 9 (industrial consumer goods), and adding the special group presumably consisting of arms or other manufactured military goods.¹⁰ With the world as a whole in 1967, the Soviet Union had a deficit of \$1,583 million in manufactured goods, which was the resultant of a heavy deficit with CMEA, equal to \$1,805 million, and a moderate surplus with the rest of the world equal to \$222 million. This surplus was presumably earned chiefly by selling manufactured goods and arms to developing countries and to non-CMEA socialist countries (most of which were also underdeveloped). (If the special group is excluded from this reckoning, the surplus in trade in manufactures with the rest of the world turns into a deficit of \$357 million.) In this same year, CMEA partners accounted for 54 percent of Soviet exports and 72 percent of imports in the manufactured groups (including arms). In raw materials and foodstuffs

¹⁰ This definition of manufactures differs from that used in appendix B wherein estimated metals exports have been added to the groups cited above.

(all other groups but those assigned to manufactures), the Soviet Union in 1967 had a surplus with both CMEA and non-CMEA partners (\$1,875 and \$823 million, respectively). It was of course possible for the Soviet Union to run surpluses both in manufactures and raw materials with the "rest of the world" as a consequence of large credits to developing and "other socialist" countries, which are reflected in an overall surplus of about \$1.2 billion with these two areas. Finally it may be noted that Comecon partners absorbed 54 percent of Soviet exports but supplied only 41 percent of Soviet imports of raw materials and foodstuffs according to these calculations.

II. THE COMMODITY COMPOSITION OF INTRA-CMEA TRADE

The commodity structure of the trade of the Soviet Union and of its East European allies is summarized in the percentages in table 4 below. Two percentages are shown under each commodity group heading. The first, marked S, expresses the share of the group in the trade of a given country with the entire world. (Except for rounding errors, the sum of these percentages across the table should add up to 100.) The second, marked C, is an estimate of the shares of intra-CMEA trade as a percentage of trade with the entire world in this group.

TABLE 4.—PERCENTAGE BREAKDOWN OF TOTAL EXPORTS AND IMPORTS BY CTN COMMODITY GROUP (S) AND SHARE OF CMEA IN TRADE WITHIN EACH GROUP (C) (1967)

	CTN group													
	1		2		3		4		5		6 to 8		9	
	S	C	S	C	S	C	S	C	S	C	S	C	S	C
Exports:														
U.S.S.R.....	32.7	54.6	35.9	57.5	4.0	50.0	0.9	62.5	12.8	44.4	11.8	49.1	2.6	54.2
Bulgaria.....	25.5	92.2	7.2	42.1	2.7	56.1	1.1	83.3	11.5	68.5	37.2	66.7	14.8	85.2
Czechoslovakia.....	48.6	77.2	17.9	62.4	4.3	66.2	1.7	55.6	4.7	24.0	34.5	21.8	18.4	60.9
German Democratic Republic.....	49.3	81.8	126.9	160.2	(1)	(1)	(1)	(1)	(1)	(1)	4.3	6.7	19.5	66.6
Hungary ²	32.7	86.6	14.5	59.4	3.5	59.4	.9	70.3	5.1	28.8	22.1	50.0	21.3	66.5
Poland.....	36.1	81.2	23.7	60.2	3.9	39.6	1.0	31.4	4.4	15.1	15.5	16.6	15.4	70.2
Romania.....	19.0	474.8	20.5	463.5	6.0	452.7	2.7	485.5	12.9	444.1	27.9	430.9	11.1	486.6
Imports:														
U.S.S.R.....	46.6	76.4	12.2	66.4	3.7	36.7	.5	48.3	3.3	20.1	9.4	36.0	24.3	74.9
Bulgaria.....	49.0	80.3	24.1	76.8	7.9	48.2	.8	75.6	8.7	46.0	5.0	33.3	4.6	72.0
Czechoslovakia.....	30.6	77.8	25.6	81.3	8.0	45.9	1.1	80.8	12.8	35.0	16.4	64.1	5.5	66.1
German Democratic Republic ³	15.0	80.9	44.2	72.5	17.3	70.6	(2)	(2)	(2)	(2)	20.5	44.2	3.0	77.1
Hungary.....	28.1	80.0	27.5	76.1	10.0	45.4	1.1	63.2	18.4	41.2	9.6	32.7	5.3	68.4
Poland.....	37.0	75.2	25.2	71.4	8.1	38.8	.7	43.5	12.5	31.8	10.9	47.0	5.6	77.8
Romania.....	48.8	39.9	24.9	470.2	6.5	433.9	1.3	468.2	8.9	425.4	2.8	461.9	6.9	457.4

¹ Groups 2 to 5 have been combined and are shown under group 2.

² 1965.

³ Groups 3 to 5 have been combined and are shown under group 3.

⁴ Trade with CMEA and other socialist countries including Yugoslavia.

Notes: CTN groups are defined in the notes to table 1. For the Soviet Union, the percentage breakdowns of exports and imports are computed from data in table 3 (arms have been combined with machinery and equipment to enhance comparability with the statistics of other CMEA members). For the remaining countries, the percentages are derived from Marer, pp. 45-50, 54-59. The share of CMEA partners in exports and imports, for all countries except Romania, was calculated from the percentages in table A2 in the appendix, which were applied to total exports to and imports from CMEA members, where the membership of the organization was defined to include Albania for Bulgaria, Czechoslovakia, Hungary, and Poland, as the totals in table A1 for 1964 suggest may have

been the practice in that earlier year. For Romania, imports and exports of machinery are calculated from percentages in "Polens Gegenwart," No. 8, 1969, p. 33, as cited in van Brabant's unpublished notes; exports to socialist countries in all but the machinery group and imports from socialist countries of raw materials and metals and of manufactured consumer goods were estimated from percentages given in "Romania socialista si cooperarea internationala," pp. 209-211. Imports of chemicals, construction materials, and animal and vegetable raw materials from socialist countries in 1965 were estimated by subtracting from total imports in each of these groups imports from "developed capitalist nations" and from developing countries, the first based on an exhaustive percentage breakdown in "Romania socialista si cooperarea internationala" (p. 243) and the second on "Romanian Economic News," June 1971, p. 3. Imports of foodstuffs from socialist countries in 1965 were derived as a residual.

The data in table 4 show that the percentage of total exports consisting of machinery and equipment tends generally to increase with the level of development achieved by a CMEA member, as does the share of industrial consumer goods.¹¹ The U.S.S.R. and Hungary were somewhat exceptional in that the proportion of consumer goods in total exports was relatively smaller than expected in the former and larger in the latter. The share of CMEA partners in total exports and imports of both machinery and consumer goods tended to be very high, although in the case of the share of CMEA in Soviet exports and in Romanian imports, these shares were distinctly smaller than for the other countries listed. (Romania was exceptional in that it bought appreciably less than half its machinery imports and only 57 percent of its imports of consumer goods from socialist countries in 1967.)

The groups showing the smallest share of intra-CMEA trade were CTN 5 (nonfood raw materials of agricultural origin) and CTN 6-8 (raw and processed foodstuffs). The CMEA members listed in the table bought two-thirds or more of their imports of raw materials and metals from the bloc but on the average sold only a little more than half of exports in this group to the bloc (Bulgaria only 42 percent).

These percentages for 1967 are now somewhat out of date, but a similar table if it could be drawn up for the early 1970's would probably not exhibit any dramatic change. The data in table 5 indicate, for instance, that all CMEA members remained extremely dependent on the CMEA market as an outlet for their machinery and equipment. On the import side, for which we have precise data only for 1969, it would appear that the CMEA shares also remained very high. The CMEA share of Romanian imports increased significantly in recent years, from a low point of 40 percent in 1957 to 52 percent in 1969 and a tentatively estimated 57 percent in 1970.

TABLE 5.—SHARES OF CMEA IN EXPORTS AND IMPORTS OF MACHINERY AND EQUIPMENT BY INDIVIDUAL CMEA MEMBERS

[Total exports or imports of machinery and equipment=100]

	1967		1969		1971	
	X	M	X	M	X	M
U.S.S.R. ¹	59.3	75.0	55.3	69.2	58.7	(?)
Bulgaria.....	92.2	80.3	88.0	87.6	91.4	(?)
Czechoslovakia.....	77.2	77.8	74.6	72.7	78.2	3 72.5
Germany Democratic Republic.....	81.9	80.9	80.7	80.2	81.2	(?)
Hungary.....	88.1	76.1	4 91.2	85.3	83.3	(?)
Poland.....	81.2	75.2	78.9	73.1	78.2	(?)
Romania.....	70.0	39.9	65.6	51.8	66.2	(?)

¹ Machinery and equipment only, exclusive of arms.

² Not available.

³ 1972.

⁴ The calculated share was 86.7 percent on basis of the statistics published in the "U.N. Bulletin of Statistics on World Trade in Engineering Products 1969" (1971).

Notes: For 1967, see the notes to table 4 above. The percentages for the Soviet Union (exclusive of arms) were computed from data in table 1 and in Marer, pp. 44, 53. For 1969, all percentages are based on P. Bozik (1973), p. 15. For 1971, all percentages except for Hungary are based on preliminary data in "Zycie gospodarcze," Apr. 9, 1972, first cited by Michael Kaser in "Problems of Communism," July-August 1973, p. 9. These percentages were applied to the value of total exports to CMEA of each country, as given in its official statistical yearbook. For Hungary, the share is based on United Nations "Bulletin of Statistics on World Trade in Engineering Products 1971" (1973), p. 147. Czechoslovakia's machinery exchanges with CMEA in 1972 were published in Czechoslovak Foreign Trade, Nov. 9, 1973, p. 3.

¹¹ For more statistical evidence on this relationship, see appendix B.

The trade of individual CMEA members by commodity groups has so far been divided between trade with Comecon partners and the rest of the world. It is instructive, however, to separate out the trade of East European nations with the Soviet Union from their exchanges with other CMEA partners, in view of the special role that the Soviet Union plays in the bloc as a primary source of raw materials and as a dominant market for manufactures. At least in the mid-1960's, the period for which the relevant statistics are available, the Soviet Union was exceptional in that it did not insist, or insisted to a much smaller extent than other CMEA members, on bilateral balancing by broad commodity groups (machinery against machinery, manufactures against manufactures, and so forth). The Soviets' willingness to trade raw materials and foodstuffs ("hard goods") for manufactures ("soft goods") no doubt helped to raise intra-Comecon trade to much higher levels than if they had behaved in the same manner as other CMEA members did. This difference in the degree of bilateral balancing by commodity groups emerges clearly from a comparison of "irreciprocity indexes" by commodity groups. The irreciprocity index (I) for each country in the sample is calculated according to the following formula:¹²

$$I = \frac{\sum_{i=1}^r |X_i - M_i|}{\sum_{i=1}^r (X_i + M_i)}$$

where X_i and M_i are respectively exports and imports in commodity group i , and r is the number of commodity groups into which exports and imports are divided. The numerator of the formula expresses the sum of the absolute values of the differences between exports and imports within each group; the denominator is equal to the sum of total exports plus total imports.

The indexes range between 0, denoting "full reciprocity" (exports equal imports in each commodity group), to 1, denoting "complete irreciprocity" (if exports are positive in a group then imports are zero and conversely). The indexes are calculated for trade statistics divided into four groups: Group I is identical with CTN Group 1 (machinery and equipment); Group II includes CTN Groups 2, 3, 4, and 5 (raw materials, fuels, metals, chemicals and building materials); Group III includes CTN Groups 6, 7 and 8 (raw and processed foodstuffs); Group IV is identical with CTN Group 9 (industrial consumer goods).

¹² Frederic Pryor, pp. 190-191. For a discussion of these indexes, see J. van Brabant, pp. 156-183. van Brabant's calculations for 1950, 1955, 1960, and 1965 (pp. 165-67) show results similar to those shown in table 6 below.

TABLE 6.—IRRECIPROCITY INDEXES OF EAST EUROPEAN CMEA MEMBERS IN TRADE WITH THE SOVIET UNION, OTHER CMEA PARTNERS AND THE REST OF THE WORLD (MID-1960's)

	Trade with—		
	U.S.S.R.	CMEA (excluding U.S.S.R.)	Rest of the world
Bulgaria (1966).....	0.53	¹ 0.31	0.40
Czechoslovakia (1967).....	.55	.13	.25
German Democratic Republic (1965).....	.73	.34	.30
Hungary (1965).....	.49	.22	.32
Poland (1965).....	.29	.17	.19
Romania (1965).....	.33	.15	.30

¹ Socialist countries excluding U.S.S.R.

Source: Appendix C.

In all cases, the irreciprocity indexes are higher in trade with the Soviet Union than with CMEA (excluding the U.S.S.R.) and with the rest of the world, in keeping with the Soviet Union's role as supplier of raw materials and semifabricates and as a market for manufactures. With the exception of the GDR, the indexes are smaller for trade with CMEA than with the rest of the world, a reflection of the bilateral balancing by commodity groups that takes place in mutual exchanges among East European countries.¹³

When the irreciprocity indexes in trade with the Soviet Union are computed for two groups only (machinery and industrial consumer goods in one group and all other goods consisting mainly of raw materials, foodstuffs and semifabricated products on the other), the above results are generally confirmed, except in the case of the Bulgarian and Romanian indexes, the trade of these two countries with the USSR being almost perfectly balanced in each of the two groups. The explanation is this: in the four-group disaggregation, the imbalance is due to exchanges of Bulgarian and Romanian consumer goods against Soviet machinery and equipment; when these two groups are aggregated, bilateral trade in manufactured products gets to be very nearly balanced. Aggregation into two groups obscures the crucial role that the Soviet Union plays as a market for middling-quality consumer goods produced by the less developed countries of CMEA.

III. SOME HYPOTHESES ON THE DIRECTION OF CMEA TRADE IN MANUFACTURES

Little is known about the criteria or methods according to which foreign-trade officials in Eastern Europe divide their imports of manufactures between CMEA and Western sources. For several members of the bloc, including particularly the GDR and Bulgaria, loyalty to the Soviet Union, to Comecon, or to both must influence these decisions. For Romania, on the other hand, it may well be that enlightened self-interest is the only guide to the choice of suppliers. But, for all members, it is evident that the ability to generate hard currencies must have something to do with the decision to import from advanced capitalist countries. Hard currency credits represent one source of purchasing power in the West. Another consists of

¹³ For an unequivocal statement confirming existence of a policy of bilateral balancing on the part of the less developed countries of Comecon, see Savov (1966, p. 19). See also Ausch (1972, pp. 111-113).

“hard goods”—raw materials, semifabricated goods—that are readily saleable on Western markets. A country’s potential earnings of hard currencies will then in part be determined by its surplus in hard goods with the world as a whole. When this surplus increases (or the deficit in hard goods decreases), a CMEA member is capable, if it wishes, to sell more hard goods to and buy more manufactured goods from “advanced capitalist states” than would otherwise be possible. But it may feel its loyalty to Comecon hinders it from taking advantage of this opportunity.

These arguments suggest the following hypotheses.¹⁴ The percentage share of machinery and equipment or of finished manufactures (machinery plus industrial consumer goods) varies positively with (1) Western credits and net earnings in the West from tourism and other services, (2) the difference between total exports and total imports of hard goods in trade with the entire world, (3) loyalty to the Soviet bloc.

Neither Western credits to the Soviet Union and Eastern Europe nor earnings from Western tourism can be estimated directly with any degree of precision, but as a reasonable proxy for these accruals we may resort to the total deficit in merchandise trade with developed market economies of individual CMEA members. Loyalty to the Soviet Union and to CMEA cannot be measured directly. To capture this proclivity, a dummy variable has been introduced for each member of CMEA except the Soviet Union. The higher the coefficient estimated for the dummy variable associated with a given country, the greater the use this country apparently makes of its opportunities to earn hard currencies to increase the share of the West in its imports of manufactures, hence the lower its presumed attachment to the Soviet Union and to CMEA.

The regression equation has the following form:

$$S_I = C + \sum_{i=1}^8 \beta_i X_i$$

where S_I is the share of imports of manufactures (limited to machinery and industrial consumer goods) imported from outside CMEA, C is a constant (intercept), X_1 stands for surplus in trade in “hard goods” with the entire world, X_2 for trade deficit (–) or surplus (+) with developed market economies, X_3 is the dummy for Bulgaria, X_4 for Czechoslovakia, X_5 for the German Democratic Republic, X_6 for Hungary, X_7 for Poland, and X_8 for Romania, β_1 to β_8 are the coefficients of the variables. The observations are drawn from all the countries listed as dummy variables plus the Soviet Union. A separate regression was run with Yugoslavia included as an eighth country of observation (and as a separate dummy). The hypothesis here is that Yugoslavia should behave like members of the Soviet bloc with respect to the main variables (overall surplus in hard goods, deficit in commodity trade with developed market economies) but should evince no particular loyalty to Comecon, an organization to which it only belongs as an “observer.”

¹⁴ These hypotheses were first developed, but not statistically tested, in Montias (1967), pp. 235–246

To increase the number of observations, data for 6 years—1964 to 1969—were pooled in the regressions.¹⁵ The regressions were also run with a separate time trend. The pooling of time-series and cross-section data is justified on the assumption that loyalty to the bloc on the part of individual CMEA members, if it changed at all during this brief period, changed in the same direction and at the same rate for all members. This assumption is not entirely realistic, but the failure to satisfy it precisely should not entail any important error.

It should be noted that the influence of the explanatory variables on the dependent variable (the non-CMEA share of imported manufactures) is not predetermined by the specification of the equation. An increase in the total surplus of hard goods (or a reduction in the deficit in these categories) need not be associated with an increase in the share of manufactures imported from the West. Likewise, if credits made available by Western countries were used to buy raw materials and semifabricates rather than machinery or consumer goods, they would have no impact whatever on the non-CMEA share of imports of manufactures.

The results of the regressions are shown in table 7 below.

TABLE 7.—FACTORS INFLUENCING THE SHARE OF IMPORTED MANUFACTURES ORIGINATING OUTSIDE CMEA (1964-69)

	Coefficients of least-squares regressions and t-statistics							
	Regression excludes Yugoslavia, no time trend		Regression includes Yugoslavia, no time trend		Regression excludes Yugoslavia, includes time trend		Regression includes Yugoslavia, and time trend	
Intercept (C).....	8.78	(1.70*)	6.99	(+1.38)	9.60	(2.01*)	8.58	(1.86*)
Surplus in hard goods (β_1).....	.0052	(2.53*)	.0056	(2.76*)	.0035	(1.79*)	.0036	(1.87*)
Deficit (-) with developed market economies (β_2).....	-.027	(-3.52*)	-.034	(-4.86*)	-.025	(-3.46*)	-.028	(-4.39*)
Country dummies:								
Bulgaria (β_3).....	6.49	(1.30)	7.73	(+1.56)	2.91	(.61)	3.26	(.70)
Czechoslovakia (β_4).....	17.90	(2.63*)	19.78	(2.94*)	12.74	(1.95*)	13.31	(2.08*)
German Democratic Republic (β_5).....	22.41	(2.94*)	24.66	(3.27*)	17.89	(2.48*)	18.76	(2.67*)
Hungary (β_6).....	14.89	(2.53*)	16.54	(2.85*)	10.53	(1.87*)	11.04	(2.00*)
Poland (β_7).....	15.60	(2.64*)	17.41	(2.99*)	11.23	(1.98*)	11.83	(2.14*)
Romania (β_8).....	31.89	(6.90*)	32.52	(7.06*)	28.69	(6.50*)	28.73	(6.64*)
Yugoslavia (β_9).....			45.02	(8.52*)			41.51	(8.48*)
Time trend.....					.89	(2.75*)	.996	(3.28*)
R ².....	.83		.94		.86		.95	
Number of observations.....	42		48		42		48	

Note: t-Statistics are shown in parentheses after the regression coefficients to which they correspond. An asterisk after a t-statistic indicates that the coefficient is significantly different from zero at the 95 percent confidence level; a cross indicates a 90 percent confidence level. For all countries in the sample excluding the German Democratic Republic, the data pertain to the years 1964 to 1969. For the German Democratic Republic, the data are for 1962 to 1965, 1967, and 1969.

Sources: Share of manufactures: For 1964, 1965, and 1967, data in tables 1, A1, A2. For 1969, Bozik (1973), p. 16. Interpolations for 1966 and 1968 are based on OECD exports of manufactures to CMEA members in Marer, pp. 256-268. All other data are from Marer, pp. 24-59.

The data in table 7 confirm our hypotheses. An increase in the overall surplus (or a decrease in the deficit) in hard goods and an increased deficit in commodity trade with developed market economies do have a significant effect in raising the share of imports of manufactures originating outside CMEA, whether or not a time trend is included in the regression. Other things equal, with the time trend included, an

¹⁵ Most of the observations for S_1 for the years 1966 and 1968 had to be estimated with the aid of data on O.E.C.D. exports of manufactures to CMEA on the assumption that these exports bore the same relation to CMEA members' imports from countries other than CMEA in the missing years as they did, on the average, in 1965 and 1967 (for 1966) and in 1967 and 1969 (for 1968). For the G.D.R., the years 1962 and 1963 had to be substituted for 1966 and 1968, due to the absence of data on the commodity composition of trade for these latter years.

increase of \$100 million in the overall hard goods surplus (or a comparable reduction in the deficit in hard goods) is associated with an increase of approximately 0.35 percentage points in the share of manufactured imports originating outside CMEA. An increase in the deficit in trade with advanced market economies of \$100 million is associated with an increase of 2.8 percentage points in the dependent variable when Yugoslavia is included and of 2.5 percentage points when it is excluded.

Judging from the coefficients of the dummy variables for Romania in all regressions and for Yugoslavia in the two regressions where it has been included, it is evident that both these countries imported a much larger share of manufactures from outside CMEA in the late 1960's than one would have expected from their surpluses in hard goods and their deficits in trade with developed market economies. Their proclivity to trade with CMEA is the least in Eastern Europe, as we might have anticipated from their recent political-economic history.

It is probably significant that Bulgaria behaved most like the Soviet Union—that is, exhibited the greatest loyalty to the CMEA—in that it imported a smaller share of its manufactures from outside the bloc than one would have expected from the surpluses of hard goods it was able to generate and from its touristic earnings and credits from the West. Czechoslovakia, the German Democratic Republic, Hungary, and Poland were in an intermediate position between Bulgaria and the Soviet Union, on the one hand, and Romania and Yugoslavia, on the other. Differences in coefficients among these four intermediate countries should be interpreted with caution. The German Democratic Republic dummy appeared high enough, nevertheless, to contradict the view that the East Germans were more closely tied to CMEA than other members. This contradiction may be explained by the fact that the German Democratic Republic was the most successful exporter within CMEA of manufactured goods to developed market economies and, hence, that it was less dependent on surpluses in hard goods and on credits to obtain hard currencies than its fellow members.¹⁶

The significant time trend indicates that the share of the West in CMEA imports of manufactures, if all other factors could be held constant, would have risen by nearly 1 percentage point per year from 1964 to 1969. This suggests a gradual decline in the proclivity of CMEA members to import manufactures from each other, the roots of which must be searched for in the political-economic relations among the countries of the area.

IV. CONCLUSIONS AND PROSPECTS

We have sought to throw light on the structural forces influencing the direction of CMEA members' trade by commodity groups in the mid- to late 1960's. The analysis has been conducted in the absence of any reference to trends in the domestic economies of these countries. In the long run, however, we should expect the direction of trade to be affected significantly by two factors operating in the domestic economies of the Socialist states that are, at least in part, mutually offsetting: (1) Their ability to produce manufactures of sufficient

¹⁶ In 1970, out of total German Democratic Republic exports to developed market economies, 17.1 percent were made up of machinery and equipment and 28.5 percent of consumer goods, as against 7.8 percent and 12.5 percent respectively for CMEA as a whole (Bozick, 1973, p. 18).

quality to penetrate Western markets on a large scale and (2) their decreasing surplus, or their increasing deficit, in raw materials, semi-fabricates, and foodstuffs, due to the combined effects of the relatively inelastic supply of these commodities and of the increasing requirements for their use as industrial inputs in the process of extensive industrialization. The first factor should permit CMEA members to increase the share of the West in their purchases of manufacturers—a possibility they may or may not wish to take advantage of—while the second should induce them to curtail this share, unless their hard currency resources are replenished from other sources, including credits and tourism. The German Democratic Republic and Czechoslovakia have made some progress in recent years in expanding their exports of manufactures to the West, even though they have not moved significantly in the direction of instituting free markets or competition in their domestic economies. Bulgaria, Poland, and Romania, as late as 1970, still had not displayed any marked ability to penetrate Western markets either with machinery and equipment or with industrial consumer goods.¹⁷ The impact of a diminishing surplus of hard goods on Romania's imports from the West seems to be the best single explanation of the reduction in the share of the West in its imports of manufactures since 1967. Barring any dramatic increase in its exports of manufactures to the West, due to joint production arrangements or to any other source of improvement in the quality and quantity of these exports, it is not likely that Romania will be able to reverse this downward trend in forthcoming years.

In 1971-72 a major new element began to influence the direction of CMEA trade by commodity groups. This was the détente in the relations between the Soviet Union and the United States and the upsurge in trade that accompanied it. It is too early to trace the impact of this new factor on intra- and extra-Comecon trade in manufactured products. Nevertheless, we may speculate about the reorientation of trade that an expansion of Soviet-United States exchanges may bring about. This expansion will undoubtedly be concentrated on U.S. exports of manufactures (chiefly machinery and equipment). If these exports are chiefly sold on long-term credit terms, there need not be a concomitant increase in Soviet sales of raw materials on the world market. But to the extent that these exports of raw materials to the West do expand, they may have to be switched away from CMEA consumers (unless the production of these primary commodities rises faster than had been anticipated in the current 5-year plan). The Soviet Union might then no longer be in a position to act as the all-purpose purveyor of raw material inputs for the industries of Eastern Europe and as the never-sated outlet for their manufactures. Since the willingness of the Soviet Union to perform these twin roles has provided the bond that has kept Comecon from disintegrating, it may reasonably be asked whether the upswing in United States-Soviet trade will not force all the East European states to look beyond Comecon for some of their supplies and for new outlets. This redirection may cause them considerable hardship unless they can adjust their industrial production to expand their sales of manufactures to the West at a reasonable cost.

¹⁷ The following were the percentages of machinery and industrial consumer goods in total exports to and imports from developed market economies in 1970: For Bulgaria, 6 and 7.9 percent respectively for exports, 31.3 and 4.2 for imports; for Poland, 6 and 10.9 percent for exports, 27.9 and 3 percent for imports; for Romania 4.3 and 13.3 percent for exports, 39.5 and 2.8 percent for imports (Bozlik, 1973, p. 18).

APPENDIX A

TABLE A1.—TRADE OF THE U.S.S.R., BULGARIA, CZECHOSLOVAKIA, THE GERMAN DEMOCRATIC REPUBLIC, HUNGARY AND POLAND WITH CMEA BY COMMODITY GROUPS (1964)

[In millions of U.S. dollars]

	Commodity group						Residual	Given total
	I	II	III	IV	V	VI		
U.S.S.R.:								
Exports.....	850	1,996	172	504	373	112	631	4,638
Imports.....	2,025	662	209	169	352	889	202	4,508
Bulgaria:								
Exports.....	217	47	20	115	248	103		749
Imports.....	388	228	47	49	16	44		772
Czechoslovakia:								
Exports.....	952	394	74	32	27	275		1,753
Imports.....	580	563	107	119	238	65		1,672
German Democratic Republic:								
Exports.....	1,202	279	219	31	25	393	4	2,153
Imports.....	282	910	69	230	319	59		1,868
Hungary:								
Exports.....	405	134	30	22	145	173		909
Imports.....	350	331	80	106	22	51		939
Poland:								
Exports.....	587	365	43	17	89	158		1,260
Imports.....	523	402	66	95	49	88		1,224

Note: The residual is computed as the difference between the totals given in the source and the sum of the exports or imports in the commodity groups listed in the source. The original data are presented in rubles, which have been converted in the table at the official exchange rate of 0.9 rubles per dollar. The commodity groups are defined as follows in the source: I. Machinery and equipment, II. fuels, minerals, raw materials, metals, III. chemicals and building materials, IV. nonfood raw materials, V. footstuffs (raw materials), IV. industrial consumer goods. Comparison with Marer (pp. 87, 111) and with the detailed breakdown of trade with Mongolia in "Vnesh. Torg. 1965" indicates that group I is identical with CTN 1 of the CMEA nomenclature, group II with CTN 2, group III with CTN 3 and 4, group IV with CTN 5, group V with CTN 7 and 8 (as well probably as CTN 6) and group VI with CTN 9. From this comparison it emerges that processed foodstuffs must be included in group V in addition to the raw materials specifically cited in the source. The given totals appear to exclude Albania for the U.S.S.R. and the German Democratic Republic, but to include it for all other countries listed. Trade with Mongolia is included for all 6 countries.

Source: V. N. Zhukov and U. Ia. Ol'sevich, "Teoreticheskie i metodologicheskie problemy," 1969, p. 159.

TABLE A2.—STRUCTURE OF RECIPROCAL TRADE OF CEMA MEMBERS

[Total value of exports or imports with CMEA partners=100]

	Commodity group													
	I		II		III		IV		V		VI		Residual	
	X	M	X	M	X	M	X	M	X	M	X	M	X	M
U.S.S.R.:														
1960.....	14.1	42.0	39.1	20.7	3.4	3.4	12.8	4.6	17.1	8.0	3.6	18.2	9.9	3.1
1965.....	18.0	44.7	43.0	14.8	3.5	3.5	11.5	3.2	8.5	9.5	2.4	18.9	13.1	5.4
1967.....	23.1	42.4	39.2	12.2	3.7	3.7	10.5	3.3	10.7	9.4	2.6	24.3	10.2	4.7
Bulgaria:														
1960.....	15.2	49.5	9.6	22.1	1.8	6.5	17.8	7.9	35.5	4.4	19.8	8.6	.3	1.0
1965.....	29.9	50.2	4.6	28.8	1.7	4.8	13.3	6.7	34.7	3.7	14.8	4.8	1.0	1.0
1967.....	31.7	55.5	4.1	25.6	2.0	5.4	10.6	5.7	33.4	2.3	17.0	4.7	1.2	.8
Czechoslovakia:														
1960.....	47.3	29.0	23.3	29.3	2.3	6.3	1.9	8.6	3.3	22.0	21.1	4.0	.8	.8
1965.....	56.3	35.6	21.1	33.0	3.7	5.6	1.8	6.7	1.7	12.4	14.2	5.1	1.2	1.6
1967.....	57.1	35.1	17.0	30.7	4.3	5.4	1.7	6.6	1.5	15.5	17.0	5.4	1.4	1.3
German Democratic Republic:														
1960.....	56.3	11.9	15.7	45.3	11.7	3.1	1.9	12.5	.8	22.6	12.8	4.5	.8	.1
1965.....	58.6	17.9	12.6	47.3	9.5	3.6	1.2	13.6	.6	13.4	16.8	3.4	.7	.8
1967.....	57.8	30.7	11.7	36.0	9.6	3.3	1.3	10.5	.4	14.7	18.6	4.0	.6	.8
Hungary:														
1960.....	46.2	35.5	13.6	32.5	2.3	5.5	4.1	14.3	15.5	5.7	17.9	5.8	.4	.7
1965.....	42.8	35.1	13.0	34.3	3.0	7.1	2.2	11.8	16.7	4.9	21.4	5.7	.9	1.1
1967.....	42.1	38.4	11.8	28.0	3.0	7.1	2.0	11.8	16.3	5.9	23.8	6.8	1.0	2.0
Poland:														
1960.....	37.4	33.5	42.1	31.1	2.2	6.3	1.3	10.2	5.2	10.7	11.3	7.6	.5	.6
1965.....	48.7	43.6	28.4	28.6	2.8	5.4	1.2	7.5	6.0	6.0	12.4	8.4	.5	.5
1967.....	49.3	44.3	24.0	28.7	2.6	5.0	1.1	6.3	4.3	8.2	18.2	7.0	.5	.5

Note: X stands for exports, M for imports. Commodity groups are defined as follows in the source: I, machinery and equipment; II, fuels, minerals, and metals; III, products of chemical industry; IV, nonfood raw materials of vegetable or animal origin; V, food raw materials and foodstuffs; VI, consumer goods. These groups correspond, respectively, to CTN 1, 2, 3, 5, 7, 8, and 9 (with 7 and 8

aggregated into group V). The only omitted groups are CTN 4 (building materials) and CTN 6 (live animals), which is presumably aggregated with group V.

Source: V. N. Zhukov and U. Ia. O'Isievich, "Teoreticheskie i metodologicheskie problemy," 1969, p. 159.

APPENDIX B

Factors Affecting the Shares of Machinery Products and of All Manufactured Goods in Total Exports in 69 Countries

Exports of machinery and other manufactured goods normally increase with a country's level of development. Are countries pursuing a Soviet-type strategy of development (with a high investment rate and a concentration of investments in heavy industry) likely to have higher shares of machinery and of other manufactured exports in their total exports than countries at the same stage of development. Does membership in a customs union make a difference in this regard for members of CMEA, the European Economic Community, or of other unions favoring mutual exchanges of manufactures? The hypothesis is that all three factors (level of development, Soviet-type strategy, and membership in a customs union) should raise both the share of machinery products and the share of all manufactured goods in total exports. Moreover, inasmuch as countries with a large population and a wide internal market are more likely, for a given GDP per capita, to develop manufacturing industries exhibiting economies of scale, a larger population, other things equal, may also have the effect of raising these shares.

In the following regressions, Soviet statistics of machinery exports have been adjusted to make them more comparable with the statistics of other CMEA members, in accord with the arguments developed in part I of this paper, by including in the machinery group estimated exports of Soviet arms.

The countries pursuing a Soviet-type strategy include all European members of CMEA plus Yugoslavia. All data refer to 1964 or 1965.¹⁸ The sample consists of 69 countries, developed and underdeveloped, socialist and nonsocialist economies.

The form of regressions is as follows:

$$S = \alpha + \beta G + \gamma P + \delta R + \eta M$$

where S is the share to be explained, α is a constant (the intercept of the regression hyperplane), G is estimated gross domestic product per capita in U.S. dollars, P is population in millions, R is a dummy variable which is equal to 1 if a country is pursuing a Soviet-type strategy of development and zero if it is not, and M is another dummy variable which equals 1 if a country is a member of a customs union and zero if it is not. The coefficients α , β , γ , δ , and η are estimated from the one-stage least-squares regression. The regression results for the share of manufactures¹⁹ in total exports (S_m) are as follows:

$$S_m = .0667 + .000188G + .000753P + .2159R + .1282M$$

(.0486) (.000036) (.000414) (.0914) (.0594)

Standard errors are shown in parentheses. The square of the coefficient of multiple correlation, R^2 , equals 0.46. The coefficients of all four variables are significant at the 95 percent level.

An alternative specification regressing the share of manufactures exports on logarithms of GDP per capita and of total population together with the same dummy variables gave these results:

$$S_m = -.9828 + .1746 \log G + .07245 \log P + .0970R + .0913M$$

(.1737) (.0268) (.01724) (.08452) (.05352)

With this specification, R^2 rises to 0.565, the coefficients of the GDP per capita and population variables are even more significant than when absolute values were used (above 99 percent). While the coefficient of the membership dummy remains significant at the 95 percent level, the Soviet-style strategy dummy now just falls short of significance at the 90 percent level. The shares of manufactures in total exports of countries pursuing a Soviet-type strategy (CMEA members plus Yugoslavia) are only slightly larger than one would expect, given their relative level of GDP per capita and population and the fact that all but one are members of a customs union.

¹⁸ For countries other than CMEA, statistics of gross domestic product per capita are from United Nations, "Yearbook of National Accounts" (1970). For CMEA, estimates of GDP per capita in 1965 are those prepared by the Economic Commission for Europe. These estimates were adjusted upward by 5.5 percent across the board to improve their comparability with the U.N. statistics for other countries.

¹⁹ Manufactures include machinery and equipment including estimated arms for the Soviet Union (CTN group 1), chemicals (CTN group 3), building materials (CTN group 4) and industrial consumer goods (CTN group 9). In addition, exports of metals in CTN group 2 have also been included. For the U.S.S.R., Hungary, and Yugoslavia, this definition is equivalent to SITC Groups 5-8 (with an adjustment for the residual in the case of the U.S.S.R.). All data for CMEA, except for the U.S.S.R., are from Marer. Data for the U.S.S.R. are from tables 1 and 2.

The two corresponding regressions (on absolute values of GDP per capita and population and on their logs) for the share of machinery and equipment (S_e) in total exports are shown below:

$$S_e = -.0398 + .000101G + .000263P + .1974R + .0568M$$

(.0172) (.000013) (.000146) (.0323) (.021)

$$S_e = -.5304 + .08258 \log G + .0341 \log P + .1403R + .04393M$$

(.0622) (.0096) (.00617) (.0303) (.01916)

R^2 for the first of these regressions equals 0.70 and for the second 0.75. All coefficients in both regressions are significant at the 95 percent level. The fit is even better when logs of GDP per capita and population rather than their absolute values are used. For these regressions, the Soviet-type strategy dummy is significant at the 99 percent level.

APPENDIX C

TRADE OF EAST EUROPEAN COUNTRIES WITH THE U.S.S.R., CMEA, AND THE REST OF THE WORLD BY CTN BROAD DIVISIONS (MID-1960'S)

[In Millions of U.S. dollars]

	Exports			Imports		
	Soviet Union	CMEA (excluding U.S.S.R.)	Rest of world	Soviet Union	CMEA (excluding U.S.S.R.)	Rest of world
Bulgaria, 1966:						
CTN I.....	199	116	16	344	168	184
CTN II.....	90	84	124	332	194	201
CTN III.....	232	109	144	12	128	47
CTN IV.....	143	28	19	18	30	20
Total.....	664	338	303	707	319	452
Czechoslovakia, 1967:						
CTN I.....	578	497	318	238	400	182
CTN II.....	169	291	357	538	262	472
CTN III.....	12	16	101	174	108	157
CTN IV.....	218	102	206	15	83	50
Total.....	977	906	981	965	853	862
German Democratic Republic, 1965:						
CTN I.....	816	4, 0	182	99	242	81
CTN II.....	237	206	447	939	303	486
CTN III.....	1	9	82	164	91	321
CTN IV.....	257	192	180	4	61	19
Total.....	1, 311	867	892	1, 205	698	907
Hungary, 1965:						
CTN I.....	265	163	66,	169	173	85
CTN II.....	60	130	170	338	190	338
CTN III.....	62	105	167	36	12	99
CTN IV.....	139	75	108	10	45	25
Total.....	525	474	511	553	420	547
Poland, 1965:						
CTN I.....	403	240	124	259	371	138
CTN II.....	195	239	348	385	221	501
CTN III.....	52	27	325	53	34	222
CTN IV.....	131	33	110	31	90	37
Total.....	781	539	908	728	716	896
Romania, 1965:						
CTN I.....	80	87	36	158	103	158
CTN II.....	171	103	225	214	94	244
CTN III.....	60	46	131	2	8	24
CTN IV.....	128	11	22	33	5	34
Total.....	438	247	414	406	210	460

¹ Trade with all socialist countries excluding the U.S.S.R.

Note: CTN broad divisions are defined in the notes to table 3. Small discrepancies in the totals are due to rounding errors. Sources: Bulgaria: Trade with Soviet Union is from table 3; trade with socialist countries from Popisakov, p. 205. Czechoslovakia: Trade with the Soviet Union, "Voprosy ekonomiki," No. 4, 1969, p. 120; trade with CMEA, table A2. German Democratic Republic, Hungary, Poland: Trade with the Soviet Union, unpublished estimated by J. van Brabant; trade with CMEA is estimated from the percentage breakdowns in table A2. Romania: Trade with the Soviet Union, table 3; trade with CMEA is estimated from Montias, pp. 175 and 179, data in "Romania Socialista si Cooperarea Internationala," p. 243 and "Romanian Foreign Trade," No. 4, 1972, p. 23, and unpublished van Brabant data.

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EASTERN EUROPE'S TRADE AND PAYMENTS WITH THE INDUSTRIAL WEST*

By EDWIN M. SNELL

INTRODUCTION

The intent of this paper is to examine connections between Eastern Europe's fast growing trade with the industrial West and its even faster growing payments deficits. From 1960 to 1971, while trade with the West tripled (from some \$3 billion to over \$10 billion), indebtedness to the West rose to almost 12 times the original level (from about \$0.6 billion to \$7 billion). All expectations about the future of the trade involve conclusions or assumptions about this relationship. The author examines this relationship with the help of a set of accounts showing the balance of payments of these countries with the industrial West. The accounts cover 1959-71, the period during which growing East European indebtedness became a feature of the trade.

Since the mid-1960's, if not before, East European leaders have made their decisions about trade with the West in the balance-of-payments context, considering not only trade balances but earnings and expenditures on invisibles and scheduled repayments on outstanding debt. They have used essentially the same data as are used in the West, if not always in the familiar Western format. The considerations that influence their decisions become clearer when seen in this context.

Western decisions have been made with incomplete information about the East European payments position, and with little notion of the extent and structure of East European indebtedness. In the extreme case in which an East European country approaches the limit currently set on credits by Western governments and banks, word soon gets around. Otherwise, Western officials, businessmen, and bankers have gotten used to going it blind. In view of the political importance of East-West trade and the payments problems that are likely to emerge sooner or later, Western decisions should be based on fuller knowledge, and Western negotiators should have much the same information as their Eastern opposite numbers. The accounts developed for this paper represent a step toward improving the Western information base.

*The East European countries treated are Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, and Romania. The industrial West represents the OECD countries less Greece, Portugal, Spain, and Turkey, together with Australia and New Zealand.

My associate Kathryn Tolin Melson contributed to this paper the research on supplier credits and transfer payments, as well as a great amount of statistical work. I could not have done the paper without her help.

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A partial list of others who supplied information and assistance is given at the beginning of the appended note on data problems.

The paper is divided into two main sections. The first, intended for all readers interested in East-West trade, argues the following main points:

(a) Eastern Europe's trade with the West and the accompanying indebtedness evolved mainly on an ad hoc basis.

(b) The rising deficits were financed increasingly by bank credits and loans; by the end of the period these were far more important than government-guaranteed supplier credits, accounting for about one-half of total indebtedness.

(c) The growth of the trade is explained by the East European eagerness for technological advance; the chronic deficits, by the overriding priority given to this objective.

(d) The East European governments learned, often quickly, to handle the difficult short-term financing problems; the West collaborated far more readily than might have been expected only a decade ago.

(e) The longer term future of the trade depends on political decisions about public financing of the trade, and of course on continued peaceful coexistence and abundant Eurodollars.

The second section deals with East European policies and payments problems, country by country. Balance-of-payments accounts for the years 1959-71 are introduced to summarize each country's experience with East-West trade. Attention is paid to the points made above. But more particularly, the country-by-country discussion is meant to help explain the course to date of Eastern Europe's trade with the industrial West. The discussion is intended particularly for those interested in the East European economies.

The paper is followed by a short discussion of the data used, the problems involved, and the attempts made to resolve them. The author intends to publish a full treatment of the subject within a year.

The Rise in Dependence on the West

With the revival of East-West trade in the mid-1950's, East European countries began to resort more frequently to Western credits and hard currency loans to meet contingencies. One of the Soviet favors granted the new Kadar regime in 1957 was to pay off most of Hungary's accumulated debt of roughly \$100 million in the West. Bulgaria in its "Great Leap Forward" in 1959-60 quickly incurred \$100 million in indebtedness, mostly on short term. At the beginning of 1960, all told, the East Europeans owed the West over \$550 million.

But the East European leaders did not then envisage a major increase in reliance on Western technology and credits. Instead the medium-term plans for the period through 1965 projected a nearly balanced and quite modest growth in trade with the West. But in 1960 several influences were already at work that would change the East European outlook—the increased difficulty of maintaining growth with the technology at hand, Khrushchev's efforts to catch up with the United States, Romania's dramatic shift of trade toward the West, and the beginning of the great expansion of Soviet oil deliveries to Eastern Europe via the Friendship pipeline.

There is little need to dwell on the discovery by East Europeans of declining returns to investment, using the technology at their disposal. The resulting rise in incremental capital/output ratios led economists throughout the area to counsel accelerated technological change as a means of maintaining economic growth rates, now that the unemployed resources had all been used up. This change in outlook became evident in the early 1960's. But it was not immediately obvious that the East European leaders would decide on large-scale purchases in the West to bring about the necessary technological change. The other developments mentioned above had a good deal to do with the decision.

The immediate effect of Khrushchev's policies was to encourage reliance on the same forces that had stimulated recovery and growth in the 1950's—a high rate of domestic investment and continued reliance on Soviet materials. His inclination toward confrontation with the West and his vision of Soviet-East European integration hardly encouraged—and may have delayed—the expansion of East-West trade. But in retrospect, one can see that he opened up the whole issue of Western economic and technological superiority, which had long been taboo, changing the very frame of reference in which Eastern Europe had viewed the world. The collapse of his ambitious plans—and the Czech and East German plans developed in emulation—contributed by enhancing the prestige of the West and stimulating the search for alternative approaches.

A second background factor was the dramatic shift of Romania's trade toward the West in 1960–61. Although following a relatively cautious course for some years, by 1965 Romania nevertheless owed \$150 million for machinery bought under medium- and long-term supplier credits and somewhat larger amounts for purchases of machinery and materials on commercial credit. The Romanian effort was the first systematic effort to modernize by increased reliance on the West, including the use of indebtedness. The message was underlined by Ceausescu's announcement in 1965 that Romania would buy \$1 billion of machinery from the West in 1966–70, much of it with the help of credit.

Third, "objective" economic factors were by then moving the other countries toward increased dependence upon the West—the slow conversion of the East European economies from coal to oil, a reduction in Soviet agricultural deliveries following the bad harvest of 1963 and a continuing threat of a slowdown in Soviet deliveries of many other materials. By the mid-1960's these changes began to accelerate the growth of East European needs for Western technology, in the form not only of publicized major orders of investment goods, but also of innumerable lesser orders for machinery and of semimanufactures—especially nonferrous metals, special steels, a wide variety of chemicals, and, somewhat later, textiles, and wood products.

It is after 1965 that imports from the industrial West begin to assume vital importance to the economic stability and growth of Eastern Europe. And this holds, though not equally, for all countries except Bulgaria—Czechoslovakia with its paralyzing internal political division, Poland despite Gomulka's reluctance, the GDR still isolated and hostile, Hungary under Kádár's watchful eye—as well as bold Romania. Even Bulgaria, free to stand aside, bought heavily in the mid-1960's and again in 1970–71.

The result was a huge increase in imports from the West. Indeed the growth in imports accelerated, and the absolute increments in imports rose from \$227 million in 1961 to \$657 million in 1971. Another index of the dependence, of course, is the cumulative balance-of-payments deficit for the period, which came to \$6.5 billion.

Financing of Deficits

The financing of this cumulative deficit can be accounted for only very roughly from published information. The West European balance-of-payments accounts that separate out transactions with the Soviet Union and Eastern Europe¹ give a very incomplete picture of financing. Important West European creditor countries—notably the United Kingdom and Switzerland—are missing. East-West German accounts are excluded. And more generally, a great deal of trade with Eastern Europe together with the financing is not reported at all.

About 25 percent of Eastern Europe's outstanding indebtedness represents medium- and long-term suppliers' credits for machinery; a much smaller amount has been extended for materials. A relatively small part represents nonguaranteed supplier credits (sometimes running longer than 1 year), which have become quite acceptable for discounting by commercial banks. Increasingly more important since the mid-1960's has been indebtedness of East European banks to commercial banks in the West, under ever more flexible arrangements. The rest is accounted for by special sources, including State intrumentalities (notably U.S. deliveries to Poland under P.L. 480 through 1964) and swing credits (mainly in intra-German trade). Eurodollar bonds and borrowing by CEMA banks, which have since become significant scarcely figure in the period through 1971.

A partly conjectural explanation of the financing of the East European cumulative deficit in 1959-71 and the total liability at the end of 1971 is as follows (billion dollars):

Initial liability beginning in 1959.....	0.4
Net drawings, 1959-71.....	¹ 6.5
Medium- and long-term supplier credits for machinery (both government guaranteed and other).....	1.8
Short-term supplier credits for machinery.....	.4
Public Law 480 (Poland).....	.3
U.S. Government credits.....	.1
Bank credits and other ¹	3.4
Swing credit, intra-German trade.....	.1
Total liability end of 1971.....	² 6.9

¹ Including some nonguaranteed supplier credits.

² Includes exchange rate adjustments. The total is somewhat greater than the net increase in liabilities; small increases in assets for the GDR, Hungary, and Poland have not been netted out.

The growth and size of indebtedness—not just the one or the other—have clearly impressed the decisionmakers most involved, East and West alike. In the late 1960's there seemed to be almost a consensus that "this can't go on forever." But the trade continues to boom. The needs and expectations of the individual East European countries are suggested in the following section, though it only touches on the impressive developments in the last 2 years.

¹ Along with very small transactions with the People's Republic of China and the Far East Communist countries.

The Weak Relation Between Imports and Exports

The East European countries' growing need for "technologically advanced" machinery and materials explains the dramatic rise in imports from the industrial West, but it is not self-evident that as a result they would run chronic deficits. A clue to the connection between rising imports and chronic deficits is the concentration of technological change and accelerated growth in "leading sectors," even as in the 1950's, though the sectors are not the same. In the 1960's rising imports went increasingly into a few areas—the most important being the petrochemical and electronics industries, and transport. At the same time, as Jerry Crawford and John Haberstroh point out in another paper in this collection,² the major exports to the West remained agricultural products, foodstuffs, and consumer goods. Otherwise export shares increased only for a few machinery specialities, semi-finished steel products, metal products, and basic chemicals. East European senior officials, economists, and propagandists along with many Western commentators have called attention to this contrast in composition, generally as a prelude to urging changes in the mix of East European exports.

It might have been expected that rising imports for the leading sectors would in turn generate a major flow of exports to the West. Quite evidently they have generated a substantial increase in total exports. A Hungarian writer, in estimating the final uses of imports, notes that between 1959 and 1968 dollar imports³ rose from 8.5 to 10.8 percent of total (direct and indirect) inputs to the export sector of final demand. Most other East European countries presumably would show the same kind of change if data were available.

What seems to have happened is that the bulk of the increased output generated with imports from the West has been used in Eastern Europe and the U.S.S.R. The areawide demand for such products has been so strong, indeed, that at every stage the area has absorbed not only East European output but also supplementary imports of these products from the West. Exports to the West have had to come from slower growing sectors given a lower priority, including agriculture and the food processing and consumer goods industries. Thus the prior claim of "leading sectors" for imports from the West is only symptomatic; the real cause of chronic and rising deficits is the overriding priority given to the pursuit of technological change. So long as hot pursuit of technological change continues, payments deficits with the West are likely to remain chronic.

The disjunction of imports from exports in trade with the West, however, does help somewhat in managing the deficits. If a rise in imports has no great impact on exports, a fall in imports will also have little impact. Upward or downward shifts in the rate of growth of imports are likely to have a strong effect on investment projects in "leading sectors" and some effect on inventories and current output of closely related goods. These shifts, however, do not greatly influence supply and demand for the products exported to the West. As a

² Jerry Crawford and John Haberstroh, "Survey of Economic Policy Issues in Eastern Europe: Technology, Trade, and the Consumer," above.

³ Including soft currency imports from the West. Istvan Orszagh, "A gazdaság importigényességéről" (Import Demands of the Economy), *Külgazdaság*, May 1972, pp. 336-46.

result, East European governments have considerable leeway in the short run to keep deficits with the West within acceptable limits, given their broad control over investment, production, and consumption.

The Flexibility of East-West Trade

The continued single-minded drive for technological change in Eastern Europe promises a continuation of chronic payments deficits. Both sides have, however, shown a good deal of flexibility in dealing with this basic problem. Otherwise East-West trade would not have flourished as it has, growing far beyond most projections of a decade ago. The shift from confrontation to accommodation has provided a basis for increased flexibility; conversely increased adaptability in the field of trade has facilitated political relations.

East European governments have evidently had major adjustments to make in coming to terms with the Western market. The difficulties, however, can easily be overstated. The need for adapting existing institutions and practices to the demands of closer relations with the Western market was exaggerated both by the reformers who tried to promote change and by the Party establishments that opposed it. Abstracting from organizational questions, the rise in Western imports and increased access to Western financing have had on balance a stabilizing effect, and presumably made for greater efficiency.

Nevertheless it has taken a lot of trial and error to deal with the expansion of trade with the West. In some ways progress has generally been slow. The planning of investment goods imports was and still is a headache because of institutionalized errors in projecting other inputs, especially construction. Selling on the market and producing to meet contracts are hit-or-miss because the production system remains geared to the stable domestic market and long-term contracts with other Communist countries.

But a great deal has been learned about financing trade, a field in which the East Europeans are still under serious handicaps. To begin with, they do not have their own convertible currencies to cushion international settlements. So miscalculation, which is unavoidable, is sometimes costly. Great address is needed to manage their fairly substantial short-term indebtedness and to deal with any considerable concentration of medium-term indebtedness coming due in a short period. They work on a thin enough margin so that a bad crop or a Western economic adjustment or recession will require going into the market for additional credit. The leadership is not always ready and willing to accept the cost of phasing out or postponing investment projects or curbing the growth of personal consumption. But East European officials have become much more responsive to such considerations and have developed the experience and the good relations in the West needed to cope with such problems. With reason Western political leaders, bankers, and businessmen have been encouraged to believe that they are dealing with people in control at least of the short-term situation, the predominant concern in the West as well.

On the Western side, the first contribution was the broader acceptance of sales to Eastern Europe as eligible for state export insurance and, sometimes, financing, with gradually lengthening repayment

periods. This paved the way for the enormous development of bank financing that has ensued. Once the confrontation of the early 1960's was passed, all this came about quite easily. For Western banks following in the wake of political accommodation, trade financing has carried little risk, low costs, and high profits, so high indeed that the East Europeans individually and through the CEMA banks, have been cutting themselves in. Even for Western businessmen, despite the costs and vexations of landing larger contracts, the less publicized repeat business has proved most attractive.

The accumulated experience and the relationships established strongly favor a flourishing trade—assuming stable political relations—so long as medium- and long-term indebtedness does not become an overriding concern to either side. Thus, the larger question is: How much can be, or will be, done to postpone that day of reckoning? Again, the East Europeans have been the chief movers, with efforts both to increase earnings in the West and to reduce their dependence, through cooperation in CEMA.

Promotion of services has to date had the greatest impact on the balance of payments. Net hard currency taken in from tourism rose from practically nothing in the late 1950's to close to \$200 million in 1971, and there is still room for expansion. The East European governments are especially delighted because relatively small amounts of hard currency need be spent in order to expand earnings in this field. By the late 1970's, expansion of merchant fleets, port facilities, containerization, and other investment in transport—which has so far affected payments mainly by "saving" hard currency—could result in an overall surplus on transport account. These services will contribute substantially to the growth of hard currency earnings and should be taken into account in any calculation of the debt "burden". Efforts to stimulate remittances from emigrants and their descendants in the West have been productive, but the potential for further growth is doubtful. One untapped source of earnings, sending workers to Western Europe, is likely to remain untapped.

A second line of approach has been to press Western governments for concessions on tariff and quantitative restrictions (QR's). Poland, Romania, and Hungary have joined GATT to supplement their bilateral efforts in this regard. In Western Europe, where governments have extended MFN status, if only unilaterally, the main target is QR's. Many have been liberalized or eliminated, and some countries have undertaken to get rid of them entirely in a few years, though of course with escape clauses. The East Europeans are especially interested in the hard core sectors, in which they are or could be highly competitive, like agriculture and textiles. In these areas, Western opposition is stubborn. In consequence, there will surely be a move at some point to seek an associate relationship with the enlarged Common Market so as to protect and increase access to Eastern Europe's main Western markets.

Another approach to the problems of getting established in Western markets is that of tying imports of licenses and capital goods to a return flow of exports. One venerable method is "compensation trade," one-shot deals that are being pushed on Western firms selling in this increasingly competitive market. A second, and newer, approach is the "cooperative venture," which involves a longer term and closer

relationship, though in some cases hard to distinguish from compensation trade. Information in this area is much too thin to permit close analysis. A few observations may be made, however. First, the Western partner in these deals is characteristically in engineering or chemicals and has a primary interest in exporting to Eastern Europe. For him the purchase or marketing of East Europe products is part of the cost of doing business. It is uncertain whether the East European gains from such tie-in deals are greater than the gains from straight purchase of Western equipment, licenses, and know-how and the independent sale of output. East Europeans evidently think so, but the question is moot. Perhaps the strongest reason for doubt is the narrowing of competition among Western sellers, a great many of whom do not find such business attractive. Special studies on the whole topic would be most useful.

The future

East-West trade has been built on détente and Eurodollars, and on the complementary needs of East and West European economies—the former to import and the latter to export—in order to retain stability and momentum. If this basis remains secure—and that seems probable—then the chief question seems to be the readiness at some future date of political leaders to cope with the ever mounting indebtedness. Right now the international banking community seems to have plenty of room to finance the trade, in part because more and more banks outside the old select circle are looking for a piece of the action. The impact of the new oil money is a question that must be left open. But money to finance East-West trade should be available for some years.

The East European leaders are not really comfortable with a large indebtedness, or indeed with rising dependence on the West. But they presumably do not consider that they have much choice. The alternative to rising indebtedness is a reduced growth rate; efforts to expand hard currency earnings and shift purchases to clearing currency areas can change the dimensions of the problem but not eliminate the choice. Few East European leaders—Gomulka was the notable exception—have been prepared to settle for a much lower growth rate in the short term than seems achievable.

At some point, then, perhaps in the early 1980's, the East European debts will become a political issue, simply because public financing will be needed to keep the trade going. For better or worse, the decisions taken then—perhaps between the EEC and CEMA—will begin a new chapter in East-West trade.

Developments in the East European Countries

The East European countries responded in varying ways to the challenge of trade with the West. The contrasting character of the political leaders, the specific historical experience of the peoples, and the spread in economic development were all contributing factors. The following discussion of the individual countries is not intended to explore these important differences, but simply to present the accounts and to indicate the approach of each country to the opportunities and risks encountered in expanding trade with the West. The considerable range of responses only highlights the common features discussed above.

BULGARIA

The Accounts

In some respects, Bulgaria's statistics are rather above average for Eastern Europe. There is good information on tourist numbers and a fair amount on foreign trade transport and the merchant fleet. The foreign trade statistics, however, leave a question, not about the terms of reference, which are clear, but about their accuracy. For those transactions that can be checked, mostly with overseas countries, Bulgarian and partner country figures often show discrepancies, and it is possible that Bulgarian imports are understated.

For other current transactions and for the capital account, analogy and Western sources provide the main basis. Unfortunately, Western sources are scantier on Bulgaria than on other East European countries, although coverage has picked up in the last 2 years along with Bulgaria's increased activity on Western markets.

As shown in table 1, significant deficits on transport and impressive earnings from tourism are the two notable points in the current account. Bulgaria greatly increased its merchant fleet in the 1960's with the help of numerous purchases in the West as well as in Communist countries. Since the mid-1960's the Bulgarian fleet has carried a rising share of the country's trade with the West and incomes from hard currency operations have grown. As a result, except in 1970, a year of high costs for ship charters, the net debit on transport did not increase.

Bulgaria leads Eastern Europe (the six countries here considered) in tourism. Along with Romania, it has invested substantially in developing the Black Sea coast for tourists, and earnings should continue to rise.

The capital account is calculated simply to finance the current account, with the exception of exchange rate adjustments, which further increase the rise in dollar indebtedness in 1970-71. This simplistic expedient is unavoidable in the absence of any independent indication of the magnitude of Bulgaria's indebtedness in the period. Austrian specialists recently came up with a figure of \$1.5 billion for Bulgaria's indebtedness to the West in 1973.⁴ This is nearly double the almost \$0.8 billion figure for the end of 1971 that results from the procedure described above and shown in table 1. Deficits undoubtedly rose very sharply in 1972-73, and exchange rates shifts in 1973 would have some effect. Even so, present accounts do not yield a figure high enough to appear consistent with the Austrian estimate.

Errors and omissions are of course inevitable, but there is no particular reason to surmise a large cumulative total with either sign, beyond the uncertainty already noted about the valuation of imports.

Calculated drawings and repayments on supplier credits for machinery and equipment are subtracted from the total estimated indebtedness to yield a residual of \$461 million, most of which is presumed to reflect net drawings on bank credits and loans.

⁴ Estimate by Wiener Institut für Internationale Wirtschafts-vergleiche beim Österreichisches Institut für Wirtschaftsforschung, as cited by *Eastern Europe Report*, 25 January 1974, p. 18.

The principal message, which becomes a familiar one in most of the East European accounts that follow, is the rising importance of bank credits and loans in the middle and late sixties. By the end of 1971, they account for over one-half of Bulgaria's total indebtedness to the industrial West. The Soviet-owned banks in the West have probably assisted Bulgaria in finding and financing credits while trying to control Sofia's apparently limitless appetite for Western goods.

Bulgaria, the Special Client

Bulgaria is the least dependent of the East European countries on trade with the West. As Jerry Crawford and John Haberstroh point out,⁵ it is the one country whose imports of Western materials for "leading industries" grow less rapidly than the output of those industries.

The economy remains heavily dependent on the U.S.S.R. for machinery, crude oil, and a wide range of industrial goods. Three-fourths or more of Bulgaria's imports—the share has tended to drop since the mid 1960's—is still from the "socialist" world, and only about one-sixth from the Western industrial countries. Yet indebtedness to these countries at the end of 1971 was roughly 2½ times the size of its exports to them, a record for the area.

Bulgaria's fast growing imports from the industrial West are partly explained with reference to Todor Zhivkov's approach to economic planning, which still involves "storming"—the establishment of very ambitious goals attainable only by extraordinary efforts, though not to the extent of the "Great Leap Forward." Bulgarian statistics do not readily yield a breakdown of imports from the industrial West. But Western figures (admittedly less satisfactory) show no clear trend for imports other than machinery until late in the plan periods, when they tend to rise sharply, with a further rise in the first year of the next period, as the economy adjusts. A sharp rise is thus seen in 1964-66 and 1970-71.

A second factor is an acceleration of machinery orders in 1964-67, followed by a sharp drop. Another such rise began in 1972 and seems likely to continue for another year or two. The rise of purchases in the mid-1960's may be explained by the consolidation of Zhivkov's power in late 1962; Zhivkov, a strong proponent of rapid growth, would not have wanted to be left behind by his neighbors. The sharp drop in orders in 1968-69 would have resulted from financing difficulties, especially, one may guess, the reluctance of the Soviet-owned banks to go beyond a certain point in supporting the Bulgarian position. In the present purchasing boom, Sofia seems to be operating more on its own, but that does not rule out a restraining influence from Moscow if Bulgarian debts seem to be getting out of hand.

The cycles in Bulgarian purchases other than machinery do not yield easily to analysis, given the substantial differences in coverage between Bulgarian and Western trade data. At a guess, petrochemicals, grain (in 1970-71), and feed might account for a good deal of the upswing along with the metals imports indicated in Western statistics.

The machinery imports are quite characteristic of East European acquisitions in the 1960's. Ships, bought to expand the merchant

⁵ Jerry Crawford and John Haberstroh, *op. cit.*

fleet, are a big item. Early in the period a couple of substantial orders were placed for locomotives. Otherwise, petrochemical installations, paper factories, and a fertilizer combine are the main items. Very little Western equipment was bought for the big iron and steel complex at Kremikovtsi.

Bulgarian prospects for financing a rapidly growing indebtedness rest on tourism and shipping and on expanded sales of agricultural products, perhaps including in addition to the traditional early fruits, vegetables, and flowers, an expanded sale of meat products. Like the other East European countries, Bulgaria also is eager to move its manufactures into Western markets. It has been successful, off and on, in selling more of its specialty, fork-lift trucks and related equipment; these furnish a particularly promising item for cooperative ventures and compensation deals.

In the end, however, Bulgaria's margin of safety—along with that of Western creditors—rests on two considerations: First is the limited dependence of Bulgaria on a rapid growth in Western deliveries; in a crunch, as in the past, Bulgaria can ease off purchases without serious economic consequences. Second is the backing that the U.S.S.R. will unquestionably extend—and the influence it will bring to bear—to solve balance-of-payments problems that get out of hand.

TABLE 1.—BULGARIA'S BALANCE OF PAYMENTS WITH THE INDUSTRIAL WEST

(In millions of U.S. dollars)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Goods and services.....	-61.8	-18.7	-8.6	-8.3	-27.5	-60.6	-81.1	-158.4	-100.5	-92.0	12.4	-70.9	-43.2
1. Exports to the industrial West.....	53.0	67.7	74.3	94.2	100.1	133.9	155.0	217.4	222.6	217.1	242.1	255.8	270.4
Imports from the industrial West.....	-110.4	-83.8	-79.7	-98.8	-123.9	-200.8	-237.4	-376.6	-321.8	-303.6	-233.9	-321.0	-334.8
2. Multilateral trade with the LDC's: Net.....	1.4	4.3	4.5	4.0	3.3	5.3	5.9	10.3	18.7	13.5	18.6	18.3	33.2
3. Transportation: Net.....	-1.4	-1.2	-1.5	-1.7	-1.8	-6.3	-6.7	-8.7	-8.7	-7.2	-6.9	-14.7	-8.3
4. Travel: Net.....	na	1.2	1.6	2.5	4.5	19.4	18.4	25.1	21.2	28.1	35.1	38.1	47.0
5. Investment income: Net.....	-3.3	-5.5	-6.2	-6.6	-7.5	-10.0	-14.1	-21.2	-28.8	-34.3	-36.5	-39.9	-42.9
6. Other government: Net.....	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
7. Other services: Net.....	-1.1	-1.4	-1.6	-1.9	-2.2	-2.1	-2.2	-4.7	-3.7	-5.6	-6.1	-7.5	-7.8
Transfer payments.....	2.7	2.5	2.2	2.1	2.5	2.1	2.6	2.6	2.9	4.2	4.6	6.5	7.3
8. Private: Earnings.....	1.3	1.4	1.5	1.7	1.9	2.2	2.6	2.8	3.0	3.4	3.9	4.6	5.7
9. Government: Earnings.....	1.6	1.3	.9	.7	.9	.2	.4	.2	.4	1.3	1.3	2.5	2.2
Government: Expenditures.....	-2.2	-2.2	-2.2	-3.3	-3.3	-3.3	-4.4	-4.4	-5.5	-5.5	-6.6	-6.6	-6.6
Total goods and services and transfer payments.....	-59.1	-16.2	-6.4	-6.2	-25.0	-58.5	-78.5	-155.8	-97.6	-87.8	17.0	-64.4	-35.9
Capital and monetary gold ²	-59.1	-16.2	-6.4	-6.2	-25.0	-58.5	-78.5	-155.8	-97.6	-87.8	17.0	-64.4	-35.9
Nonmonetary sectors:													
10. Medium and long term (machinery): Net....	-9.2	-5.8	-56.4	-24.5	(1)	-20.2	-23.4	-62.1	-36.5	45.1	21.9	3.5	-13.6
11. Short term (machinery): Net.....	-4.2	-.4	-2.5	4.4	.5	-7.7	-4.2	-14.2	-2.5	9.9	1.4	-1.7	-1.4
Monetary sectors: 12. Liabilities: Net ³	-45.7	-10.0	52.5	13.9	-25.5	-30.6	-50.9	-78.5	-58.6	-142.8	4-5.3	-66.2	4-20.9
Cumulative end of year indebtedness ⁴	-84.1	-100.3	-106.7	-112.9	-137.9	-196.4	-274.9	-430.7	-528.3	-616.1	4-632.1	-696.5	4-787.3

¹ Negligible.

² A positive number indicates an increase in assets or a reduction in liabilities; a negative number indicates a reduction in assets or an increase in liabilities.

³ Including other nonmonetary and net errors and omissions.

⁴ Adjusted upward for shifts in exchange rates, by 5.5 percent for end of year 1969 and 7.5 percent for end of year 1971.

⁵ Starting position is \$25,000,000 at the beginning of 1959.

CZECHOSLOVAKIA

The Accounts

Czechoslovakia's accounts are estimated item by item from piecemeal information, with some use of analogy (for "other government" and "other" payments and for transfers). Czechoslovak writers have discussed the balance of payments with the West as a whole, but the underlying data seem to have come from accounting, not in devisa crowns, but in internal crowns, for which the Czechs have had a special weakness. The discussion is well worth a look by specialists, but is not very helpful for the present purpose.⁶

The official foreign trade statistics are used in the present accounts, shown in table 2, with rather more reservation than usually attaches to East European trade data. The final annual statistics for this period are invariably described as conforming to standard CEMA practice, with exports and imports reported f.o.b. port or border of the exporting country. That is doubtless true in principle. But some comparisons of Czechoslovakia's and partner country statistics (for those transactions on which both partners report more or less comparable quantities) suggest that Czechoslovak imports from the West tend to be overstated. The overall trend of slowly rising deficits with the industrial West—with occasionally minute surpluses—is certainly not misleading. But the cumulative deficit of nearly \$700 million over the period could be significantly overstated. A 1-percent overstatement of imports for the period, for example, would produce a 10-percent overstatement of the deficit.⁷

The cumulative surplus of about \$100 million with multilateral partners among the LDC's would similarly be understated, although Czechoslovakia presumably keeps careful account of maritime costs, largely in hard currency. In any case, Czechoslovakia earns unusual amounts of hard currency in its trade with the LDC's in part through munitions shipments. But the heavy hard currency costs involved in overseas trade—including the fairly large trade with LDC's on clearing account—have at the same time given Czechoslovakia the largest deficit in the area on transport.

The remaining invisibles yield a small net surplus, largely because of earnings on travel and transfer payments. Incomes from tourism are fairly precisely known, whereas transfer payments are represented by estimates. The rise in pensions and annuities beginning in 1968 represents chiefly a share assigned to Czechoslovakia of such payments by the F.R.G. The estimate of private remittances represents mainly a guess at the net hard currency earnings of Tuzex; cash remittances alone would be much less and would not grow sharply.

The capital account reflects simply the financing of the current account deficits on the assumption—which is not far off—of no net liabilities (or assets) at the beginning of the period. Any errors and omissions in the current account are accordingly reflected in the capital account, and in the cumulative net indebtedness.

⁶ See in particular, Karel Podlaha, "Struktura vnějších hospodářských vztahů a ekonomická rovnováha" (The Structure of External Economic Relations and the Economic Balance), *Plánované hospodářství*, April 1969, pp. 59-66, and Václav Zahalka, "Poznámky k vývoji platební bilance CSSR" (Comments on the Development of the Balance of Payments of Czechoslovakia), *Zařazení obchod*, August 1971, pp. 9-11.

⁷ Austrian specialists have estimated Czech indebtedness in 1973 at \$1 billion, which would imply a 1971 figure well below the present estimate. See *Eastern Europe Report*, 25 January 1974.

There is some evidence suggesting that in fact indebtedness might be overstated. An article appearing in late 1968 gives data on outstanding liabilities of Czechoslovakia at the end of 1967 in convertible currencies, expressed in crowns at a rate calculated at "internal reproduction price equivalents" (vnitřní reprodukční cenové vyrovnání, or VRCV).⁸ The rates for these crowns were 22.68 crowns=\$1, and 18 crowns=1 ruble. Converted at the dollar rate given, hard currency indebtedness comes to \$101 million on long term and \$280 million on short term, only \$381 million all told as against the \$475 million shown in table 2. The same conversion evidently produced Premier Černík's figure given out in April 1968 of a hard currency debt of just under \$400 million, largely on short term.⁹

If the original foreign currency figures were directly converted into crowns at the rate given, the reverse conversion obviously will give accurate results. A glance at other data expressed in VRCV crowns seems to indicate that, instead, data used for domestic accounting probably represented the starting point. Such an approach would have had the evident advantage of permitting some public discussion of problems involving "sensitive" information. It seems likely that the reconversion of the VRCV data results in an understatement of indebtedness in dollars.¹⁰

The same source gives other figures for the Czech capital position, including a figure of \$146 million in outstanding long-term hard currency credits to the West. All or nearly all this amount, perhaps also understated, would represent credits to LDC's.¹¹ It obviously involves trade not reflected in the balances with "multilateral partners," as shown in the present accounts. For this reason, credits to the West are ignored; it is assumed that the surpluses shown in table 2 represent net availability of hard currency to Czechoslovakia to spend elsewhere. The error involved in the current account could well be in favor of Czechoslovakia, the reverse could be true in the capital account.

The capital accounts shown in table 2 do seem to agree with the Czech source cited in the relative weight given to indebtedness on supplier credits—if that can be equated with "long-term" indebtedness—and other indebtedness, here attributed to the monetary account—if that can be equated with "short-term" indebtedness. Czechoslovakia, like other Eastern European countries, was clearly making increased use of bank credit in the late 1960's, to a degree quite typical of Eastern Europe as a whole.

Foreign Trade Under Three Leaders

Czechoslovakia had the distinction of two rather dramatic changes in leadership in the 1960's. During much of the decade, political struggle absorbed the attention of responsible officials, and there was no

⁸ Miroslava Koudelka, Dušan Libnar, Miroslav Havel, "Peněžní vstahy v ČSSR," enclosure to *Hospodářská noviny*, No. 47, December 6, 1968, p. 6.

⁹ The remarks from Černík's report to the National Assembly, were reported in *Rudé Právo*, April 25, 1968, p. 3, and reported by David Binder in the *New York Times* of the same day, dateline 1 April 24, perhaps from an English language broadcast of the same day reported in FBIS Daily Report, Eastern Europe.

¹⁰ Compare, for example, Karel Podlaha, *op cit.*, pp. 59-60. This article, which in fact presents a global balance of payments using VRCV data, gives alternative figures for 1967 foreign trade at both negotiated prices and f.o.b. prices, which converted at the VRCV rates, are substantially lower than those both obtained by converting the usual devisa crown values at the official rate.

¹¹ See Václav Brůžek, "Zahraniční úvěrové vztahy v čs. platební bilanci" ("Foreign Credit Relations in the Czechoslovak Balance of Payments"), *Finance a úver.*, February 1972, pp. 93-94. He notes that 93 percent of long-term credits to the West are to LDC's.

consensus on economic policy. The gradually rising deficits in foreign trade and payments result, then, not from a consistent policy but rather from caution and indecision and from the pressures felt by an insecure leadership.

Throughout this period—and before—the conduct of trade with the West was hampered by very small reserves. The substantial assets in gold and foreign currency that the Communists inherited on seizing power in 1948 had long since been exhausted. The only substantial reserve remaining was the 18.4 metric tons of gold seized by Germany in World War II; but this asset, though carried on the books of the national bank, remained under the control of the United States pending a settlement of claims outstanding in 1948. A settlement was initiated in 1964, but not signed; a new settlement has recently been initiated.

In addition, the favorable market position held by Czechoslovakia in the early postwar years was also a thing of the past. Reorientation of the economy to trade with the U.S.S.R. and Eastern Europe had been immediate and nearly complete. Stalinist economic policy, continued through the 1950's, had undermined Czechoslovakia's position as an exporter of machinery, consumer goods, and high-grade food products.

These considerations were not of great moment in the late 1950's to the Novotny regime, formulating plans to "complete the building of socialism" in the coming years. It remained for the reform movement, which began to gather support as the economy ran into trouble in 1962-63, to gather them up with the many long-suppressed issues, that were ventilated in the mid-1960's. To their principal spokesman, Ota Šik, the economic revival needed in renewing the whole society would depend on much closer trade relations with the West.

The opening up of a vista of national revival did not much affect foreign trade and payments. Alexander Dubcek, in his short period of power, had too much else to think about. But the need for credits did overstimulate some officials, including Dr. Šik, leading them to start talking about a possible credit of up to \$500 million from the U.S.S.R. or, if not, from the West. The matter was evidently discussed with Soviet representatives and, informally, with Western officials and bankers. These discussions did not get far; on second thought, everyone backed away, stressing the problems of how to use such a credit to good effect.¹²

Apart from impatience and an inclination to think and talk big, which cost the reformers dear, it is open to doubt whether they would have moved as far or fast as the Romanian or, indeed, the GDR leadership in expanding trade with the West. Nevertheless, the episode does show that in Czechoslovakia, as in most other countries of the area, the idea of technological change had become important, and was linked with acceptance of Western credits.

A gradual step-up in purchase of plant and equipment on medium-term credit reflects the same development. The rise, evident in the last years under Novotný, continued uninterrupted during 1968 and through 1970, though purchases leveled off in 1971. Equipment and installations for the chemical industry predominate in the larger

¹² Interview with Finance Minister Sucharda, in *Zemědělské noviny*, Apr. 18, 1968, p. 3; press conference of Premier Cernik and Vice Premiers Gustav Husak and Ota Šik, May 14, 1968, BBC SWB EE/2772/c/1, May 17, 1968.

Czech purchases; otherwise, smaller orders for automotive equipment are the most frequent, along with a papermill and equipment for a pulp mill. Cumulative net drawings on medium-term supplier credits for plant and equipment ran about \$325 million over the period; including short-term credits for machinery, net drawings totaled nearly \$380 million.

Apart from substantial purchases of Canadian grain financed on medium-term government credit through the mid-1960's, bank credits increasingly figured in Czech indebtedness. Already by early 1967 the Foreign Trade Bank had entered into interbank agreements, in particular with French and English banks, for long-term financing of imports of machinery and equipment.¹³ Public mention of large credits continued into 1969. Premier Cernik in February was reported to have said that Czechoslovakia had "obtained pledges" for \$200 million to \$300 million in commercial credits "to help make her outdated industry competitive," according to the New York Times man in Prague, and was still talking about the need for larger credits.¹⁴ Late in the same year it was reported that the U.S.S.R. had agreed to help Czechoslovakia buy what it needed in the West as part of the trade agreement for 1970—an indication, one would assume, of high-level approval for substantial loans by the Moscow Narodny Bank.¹⁴ European banks have not had a monopoly on the business. A Prague interview with the president of Manufacturers Hanover Trust Co.,¹⁵ noted, for example, the long record of his bank in financing sales of materials, especially corn and soybeans, to Czechoslovakia.¹⁶

The hard currency position of Czechoslovakia seems less secure than that of its immediate neighbors in Eastern Europe. With debts running substantially more than the value of exports, and an economy heavily committed to heavy industry, it lacks an obvious way of stimulating a rapid growth of earnings. But Czechoslovakia is safely within the limits of what has become acceptable—in the East and in the West—and doubtless will stay within these limits.

¹³ *Hospodářské noviny*, 17 March 1967, p. 5.

¹⁴ *New York Times*, Feb. 8, 1969, p. 1.

¹⁵ Reuters, *East West Trade News*, Nov. 6, 1969, p. 5.

¹⁶ Prague English language broadcast to Africa, FBIS *Daily Report*, Eastern Europe, May 19, 1973.

TABLE 2.—CZECHOSLOVAKIAS BALANCE OF PAYMENTS WITH THE INDUSTRIAL WEST

[In millions of U.S. dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1957	1968	1969	1970	1971
Goods and services.....	-12.0	-62.5	-84.3	-66.2	-37.4	-104.7	-102.9	-123.6	-46.1	-111.8	-78.8	-242.5	-202.3
1. Exports to the industrial West.....	278.5	304.2	345.6	320.3	360.1	407.2	439.2	490.7	526.1	552.2	678.9	746.4	816.5
Imports from the industrial West.....	-275.8	-325.6	-393.1	-354.6	-352.6	-455.0	-486.7	-561.2	-522.2	-630.7	-688.9	-879.9	-964.9
2. Multilateral trade with the LDC's: net.....	7.3	-13.9	1.5	2.7	-4.0	.1	4.5	7.7	8.6	32.7	16.5	-1.8	34.8
3. Transportation: net.....	-19.4	-22.6	-29.8	-22.7	-32.9	-44.8	-46.9	-36.7	-35.6	-35.4	-38.9	-53.1	-34.2
4. Travel: net.....	2.8	3.6	3.8	5.2	5.8	10.3	14.5	16.8	18.5	19.5	8.8	13.0	23.7
5. Investment income: net.....	-1.3	-4.8	-8.5	-10.6	-13.9	-19.3	-25.1	-29.0	-32.2	-36.0	-45.4	-57.1	-71.0
6. Other government: net.....	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
7. Other services: net.....	-4.4	-5.9	-6.5	-7.6	-2.2	-7.6	-7.2	-14.8	-11.5	-16.9	-17.3	-20.7	-20.1
Transfer payments.....	21.4	19.7	18.0	17.3	20.8	17.9	22.4	21.9	25.2	31.8	31.6	40.4	38.3
8. Private earnings.....	10.3	11.0	11.9	13.4	15.4	18.0	21.1	22.4	24.2	24.2	24.2	24.2	24.2
9. Government: earnings.....	12.0	9.7	7.1	5.1	6.9	1.5	3.1	1.5	3.1	9.9	9.9	18.8	16.9
Government: expenditures.....	-9	-1.0	-1.0	-1.2	-1.5	-1.6	-1.8	-2.0	-2.1	-2.3	-2.5	-2.6	-2.8
Total goods and services and transfer payments.....	9.4	-42.8	-66.3	-48.9	-16.6	-86.8	-80.5	-101.7	-20.9	-80.0	-47.2	-202.1	-164.0
Capital and monetary gold ¹	9.4	-42.8	-66.3	-48.9	-16.6	-86.8	-80.5	-102.7	-20.9	-80.0	-47.2	-202.1	-164.0
Nonmonetary:													
10. Medium and long term (machinery): net.....	-22.0	-13.0	-10.1	-8.7	-8.4	-4.5	-12.9	-42.9	-10.0	-31.2	-38.5	-54.2	-69.2
11. CCC credits: drawings.....								-6.3	-2.6				
CCC credits: repayments.....									5.9	1.0	1.0	1.0	
12. Short term (machinery): net.....	-11.5	9.2	-3.5	-3.2	-.3	-2.1	-6.6	-3.4	-4.2	-2.6	-14.1	-10.0	
13. Canadian E.C.I.C.: drawings.....			-15.7			-7.8	-46.7	-29.5	-2.2	-7.4	-7.3		
14. Canadian E.C.I.C.: repayments.....					10.5	5.2		5.2	33.7	35.5	9.8	4.9	7.4
Monetary:													
15. Liabilities: net.....	47.9	-37.9	-35.9	-36.2	-17.8	-76.5	-12.9	-24.3	-42.1	-72.3	6.2	-141.0	-98.3
16. Gold expenditures.....	-5.6	-1.1	-1.1	-.8	-.6	-1.1	-1.4	-.5	-1.4	-3.0	-4.3	-2.8	-3.9
Gold: earnings.....	.6												
Cumulative end of year indebtedness.....		-41.7	-106.9	-155.0	-171.0	-256.7	-335.8	-437.0	-456.5	-533.0	-599.5	-798.8	-1,021.2

¹ A positive number indicates an increase in assets or a decrease in liabilities; a negative number indicates a decrease in assets or an increase in liabilities.

² Adjusted upward for shifts in the exchange rates by 4 percent for end of year 1969 and 6.5 percent for end of year 1971.

³ Residual which includes supplier credits for materials.

GDR

The Accounts

The GDR withholds nearly all information bearing on foreign payments except for the basic foreign trade statistics published in the statistical yearbooks. A slight easing of restrictions in the late 1950's was reversed by the early 1960's. Since then the general economic literature of the GDR has been almost devoid of useful statistical data, although technical publications occasionally contain something of value.

The diverse and important transactions of the GDR with the FRG, however, are covered more or less in West German official publications, scholarly studies, and news stories. FRG officials and businessmen are evidently disposed to be discreet, but the open character of West German society has led to the publication of a good deal of information on services, transfer, and credits, as well as on trade. This material has been used extensively in drawing up the present accounts.

GDR trade statistics are used with some confidence, although they present anomalies.¹⁷ The main deviations from Western partner country statistics are similar to those shown by other East European countries. Comparison with appropriate FRG statistics¹⁸ is reassuring, given the irreducible differences to be expected from the treatment of transport, consignment sales, and end of year accounting cutoffs.

GDR statistics must be adjusted, however, to allow for the rise in the value of the West German Deutsche Mark in late 1960 and late 1969. The GDR has continued to convert DM (referred to in intra-German trade as "accounting units") to East marks at "parity," that is, at a rate equivalent to 4.2 to the dollar (through 1971), thus understating the growth of intra-German trade (including trade with "Westberlin") and its share in total GDR trade.

The GDR shows a net deficit on services in spite of rising cash receipts from West German traffic with West Berlin and travel to the GDR. The chief causes are expenses for ship charters, port charges, interest payments, costs of representation in the West (not offset by significant Western expenditures in East Berlin), the support of subversive activities in the FRG, and payments in DM to Reichsbahn workers living in West Berlin. Published FRG statistics are used in estimating services along with physical data, which form the basis for the travel account and for the transport account with other Western countries. Interest payments reflect the average cumulative indebtedness (exclusive of the interest-free swing and overdue payments to West German suppliers), with rates averaging 7.5 percent plus for FRG credits and 6.5 percent for other credits.

The biggest problem concerns earnings from transfers which became large in the late 1960's. These in part represent DM purchases by West Germans of goods to be delivered to relatives in the GDR by Genex,¹⁹ contributions of the Evangelical Church to help support the

¹⁷ In particular, trade with the West contains a rather large residual not allocated by country.

¹⁸ Those of the Economics Ministry. The other official series, that of the Federal Statistical Office, differs in treating deliveries for processing and return on a gross basis and in including deliveries that are not paid for, together with deals financed in third countries. On all three counts, the series is unsuitable for balance-of-payments purposes. Differences are summarized by Horst Lambrecht, *Die Entwicklung des Interzonenhandels von seinen Anfängen bis zur Gegenwart*, West Berlin, 1965, pp. 29ff.

¹⁹ Geschenkdienst und Kleinexport GmbH, founded in 1957. This organization has a network of representatives in the FRG, plus representation in Copenhagen and Zurich, and offers a catalog with 850 items. *A bis Z*, 1969, p. 234.

churches of their brethren in the East, FRG payments to the GDR for releasing prisoners and allowing families to be reunited, and FRG payments on certain GDR claims.

Little has been published on these payments. Rough magnitudes of West German purchases on behalf of relatives are indicated by Polish and Czech success with their own programs (through Orbis and Tuzex). Total remittances per year are allowed to rise from \$5 million in 1959-60 to \$25 million in 1971. The needs of the East German Protestant congregations offer an indication of West German contributions, which are put at \$5 million a year. Ransom payments are calculated from recent statements, indicating that in the 2-year period 1969-70, payments ran about \$29 million; in 1971, \$27 million was paid as the first installment on a bigger deal.²⁰ It is assumed on the strength of the figure for 1969-70 that payments ran between \$10 million and \$15 million a year, beginning in about 1963, that is, the second year after the Berlin Wall. The FRG has announced payments on GDR claims.²¹

In the capital account, outstanding supplier credits for machinery and equipment rose to roughly \$300 million by the end of 1971, divided about half and half between the FRG and all other Western partners.²² FRG short-term supplier credits, mainly for steel and other materials, are much larger than those extended by other countries. At the end of 1971 net drawings ran some \$200 million; considerable amounts of supplier credits for materials are assumed also in other GRD trade with the West.

Bank credits have played a substantial part in GDR purchases outside of West Germany, although less so than in those of most other East European countries. Credits outstanding were substantially reduced in 1967-69, then boomed again. Presumably, many were arranged by the Moscow Narodny Bank in London and the Banque Centrale de l'Europe du Nord in Paris, both Soviet owned although some financing has come directly from Swiss and perhaps Swedish banks. The political isolation of the GDR would have led to reliance on these sources. Only since 1971 has the GDR begun to rely substantially on other sources, including commercial banks in Japan and the United States.

GDR drawings represent in part the financing of extraordinary agricultural purchases in 1964-66 and in 1971-72. Given the large amounts, running to \$50 million a year, medium- and even long-term credits could have been extended, well beyond the terms usually available. The need for bank credits rose with the acceleration of demand for metals, chemicals, and other materials beyond the GDR's ability to finance these purchases on the usual commercial terms. Beginning in 1969 such imports outran all others, and it is estimated that by the end of 1971, drawings on Western lines of credit financed a large fraction of such purchases. Net drawings on supplier

²⁰ A total of 273.4 million DM for 1969-72 is given by *Der Spiegel*, 17 December 1973, p. 18. Some corroboration would evidently be desirable. The figures for 1971 and 1972 are 93 million DM and 70 million DM, respectively, from a statement by a CDU deputy, citing official sources, as reported in a DPA broadcast of 18 December, 1972. BBC SWB EE/4175/A1/6, 20 December, 1972.

²¹ The GDR claimed compensation for the withdrawal of subsidies on deliveries of petroleum products under EC regulations and for underpayment (at internal FRG rates) of postal and telecommunications (and later transport) services.

²² FRG publications have shown outstanding balances on "medium-term" credit since 1967, when facilities for such credit with government backing were first provided. The analysis done for these accounts suggests that some medium-term credits not backed by FRG government instrumentalities are included in the reported totals for "short-term credit". The "medium-term" indebtedness by now includes also long-term credits.

and bank credits for these purposes amounted to over \$400 million by then.

Other capital items represent GDR indebtedness on the "swing credit" in intra-German trade, overdue GDR payments to FRG suppliers as reported in the West German press, and GDR outstanding credits extended to the FRG. In addition, there were GDR gold purchases of over \$100 million in the London market in 1967-68, which have been followed by rising sales in the same market.²³

Credit and Politics: A Bit of History

Policies on trade and payments have reflected the GDR's struggle to impose itself as a believable rival of the FRG. During the 1960's the Ulbricht regime continued stubbornly the effort to achieve high growth rates and modernize the economy. Ulbricht tried to work the West German connection for whatever it was worth without political concessions, while turning elsewhere for larger credits. He moved too fast; his successor Erich Honecker must go more slowly, but inevitably down the same path.

In 1959-61, the first 3 years covered in the payments accounts, the GDR was struggling to fulfill the 7-year plan to "overtake and surpass" West Germany by 1965. To do so, the leadership ran mounting deficits not only with the West, as shown, but also with the U.S.S.R. Even so, by 1961, shortages of materials were spreading, producer inventories of goods in process were rising, and lags in construction lengthened rapidly.

The Soviet Government, facing similar problems, called a halt. So in 1962-63 Ulbricht had to retreat and regroup, balancing payments both with the U.S.S.R. and with the West. The deficit with the West was small in 1962 and, as Ulbricht himself pointed out, payments were balanced in 1963 for the first time since 1958. Indebtedness to the FRG increased, but there was an even sharper reduction in payments overdue, while indebtedness to other Western countries rose only slightly. The GDR growth rates dropped to just over 2 percent per year.²⁴

Ulbricht had looked for a way to prevent a downturn. During 1961, the GDR had been on a campaign to free the economy from FRG interference (*Störungsfreiheit*), as a result of Bonn's threat in the fall of 1960 to suspend interzonal trade. In February 1962, however, Ulbricht had two proposals for sizable credits submitted to FRG representatives. The first was for annual deliveries of 3 million tons of West German coal for 10 years, with delayed repayment, presumably on clearing account. The second was for a deal under which the FRG would deliver \$125 million worth of machinery in 3 years, to be repaid in kind.²⁵

FRG officials apparently considered these proposals seriously and discussed them over a considerable period. But the Berlin crisis and the Berlin wall remained fresh in memory. It was too soon for consensus on large-scale deals with the GDR without some tangible political gain. When it eventually became clear that none was obtainable,

²³ Transactions in other markets are not known.

²⁴ As reflected in GDR statistics through 1967.

²⁵ Lead article *Neues Deutschland*, 30 May 1962, pp. 1-2; speech of Walter Ulbricht, *Neues Deutschland*, 20 June 1962, pp. 4-5; and unsigned article in the Fall Leipzig Fair issue of *Die Wirtschaft*, September 1962, p. 9.

the negotiations petered out. Khrushchev had the last word. Presumably with reference to the same offer, he remarked in early 1963: "If West Germany is still haggling about credits, one must say: a year or two will pass, then they will offer credits but the GDR will do without them."²⁶

Beginning in 1964-65, GDR trade with the West picked up, and indebtedness rose again, gathering momentum through 1967 in response to renewed economic growth and sharply increased agricultural purchases in the West. Then in 1968 came a pause. The explanation seems to lie in changing trade relations with the U.S.S.R. The achievement of Ulbricht's ambitions for the economy had been complicated by the less generous approach of the Brezhnev government to materials export as reflected in the 1966-70 trade plan. This plan was adopted over the stubborn opposition of Ulbricht's chief adviser, Erich Apel, who committed suicide upon the signing of the agreement in December 1965. By 1967, the Soviets were making new demands for "investment" in Soviet materials and for sharply increased GDR imports of Soviet machinery; at the same time, Soviet commitments of some materials were significantly cut back. Ulbricht's response, announced at the seventh Party Congress in 1967, was an independent GDR line on economic policy, which would emphasize rapid structural change. To work out the projects, to place contracts in the West, and perhaps to win Brezhnev's acquiescence was the work of 1968. The temporary relaxation of the tempo is marked by the unique balance of payments surplus shown in that year.

The main obstacle to accelerated technological change, that of financing, was considerably eased by a more forthcoming approach by the FRG. The GDR perceived in the change in Bonn under the Kiesinger/Brandt coalition not only the promise of more credits and greater access to the FRG markets but also the opportunity to squeeze more out of the Berlin traffic and intra-German travel. Already in 1967, the West German Government had moved to stimulate trade by eliminating the requirement (part of a 1960 agreement on intra-German trade) for annual settlement of swing balances. Though never actually imposed on the GDR, the requirement had—as intended—limited GDR resort to the swing. In the spring of 1967 Bonn had also set up facilities to insure and partly finance medium-term credits for the GDR. These initiatives were followed in 1968 by further liberalization of the swing credit, and by providing for annual increases in quotas for machinery deliveries in both directions.

At the same time, the FRG succeeded in settling GDR claims for compensation in return for the elimination (under Common Market rules) of domestic subsidies for synthetic oil products, from which GDR deliveries had benefited (as "domestic" product). These deals were capped in August by the GDR announcement of a doubling of charges imposed on Berlin highway traffic and the obligatory currency exchange by Western travelers in the GDR, and the imposition of visa fees on such travelers. All told, these changes produced in 1969-70 a rise of \$100 million in FRG credits, furnished to the GDR together with a substantial rise in the GDR cash intake.

In 1969-70 the results appeared in accelerated purchases in the West, which in the end must have run considerably above the original

²⁶ *Neues Deutschland*, January 18, 1963, p. 2.

projections. The large trade deficit in 1970 running over \$300 million was accompanied by substantial deficits with the U.S.S.R., Hungary, and Poland. Even so, by the fall of 1970 the headlong growth of the economy, and especially of investment, had outrun supplies of fuels and many intermediate products, and the backlog of unfinished investment had mounted. As in 1961, it was necessary to change course, but this time, Walter Ulbricht reacted too slowly, and in the fall of 1970 the Politburo took the decision out of his hands. This impasse could well have contributed to the fall of Ulbricht, who was replaced in May 1971 by the long-time heir apparent Erich Honecker.

The new leadership did not try to slow down the economy abruptly, wisely no doubt, in view of its momentum. Honecker tried to hold down discretionary imports, but accepted a still larger deficit in 1971, raised by exceptional agricultural purchases from the 1971 crop, as mentioned earlier. Heavy reliance on short- as well as medium-term credit greatly complicated the job of managing trade.

The regime's efforts to hold down deficits have not abated since 1971. But Ulbricht's large investments in new technology, above all in petrochemicals, along with increased production and consumption of livestock products, have tied the economy still closer to the Western market. The shortfall in Soviet agriculture in 1972, sharp rises in world market prices, and finally the energy crisis emerging in 1974 have all aggravated the problem of trade and payments. And, in spite of having won the long struggle for recognition, the GDR is still very much on its own. The only apparent source of help is the FRG, but prudence—indeed, fear—seems to preclude rapprochement and Soviet policy would seem to set limits to the possibilities of blackmail. It is hard to see a way out.

The gross GDR debt to the industrial West, by 1971 somewhat larger than its exports to the area, is not the crux of the problem. The problem, rather, is the uncertain prospect for sharply increased GDR earnings, either from exports or from services. The regime has done fairly well so far, but as Soviet prices for oil and other materials go up it will be very hard to maintain recent rates of increase in hard currency earnings. The present outlook is that the GDR in the end—after years of battling to achieve a destiny of its own—will have to settle for such growth, prosperity, and importance as may suit the Soviet Union.

TABLE 3.—EAST GERMAN BALANCE OF PAYMENTS WITH THE INDUSTRIAL WEST

[In millions of U.S. dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Goods and services:													
1. Exports to the industrial West.....	412.0	441.2	449.6	420.5	485.8	551.0	630.6	651.1	686.0	726.6	935.3	1,057.5	1,134.2
Imports from the industrial West.....	-431.5	-511.0	-477.1	-417.5	-431.2	-558.1	-637.9	-778.9	-749.6	-703.4	-992.5	-1,350.5	-1,414.7
2. Multilateral trade with the LDC's: net.....		.2	1.8	-9.1	-4.3	-5.1	-8.3	-10.9	-13.1	-11.6	-11.5	-4.1	-1.1
3. Transportation: net.....	-20.0	-28.8	-25.9	-12.5	-15.4	-27.0	-52.8	-38.7	-32.9	-24.8	-35.1	-49.9	-41.9
4. Travel: net.....	1.2	1.3	.8	1.8	1.5	9.0	23.8	30.0	18.3	22.3	24.1	32.4	34.3
5. Investment income: credit.....	1.2	1.2	1.2	1.2	1.5	1.5	1.8	2.0	2.5	3.0	4.0	6.0	8.6
Investment income: debit.....	-6.0	-11.2	-18.2	-22.5	-25.7	-28.0	-30.9	-38.0	-44.6	-44.3	-42.1	-55.6	-69.2
6. Other government: net.....	-13.7	-19.2	-19.7	-20.4	-20.7	-21.1	-21.3	-21.5	-22.5	-9.8		-4	2.4
7. Other services: net.....	-3.8	-4.0	-4.0	-4.0	-4.0	-4.5	-8.8	-8.8	3.7	3.7	3.7	10.4	8.3
Transfer payments:													
8. Private: earnings.....	10.0	10.0	12.0	15.0	18.0	21.0	25.0	27.0	28.0	29.0	30.0	30.0	30.0
9. Government: earnings.....				5.0	10.0	10.0	10.0	12.0	12.0	30.2	29.0	33.6	98.6
Total goods and services and transfer payments.....	-50.6	-120.3	-79.5	-42.5	15.5	-51.2	-68.8	-174.7	-112.2	20.9	-55.1	-290.6	-210.5
Capital and monetary gold ¹	-50.6	-120.3	-79.5	-42.5	15.5	-51.2	-68.8	-174.7	-112.2	20.9	-55.1	-290.6	-210.5
Nonmonetary:													
Liabilities to FRG:													
10. Swing: net.....	-18.3	9.5	9.0	6.2	1.0			-32.5			-42.5	-8.2	-5.7
11. Overdue payments: net.....	-6.0	-12.5	25.0	-20.0	31.2	1.2	12.5	-36.2	-8.8	-45.0		-87.7	92.0
12. Short term credit: net.....	-7	-5.8	-9.0	-3.5	-11.2	-20.0	-12.5	-3.8	-5.0	10.0	-17.5	-47.9	-34.2
13. Medium term credit: net.....									-37.5	-37.5	-12.5	-20.5	-21.6
Others: ²													
14. Medium term: net.....	-4.9	-7.1	-2.9	-11.6	-9.1	-6.7	-10.4	-28.7	-25.2	6.5	-10.8	-46.0	-66.6
15. Short term: net.....	-2.9	-5	-2.2	-9	-2.9	2.8	-3.7	-11.2	-1.7	2.5	2.8	-9.0	-1.5
Assets (with FRG): net.....					1.2	1.2	1.2	2.5	6.2	25.0	12.5	41.1	28.7
Monetary:													
Bank credits: net ³	-17.8	-98.9	-99.4	-12.7	5.3	-29.2	-55.3	-64.4	12.2	133.0	7.3	-98.2	-120.2
Gold: net.....						-5	-6	-4	-52.4	-73.6	5.6	9.2	32.6
Exchange rate adjustment.....		-5.0										-23.4	-114.0
Cumulative end of year indebtedness with the FRG ⁴	-88.0	-103.8	-101.3	-96.2	-71.3	-93.8	-91.2	-168.8	-200.0	-202.5	-298.4	-462.0	-497.0
Cumulative end of year indebtedness other ⁴	-75.7	-182.2	-286.7	-311.9	-318.6	-351.7	-421.1	-525.4	-540.1	-398.1	-398.8	-552.0	-740.3
Total cumulative end of year indebtedness.....	-163.7	-286.0	-388.0	-408.1	-389.9	-445.5	-512.3	-694.2	-740.1	-600.6	-697.2	-1,014.0	-1,237.3

¹ A positive number indicates an increase in assets or a reduction in liabilities, a negative number indicates a reduction in assets or an increase in liabilities.

² Residual, which includes supplier credits for materials.

³ Starting point for end of year 1958 is \$53,100,000.

⁴ Starting point for end of year 1958 is \$50,500,000.

HUNGARY

The Accounts

Hungary's extensive public discussion of planning problems and broad coverage of domestic economic data have been accompanied by a very discreet approach to questions of foreign payments. Extensive research and estimating have gone into the present estimates. Balance-of-payments information was provided in 1972 by the Hungarian National Bank to subscribers to a large Eurobond issue. This information has not been published.

The merchandise and transport accounts shown in table 4 reflect the use of c.i.f. import statistics, which Hungary has adopted in preference to the f.o.b. accounting standard in CEMA. The transport account is affected in two ways. First, the calculated hard currency cost of transport and insurance on imports, from the exporter's port or railhead to the Hungarian border, must be excluded from the transport balance. Second, the net deficit on transport must be further reduced by the amount of such costs (chiefly for transit, forwarding, and shipping) paid in other currencies, especially rubles. The deficit on transport would be much larger if the merchandise account were f.o.b./f.o.b. (as generally in Eastern Europe); for example, the deficit in 1971 would be about \$30 million. In Hungary's internal statistics, the whole problem can be evaded by using contract price data for trade, but such statistics are not published for the industrial West.²⁷

The deficits shown for most years since the early 1960's in Hungary's "multilateral" trade with the LDC's are not unrepresentative of Hungary's trade with the whole group, including "bilateral" partners. But the deficits shown would turn into surpluses if the imports were priced f.o.b., not c.i.f.

Apart from the problems associated with the use of c.i.f. import statistics, the Hungarian accounts present only the normal estimating problems noted in the methodological note. Fairly good data can be put together for travel. Private transfers (remittances) may be somewhat on the high side.

The capital account is designed to finance current account deficits, allowance being made for a small estimated starting debt, a guess at the doubtless substantial addition to Hungary's deposits in Western banks, the relatively small gold sales and purchases on the London market, and exchange rate shifts. This approach leaves all errors and omissions reflected in changes in the gross Hungarian debt position. They are also reflected in the estimate for the monetary sector, which represents the residual within the capital account.

A partial corroboration of this approach, is offered by a statement in early 1970 by Béla Csikós-Nagy, the well-known senior economist active in planning economic reform. He reported that Hungary's liabilities to the West had increased in 1966-69 by 2 billion foreign exchange forints, or about \$170 million.²⁸ The present account shows a rise of \$158 million. The figure cited by Csikos-Nagy probably refers only to hard currency. In any case, it represents a minimum figure for the rise in indebtedness to the industrial West. Any hard

²⁷ Data at contract prices are published only for "ruble trade" and "dollar and other" trade.

²⁸ *Magyar hírlap*, February 10, 1970, as cited by RFE.

currency balances in "multilateral" trade with LDC's (at contract prices) would be an asset rather than a liability. It is quite unlikely that bilateral balances with LDC's were included, but such balances (at contract prices) were also positive.

As constructed, Hungary's capital account reflects a restricted use of medium- and long-term supplier credit and the extensive use of Western bank credits and loans. The Hungarian National Bank was the pioneer in establishing close relations with Western banks, the basis for the Eurodollar bonds that Hungary began putting on the market in 1971. Hungary's credit remains very high with Western bankers.

Hungary's Policy: A Small Difference

Adaptability has been the aim of Hungary's economic policy. To the Kádár regime it has never seemed possible either to avoid or to ignore the risks of growing dependence on foreign trade. It is doubtless true that these are greater for Hungary than for most other East European countries, but the distinctive character of Hungarian policy appears to be quite as much, if not more, a matter of culture and history.

In trade with the industrial West, one notable indication of Hungary's approach has been a relatively small share of machinery, and a relatively large share of industrial materials, especially chemicals, in Hungary's imports. The share of machinery rose to more than 20 percent only in 1966, and even a splurge of orders in 1971 brought it to just over 25 percent. Not surprisingly, Hungary has made few sizeable purchases—two chemical plants, a large order for papermaking equipment, and substantial investment in automotive plant and equipment—together with several lots of railroad rolling stock. Cumulative net drawings on these credits over the period comes to only about \$150 million, plus an estimated \$50 million in short-term supplier credits.²⁹

Hungary's reliance on bank credits and loans is correspondingly great. This seems to be explained in part by the composition of Hungary's imports—supplier credits beyond two years are rarely available for purchases of industrial materials. But the privacy and flexibility of bank financing also appeal to the Hungarians. The reputation of Hungary's National Bank and of its key executive, János Fekete, is well established, and Hungary has presumably had to depend less than other East European countries on the good offices of the Soviet-owned banks.

In spite of the importance of Hungarian drawings on lines of credits and growing use of syndicated interbank loans, published information does not provide much of an idea of the total. Loans floated on the London market in 1968–71 amounted to \$120 million (including the \$50 million Eurobond issue offered in late 1971), of which \$40 million had been repaid by the end of 1971. But these loans account for as little as one-fifth of the total outstanding, which by then amounted to roughly \$600 million. Much of the remainder was obtained on the West German market.

Other direct financing rounds out Hungary's indebtedness. The National Bank floated a Eurobond issue of \$25 million in early 1971

²⁹ In addition Hungary bought \$4.5 million worth of agricultural commodities on CCC credits.

(as well as an additional \$50 million bond offered in December 1971, not taken into account in the present estimates). The CEMA Investment Bank in the same year granted credits to Hungary, including about \$7.8 million in hard currency, to expand and modernize the Ikarus plant (which produces widely sold buses) and to invest in the state railroad.

The emphasis in Hungary's policies has been shifting. The rise in the share of machinery imports since the mid-1960's suggests that a growing need for Western technology was indicated by the intensive study that accompanied the 1968 reform. When enterprises were given somewhat more leeway to import, especially in 1970-71, machinery imports led the way. The growth of machinery imports was interrupted in 1972 by controls imposed after the suddenly increased deficit in 1971, when earnings from agricultural exports dropped more sharply than expected. But machinery imports have begun rising again, both absolutely and as a share of total imports.

The big increase projected in 1971 in "dollar" imports as a share of inputs (direct and indirect) to investment from 7.3 percent in 1968 to 10 percent in 1975 was already overachieved in 1972.³⁰ Such a rapid rise in machinery imports will probably not be repeated. But the long terms available and subsidized interest rates often extended on supplier credits for large orders of machinery and equipment look attractive today relative to bank financing, especially given the prospect of continued inflation.

³⁰ The study is summarized in Istvan Orszagh, *op. cit.*

TABLE 4.—HUNGARY'S BALANCE OF PAYMENT WITH THE INDUSTRIAL WEST

[In millions of U.S. dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Goods and services.....	-22.5	-66.9	-89.0	-47.4	-42.6	-92.9	-64.5	-36.0	-78.1	-73.3	0.8	-96.4	-296.6
1. Exports to the industrial West.....	170.9	182.9	185.2	209.0	268.4	291.2	321.5	377.3	391.4	386.6	507.4	626.0	622.9
Imports from the industrial West.....	-176.6	-234.3	-255.1	-251.9	-313.2	-380.2	-379.9	-397.9	-444.9	-428.8	-490.4	-699.1	-889.4
2. Multilateral trade with the LDC's: net.....	2.6	6.5	4.7	3.2	-4.6	-9.8	-8.1	-7.6	-3.3	-1	5.5	-1.4	-1.8
3. Transportation: net.....	-15.4	-16.5	-14.7	5.0	22.6	23.3	18.0	11.0	-2.4	-5.6	1.6	-2.8	-9.4
4. Travel: net.....	2.6	1.3	1.7	1.9	1.1	2.3	7.2	10.2	10.6	9.7	12.1	20.0	29.2
5. Investment income: credit.....	2.0	2.3	2.7	3.0	3.3	3.7	4.0	4.3	5.0	6.0	7.0	7.5	8.0
Investment income: debit.....	-3.6	-5.5	-9.7	-13.2	-15.3	-18.7	-22.7	-24.9	-27.9	-31.8	-32.9	-35.5	-44.9
6. Other government.....	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
7. Other services: net.....	-2.0	-2.6	-2.8	-3.4	-3.9	-3.7	-3.5	-7.4	-5.6	-8.3	-8.5	-10.7	-10.2
Transfer payments.....	17.0	15.7	14.3	13.9	16.7	14.3	17.9	17.5	20.1	27.9	30.4	42.1	49.3
8. Private: earnings.....	8.1	8.6	9.3	10.5	12.1	14.1	16.5	17.5	18.9	21.4	24.1	28.7	35.8
9. Government: earnings.....	9.5	7.7	5.6	4.1	5.5	1.2	2.5	1.2	2.5	7.9	7.8	15.0	15.2
Government: expenditures.....	-6	-6	-6	-7	-9	-1.0	-1.1	-1.2	-1.3	-1.4	-1.5	-1.6	-1.7
Total goods and services and transfer payments ¹	-5.5	-51.2	-74.7	-33.5	-25.9	-78.6	-46.6	-18.5	-58.0	-45.4	31.2	-54.3	-247.3
Capital and monetary gold ^{1, 2}	-5.5	-51.2	-74.7	-33.5	-25.9	-78.6	-46.6	-18.5	-58.0	-45.4	31.2	-54.3	-247.3
Nonmonetary sectors:													
10. Medium and long term (machinery): net.....	-13.1	-12.6	-3.4	-1.9	-7.9	-8.5	-6.0	-13.1	-14.7	-1.6	-7.0	-20.3	-36.7
11. CCC:													
Drawings.....								-3.4	-1.1				
Repayments.....									1.3	1.7	1.7	4	
12. Short term (machinery): net.....	-6.7	-1.8	-5	-5	-2.7	-2.0	-1.9	-2.8	-5.3	4.1	-3.6	-7.9	-13.9
Monetary sectors:													
13. Liabilities: net ³	11.0	-42.6	-76.7	-36.1	-18.4	-75.1	-39.2	-7.5	-52.3	-60.7	* 27.7	-34.9	* -202.4
Assets: net.....	3.3	5.8	5.9	5.0	5.9	5.8	5.0	8.3	14.1	16.8	12.4	8.4	8.3
14. Gold: earnings.....					1.2	1.2							
Gold: expenditures.....					-4.0		-4.5			-5.7			-2.6
Cumulative end of year indebtedness ⁴	-63.8	-120.8	-201.4	-239.9	-268.9	-354.5	-401.6	-428.4	-500.5	-557.0	* -559.7	-622.4	* -927.9

¹ Including net errors and omissions.² A positive number indicates an increase in assets or a reduction in liabilities; a negative number indicates reduction in assets or increase in liabilities.³ Adjusted upward for shifts in the exchange rates by 4 percent for end of year 1969 and 6.5 percent for end of year 1971.⁴ Starting position is \$55,000,000 at the beginning of 1959.⁵ Residual, which includes supplier credits for materials.

POLAND

The Accounts

Poland is the only East European country (apart from Yugoslavia) to publish balance of payments accounts. These accounts, issued by the Polish National Bank,³¹ cover goods and service transactions with the "capitalist world" along with transfers. They differ in coverage from the accounts furnished to GATT and member governments,³² which would be less suitable for the present purpose. Poland is also unusual in the amount of other information published that relates to foreign payments, including the only complete official series for tourism, extensive discussion of earnings and expenditures by the maritime fleet, and scattered data on other topics.

The balance of payments on current account, as shown in table 5 represents the official figures, adjusted only to eliminate clearing transactions with LDC's and remittances in kind.³³ Discussion in Polish journals and the distinguished statistical tradition of Poland make for confidence in the Polish accounts.³⁴ They may well be more reliable than those for some Western countries. They are free from two major sources of error in the reporting that underlies Western accounts—incomplete coverage of middleman trade and third country financing, already reflected in standard Polish trade statistics; and the difficulty of tracing international capital movements, which is no problem for Poland. Moreover, Poland has corrected its foreign trade statistics for balance of payments purposes to eliminate errors resulting from rule-of-thumb adjustments of raw data to the standard CEMA basis, f.o.b. exporter's border or port. Transport statistics from all sources have been collated, in particular to make them consistent internally and with the merchandise account as adjusted.

Poland's deficits on goods and services are substantial especially during the early 1960's, as a result of U.S. deliveries under Public Law 480. But these are offset in part or (in 1964, 1965, 1970, and 1971) entirely by net earnings on transfers.

The cumulative current account deficit for the whole period comes to a little over \$700 million. The deficit would have been much larger except for remittances from the West, supplemented by modest surpluses on travel and (after 1963) on transport. Poland has encouraged emigrants (and their descendants) in the United States and Western Europe to buy scarce goods for their relatives in the old country through the use of bank vouchers, redeemable at Orbis agencies throughout Poland.³⁵ This program, together with pensions of returning emigrants and cash remittances, produced an income that was running over \$90 million a year by the late 1960's.³⁶ The net

³¹ See articles by Maria Rubel in *Bank i kredyty*, August 1971, October 1972, and November 1973.

³² Noted by Maria Rubel, "Aktualne problemy metodologii bilansu platniczego" (Current Problems of the Methodology of the Balance of Payments), *Bank i kredyty*, December 1972, p. 494.

³³ In addition, contributions to international organizations, shown by Poland under "other government" expenditures—the only evident deviation from IMF practice—have been shifted to transfer payments. In the single net entry given, they are far outweighed by earnings from transfers.

³⁴ See, in addition to the excellent articles by Maria Rubel cited above, those of Jerzy Weselewski in *Technika i gospodarka morską*.

³⁵ Piotr Czerwinski, "Zazranicznó obrotó uslugowé Polskí i perspektywé ich rozwoju" (Poland's Foreign Services Turnover and Prospects for its Growth), *Gospodarka planowa*, August-September 1967, pp. 65-66.

³⁶ The value of gift parcels, running at more than \$100 million during the period, is probably included in Polish accounts and has therefore been subtracted.

surpluses on transport account, even at the end of the period, were not large, but they contrast with the substantial deficits run by all other East European countries that have a large Western trade. Even in tourism, which Poland was slow to develop, net earnings have been larger than those of the other northern countries; only Bulgaria and Romania have done better. Here, too, emigrants have made a significant contribution.

Poland enjoyed one big break on financing imports—the extension of U.S. Public Law 480 (title I) aid to the Gomulka government in 1957. Under this program Poland imported nearly \$400 million worth of agricultural products in 1959–64. Payments for these and earlier imports in 1957–8, totaling \$538 million, are scheduled over a long term (generally 30 years), in good part in zloty. New drawings during the period were about \$350 million.

Apart from the special case of Public Law 480, Polish purchases on supplier credits were largely on medium term during most of the period. Estimated purchases of machinery and equipment on medium-term credit began running at \$100 million a year or more in 1967, but the net cumulative drawings in 1959–71 total less than \$400 million. In addition there were short-term drawings running to over \$50 million. There were also drawings on other U.S. credits, but these were almost offset by repayments. Poland also imported wheat from Canada during most of the 1960's on medium-term credits, but these appear to have been repaid.

In addition to supplier credits, Poland made moderate use of bank financing. A residual calculation, representing the difference between drawings on supplier credits plus U.S. Government credits and total drawings (calculated from interest payments), yields a cumulative drawing over the period of over \$200 million, from a variety of sources. Both in absolute terms and relative to the value of imports, Poland appears to have made less use of such facilities than any other East European country.

All told, Polish liabilities (including those under Public Law 480), rose from less than \$0.2 billion at the beginning of 1959 to almost \$1.2 billion at the end of 1971. At the same time, Polish assets, largely bank deposits, rose by \$61 million. The difference between the net increase of \$0.9 billion in indebtedness and a total deficit of \$0.7 billion on current account is reflected in an upward adjustment in indebtedness for shifts in exchange rate and in the errors and omissions.

Polish Trade Policy Under Gomulka—and Gierek

In economic policy, Wladislaw Gomulka aimed at avoiding trouble, and it is ironic that imprudence—raising food prices just before Christmas 1970—led to his fall. Gomulka encouraged trade with the industrial West. Poland's exports in the 1960's went up as fast as those of its northern neighbors and Hungary, though much more slowly than those of Bulgaria and Romania. But Poland's imports lagged. Gomulka reportedly was advised to step up purchases of capital equipment on credit in the late 1960's to take advantage of the improved terms—and the opportunity to repay fixed debts in depreciating currencies.³⁷ But he moved slowly and, as it happened, the opportunity fell to his successor.

³⁷ *Rynki zagraniczne*, Nov. 6, 1971 (summarized in ABSEES, April 1972).

Things did begin to move in the late 1960's. Machinery purchases on medium-term credit rose to over \$100 million a year in 1967-70. More frequent purchases of industrial plants began to appear, along with the continued acquisition of Western shipping. Purchases included several chemical installations, equipment for the paper and textile industry; rolling mill equipment; automotive equipment; and the big Fiat plant.

Poland joined GATT and negotiated new lines of bank credit in the West. Cautious reforms in planning, organizations, and management were planned in the pursuit of efficiency. More ambitious plans were formulated for imports in the 1970's.

But Gomulka was hesitant. He would doubtless have moved more boldly if the FRG had then been willing to guarantee large credits on concessionary terms, as Poland proposed in 1969. Indeed the planners seem then to have been thinking along much the same lines later taken up by the Gierek regime in 1971. It proved to be a little early, however, for the FRG to agree to such a proposal. Undoubtedly the failure of this initiative put a crimp in Gomulka's plans; FRG credits were important not only in themselves but also for the leverage they would provide in dealing with other countries. Interestingly enough, the Brandt government agreed in 1973 to offer a substantial line of credit, over \$300 million, on concessionary terms—rates of 6 percent and lower have been mentioned—but at the time of writing, Poland was still trying for something bigger and better.

Gomulka's successor Edward Gierek has acted where Gomulka hesitated. Upon taking power he quickly revived the plans that had been laid aside in 1970 for a large rise in imports from the West to stimulate the economy. He held out the prospect of a future with faster growth and rising prosperity as he tried to reassure the population and to move Poland's inert party and state bureaucracy. The 18-percent increase in imports from the industrial West in 1971 was just a beginning. The domestic situation dictated that much of the increase be spent on food for the population. Purchases of \$2.5 billion in Western machinery and equipment were projected for 1971-75 in the quickly adopted 5-year plan. And so far the dollar value of purchases has grown even faster than projected, although partly because of price rises as well as dollar devaluation.

The most important result of Poland's trade policy in the 1960's might seem to be that it was repudiated. But it is also true that Gierek can be bolder because Gomulka was so cautious. Poland's hard currency position at the end of 1970 was safe, with relatively low short-term indebtedness and a big part of its liabilities—on Public Law 480—was practically no burden at all. Debt servicing was manageable, given the rise in total earnings, including invisibles. Gierek had room to move in. Even after accelerating purchases in 1972-73, Gierek may be in a better position than most of his fellow leaders, because of Polish resources of coal and other minerals.

TABLE 5.—POLAND'S BALANCE OF PAYMENTS WITH THE INDUSTRIAL WEST

[In millions of U.S. dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Goods and services	-142.9	-166.0	-214.6	-159.5	-116.1	-125.9	-40.9	-125.5	-111.6	-173.2	-184.5	-54.9	-97.2
1. Exports to the industrial West	346.8	369.7	413.2	460.3	481.4	547.9	600.8	648.4	672.7	723.7	767.8	933.0	1,066.0
Imports from the industrial West	-454.5	-483.1	-575.8	-560.6	-551.8	-638.8	-597.9	-716.7	-755.7	-853.4	-893.4	-970.4	-1,145.7
Imports from the LDC's: Net	-10.8	-15.2	-11.8	-17.8	-14.9	1.5	-5.8	-15.8	-5.8	-2.5	-13.7	24.3	20.2
2. Multilateral trade with the LDC's: Net	-8.3	-18.2	-15.4	-10.3	4.4	.7	1.0	7.7	24.0	20.3	21.4	17.2	18.8
3. Transportation: Net	1.8	1.7	1.9	.7	2.1	3.8	4.2	4.8	5.2	5.8	7.0	11.2	15.7
4. Travel: Net	.7	.8	1.0	1.2	1.5	1.8	2.1	2.4	2.6	2.8	4.1	3.9	4.5
5. Investment income: Credit	-5.0	-6.5	-11.2	-15.3	-19.4	-24.0	-27.2	-30.2	-31.2	-39.5	-50.0	-49.0	-46.0
Investment income: Net	-8.4	-8.4	-8.5	-8.7	-8.8	-8.7	-8.1	-5.3	-7.4	-6.7	-3.2	4.2	-1.0
6. Other government: Net	-5.2	-6.8	-8.0	-9.0	-10.6	-10.1	-10.0	-20.8	-16.0	-23.7	-24.5	-29.3	-29.7
7. Other services: Net	37.4	35.9	39.1	45.1	48.1	54.9	61.9	65.1	69.9	88.3	87.5	110.0	140.9
Transfer payments	23.4	25.4	29.1	35.8	39.4	47.1	56.5	60.3	65.9	76.3	87.0	110.8	139.2
8. Private: Earnings				-2	-5	-1.0	-2.8	-3.0	-3.2	-3.5	-3.2	-4.0	-4.9
Private: Expenditures													
9. Government: Earnings	14.0	10.5	10.0	9.5	9.2	8.8	8.2	7.8	7.2	15.5	3.7	3.2	6.6
Total goods and services and transfer payments	-105.5	-130.1	-175.5	-114.4	-68.0	-71.0	21.0	-60.4	-41.7	-84.9	-97.0	55.1	43.7
Capital and monetary gold ¹	-77.8	-202.7	-128.1	-119.1	-88.1	-99.3	-39.0	-7.7	-69.5	-143.1	43.9	16.3	65.0
Nonmonetary sectors:													
10. Medium and long term (machinery): Net	-53.7	-24.6	-9.2	-10.5	-10.4	10.9	-5.4	-33.4	-68.0	-53.8	-58.4	-16.2	-38.9
11. Medium and long term (agriculture):													
Public Law 480: Drawings	-52.0	-120.0	-57.0	-52.0	-49.0	-60.0				15.0	16.0	20.0	24.0
Public Law 480: Repayments		1.0	1.0	4.0	4.0	9.0	6.0	4.0	14.0				
Canada E.C.I.C.: Drawings	-8.9	-7.0	-28.8	-26.3	-11.3	-39.3	-17.2	-22.9	-15.1	-11.3			
Canada E.C.I.C.: Repayments			5.9	7.7	21.5	27.1	16.3	30.0	24.6	21.0	17.7		
12. U.S. credits other: Net	-11.0	-2.0	2.0	2.0	5.0	5.0	6.0	6.0	-5.0	-11.0	6.0	1.0	-10.0
13. Short term (machinery): Net	-25.6	1.9	-2.6	-4.7	1.9	4.0	.5	-4.4	-8.2	-5.9	-9.0	1.7	-5.4
Monetary sectors:													
14. Liabilities: Net ²	71.9	-53.7	-41.9	-42.7	-54.0	-61.0	-50.2	8.0	-16.0	-100.5	59.1	.6	91.9
15. Assets: Net	1.5	1.7	2.5	3.4	4.2	5.0	5.0	5.0	4.2	3.4	12.5	9.2	3.4
Net errors and omissions	-27.7	82.6	-47.4	4.7	20.1	140.4	60.0	-52.7	27.8	58.2	-140.9	38.8	21.3
Cumulative end of year indebtedness ⁴	-268.0	-472.4	-602.0	-725.5	-817.8	-922.1	-966.1	-978.8	-1,052.5	-1,199.0	-1,167.6	-1,160.5	1,157.7

¹ A positive number indicates an increase in assets or a reduction in liabilities; a negative number indicates a reduction in assets or an increase in liabilities.

² Residuals, which includes supplier credits for materials.

³ Adjusted upward for shifts in the exchange rate by 8 percent for end of year 1971.

⁴ Starting position is \$188,700,000 at beginning of 1959.

ROMANIA

The Accounts

Romania's vastly expanded activity on Western markets in the 1960's did not result in a major increase in the flow of statistical information. Nor was any to be expected, given the strong political controls at home and continued sensitivity to Soviet and East European criticism. As a member of the International Monetary Fund, Romania has had to submit economic data, including balance-of-payments accounts. A public presentation of some sort by the IMF is to be expected in due course, perhaps in next year's balance-of-payments yearbook.

Meanwhile, analysis of Romania's accounts must rest on available published information. The current account relies partly on physical information (for tourism and transport), together with analogy in the case of other services and transfers. "Ransom" of Jewish and other emigrants is one question mark. In the capital account, purchases on supplier credits can be worked out fairly well, but other financing is conjectural, especially since the usual assistance from Soviet-owned banks is probably not such a large factor. The PRC advanced Romania a sizable credit in 1970-71, but it was largely and perhaps wholly a commodity credit.

The Romanian merchandise account reflects unadjusted official data, which may deviate from standard CEMA practice; Romanian sources leave a doubt.³⁸ In 1964, an official publication indicated that trade was valued at contract prices,³⁹ but at almost the same time another source explicitly described Romania's statistics as f.o.b./f.o.b.⁴⁰ The U.N. treats Romanian statistics for the period on the usual CEMA basis, and presumably has some sort of authority for doing so. Deviations from the standard CEMA practice in handling transport (f.o.b. exporter's border or port) may be substantial, but the effect on the trade balance seems to be quite small.

The net balance on transport, negligible in the early and mid-1960's, turned into sharply rising deficits thereafter. This shift reflects a dramatic increase in maritime imports from overseas. The considerable expansion of the Romanian merchant fleet was far from enough to handle this increase, and Romania got little help—for obvious reasons—from Communist fleets. Accordingly, hard currency expenditures for chartering tramp shipping and for c.i.f. imports went up fast, especially in 1970, when rates shot up. Romania, like other East European countries, is continuing to enlarge its fleet so as to carry more of its own seaborne trade and earn more hard currency.

The mounting trade and transport deficits have been partly offset by earnings from tourism, which rose from a negligible amount in the early 1960's to over \$40 million (net) in 1971. Earnings to date reflect the attractions of the Black Sea coast for West German and other European visitors. In recent years, half the investment in tourism has gone to this area.⁴¹ The planners hope to keep summer tourism rising

³⁸ See Paul Marer, "Soviet and East European Trade Statistics, 1946-69," Bloomington, Ind., 1972, pp. 354 ff.

³⁹ Academia Republicii Populare Romine, Institutul de Cercetari Economice, "*Dezvoltarea Economica a Romaniei, 1944-64*," Bucharest, 1964, pp. 677-729.

⁴⁰ *Revista de statistica*. No. 10, 1964, as cited by J. M. Montias, "Economic Development in Communist Rumania," *Cambridge*, Mass., 1967, p. 141.

⁴¹ D. N. Lazaroiu, "Căi de creștere a eficienței comerțului invizibil" (Ways to increase the efficiency of invisible trade). *Probleme economice*, September 1971, p. 51.

and, at the same time, to begin cashing in on the boom in winter tourism.

Estimates of interest payments are very approximate for Romania. Bank credits are uncertain not only in size but also in source. Specialist banks have on occasion played a considerable role. But large credits at advantageous terms probably more than offset the high interest on these relatively small amounts.

Estimates of transfer payments, as noted, above, are open-ended, because of the possibility—not regarded by the author as probable—of important Western payments to facilitate the emigration of Jews. Journalists have mentioned very large amounts.⁴² The prudent basis for estimating, however, is that hard currency was paid only to cover air passage (in Romanian planes) and perhaps to cover processing, except perhaps in isolated cases. On the estimate of perhaps 10,000 emigrants a year through 1967, with charges running at \$250 per head, earnings of \$2.5 million per year from this source are included. Since 1967, emigration to Israel has been small. Numbers of Romanians continued to emigrate to West Germany—some 25,000 in 1968–71—but there is little reason to assume significant hard currency payments, in view of the good commercial and political relations with the FRG.

Romania's capital transactions have been conducted without publicity. The nearest thing to an official indication of indebtedness is a report of late 1973, apparently on good authority, that about 25 percent of the country's convertible currency earnings went for interest and repayment of foreign credits.⁴³ The earnings in 1973 would have run nearly \$1.8 billion, using the elastic Romanian definition of convertible currency, which apparently covers transactions with Yugoslavia and a substantial number of LDC's. The figures are as follows:⁴⁴

Exports \$1.63 billion plus travel \$0.10 billion plus transport \$0.05 billion plus transfers \$.025 billion equals \$1.805 billion.

Accordingly almost \$450 million was needed to cover repayments and interest. This is a rather arbitrary figure, to be sure. A considerable part of the indebtedness is on bank credit, which can be converted to a longer term basis or refinanced with out appearing in repayments.

An interesting light is cast on this figure by an Austrian estimate of early 1974, which puts the indebtedness, presumably in 1973, at \$1.8 billion.⁴⁵ With an interest rate averaging 6 percent, interest payments would run not a lot over \$100 million and repayments on principal about \$350 million, or only one-fifth of indebtedness.⁴⁶

Drawings were probably not much bigger than repayments in 1973, and the total may have been nearly \$1.8 billion at the beginning of 1973 as well.⁴⁷ At the end of 1971, however, it would probably have

⁴² One article asserted that payments had amounted to \$210 million. See Arthur and Norma Woodstone, *This Week Magazine*, October 12, 1965, pp. 4–6.

⁴³ *Business Week*, December 1, 1973, p. 41. The context indicates that the information was obtained from Vasile Voloseniuc, Chairman of the Foreign Trade Bank, by Associate Editor John Pearson on a trip to Bucharest.

⁴⁴ Preliminary export figure from speech by Nicolae Ceausescu on November 28, in *Scinteia*, November 30, 1973, p. 2. Other figures are rough projections of earlier data. For the travel figure see, *Eastern Europe Report* June 29, 1973, p. 189. Estimated tourist earnings likewise reflect the elastic concept of hard currency.

⁴⁵ Estimate by Wiener Institut für internationale Wirtschaftsuergleiche, beim Österreichisches Institut für Wirtschaftsforschung, as cited by *Eastern Europe Report*, 25 January 1974.

⁴⁶ Even a debt service of only \$450 million would have run at over 40 percent of total earnings from the industrial West, plus those from "multilateral" trade with LDC's.

⁴⁷ The exchange rate shifts in 1973 would inflate the dollar figure, but part of the debt is owed in Euro-dollars.

been less than \$1.7 billion. The cumulative current account deficits shown in table 6 would imply a larger indebtedness at the end of 1971 if appropriate interest payments (say at 6 percent) were introduced. There are various possible errors and omissions. Two, mentioned above, are uncertainty about the pricing of Romanian foreign trade and the possibility of much larger earnings from the emigration of Jews.

A third is the likelihood of some Romanian gold sales during the period as indeed is asserted for the early years by Professor J. M. Montias; official figures are not issued on gold production, but it is known to have been substantial.⁴⁸ A fourth is the extension of some hard currency as part of the credits advanced by the People's Republic of China in 1970-71.⁴⁹ But there is little basis for deciding among these possibilities, or attaching a plausible value to them.

Accordingly credit entries of \$25 million a year are introduced into the accounts for 1965-71 as errors and omissions. Even so, a cumulative current account deficit of \$1.8 billion is left to be financed.⁵⁰ Cumulative net drawings on supplier credits for machinery run only about \$500 million over the period. The debt to the United States for deliveries by the Commodity Credit Corporation in 1970-71 comes to \$56 million at the end of 1971. Most of the residual of \$1.2 billion reflects financing of material deliveries by suppliers and by banks, abruptly in the late 1960's. Romania, despite its independent policies, doubtless has had some help from the Soviet-owned banks, but the bulk of the indebtedness would certainly be held by Western commercial banks. The general picture shown is undoubtedly correct, although the estimated amounts obviously are subject to correction.

ROMANIA: The Limiting Case

The westward shift in Romania's trade in 1960-61 helped to assure Gheorghiu-Dej of independence in determining how the economy would develop. Romania could have its own heavy industry and push its own growth as fast as it dared. It is quite believable that, as Prof. J. M. Montias has concluded, a rapid growth in trade with the West was projected for the early 1960's in 1958.⁵¹ Even before the shift was made, Premier Ion Maurer began looking for credits to buy Western plant and equipment needed for pushing investment.

Less obvious was one consequence of having lost the benefits of Soviet support, especially for a regime very impatient to promote growth: an insatiable appetite for Western industrial materials. As Jerry Crawford and John Haberstroh point out, Romania's dependence on the West for materials was already large in the mid-1960's.⁵² As a result, imports from the West to support the leading sectors rose at only about 17 percent per year in 1965-72, or at about the average rate of growth of output in those sections, which ranged from 16 percent to

⁴⁸ J. M. Montias, *op. cit.*, p. 174. He cites a figure of \$40 million a year for production, which is perhaps high. See also his analysis of trade statistics, pp. 136 ff.

⁴⁹ See, for example, RFE, Romanian situation report/2, January 11, 1973, p. 9. The original credit, over \$250 million, seems to have been strictly a commodity credit. A second extension of October 1971, of unknown amount, might perhaps have been or included gold.

⁵⁰ This indebtedness is entirely with the industrial West. Like Czechoslovakia (see above), Romania is likely to consider part of the credits extended to LDC's as "convertible" and could thus claim significantly lower net liabilities in "convertible currency" than its liabilities to the industrial West. For practical purposes, however, it is better to consider the latter quite apart from any assets with the LDC's.

⁵¹ J. M. Montias, *Economic Development in Communist Romania*, Cambridge, Mass., 1967, p. 201.

⁵² Jerry Crawford and John Haberstroh, *op. cit.*

20 percent per year. In several other countries, imports for leading sectors outran output in those sectors as the countries began to increase dependence on Western sources. Romania's dependence did not greatly increase, but remained greater than theirs and involved larger trade deficits.

In the mid-1960's, Romania was still concerned mainly with financing imports of machinery, and such imports furnished the main topic of discussion as representatives visited Western capitals, for the first time including a high level visit to Washington by Premier Gheorghe Gaston-Marin. Romania's public projection of \$1 billion in machinery imports from the West in 1966-70 had made a great impression. Machinery imports in the period in fact ran to nearly \$1.5 billion.

Notable among Romania's machinery purchases from the early 1960's through 1971 were major installations for the Galati Steel combine, which the U.S.S.R. had refused to provide. West Germany furnished the bulk of the Western equipment bought for the industry, including a rod mill and rolling mill, all told valued at well over \$200 million. The United Kingdom and France joined West Germany as leading suppliers of installations for other industries—the oil refining, petrochemical, wood and paper, and food industries. Japan entered the market mainly with a large order of ships, in addition to shipping purchases from several West European countries. Purchases of locomotives and rolling stock, a substantial order for British aircraft, and equipment for a large irrigation project, also from the United Kingdom, represent the remaining big items in \$1.5 billion in purchases on medium- and long-term supplier credits in the period. Another billion dollars worth of equipment was bought with other types of financing.

By 1968 the problem of financing imports of materials had also become a main consideration. It seems likely that Romania had by then incurred a substantial amount of relatively short-term indebtedness, because it had reached a limit with the FRG, its principal creditor. That would help to explain a sharp rise in imports from other West European countries, the United States, and Japan in the next couple of years, as Romania tapped new sources of credit. U.S. Government credits were limited to an extension of CCC credits following the spring floods of 1970. French and British bank credits probably financed much of the big expansion of indebtedness in 1969-71.⁵³

During the same years, FRG credits to Romania probably rose very little. Imports from the FRG dropped sharply after a jump in 1967 and drifted downward thereafter through 1971. FRG credits to Romania in 1969-71 probably remained at less than 1.5 billion DM.⁵⁴ In late 1969 an anonymous, but evidently authoritative writer made the following comments, which cast some unusual light on Romania's financing problems:⁵⁵

That Romania must be especially interested in German credits of the longest possible duration and at the lowest possible interest, is easily deduced from

⁵³ Some fairly long-term supplier credits were also extended. Japanese firms signed contracts in 1971 for sale of a large ball bearing plant, with 80 percent of the purchase price covered by a 10-year credit at 6 percent interest, and a vinyl chloride monomer plant with an 8-year credit at 6.5 percent interest.

⁵⁴ The level would correspond to \$375 million until late 1969, about \$410 million in 1970 and early 1971 and about \$130 million after mid-1971. The level in late 1969 was 1.45 billion DM. See Duesseldorfer *Handelsblatt*, Dec. 15, 1969.

⁵⁵ Duesseldorfer *Handelsblatt*, *loc. cit.*

Romania's present considerable payment obligations resulting from previous export credits guaranteed by the Federal Government. From 1970 to 1972 they could easily be between 200 million and 230 million DM. These obligations limit the possibility for future imports in exchange for convertible currency.

The author then went on to outline what looked like a possible arrangement:

* * * The Federal Government would offer 100 percent guarantees without charge for an untied credit of about 100 million DM, which would be extended by German banks for a period of 10-15 years. This would have to be a so-called transitional and plan-financing credit. Since in the realm of export guarantees the internally established limit of 230 million DM is almost exhausted, an internally fixed guarantee limit for the acceptance of new export credit guarantees of perhaps 250 million DM (book value) annually to secure investment goods deliveries for a period of eight or, in exceptional cases, 10 years could be effected in its place. Further, an internal guarantee limit of 100 million DM to secure short-term export business is worthy of consideration.

Some arrangement of the sort may well have been made, offering enough new credit roughly to equal payments falling due. Financing on such terms would also help to explain the relatively low repayments inferred above for 1973.

A renewed spurt in Romanian imports from the FRG in 1972-73, presumably reflecting newly negotiated credits, led to a rise of perhaps 300 million DM in outstanding FRG credits to 1.8 billion DM in late 1973 or early 1974, or roughly \$600 million.⁵⁶ The share of the FRG in total Romanian indebtedness thus rose to about one-third of the total, as against barely one-fourth in 1971. But this is still a big drop from the share at the end of 1967, which was roughly one-half.

The difficulty of managing and servicing such a large debt has stimulated a strong Romanian response. In order to get better access to the financial market, the Foreign Trade Bank has established joint banks in Paris and London with Western commercial banks. Romania has joined the IMF, and has already drawn an overquota tranche equal to \$57 million. The foreign trade organizations have become increasingly hard bargainers in dealing with Western suppliers and banks, as to price and terms of repayments, and have redoubled efforts to enter into cooperation agreements with major suppliers. But Romanian growth plans remain very ambitious. Nicolae Ceausescu and other spokesmen seem to acknowledge a need to ease off growth rates, but recent pronouncements still indicate a projected industrial growth rate of 8 percent to 10 percent per year—through 1990!

In conclusion, then, the Ceausescu Government takes a serious view of its complicated foreign payments position, and at the same time intends to persevere in economic development to the limit possible. This determination seems to arise from a belief in Romania's duties and privileges as a "less developed country." In Western capitals, this view of Romania is accepted as a polite fiction out of consideration for Romania. It remains a fixed conviction, however, for Romania's leaders, partly because they grew up with it, partly because there remains a large gap between Romania and the more advanced European countries to the north and west, and partly because it has advantages. It will remain for a new generation to take a more realistic view of the needs and possibilities for growth for a country that has already joined the developed minority.

⁵⁶ *Frankfurter Allgemeine Zeitung*, January 30, 1974, p. 17, which puts the figure at somewhat less than the 1.9 billion DM figure given for Yugoslavia. *Eastern Europe Report*, July 13, 1973, p. 197 puts Romania's debt to West Germany at 2 billion DM.

TABLE 6.—ROMANIA'S BALANCE OF PAYMENTS WITH THE INDUSTRIAL WEST

[In millions of U.S. dollars]

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Goods and services.....	-4.2	-4.0	-40.9	-82.6	-72.3	-101.5	-101.1	-119.3	-312.6	-284.5	-291.7	-305.8	-299.7
1. Exports to the industrial West.....	75.6	145.5	185.1	183.4	208.5	230.5	254.5	335.8	411.0	414.3	460.0	547.3	670.2
Imports from the industrial West.....	-74.2	-147.5	-221.4	-255.5	-264.8	-314.7	-347.2	-445.3	-707.2	-671.6	-710.9	-753.2	-881.6
2. Multilateral trade with the LDC's: Net.....	-2.2	2.6	1.9	-7	-1.6	.3	3.2	9.4	3.9	6.5	4.3	-6.6	-5.8
3. Transportation: Net.....		-6	-1.5	-9	-1.3	-1.3	-1.4	-4	3.2	3.1	6.0	-23.1	-10.3
4. Travel: Net.....	Negl.	.2	.7	.6	1.7	3.2	14.0	15.9	20.2	27.2	29.2	28.7	41.3
5. Investment income: Net.....			-1.0	-4.3	-8.6	-13.4	-18.3	-22.9	-33.8	-49.7	-64.9	-80.5	-96.3
6. Other government: Net.....	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
7. Other services: Net.....	-2.4	-3.2	-3.7	-4.4	-5.2	-5.1	-4.8	-10.3	-8.1	-12.2	-12.9	-15.4	-16.2
Transfer payments.....	7.5	7.1	6.7	6.6	7.4	6.7	7.8	7.6	8.4	8.3	9.0	12.5	14.4
8. Private: Earnings.....	5.1	5.2	5.5	5.9	6.4	7.0	7.8	8.1	8.5	6.9	7.7	9.2	11.5
9. Government: Earnings.....	2.8	2.3	1.7	1.2	1.7	.4	.8	.4	.8	2.4	2.4	4.5	4.1
Government: Expenditures.....	-4	-4	-5	-5	-7	-7	-8	-9	-9	-1.0	-1.1	-1.2	-1.2
Total goods and services and transfer payments.....	3.3	3.1	-34.2	-76.2	-64.9	-94.8	-93.2	-111.2	-303.4	-275.1	-281.2	-291.3	-285.3
10. Medium and long term (machinery): Net.....	3.3	3.1	-34.2	-76.2	-64.9	-94.8	-68.2	-86.2	-278.4	-250.1	-256.2	-266.3	-260.3
11. U.S. Government net foreign assistance.....	-10.2	-17.6	-42.6	-39.7	-22.8	-11.0	-17.6	-38.0	133.9	-80.9	-33.2	33.9	-9.7
12. Short term (machinery): Net.....												-33.0	-23.0
13. Other nonmonetary and monetary ²	-3.4	-4.6	-8.7	-4.9	3.9	-5.6	-6.6	-6.2	-24.8	3.6	8.2	-8.9	-6.1
Net errors and omissions.....	16.9	25.3	17.1	-31.6	-46.0	-78.2	-44.0	-42.0	-119.7	-172.8	-231.2	-258.3	² -221.5
Cumulative end of year indebtedness.....							-25.0	-25.0	-25.0	-25.0	-25.0	-25.0	-25.0
			-34.2	-110.4	-175.3	-270.1	-338.3	-424.5	-702.9	-953.0	-1,209.2	-1,475.5	-1,809.1

¹ A positive number indicates an increase in assets or a reduction in liabilities; a negative number indicates a reduction in assets or an increase in liabilities.

² Residual which includes supplier credits for materials.

NOTE ON DATA PROBLEMS ⁵⁷

To draw up balance of payments accounts for the East European countries is to invite questions from those familiar with the problems. The accounts presented in the text of this paper rest on a good deal of research, which the author intends to publish within the next year or so. The original intention was to include a rather full summary with the present paper, but there has not been enough time for that. The following remarks will provide an idea of the main considerations, though not a systematic discussion of the individual country problems, which are touched on in the review of the country accounts in the paper itself.

In the next few years the East European countries can be expected to furnish more balance of payments information to the West. They alone are in a position to furnish it. It will be of quite limited use, however, if it is not made public. As noted in the introduction, trade is of growing importance in East-West relations, and the policy decisions that must be made in the West require wide discussion, backed up by expert consideration. The chief use of such studies as the present one is to develop the interest and the background knowledge needed; no amount of research can remove the need for detailed official publications by the East European countries.

The discussion is organized according to major topics in the current and capital account, in order.

Merchandise

East European and Soviet trade statistics deviate very substantially from Western partner statistics, as everyone who has used them is well aware. Discrepancies such as are observed should in fact be expected to arise from the different approaches used.⁵⁸ Since the late 1950's the standard approach of the CEMA countries in their published statistics (they keep several sets for various purposes) has been to treat essentially all purchases and sales of goods abroad as foreign trade, and to impute them to the country to which payment is made or from which payment is received. The physical origin and destination of the goods in question is almost entirely irrelevant. One could hardly ask for an approach more suited to balance of payments requirements.

Western statistics, on the other hand, are based largely on records kept by customs bureaus, in the case of imports, and declarations by shippers as to country of consignment or destination, in the case of exports. Such statistics are the despair of balance of payments analysts, for reasons long since pointed out.⁵⁹

One of these reasons, ancient in origin, is middleman trade. This involves, as the name indicates, purchase of commodities for one country by a merchant in another, who then resells them to a customer

⁵⁷ The present study has benefited from the help of many with specialized knowledge. The author would like to express appreciation particularly to Elizabeth Denton, John Danylyk, Bernard Matowska, Earl Michel, Cherry Wrenn Odell, Joan Zoeter, and David Wigg.

⁵⁸ A systematic brief comparison is made by Paul Marer, *Soviet and East European Foreign Trade 1946-1969*, Bloomington, Ind., 1972, pp. 347ff.

⁵⁹ See Herbert B. Woolley, "On the Elaboration of a System of International Transaction Accounts," *Problems in the International Economic Accounts*, Princeton, 1957, pp. 217-90; and Robert M. Lichtenberg, *The Role of Middleman Transactions in World Trade*, Occasional Paper 64, NBER, 1959.

in a third country. The commodities especially involved in Western exports to Eastern Europe are crude oil, rubber, nonferrous metals, animal feed, coffee, and cocoa, all from overseas countries. Time was that such goods were usually landed in Western Europe, stored, and perhaps auctioned before reshipment. Today, they are likely to be transshipped without record, or they may not even be routed via a port of the merchant's country. In the latter case, Western trade analysts need not be concerned, but such a transaction will still cause a discrepancy between East European and Western statistics.

A second, slightly different case concerns transshipments of large quantities of goods for transport reasons. A third-country middleman is likely to be, but need not be involved. An example is the transshipment of grain in international trade.⁶⁰

Third country financing involves still another type of transaction, quite distinct from the first mentioned one, often involving machinery or other industrial goods. Buyer and seller will deal directly, but the transaction will be financed through a bank or trader in a third country.⁶¹ A rather different case is occasional Soviet financing of deliveries of grain to Eastern Europe.

The author is satisfied from working with East European and Western partner statistics that transactions such as those described above account for the major discrepancies between them. The discrepancies are especially great between East European import and matching Western export statistics. The clearest case is the excess of East European imports over exports from the Netherlands and the United Kingdom. The differences show up for all the East European countries (except Bulgaria) and are quite consistent, year in and year out. Detailed commodity statistics, so far as available, link these differences with East European imports of coffee, cocoa, nonferrous metals, rubber, and animal feed.⁶² A persistent graduate student could settle this part of the problem quite readily.

Middleman trade in these commodities has less to do with the other discrepancies. East European trade with Switzerland and to a lesser extent with Austria, also involves marked differences in the same direction. But with other countries of Western Europe, the relation is much less consistent, often the difference is very small and sometimes it is in the opposite direction. Classic middleman trade with overseas countries is still involved, but third country financing, switch transactions, the operations of international corporations, subcontracting, and evasions of U.S. export controls are more important in imports from these countries.

Third country financing is a specialty of Switzerland, in addition to middleman trade in commodities from overseas (some of which might even pass through the port of Basel). It is popular with East European countries, when they have run into payments difficulties or debt ceilings in, for example, West Germany. Banks in other countries, notably France, are active in the same field. Subcontracting involves

⁶⁰ See, for example, "U.S. Agricultural Exports Adjusted for Transshipments" *Foreign Agricultural Trade of the U.S.*, January 1974, pp. 15-23. This article does not cover significant transshipments through Hamburg.

⁶¹ Such transactions along with various forms of middleman trade are reflected in official statistics on West German trade, by country of origin and consumption and by country of financing, in *Statistisches Bundesamt, Aussenhandel, Reihe 1. Zusammenfassende Übersichten*. For discussion, see Olivér von Gajzágó, *Der Zwischenhandel im Osthandel der Bundesrepublik Deutschland 1962-66*, West Berlin, 1970.

⁶² In addition, East European merchant fleets have long bought oil for bunkering through London.

a type of third-country financing: the East European bank pays the main contractor or his bank, and one or the other pays subcontractors. International corporations are likely to centralize payment, wherever the goods or components may come from. Switch transactions are a speciality of Austrian firms but Swiss and British firms are also in the market. For evasion of export controls, neutral countries are favored, although firms in other countries have also been involved.

The differences between East European exports and Western imports—abstracting from the transport element in cost, insurance, and freight—likewise appears to be the result of middleman trade. That is shown by comparison of data for Hungary's trade in 1966-70 using the standard CEMA approach—country of contract or financing—and using the country of shipment and destination approach adopted in 1971. A lot of the difference probably reflects the fact that LDC's settle accounts often through London, Antwerp, Paris, and Rotterdam. But also to a degree it must reflect West European resale overseas of commodities accepted as the price of doing business with Eastern Europe.

With a lot of research and careful statistical analysis, it seems feasible to write a useful and interesting study of the various types of East-West transactions. East European trade statistics, though very troublesome, yield a good deal of information; the trade yearbooks of Poland (especially through 1968) and Czechoslovakia are the most helpful.⁶³ Something is learned by comparing the old and the new trade statistics of Hungary just referred to.

No amount of work, however, will permit systematic, full reconciliation of East European with Western statistics; only the East European statistical offices could do that. Thus the general acceptability of East European statistics has to be decided on the grounds of an understanding of the reporting, trade, and financing practices, East and West. Scholarly work on the subject would do a great deal to further this understanding.

Even granted, or stipulated, that East European trade statistics are preferable to Western statistics for balance of payments accounts, there remains of course the question: How accurate are they? This is a well-known problem with all economic statistics, and about the only test is whether they provide dependable answers to specific questions.

The main problem appears to be the treatment of transport costs. A significant cumulative bias is in fact likely on this account in East European import statistics; much less likely, in export statistics. Poland, which has gone to a lot of trouble over the problem, has raised its figures for imports from the "capitalist" world by 2-3 percent per year in drawing up balance of payments accounts, while reducing exports by less than 1 percent. Nearly all the difference is probably attributable to industrial countries. Other East European countries may have done better because they have been less ambitious to publish detailed trade statistics. It would be comparatively simple to adjust country totals, without even troubling to adjust the highly aggregative or incomplete breakdowns given. It is not conclusive then that scattered data on particular items that show a fairly good match in quantity terms with partner countries show uneven results.

⁶³ Hungary has an unpublished trade yearbook, often cited, which could compare in value; perhaps other countries do as well.

The blame may sometimes rest on the partner country data, and besides, errors do tend to be offsetting. In most cases (probably all but Czechoslovakia) any net bias is likely to minimize cumulative trade deficits and indebtedness, not to exaggerate them. Careful work by a statistician with an empirical bent could perhaps produce a more definite opinion.

"Convertible Currency" Trade With LDC's

All the East European countries, for economic as well as political reasons, have taken an interest in promoting trade with the LDC's. Czechoslovakia is still the leader. As reflected in East European statistics, the trade includes of course only transactions settled directly, whether in cash or clearing, with the country involved. Sales handled by middlemen or settled through banks in Western Europe, as noted above, would appear as trade with Western Europe.

For the purposes of the present accounts, only the net earnings or expenditures of hard currency in this trade are of immediate interest. The approach used has been to enter the balances with those countries reportedly on a multilateral trading basis with the East European country in question. The result is very likely to result in error, though in what direction is uncertain. Several East European countries, and especially Czechoslovakia and Romania, consider a much larger fraction of their trade as convertible than the trade represented in the present accounts. One possible way of investigating the question is to look at the commodity composition, preferably relying on East European data. The marketability of the commodities can generally be estimated. It would be possible then to determine balances of hard (that is, readily marketable) commodities, in the light of any information on credits and other deals. A check could thereby be made on claims of convertible currency balances.

A word might be added on hard currency deals among Communist countries. They occur, though large deals are not likely to be frequent. East European or Soviet grain, in particular, may be sold and bought for hard currency, but normally through a Western dealer, thus not turning up in East European statistics as intra-CEMA trade. There is probably some cash involved on ship charters, possibly on other transport services. This a subject on which there is little prospect of useful research.

Services

Data problems on services vary widely by sector and by country. The best information is on travel. Poland is the only country that has published a complete series (since 1960) on earnings and expenditures in travel from and to the West, which differs, by the way, from the series in its balance-of-payments accounts. But Czechoslovakia and Hungary have put out enough information here and there to permit good estimates; and acceptable estimates can be made for Bulgaria and Romania, based on numbers of travelers, together with the series on global earnings and expenditures in tourism and scattered other data. Even the amounts of hard currency involved in major movements between the GDR and the FRG can be fairly well established.⁶⁴

⁶⁴ The forthcoming study by Paul Marer and John Tilley, *The Tourism Industry in the Soviet Union and Eastern Europe: Travel Flows, Earnings, and Prospects* (IDRC Report No. 2) should cast further light on the data as well as the economic and political implications.

The most difficult job is certainly that of estimating transport services. It poses very considerable difficulties indeed for the East European statistical services. The present accounts rely heavily on pricing of physical data. There are some exceptions. Poland's balance-of-payments series needs only to be adjusted for the transport element in c.i.f. imports and exports on clearing trade. Hungary has published a series for net expenditures on transport in dollars and other nonruble currencies, and with fairly elaborate adjustments it can be used to produce plausible estimates. Transport accounts in intra-German trade can be determined from published data, though not with ease.

Otherwise the author has tried to set up maritime transport accounts for Eastern Europe, based on breakdowns of tonnages handled by the national maritime fleets and the shipping they charter, intra-CEMA maritime transport services, and tonnages of exports and imports in maritime trade with various markets. The immediate results are certainly to be preferred to those obtained by using rule-of-thumb factors. The procedure has the further advantage that new and better data can be introduced to improve the estimates. The subject merits detailed study.

Interest payments, except in the case of Poland, are estimated along with the growth of total indebtedness, allowance being made for liabilities not bearing interest, notably under U.S. Public Law 480 and the swing in intra-German trade. Interest rates are put generally at 6 to 6½ percent; they are higher in short-term indebtedness in intra-German trade, and Romania is presumed to have paid high rates on its short-term debt. In any case, estimates of interest rates are not an important source of error.

For other services, the main reliance has been put on Western balance of payments statistics and the use of analogy with Polish accounts. Although important Western countries do not break out Eastern Europe (or the state trading countries), the balances probably give a good idea of transactions in this complex field. Polish statistics are in fair agreement (once contributions to internal organizations have been shifted to transfers, according to Western practice). The incomes and expenditures for representational expenditures are, as expected, nearly in balance, with the East European countries showing small deficits. Other services have been estimated by analogy with Poland, in proportion to the national products. The GNP estimates shown by Jerry Crawford and John Haberstroh in this volume were used.⁶⁵ but intra-CEMA comparisons would give much the same result.

The one exception, as so often in these accounts, has been the GDR. Representational costs have been estimated roughly, on the assumption (as noted in the paper) that there were no significant GDR hard currency incomes from this source (through 1971). The costs of intelligence operations in the FRG are estimated from West German publications. Other services reflect information only on intra-German transactions.

Transfer payments, as noted on various occasions in the country sections, present problems that cannot be resolved entirely. Government remittances can be worked out largely from Western sources.

⁶⁵ Jerry Crawford and John Haberstroh, *op cit.*

Contributions to international organizations are recorded in the UN yearbooks. But Western data do not cover the substantial private remittances made in the form of hard currency purchases for the benefit of relatives in Eastern Europe, nor do they cover any private ransom payments (important chiefly in the case of Romania).

Capital Account

The open-ended problem of capital transactions has unavoidably been discussed in most of the country sections. The few available pieces of East European information on indebtedness have been introduced there, along with some of the Western estimates recently made. A good deal of effort has been put into analyzing information on supplier credits for machinery and equipment. Detailed Western statistics on sales have been matched so far as possible with information on contracts; in the absence of contracts, estimates have been made in the more obvious cases of large sales, relying on standard practice for guaranteeing credits in the exporting country. The author believes that these credits have been fairly well covered and that the resulting estimates of indebtedness are not far off. The principal government-to-government credits have also been taken into account.

As the accounts make plain, there are still large residuals to be explained by private nonguaranteed credits and the mushrooming bank credits and loans, on which there is only spot information. The growth, but by no means the extent, of these credits is suggested by data in BIS annual reports on Eurodollar accounts with Eastern Europe (including the U.S.S.R., of course). Western balance-of-payments accounts give an even less adequate view of the development. Western financial authorities undoubtedly have some idea of the sources, terms, and total magnitude of Western bank financing of East-West trade, but there appears to be no systematic attempt as yet to organize reporting on the subject on an international scale, comparable to the coverage in the U.S. Treasury reports. Individual researchers must, for the moment, be satisfied with indirect approaches such as that taken in this paper. Better public information on the subject is one of the needs that must be met if Western policy is to facilitate an orderly development of East-West trade.

WESTERN INVESTMENT IN EASTERN EUROPE: THE YUGOSLAV EXAMPLE

By PATRICK J. NICHOLS

CONTENTS

	Page
I. Introduction.....	725
II. Why Foreign Investment?.....	726
III. The Yugoslav Setting.....	727
The Legal Framework.....	728
Negotiating the Contract.....	731
A Limited Response.....	734
Industrial Impact.....	735
Regional Impact.....	737
Why Western Firms Invest.....	738
How Much Will the Yugoslavs Gain?.....	739
IV. Where the Rest of East Europe Stands.....	740
V. Lessons From the Yugoslav Experiment.....	742

I. INTRODUCTION

Eastern Europe's heavy reliance on the industrial West for key technological inputs to sustain growth has put an increasing strain on the balance of payments. Since the early 1960's, East European policy-makers have sought to find better ways to harness Western technology and at the same time to lower the hard currency cost of the acquired know-how. Their experiments have now brought them to the point of allowing Western equity investment in joint ventures with domestic firms. Yugoslavia, in 1967, was the first Socialist country to permit foreign investment and Romania in 1971 and Hungary in 1972 have followed suit. Early in 1974 Poland was in the process of readying a foreign investment law possibly in time for the 5-year plan beginning in 1976.

This paper will take a close look at the results of foreign investment in the first 7 years of the Yugoslav experience. Key operating issues to investors—the legal framework, negotiating problems, and the industries selected—will be discussed. Some comments will also be made on the potential impact of the investments in Yugoslavia's overall development. Drawing on the Yugoslav case, the paper will then discuss the status of and prospects for foreign investment in other Eastern European countries. The paper will concern itself with the narrower question of equity investment rather than the larger question of East-West cooperation.¹

¹ There are no precise definitions for either cooperation agreements or joint ventures. The Hungarians have defined "cooperative agreements" as including any combination of the following elements: (1) Sales of licenses, patents, technical know-how; joint research and development projects; feedback of resulting know-how. (2) Product specialization on an international basis, sometimes referred to in terms of "international division of labor." This can involve exchanges of materials, semimanufacturers and components or even finished goods. (3) Supply of plant machinery and equipment, as well as possible credit arrangements. (4) Marketing arrangements through mutual use of sales organizations in specified territories. East Europeans tend to call any form of business or technical cooperation over time a "joint venture" while Western businessmen generally reserve the term for an enterprise in which a limited liability partner owns a share of the equity. To avoid confusion, this paper will use the term equity venture to signify only those ventures in which an investment has been made and some degree of control is exercised by a Western firm.

II. WHY FOREIGN INVESTMENT?

In the early 1960's, Eastern Europe² began going deeper into debt to purchase Western equipment and technology to accelerate growth in leading sectors such as chemicals, petrochemicals, machine building, electronics, and transport equipment. As a first step, the countries purchased licenses and processes from Western firms along with much of the equipment needed to produce the products. This arrangement was not altogether satisfactory. The price of the licenses was high and the documentation frequently carried restrictive marketing covenants prohibiting sales outside the purchasing country.³ And by the time the licenses could be put to use, the technology was often out of date, yielding products which had limited hard currency export prospects.

The balance-of-payments pinch was felt first by the lesser developed and faster growing economies—especially Romania and Yugoslavia. These countries, along with the forward looking Hungarians, began in the early 1960's to search for alternatives to outright purchases of industrial assets. Hopeful of making Western technology more productive and lowering the hard currency cost by promoting exports, policymakers turned to cooperation ventures and coproduction ventures. Ideally, the deals were expected to lead to the "coproduction" of a product by the domestic enterprise and its Western partner. Production of component parts was to be rationalized between the firms and the final output was to be sold abroad through the Western firm's marketing channels. The deals actually brought to fruition varied from simple subcontracting deals in which the domestic partner added small parts to an almost completed product to more complex situations where the Western partner provided capital, entrepreneurship, and markets while the Eastern firm was supplying plant, labor, and raw materials.

Although some cooperative arrangements worked well, in terms of acquiring new technology and establishing new export outlets the results often disappointed East European policymakers.⁴ The Yugoslavs, in particular, complained that they were still being denied the most contemporary technology and that Western firms were taking advantage of liberal customs treatment afforded cooperation ventures to push their exports in Yugoslavia. The Hungarians have also been displeased with cooperation arrangements, citing their meager export success. The situation has improved somewhat—about 20 percent (some \$20 million) of Hungarian machinery exports to the West were attributed to cooperation deals in 1973.⁵

The countries also set up cooperative ventures and even equity deals with Western firms outside their boundaries. A number of these ventures were located in Vienna so that the jointly owned firms could take advantage of the city's financial lines and switchtrading facilities.⁶ The main objective was to use the Western partner's marketing channels to promote Eastern European exports in third countries.

² See other articles in this volume especially that of Snell, *supra*, p. 692.

³ See Milan Pavicevic, "Transfer of Foreign Technology and the Yugoslav Economy," *Yugoslav Survey* vol. XIV, May 1973, p. 67. See also "New Yugoslav Draft Law Encourages Foreign Investment But Tightens Terms of Cooperation," *Eastern European Report*, Feb. 9, 1973, p. 54.

⁴ See Pavicevic, *op. cit.*, pp. 76-82; also Eastern Europe, *Foreign Broadcast Information Service (FBIS)* Feb. 16, 1973, p. 116.

⁵ *Reuters East-West Trade News*, Issue No. 2, Jan. 10, 1974, p. 6.

⁶ For a practical description of switchtrading and East-West business see Solving East European Business Problems, *Business International*, Geneva, 1973.

One major exception is the large corn production system (CPS) venture with the Hungarian state farm, Balbona.⁷ Located in Vienna, the CPS-Balbona project is trying to extend its successful large-scale farming system in Hungary to other East European countries. See the following table for an overview of the positions of Eastern European countries on various aspects of East-West cooperation.

INDICATORS OF EAST-WEST COOPERATION, LEAST COOPERATIVE TO MOST COOPERATIVE: BULGARIA, EAST GERMANY, CZECHOSLOVAKIA, POLAND, HUNGARY, ROMANIA, AND YUGOSLAVIA

Country	Participation in which Western organizations	Number of known cooperation agreements end 1972 ¹	Is equity investment permitted	Number of known equity investments	Organizations conducting foreign trade	Percentage of trade with the West, 1972
Bulgaria.....	GATT ²	18	No.....		Foreign trade organizations.	14
Czechoslovakia.....	GATT.....	33	No.....		Foreign trade organizations, some enterprises.	21
East Germany.....	None.....	13	No.....		Foreign trade organizations.	23
Hungary.....	GATT.....	164	Yes (1972)....	0	Foreign trade organizations, selected enterprises.	25
Poland.....	GATT.....	55	Investment law pending.		Foreign trade organizations, some large enterprises.	30
Romania.....	GATT, IMF, IBRD.	36	Yes (1971)....	3	Foreign trade industrial centrals.	36
Yugoslavia.....	GATT, IMF, IBRD, Association with EEC.	375	Yes (1967)....	276	Most enterprises, export-import firms.	67

¹ Numbers are not strictly comparable for all countries, but do provide a rough ranking.

² March 1973.

³ Observer.

The Yugoslavs were the first to decide that cooperation ventures—either in or out of country—were not enough to make a major contribution to economic development. Already heavily in debt to the West, the Yugoslavs latched onto foreign investment as a means for securing new technology while cutting the costs. But the Yugoslavs stopped short of permitting “direct” Western ownership of socialized enterprises. Instead investment up to 49 percent was to be permitted only within the context of Yugoslavia’s distinctive “self-management” system and thus only in the socialized sector of the economy.

III. THE YUGOSLAV SETTING

Although the new law was not adopted without a good deal of ideological soul searching, Yugoslavia was a natural for socialism’s first experiment with foreign investment. Under Tito, Yugoslavia’s economic system had moved well away from the Soviet-styled model that was in vogue during 1945–50. The current system is a mixture of market forces, noncompulsory planning, the participation of workers in enterprise management, and social ownership of capital. Since the far reaching economic reform of 1965, decisions on incomes, output, investment, and foreign trade have been left largely in the hands of banks and enterprises. Despite a retrenchment toward greater central government and party control following the purge of

⁷ For a description of the CPS-Balbona project see Magyar Hirlap, Hungarian, Jan. 29, 1974, p. 6, and Hungarian Situation Report, Radio Free Europe Oct. 23, 1973, p. 9.

liberal Croat leaders in 1971, the economy remains the most decentralized in Eastern Europe.⁸

At the same time, the economy has been the most unstable in Eastern Europe, consistently running the gamut from boom to bust. The country has most of the problems of developing nations—severe inflationary pressure and chronic balance-of-payments difficulties—superimposed upon striking regional diversity and a nationalities problem. Yugoslavia's six republics and two autonomous provinces are divided along a north-south line of development and culture. The westward looking northern republics—Slovenia and Croatia—are politically liberal and economically advanced, approaching Austria in per capita GNP. The southern regions—Bosnia and Hercegovina, Macedonia, Montenegro, and the province of Kosovo—are backward and conservative in political outlook. Serbia—the largest republic—occupies a middle ground in terms of economic development and politics.

Fierce regional conflict emerged over the role of foreign investment in Yugoslavia—as over the larger issues of economic reform and decentralization. The northern republics argued that the federation should permit foreign investment in domestic enterprises. For these republics, quest capital did not pose a threat to the Yugoslav system of workers' self-management. Rather, they believed Yugoslavia needed all of the technology and capital it could get. The South was equally adamant that investment by the "capitalists" should not be allowed. Already dismayed over the prospect that economic reform would favor the more developed north, the south held that even if foreign investment upgraded technology and speeded economic development the risk it entailed for socialism and self-management was too great. More important, the south surmised that most of the foreign investment would flow to the northern regions, and further accentuate regional economic differences.

The regime finally bought the north's argument, confident that Yugoslavia would attract a massive inflow of foreign capital. The Government, however, soon found that few Western companies, in the words of Aleksandar Grlickov, one of the Government's chief economists, were " * * * waiting on the frontier * * * to launch an invasion." Indeed, the response was so weak that the party newspaper *Borba* sarcastically commented:

We all remember the discussions * * * of the Law on Investment of Foreign Capital, all the suspicions and reserves which would be, allegedly, caused by a flood of foreign investments in the Yugoslav economy. However, it is obvious that there has been no flood.⁹

No deals had been concluded in 1967 and only five in 1968. Moreover, even though the Government was trying to stimulate interest in investing in the less developed south, only two ventures had actually been arranged there by the end of 1969.

The Legal Framework

The regime sought to procure the benefits of foreign investment with as little disruption to the political landscape as possible. The

⁸ Some of the most informative works on Yugoslavia include: *Towards A Theory of Planned Economy*, Horvat, Branko, Yugoslav Institute of Economic Studies, Belgrade, 1965; *The Market-Planned Economy of Yugoslavia*, Pejovic, Svetozar, University of Minnesota Press, Minneapolis, 1966; *Yugoslavia and the New Communism*, Hoffman, George F. and Neal, Fred Warner, Twentieth Century Fund, New York, 1962; and *Economic Policy in Socialist Yugoslavia*, Bicanic, Rudolf, Cambridge University Press, Cambridge, 1973.

⁹ *Borba*, Aug. 1, 1969.

Government outlined its position on foreign investment in the "theses" promulgated in April 1967.¹⁰ First, foreign investors had to comply with the Yugoslav system of self-management. Second, foreign funds could be invested only in existing Socialist enterprises; no provision was made for investing in the private sector of the economy. Third, obtaining new technology and entry to export markets was to take precedence over obtaining financial capital.¹¹

Financial conditions for foreign investment were explicitly stated in the draft laws adopted in July 1967, but key operating issues such as the investors' rights of management, profit repatriation, and even ownership rights were not resolved. Particular fields of economic activity such as banking, insurance, domestic transportation, trade, and social services were closed to foreign investment and portfolio investment was prohibited. Foreign investment in a Yugoslav enterprise was to be limited to 49 percent except under unusual but unspecified conditions. Moreover, the law required that profits of the foreign investor be taxed by 35 percent and that 20 percent of the balance either be reinvested in the joint venture, another Yugoslav enterprise, or else be placed in long-term bank deposits. Beyond this the law was vague.

By 1970 the Government had concluded that the investment climate would have to be improved if Yugoslavia were to attract significant amounts of foreign investment. The regime accepted the criticism of foreign investors and Yugoslav enterprises that the provisions for repatriating profits were too restrictive. When the original investment law was adopted in 1967, Yugoslav enterprises were permitted to retain only 7 percent of their earnings from hard-currency exports and many Western businessmen felt that this retention quota would not provide sufficient funds for profit repatriation. In addition, the requirement to reinvest 20 percent of profits was attacked by Westerners and Yugoslavs alike. In late 1970, the Government simultaneously dropped the reinvestment provision and broadened the base for profit repatriation by allowing joint enterprises to retain an additional one-third of their hard-currency earnings. In early 1972, the basic retention quota was increased so that a minimum of 53 percent of the hard currency earned by a joint venture can now be used for profit repatriation. This should prove sufficient for repatriating profits even in the early years of the joint venture when exports are likely to be small.

The Government has been less tractable on the issue of export promotion. The revised investment law still requires that a joint investment contract shall not be entered into if the parties do not state that their business cooperation will lead to " * * * an increase in output, a rise in productivity, and increased exports." ¹² A rough rule of thumb seems to be that 40 percent of the joint venture's production should be earmarked for foreign markets.¹³ Many foreign firms have expressed a

¹⁰ The "Theses on Socio-Economic Aspects of Joint Investments by Domestic Enterprises and Production-Financial Cooperation Between the Yugoslav and Foreign Economies" and other laws on foreign investment are contained in *Collection of Yugoslav Laws*, vol. XVII, Institute of Comparative Law, Belgrade, 1967.

¹¹ For an excellent description of Yugoslavia's motivations for permitting foreign investment, see *Yugoslav Foreign Investment Legislation At Work; Experience So Far*, Sukijasovic, Miodrag, the Institute of International Politics and Economics, Belgrade and Ocena Publications, New York, 1970, especially pp. 11-14.

¹² "Law on Investment of Resources of Foreign Persons in Domestic Organizations of Associated Labor," Official Gazette of the Socialist Federal Republic of Yugoslavia (SFRY), Nov. 22, Apr. 19, 1973, art. 12, sec. 2.

¹³ "Foreign Investment in Yugoslavia," Organization for Economic Cooperation and Development, Paris, 1970, p. 10.

desire to enter into joint investments with Yugoslav firms if they are not required to export part of the output. These firms stress that import-replacing products of many proposed joint ventures would save the country foreign exchange but Yugoslav authorities—evidently fearing a flood of requests for “screwdriver” factories—have been unwilling to approve any ventures that do not envisage exports.

The Government has made some progress in accommodating foreigner's property rights with the system of workers self-management and social ownership.¹⁴ Before committing funds, foreign investors wanted to know the status of their property in the event a joint venture should fail. Would trademarks and industrial property be recoverable? Was the foreign investor forced to renounce all claim to the invested assets when the contract was registered by the Yugoslav Government? In early 1971, the Government finally provided a partial answer to questions like these. The foreign investment law was amended to give investors the right to hold title to invested assets until they are fully amortized. And for the first time, the Government permitted foreign equity to be repatriated in accordance with any foreign exchange regulations which might be in effect.¹⁵

Originally the Government had considered foreign investments to be permanent and no provision had been made for termination of joint ventures. Now, joint investments may be terminated if (a) losses are incurred in two successive years or business results are “considerably below” expectations, or (b) if one of the partners fails to meet contractual obligations. The foreign partner may sell his share in the foreign investment to another Yugoslav enterprise or other foreign firm but is required to extend “first refusal” rights to his Yugoslav partner. The Yugoslav partner is then required by law to communicate its acceptance or rejection of the sale offer within 60 days.¹⁶ So far, no foreign investors have sold their interests either to Yugoslav partners or to third parties. Finding a Yugoslav enterprise with a sufficient amount of hard currency is one obvious hurdle for the foreign investor who hopes to sell his joint venture share. For this reason, a number of foreign investors have included clauses in the joint venture contracts which permit them to convert their equities into long-term loans to Yugoslav partners.

On the issue of ultimate control of joint ventures the regime has held firm. Although the Federal Executive Council can approve equal investment participation in a venture “exceptionally * * * for the purpose of developing a determined economic branch or activity * * *” no contract with 50-50 participation has yet been approved.¹⁷ Essentially two types of Yugoslav firms are empowered to negotiate joint ventures—single enterprises and conglomerates. A foreign investor has the option of investing up to 49 percent in (i) an enterprise itself, (ii) an enterprise which belongs to a conglomerate; (iii) a conglomerate as a whole, or (iv) an autonomous division created

¹⁴ According to Yugoslav law, socialized enterprises are operated and controlled by the workers, who elect workers' councils and directors to make day-to-day decisions. These enterprises serve as trustees of the state, employing but not actually owning the assets under their control. Since the foreign investment law requires that foreign and domestic firms be accorded equal treatment, the foreign investor is also denied property rights of ownership, and instead is accorded only the contractual rights which stem from the joint venture agreement.

¹⁵ Article 18, “Law on Investment of Resources of Foreign Persons in Domestic Organizations of Associated Labor,” *op. cit.*

¹⁶ Article 16, *Ibid.*

¹⁷ Article 4, *Ibid.*

within either a single enterprise or a conglomerate. Most investors have selected the last option because it offers a degree of insulation from the overall enterprise operation and because a given outlay of capital buys a larger equity share. A joint management board composed of representatives from the Yugoslav enterprise or conglomerate and the foreign firm exercises control over the venture. The management board's powers are a matter for negotiation and are specified in the joint venture contract.

To help allay fears among foreign investors that frequent changes in the institutional framework of Yugoslavia's economy would not harm their interests, the government adopted an amendment to the constitution in 1971 guaranteeing that " * * * the rights of a foreign person concerning his resources invested in an organization may not be diminished by a law or another act after the conclusion of a contract * * *"¹⁸ Article 27 of the new constitution now in the process of being adopted—in effect Yugoslavia's third since 1960—contains similar language guaranteeing the safety of foreign investment.¹⁹ How meaningful the guarantees are is still unknown since they have never been tested in either a Yugoslav or an international commercial court. Although the amendments do not encompass changes in tax laws the foreign investor presumably is protected from changes in foreign exchange regulations.

Foreign firms have also complained that the high rate of taxation discourages joint ventures. So far the Government has done little to reduce the tax burden. Less developed republics were allowed to cut the tax rate on profits from 35 percent to 14 percent and a tax rebate ranging from 15 percent to 50 percent now is given on profits that are reinvested for a 5- to 10-year period or placed in long-term bank accounts. But the Government thus far has ignored investor complaints of double-taxation. Domestic taxes continue to be levied at a rate of approximately 40 percent of the enterprise wage bill whether or not the firm turns a profit. In addition, the foreign partner's profits are subject to a 35-percent tax, while no additional tax is levied on the domestic partner.

Negotiating the Contract

Even with improvements and clarifications in the legal environment, many issues still must be settled in contract negotiations. Since the foreigner's property rights are contractual, careful negotiation of the agreement is perhaps more important to the success of the joint venture than are similar arrangements in other developing countries. Although negotiations can move along surprisingly quickly if the investment is in a high priority sector, the process can be frustrating. Yugoslav legislation is still difficult to interpret and many issues pertaining to management rights, export objectives, bookkeeping, and the calculation of profits must be negotiated. Yugoslav enterprise representatives often are not sure precisely what will and will not be approved by the Federal Government.

Because Yugoslav enterprises are in theory managed by workers' councils, the contract must contain an explicit delineation of the

¹⁸ Amendment No. 22, Constitution of Socialist Federal Republic of Yugoslavia.

¹⁹ Draft of constitution of the Socialist Federal Republic of Yugoslavia, article 27 in *Eastern Europe*, FBIS, No. 11, 133, supplement 21, July 11, 1973 p. 19.

rights ceded by the workers to the joint venture's management board. The workers' councils—along with the enterprise director—must approve the joint investment contract before it becomes valid. This procedure signifies that certain rights of self-management have been transferred temporarily to the management board.

Foreign partners often have achieved equal representation of the management board even when they have invested a relatively small share of the equity. The general director of a Yugoslav enterprise must be a Yugoslav citizen, but a foreigner could become the director of a joint enterprise. This has never happened. Instead, a Yugoslav—usually the enterprise director—heads the joint venture and serves as the presiding officer of the management board while an officer of the foreign firm holds the number two position. The foreign investor retains considerable power, however, since most of the contracts provide that major decisions of the joint management board must be unanimous.

In drawing up the contract the partners are allowed considerable freedom to determine the prerogatives of the management board. Usually the board consults periodically with the enterprise management on technical as well as financial matters. These consultations might cover the construction of new facilities, project documentation, technical standards of production such as product assortment and quality, and the examination of financial records and statements of the venture. As a rule, the management board avoids issues affecting labor policy, although it can determine basic wage levels subject to interrepublican skill levels. Workers employed in the joint ventures normally expect to be paid 10 percent more than rates prevailing in similar jobs in the rest of the economy.

Thus far the management boards have worked fairly harmoniously. Yugoslav directors—not the workers' councils—make most decisions in domestic enterprises, and they have about the same managerial outlook as their capitalist counterparts. And few Western firms—contrary to the regime's hopes—seem intent on directly managing the ventures anyway. Contracts often provide for monthly or quarterly consultations, but some management boards have met even less frequently than prescribed. Although nearly every contract provides for arbitration no issues are known to have been arbitrated so far.

Export promotion and technological transfer are central to joint venture negotiations. At a minimum, the Yugoslavs hope that the joint ventures will be self-liquidating in foreign exchange costs. Since the dinar is not freely convertible and domestic sales cannot provide transferable funds for the foreign partner, enough exports must be generated to pay for imported components and technology, provide funds to remit profits, and eventually to repatriate the foreign partners' investment. This problem demands flexibility and creativity on the part of the foreign investor. The Western partner may simply absorb some of the output of the venture, arrange with a switch trader to swap the output for something he can use, or market on a fee basis part of the joint venture's product in the West.

Some investors have avoided the problem—at least for the short run—by extending relatively large credits to their Yugoslav partners for the purchase of equipment, licenses, and technology, investing a

small amount of equity in the venture, and concentrating on domestic sales with a minimum of exports. Domestic profits are then plowed back into the enterprise to increase the foreign partner's share of the equity. In effect, the investor is gambling that foreign exchange regulations will be liberalized in the longer run to allow profits, or part of them, to be repatriated in hard currency. While waiting for that contingency, the foreign firm can make profitable replacement sales of machinery, equipment, and components.

The Yugoslav partner will also seek to secure the benefits of the foreign partner's research and development, perhaps negotiating to obtain new technological processes as they become available. While little is known about negotiated technology transfers, the foreign investor has a decided incentive to be cautious in releasing technology. An investor obviously does not want to create a competitor in international markets and by controlling the release of technology the Western firm probably can generate a later round of equipment sales.

The division of profits, the choice of a bookkeeping system, and procedures for arbitration are other negotiating topics. Most joint venture contracts allocate profits between the partners on a pro rata basis with equity. Accounting is handled in accordance with international procedures as modified by local laws. Since most joint ventures are spun off from the parent enterprise, they generally have a separate set of books open to periodic examination by the foreign investor or the management board. Arbitration procedures are also specified in the contracts as are the courts in which the proceedings will be held. Yugoslavia is a member of the Paris International Chamber of Commerce and will accept arbitration rulings of that tribunal.

Because many issues concerning joint ventures have not been settled in law, some Westerners try to include in the contract every item that could conceivably affect the joint venture. They push for what they want from a business standpoint and then rely on the economic secretariat to tell them whether what they have agreed to is permissible within Yugoslav law. The services of the International Investment Corporation of Yugoslavia (IICY)—a consortium of Yugoslav and international banks set up to promote foreign investment in Yugoslavia—have been useful to some Westerners in their negotiations. The IICY specializes in negotiating large and medium sized deals, several of which have included the participation of the International Finance Corporation. Some U.S. firms have found the offices of IICY valuable in cutting bureaucratic redtape and in getting ventures off the ground. The IICY is especially interested in stimulating investments in extractive, industrial, tourist, and agricultural projects—all priority investment targets of the Yugoslav Government.

Official registration of the negotiated contract is the final step in arranging a joint venture. After the contract is approved by the enterprise workers' council and signed by the director, the Federal Secretariat of the Economy performs a preventive check to insure that the joint venture contract: (a) conforms to Yugoslav law; (b) promises to increase the production, productivity, and exports of the Yugoslav partner; (c) treats both partners equally; (d) does not overvalue the patents, licenses, and technology contributed by the foreign partner; (e) requires an investment of at least \$100,000

by the foreign partner; and (f) does not conflict with the interests of national security or defense.²⁰ The decision to accept or reject the contract must be made by the Secretariat within 2 months; a negative decision may be appealed to the Federal Executive Council. In practice, the number of joint ventures under negotiation has been small enough to permit the Secretariat to clear up details during the negotiating process. Ratification of the contract has therefore been virtually automatic upon its acceptance by the workers' council of the domestic enterprise.

A Limited Response

Although the Yugoslavs expected to be flooded with offers of Western capital, only \$125 million had been realized in 76 joint ventures as of March 1973, hardly significant compared with other forms of capital inflow as shown in table 1. The number of joint investments climbed in 1971-72, but the average amount of foreign participation and the foreign share in total investment declined. Meanwhile the share of borrowed capital in total Yugoslav investment has steadily risen. The gross inflow of long and medium term Western capital, which averaged about \$580 million annually during 1968-72, now accounts for almost 25 percent of total investment compared with about 15 percent in the early 1960's. Lending by the International Bank for Reconstruction and Development (IBRD)—Yugoslavia's major source of long term development capital in recent years—alone outstripped foreign investment by some 40 percent during 1968-72.

TABLE 1.—YUGOSLAVIA: THE ROLE OF FOREIGN INVESTMENT, 1968-72

[Dollar amounts in thousands]

	1968	1969	1970	1971	1972	Total
Number of equity ventures ¹	5	² 12	11	17	27	72
Total investment in equity ventures of which.....						
Foreign funds.....	³ \$71, 818	\$98, 456	\$99, 070	\$72, 296	\$312, 752	\$654, 392
Percent of total investment.....	16, 805	27, 535	22, 911	18, 898	37, 172	123, 312
Percent of total investment.....	23	28	23	26	12	19
Total inflow of medium and long term capital ⁴	\$337, 000	\$449, 000	\$568, 000	\$730, 000	⁵ \$827, 000	\$2, 911, 000
Foreign investment funds as a percent of total capital.....	5	6	4	3	4	4

¹ Including annexes to existing contracts.

² Including 2 joint ventures with CEMA countries.

³ At prevailing exchange rates at time of venture registration.

⁴ Taken from preliminary balance of payments data for hard currency countries only.

⁵ Preliminary balance.

Sources: Balance of payments data from International Monetary Fund; "Investing in Yugoslavia with OPIC Assistance,"^{*} Overseas Private Investment Corp., 1973.

Even though many of the larger equity ventures are extensions of ongoing cooperation and licensing agreements, few Western firms have invested as much as the law allows. By March 1973, foreign partners had invested the legal maximum of 49 percent in only 21 ventures, most of which were relatively small. The larger partnerships such as the

²⁰ Article 12, "Law on Foreign Investment of Resources of Foreign Persons in Domestic Organizations of Associated Labor," *op. cit.*

Fiat-Crvena Zastava Motor Works, the Tovarna Automobilov Maribor (TAM)—Kloeckner, Hulmoboldt, Deutz truck assembly operation, and the FAP-FAMOS-Daimler Benz truck venture have depended on outside funding by the International Finance Corporation and the IIC Y. In all three cases, the foreign partners invested less than 19 percent of the equity while insisting on contract clauses permitting them to convert their equities into medium-term loans.

Yugoslavia's leading trading partners—West Germany and Italy—are also its main sources for licenses, patents, cooperation agreements, and equity ventures. By the end of 1972, Italy had concluded 19 joint investments with Yugoslav enterprises and was participating in 71 industrial cooperation agreements while West Germany was involved in 17 equity ventures and 148 cooperation arrangements, as shown in the tabulation below:

	Patents and licenses	Industrial cooperation	Equity ventures
Total.....	394	375	72
Western Europe.....	359	306	59
Of which:			
West Germany.....	(93)	(148)	(17)
Italy.....	(62)	(71)	(19)
Eastern Europe.....	35	62	2
United States.....	16	4	4
Other.....	4	3	7

Source: "Yugoslav Survey", vol. XIV, May 1973.

Compared with Western Europe, the United States is a relatively minor source of technology for Yugoslavia. By the end of 1972, U.S. firms had concluded only four cooperation deals and four equity ventures. One equity venture involving Time-Life Inc. was signed in 1968 but no other U.S. agreements were arranged until late 1971 when Knopic, a small New York electronics firm invested \$600,000 in a deal with Iskra of Slovenia. In 1972, Eaton Corp. made the first sizable U.S. investment (\$2.2 million) to produce automatic controls with Cajavec of Bosnia and Hercegovina. U.S. investment activity is up sharply in 1973. Two small investments were registered in January and at least three more contracts have been signed and await ratification by the Economic Secretariat. If these investments are approved, U.S. companies will have entered into nine joint investments involving about \$9 million.

Industrial Impact

The industrial branches that have led the way in cooperation and licensing agreements have also concluded the most joint equity ventures (see table 2). Although it is difficult to measure the influence of foreign investment and cooperation agreements on growth in the economy transfers from the West have had a substantial impact on the output mix. Consumer products—electrical appliances, automobiles, medicines—manufactured under Western licenses and processes satisfy part of the demand of the domestic population which would be otherwise met by imports of finished products.

TABLE 2.—YUGOSLAVIA: REGISTERED JOINT INVESTMENTS AND COOPERATION AGREEMENTS, BY INDUSTRY, END OF 1972

	Industrial cooperation agreements	Registered joint investments	1966-71 average annual growth of value of production (in percent)
Total (all industry).....	375	72	6.5
Petroleum.....	0	0	13.2
Ferrous metallurgy.....	2	1	5.3
Nonferrous metallurgy.....	0	3	5.0
Nonmetallic minerals.....	5	5	5.9
Metalworking industries (excluding shipbuilding).....	220	22	6.7
Of which—			
Motor vehicles industry.....	(¹)	² 9	³ 17.5
Shipbuilding.....	0	0	10.4
Electrical industry.....	123	8	8.8
Chemical industry.....	6	12	12.2
Building materials industry.....	0	2	7.6
Wood industry.....	3	2	4.8
Paper and printing industry.....	2	5	7.0
Textile industry.....	3	3	3.2
Leather industry.....	0	1	2.5
Rubber industry.....	1	2	7.1
Food and beverage industry.....	5	4	5.5
Tobacco.....	0	2	.....
Other industrial products.....	5	0	(¹)

¹ Not available.

² Including annexes to existing contracts.

³ Average growth of physical production.

Source: Yugoslav Survey, vol. XIV, May 1973, Statisticki Godisnjak SFRJ 1972.

Foreign firms have been most willing to invest in the automobile and chemical industries—two of Yugoslavia's most rapidly expanding industries. There have been no sizable investments in basic materials even though serious negotiations have occasionally taken place. The collapse of protracted negotiations with Kaiser aluminum in 1970 suggests that Western firms are cautious about investing in Yugoslavia's natural resources even if they are satisfied that commercially exploitable reserves exist.²¹ Instead, they prefer the processing industries where the payment period is relatively short and capital commitments are smaller.

Western Europe's leading car and truck manufacturers—Fiat, Daimler-Benz, Citroen, Volkswagen, and Kloeckner-Humboldt-Deutz have invested about \$40 million in joint ventures with Yugoslav firms. These ventures typically involve the assembly of knocked down cars and trucks in Yugoslavia offset in part by the export of components manufactured by Yugoslav enterprises or their subsidiaries. The exception is the Fiat-Crvena Zastava contract. Zastava produces automobiles in integrated serial operations and exchanges parts with Fiat of Italy and the other Fiat affiliates in Eastern Europe.

The Government's priority effort to upgrade chemical technology has helped to attract Western investors to that industry. To the Yugoslavs, joint ventures in chemicals and petrochemicals offer a better opportunity for reaching world technological levels than do product licensing arrangements. The cycle from research and development to production is unusually swift in chemicals and the Yugoslavs

²¹ Kaiser negotiated for almost 2 years to build an alumina combine in Zvornik, Bosnia and Hercegovina before ending the talks. Kaiser officials claimed that world aluminum capacity coupled with low prices made the joint investment's profitability a question mark.

hope they can short circuit the product development process by tapping the research efforts of Western firms. Western firms are in turn more inclined toward investments in chemicals than in many other industries because it is easier to dispose of the output. Basic products of the venture can be more readily used as a raw material in "downstream" chemical plants of the Western partner than would be the case in some other industries. Moreover, it may be easier to find a chemical product that the Yugoslavs are able to produce efficiently which will not compete with products already marketed by the Western firm or subsidiaries abroad.

Regional Impact

Because they favor processing industries, investors have gravitated to Slovenia, the most developed republic (see table 3). The Slovenes had landed just six joint investments by the end of 1970, but 11 ventures were set up in both 1971 and 1972. Most of these investments are in relatively small scale consumer oriented industries such as tire production, paper manufacturing, and home appliances. Foreigners have preferred Slovenia and, to a lesser extent, Croatia, to other parts of the country because quality standards are considerably higher in these areas than elsewhere in Yugoslavia and the labor force is much better trained. Moreover, Slovenia and Croatia have closer geographic and cultural links with the markets of Western Europe than do the other Yugoslav republics. Serbia still leads all other republics in the total value of joint ventures because almost \$30 million has been invested in the Fiat-Crvena Zastava venture alone. Since the end of 1970, however, only six ventures involving \$7.8 million have been organized in Serbia compared with almost \$30 million and 22 ventures in Slovenia.

TABLE 3.—YUGOSLAVIA: FOREIGN INVESTMENTS BY REPUBLIC 1968-72

[Dollar amounts in thousands]

	1968	1969	1970	1971	1972	1968-72 total	Percent- age share
Slovenia:							
Number of investments.....	2	2	2	11	11	28	38.9
Amount.....	\$11,494	\$4,817	\$1,905	\$14,789	\$15,549	\$48,554	.....
Croatia:							
Number of investments.....	1	2	3	2	7	15	20.8
Amount.....	\$152	\$1,414	\$848	\$104	\$7,776	\$10,294	.....
Serbia:							
Number of investments.....	2	6	4	2	16	20	27.8
Amount.....	\$5,159	\$18,237	\$17,516	\$2,556	\$6,039	\$49,507	.....
Bosnia and Hercegovina:							
Number of investments.....	0	2	0	1	2	5	6.9
Amount.....		\$3,067	.....	\$640	\$4,682	\$8,389	.....
Macedonia:							
Number of investments.....	0	0	2	1	0	3	4.2
Amount.....			\$2,642	\$800	.....	\$3,442	.....
Montenegro:							
Number of investments.....	0	0	0	0	1	1	1.4
Amount.....					\$3,125	\$3,125	.....
Yugoslavia:							
Number of investments.....	5	12	11	17	27	72	100.0
Amount.....	\$16,805	\$27,535	\$22,911	\$18,889	\$37,172	\$123,312	.....

¹ Including 2 investments worth \$696,000 in the Autonomous Province of Kosovo.

Source: "Investing in Yugoslavia With OPIC Assistance," OPIC, 1973, calculations by author.

Despite favorable tax treatment, the presence of most of Yugoslavia's mineral resources (bauxite, zinc, copper and lead) and an unwritten rule that South will be favored over the North in joint venture requests, the regime has been unable to attract much investment to its less developed regions. Foreign investment in the south—Bosnia and Hercegovina, Macedonia, Montenegro, and the province of Kosovo—amounted to just \$15.6 million in 11 ventures at the end of 1972. Western investors have been deterred by a combination of factors including the size of investment outlays, poor transportation facilities, a scarcity of skilled labor, low labor productivity, and the relative remoteness of the South from large and affluent urban markets. As a result, the southern republics have begun to look to the U.S.S.R. for help in developing raw materials.²²

Why Western Firms Invest

Few Western firms actually made investments in Yugoslavia without first sampling the looser—and generally more lucrative—forms of technology transfer such as licensing agreements and industrial cooperation. Indeed a number of Western firms seemingly agreed to joint investments only because the government instituted a squeeze on imports and began tightening the rules of industrial cooperation.²³ Because the ground rules for cooperation agreements include preferential customs treatment, Yugoslav enterprises were encouraged to conclude cooperation arrangements and trim domestic output since they could earn larger profits by selling imported products instead of their own.²⁴ Now cooperation deals are more closely regulated and legislation has been changed to require that domestic enterprises contribute at least 30 percent of the value added to a jointly produced product.

To maintain their presence on the Yugoslav market, many Western European firms have invested token amounts in joint ventures with Yugoslav enterprises. The preference of investors for processing industries and the low rate of profits earned tend to reinforce the view that their investments are made chiefly to support export efforts. They invest in small-scale consumer industries with a high import content and a limited export potential. Moreover, profit rates on their equities have apparently been far below rates prevailing elsewhere in the world. For instance, the Fiat-Crvena Zastava joint venture—Yugoslavia's model agreement—earned only 2 to 3 percent on invested funds, not the 15 percent which was projected when the agreement was signed. As a report of a Serbian Assembly Commission pointed out “* * * foreigners invest in our enterprises * * * not for direct profit but for indirect effects such as market expansion, the opportunity for supplying components, and the elimination of other potential foreign competitors.”²⁵

And Westerners probably get no great cost break by investing in Yugoslavia. Yugoslavia does enjoy an advantage in labor costs when

²² The Soviet Union extended a soft currency credit worth \$540 million to Yugoslavia in the spring of 1972. Most of the credit is to be used in the less developed regions for development of thermoelectric capacity, nonferrous metals, and the like.

²³ See *East European Report*, Feb. 9, 1973 op. cit. pp. 34-35.

²⁴ *Ibid.*

²⁵ Eastern Europe, *Foreign Broadcast Information Service*, Sept. 13, 1973, p. 112.

compared to the Common Market countries but its costs are probably no lower than in other countries in southern Europe. Although inter-country labor comparisons are tenuous,²⁶ a recent United Nations study indicates that Yugoslavia compares unfavorably to Greece and Spain in value added per worker in manufacturing and ranks only slightly ahead of Portugal. The Common Market has granted tariff concessions to Greece and Spain similar to those accorded the Yugoslavs, and the operating environment in both countries is much more open than in Yugoslavia. Both countries permit foreign investors to hold majority positions in domestic firms and Spain has even permitted large scale investment in real estate. However, as in Yugoslavia, foreign investment in the manufacturing industries of Spain and Greece has been concentrated in the sectors of transport, chemicals, and metal products, with most of the output aimed at satisfying domestic consumption.

West European enterprises have arranged most of the joint investments mainly because they are more flexible than U.S. firms in finding ways to do business in Eastern Europe. The West Europeans have an advantage in that they can more easily rationalize the components produced by joint ventures with their home operations. And they are more willing to undertake the marketing of Yugoslav goods, some of which may be only remotely related to their own product mix. U.S. firms have only recently begun to look at joint ventures as a means of expanding exports.

U.S. investment activity is likely to continue to lag behind that of Yugoslavia's main trading partners. Although large firms like Dow and Gillette have concluded small equity ventures, the presence of major U.S. multinationals in Western Europe should keep U.S. investment at a low profile. Manufactured products from U.S. equity ventures in Yugoslavia would have to be sold in competition with the output of U.S. subsidiaries in Western Europe and American firms are not yet ready to make the major commitment necessary to invest in Yugoslavia's chief raw materials—copper, bauxite, and lead.

How Much Will the Yugoslavs Gain?

Unless the investment climate suddenly improves, Yugoslavia will probably fall considerably short of its goal of attracting \$285-\$300 million in foreign investment during 1971-75. Only about \$65 million had been realized from 1971 to mid-1973 and the Yugoslavs may be hard pressed to obtain as much as \$200 million in foreign investment during all of 1971-75. And foreign investment has had no impact on the Federal Government's pressing regional development problem. As a Serbian Assembly Commission reported in September 1973 " * * * foreign investment had no significant influence on * * * the structure of our economy or the development of less developed regions. Foreign capital went rather to the developed regions * * *"²⁷

Even though capital has flowed to the more developed areas, significant export gains will be hard to come by. Joint venture contracts are required to contain provisions for export promotion, but the scanty available evidence suggests that few Yugoslav enterprises

²⁶ "Some Aspects of Manufacturing in Southern Europe: Production, Trade, and Transfer of Technology," *Economic Bulletin for Europe*, United Nations, Geneva, p. 53.

²⁷ *Eastern Europe*, FBIS, op. cit. p. 1.12.

involved in joint investments are net earners of foreign exchange. For instance, imports of the Fiat-Crvena Zastava enterprise totaled almost \$80 million in 1972 while exports amounted to less than \$30 million. At the same time, the import replacing products of major equity ventures—automobiles, trucks, chemicals—save foreign exchange in proportion to the value that is added in Yugoslavia. But because most of these industries rest upon a limited raw materials base, the Government will be fortunate if many of the joint enterprises eventually pay their own way.

Foreign investment will raise the quality of technology and management, although only to the fringe of Western experience. Most equity ventures are in reality little more than a blending of classic licensing deals and cooperation agreements; only in exceptional cases have Western firms permitted Yugoslav enterprises to reach levels of technology characteristic of their home operations. Instead, most equity ventures are heavily dependent upon the Western partners for deliveries of components and machinery to maintain relatively low volume, high cost output. Transfers of management and labor skills also are not apt to be significant. Few Western firms are actively managing the joint firms—in part because they have invested relatively little—and few have instituted major training programs for workers.

IV. WHERE THE REST OF EAST EUROPE STANDS

In October 1971 Romania became the first CEMA country to follow Yugoslav on the path to foreign investment. The Romanians share three basic characteristics with the Yugoslavs: an independent posture within the Communist movement, a large and growing hard-currency indebtedness to the West, and a propensity to push for rapid growth fueled by Western technology and financed with Western credit. These factors were enough to prompt Bucharest to accommodate foreign investment in one of the most tightly controlled and centrally directed economies in East Europe.

The original 1971 law was far too vague for Western investors and no deals were actually concluded under it. A second and more complete investment decree was proclaimed in November 1972 and thus far three Western firms, including the U.S. firm Control Data, have made investments.²⁸ Romania, like Yugoslavia, requires that the Romanian side will retain 51 percent of the equity in a venture. Unlike Yugoslavia, however, the Romanian law provides that equity ventures will be concluded with "industrial centrals" rather than individual enterprises.²⁹ Romania's law puts a premium on export-oriented industries and those which have a technological base "on a par with world standards".³⁰

A joint venture contract must be reviewed by the state planning committee, the Ministries of Finance, Foreign Trade, and Labor and

²⁸ The three Western firms known to have concluded investments with Romanian centrals are Zahnrad-Fabrik Renk AG (West Germany), Romalpa SpA (Italy) and Control Data Corporation (United States).

²⁹ Industrial centrals were established in April 1969 and consist of several enterprises grouped in one or more of the following ways: Vertically by product, horizontally by product, and territorially by product. The industrial centrals play a role in annual and long-term plan formation and have a limited voice in foreign trade.

³⁰ Law No. 1, published in the Official Bulletin of the Socialist Republic of Romania, March 1971, article 8. For an excellent outline of Romania's law see "Joint Investment Opportunities with the Socialist Republic of Romania," Morse, David A. and Gockjian, Samuel V. in *Business Lawyer*, vol. 29, November 1973.

the Romanian Foreign Trade Bank. After signing, the agreement is rechecked by the Ministry of Foreign Trade for compliance with Romanian law and forwarded for approval by the Council of Ministers. If Council of Ministers approves, the contract becomes binding.

Unlike the Yugoslavs, the Romanians require that the partners prepare a 5-year plan and annual plans which describe projected financial and economic activities of the venture. Although there is no reinvestment provision in the Romanian law, the joint company is required to set up a "reserve fund" of up to 25 percent of the invested capital. Taxes on profits are levied at an annual rate of 30 percent but the Council of Ministers is empowered to grant a limited tax holiday to the venture. A tax rebate is also given on reinvested profits. The Romanians guarantee that profits and equity can be repatriated and agree to arbitrate major disputes at the International Chamber of Commerce in Paris.

The latest CEMA country to board the bandwagon, however hesitantly, is Hungary. In their October 1972 investment law, the Hungarians included provisions similar to those in effect in Yugoslavia and Romania: a 51 percent share "in general" for the Hungarian enterprise,³¹ guarantees of profit and equity repatriation, and setting up a risk fund of 10 percent of the venture's capitalization.

Unlike those countries, the Hungarians have made it clear that they view foreign investment as a "marginal and exceptional recourse."³² Indeed, as of March 1974, no joint investments had been approved. As Odon Kallas, president of the Hungarian Chamber of Commerce put it in late 1972: "We have an ideological objection (to foreign investment) because we are a socialist country and * * * an economic objection because we have successfully managed our economy without it."³³ And it is true that the government's policy of combining conservative debt management with a viable economic reform has eased pressure on the leadership to go beyond the standard cooperation arrangements in which Hungary has been the CEMA pacesetter.

Early in 1974 Poland was drafting an investment law which presumably will be released in time for the 1976-80 5-year plan. Some Western and Polish legal scholars argue that foreign investment could have taken place even without promulgation of a new law.³⁴ But Polish authorities have apparently decided that it would be easier to cut red tape by starting from scratch.

Few details are available although the law represents the next logical step in Party Chief Gierek's expansive policy of trade and cooperation with the West. Gierek, cashing in on his predecessor Gomulka's fairly conservative debt policy, has been rapidly boosting imports of machinery from the West and pushing for large-scale Western cooperation.

The other countries, Bulgaria, Czechoslovakia, and East Germany, have been much more reticent on the investment question. None of the three has permitted equity ventures with the West and all have lagged significantly in concluding cooperative ventures. The atmos-

³¹ Decree No. 28, 1972 "On Economic Associations operating with Foreign Participation" *Magyar Kozlony*, No. 76, Oct. 3, 1972, clause 4.

³² "Hungary Rules Out Widespread Western Investment," *Financial Times*, Nov. 24, 1972, p. 4.

³³ *Ibid.*

³⁴ See "The Law of Foreign Trade in the Polish People's Republic," in *Law and Contemporary Problems*, vol. XXXVII, summer, 1972, p. 506 and also an article by Jan Rybac contained in *Handel Zagraniczny*, No. 10, October 1973, pp. 327-331.

phere may be changing, at least in Czechoslovakia. In a late 1973 speech on the economy, Premier Strougal hinted that the Czechs were considering joint equity ventures.³⁵ This likelihood was buttressed by a recent article in the party economic weekly *Hospodarske Noviny* which advocated " * * * the financial participation of other countries * * *" in Czech industry.³⁶

The conservative Bulgarians have steadfastly prohibited equity investment in their constitution and apparently have little inclination to remove the ban. The inward looking East Germans also have made no effort to accommodate equity ventures although Gerhard Biel, deputy minister of foreign trade, insists that East Germany stands ready to entertain venture proposals from the United States³⁷ once diplomatic relations are established.

V. LESSONS FROM THE YUGOSLAV EXPERIMENT

Romania, Hungary, and presumably Poland have essentially emulated the Yugoslav format for investment. Nonetheless they present the investor with a considerably different investment equation. First, their economies are more stable than is Yugoslavia's and second, the enterprises in all these countries are subject to more central control and redtape; it may prove to be just as hard to insulate investors in these countries from bureaucratic frustrations as it has been to isolate them from the impact of inflation and confusing policy changes in Yugoslavia. Aside from these basic obstacles, however, the future of foreign investment in Eastern Europe will depend to a large extent on how these countries react to the lessons of the Yugoslav experiment.

At a minimum, the limited response of Western firms to the opportunity of operating in the relatively open environment in Yugoslavia ought to have made the East Europeans more realistic about foreign investment. They now should expect that most Western firms will be intent on making sales, investing a minimum of equity, and marketing as little of the venture output in the West as practicable.

To counter this problem and attract more productive and rational investment, the CEMA countries—and Yugoslavia—might well recast their investment laws in the light of import substitution rather than export promotion. After carefully determining industrial priorities, governments could allow foreign companies to set up joint ventures which rest upon an adequate raw materials base and use locally produced inputs to make products for domestic consumption. This might prove more efficient—and cheaper—in the long run than indirectly promoting ventures that rely heavily on imported components to produce high cost products which have a limited export market. In Yugoslavia, domestic political considerations probably preclude the federal government from explicitly relaxing export provisions in the near future. Regional pressures for competing ventures would be great, and it would be politically difficult for the Federal Government to set unambiguous industrial priorities. The governments of the more closely controlled CEMA countries, on the other hand, are less bound by regional considerations.

³⁵ "Joint Ventures on Czechoslovak Horizon," *Eastern European Report*, op. cit. Jan. 11, 1974, pp. 4-5.

³⁶ *Ibid.*

³⁷ "GDR Welcomes Joint Ventures With U.S.," *Journal of Commerce*, Jan. 11, 1974, p.1.

Removing the onus of export promotion and establishing clearcut procedures from the outset for the repatriation of profits and equity would go a long way toward improving the operating climate without much harm to the East Europeans. In retrospect, the Yugoslavs could have landed far more investment if their original law had been more clear and less rigid in promoting exports. Having changed the focus of their laws, the East Europeans might find that they could pick and choose among more Western offers. Carefully worked out deals which involve large equity investments by Western firms might make a greater contribution to domestic output and efficiency than have the classic credit purchases of machinery and equipment of the past. To be sure, credit sales of equipment along with licensing arrangements will remain central to future joint venture agreements, but the East Europeans may be able to pick up useful marketing skills and improve worker training and managerial expertise in the process, especially if foreign firms see the possibility of making reasonable profits.

The operating environment obviously would be enhanced if the CEMA countries gave special treatment to joint investment ventures. Indeed, Romania has already permitted this in a limited way. Joint ventures are given priority access to raw materials and services and are charged at the noncommercial exchange rate (about 14 lei per \$1) rather than the official rate (5 lei per \$1). The East Europeans could also consider giving the ventures tax holidays as do most developing and even some developed countries who are seeking investment.

Of course, concessions are no substitute for a promising profit risk ratio. As the Yugoslav experience suggests, Western firms need substantial profit opportunities before they will make long-range commitments and tie up key management personnel. Moderate profit prospects may elicit interest in small investments with a short payout period, but large-scale projects in priority sectors will require something more in the way of profitability. If the East Europeans really want to reap the benefits of foreign investment, ultimately they must be prepared to pay for it.

TOURISM

By PAUL MARER and JOHN W. TILLEY*

CONTENTS

	Page
I. Introduction.....	745
II. Political Aspects.....	746
Controlled Versus Uncontrolled Tourism.....	746
U.S.S.R. versus East Europe.....	746
The Special Case of East Germany.....	746
Controls in the Rest of CEMA.....	747
Demand for Travel by East Europeans.....	748
Experiments To Liberalize Travel Within CEMA.....	749
The Political Economy of Western Tourists in East Europe.....	750
III. Tourist Flows, Revenues, Exchange Rates.....	751
Number of Tourists.....	751
Revenues, Expenditures, Net Earnings.....	753
Total.....	753
Hard Currency Versus Soft Currency.....	757
Economic Importance of Hard-Currency Earnings.....	758
Growth of Tourism.....	760
"Incentive" Exchange Rates for Western Tourists.....	763
IV. Prospects.....	765
Introduction.....	765
Policy Variables.....	765
Plans.....	766
Some Projections.....	767
Problems of Methodology and Measurement.....	767
Feasibility of Rapid Expansion.....	768
East-West Comparisons.....	768
The Supply Factor.....	770
Western Participation.....	771

TABLES

1. Visitor Arrivals to East European Countries and the U.S.S.R. in 1965 and 1972 and Average Arrival Growth of Visitor Arrivals, 1965-72.....	752
2. Tourist Revenues (R), Expenditures (E), and Net Earnings (B) of Individual East European Countries, 1960-72.....	754
3. Tourist Revenues (R), Expenditures (E), and Net Earnings (B) of Individual East European Countries and the U.S.S.R. by Socialist (SC) and Non-Socialist (HC) Groups of Countries in 1971.....	757
4. Net Hard Currency (HC) Tourists Earnings of Individual East European Countries and the U.S.S.R. in 1971 and Average Annual Hard Currency Trade Balance with OECD (1969-71) and the United States (1969-73).....	759
5. Hard Currency Tourist Revenues, Net Earnings, and Net Earnings less Induced HC Imports of Individual East European Countries and the U.S.S.R. in 1971.....	760
6. Rate of Growth of Gross Tourist Revenues and Net Earnings of Individual East European Countries by Selected Periods, 1960-72.....	760
7. Balance of Trade Ratios of East European Countries and the U.S.S.R. With Industrialized Western Countries, 1960-68.....	762

CHARTS

1. Tourist Revenues as Percent of Total Exports for Selected East and West European Countries in 1972.....	756
2. Total Tourist Revenues for Selected East and West European Countries in 1972.....	769

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I. INTRODUCTION

This study deals with the political economy of tourism of the six smaller European members of the Council for Mutual Economic Assistance (CEMA)—Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Romania—a group referred to in this study as East Europe (EE). Also included for comparison whenever data were available are Yugoslavia and the U.S.S.R., two countries that are similar in certain characteristics but differ in other important respects from the six countries of EE.

Part II discusses political considerations which provide a most important and unique background for tourism in EE. The extreme version of "controlled" tourism, still practiced in the Soviet Union and East Germany with regard to incoming tourists, is no longer typical in the rest of EE. But scarcity of convertible currency and fear of ideological "contamination" force all EE governments to continue restricting the travel of their citizens to the West. To deal with strong, pent-up demand for travel, EE governments have been attempting to liberalize travel restrictions within CEMA. We report on a fascinating but short-lived experiment between East Germany and Poland in 1972 to abolish visas and currency restrictions and the unforeseen outcome of this liberalization attempt. We delve into CEMA institutional arrangements which stand in the way of liberalized travel even within the region. With respect to the inflow of Western tourists, greatly encouraged by several EE countries during the last decade, we discuss the economic benefit versus political cost trade-off facing decisionmakers in EE.

Part III shows comparative data on tourist flows, revenues, expenditures, and earnings, much of the information assembled from a variety of official and fugitive sources, carefully evaluated, and presented here for the first time. We find that during the last decade EE has emerged as one of the most dynamic tourist areas of the world, in good part because of the rapid rise of Western tourists visiting EE. One explanatory variable behind EE's rapidly increasing convertible-currency earnings is the "incentive" tourist exchange rates offered by some CEMA countries to Western tourists. We identify "incentive" exchange rates on the basis of purchasing power calculations of EE currencies.

With regard to the economic importance of tourism, we find that hard-currency earnings from tourism already provide an important source of revenue for EE to finance imports from the West.

Part IV discusses some of the principal forces expected to influence the future development of tourism in EE. On the basis of alternative assumptions, we provide a range of prospective hard-currency earnings from tourism by 1980. Future plans and projections of EE governments for their tourist sectors are juxtaposed with the tourist absorption capabilities of these countries. We conclude by calling attention to prospective opportunities for participation by Western firms in the construction and management of hotels, roads, and other tourist facilities in some EE countries.

II. POLITICAL ASPECTS

Controlled Versus Uncontrolled Tourism

U.S.S.R. VERSUS EAST EUROPE

John Hardt introduced a most useful distinction between "controlled" and "uncontrolled" tourism. Under controlled tourism foreign visitors are insulated from the citizens of the host country, there is strict control over their travel routes and activities, and permission to travel abroad for pleasure is rarely granted. A prime example of controlled tourism is the U.S.S.R., where a planned itinerary must be registered with Intourist to obtain a visa, penalties for deviation from prearranged plans range from a fine of 50 rubles to a 1-year prison sentence, and individuals traveling alone more often than not are given a personal escort service at each city of call. More generally, foreign tourists are subject to surveillance and control.¹ In contrast, many aspects of controlled tourism are no longer practiced in EE. For example, visa and other entry formalities have been liberalized and Western tourists are by and large not restricted in their travel within the E.E. countries. Controls, such as registration with the police, are still in effect in some countries, but these tend to be formalities.

One aspect of controlled tourism that still remains throughout EE, partly for political and partly for economic reasons, is restrictions on East Europeans traveling abroad. Scarcity of foreign exchange, particularly hard currency, fear of ideological "contamination," and desire to avoid defections to the West force EE governments to restrict the flow from East to West. Control on the outflow of tourists, however, is much less stringent in EE than in the U.S.S.R.: in 1971 there were approximately 2 million Soviet citizen-trips to foreign countries, many in official capacity, 55 percent to socialist and 45 percent to non-socialist destinations, whereas the six EE CEMA countries (Yugoslavia excluded) allowed approximately 8.5 million citizen-trips abroad, 82 percent to socialist and 18 percent to Western countries.²

THE SPECIAL CASE OF EAST GERMANY

The country which still has the largest residue of controls on incoming Western visitors and tourists is East Germany. Until 1972, travel to the GDR was very difficult, especially for West Germans and West Berliners, who were only allowed entry to (1) visit close relatives (one trip a year, not to exceed 4 weeks), (2) attend the Leipzig Fair, or (3) take care of official business.³

Travel restrictions were liberalized in 1972 by the transit agreement between the two Germanies, and by the four powers agreement affecting the rights of West Berliners to travel in the GDR and East Berlin.

¹ Barbara Fungler, "The Development of the Tourist Industry in the Soviet Union," unpublished Master's essay, George Washington University, February 1974.

² The smaller the country and greater its per capita income, the larger the proportion of its population that would be expected to travel abroad. The population of the U.S.S.R. is about 250 million, that of the six European CEMA countries combined about 105 million. Yet the difference in the number of Soviet and EE tourists is so large that differences in degrees of control must have played a role.

³ The travel of West Berliners to the GDR was virtually impossible after 1952 and to East Berlin after 1961. During 1963-66, the borders were opened to West Berliners during holidays to visit close relatives. See *Die Entwicklung der Beziehungen zwischen der Bundesrepublik Deutschland und der Deutschen Demokratischen Republik: Bericht und Dokumentation*. Bundesminister für innerdeutschen Beziehungen, Apr. 1973, pp. 30-32. Information on the 1972 agreements (see below) is also from this source, unless otherwise noted.

Under these agreements West Germans and West Berliners are now permitted to visit relatives and friends, not exceeding 30 days a year, and for the first time can also tour the GDR, but their itinerary must be approved before entry visas are issued, just as is the case in the U.S.S.R.

A special tourist exchange (1 DM=1 DDR mark) applies to West Germans traveling to East Germany. A compulsory per diem exchange of 10 DM for travel to the GDR and 5 DM to East Berlin was required until November 15, 1973, when the compulsory amounts were doubled.⁴ It is not known whether the reason was to increase revenues because demand was judged inelastic or to discourage the visitor inflow.

Travel by East Germans to West Germany was restricted before 1972 to pensioners, invalids, and accident victims, only to visit families, for a maximum of 30 days. Under such arrangements, about 1 million border crossings by East Germans were registered each year between 1969 and 1972.⁵ Since 1972, permission to travel to West Germany may be granted to anybody, but again only for urgent family matters. Because East Germans are allotted only token amounts of hard currency, the West German Government provides additional cash, travel, and health-care subsidies to East German citizens traveling in West Germany.

As a result of the 1972 agreements, 8.5 to 10 million East German border crossings were expected in 1973, a six-fold increase over 1972.⁶

CONTROLS IN THE REST OF CEMA

In all CEMA countries exit visas to the West are issued only after a careful screening process by tourist committees, trade unions, and the police. Permission to travel to the West is usually granted only once every 3 years and travel to Yugoslavia once every 2 years. Exit visas are often denied for any number of reasons and even if a citizen attempts recourse through the appeals system, only a small percentage of denials are overturned. An invitation from a relative in the West is the easiest procedure for obtaining permission to travel. If approved, a total pocket money of \$8-16 is allocated to each traveler, so that the financial responsibility for the trip rests on the relative or friend in the West. Authorities apparently favor this mode of travel because large outflows of hard currency are not involved. The next easiest way of securing permission to go to the West is group travel. Group tours to Western Europe are oversubscribed, those to developing countries are less in demand.

Trips to the West without invitation or group may also be granted, in which case a total foreign exchange allotment of \$100-250 may be granted, depending on the country of destination. For trips to Western Europe in most cases only amounts in the lower end of the range are granted. These are clearly insufficient for any prolonged stay, which is the principal reason why all CEMA countries have black markets in convertible currencies.

Controls on travel to other socialist countries are much less stringent and principally take the form of limited currency allowances.

⁴ Der Tagesspiegel, November 21, 1973.

⁵ Bundesminister für innerdeutsche Beziehungen, Jahresbericht 1972, p. 9.

⁶ Der Tagesspiegel, November 21, 1973 reports that East Germany projected an 8.5 million figure. Time Magazine, November 19, 1973, reports, very likely from West German sources, that 10 million visitor arrivals were expected in 1973.

Demand for Travel by East Europeans

There is a strong, growing, and persistent pent-up demand for travel by the citizens of the EE countries, a demand that is partly economic and partly political in nature. As personal incomes rise, effective demand for travel also increases. Travel is so highly valued by EE consumers that they are willing to pay high prices for it.⁷ For this reason, travel abroad can be used to absorb excess spending power and to provide economic incentive to a large segment of the population. Tourism by East Europeans also serves as a political safety valve. Easing travel restrictions is one of the most popular liberalization measures that can be taken by an EE regime; conversely, new restrictions on travel are viewed by the population as a most retrogressive political act.

Restrictions on travel to the West by the Czechoslovak Government after 1968 and the easing of travel restrictions by Poland after 1970 illustrate the linkage between politics and tourism. In Czechoslovakia there was a rapid increase in the number of tourist departures to both East and West after 1963. The number of Czechoslovak citizen trips to the West increased from 72,000 to almost 720,000 between 1963 and 1969. Following a period of indecision by the Czechoslovak leadership after August 1968 (which explains why the number of departing tourists peaked in 1969), the gates to the West were practically closed. In October 1969, all exit permits already granted for trips to Western countries were declared invalid. As a consequence, the number of citizen trips to the West declined in 1970 and 1971, and in 1972 was less than one-fourth the 1969 figure, smaller than in 1964.⁸

Poland, in contrast, began to move in the opposite direction after the riots of December 1970. In 1971 Polish citizen trips reached a new high of almost 1.1 million. The previous high was in 1966 (950,000 trips). In 1971 citizen trips abroad increased by 23 percent, a high growth rate compared with the 10-percent increase in 1970. Departures to the West also achieved a new high. Liberalizing trends reached their zenith in 1972 when Poland entered into a bold experiment of passport-free and currency-restriction-free travel with East Germany, an experiment that lasted for 1 year only. The initiative for this agreement reportedly came from the East German Government which wanted to show its citizens that the DDR mark was convertible in a neighboring socialist country. Poland was receptive to the proposed agreement as one avenue of reducing domestic tensions after the events of December 1970. But both parties greatly underestimated the problems that would be created by this liberalization measure, an important and instructive experience for all CEMA countries, to which we turn next.

⁷ For example, in Czechoslovakia there is a 125 percent, and in Poland a 150 percent surcharge on the Western tourist exchange rates when Czechoslovak and Polish citizens travel to the West. That is, while a Western tourist gets 14.92 Czechoslovak crowns for \$1, the Czech citizen has to pay 33.56 crowns to obtain a dollar for travel purposes. Even so, only 22 percent of the applications for HC allotments in 1972 were granted (*Süddeutsche Zeitung*, January 24, 1973). This percent does not include those who travel at the invitation of Western relatives and who can buy a total pocket allowance of \$8-16, depending on destination.

⁸ No comparable restriction has been imposed on travel to socialist countries, although the number of Czechoslovak tourists to the East has remained approximately the same during 1967-72. It is interesting to note that in the 1972 agreement liberalizing certain restrictions for East German tourists going to Czechoslovakia, an agreement that has resulted in about 6.5 million East German citizen trips to Czechoslovakia in 1972 against 1.2 million in 1971, Czechoslovakia did not reciprocally ease restrictions on travel to East Germany, so that the number of Czechoslovak citizen departures to East Germany increased only to 495,000 from 320,000 in 1971.

Experiments To Liberalize Travel Within CEMA

The Polish-East German experiment illustrates not only the link between tourist policy and politics, but also the considerable difficulties which stand in the way of significant further liberalization of intrabloc tourism. When the agreement was signed providing for unrestricted travel and apparently unlimited exchange of Polish and East German currencies,⁹ officials expected a 1 to 2 million two-way flow of visitors during 1972. Instead, more than 16 million tourists crossed borders: 9.5 million Poles to East Germany and 6.8 million East Germans to Poland.¹⁰ The reason was the speculative retail buying opportunities created by the freedom to travel and exchange currency, resulting in a buying spree of unforeseen proportions. Purchases by Poles in East Germany well before the year ended amounted to 120 million East German marks and by the East Germans in Poland on the order of 75 million East German marks.¹¹ The Poles concentrated on buying high-quality consumer goods (household appliances, televisions, and clothing), the Germans, some types of food and gasoline. The situation became so critical that East German citizens were unable to buy certain goods in their own stores in the border region. As a consequence, Polish tourists were resented and in some cases officially harassed. On January 1, 1973, currency restrictions were reinstated by the Poles, but somewhat eased on April 24, 1973.

There was one other, though not quite similar, experiment in liberalization in 1972, again involving East Germany, with Czechoslovakia. The background for this experiment is important. After the implementation of the Brezhnev doctrine in August 1968, in Czechoslovakia, with participation by East German troops, the number of East German tourists in Czechoslovakia decreased by 77 percent (from 1.3 million visitor trips in 1968 to less than 300,000 in 1969), and remained below 1967-68 levels through 1971. To encourage travel to Czechoslovakia, an agreement was signed in late 1971 which abolished exit visas for East Germans traveling to Czechoslovakia, without, however, Czechoslovakia granting an equivalent advantage to its citizens traveling to East Germany. As a result, 6.5 million citizen trips were made to Czechoslovakia by East Germans against less than 1.2 million in 1971. Once again, a sudden buying spree occurred, forcing Czechoslovak authorities to introduce export restrictions soon after the agreement came into effect on January 25, 1972. The export of over a dozen consumer items was banned altogether, and the export of other items was permitted only to those holding export permits linked with a 100-percent export levy.¹²

One might draw an analogy between liberalizing the movement of people and the movement of commodities within CEMA. The fewer the restrictions—the more multilateral the flow and the settlement of transactions—the more trade and travel contributes to the economic integration of the bloc. Thus, to the extent that integration is viewed

⁹ The Poles could purchase East German marks and other CEMA currencies at the official tourist exchange rate plus a 15-percent surcharge (Pick's Currency Yearbook, 1972, p. 420). We have no information on any surcharge the East Germans might have had to pay.

¹⁰ *Rocznik Statystyczny* 1973, p. 538.

¹¹ *Die Welt*, Nov. 30, 1972.

¹² Foreign Trade Minister's Decree No. 4, Feb. 10, 1972, as cited in Radio Free Europe Research Report, Nov. 21, 1972, p. 16.

as desirable, a liberalization of paper and currency restrictions on intrabloc travel would be consistent with the pursuit of that objective. But as the Polish-East German experiment has shown (and as we observe also in commodity trade which remains bilateral), the institutional framework for CEMA integration has not yet been created.

The two principal problems for tourism are: (1) large differences among countries in the availability, quality, and retail price structure of consumer goods; and (2) inconvertibility of earnings by the net exporters of tourist services within CEMA. The first problem gives rise to uncontrollable "shopping sprees" disrupting the supply line of consumer goods and generating ill feelings by the people of one country against the people of another country, forcing authorities to reinstitute controls.¹³

The second problem is more hidden but is no less important. Since CEMA countries do not have a universally accepted means of payment to settle intrabloc transactions, a procedure had to be found to transfer net balances from the tourist account to the commodity clearing account; that is, to enable the debtor to settle with commodity deliveries. In 1963 a uniform coefficient of 3.4 was agreed upon to convert balances denominated in domestic rubles to the commodity clearing account denominated in so-called "transferable rubles," which are held at the CEMA bank.¹⁴ As it turned out, the coefficient was, or subsequently became, too high and thus the resulting settlement unfavorable to the creditor countries, that is, to the net exporters of tourist services (Bulgaria, Czechoslovakia during the 1960's, Hungary, and Romania), and quite favorable to the net importers of tourist services (East Germany, Poland, and, we assume, the U.S.S.R.).¹⁵ In 1971 the coefficient was finally changed to 2.3, on a uniform basis for all CEMA countries. But whatever the coefficient, the principal problem is that net tourist earnings cannot be converted freely into commodity imports. The debtor country's central planners offer only a limited choice of goods, and often not those the creditor country would like to import. In contrast, the debtor country's tourists have a practically unlimited choice of goods at the retail level in the host country. Many of these goods are heavily subsidized for reasons of domestic income distribution, but subsidizing purchases by foreigners is unwelcome. There are no similar problems, of course, in exporting tourist services to the West. Western tourists pay in currencies that are fully convertible, which can be used freely to import goods from the world market.

The Political Economy of Western Tourists in East Europe

It is conventional wisdom in East and West that increased contact with Western visitors tends to cause ideological "contamination," weakening political control by the central authorities in EE. Neverthe-

¹³ A Czechoslovak official is cited as complaining: "They (the East Germans) come over here with their heavy marks and they buy up all the fruit in sight. Then they lecture us about how much better life is in the GDR." *Time*, October 1, 1973, p. 36.

¹⁴ Domestic ruble values are obtained by converting net bilateral balances in EE currencies to rubles at intrabloc tourist exchange rates, newly established in 1963. These were determined on the basis of purchasing power parities of currencies, based on a uniform and supposedly representative standard market basket. The coefficient of 3.4 was reportedly arrived at on the basis of the relationship between the domestic prices in the Soviet Union and the foreign trade prices (CEMA average?) of the agreed new basket (Adam Zwass, "Die Devisenkurse im RGW-Raum," *Quartalshefte der Girozentrale*, VII:3 (1972), p. 233-4).

¹⁵ Czechoslovakia resisted especially strongly settlements at this rate and succeeded, through a series of bilateral agreements, to reduce the coefficient from 3.4 to the range of 2.0 to 2.2 (Zwass, "Die Wahrung im Aussenhandel der RGW-Lander," *Vienna. Institut fur Internationale Wirtschaftsvergleiche, Forschungsberichte No. 8, May 1973, p. 42).*

less, EE countries, with the exception of Czechoslovakia and East Germany, apparently decided to expand Western tourism, taking the position that the economic benefits of increased hard-currency revenues more than offset the political cost of citizen contact with Western tourists. Efforts are being made, however, to minimize the political costs by attempting partial isolation of Western tourists from the population. For this, EE authorities tend to rely on the personal preferences of tourists, such as the tendency of Western visitors to stay in the best hotels and resort areas, rather than on bureaucratic controls, as in the U.S.S.R.¹⁶ Authorities also try to screen the personnel in regular contact with Western tourists. For example, Balkan-tourist managers in Bulgaria stress that when hiring tourist personnel, they give as much weight to ideological and political considerations as to professional qualifications.¹⁷ The population is also regularly reminded that too frequent or the "wrong kind" of contact with Westerners is a punishable antistate activity.

It is difficult to assess with any certainty the political effects of a continued increase in Western tourists in EE. We tend toward the view that from the perspective of decisionmakers in EE shortrun political costs can be minimized. It is certainly not beyond the realm of possibility that a large inflow of Western visitors, rather well off on the average, might create a popular backlash against Western tourists (the "ugly German" syndrome) as they crowd the highways and beaches, buy up scarce consumer items, and obtain preferential treatment. To be sure, some of this backlash might be directed against the EE governments for encouraging these developments.

One of the most important longrun consequences of increased tourism from the West might be its "demonstration effect." An increasing flow of Westerners in EE may contribute to the frustrations and discontent among East Europeans who are unable to travel to the West because of restrictions. This may heighten pressure on EE regimes to liberalize travel to the West. Next to owning a car, tourism is the most important economic goal of the average Pole, according to a survey published in Poland.¹⁸ The rest of the population elsewhere in EE certainly feels no different from the Poles.

III. TOURIST FLOWS, REVENUES, EXCHANGE RATES

Number of Tourists

East Europe has emerged during the last decade as one of the most dynamic new tourist areas of the world. Table 1 shows the number of tourist arrivals by individual E.E. country in 1965 and 1972, and breakdown according to visitors from Socialist and non-Socialist countries. We find that by 1972 the 6 E.E. countries had approximately 25 million visitor arrivals, of which 18 million (71 percent) came from Socialist and 7 million (29 percent) from non-Socialist countries. Whereas several West European countries and Yugoslavia record

¹⁶ A new Romanian beach resort area on the Black Sea, Olimp, is reportedly reserved entirely for West German tourists. In this resort area the German mark is the "exclusive" means of payment (Vilagazdasag (Budapest), February 10, 1973). In Bulgaria, each nationality is lodged in its own hotel on the Black Sea coast, with the East German facility at one end of the beach, and the West German on the other (Richard Burks, "Survey of Political Issues in East European Economics," in this Compendium).

¹⁷ Pogled (Bulgaria), November 20, 1972.

¹⁸ Tygodnik Demokratyczny, April 25, 1971.

the number of incoming visitors on the basis of arrivals at accommodations (most of these are bona fide tourists), CEMA countries collect statistics on the basis of frontier arrivals, which thus includes transits as well as excursionists who stay less than 24 hours. Comparisons of tourist flows among E.E. countries and with Western countries are therefore difficult because the proportion of transits and excursionists in the total varies substantially from country to country. For example, less than 60 percent of Hungary's frontier arrivals are genuine tourists spending more than 24 hours in the country.

TABLE I.—VISITOR ARRIVALS TO EAST EUROPEAN COUNTRIES AND THE U.S.S.R. IN 1965 AND 1972 AND AVERAGE ANNUAL GROWTH OF VISITOR ARRIVALS, 1965-72

(In thousands and percent)

Country	Total (thousands)		From Socialist countries				From non-Socialist countries				Average annual increase, 1965-72 (percent)
			1965		1972		1965		1972		
	1965	1972	Thou- sands	Per- cent	Thou- sands	Per- cent	Thou- sands	Per- cent	Thou- sands	Per- cent	
Bulgaria.....	1,084	3,007	447	41	1,486	49	637	59	1,521	51	16
Czechoslovakia.....	2,947	4,699	2,329	79	3,907	83	618	21	2,792	17	8
East Germany.....	NA	6,491	NA	-----	3,391	52	NA	-----	3,100	48	NA
Hungary.....	2,136	6,386	1,706	80	5,426	85	430	20	4,960	15	17
Poland.....	1,163	2,185	973	84	2,553	83	190	16	313	17	8
Romania.....	676	2,906	475	70	2,300	79	201	30	606	21	23
Total, East Europe.....	8,006	25,354	5,930	74	18,063	71	2,076	26	7,292	29	13
Yugoslavia ⁶	2,658	5,140	436	16	479	9	2,222	84	4,660	91	10
U.S.S.R.....	1,264	2,300	553	44	(1,449)	(63)	711	56	(851)	(37)	9

¹ Of which 940,000 are Turks, most of them transiting through Bulgaria.

² 1971 data. 1972 data are not representative because they reflect temporary opening of Czechoslovak and Polish borders to unrestricted East German travel, which swelled the 1972 arrival figures as follows: Czechoslovakia, from Socialist countries 10,600,000, of which 6,500,000 were East Germans; Poland, from Socialist countries almost 8,000,000, of which 6,800,000 were East Germans.

³ 1971 data. Latest data available.

⁴ The number of tourist arrivals and their composition was as follows: total 3,600,000, of which from Socialist countries, 2,600,000 (71 percent); from non-Socialist, 1,100,000 (29 percent).

⁵ Excludes East Germany.

⁶ Based on accommodation arrivals statistics, which accounts only for visitors staying overnight.

⁷ Breakdown of Socialist and non-Socialist arrivals is based on 1970 composition, the latest year for which information is available.

Source: Obtained or reconstructed from a variety of official sources. For full documentation, see Paul Marer and John Tilly, "The Tourism Industry in the Soviet Union and Eastern Europe: Travel Flows, Earnings, and Prospects." Bloomington: Indiana University, International Development Research Center, forthcoming.

The average annual growth rate of visitor arrivals in the five CEMA countries from 1965 to 1972 was 13 percent. During this same period visitor arrivals in 13 OECD countries which also record according to frontier arrivals increased only 9 percent per annum.¹⁹

During this 7-year period the number of arrivals increased more than fourfold in Romania, about threefold in Bulgaria and Hungary, and twofold in Yugoslavia. Relatively small increases were registered by Czechoslovakia and Poland, and no information is available for East Germany.

A breakdown of visitor arrivals between those from Socialist and Western countries reveals that more than nine-tenths of tourist arrivals in Yugoslavia are from the West. On the other hand, the only CEMA country where more than half of the visitor arrivals are from non-Socialist countries is Bulgaria (51 percent), but even here more than half of Western arrivals are Turks transiting through Bulgaria.

¹⁹ OECD, "International Tourism and Tourism Policy in OECD Member Countries, 1973," Paris, 1973. Cited figure is based on chart on p. 13.

In all other CEMA countries Western visitors account for anywhere from 16 percent (Poland) to 30 percent (Romania) of the total. In Hungary, which is an important transit country for tourists from other Socialist countries, the Socialist-non-Socialist breakdown excluding transits is 71-29 percent.

Revenues, Expenditures, Net Earnings

TOTAL

Table 2 presents total revenues, expenditures, and net earnings of individual EE countries, as available, for 1960-72. Expenditures represent direct currency allowances granted for travel abroad.²⁰ Net earnings are defined as the difference between revenues and direct expenditures by departing citizens. We find that total 1972 revenues of the five EE countries (no data available for East Germany) came to well over half a billion dollars. Expenditures were considerably smaller than revenues in four of the five countries. The exception was Poland, with 1972 expenditures of \$241 million, six times as much as in 1971, due to a since-then-restricted "free tourism" experiment with East Germany.

²⁰ Yugoslavia records every withdrawal from private foreign exchange accounts made either in cash or in checks as expenditure on tourist travel abroad, although a considerable part of this money is spent on purchases. "Yugoslav Survey," vol. XIII, November 1972, p. 79.

TABLE 2.—TOURIST REVENUES (R), EXPENDITURES (E), AND NET EARNINGS (b) OF INDIVIDUAL EAST EUROPEAN COUNTRIES, 1960-72
[In millions of current dollars]

Country	1960			1961			1962			1963			1964			1965			1966		
	R	E	b	R	E	b	R	E	b	R	E	b	R	E	b	R	E	b	R	E	b
Bulgaria													30.1			40.2			40.2		
Czechoslovakia													40.3			39.4			47.9	29.6	18.3
East Germany																28.0			40.0	17.0	23.0
Hungary	5.8			8.2			8.8			18.0						12.2	29.5	-17.3	13.6	40.0	-26.4
Poland	5.3	8.0	-2.7	6.6	9.9	-3.3	7.1	13.1	-6.0	9.3	15.0	-5.7	11.2	17.8	-6.6	24.9					
Romania	5.8			9.6												24.9					
Yugoslavia	18.4	7.2	11.2	26.2	11.4	14.8	40.2	9.6	31.6	66.7	7.9	58.8	68.6	12.8	55.8	81.0	18.0	63.0	116.7	34.2	82.5
Country	1967			1968			1969			1970			1971			1972					
	R	E	b	R	E	b	R	E	b	R	E	b	R	E	b	R	E	b			
Bulgaria							78.0	4.5	73.5	85.0	4.5	80.5	113.0	4.5	108.5	138.0	7.6	130.4			
Czechoslovakia	70.4	40.1	30.3	61.1	45.2	15.9	36.2	73.4	-37.2	41.9	53.3	-11.4	61.2	52.8	8.4	(100.0)					
East Germany																					
Hungary	45.0	21.0	24.0	47.9	22.3	25.6	60.5	24.7	32.9	72.4	27.6	44.8	99.6	32.0	67.6	137.6	43.2	94.4			
Poland	15.6	32.9	-17.3	19.0	21.7	-2.7	21.8	21.8	0	27.3	23.4	3.9	35.9	41.9	-6.0	106.7	241.4	-134.7			
Romania	33.5						55.1	12.3	42.8	62.2	10.7	51.5	86.1	14.2	71.9	95.6					
Yugoslavia	150.3	51.2	99.1	187.0	51.0	136.0	241.5	73.7	167.8	274.6	128.6	146.0	359.4	217.6	141.8	460.5					

¹ Estimated (see text).

Source: Obtained or reconstructed from a variety of official sources. For full documentation, see Paul Marer and John Tilley, op. cit.

Yugoslavia leads the European CEMA countries in total tourist revenues by a substantial margin: \$460 million in 1972, almost as much as the revenues of the five CEMA countries combined. At the next revenue tier we find Bulgaria and Hungary (\$138 million each), then Poland and Romania (approximately \$100 million each), followed by Czechoslovakia whose 1972 revenues are not yet available but which probably surpassed the \$100 million mark on account of the large increase of East German visitors in 1972, following the special agreement described in the previous section.

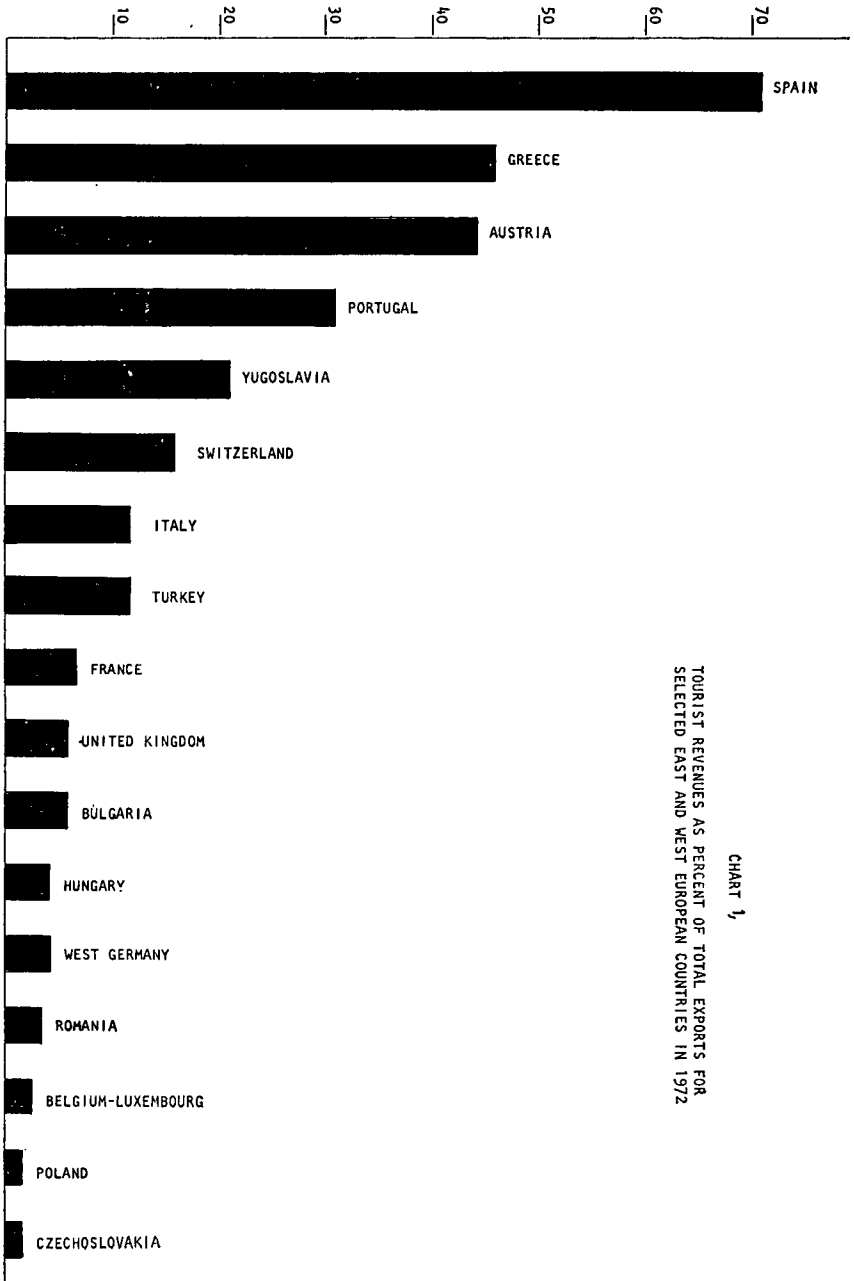
Gross tourist expenditures tend to be smaller than gross revenues, except in Poland. Particularly striking are the cases of Bulgaria and Romania, noted for their "one-way" tourism. These countries severely restrict the number of tourists who can go abroad and the amount of foreign exchange allocated to them, resulting in expenditures that amount to only about 5 percent of revenues in Bulgaria and 16 percent of revenues in Romania.

Turning to net earnings, Yugoslavia is once again in a league by itself, with \$141 million in 1971. But whereas CEMA countries are far behind Yugoslavia in total tourist revenues, the gap between Yugoslavia and CEMA countries in net earnings is much smaller because CEMA countries tend to restrict the outflow of tourists while Yugoslavia is more liberal in this respect. By the early 1970's three CEMA countries, Bulgaria, Hungary, and Romania, had been able to obtain a positive balance on the tourist account in the range of \$75 million to \$135 million. Lagging far behind are Czechoslovakia and Poland where relatively small surpluses and deficits alternate over the years.²¹

One measure of the economic importance of tourism is the size of gross revenues relative to total export earnings. Chart 1 presents these ratios for EE countries for which data are available, for Yugoslavia, and for selected West European countries. While tourism is beginning to represent a significant source of revenues relative to exports in EE (2-5 percent), and in Yugoslavia (20 percent), only in the latter country does the relative importance of tourism approach the significance of this sector in Western countries with comparable geographic location, climate, and per capita income (see sec. IV).

²¹ It is quite likely that East Germany was the only EE country until 1972 with a sizable deficit on its tourist account.

TOURIST REVENUE (PERCENT OF TOTAL EXPORTS)



TOURIST REVENUES AS PERCENT OF TOTAL EXPORTS FOR
SELECTED EAST AND WEST EUROPEAN COUNTRIES IN 1972

CHART 1

HARD CURRENCY VERSUS SOFT CURRENCY

Of particular significance in EE is the composition of revenues and net earnings according to hard currencies (HC) and soft currencies (SC), which is summarized in table 3 for 1971, the latest year for which this breakdown is available or could be estimated. HC tourism is defined as travel to and from Western countries, where convertible currencies, which can be used freely for purchases in any Western country, are used.

TABLE 3.—TOURIST REVENUES, EXPENDITURES, AND NET EARNINGS OF INDIVIDUAL EAST EUROPEAN COUNTRIES AND THE U.S.S.R. BY SOCIALIST (SOFT CURRENCY) AND NON-SOCIALIST (HARD CURRENCY) GROUPS OF COUNTRIES IN 1971

[In millions of current dollars]

Country	Tourist revenues	Expenditures	Net earnings	Hard currency revenue as percent of total revenue	Expenditures as percent of revenues	
					Soft currency	Hard currency
Bulgaria:						
Soft currency.....	67.1	3.5	63.6}	41	5	2
Hard currency.....	45.9	1.0	44.9}			
Czechoslovakia:						
Soft currency.....	30.4	45.3	-14.9}	50	149	24
Hard currency.....	30.8	7.5	23.3}			
East Germany:						
Soft currency.....	39.7	5.4	34.3}	49	56	17
Hard currency.....	227.5	40.1	187.4}			
Hungary:						
Soft currency.....	54.5	18.5	36.0}	45	34	30
Hard currency.....	45.1	13.5	31.6}			
Poland:						
Soft currency.....	20.0	38.0	-18.0}	44	190	25
Hard currency.....	15.9	3.9	12.0}			
Romania:						
Soft currency.....	36.0	5.4	30.6}	58	15	18
Hard currency.....	50.1	8.8	41.3}			
Total East Europe:						
Soft currency.....	200.8	112.4	88.4}	49	56	17
Hard currency.....	227.5	40.1	187.4}			
Yugoslavia:						
Soft currency.....	10.8	32.6	-21.8}	48 ¹	300	53
Hard currency.....	348.6	185.0	163.6}			
U.S.S.R.:						
Soft currency.....	NA	NA	NA}	NA	NA	22
Hard currency.....	96.0	21.0	75.0}			

¹ Excludes East Germany; its soft currency balance is almost certainly in deficit.

Source: Obtained or reconstructed from a variety of official sources. For full documentation, see Paul Marer and John Tilley, *op. cit.*

We find:

HC revenues account for about half of total revenues in the five European CEMA countries combined, but nearly all of the revenues of Yugoslavia. This is because CEMA countries consider Yugoslavia an HC country, so passport and currency allocations for travel to Yugoslavia are almost as restricted as travel to Western countries.

The proportion of HC revenues in the total is substantially larger than the proportion of visitors from non-Socialist countries, mainly because the average per capita spending of Western tourists is much larger than the average per capita spending of tourists from Socialist countries. Bulgaria is an exception because more than half of its visitor-arrivals from non-Socialist countries are Turks, mostly transiting through Bulgaria.

HC expenditures tend to be a smaller proportion of HC revenues than SC expenditures are of SC revenues, which reflects the tighter restrictions on East Europeans traveling to the West. As a result of stronger restrictions on travel to the West than to the East, in 1971 the six European CEMA countries combined obtained net NC earnings of \$187 million, which is about double the amount of net SC earnings of \$88 million, although gross HC and SC revenues were nearly the same, about \$200 million each.

One index of the relative degree of liberalization on travel to the West is the ratio of HC expenditures to HC revenues, shown in the last column of table 3. On this basis Yugoslavia appears to be the most liberal, with more than half of HC revenues being spent on travel to the West, followed by Hungary, where the proportion is about one-third.²² The most restrictive by far is Bulgaria (2 percent), followed by East Germany and Romania (14 and 18 percent, respectively).

Economic Importance of Hard-Currency Earnings

One measure of the economic significance of net HC earnings from tourism is their potential contribution toward financing the HC trade deficits of these countries. East European countries have had sizable and recurring trade deficits with HC countries in recent years, with the exception of Poland until 1972. For instance, during 1960-71, Romania showed a trade deficit with OECD countries as a group for every year, while the U.S.S.R., Hungary, Bulgaria, Czechoslovakia, and Yugoslavia recorded deficits for at least 10 of 12 years during this period. If we compare net HC earnings from tourism for 1971 with average HC trade balances of 1969-71 (table 4), we find that the net HC tourist revenues made a potentially significant contribution toward financing the trade deficits of the EE countries (no information for East Germany) and the U.S.S.R., except in the case of Poland, whose small HC earnings supplemented its small HC trade surplus. Since there are significant differences in EE's export and import trade with OECD countries, depending upon whether EE or OECD data sources are used, table 4 shows EE's trade balance according to both sets of statistics.²³ We find that the HC tourist earnings of Bulgaria in 1971 more than covered its annual HC trade deficit with OECD, averaged over the previous 3 years, as reported by EE sources. In the case of other CEMA countries, the proportion of trade deficit with OECD covered by net HC earnings ranged from about one-fifth to more than one-half, depending upon the country and set of trade statistics.

²² Hungary reportedly has a policy of maintaining a certain proportion between HC tourist revenues and expenditures: according to the Minister of Internal Trade, approximately 30-35 percent of HC revenues are allocated to Hungarians traveling to the West (Népszava, Aug. 1, 1972).

²³ For a discussion of the problem of East-West mirror trade statistics, see Paul Marer and Egon Neuberger, "Commercial Relations Between the United States and Eastern Europe: Options and Prospects," in this Compendium.

TABLE 4.—NET HARD-CURRENCY (HC) TOURIST EARNINGS OF INDIVIDUAL EAST EUROPEAN COUNTRIES AND THE U.S.S.R. IN 1971 AND AVERAGE ANNUAL HARD-CURRENCY TRADE BALANCE WITH OECD (1969-71) AND THE UNITED STATES (1969-73)

[In millions of current dollars]

Country	Average annual HC trade balance with OECD, 1969-71		Net HC tourist earnings in 1971	Average annual HC trade balance with United States					
	EE source	OECD source		EE source			U.S. source		
				1969-71	1972	1973	1969-71	1972	1973
Bulgaria.....	-39	-78	44.9	-1	0	NA	-6	0	-3
Czechoslovakia.....	-95	-40	23.3	-4	-31	NA	-1	-21	-45
East Germany.....	-191	-123	NA	-33	-56	NA	-21	-5	-17
Hungary.....	-98	-74	31.6	-21	-27	NA	-15	-10	-18
Poland.....	16	146	12.0	34	17	NA	36	27	-175
Romania.....	-180	-155	50.2	-32	-37	NA	-39	-37	-60
Total East Europe.....	-587	-324	NA	-57	-134	NA	-46	-46	-318
Excluding East Germany.....	-396	-201	162.0	-24	-78	NAY	-25	-41	-301
Yugoslavia.....	-898	-881	163.6	-52	-----	NA	-43	-----	-----
U.S.S.R.....	-167	155	75.0	-63	-428	NA	-68	-452	-1,045

Source: Trade data: Indiana University, International Development Research Center, International Trade Information Management System (based on official OECD and East European sources); net HC tourist earnings: Table 3.

To gain another perspective, net HC tourist earnings of EE and Yugoslavia are juxtaposed with these countries' trade with the United States. During 1964-71 the United States had a continuous trade surplus with the U.S.S.R. and all EE countries except Poland and (in some years) Czechoslovakia. As of 1973 the United States had a surplus with all EE countries (table 4) and the consensus is that, barring unforeseen political developments, the U.S. surplus position will be strengthened during the next decade. The most important economic constraint on the expansion of U.S. trade with these countries. One source of foreign exchange could be their HC earnings from tourism, which should be of particular interest to the U.S. because these earnings are not "tied," as is often the case with EE's export earnings in a number of HC Western countries, under formal or informal bilateral agreements.

The level of EE's trade with the United States has been depressed up to now. But as relations are being normalized, United States-EE trade is beginning to move toward levels commensurate with the economic and trade potentials of the two partners. Still, it is of some interest to note that EE's net HC earnings from tourism in 1971, \$162 million, would have been more than ample to cover EE's average 1969-71 trade deficit with the U.S. if these earnings were to be used for this purpose. These earnings also would have been adequate to finance EE's trade deficit with the United States in 1972 and, if Poland is excluded, in 1973. On an individual country basis, Bulgaria, Hungary, Romania and Yugoslavia can be expected to have sufficient HC earnings from tourism to provide a significant revenue source to finance their prospective trade deficits with the United States, if net earnings were to be allocated for this purpose.

Should one wish to assess net return on investment in tourism, one would need to take into account the import content of tourist investment and services, particularly HC import content, which is not published. We estimated directly induced Western imports on the basis of a methodology found in a Western study.²⁴ A high, average,

²⁴ Michael Peters, *International Tourism*, pp. 238-241

or low import content estimate (9, 6, or 3 percent of total HC revenues) was applied, as appropriate. Subtracting induced HC imports from net HC earnings reduces net earnings very little as is shown in table 5 below:

TABLE 5.—HARD-CURRENCY TOURIST REVENUES, NET EARNINGS, AND NET EARNINGS LESS INDUCED HARD-CURRENCY IMPORTS OF INDIVIDUAL EAST EUROPEAN COUNTRIES AND THE U.S.S.R. IN 1971

Country	Hard currency tourist revenues (1)	Hard currency net earnings (2)	Hard currency earnings less induced hard currency imports (3)
Bulgaria.....	45.9	44.9	40.9
Czechoslovakia.....	30.8	23.3	21.5
East Germany.....	39.7	34.3	33.1
Hungary.....	45.1	31.6	27.7
Poland.....	15.9	12.0	11.5
Romania.....	50.1	41.3	36.9
Yugoslavia.....	348.6	163.6	133.2
U.S.S.R.....	96.0	75.0	72.2

Source: Col. 1 and 2, table 3; col. 3. For full documentation, see Paul Marer and John Tilley, *op. cit.*

Growth of Tourism

Table 6 shows the rate of growth of tourist revenues of individual EE countries and Yugoslavia, for a longer term and for a more recent period, and the growth of net earnings for the longest period for which data were available. We find that EE has achieved a rapid increase in the tempo of its earnings: the average annual rate of increase of gross revenues for 1965–71 for the five European CEMA countries was 18 percent, for 1969–71, 25 percent. This is a rather impressive performance when compared with the 8.7 percent annual increase of tourist revenues of 16 West European countries combined during 1965–71.²⁵

TABLE 6.—RATE OF GROWTH OF GROSS TOURIST REVENUES AND NET EARNINGS OF INDIVIDUAL EAST EUROPEAN COUNTRIES, BY SELECTED PERIODS, 1960–72

[Percent per annum ¹]

Country	Gross revenues					
	Long term		Short term ²		Net earnings	
	Years ³	Percent	Years ³	Percent	Years ³	Percent
Bulgaria.....	1964–72	21	1969–72	21	1969–72	21
Czechoslovakia.....	1964–71	5	1967–71	—4	1966–71	—17
Hungary.....	1960–72	31	1968–72	30	1966–72	27
Poland.....	1960–71	19	1967–71	23	1960–71	None
Romania.....	1961–72	23	1969–72	20	1969–71	30
East Europe ⁴	1965–71	18	1969–71	25	1969–71	49
Yugoslavia.....	1960–72	31	1968–72	25	1960–71	26

¹ Compound annual growth rates calculated on the basis of end-year data. Regression growth rates were not obtained because of missing data for some intervening years.

² Choice of end years was determined by the availability of data.

³ Subperiod of 4 yr or less.

⁴ 1971 end-year chosen because 1972 revenues are extraordinary on account of the temporary Polish-East German agreement.

⁵ Excludes East Germany.

Source: Table 2.

²⁵ OECD, *International Tourism and Tourism Policy in OECD Member Countries, 1967*, p. 47 and 1973, p. 73. The annual growth rate was calculated by summing tourist revenues of 16 European OECD countries for 1965 and 1971 and using these end-year totals.

Even more spectacular is the performance of those four countries which sometime during the 1960's had assigned a high priority to developing their tourist industry. In these four countries, each of the following statistics increased by at least 20 percent per annum: (1) gross revenues over a longer period (8 to 13 years, depending on the availability of data); (2) gross revenues over a recent shorter period (4 years or less); and (3) net earnings (for whatever period data could be found). The performance of the four countries with respect to these indicators is as follows (in percent): Bulgaria: 21, 21, 21; Hungary: 31, 30, 27; Romania: 23, 20, 30; and Yugoslavia: 31, 25, 26.

The "takeoff" point of tourism in Bulgaria, Hungary, and Romania was in the mid-1960s; in Yugoslavia, about 5 years earlier. Why have three of the six CEMA countries embarked on an expansion course in their tourist sector during the 1960's? And why haven't the others? The reasons, we speculate, are geographic, economic, and political.

The majority of tourists the world over seek sun, water, and low prices. Bulgaria and Romania have sun and water and also the lowest prices within the region for Western tourists, as we shall demonstrate below. Thus, in many respects Bulgaria and Romania are like Portugal and Spain. In addition, the Rila mountains of Bulgaria and the Transylvanian Alps and Carpathian mountains of Romania offer mountaineering in the summer and skiing in the winter. Both Bulgaria and, especially, Romania are endowed with hot mineral springs renowned internationally for their therapeutic effects. Hungary, although landlocked, offers Lake Balaton, the largest lake in central Europe, as an attractive summer recreation area. Hungary and Bulgaria also serve as main transit countries, Hungary to Western as well as to Eastern tourists, Bulgaria principally to Turks traveling to and from Western Europe. We find, thus, that the North-South tourist trend, so apparent in Western Europe, is also reflected in EE.

With respect to economics, differences among EE countries in developing the tourist sector might be explained by differences among them in balance-of-payments pressures with the West. With low foreign exchange reserves, without long-term Western credits (which were generally unavailable to Communist countries until the latter part of the 1960's) and with difficulties of selling machinery and other manufactures on Western markets, the small EE countries have a rather limited option of increasing their HC earnings. One such option is tourism.

Is there a relationship between balance of payments pressures with HC countries and priority for developing the tourist sector? East European countries do not publish balance-of-payments statistics. As an approximation, we use balance-of-trade figures. A consistent trade deficit is assumed to be an indicator of pressure on the deficit country. And the larger the deficit the greater the pressure, provided that such other things as the size and composition of HC debt and the relative importance of nontrade items in the balance of payments can be assumed as being equal.

TABLE 7.—BALANCE OF TRADE RATIOS OF EAST EUROPEAN COUNTRIES AND THE U.S.S.R. WITH INDUSTRIALIZED WESTERN COUNTRIES,¹ 1960-68

[Exports as percentage of imports]								
Year	Bulgaria	Czechoslovakia	East Germany	Hungary	Poland	Romania	Yugoslavia	U.S.S.R.
1960-----	82	94	92	79	89	100	58	82
1961-----	NA	88	96	75	83	84	46	100
1962-----	97	92	101	82	93	71	60	112
1963-----	78	102	112	86	97	80	65	105
1964-----	70	91	99	75	95	71	58	95
1965-----	71	91	99	84	111	77	63	107
1966-----	58	88	83	94	98	81	67	112
1967-----	70	100	91	87	96	61	60	126
1968-----	74	88	103	90	95	64	70	115
Average ²	75	93	97	83	95	76	61	106

¹ West Europe, North America, Japan, and Oceania.

² Unweighted.

Source: Paul Marer, "Soviet and East European Foreign Trade, 1946-69: Statistical Compendium and Guide," Bloomington 1972, statistical series 1.

Table 7 shows the balance of trade ratios of individual EE countries and the U.S.S.R. with industrialized Western countries as a group.²⁶ We find that during 1960-68 Bulgaria, Hungary, Romania, and Yugoslavia—the four countries with comparatively outstanding performance in increasing tourist revenues—had significantly lower balance of trade ratios with the industrial West than the rest of CEMA. And since the balance of trade ratios of these countries had been comparatively low already during the early 1960's (in Yugoslavia already during the 1950's), before the "takeoff" of tourist development, this suggests that the stronger the pressure to earn HC to finance imports, the more likely that the economic benefit of exporting tourist services to the West will be given more weight by regimes in EE than the political cost of citizen contact with Western tourists.

With respect to politics, this variable seems to have a particularly important bearing on official attitudes toward tourism in East Germany and Czechoslovakia. East Germany has shunned citizen contacts with the West for reasons that relate to the insecurity of the regime about its international standing, the ideology of the leadership, and the need to prevent defections to the West. Only recently has it made a small but significant step, under intense pressure to be sure, toward allowing a freer movement of people between the two Germanies.

Czechoslovakia until 1968 was one of the leading tourist countries in EE. Since 1968, total tourism has increased less rapidly than in Bulgaria, Hungary, and Romania.²⁷ And for obvious political reasons, the Czechoslovak regime, like East Germany's discourages citizen contact with the West.

²⁶ Trade balance with industrial countries rather than with all Western countries is used because an overall surplus with total West may hide a deficit with the developed countries (with which trade is conducted largely in HC) and a surplus with the less developed countries (with which trade is transacted largely in a clearing currency).

²⁷ There were more visitor-arrivals in Czechoslovakia until 1967 than in any other CEMA country, but since then it has been surpassed, for example, by Hungary. Until 1967, Czechoslovakia's total revenues from tourism were larger than those of any other CEMA country; by 1971 it had been surpassed by Bulgaria, Hungary, and Romania.

"Incentive" Exchange Rates for Western Tourists

One important area where the political attitude of EE regimes toward Western tourists and the economics of West to East tourism become commingled is in the determination of exchange rates for Western tourists. Some EE countries offer more attractive exchange rates to Western tourists than others.

The official exchange rates of CEMA countries are arbitrary and in most cases have little or no relationship to the purchasing powers of these currencies. For tourists, therefore, so-called noncommercial exchange rates are established which are more favorable to the Western tourists than the official rates in all CEMA countries, except in the U.S.S.R. where the official and tourist rates are identical. Yugoslavia's official exchange rates are no longer arbitrary; they are in fact determined and periodically adjusted to reflect its approximate purchasing power, so it, too, has one exchange rate only.

Tourist exchange rates among the currencies of Communist countries are established multilaterally, on the basis of purchasing power parities, based on a uniform and supposedly representative standard market basket. But an exchange rate based on purchasing power calculations will depend very much on the choice of goods entering into the basket, particularly in EE where retail price ratios differ among countries by substantial margins. Hence, there was considerable debate in CEMA over the choice of commodities to be included in the basket preceding the 1963 determination of intrabloc tourist exchange rates.

The basis on which exchange rates for Western currencies are established by CEMA countries is not known. But it appears from inconsistent cross rates between intrabloc tourist exchange rates and East-West tourist exchange rates that every CEMA country calculates its Western tourist rates on an individual basis. Presumably, a CEMA country establishes the value of a tourist basket in domestic currency and in dollars (or DM's, et cetera), then adjusts the purchasing power coefficient so obtained, depending upon whether it wishes to encourage the inflow of Western tourists. The outflow of its own tourists to the West is of course controlled directly, as well as through surcharges on the Western tourist rates, as was noted in section II, footnote 7.

Assuming that the 1963 intrabloc tourist exchange rates were good approximations of the relative purchasing powers of bloc currencies, we can estimate which CEMA countries have especially favorable, or "incentive" exchange rates for Western tourists.²⁸ If we assume that a Western tourist could exchange dollars for domestic rubles and then convert these rubles to East European currencies, then the difference between these indirect rates for the dollar and the direct exchange rates for Western tourists in effect before the 1971 dollar devaluation would give the "incentive" rankings, relative to the official ruble/

²⁸ To the best of our knowledge, changes in CEMA-Western tourist exchange rates since the recent dollar devaluations reflect primarily changes in the official exchange rates of Western currencies. Thus, conclusions based on our analysis of pre-December 1971 CEMA-Western exchange rates probably require no modification in substance.

dollar rate for Western tourists. The percentage point differences between the direct and indirect rates are as follows:²⁹

	<i>Percent</i>
Bulgaria.....	130
Hungary.....	106
Romania.....	95
Czechoslovakia.....	51
Poland.....	41
East Germany.....	18
U.S.S.R.....	

These calculations suggest that Bulgaria sets exchange rates most favorable to Western tourists, followed by Hungary, Romania, Czechoslovakia, Poland, and East Germany.

Another insight would be provided by comparing the purchasing power of CEMA currencies with exchange rates for Western tourists. These purchasing power calculations are also difficult, among other reasons, because of the often large differences between East and West in the availability and quality of goods and services, and because official retail prices are not always representative of actual prices as products are also sold on the free market at higher prices. In spite of these difficulties, the purchasing power of CEMA currencies in terms of the West German mark (DM) was calculated recently by a West German scholar.³⁰

We then ranked CEMA currencies from the highest incentive to the highest disincentive rates, expressed as percentage point differences from estimated purchasing power, and obtained results as follows (no information for Romania):

	<i>Percent</i>
Bulgaria.....	+78
Hungary.....	+34
Czechoslovakia.....	+11
East Germany.....	-7
Poland.....	-12
U.S.S.R.....	-38

It must be stressed that the purchasing power estimates which underlie these rankings represent only rough approximations because their values will be influenced, among other factors, by the choice of goods and services included in the market basket, the weights used to construct the index, the accuracy of official prices, and differences in the availability and quality of goods. Nonetheless, we find that these rankings match very closely the previous ranking calculated according to a different method, though the absolute numbers in the two rankings are not comparable.

We find that the three countries which appear to provide a rather substantial "incentive" to Western tourists by setting favorable

²⁹ Calculated according to the following formula:

$$\frac{\text{Tourist Rate for the Dollar just prior to December 1971} \times 1.11 \text{ Dollar}}{\text{Tourist rate for the ruble in effect since 1963} \times 1 \text{ Ruble}}$$

³⁰ Berta Backe-Dietrich, "Die Offiziellen Devisenkurse und die Kaukraft einiger RGW-Länderwährungen," *Jahrbuch der Wirtschaft Osteuropas*, vol. 1, 1970, pp. 427-434. The author states that such calculations could be carried out more meaningfully for East Germany and Czechoslovakia than for other CEMA countries because retail prices were generally available and their goods and services reasonably comparable to those of West Germany. Somewhat less reliable calculations were possible for Hungary, Poland, and Bulgaria on the basis of published retail prices, and only a rough approximation could be made for the U.S.S.R. No direct purchasing power estimates were possible for the Romanian lei.

exchange rates are Bulgaria, Hungary, and Romania. The four countries which provide much smaller or no incentive, possibly even a disincentive to Western tourists, are Czechoslovakia, Poland,³¹ East Germany, and the U.S.S.R. These rankings correlate closely with what we know about the politics of East-West tourism. They also correlate positively with individual country growth rates of tourist visitors and hard-currency earnings, and in all likelihood are one of the explanatory variables behind the differential growth rates.

IV. PROSPECTS

Introduction

It is very difficult at the present state of the arts to make forecasts for the tourist sector in EE. There are important methodological and data problems—standard difficulties compounded for EE where institutional constraints are important and policy often volatile. In this section we examine some policy variables and options, then summarize the future plans of individual EE countries for their tourist sectors, considering these plans the best clues available on future policy intentions. Next we call attention to some preliminary projections of tourists flows in EE made by the IUOTO.³² East European plans and IUOTO projections suggest that, barring unforeseen political developments, a continued rapid expansion of tourism is very likely. We make some tentative, ball park estimates of what might be the net HC earnings implications of these projections. Next we attempt to test the feasibility of these projections by cross section comparisons with West Europe, and by examining the adequacy of current and prospective accommodations and service capabilities in EE. We find that EE countries fall seriously short in their tourist absorption capability and in the quality of tourist services. This raises the possibility that supply rather than political constraints may limit a rapid expansion of tourism exports, which in turn suggests that there might be new opportunities for Western participation in this sector.

Policy Variables

Much of the discussion in sections II and III has been a review of past policies of EE countries, as reflected in their growth of visitor arrivals, tourist revenues, control measures, and attempts to dismantle the controls. There is a strong pent-up demand for travel within EE, which the authorities had begun to release by relaxing bureaucratic and currency controls. An interesting paradox: within the bloc there is considerable political pressure to import tourist services from other CEMA countries (i.e., to send tourists to other socialist countries), but strong economic factors against exporting tourist services to bloc partners. In contrast, there is considerable economic pressure to export tourist services to the West, but strong political factors weighing against it. The outcome of these competing pressures has by no means been uniform throughout EE.

³¹ Orbis does issue "bonus coupons" (67 percent premium on the tourist exchange rate) to tourists spending more than \$50.

³² International Union of Official Travel Organizations, an agency affiliated with the United Nations.

For these reasons, too, it would be dangerous to extrapolate past trends, particularly for intrabloc tourism. While EE regimes will certainly be more cautious in the future about premature liberalization schemes, there is no reason to assume that a gradual relaxation of controls would not stimulate intrabloc tourism. The rate at which intrabloc tourism will expand will probably be determined by the extent of restrictions remaining on East-West travel (if a tourist cannot go to the West, his second choice might be to travel within CEMA), and the success of efforts to solve the institutional problems that now hinder expansion.

The following measures would promote tourism within CEMA:

(1) A move toward equalizing retail price ratios, and the availability of goods among countries, by price changes eliminating the most glaring dissonances;

(2) An effective and enforceable tariff system on consumer items;

(3) More frequent adjustments of intrabloc tourist exchange rates; and

(4) Full or partial convertibility of net tourist earnings, by settling balances with convertible currencies or commodities relatively scarce within the bloc.

It is also difficult to predict future trends in West-East tourism, particularly for countries which have not yet moved far in this sector. We have seen that in 1972 even East Germany had begun a cautious liberalization. Should the Soviet Union decontrol its tourism, then perhaps even its staunchest allies could not remain far behind.

Plans

East European countries plan to expand and improve their tourist services, with the possible exception of East Germany, whose plans are not known. In some cases the expansion is aimed specifically to attract Western tourists (Bulgaria, Poland, Romania, and Yugoslavia); in others the goal is to expand tourist services to meet increased demand from domestic tourists and visitors from socialist countries (Czechoslovakia); in still another case the objective is to expand and improve tourist services to both Western and socialist tourists (Hungary).

Bulgaria's development program is typical of countries which plan to expand their tourist base to meet increased demand by Western tourists. A comprehensive new 15-year program for the development of the tourist industry was recently outlined by the chairman of the State Committee on Recreation and Tourism, Ivan Vrachev. The program has detailed plans for constructing new buildings, reconstructing and modernizing existing facilities, and reorganizing the industry to accommodate visitors the year around to end the seasonality problem. New construction will be centered along the Black Sea coast, but will also include spas and mountain regions because these have the greatest untapped tourist potential. The program plans to expand the number and variety of services, which are rather primitive at present, to meet demands of visitors with different tastes and incomes.³³ Bulgaria is hopeful that this program will increase the share of Western tourists in the total and thereby add significantly to its net HC earnings.

³³ *Ikonomicheski Zhivot*, August 22, 1973. During 1972-73, Bulgaria had eliminated visa requirements for all incoming tourists.

The development programs in Bulgaria, Hungary, Poland, and Romania envisage a doubling to tripling of foreign exchange revenues in the next 5 to 10 years, with increased share of the total from HC sources. EE countries and Yugoslavia are generally optimistic about the development of their tourist industries, with Yugoslavia and Bulgaria having the most supportive attitude and highest anticipations, followed by Romania, Hungary, and Poland. Czechoslovakia and the U.S.S.R. appear to lag behind.

Some Projections

PROBLEMS OF METHODOLOGY AND MEASUREMENT

To develop a satisfactory forecast of future tourist trends, one would need a model that includes knowledge about motivations to travel, and explicitly treats such issues as government policies in East and West. Even for Western countries there is no generally accepted forecasting methodology. The IUOTO, which has done extensive tourist forecasting, states that: "Experience indicates that tourist forecasts cannot be compressed into a mathematical model regardless of its degree of sophistication and the number of factors covered."³⁴ Worse still, only fragmentary data are available on certain key variables, such as HC-SC revenue breakdowns. Moreover, there are problems of definition (tourist against visitor). These problems are compounded in EE where there are sharp breaks in the series due to volatile shifts in policy and control measures (c.f. the Polish-East German experiment).

In spite of these difficulties, the IUOTO projected on the basis of past trends that by 1980 the West Europe to EE plus Yugoslavia flow would be 12-15 million departures and the reverse flow 1.5-2 million departures. Intrabloc departures were projected as 25-30 million. Arrivals were forecast independently, assuming a slackening of growth rates after 1975. After reconciling departure and arrival statistics, they projected total arrivals in Europe by 1980 of 180-200 million, of which EE plus Yugoslavia will account for 40-50 million.³⁵

Revenues almost always grow faster than the number of tourists because per capita expenditures tend to rise and length of stay to increase. Combining known EE plans and IUOTO projections, we make some highly tentative estimates of what the net HC earnings implications might be by 1975 and 1980. Assuming a uniform 10 percent (or a more optimistic 15 percent) annual increase in HC tourist revenues, with HC tourist expenditures amounting to about 20 percent of revenues for the five CEMA countries (U.S.S.R. and East Germany excluded) and 50 percent of revenues for Yugoslavia, then by 1975 the five CEMA countries combined would have approximately \$225 (\$275) million to spend on Western imports from this source alone, while Yugoslavia alone about \$250 (\$300) million. The comparable figures for 1980 are \$370 (\$550) million for the CEMA five and \$410 (\$610) million for Yugoslavia. If we assume that during the 1970's the U.S.S.R. and East Germany will gradually open up their borders to Western tourists, then a combined net HC tourist earnings for the U.S.S.R. and the seven East European countries by 1980 of \$1.0 billion (in 1971 dollars) would be a conservative, and of about

³⁴ IUOTO, Pilot Study on Long-Term Forecasts. Geneva (n.d., about 1972):

³⁵ IUOTO, op. cit., pp. 116B and 118C.

\$1.5 billion an optimistic estimate. Of course, if restrictions on travel from EE to the West were eased significantly, so that direct HC expenditures would rise substantially above 20 percent of HC revenues, this would reduce net HC revenues from the levels estimated above.

Feasibility of Rapid Expansion

EAST-WEST COMPARISONS

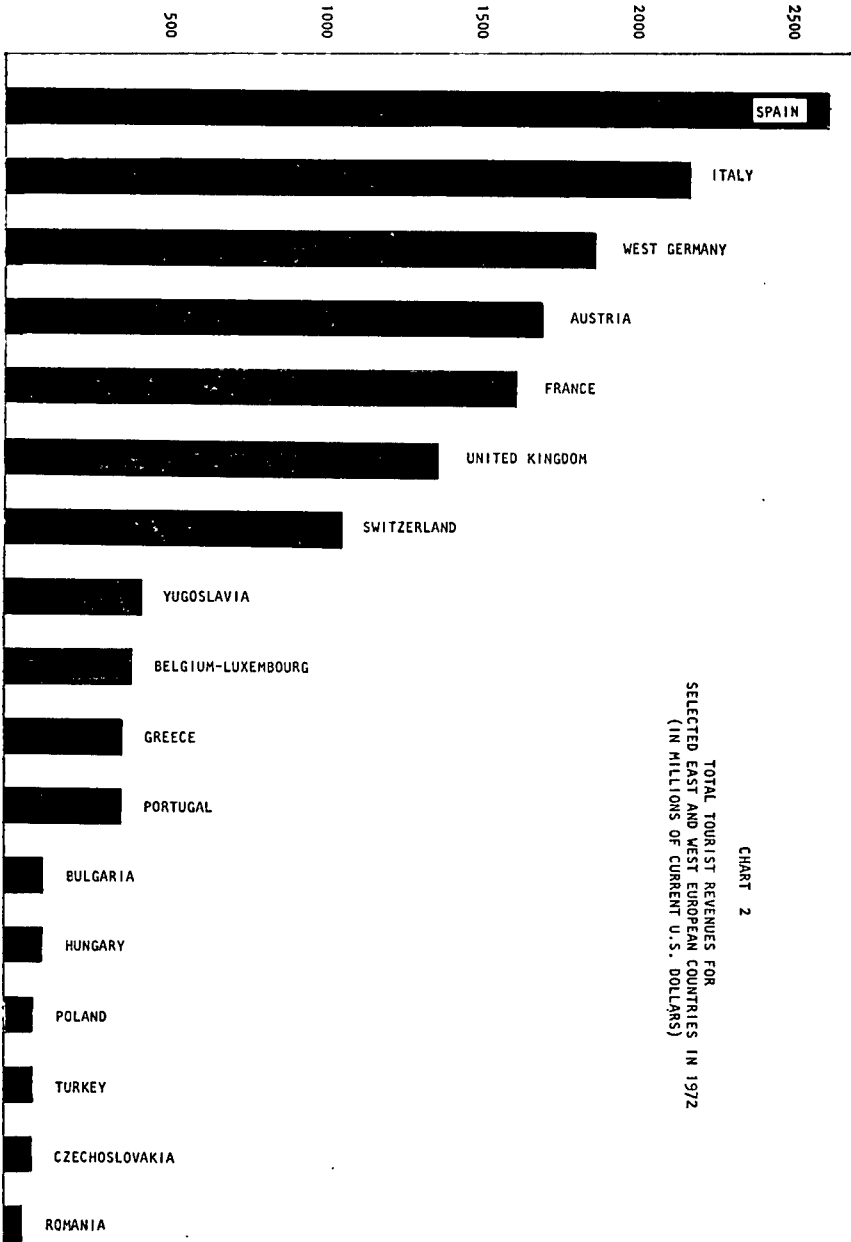
Chart 1 has shown total tourist revenues as percent of commodity exports, for selected East and West European countries. Chart 2 shows total tourist revenues in dollars for the same countries.

We find that EE countries are far behind West Europe and Yugoslavia. In 1972 Spain led all West European countries with \$2.6 billion tourist revenue (70 percent of its commodity exports), followed by Austria, the United Kingdom, and Switzerland. The five CEMA countries and Yugoslavia combined earned less revenue than Switzerland alone, suggesting in a rough and ready way, that tourism is still an "infant industry" in EE. To be sure, a direct comparison of revenues, even revenues as percent of exports, is somewhat misleading, because the level of earnings and the ratio of tourist revenues to commodity exports are influenced by such variables as (1) climate and a large seacoast; (2) geographic location (whether a country is near the main international tourist routes); (3) the level of per capita income (with which revenue/export ratios appear to be inversely related); (4) language and political considerations; and (5) which countries have been traditional exporters of tourist services, and for how long. On most of these considerations West European countries retain decided advantage over EE.

Somewhat more indicative of potential might be a comparison of pairs of Eastern and Western countries which are somewhat similar with respect to the nature of their main tourist attractions, their geographic locations, and level of development. On this basis, too, we find that EE countries have a long way to go before the importance of their tourism relative to their total exports approaches those of Western countries. For instance, in Czechoslovakia the 1972 tourist/export ratio was 2.0, whereas in Austria it was about 44. Even when one compares Czechoslovakia with countries like West Germany and Belgium-Luxembourg, the Western ratios are somewhat higher. Romania and Bulgaria might be compared with countries such as Spain, Portugal, and Turkey, countries having sun, water, and approximately the same level of per capita income, and all being located somewhat "off" the main international tourist routes. The differences in ratios are quite large, 3.7 and 5.6 for Romania and Bulgaria versus 70.0, 30.4, and 11.7 for Spain, Portugal, and Turkey, respectively.

Unsophisticated as these comparisons are, they suggest that if Western Europe is any indicator of potential for the tourist industry, there is considerable room for further expansion of EE earnings from tourism, with the potential for expansion probably being substantially greater than for commodity exports.

TOURIST REVENUES (MILLIONS OF DOLLARS)



THE SUPPLY FACTOR

If EE and Yugoslavia expect 40 to 50 million tourist (*sic*) arrivals by 1980, with something like one-third to two-fifths of arrivals in EE from the West (and more than nine-tenths in Yugoslavia from the West), then these countries must solve their supply bottlenecks. These relate to the quantity as well as quality of accommodations and services. All EE countries are experiencing acute shortages of accommodations, particularly during the peak season. The number of beds per thousand population in this region and selected West European countries has been compiled from a variety of sources and is shown in the tabulation below.³⁶

East Europe:		West Europe:	
Yugoslavia.....	10.0	Austria.....	70.0
Bulgaria.....	7.2	Switzerland.....	41.4
East Germany.....	4.2	Italy.....	25.5
Czechoslovakia.....	4.1	France.....	23.8
Romania.....	3.2	Spain.....	21.9
Hungary.....	2.8	United Kingdom.....	14.5
Poland.....	1.5	West Germany.....	13.0
		Belgium.....	12.0
		Turkey.....	0.8

The attainment of at least 10 beds per thousand population may be considered a bare minimum goal if an EE country hopes to compete strongly with the most developed tourist countries in the West. At present only Yugoslavia attains this goal, Bulgaria approaches it, the other EE countries lag far behind.

Another important problem is the high degree of seasonality of tourism. To alleviate this problem, the development of lesser-known tourist areas is essential. This will require, first, an increased investment in basic facilities and then an improvement in the level of services until these approach Western standards. More quality hotels and better services with well-trained personnel will be needed to attract Western tourists. In order to increase HC earnings, entertainment facilities, handicraft shops, and related tourist amenities must be increased and improved. Most tourist income in EE is derived from payments for food and accommodations; in contrast, only a little over one-third of tourist expenses worldwide involve payment for food and lodging.³⁷

Another precondition for the continued rapid growth of tourism in EE is improvement in the infrastructure. Specifically, transportation bottlenecks have a crucial impact on tourists who travel by car. In general, the road networks and service stations in EE are much below Western standards. Yugoslavia has probably the best highway network in the region, but even this is very poor by West European standards.³⁸ In all EE countries a relatively poor highway network and few service stations hinder the expansion of tourist and transit traffic. In the future, other EE countries besides Yugoslavia might find it desirable to attract Western capital and technology for highway construction.

³⁶ Due to differences in statistical definitions, CEMA countries' bed capacity may not be fully comparable with those of Western countries.

³⁷ Pogled, November 20, 1972. Another Bulgarian source noted that while retail trade and the selling of souvenirs account for 30 percent of Italy's revenue from international tourists, the comparable figure for Bulgaria is only about 10 percent (Ikonomicheski Zhivot, December 1, 1972).

³⁸ Yugoslavia's principal road along the Adriatic was partly financed by a loan from the World Bank (H. David Davis, "Investment in Tourism," Finance and Development, March 1967).

Western Participation

Western participation in the EE tourist industry has been small up to now, but the potential for East-West cooperation in this sector is quite good. The most typical East-West cooperative agreement up to now has been hotel franchising. This is an arrangement under which the Western partner provides technical assistance,³⁹ and access to its worldwide reservation system, while the Eastern partner supplies the capital, undertakes the construction, and provides management. A hotel built under franchise is fully owned by the Eastern partner; the Western partner receives a share of HC revenues from room sales.

The Intercontinental Hotels Corp. has been a leader in franchising in EE, with hotels in Zagreb, Bucharest, Budapest, Prague, and Warsaw. Other U.S. corporations, such as the Hilton Hotels, and Holiday Inns, have also been active.⁴⁰ The most recent newcomer is the Japanese firm Nippon Kohatsu which signed an agreement to construct, on credit, a 500-room luxury hotel in Sofia by 1977, with the bulk of materials and equipment being shipped from Japan.⁴¹ For Sofia alone, Bulgaria is planning 10 new hotels with a total of 5,000 beds. They are seeking Western participation and are negotiating with Swedish, Italian, and Japanese firms.⁴² The Japanese have also made it clear they want to do business in this sector with other East European countries also.

There are prospects for more advanced East-West cooperative agreements, such as joint ventures, in some East European countries. According to a leading Romanian official we interviewed, Romania would be interested to explore such undertakings in the tourist sector, but would prefer ventures in which partners share in the risk as well as in the profit. In our view, a key to successful joint ventures in this as well as in other fields is not so much ownership but management: will the Western partner have a right to hire, fire, and to provide incentive wage-scales to employees in jointly owned and managed enterprises?

³⁹ Construction and design consulting, engineering services such as communication design, training of personnel, and promotional services.

⁴⁰ Cyrus S. Eaton, Jr., Chairman of Tower International, has reportedly held talks with Soviet officials about financing a series of luxury hotels in the Soviet Union (The New York Times, February 6, 1974).

⁴¹ EastWest Markets, December 17, 1973, p. 5 (newsletter of Chase World Information Corporation).

⁴² EastWest Markets, March 25, 1974, p. 5.

