

95th Congress }
2d Session }

JOINT COMMITTEE PRINT

ISSUES IN EAST-WEST COMMERCIAL
RELATIONS



A COMPENDIUM OF PAPERS

SUBMITTED TO THE

JOINT ECONOMIC COMMITTEE

CONGRESS OF THE UNITED STATES



JANUARY 12, 1979

Printed for the use of the Joint Economic Committee



U.S. GOVERNMENT PRINTING OFFICE

WASHINGTON : 1979

36-144

JOINT ECONOMIC COMMITTEE

(Created pursuant to sec. 5 (a) of Public Law 304, 79th Cong.)

RICHARD BOLLING, Missouri, *Chairman*
LLOYD BENTSEN, Texas, *Vice Chairman*

HOUSE OF REPRESENTATIVES

HENRY S. REUSS, Wisconsin
WILLIAM S. MOORHEAD, Pennsylvania
LEE H. HAMILTON, Indiana
GILLIS W. LONG, Louisiana
PARREN J. MITCHELL, Maryland
CLARENCE J. BROWN, Ohio
MARGARET M. HECKLER, Massachusetts
JOHN H. ROUSSELOT, California

SENATE

WILLIAM PROXMIRE, Wisconsin
ABRAHAM RIBICOFF, Connecticut
EDWARD M. KENNEDY, Massachusetts
GEORGE MCGOVERN, South Dakota
JACOB K. JAVITS, New York
WILLIAM V. ROTH, JR., Delaware
JAMES A. McCLURE, Idaho
ORRIN G. HATCH, Utah

JOHN R. STARK, *Executive Director*

LETTERS OF TRANSMITTAL

JANUARY 12, 1979.

To the Members of the Joint Economic Committee:

Transmitted herewith for use by the Joint Economic Committee, the Congress, and the interested public is an assessment of current issues in commercial relations between the United States and the Eastern bloc entitled "Issues in East-West Commercial Relations." This collection of papers and statistical materials is designed to serve the committee and the Congress by providing an up-to-date body of data and analysis on East-West economic issues.

The papers in this volume grew out of a Workshop on East-West Commercial Relations requested by the committee and organized by the Congressional Research Service of the Library of Congress. The emphasis of the compendium is on the question of technology transfer and the financing of East-West trade. Materials on the problems and potential of East European nations' exports, agricultural trade, and maritime practices round out the volume.

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, Ronda A. Bresnick, and George D. Holliday, who planned the original workshop, helped outline the research for this volume and edited the individual papers.

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

Sincerely,

RICHARD BOLLING,
Chairman, Joint Economic Committee.

JANUARY 8, 1979.

HON. RICHARD BOLLING,
*Chairman, Joint Economic Committee, U.S. Congress,
Washington, D.C.*

DEAR MR. CHAIRMAN: Transmitted herewith is a collection of materials on trade and financial relations between the United States and the Eastern bloc entitled "Issues in East-West Commercial Relations." The volume includes studies by specialists at the Congressional Research Service, the Commerce Department's Bureau of East-West Trade, Department of Defense, Department of State, and academic institutions. This collection of papers grew out of an April 1978 Workshop on East-West Commercial Relations that was sponsored by the Joint Economic Committee and conducted by the Congressional Research Service of the Library of Congress.

The study focuses on the questions of technology transfer and the financing of East-West trade that formed the heart of the Workshop agenda. Sections on the impact and potential of Eastern bloc exports to the West, agricultural trade and maritime practices have been included to round out this volume.

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 the Joint Economic Committee, individual members thereof, or the committee staff.

The Library of Congress made available the services of John P. Hardt, Ronda A. Bresnick, and George D. Holliday of the Congressional Research Service, who organized the workshop, coordinated and edited the volume, and contributed individual papers to it.

Edward J. Jacobs of the committee staff provided valuable printing and editorial assistance.

Sincerely,

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

Enclosure.

THE LIBRARY OF CONGRESS,
CONGRESSIONAL RESEARCH SERVICE,
Washington, D.C., January 3, 1979.

HON. RICHARD BOLLING
*Chairman, Joint Economic Committee,
U.S. Congress,
Washington, D.C.*

DEAR MR. BOLLING: During the 1970's, issues concerning East-West commercial relations were prominent on the congressional agenda. The increased volume of U.S. trade with Communist countries has generated considerable debate and important policy decisions on various aspects of East-West trade. The Export Administration Act of 1969 and subsequent amendments in 1974 and 1977 have focused attention on the issue of transferring technology to the East. The Trade Act of 1974, with its Freedom of Emigration Amendment highlighted the question of MFN tariff treatment for Communist countries and linked it to human rights observance in those countries. Both the Trade Act and Amendments to the Export-Import Bank Act have changed the ground rules for U.S. Government financing of East-West trade. Each of the policy areas remain the focus of considerable congressional attention.

On April 5, 1978, in response to the request of the Joint Economic Committee, the Congressional Research Service held a Workshop on East-West Commercial Relations. The purpose of the workshop was to identify the key issues in East-West commercial relations, raise questions germane to congressional policy interest or to legislation concerning East-West relations, and generate discussion.

This study focuses on the issues of technology transfer and finance, the topics central to the workshop discussions. Chapters on agriculture and maritime affairs have been added to highlight those important issues.

The workshop was chaired by Dr. John P. Hardt, Associate Director of Congressional Research and Senior Specialist in Soviet Economics, and Dr. Kent H. Hughes of the Joint Economic Committee staff.

The compendium of papers was coordinated and edited by Ronda Bresnick, George Holliday, and John Hardt of the Office of Senior Specialists and Economics Division of CRS.

It is understood that the views contained in this study are not necessarily those of the Congressional Research Service nor of the U.S. Congress.

Sincerely,

GILBERT GUDE,
Director, Congressional Research Service.

CONTENTS

	Page
Letters of Transmittal.....	iii
ISSUES IN EAST-WEST COMMERCIAL RELATIONS	
The Setting: The Congress and East-West Commercial Relations— Ronda A. Bresnick.....	1
Part I. EAST-WEST TECHNOLOGY TRANSFER	
Chapter 1. Technology Transfer Policies—Joseph S. Nye, Jr.....	15
Chapter 2. Technology Exports and National Security—Maurice J. Mountain.....	22
Chapter 3. Quantification of Western Exports of High Technology Products to Communist Countries—Hedija Kravalis, Allen J. Lenz, Helen Raffel, and John Young.....	34
Chapter 4. The Role of Western Technology in the Soviet Economy— George D. Holliday.....	46
Chapter 5. Technology Transfer and Change in the Soviet Economic System—John P. Hardt and George D. Holliday.....	59
Chapter 6. Economic Development and Modernization in Contemporary China: The Attempt To Limit Dependence on the Transfer of Modern Industrial Technology From Abroad and To Control Its Corruption of the Maoist Social Revolution—Robert F. Dernberger.....	91
Part II. EASTERN EXPORTS TO THE UNITED STATES AND OTHER WESTERN COUNTRIES	
Chapter 7. Communist Exports to the West in Import Sensitive Sectors— Karen Taylor and Deborah Lamb.....	125
Chapter 8. Soviet-East European Export Potential to Western Countries— Hedija H. Kravalis.....	168
Chapter 9. A Summary of U.S. Laws Applying to Imports of Communist Products—Karen Taylor.....	173
Part III. FINANCING EAST-WEST TRADE	
Chapter 10. Communist Country Hard Currency Debt in Perspective— Lawrence H. Theriot.....	179
Chapter 11. Potential 1980 and 1985 Hard Currency Debt of the USSR and Eastern Europe under Selected Hypotheses—Allen J. Lenz.....	186
Chapter 12. Statistical Abstract of East-West Trade Finance—William F. Kolarik, Jr.....	193
Chapter 13. The Theoretical Capacity of the U.S. Commercial Banking System for Financing East-West Trade—William F. Kolarik, Jr.....	210
Chapter 14. The Potential Role of Eximbank Credits in Financing U.S.- Soviet Trade—Allen J. Lenz and Lawrence H. Theriot.....	217
Chapter 15. Impact of Eximbank on U.S. Exports—Jane Gravelle.....	227
Part IV. UNITED STATES-SOVIET AGRICULTURAL TRADE	
Chapter 16. Soviet Agriculture and the Grain Trade—Ronda A. Bresnick and John P. Hardt.....	235
Part V. MARITIME PRACTICES	
Chapter 17. Maritime Developments Involving the Soviet Union, the United States, and the West—John P. Hardt.....	247

Part VI. PROBLEMS AND PROSPECTS

	Page
Chapter 18. United States-Soviet Trade Policy—John P. Hardt-----	267

APPENDIX

Executive Response to Chairman Bolling's Letter-----	287
Chronology on East-West Commercial Relations—Ronda A. Bresnick---	297
East-West Trade Statistics:	
U.S. Agricultural and Nonagricultural Trade with Centrally Planned Economies, 1972-77-----	306
U.S. Trade with Centrally Planned Economies: Top 15 Exports and Imports, by Country-----	308
Trade of Industrial Western Countries with Centrally Planned Economies, 1972-76-----	315
Status of U.S. Commercial Relations With Communist Countries-----	321
Membership of Communist Countries in International Economic-Commercial Organizations-----	322

THE SETTING: THE CONGRESS AND EAST-WEST COMMERCIAL RELATIONS

BY RONDA A. BRESNICK*

CONTENTS

	Page
Overview.....	1
East-West trade: Two schools of thought.....	3
The administration of export controls and the technology transfer issue....	4
The Carter administration and East-West trade.....	8
The linkage of economic cooperation to political gains.....	9
Prospects for East-West trade and commercial relations.....	10

OVERVIEW

U.S. trade with the Communist world has grown rapidly in the 1970's. While it is still small in comparison with overall U.S. foreign trade, considerable significance has been attached to East-West trade because of the prospects for future growth and, more importantly, because of the linkage of commercial ties with East-West political relations. Congressional consideration of important legislation relating to East-West trade has been influenced by increased interest in the U.S. business community in trade with the East, continued efforts by the Administration to achieve improved relations with the Soviet Union and China, and controversy about certain aspects of Soviet foreign and domestic policies.

Various U.S. legal restrictions have contributed to the low level of U.S. trade with Communist countries. Three of the most important restrictions—denial of most-favored-nation tariff (MFN) treatment, restrictions on U.S. Government credits and export controls—have been at the center of Congressional interest in recent years. The denial of MFN and the restrictions on government credits (from the Export-Import Bank and the Commodity Credit Corporation)¹ have affected those non-market economy countries unwilling to adhere to the provision of the Trade Act of 1974 which ties such privileges to certain standards of free emigration. This provision has been waived by the President for Romania and Hungary.

The administration of controls—to prevent the export of goods and technology which are considered to have military implications—on U.S. exports to Communist countries has been of considerable interest to the Congress in the late 1960's and throughout the 1970's.

*Research Assistant in Soviet Economics, Congressional Research Service, Library of Congress.

¹The Commodity Credit Corporation (CCC), an agency which provides short-term financing for U.S. agricultural exports, has provided significant credit assistance in East-West trade. It played an important role in the 1973-1974 grain sales to the USSR, providing a total of \$550 million in credits for the purchase of U.S. grains. Poland and Romania continue to receive export credits from the Commodity Credit Corporation. Under the Jackson-Vanik Amendment to the Trade Act the Soviet Union is denied access to the CCC as well as the Export-Import Bank.

Legislation in this area has been characterized by steady liberalization, beginning with the Export Administration Act of 1969 and then continuing with amendments in 1974 and 1977.

Congressional interest in East-West trade during the 95th Congress focused primarily upon extending and amending the Export Administration Act of 1969. Other aspects of East-West commercial relations, including the regulation of rate cutting practices of state controlled carriers engaged in the foreign commerce of the United States, the extension of MFN status for Romania and Hungary, the availability of U.S. government credits from the Export-Import Bank, and the stimulation of U.S. agricultural exports to the East by extending Commodity Credit Corporation (CCC) credits to all non-market economy countries, were also taken up by the 95th Congress.

While there were several laws passed which touched upon the issue of East-West commercial relations, the Export Administration Amendments of 1977—amending and extending the Export Administration Act of 1969—was the most far-reaching and may have the most significant impact upon future trade between East and West. The 1977 Amendments represent a significant effort by the Congress to strengthen the framework for East-West trade by facilitating the export of U.S. goods and technology while clarifying and simplifying the export licensing process.

It seems likely that the Congress will continue to take an active interest in export controls as it holds oversight and budgetary hearings and as the Executive Branch reviews and reports on export administration rules and regulations as mandated by law. In addition, because the Export Administration Act expires in September 1979, it must be addressed in the 96th Congress.

It also appears likely that there will be a closer examination of the issue of extending official U.S. credits and other trade privileges to Communist countries. There seems to be some sentiment for modifying (but not repealing) the Jackson-Vanik amendment to the Trade Act of 1974, and the Stevenson and Church amendments to the Export-Import Bank Act of 1974.²

These efforts have in part been motivated by an interest in maintaining an evenhanded policy to the USSR and China. By amending the law to extend credits and other trade privileges to all non-market economy countries, preferential treatment is avoided.

Other modifications to the Trade Act and Export-Import Bank Act, relevant to non-market economy countries, seem to be motivated by an interest in adding flexibility to the President's waiver authority with respect to emigration while at the same time maintaining adequate congressional oversight and consultation.

While facilitating the extension of credits and most-favored-nation tariff treatment to Communist countries is likely to be under active

² The proposed Stevenson amendments (S. 339) to the Export-Import Bank Act and the Trade Act would: (1) delete provisions in the Export-Import Bank Act and the Trade Act which single out the USSR for discriminatory treatment with respect to credits, (2) establish a new limitation on Bank support for U.S. exports to any single Communist country, and (3) revise the "waiver" provisions concerning emigration practices and eligibility for MFN treatment and Eximbank credits.

The proposed AuCoin amendments (H.R. 1835), similar to the Stevenson amendments, would: (1) empower the President to make a determination that the granting of a waiver to Section 402 of the 1974 Trade Act would "lead substantially to the achievement of free emigration objectives", (2) extend the duration of a Presidential waiver to five years, after the first extension, (3) establish a new limitation on Eximbank support for U.S. exports to all non-market nations of \$2 billion.

consideration in the 96th Congress, the resolution of these issues will take place within the larger context of the SALT agreements and continued normalization with the PRC.

EAST-WEST TRADE: TWO SCHOOLS OF THOUGHT

In the Congress, as well as the Executive and academic community, two major schools of thought exist concerning the costs and benefits of East-West trade; one which emphasizes the mutual benefits derived from trade and the importance of continued economic interdependence, and the other which emphasizes the adversarial nature of East-West relations and the desirability of maintaining economic independence when dealing with the East.

1. Mutual Benefit and Economic Interdependence

Given stable market conditions and an acceptable degree of military risk, there are those who view East-West trade as mutually advantageous. Expressing the likelihood that U.S. high technology products, plants and processes may find an expanding long-term market that will not only yield a profit but, by permitting larger scale U.S. production will also keep costs down via economies of scale and R&D outlays up, this school of thought emphasizes the significant economic benefits that may be derived from East-West and U.S.-USSR trade.

Over time, through a modest but increasing economic involvement, it is further believed that the Soviet Union and other Eastern countries may develop a stake in the economic well-being of the West and, therefore, encourage policies emphasizing world market stability. A shift in the East away from military concerns toward more peaceful objectives such as economic growth and improved consumer welfare is seen as possible from increased modernization, in part through East-West trade. Although general political benefits may accrue from trade, the use of direct economic leverage for specific political gain is judged to be ineffective.

These views, close to those of many West European governments, might facilitate a more coordinated US-West European economic policy towards the East.

2. Adversarial Nature and Economic Independence

There are those within the Congress, the Executive and the academic community who view any benefits accrued to the East as costs to the West and vice versa. This group also believes that, because East-West trade is small by comparative measures, it is not likely to be economically significant to most U.S. businesses or to the economy as a whole.

According to this school of thought the Soviet Union has much to gain from East-West trade especially by importing critical Western technology and agricultural products to meet shortfalls in plans. Soviet leaders may also wish to gain technology that would reduce pressures to reform, ease the military burden, and assist them in closing the military gap with the United States. Therefore, if the U.S. is to export to the Soviet Union at all—or to their allies who may

be considered conduits to the Soviet economy—then the maximum short term economic and political price should be exacted. As likely suppliers of the last resort, according to this school of thought, the U.S. should bargain hard on prices and seek to favorably affect Soviet domestic and foreign policy by manipulating U.S. exports and credit. Although the capacity of the United States to exercise a unilateral policy of denial is limited, efforts through NATO and other international institutions might lead to a more coordinated US-West European leverage policy.

During the 95th Congress, although legislation concerning the financing trade to the Soviet Union and the countries of Eastern Europe (including an amendment to the Agricultural Trade Act of 1978 to extend CCC credits to all non-market economy countries, and an amendment to the Export-Import Bank Act requiring the compilation of a list of countries eligible for EximBank financing, but specifically excluding the USSR) was considered, none was passed. CCC credits were extended the People's Republic of China, however.

The Export Administration Amendments of 1977 was the most significant legislation of the Carter Administration and the 95th Congress concerning East-West commercial relations. It appears to have developed new policy guidelines consistent with and within the framework of the mutual benefit-interdependence school of thought. At the same time, some of the actions of the Carter Administration seem to reflect the adversarial-independence view. It seems important, therefore, to explore the central features of the Export Administration Act and the activities of the Carter Administration in some detail for a more thorough understanding of the issues of East-West trade.

THE ADMINISTRATION OF EXPORT CONTROLS AND THE TECHNOLOGY TRANSFER ISSUE

On September 30, 1976 the Export Administration Act expired and by executive order the administration of export controls was placed under the authority of the Trading with the Enemy Act.³ In March, 1977 the House International Relations Committee held hearings on various bills to extend and amend the Export Administration Act, and on March 31, 1977 Congressman Zablocki, Chairman of the House International Relations Committee, introduced H.R. 5840 (Export Administration Amendments of 1977). On April 20, 1977 the bill was considered and passed by the House of Representatives. On May 5, 1977 after being studied by the Senate, the bill was amended and passed. Following a conference and agreement by both bodies, compromise legislation was presented to President Carter on June 13, 1977.⁴ On June 22, 1977 this legislation (referred to as the Export Administration Amendments of 1977) was signed by the President and enacted into law (P.L. 95-52).

³ On December 28, 1977 the President signed into law Amendments to the Trading with the Enemy Act (P.L. 95-223) which among other things repeals the peacetime authority of the President to regulate foreign economic transactions under the Trading with the Enemy Act of 1917. Therefore, should the Export Administration Act be allowed to expire any time in the future, the President will not have the authority to continue to exercise the administration of export controls under the Trading with the Enemy Act of 1917.

⁴ For a complete analysis of the compromise bill see House report No. 95-354.

The Export Administration Amendments of 1977 are designed to improve the export licensing process, and could have a significant impact on East-West trade. In addition to extending the authority of the Export Administration Act of 1969 to September 30, 1979, this law:

States that U.S. policy toward individual countries shall not be determined exclusively on the basis of a country's Communist or non-Communist status in administering export controls for national security purposes, but shall take into account: (a) the country's present and potential relationship to the U.S., (b) the country's present and potential relationship to countries friendly and hostile to the U.S. and, (c) the country's ability and willingness to control retransfers of U.S. exports in accordance with U.S. policy.

Allows the President to deny any request or application for authority to export items from the U.S. to any nation threatening the national security of the U.S. if the President determines that such an export would prove detrimental to the national security of the U.S.

Requires the President to periodically review U.S. policy toward individual countries and together with a justification for U.S. policy, report to Congress.

Establishes that goods freely available elsewhere should not be controlled for export from the U.S. unless it can be shown that the absence of controls would harm the national security.

Directs the Secretary of Defense to recommend a restriction on the export of goods and technology which would make a significant contribution to the military potential of any country which would prove detrimental to the national security of the U.S.

Requires the Secretary of Commerce to either act upon an export licensing application within 90 days, or inform the applicant in writing of the specific reasons for the delay. If no action is taken within 90 days, the application must be approved and the license issued.

Mandates a study by the Secretary of Commerce of the problem of the transfer of sensitive national security information by technology exchange agreements and by scientific publications.

Requires a review of the Export Administration rules and regulations under this Act and the lists of articles, materials and supplies which are subject to export controls to determine how compliance can be facilitated by simplifying rules and regulations. Results of such a review are to be reported to Congress.

Directs the President to submit a special report on multilateral export controls (the COCOM list) to Congress.

Requires a study by the Secretaries of Commerce and State to determine whether any export controls imposed unilaterally or multilaterally should be removed, modified or added to in the interest of national security.

Requires the President to conduct a study of the domestic economic impact of exports of industrial technology which require a license under the Export Administration Act.

Calls for a more effective monitoring of commodities in potential short supply by requiring that such monitoring begin at a time adequate to insure that data will be available which is sufficient to permit achievement of the policies of the act.

In addition to addressing specific export policy and procedure issues, the Export Administration Amendments of 1977 touch upon several broad concepts:

*1. The Right To Export*⁵

By calling for a simplification and limitation of export regulations and commodity control lists, the 1977 Amendments, according to the House Committee on International Relations, are aimed at revising the premise that exporting—even to possibly hostile Eastern nations—is a privilege subject to government controls. Under the earlier export control laws, most trade with Communist countries was restricted in principle. Although restrictions have gradually loosened to a point where controls are focused mainly on materials that may endanger the national security of the United States, the process of decontrolling items has been slow and complex. Removing an item from the control list has, in the past, left the burden of proof on those seeking to remove the control, thereby creating the presumption that exporting is a privilege rather than a right. Limiting and simplifying the commodity control lists broadens the premise customary in world trade that exporting is a right, like any other, which may be denied only under unusual circumstances (such as for the protection of national security).

*2. Policy Toward Individual Countries*⁶

Earlier export control policy was based on the assumption that all Communist countries (except Yugoslavia) were a threat to the national security of the United States. The 1977 Amendments attempt to move away from applying one standard export control policy to such a diverse group of countries as the Soviet Union, Albania, Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania, Yugoslavia, and the People's Republic of China. Furthermore, the 1977 Amendments encourage a continuing reassessment of export control policy toward individual countries by requiring the President to periodically review and report to Congress on the nature of U.S. policy toward individual countries. In addition, by eliminating the wording "controlled countries" from the law, the 1977 Amendments discourage any artificial grouping of countries for purposes of export control.

On June 23, 1977, one day after signing the Export Administration Amendments of 1977 into law, the President—by recommending to the Department of Commerce they deny a license to the Control Data Corporation for exporting the Cyber-76 computer to the Soviet Union—may have established a precedent for limiting certain types of technology exported to the Soviet Union. While the Cyber-76 computer

⁵ See U.S. Congress, House, Committee on International Relations, *Export Administration Amendments of 1977*. Report, 95th Congress, 1st session, April 6, 1977. Washington U.S. Government Printing Office, 1977, p. 3.

⁶ See U.S. Congress, Senate, Committee on Banking, Housing, and Urban Affairs, *Export Administration Amendments of 1977*. Report, 95th Congress.

was intended for use in processing weather forecasting data, it had potential applications for tracking missiles and for other military purposes. Although CDC spokesmen maintained they could provide adequate safeguards against any diversion of the Cyber-76 to military uses, the Carter Administration and the Department of Commerce felt the safeguards were not adequate.

Under the Carter Administration, the Executive Branch has continued to study export control and technology transfer and made efforts to put into practice the 1977 Export Administration Amendments. The Secretary of Defense, for example, in August 1977 restated definitions and guidelines regarding the Department of Defense role in controlling exports of critical U.S. technology and related products.⁷ Efforts at the Department of Defense during the last year have focused on (1) identifying and preparing a list of critical technologies and products,⁸ (2) assessing the active mechanisms of technology transfer, (3) developing a simplified criterion for product control and, (4) examining whether new administrative procedures or legislation for streamlining the existing export control system would be desirable.⁹

3. *International Technology Transfer*¹⁰

Both the nature of the commodity being transferred and the country to which it is proposed to be exported are necessary considerations in export control decisions.

Past export control decisions placed heaviest emphasis upon the political system of the recipient country (whether it was communist or non-communist). The 1977 Amendments shift this emphasis by encouraging a more thorough examination of the technology embodied in the commodity or service being exported in an effort to better identify the national security implications of exporting certain technologies.

In July 1978 another controversial decision was made by the Administration to control the export of U.S. computers to the USSR for national security reasons. President Carter recommended to the Department of Commerce that it reject a Sperry Rand license application for the sale of a Sperry Univac Computer System to the Soviet news agency TASS, on the grounds that it had excess capacity for its intended end use which could be diverted to other uses. Although the decision was made on national security grounds, the timing of the case suggested to some observers that the denial was in response to the

⁷ Secretary of Defense. Memorandum for the Secretaries of the Military Departments. Interim DOD Policy Statement on Export Control of United States Technology.

⁸ Department of Defense, Office of the Director of Defense Research and Engineering. Memorandum on List of Critical Technologies for Export Control, 29 Sept. 1977.

⁹ Statement of Dr. Ellen Frost, Deputy Assistant Secretary of Defense (ISA) and Dr. Ruth Davis, Deputy Director (Research & Advanced Technology (DDR&E)) Office of the Secretary of Defense. Before the Subcommittee on International Economic Policy and Trade, U.S. House of Representatives.

¹⁰ For discussions on technology transfer and national security and the executive report on international technology transfers required by Section 24 (c) of the International Security Assistance Act of 1977, see: *International Transfer of Technology: An Agenda of National Security Issues*. Prepared for the Subcommittee on International Security and Scientific Affairs, of the Committee on International Relations, House of Representatives. U.S. Congress, Feb. 13, 1978. Also see: *International Transfer of Technology*. Report of the President to the Congress together with Assessment of the Report by the Congressional Research service, Library of Congress. Prepared for the Subcommittee on International Security and Scientific Affairs of the Committee on International Relations, House of Representatives U.S. Congress December 1978.

Soviet government's suppression of dissidents and the conviction of two newsmen. Both computer cases illustrate the difficulties inherent in administering controls on dual use technologies.

In August, the Carter Administration announced a new procedure for administering controls on exports of items used for the exploration or production of petroleum or natural gas. The new procedure requires any U.S. exporter of such items to obtain a validated license from the Commerce Department. The announced purpose of this change was to assure that such exports "would be consistent with the foreign policy objectives of the United States." The new policy does not mean that any sales of oil and gas equipment will be barred automatically. (In fact, a major transaction, involving the sale to the Soviet Union of technology to build a plant for the production of drill bits, was subsequently approved by the Administration.) It simply provides policymakers the opportunity to review proposed transactions and to disapprove them in pursuit of U.S. foreign policy goals.

THE CARTER ADMINISTRATION AND EAST-WEST TRADE

Initiatives by the Carter Administration to encourage East-West trade have included: (1) establishing full diplomatic relations with the People's Republic of China, (2) recommending the emigration provisions under the Trade Act of 1974 be waived with respect to Romania, (3) strengthening U.S.-Polish relations highlighted by a three-day Presidential visit in December 1977, (4) signing an agreement on trade relations between the U.S. and the Hungarian People's Republic, and (5) recommending the emigration provisions under the Trade Act of 1974 be waived with respect to Hungary.

On January 1, 1979 the United States and the People's Republic of China established full diplomatic relations. An increase in trade and commercial relations between the two countries will undoubtedly follow as a result, although the volume of such relations is now uncertain. The PRC's requirements for Western technology and its more flexible attitude toward credits and other aspects of the Western market do, however, suggest a future overall widening of economic ties.

Settlement of the issue of Chinese assets blocked in the United States and U.S. private claims against the PRC will facilitate a resolution of issues such as, most favored-nation (MFN) tariff treatment for the PRC, the extension of official U.S. credits, a loosening of controls on U.S. exports to China and other facets of normalized trade. The summit between President Carter and Chinese Vice Chairman Teng Hsiao-ping in late January 1979 opened the discussion of bilateral trade issues between the two countries and paved the way for future negotiations on these difficult issues.

On June 3, 1977, President Carter recommended to the Congress that his authority under the Trade Act of 1974 to waive the freedom of emigration requirement with respect to Romania be extended for one year. Because neither the House nor Senate passed a disapproving resolution, the President's waiver authority was automatically extended and nondiscriminatory treatment with respect to trade, credit and investment was continued to Romania. Stating that trade will

serve to further promote mutually beneficial growth between the U.S. and Romania, President Carter, in his recommendation to Congress stressed the importance of maintaining and expanding this bilateral relationship for reasons such as (1) to help strengthen Romania's independent foreign policy, and (2) enhance our ability to discuss such topics as emigration, divided families and marriages cases.¹¹

On December 29, 1977 President Carter arrived in Poland for a three day visit involving discussions on: expanding U.S.-Polish trade, improving U.S. official credit arrangement for Poland, increasing U.S. exports to Poland, and human rights. Several trade and aid agreements are now pending, one as a direct result of President Carter's visit to Poland in November 1977.¹² These agreements are significant because they: provide hard currency to Poland at a time when it is facing pressing economic problems, emphasize the growing independent nature of Poland's foreign policy, and involve informal, ongoing, human rights discussions between Poland and the U.S.

On March 17, 1978 President Carter signed an agreement on trade relations between the United States and the Hungarian People's Republic. This agreement extends non-discriminatory treatment to the products of the Hungarian People's Republic; encourages, promotes, and facilitates trade; provides further business facilities to support trade; specifies that financial transactions between both parties be conducted by firms, enterprises and companies in U.S. dollars; reaffirms the commitments made with respect to industrial property in the Paris Convention for the Protection of Industrial Property; permits and facilitates the establishment and operation of a government commercial office as an integral part of each Parties Embassy; establishes market disruption safeguards; and encourages a prompt and equitable settlement of commercial disputes. The initial term of this agreement is three years. It may be extended for successive periods of three years unless either Party gave written notice of termination.

On April 7, 1978 President Carter submitted the agreement to the Congress for approval.¹³ On July 7, 1978 the agreement entered into force.

THE LINKAGE OF ECONOMIC COOPERATION TO POLITICAL GAINS

During the 95th Congress legislation concerning the U.S.-Soviet commercial relations centered primarily upon the more technical aspects of trade rather than linkage of trade to human rights issue, as had been the case in the 94th Congress. Congressional concern for human rights in the Soviet Union, still very strong, was most often expressed through the framework of existing legislation and through the forum of the Helsinki Commission. One exception was the Amendment to the Export-Import Bank Act of 1945, signed into law on October 26, 1977 (P.L. 95-143), which links human rights to the extension of

¹¹ U.S. Congress. House. Committee on Ways and Means. Subcommittee on Trade. *Most-Favored-Nation Treatment with Respect to the Products of the Socialist Republic of Romania*. Hearings July 18, 1977, GPO. 282 p.

¹² During his trip, President Carter announced that the U.S. would be extending an additional \$200 million Commodity Credit Corporation (CCC) credits to Poland. They were extended in late 1978.

¹³ See. *United States-Hungarian Trade Agreement*. Communication from the President of the United States, April 10, 1978.

loans and guarantees by requiring the Board of Directors of the Bank to consider the observances of human rights before granting credit.¹⁴

The Commission on Security and Cooperation in Europe, a major forum for Congressional concern and interest in East-West relations chose to focus its efforts on monitoring compliance with Basket Three (Human Rights) of the Helsinki Final Act during the 95th Congress. It is not clear whether the Commission wanted to tie Basket Three (Human Rights) to Basket Two (Economic Cooperation). In any case, they did not go on record advocating such a connection.¹⁵

Throughout the 95th Congress there was little indication that any legislation passed during earlier Congresses concerning the linkage of human rights to trade would be significantly revised. Carter Administration spokesmen—Secretary of State Cyrus Vance, and Department of Commerce officials in particular—expressed their hopes that Congress would take initiative to modify Section 402 of the Trade Act, but proposed no specific legislation in 1978.¹⁶

PROSPECTS FOR EAST-WEST TRADE AND COMMERCIAL RELATIONS

It appears likely that Congressional interest in East-West trade will continue to center more on the administration of export controls and less on modifying other existing legislation. Because the Export Administration Act expires in September 1979, export controls must be addressed by the 96th Congress. Indeed, as legislatively mandated studies on export administration are completed, as the CoCom list is reviewed and the Department of Defense moves toward implementing the Bucy report recommendations,¹⁷ it is likely that an increasing amount of attention will be paid to export control policy in the Congress, the Executive, and the private sector.

Although studies on simplifying, clarifying and expediting the export administration procedure have begun, it appears likely that the speed at which export license applications are processed will continue to be of great interest to the Congress as well as the business community. A status quo in the export license application process could frustrate the expediting intentions of the Congress, and limit the potential trade promoting effects of the Export Administration Amendments of 1977.

Also of particular interest will be the economic and national security implications of transferring high technology goods and services to the Soviet Union. The export of energy technology stands out as an issue of considerable concern.

¹⁴ U.S. Congress. Senate. Committee on Banking, Housing and Urban Affairs. *Extending the Export-Import Bank of 1945*. Report 95-279. 95th Congress. Note that this linkage pertains to all countries, not only the communist countries.

¹⁵ See U.S. Congress. Commission on Security and Cooperation in Europe. *Implementation of the Final Act of the Conference on Security and Cooperation in Europe: Findings and Recommendations Two Years After Helsinki*. Report transmitted to Committee on International Relations, House, Sept. 23, 1977, 194 p.

¹⁶ *Washington Post*, June 17, 1977, p. A22. There are some within the Congress and Administration who may have wished to see the Jackson-Vanik amendment repealed but—fearing a move toward protectionism might cause an undesirable modification of the Act—were reluctant to support any change at that time.

¹⁷ A task force of the Defense Science Board, chaired by Fred Bucy of Texas Instruments, recommended: (1) Licenses be withheld only for "revolutionary", not for "evolutionary" technology. (2) Restrictions be placed more on "active" mechanisms of transfer featuring training, on going contact, etc. (3) Restrictions of exports to Communist countries be extended to all nations. The purpose of the Defense Science Board proposals is to simplify and expedite the licensing process and to change the criteria for restricting high-technology exports.

In addition to issues in export administration, legislation in the next few years concerning East-West relations will most likely center upon the financing of trade, particularly as it concerns the use of U.S. official credits from the Commodity Credit Corporation and the Export-Import Bank.

It is likely that as East-West trade grows, debates will continue on such topics as financing, linkage, technology transfer and export controls. The following policy questions may be relevant to these debates:

1. Is there a useful and practical method for measuring the direct and indirect effects of international technology transfers upon U.S. national security?

2. What safeguards on high or critical technology exports, such as computers, would provide adequate protection against the possible misuses of U.S. technology for purposes that conflict with U.S. interests?

3. Should the United States government be more concerned with active technology transfer mechanisms involving transfers of know-how and less restrictive of product exports as suggested by the Bucy Report? How would that policy be implemented?

4. What effective legal and administrative options are open to the Congress and the Executive branch to develop coordinated policy on private commercial transfers of technology?

5. The countries of Eastern Europe have achieved varying degrees of independence from the Soviet Union. How can we determine whether leakage of Western technology from country to country is likely? Are East European countries automatic conduits of imported Western technology to the USSR?

6. Has the linkage of economic cooperation to humanitarian issues been a successful and productive policy? How can the Congress best evaluate the impact of linkage policy upon the U.S. and Soviet economies?

7. Would it be economically beneficial and consistent with our foreign policy interests to permit the USSR access to CCC credits for the purchase of U.S. agricultural exports?

8. How should the country eligibility for Eximbank be determined?

9. Should the United States assume an evenhanded policy toward the USSR and the PRC with respect to tariffs, credits, export licensing, and other commercial matters? How can this policy best be implemented?

Part I. EAST-WEST TECHNOLOGY TRANSFER

Technology transfer has been one of the most controversial aspects of the expansion of U.S. commercial relations with the East in the 1970's. The relaxation of national security export controls, which was given great impetus by the Export Administration Act of 1969 and subsequent amendments, has contributed to a rapid expansion of trade with the Soviet Union and other Communist countries. An important component of that trade has been the transfer of advanced U.S. technology to Communist countries.

Some observers have begun to question the wisdom of expanding sales of many kinds of technology, particularly to the Soviet Union. While the Export Administration Act provides for controls on exports which make a "significant contribution" to Soviet military potential, opponents of increased technology transfers maintain that the Soviet military sector might benefit indirectly from technologies sold for civilian purposes. For example, many technologies have both civilian and military applications. Although sold to a Soviet civilian industry, such a technology might be diverted to the military sector. In addition, Soviet acquisition of some civilian technologies might release to the military sector domestic resources which might otherwise have been needed to develop those technologies independently. The Soviet military sector might also benefit indirectly through its interaction with a civilian sector that has raised its general technological level by importing Western technology.

These arguments are rejected by observers who favor continued expansion of technology transfers to the Soviet Union. They maintain that while diversion of dual-use technologies from the civilian to the military sector is possible, it is unlikely because it is usually difficult and the risk of detection is high. They also point out that technology imports not only release domestic technology resources: they also require that complementary resources be invested so that the new technology can be effectively exploited. Thus, Western-assisted Soviet projects may compete with the military sector for some domestic technological resources. Finally, proponents of expanding technological exchanges with the Soviet Union note that U.S. companies that sell technology to the Soviet Union also benefit. If U.S. firms were denied the right to sell to the Soviet Union, Soviet importers in many cases would have access to equivalent technologies in other Western industrial countries.

Chapters 1 and 2 of this volume provide explanations of U.S. technology transfer policy by two observers who have been involved in policymaking and administration in this area. The author of Chapter One examines the special case of U.S. technology transfer to the East in the perspective of overall U.S. technology transfer policy. The author of Chapter Two focuses on the relationship between technology transfer and U.S. national security.

Many of the arguments for and against increasing technology transfers to the East are based on assumptions about the impact of Western technology on the domestic economies of the Communist countries. Chapters 3 to 6 provide insights into this question. Chapter 3, entitled "Quantification of Western Exports of High Technology to Communist Countries," examines the quantity and commodity composition of "high" technology products to the Soviet Union and Eastern Europe. Chapter 4, entitled "The Role of Western Technology in the Soviet Economy," suggests that Western technology is assuming a new, more prominent role in Soviet economic plans and provides a closer look at the resource-releasing and resource-demanding effects of technology imports. Chapters 5 and 6 provide analyses of the possible effects of Western technology transfers on domestic institutions in the Soviet Union and China, respectively.

Chapter 1. TECHNOLOGY TRANSFER POLICIES*

BY JOSEPH S. NYE, JR.

The subject of technology transfer has become increasingly important in international economic affairs in recent years. The U.S. Government and the various elements of the private sector—industry and labor—are concerned about the subject. This is certainly evident from the interest in this 2-day meeting. The subject has also received much attention in meetings of international organizations like the U.N. Conference on Trade and Development (UNCTAD) the U.N. Industrial Development Organization, the U.N. Commission on Transnational Corporations, and the Organization for Economic Cooperation and Development (OECD). Our policy is currently being reviewed in an interagency study by the executive branch in response to a request by the President. We expect the first part of this review to be completed early next year.¹

Technology transfer occurs through a diverse set of mechanisms and in a variety of situations. For example, East-West, North-South, and West-West conditions of technology transfer are all quite different. Any general description of our policy can only define the central trend, not describe each situation.

By and large the government takes a neutral position in regard to the largest part of technology transfer—that is, virtually all except East-West transfer and that involving military technology. Most American technology is transferred across international boundaries through private trade and investment by American corporations. Thus the fundamental policy of the U.S. Government toward technology transfer derives in the first instance from its attitude toward international investment—that is, to neither promote nor discourage inward and/or outward investment flows or activities.

The government ideally tries to avoid measures which would give special incentives or disincentives to investment flows and normally does not intervene in the activities of individual companies regarding international investment. This principle of neutrality flows from our longstanding commitment to a generally open international economic system, and to a considerable extent it covers the transfer of technology. But the exceptions are sometimes as important as the rule, and the underlying philosophy is somewhat more complex.

The basic philosophy of an open international economic system that underlies our policy toward the largest component of technology transfer assumes a positive sum game—that all nations are better off as a result of the transfers that occur. There is a strong logic behind this:

* Address before the Electronic Industries Association in Washington, D.C., on Dec. 7, 1977. Mr. Nye is Deputy to the Under Secretary for Security Assistance, Science, and Technology. Reprinted from the Department of State Bulletin, March 1978, pp. 38-41.

¹ For reference to one of these executive branch studies see, "International Transfer of Technology" Report of the President to the Congress, together with the Assessment of the Report by the Congressional Research Service, Library of Congress, House International Relations Committee, Dec. 1978. GPO 54 p. [Eds.]

position. The logic is strongest in relation to technology flows among developed countries. But a number of problems arise in East-West and North-South transfer of technology. To understand these problems we must go beyond economics and realize that technology is an important source of the relative power of the United States in world politics. Many aspects of power politics resemble a zero sum game—where one nation's gain is another's loss.

The most familiar aspect of the politics of technology transfer and the most frequent source of exceptions to the general rule relate to military security. The strategic nuclear balance depends on mutual assured deterrence. One reason we maintain a triad of land-, sea-, and air-base strategic nuclear systems is to use redundancy as protection against destabilizing technological breakthroughs. For the same reason, we use export licensing to inhibit transfer of technology that could significantly contribute to Soviet military potential.

We also restrict the transfer of certain aspects of nuclear technology that provide direct access to weapons-usable material because of the dangers to our security posed by the potential proliferation of nuclear weapons. We also control the export of conventional armaments to avoid introducing destabilizing military technologies into regional relationships that could ultimately affect our security. A number of important initiatives have been taken by the Carter Administration in relation to those military-security exceptions to the free transfer of technology.

The political aspects of technology transfer go beyond the military significance alone. For one thing, a strong technological lead by the United States contributes to our overall economic strength. We are concerned to maintain our overall technological strength. In addition, there are many issues in world politics today where military force is not particularly useful in achieving our objectives—for example, communications satellites, ocean resources, environmental cooperation. Yet in each of these areas, our advanced technology provides us with a potential instrument for political bargaining. Technological leadership can provide usable power.

A popular tendency in thinking about technology as a source of power is to think in simple terms of restricting its export. But technology is not like a precious metal to be hoarded. It is more like a fine Rhine wine. He who hoards it too long is left with bottles of worthless vinegar. With time, any technology will spread—as Britain found out with the textile technology in the 18th century and the United States discovered with nuclear technology in the 1940's.

It is sometimes said that the most important aspect of technology transfer is the sure knowledge that something can be done. From then on, diffusion is a matter of time. Thus a sense of timing is crucial to deriving power advantages from any eroding asset such as technological leads. Individual firms know this and act accordingly in their product cycles. A critical policy question is whether the government is capable of making refined decisions about proper timing and the positive use of technology transfer controls.

Many doubt that our governmental machinery—both executive and legislative—is capable of such finely calculated decisions. In the absence of an adequate process, they argue, the best government stance is one of neutrality with the burden of proof put upon those wishing

to restrict exports. In practice, this burden, particularly in the case of East-West trade, has tended to be placed upon military security arguments. Yet even in this area, we often encounter difficulties in making carefully balanced and refined judgments.

EAST-WEST TRANSFER

Over the past 5 years, the United States and the Soviet Union have greatly expanded their economic relationship in the field of trade although we lag behind other Western exporters in many areas. From an economic point of view, increased trade with the U.S.S.R. benefits the U.S. through higher employment, an improved balance of trade, and access to valuable raw materials. Politically, it also increases contact between our two peoples, gives the U.S.S.R. an incentive to relax its traditional isolation and play a more normal role in the world economy, and adds an element of stability to our political relations. In cooperation with other Western nations, we restrict export of goods and technological data which would make a significant contribution to the military potential of the Soviet Union and prove detrimental to our security and that of our allies.

U.S.-Soviet trade has expanded considerably since 1971. Two-way trade totaled only \$220 million in 1971 but stood at \$2.5 billion in 1976. Last year the balance of trade was strongly in our favor; exports were roughly \$2.3 billion and imports about \$220 million. Some two-thirds of our exports, however, consisted of agricultural products which involved little transfer of technology. Moreover, U.S.-Soviet trade still accounts for a small percentage of total U.S. trade. Our 1976 exports to the U.S.S.R. accounted for only 2% of our total exports, and the U.S. share of OECD technology exports to the U.S.S.R. remains far below the U.S. share of such exports to other markets.

In October 1972 the United States signed a trade agreement with the U.S.S.R. granting most-favored-nation tariff treatment to Soviet goods in return for certain Soviet commitments: a declaration of intent to place large orders for U.S. agricultural and industrial goods, provision for third-country commercial arbitration, and improved facilities for U.S. businessmen in Moscow. This agreement required legislation which became public law with the passage of the 1974 Trade Act. But this legislation contained an amendment which linked Soviet emigration practices to the nature of our trade relationship. This was not acceptable to the Soviet Union.

However, since 1972 the two governments have entered into a number of economic agreements and have expanded the framework for their commercial relations. A number of U.S. private companies have undertaken important initiatives. The U.S.-U.S.S.R. Trade and Economic Council composed of 200 U.S. firms and 100 Soviet organizations was formed in 1973. It has offices in New York and Moscow to expand U.S.-Soviet trade. Twenty-five U.S. firms have received permission to open offices in Moscow and at least 55 American firms have entered into cooperation agreements with the Soviet State Committee on Science and Technology under our basic science and technology agreement. Not all of these agreements have, however, been implemented.

A number of problems in East-West technology transfer are under current consideration. One problem, raised by the Bucy report submitted to the Defense Department last year, concerns control of key technologies. How to select the really critical technologies is a complex issue. A closely related problem is how to maintain cohesion among the Western members of the Coordinating Committee for East-West Trade Policy (COCOM) when there is a feeling among COCOM members that the COCOM list and procedures are unduly restrictive and ill-suited to the military security problem posed by the Soviet Union.

Yet another problem is how to refine internal decisionmaking procedures so that a broader conception of national security is used to make decisions. Under current procedures, precise arguments that a technology transfer has military significance, no matter how slight, tend to prevail easily over important but fuzzy arguments based upon broader national security considerations. These issues and the important trade-offs they involve are currently under discussion and review as part of the interagency study I mentioned earlier.

NORTH-SOUTH TRANSFER

The other politically difficult area in the transfer of technology is the North-South area. The transfer of technology is viewed by the developing countries as critical to achieving long-term economic growth and development. They would like to see some basic changes in the present process of technology transfer including a large measure of governmental control over the terms and conditions of commercial technology transfer from the developed countries. They claim that their right of access to technology which they regard as the "common heritage of mankind" has been limited and restricted unreasonably and that this is the main reason for their being underdeveloped.

Some of these countries have established measures under their national laws to prohibit technology suppliers from imposing any restrictions on recipients for the use of this technology. Through UNCTAD they have pressed for a mandatory code of conduct covering all forms of technology transfer to regulate the conditions under which owners of patents and other technology can license and sell their technology abroad.

On the other hand, U.S. labor unions have raised the issue of the adverse effects of foreign technology transfers on U.S. employment levels. The idea is that the flow of technology abroad enables goods to be produced in foreign countries which would otherwise have been produced in this country and, as a consequence, jobs are lost in the United States. The Congress has requested a study of the domestic economic consequences of the transfer of technology abroad in recently enacted amendments to the Export Administration Act.

It is, of course, difficult to answer the question of impact of technology transfer on balance of payments and on the U.S. labor market. These are subjects that will be addressed in substantial detail in the course of this meeting. There are a number of factors involved which may have a tendency to balance each other. While it is true that the transfer of technology from the United States to a foreign country does enable that country to produce goods that otherwise might have

been produced in the United States, it is also true that the boost given to the economic and social conditions in the recipient country will increase its absorptive capacity for other U.S. goods and that effect may equal or surpass the loss in market due to the additional production within that country. Furthermore, studies conducted at the Harvard Business School show that the net effect depends upon the likely alternatives to the transfer, and these alternatives depend upon the stage of the product cycle. Since it is often difficult to state with certainty what the alternative might have been, it is not surprising to find a certain amount of political acrimony in particular cases.

Looking at the other side of the coin, we believe that over the long run, the economic and technological development of lesser developed nations is in our national interest. We continue to believe that North-South investment flows can be an important form of transferring technology for development.

We respect the right of each country to determine the environment in which foreign investment takes place in that country. At the same time, once foreign investments have been made on this basis, these governments should not discriminate against established firms on the basis of nationality or deprive such firms of their rights under international law.

On the question of codes of conduct for multinational enterprises, we believe that they must, of necessity, be broad in nature and, consequently, they do not lend themselves easily to legally binding arrangements. However, we believe they can serve a useful purpose by providing a basis for firmer expectations of accepted behavior for both investors and host governments. In summary, we believe that broad codes of conduct should be voluntary in nature; should be balanced in reference to the responsibilities of governments and multinational enterprises; should not be used as a basis for discrimination; should abide by international law concerning foreigners' property rights; and should apply to all enterprises, whether private, government, or mixed.

The only internationally agreed code of conduct at present is the package agreed to by the OECD ministers in June 1976. We believe this was a major step toward realizing our goal of clarifying the rules for, and strengthening cooperation on, international investment.

The most important current forum for dealing with North-South investment issues is in the U.N. Commission on Transnational Corporations and its Intergovernmental Working Group on a Code of Conduct. Here we are coming to grips with some issues that divide developed and developing countries—permanent sovereignty of the state versus standards of equitable treatment and compensation traditionally maintained in international law, a binding versus a voluntary code of conduct, and responsibilities of firms versus responsibilities of governments.

I have explained in some detail the general position of the U.S. Government with respect to technology transfer through the private sector. It is essentially a noninterference policy unless the security or other vital interest of the United States is involved. We believe this is the right policy for us to follow. Loss of leadership in science and technology will not occur in this country because of normal commercial exchange in the course of doing business on an international scale. On the

contrary, the risk of loss of leadership would be much greater if we were to adopt a protectionist policy with respect to our science and technology. We believe in the ability of this country to continue to compete vigorously in an open international economic system.

In the long run developing countries can and will expand and improve their own industrialization through their own efforts as well as the normal action of private firms competing in a global economy. Government measures that obstruct technology transfer do not serve the long-term development interests we share with the less developed countries.

The U.S. Government can play a positive role through helping to strengthen the universities and research institutes in these developing countries to make them better able to absorb technology and to develop their own technology. We can also examine ways to facilitate the flow of public sector technologies. Several kinds of technology are largely in the public domain and others would not be competitive with American industrial or commercial interests. In the past the U.S. Government has provided some technical assistance in these areas, but the effort could probably be considerably increased.

First, the United States could promote the transfer of public technologies that build up the economic and social infrastructure necessary for modernization. This effort could cover technologies for electric power; public transportation; education; preventive and curative health care; agriculture productivity; water, air, and land conservation; natural disaster planning; and others.

Second, there is a large pool of unused technology now in the public domain, some of which is in the form of expired patents not now being commercially exploited but much of which are well-developed technologies that were put aside at a time when they were not competitive. A promising example is the use of forest products and agricultural residues for the manufacture of a vast range of useful materials which are now derived from petrochemicals. Some of these ignored, and now public, technologies are clearly useful and others are not. All need to be examined critically and many might be improved by cooperative ventures in research and development which could ultimately bring mutual benefit to both developed and less developed nations.

Third, we believe that the nonproprietary technologies of food processing could effectively be transferred to establish the basis of small, rural industry in developing countries. Such transfers would hardly be competitive with American industry or agriculture in a world which faces overall food shortages for the foreseeable future.

Of course, the areas in which they shall need to build up expertise will vary widely from country to country depending on their present capabilities, their own needs, their own natural resources and human resources, and their future commercial opportunities. The process will be a long one, but we believe it is the effective way to improve social and economic conditions in these countries. There is no quick and easy road to industrialization. It would be well to supplement the term technology transfer in this context with technology development. We expect these questions to be treated in the U.N. Conference on Science and Technology for Development to be held in 1979.

It is altogether appropriate that we ask ourselves why the United States should be helpful in strengthening the educational and tech-

nological infrastructure of developing countries. The reason is that over the long run, we see the development of Third World countries as reinforcing our national interest through contributing to a more stable world order. Whatever the near-term conflicts, we should see North-South transfer of technology as a positive sum game in the long run. We believe that technology transfer:

Will contribute to meeting human needs and developing human capacities and to upward mobility through the growth of indigenous technical and managerial skills;

Will promote less developed country internal economic development and independence and reduce their dependence on current aid-type programs;

Will enable the less developed countries themselves to exploit their resources and thus maintain world supply of important materials; and

Will promote the integration of less developed countries into the world economic community where, as part of that community, they can attain the transfer of technology needed for their development, remove feelings of colonial subordination, and participate in more of the positive benefits of increased economic and political integration.

I believe the workshops which will follow in the course of today and tomorrow will provide elaboration of the several points I have mentioned. I hope that I have given you some indication of the broad doctrine and policy of the U.S. Government on the important subject of technology in world affairs.

Chapter 2. TECHNOLOGY EXPORTS AND NATIONAL SECURITY*

BY MAURICE J. MOUNTAIN**

I

In the past few years, an increasingly popular subject of discussion is what has come to be known as the technology transfer problem. Broadly speaking, this is the question of whether it is in our national interest to transfer advanced U.S. technologies to other countries and the extent to which the government should attempt to regulate the process.

The recent growth in the number of public speeches, learned articles, business-sponsored seminars, academic research projects, and high-level government studies being devoted to this topic has been exponential. While much of this outpouring is devoted to political and economic considerations it is the national security aspect which appears to generate most concern. Here the central issue is whether adequate government control is being exercised over the technology being released to the Soviet Union and its Warsaw Pact allies. Some argue that government controls in this area are too tight, some that they are too loose, and some that they are ineffective in any case and probably should be dropped altogether. Some have termed the controls a "shambles" and some have even gone so far as to assert that the government has failed to recognize the importance of technology and has allowed vast amounts of it to be exported to the detriment of our national security.

Such wide variation in opinion is, perhaps, to be expected. The issue is a difficult and complex one. Moreover, it arises in a field in which, as Mark Twain once remarked admiringly about science, one can get a wholesale return of conjecture from a trifling investment of fact. However, a more likely reason for the different opinions appears to be limited acquaintance with the actual working of government controls and with the criteria by which they should be judged. Indeed, there seems to be widespread misunderstanding of the nature of technology, of how it flows abroad and of what the realistic choices are in any governmental effort to restrict its export.

This is a situation which calls for some correction. With that purpose in mind, the following observations, made from the perspective of a member of the government export control community, are intended to deal with some of the more salient aspects of the problem.

*A version of this article originally appeared in *Foreign Policy*, Number 32, Fall 1978 (Washington, D.C.).

**Dr. Mountain is the Director of Strategic Technology and Munitions Control, Office of the Assistant Secretary of Defense for International Security Affairs. The views expressed are solely those of the author and do not necessarily represent the views of the Department of Defense.

II

Any meaningful discussion of this subject must begin with a clear understanding of the terms "technology" and "national security." A very useful definition of the first of these is one formulated by J. Fred Bucy, the Chairman of a Defense Science Board Task Force which, in 1976, made an extensive study of the technology transfer problem:

Technology is not a science and it is not products. Technology is the application of science to the manufacture of products and services. It is the specific know-how required to define a product that fulfills a need, to design the product, and to manufacture it. The product is the end result of this technology, but is it not technology.¹

The second term, "national security," can be defined in many ways. In the largest sense, a nation can be said to be secure when it has achieved a state of inviolability from hostile acts or influences. More precisely, if one adopts the official usage of the Department of Defense, national security is "the condition provided by: *a.* a military or defense advantage over any foreign nation or group of nations, or *b.* a favorable foreign relations position, or *c.* a defense posture capable of successfully resisting hostile or destructive action from within or without, overt or covert."²

It is chiefly in connection with the first of these conditions—maintaining a military or defense advantage—that the question of government control of technology transfer abroad becomes important. Why this is so can most easily be understood in terms of four related propositions about today's world. They can be stated as follows:

1. The Soviet Union, as a Communist State, is chronically hostile to the fundamental political values of the West and to the continued existence of the constitutional democratic system which embodies and sustains these values.

2. To serve that hostility, the USSR and its Warsaw Pact allies have created and maintain in being formidable military forces which are capable of use against areas of vital interest to the United States.

3. The element in the world situation which deters the USSR from actively employing these forces against the West is the margin of military advantage which the U.S. and its NATO allies continue to maintain.

4. The military advantage possessed by the West is qualitative rather than quantitative, i.e., it resides not in the size of the U.S. and NATO forces but chiefly in the technological superiority of their weapons systems.

It should be emphasized that these are propositions. But they are important because they supply the seldom-mentioned premises upon which our system of strategic trade controls rests and because if any of them is demonstrably false, the national security argument for control of technology exports is largely destroyed. Even more impor-

¹ J. Fred Bucy, "On Strategic Technology Transfer to the Soviet Union," *International Security*, Cambridge, Mass., Spring 1977.

² The Joint Chiefs of Staff, Pub. 1, "Department of Defense Dictionary of Military and Associated Terms," Washington, U.S. Government Printing Office, 1974.

tantly, much of the justification of our defense policy is also destroyed for it, too, is based on them.

About some of these propositions there can be little doubt. For example, it is a fact that the USSR, together with the other Warsaw Pact countries, has today more men under arms, a larger air force, a greater number of missiles, tanks and artillery, and, in terms of numbers of ships, a bigger navy than the U.S. and its NATO allies.

There is also reliable evidence that the U.S. currently has an appreciable margin over the USSR in some crucial (although not necessarily all) performance factors of our intercontinental ballistic missiles, submarine launched ballistic missiles, strategic and tactical aircraft, nuclear attack submarines and low frequency passive underwater hydroacoustic intercept systems. These margins, which necessarily vary with the weapons system being considered, consist in such things as better accuracy, reliability, speed, range, ability to escape detection, in short, in technological attributes which result in greater combat effectiveness.

Secretary of Defense Brown, in testifying before Congress in support of the Fiscal Year 1979 Defense budget, stated, "We rely increasingly on the sophistication of our equipment to compensate for potential superiority in enemy numbers."³ In this connection, one should note that for the past several years more than ten percent of the U.S. Defense budget, or approximately \$10 billion annually has been expended on military research and development to maintain U.S. technological superiority. For Fiscal Year 1979, the amount being requested is \$12 billion. Even these sums tend to understate the total of the relevant outlays since they do not include the even larger expenditures necessary to procure, deploy and operate the improved weapons systems which result.

In any event, if these basic propositions are true—if indeed there is substance to the notion that a margin of qualitative superiority in our weapons systems is vital to our deterrent strategy and to maintain it requires such tremendous expenditures—simple prudence dictates one conclusion: We must not reduce that margin by heedlessly permitting the transfer to our adversaries of the technologies on which it is based.

It is this which the Congress obviously had in mind when it declared it to be the policy of the United States "to restrict the export of goods and technology which would make a significant contribution to the military potential of any other nation or nations which would prove detrimental to the national security of the United States."⁴ In deciding technology transfer issues, this is the ultimate test.

III

It is a curious circumstance that many current discussions of government control of technology exports tend to treat any technology as important to national security if, in some way, it contributes to the economic, political or social well-being of the United States. Such a view overlooks the fact that the necessary link between technology and national security is the production of military weapons systems.

³ Hearings before the House Armed Services Committee, Feb. 7, 1978.

⁴ Export Administration Act of 1969, as amended, Sec. 5(1)(B).

One explanation is the natural tendency to regard all things which contribute to military power as having direct military value. To a degree this view is correct, but it is far too general to be useful. Moreover, by logical extension, it can lead to practical absurdities, such as the possibility of classifying an improved method of growing wheat as military technology because soldiers must be fed. The simplest way to avoid such confusion is to note that, whatever impact a technology may have on the quality of human life, the domestic economy, foreign trade, the balance of payments, or even diplomatic relations, its national security significance depends entirely on the extent to which it is or may be applied to a specifically military purpose. Thus, a technology, however sophisticated or advanced, which has no present or future military application can be ignored. Even technologies which do have a specific military application but which, if transferred to an adversary nation, would make no significant contribution to the production or operation of a military weapon are of little importance. For example, given the fact that the Soviets already have demonstrated ability to produce rifles, the U.S. technology involved in the making of rifle barrels, unless it would result in a markedly better or more efficiently produced Soviet rifle, could be acquired by the Soviet Union with no appreciable effect on our national security.

Once the central position of weapons systems is recognized, the technology whose transfer could be detrimental to national security can be determined in logical fashion from the answers to a series of fairly obvious questions. The first would be: In what weapons systems do the U.S. and its allies now have, or are they likely to have, a margin of technological superiority in relation to the USSR and Warsaw Pact? Next would be the questions: What particular attribute of the system makes it superior? Is it, for example, its accuracy, reliability, speed, range, ability to escape detection, invulnerability to electronic countermeasures, or what? After identifying the specific nature of the advantage, one can then look for its source. In the weapons systems mentioned earlier, the U.S. advantage derives in the first instance from superior guidance and control systems, liquid and solid propulsion systems, advanced computers, composite materials, basic airframe fastening techniques, active and passive sonar systems, cable technology and signal processing. When the search is carried beyond this initial stage to the discovery of the ultimate source, it generally turns out that the qualitative advantage of a weapon system stems from some special know-how in the design, production or operation of one or more of its component elements, a know-how which, for one reason or another, is not available to the Communist world.

To cite but one example, U.S. combat aircraft presently out perform comparable Soviet equipment in a number of significant respects, among them payload and range. One reason is that U.S. planes are powered by jet engines which have a notably better thrust-to-weight ratio. This is due, in large part, to the fact that these engines can operate at much higher temperatures. This, in turn, is possible because the turbine blades of the U.S. engines are made of special heat resistant materials. And finally, these turbine blades can be manufactured because the U.S. has developed the know-how required to work the materials from which they are made while the USSR has not.

This kind of knowledge can be characterized as critical technology. But in applying this term, it is necessary to be clear on what there is about it that makes it "critical." The attribute which places a technology in this category is what may be called, for want of a better term, its scarcity. It is not enough that it be essential or unique to the particular product or weapons system to which it applies; to be "critical," it must also be sufficiently esoteric to be known only to a few. In the world of business, it is that form of proprietary information called a trade secret, *i.e.*, special technical knowledge which competing firms do not possess. In the context of national security, it is technology which the Soviets do not yet have and we do not want them to acquire. One way to illustrate how this quality of being critical differs from that of being essential, or unique, is to point out that the production of integrated circuits is usually done on an assembly line basis in which a conveyor belt arrangement is essential. Since the conveyor belt system must be designed for the particular parts being conveyed, it must to that extent be unique. But the task of designing, producing and operating such an assembly line conveyor belt requires no particular technology that is not generally known or readily available to any reasonably competent engineer in the U.S. or elsewhere. By contrast, in the fabrication of high-quality integrated circuits, the making of masks, the whole area of process control, and the testing of the finished products are examples of technologies which are "critical" precisely because, in addition to being essential and unique, they involve techniques which the Soviets and their allies have not mastered.

Here, however, some caution must be observed. The fact that the Soviets have not mastered a particular technique which has military significance to the West does not necessarily mean that they want to obtain it. Nor does it mean that they would make military use of it if they could obtain it. Soviet weapons development philosophy and practice are different from that of the U.S. They tend to emphasize simplicity and quantity; the U.S. stresses sophistication and high quality. In addition, the Soviet system with its rewards for individual performance keyed to the fulfillment of predetermined output goals places a number of obstacles in the way of adopting and supporting innovative changes in production processes. It is, therefore, quite possible that the USSR, whether from necessity or choice, would not make military use of technologies we consider important, even if we were to make them available.

To act on this assumption, however, could be risky. One reason is that, by definition, the release of a critical technology would provide the Soviets with an option they do not now have and one they would be free to exercise at any time it became attractive to them. A second reason is that they have shown, by their achievements in space and in the nuclear field, that they can overcome in limited areas the societal weaknesses which beset their industry in general. And, finally, the strenuous efforts they continue to make by covert as well as overt means to obtain critical U.S. technology suggest they then intend to make use of all they can acquire.

IV

Identifying critical technologies is not an easy task. It is, however, relatively simple compared to the problem of devising ways effectively to control their export. A major source of difficulty is the fact that there is a wide variety of legitimate channels through which technology can and does flow. The Defense Science Board Task Force, mentioned earlier, identified a number of these channels and rated them as to their effectiveness as transfer mechanisms.⁵ Although they noted some slight variation from industry to industry, they were able to establish a fairly uniform pattern. At the low end they placed trade exhibits, commercial literature, undocumented sales proposals, sales of products without maintenance and operations data, and licenses without know-how. In the middle they placed commercial visits, processing equipment without know-how, documented proposals, licenses with know-how, consulting services and engineering documents, and technical data. At the high end, they listed processing equipment with know-how, training in high technology areas, technical assistance contracts, joint ventures, licenses involving extensive training and, ultimately, turnkey factories.

What is noteworthy about this ranking is the fact that the order appears to be directly related to the degree of interpersonal contact involved. The mechanisms at the upper end of the scale require extended personal contacts between highly qualified people from both donor and recipient. At the lower end, such contacts are minimal and, in some cases, may be non-existent. The mechanisms rated in the middle require interpersonal exchanges whose quality and duration fall somewhere in between.

What emerges is the conclusion that the key to effective technology transfer is the amount and nature of the person-to-person exchange a transaction provides. An arrangement which brings together very competent people and allows them to work side by side for extended periods of time will transfer much more know-how than one where the ability of one or both of the participants is limited and their association intermittent and shortlived. Even brief personal exchanges can convey knowledge either not obtainable, or obtainable only with difficulty, from books or documents.

Such a conclusion accords with common sense. The transfer of knowledge is, after all, a matter of one man absorbing what another man is presenting. That the effectiveness of the process depends on the ability of both the learner and the instructor, as well as on the amount of time they spend together, is not surprising.

V

What these observations suggest is that the task of controlling the export of critical technology, although difficult, is not as large as it appears and may, indeed, be manageable. If it is true that the really

⁵ Report of Defense Science Board Task Force, "An Analysis of Export Control of U.S. Technology—A DoD Perspective," Office of the Director of Defense Research and Engineering, Washington, 1976.

significant flows of technology occur through technical assistance or training, it would appear that it is export transactions containing substantial amounts of these elements which need to be most closely monitored and regulated. Other mechanisms of technology transfer could be largely ignored or, at the very least, treated as of lesser concern.

There are two important exceptions. One involves the exchanges which take place in connection with plant visits and with negotiating contracts. Normally, these would not involve the transfer of any significant technology. Yet, where the person seeking the information is already highly knowledgeable, a very brief contact may be sufficient. Such a person, by being in a position to observe the physical layout of equipment and the particular sequence of operations in a successful plant, or to engage a competent manager or engineer in apparently casual professional conversation, could obtain valuable help in solving a technical problem without the donor being aware of it.

That this kind of thing occurs is well known. Following the May 1972 Summit Conference in which the U.S. and the USSR agreed to promote the growth of commercial and economic ties between the two nations, a trickle and soon a flood of Soviet commercial visitors began coming to the U.S. A recent count places the number at 1500 annually. It soon became apparent that the "commercial" visitors were delegations of very competent scientists and engineers equipped with precise itineraries covering the most technically advanced U.S. firms and with decidedly less interest in buying sophisticated U.S. products than in learning every possible detail of their manufacture.

It was also shortly after the May 1972 Summit Conference that U.S. firms seeking business in Moscow found that various Ministries of the Soviet Government were requiring them as a precondition for doing business to sign technical assistance protocols under which each party promised to enter into very close and continuing exchanges of the most advanced technology. Although essentially "agreements to agree" which promised no more than each party's "best efforts," these protocols, together with the commercial visitor problem, raised questions as to whether the Soviets were seeking to circumvent U.S. export controls by these devices. They underscored the need for a better understanding on the part of the U.S. Government of the precise nature of technology transfers. It was, in fact, these developments which were partly responsible for the creation in 1974 of the Defense Science Board Task Force on the export of technology.

Since then this particular aspect of the problem has diminished to some extent as U.S. firms have found through experience that, even after numerous visits and protracted negotiations during which the Soviets continually press for more and more proprietary information, the large and potentially profitable contracts for the sale of products which the Soviets typically hold out as bait rarely materialize.

In the matter of visits, one area which needs further exploration is that of scientific exchanges through academic institutions or government-to-government programs. In many of these, Soviet experts spend several months at a U.S. university or research center while U.S. experts spend equally extended lengths of time in the Soviet Union working with their Soviet counterparts. These associations are certainly close and in many cases prolonged. However, there are two main arguments against U.S. Government efforts to regulate them.

One is that the information exchanged tends to be in the realm of theory, basic research and laboratory experimentation, and for the U.S. Government to interfere in this process even though the Soviet Government openly does so, would be politically repugnant since such action would impinge on scientific inquiry and academic freedom. The second argument rests on the fact that it is not in basic science and theory but in industrial know-how, systems management and production methods, in brief, in the technology of the factory rather than of the laboratory that the U.S. has predominance. Accordingly, to restrict scientific exchanges would serve no practical purposes. Nevertheless, the impact of these exchanges is only imperfectly understood and some additional study of them would be helpful.

The second important exception to the notion that only technical assistance and training programs transfer significant amounts of technology relates to the sale of end products. While it is true that many end products of sophisticated technology are not susceptible to "reverse engineering," that is to say, one cannot learn how to produce them by dismantling a sample, it is also true that much of modern technology consists of the ability to use certain tools in production and maintenance routines. Thus while tools and instruments, considered as end products, may not represent a transfer of design or manufacturing know-how, the seller normally must guarantee that they will meet performance specifications when operated by the buyer's personnel. To make good this guarantee, extensive training of the buyer's personnel in how to operate and maintain the equipment may be required. As a result, critical technology can be exported on a piecemeal basis and quite unwittingly because to all appearances only an end-product is involved. This is why processing equipment with operational know-how is high on the list of efficient transfer mechanisms.

There is yet another sense in which control over production equipment is important in relation to technology, and that is where the critical technology is already known but what is lacking is the sophisticated machinery and tools needed to exploit it. Know-how without the means to apply it is of little practical significance. For this reason the value of a technology already available to the Soviets can be limited if their access to the instruments required to fully use it can be restricted. It is this reality which the Defense Science Board obviously had in mind when it ranked "process equipment without know-how" in the mid-range of effective transfer mechanisms. It is also this kind of end product that the Department of Defense has labelled "keystone" and recommended be closely controlled as a means of restricting technology because it is "equipment that completes a process line and allows it to be fully utilized."

VI

Before leaving the subject of end products, it should be noted that there is a good deal of unnecessary confusion over the relative worth of controlling the export of end products as compared to technology. Because critical technology and closely related end products in the form of keystone production equipment and instruments are of primary importance, it emphatically does not follow that other end

products generally are of little military significance. For example, the U.S. has inertial navigation systems, signal processing equipment, sophisticated computers, microprocessors, and night vision equipment more advanced than anything the Soviets are currently able to produce. To export such items would transfer little know-how since the critical technology involved in their fabrication is not generally regarded as extractable. Yet the products themselves can make a significant contribution to Soviet military potential simply because they perform better than anything the Soviets possess. Thus, such end results of technology are placed under control not to protect technology but because of their direct military worth. Nor should this be any cause for wonder. After all, the only reason a technology becomes important is that it is the means for creating something of importance. If its end products have no military significance, a technology, no matter how sophisticated, would have no military significance.

This is why it is erroneous to argue, as is sometimes done, that technology should be closely controlled but its end products freely exported. The correct argument goes in the other direction: When an end product is sufficiently important to be controlled, it is even more important than the technology and tools for its manufacture be closely controlled. Certainly, it would make no sense to restrict the export of a particular item but at the same time provide the means by which it could be produced in unlimited quantities. Nor it is necessarily correct to argue that control over products because they have a limited life expectancy is a "short term" measure and therefore not as important as control over technology because its effects continue over the long term. The traditional concept of an embargo as a means of reducing an adversary's war-making strength over an extended period of time is not entirely relevant today. In the nuclear age, the decisive war may be short as well as intense. Weapons on hand may be more important than those yet to be produced, and in some cases the numbers may not have to be great; certainly not so great that in the brief span of such a conflict stockpiled end products could not be sufficient.

VII

Most perplexing of all the difficulties in the control of technology transfers is what is known as the "dual-use" problem. It stems from the fact that, while it is U.S. Government policy to restrict the export of technologies of military significance, it is also U.S. Government policy to do so without interfering any more than is necessary with peaceful trade.

The problem, however, is not with the policy, which is straightforward enough, but with the fact that there are almost no militarily significant technologies which do not also have important peaceful uses. Indeed, in the highly industrialized modern world, while arms and ammunition can still be identified, the distinction between implements of war and peaceful goods as well as the technologies for their manufacture has become so blurred that whether an item is a sword or a plowshare depends today not so much on how it is made but on how and by whom it is used. For example, the advanced computers employed to improve nuclear warhead design or carry out real-time command and control functions in an air defense system also have

extensive commercial and scientific uses; the reactors which produce nuclear material for weapons also produce electric power; the technology required to manufacture a ballistic missile is virtually identical with that required to manufacture the launch vehicle for a weather satellite. So common is this dual-use characteristic that it is almost impossible to draw up a list of items, whether of goods or technology, whose embargo will inhibit weapons development without including some items whose embargo will also inhibit the peaceful trade activities we wish to foster.

It is for this reason that export control decisions tend to be based on determining on a case-by-case basis that the commodity involved is appropriate to its stated civil end use and that either the likelihood of its diversion to military purposes is slight or the military contribution it would make if so diverted would not be of great significance. Given the closed nature of Communist societies, and in particular the secrecy with which they shroud their military sector, such judgments are not easy to make. But in the light of the stakes involved, such judgments cannot be made carelessly. This is especially the case with technology transfers. Where the export of a finished product is concerned, there is some chance of determining that it went to its intended destination. If it should be diverted subsequently, there are ways of detecting that fact and reducing its value by shutting off follow-on spare parts and maintenance support. Additional sanctions can be imposed in the form of refusing any further export licenses for similar or even other equipment to the same consignee. And, in any event, errors in judgment where end products are concerned tend to be self-limiting for the simple reason that items of hardware have both finite uses and a finite life.

The case with technology is quite different. There is almost no chance of determining, once it has been exported to a Communist country, just how it will be used. Its diversion to military purposes can take place with little chance of detection. Even if its diversion is discovered, it cannot be recalled nor its value reduced. Finally, its usefulness may not be short-lived and its products may continue for years to make a significant contribution to the military potential of the recipient nation.

VIII

One remaining matter to be dealt with is the question of effectiveness of export controls. Quite commonly it is argued that, since the Soviets have obviously acquired a number of once critical technologies, as demonstrated by their missiles and nuclear weapons, the export restrictions imposed by the U.S. and its allies have not been effective. This misstates the issue. It is unrealistic to expect that a system of export restrictions can prevent a nation like the USSR from acquiring over time any particular level of technology the West has developed. Indeed, it can be assumed that inadvertent leakage, clandestine acquisition and indigenous development will combine to assure that this takes place eventually. This process cannot be halted, it can only be retarded. Thus, the true measure of effectiveness of controls over technology is how long the catch-up process takes. On that basis, the present system scores well, for in a number of critical technologies, we have consistently maintained a lead over the USSR of two, five, and in some instances more years.

IX

The facts which have been set forth here are not newly discovered. They have been well-known among export control officials of the government for years. As a consequence, it is long standing government practice automatically to place under embargo to the Communist world the technology to produce any end item which is considered significant enough to be itself embargoed. Moreover, although numerous exceptions to the embargo of end items are made each year on a case-by-case basis, there have been only a handful of transactions where any substantial amount of advanced Western technology has been licensed for transfer to the Communist world. In most such cases, as with the U.S. technology supplied in 1972 to the USSR's Kama River truck factory, important diplomatic considerations were involved. Apart from such relatively rare instances, there has been very little licensed export of critical technology from the United States to the USSR or its Warsaw Pact allies.

It is, of course, true that the U.S. Government does not restrict the export to friendly countries of either dual-use end products or the technology to manufacture them. But this is on grounds of policy and not a result of defects in the export control machinery. The question which is now being raised is whether this policy should be changed. What is being asserted is that the liberality with which we have exported U.S. technology abroad to friendly countries is redounding to our detriment. Leaving aside the economic aspect, which falls outside the scope of this article, the security argument is that U.S. technology of military significance is finding its way to the Communist world through friendly countries to whom we have been supplying it without restriction.

Accordingly, the Department of Defense in 1977 proposed that export controls be extended to cover the release of critical technology to all destinations. The stated purpose is to enable the U.S. Government to regulate technology exports to non-Communist countries in terms of the recipient's intent and ability to prevent either the compromise or the unauthorized re-export of that technology. Defense is recommending that this policy be applied :

* * * without regard to whether the exporter is a government department or agency, a commercial enterprise, an academic or non-profit institution, an individual entrepreneur, or in the case of re-export requests, a foreign government or an international organization ; and without regard to the transfer mechanism involved, e.g., turnkey factories, licenses, joint ventures, training, consulting, engineering documents and technical data.⁶

Although these recommendations have been promulgated by the Secretary of Defense as internal guidance to the Department of Defense with regard to its role in support of U.S. export controls, it is not yet clear whether they will be adopted as government policy.

In this connection, export controls over the release of technology from the U.S. directly to the Communist world are at present so complete that it would be difficult to conceive of any substantial change except in the direction of relaxing them. By comparison, restrictions on releases from the U.S. to non-Communist countries are much looser, so that any substantial change is likely to be in the direction of tighten-

⁶ "Interim DoD Policy Statement on Export Control of United States Technology." Office of the Secretary of Defense, Washington, August 26, 1977.

ing them. Accordingly, it is probably only on this latter traffic that proposals to tighten controls would have an impact. Nevertheless, if it is true, as some claim, that critical U.S. technology is reaching Communist nations through non-Communist countries, national security considerations would argue for more effective management of releases to friendly countries. On the other hand, national security considerations also argue that we continue to transfer critical technology to countries with which the U.S. has a major security interest where such transfers can strengthen collective security, contribute to weapons standardization or interoperability, and maximize returns on U.S. investment in research and development.

A reasonable approach might be to extend controls on releases to non-Communist countries only to the more efficient mechanisms of transfer. This would mean that for given transactions, and in particular those involving production equipment and instruments, limits would be established only on 1) the number and type of experts providing training or technical assistance, 2) the duration and location of such training or assistance and 3) the number of the purchaser's personnel to whom training or assistance could be given. The precise details would doubtless vary with the particular technology involved, but in every case the central concern would be with these three factors.

Whatever action is ultimately taken must also recognize the fact that many of our major NATO allies, and Japan as well, are no longer dependent on U.S. technology to the extent they were a decade or two ago. Today they possess and are quite capable of generating sophisticated and critical technologies with little or no help from us. From the standpoint of national security, what is important, and what U.S. actions towards them must be designed to encourage and foster, is their willingness and ability to restrict the flow of such technology whether theirs or ours in origin, to Communist countries.

X

The problem of technology transfer is a knotty one with many ramifications. Besides national security, there are other important issues such as the impact on U.S. domestic employment, foreign trade, international political relations, and the economic growth and development of friendly countries. Whether all of these can be dealt with in some satisfactory manner may be debatable, but there are grounds for believing that the national security aspects can be solved. Certainly the identification of most if not all of the technologies which are critical in relation to our weapons systems appears feasible. So, too, does the task of discovering those items of production or test equipment which are the unique instruments of these technologies. With such facts in hand, it should be possible to focus upon the training and technical assistance components of any transaction and by limiting these components to control effectively the more important transfers.

In any case, the problem is one which is important and not likely to go away. It is also one which calls for wide and informed discussion, both inside and outside of government. The more this discussion can be freed from misconceptions as to the facts and the appropriate criteria for weighing them, the more sound, one may hope, will be the government policy which ultimately emerges.

Chapter 3. QUANTIFICATION OF WESTERN EXPORTS OF HIGH TECHNOLOGY PRODUCTS TO COMMUNIST COUNTRIES*

BY HEDIJA, KRAVALIS, ALLEN J. LENZ, HELEN RAFFEL, AND JOHN YOUNG

CONTENTS

	Page
Summary	34
I. Introduction	35
II. Measurement criteria	35
III. Export composition and trends	37
IV. Summary and conclusion	43
Appendix A	44
Appendix B	45

SUMMARY

There is a widespread presumption that the composition of U.S. and Industrial Western country exports to the communist countries is dominated by advanced technology items.

This paper quantifies U.S. and Industrialized West (IW) exports to communist countries of "high technology products" in the machinery, transportation equipment and instrumentation categories. U.S. and IW exports of these products are measured and compared with total U.S. and IW exports to communist countries. Data also are provided on exports to communist countries processed under validated licenses.

Analysis of the U.S. and IW exports of the high technology products defined in this paper reveals that:

Communist countries, taken together, purchase a relatively small share of total IW high technology product exports (approximately 5-7 percent);

The share of high technology products in total IW exports to communist countries (12.6 percent in 1976) is similar to the high technology products share in IW exports to the world (10.9 percent in 1976);

In spite of rapid growth of IW exports to communist countries, the share of high technology products in those exports has remained relatively constant;

The U.S. is the fourth leading IW exporter of high technology products to the communist countries, accounting in 1976 for

*The authors are from the Office of East-West Policy and Planning, Industry and Trade Administration, Department of Commerce. This paper was prepared to stimulate discussion and does not necessarily reflect the views of the Department of Commerce or the U.S. Government.

12.7 percent of such IW exports, while the U.S. share of IW high technology products exports to the world is approximately 10 percent;

U.S. exports of high technology products accounted in 1976 for 9.3 percent of total U.S. exports to communist countries, in comparison with a 17.2 percent share in U.S. exports to the world; and Analysis of exports to communist countries processed under validated license reveals that very small shares (1 to 3 percent) of U.S. exports were judged to have enough potential application to communist country military industrial production to merit evaluation under the validated license procedure.

This preliminary analysis suggests the "high technology" content of U.S. and IW exports to communist countries does not differ markedly from the "high technology" content of U.S. and I.W. exports to the world as a whole.

I. INTRODUCTION

Much Western discussion of East-West economic relations presumes that the composition of Western exports to communist countries differs markedly from Western exports to other advanced Western countries or to developing countries. In particular, communist country governments are said to be mounting a concerted and unusually single-minded effort to acquire advanced Western technology. This effort is said to be motivated not by desire to foster long term expansion in East-West economic relations based on normal principles of comparative advantage but instead by a need to shore up stagnating communist economies with the one-time infusion of Western technology. By this interpretation the West is reaping only transitory gains while risking the creation of strong potential competitors on world markets, shoring up undesirable political regimes, and endangering Western military security through the indirect buildup of the military industrial capability of adversary countries.

While it is true that Western countries have exported significant quantities of highly processed manufactured goods to communist countries, products which traditionally have been viewed as embodying advanced technology, it has not been demonstrated that patterns of Western export of technology to communist countries are atypical in the context of generalized Western exports of technology. Indeed, the results of this analysis indicate that Western exports to communist countries do not emphasize "high technology" products compared with exports to other Western trading partners.

II. MEASUREMENT CRITERIA

Technology is commonly defined as "the application of scientific knowledge to practical purposes," or more generally as "know-how." The transfer of technology, then, involves the transfer of capability. This is an inherently difficult process to measure, particularly for transfer of disembodied technology. Previous studies have used prod-

uct exports to represent flows of embodied technology, and various criteria have been employed to identify "high technology" products. Some of these criteria, however, fail to account for the critical transfer of know-how and the subsequent ability to replicate and diffuse the acquired technology.

To meet these requirements, most researchers have focussed on industrial plant and equipment as principal vehicles of embodied *and* transferable technology. At the same time, because exports of plant and equipment frequently are accompanied by licensing, technical assistance, and other forms of disembodied technology transfer (especially in exports to communist countries), plant and equipment exports are probably one of the better proxies for technology export in general.

Regardless of the criteria employed, measurement of embodied technology flows runs into problems of trade data collection and classification. First, international trade data are not sufficiently detailed to distinguish precisely between levels of technology. For example, at the level of greatest disaggregation provided by U.N. data in the "Office Machine" category, SITC 7142 includes both electronic computers of varying degrees of sophistication and more mundane calculating and accounting machines. For this reason any set of trade data categories tends to overstate the volume of exports embodying truly advanced technology in individual item categories. Second, there is difficulty in deciding exactly which categories of products should be considered as embodying or having a potential for embodying "high technology." There is no generally accepted list of such products, and any listing would change over time with the advancement of technology in different areas. Finally, products in a category omitted from a selected list of high technology items might incorporate critical inputs embodying advanced technology, thereby possibly justifying their inclusion on the list.

Notwithstanding these shortcomings, useful insights on the export of Western technology can be derived from analysis of international trade data. Reflecting the interest in industrial plant and equipment, certain analyses have classified as "high technology products" all products placed in Standard International Trade Code Classifications 7 (Machinery and Transport Equipment) and 86 (Professional, Scientific, and Controlling Instruments). While these may be the appropriate general categories for analyses, results can be improved by disaggregating to those 4- and 5-digit product categories which are likely to contain products embodying world "best practice." Such exports may be expected to make a proportionately greater contribution to advance recipient country state-of-the-art. To accomplish this improvement, a refined list of "high technology products" was derived by the Office of East-West Policy and Planning of the Bureau of East-West Trade in consultation with commodity specialists in the Office of Export Administration. This is presented in Table 1. Product categories in Classifications 7 and 86 that were excluded from this list are presented in Appendices A and B.

TABLE 1.—HIGH TECHNOLOGY ITEMS¹

SITC	Description
71142	Jet and gas turbines for aircraft.
7117	Nuclear reactors.
7142	Calculating machines (including electronic computers).
7143	Statistical machines (punch card or tape).
71492	Parts of office machinery (including computer parts).
7151	Machine tools for metal.
71852	Glass-working machinery.
7192	Pumps and centrifuges.
71952	Machine tools for wood, plastic, etc.
71954	Parts and accessories for machine tools.
71992	Cocks, valves, etc.
7249	Telecommunications equipment (excluding TV and radio receivers).
72911	Primary batteries and cells.
7293	Tubes, transistors, photocells, etc.
72952	Electrical measuring and control instruments.
7297	Electron and proton accelerators.
7299	Electrical machinery, n.e.s. (including electromagnets, traffic control equipment, signalling apparatus, etc.).
7341	Aircraft, heavier than air.
73492	Aircraft parts.
7351	Warships.
73592	Special purpose vessels (including submersible vessels).
8611	Optical elements.
8613	Optical instruments.
86161	Image projectors (might include holograph projectors).
8619	Measuring and control instruments, n.e.s.

¹ This definition of high technology deletes a number of SITC 7 and 86 items included in some previous analyses. The items deleted by this formulation are listed in app. A. Items not included in this report's definition of high technology, but deemed by some analysts to occasionally include high technology items are noted in app. B.

III. EXPORT COMPOSITION AND TRENDS

Utilizing the above definition of "high technology products", data are presented in this section on the export of these commodities by the U.S. and the Industrialized West (IW)¹ to communist countries.² In line with previous arguments on the validity of using commodity export data as a reasonable proxy for general export of technology, the following tables are of value in:

- Determining the commodity and technical composition of technology export;
- Establishing trends in the volume of technology exports;
- Comparing the volume and importance of technology exports to communist countries with the volume and importance of technology exports in world trade as a whole; and
- Determining the relative importance of alternative Western sources of supply of technology to communist countries.

In fact, as a proxy for technology transfer in general, commodity export data are almost certain to *overstate* the relative importance of IW technology export to communist countries *in comparison with* IW technology export in general. Although the impact is not quantifiable, the significantly freer movement of literature and especially people among IW countries in contrast to the East-West dimension implies that a probably higher share of technology transfer among non-communist nations is carried out through "disembodied" modes.

¹ The 15 Industrialized Western countries are: U.S., Canada, Japan, Belgium-Luxembourg, France, Federal Republic of Germany, Italy, Netherlands, Austria, Norway, Sweden, Switzerland, United Kingdom, and Denmark.

² Bulgaria, Cuba, Czechoslovakia, GDR, Hungary, Poland, PRC, Romania, U.S.S.R., Yugoslavia.

TABLE 2.—COMPARISON OF HIGH TECHNOLOGY EXPORTS WITH TOTAL EXPORTS OF 15 I.W. COUNTRIES TO THE WORLD AND TO THE COMMUNIST COUNTRIES, 1976, 1974, 1972

[Amounts in millions of U.S. dollars]

Destination (IW exports)	1976		1974		1977	
	Amount	Percent of total	Amount	Percent of total	Amount	Percent of total
U.S.S.R						
High technology.....	\$1,627	14.0	\$1,036	16.6	\$582	17.5
Total.....	11,653		6,250		3,317	
EE:						
High technology.....	1,525	12.0	1,223	10.8	619	12.1
Total.....	12,757		11,322		5,098	
Yugoslavia:						
High technology.....	561	13.9	482	10.7	270	12.8
Total.....	4,034		4,503		2,117	
Cuba:						
High technology.....	83	8.8	42	5.1	27	10.5
Total.....	942		817		257	
PRC:						
High technology.....	343	10.0	414	9.5	64	4.5
Total.....	3,423		4,369		144	
Total all Communist countries:						
High technology.....	4,140	12.6	3,197	11.7	1,562	12.8
Total.....	32,808		27,261		12,234	
World:						
High technology.....	64,366	10.9	49,314	9.9	29,092	10.7
Total.....	590,833		498,470		273,045	

Table 2 presents annual data on IW high technology product exports to communist countries and the world as a whole. Immediately apparent is the small share of such IW exports destined for communist countries—6.4 percent in 1976 and 5.4 percent in 1972. This suggests that communist countries have not been and are not likely to become such a dominant force in the marketplace that they could exert significant pressure on Western suppliers of advanced technology, even assuming that communist countries would (or could) act collectively. Second, the share of IW high technology product exports in total IW exports to communist countries does not differ markedly from the respective share in IW exports to the world. In 1976, the respective figures were 12.6 percent and 10.9 percent.

Third, while the total volume of IW exports to the world as a whole and to communist countries has increased dramatically in the 1970's, there is no discernible trend suggesting that IW high technology product exports to communist countries will increase or decrease their share in total IW exports to communist countries. In 1972, the share of high technology products in exports to communist countries was 12.8 percent; in 1976, the share was 12.6 percent. *In short, by world trading standards, high technology products do not dominate in exports to communist countries, are not large in volume, and are not experiencing any marked shift in relative importance.*

In addition, the thrust of these conclusions remains valid when IW high technology exports are expressed as a portion of manufactured goods exports (SITC 5-8) to eliminate the effects of Western exports of agricultural products. For example, the shares of high technology

exports in IW manufactured exports to the world were 13.6 percent in 1972, 12.9 percent in 1974, and 14.1 percent in 1976. The respective shares for IW exports to communist countries were 14.8 percent in 1972, 13.5 percent in 1974, and 15.2 percent in 1976.

Table 3 lists principal IW high technology product exports to all communist countries; table 4 shows similar exports to the U.S.S.R. In both cases, machinery and related equipment are prominent, reflecting communist government drives to simultaneously expand and modernize industrial capacity. Much imported machinery is adapted for numerical or computer-numerical control. These imports and instrumentation imports will further automate communist country production processes and increase industrial productivity.

Data presented in table 5 illustrate the relative importance of IW trading partners of the U.S.S.R. as suppliers of high technology products to the Soviets. These high technology export shares of IW countries are similar to their respective shares of all manufactured exports to the U.S.S.R., e.g., in 1976, the U.S. accounted for 12.7% of IW high technology product exports and 8.7 percent of IW manufactured goods exports to the U.S.S.R. Also, the shares have been relatively stable, with the exception of the marked gain of the U.S. in the early 1970's. However, while in 1976 the United States supplied 12.7 percent of IW high technology product exports to the U.S.S.R., it supplied 30 percent of IW high technology product exports to the world.

TABLE 3.—TOP 5 HIGH TECHNOLOGY IW EXPORTS TO THE COMMUNIST COUNTRIES, 1976

SITC	Item	Value (billions)	Percent of total high technology exports	Percent of total exports
7151	Machine tools for working metal.....	\$1.110	26.8	3.4
7192	Pumps and centrifuges.....	.648	15.7	2.0
7299	Electrical machinery and apparatus, n.e.s.....	.451	10.9	1.4
71992	Taps, cocks, valves, n.e.s.....	.438	10.6	1.3
72952	Electrical measuring and controlling instruments, n.e.s.....	.255	6.2	.8
	Top 5 total.....	2.902	70.1	8.8

TABLE 4.—1976 IW HIGH TECHNOLOGY EXPORTS TO U.S.S.R.

[Dollar amounts in thousands of U.S. dollars]

SITC	Commodity	1976 rank	1976 value	Percent of total	Cumulative percent	1975 value	Percent of total	Cumulative percent	1974 value	Percent of total	Cumulative percent
7151	Machine tools for metal.....	(1)	\$576,851	5.0	-----	\$550,251	5.1	-----	\$448,796	7.2	-----
71992	Cocks, valves, etc.....	(2)	252,634	2.2	-----	283,109	2.6	-----	107,840	1.7	-----
7192	Pumps and centrifuges.....	(3)	245,042	2.1	-----	167,362	1.6	-----	107,823	1.7	-----
7299	Electrical machinery, n.e.s.....	(4)	139,606	1.2	-----	214,335	2.0	-----	119,734	1.9	-----
72952	Electrical measuring and control instruments.....	(5)	94,895	.8	11.2	102,149	1.0	12.3	53,409	.9	13.4
8619	Measuring and control instruments, n.e.s.....	(6)	69,097	.6	-----	60,171	.6	-----	41,237	.7	-----
73592	Special purpose vessels (including submersible vessels).....	(7)	68,401	.6	-----	15,622	.1	-----	30,937	.5	-----
71954	Parts and accessories for machine tools.....	(8)	55,785	.5	-----	49,300	.5	-----	31,901	.5	-----
7143	Statistical machines (punch card or tape).....	(9)	44,481	.4	-----	35,163	.3	-----	14,579	.2	-----
71952	Machine tools for wood, plastic, etc.....	(10)	20,888	.2	13.5	41,702	.4	14.2	30,440	.5	15.8
7249	Telecommunications equipment (except TV and radio receivers).....	(11)	20,452	.2	-----	17,690	.2	-----	16,808	.3	-----
71492	Parts of office machinery (including computer parts).....	(12)	10,799	.1	-----	8,259	.1	-----	4,064	.1	-----
7142	Calculating machines (including electronic computers).....	(13)	7,110	.1	-----	7,897	.1	-----	7,281	.1	-----
71852	Glass-working machinery.....	(14)	7,097	.1	-----	8,352	.1	-----	11,139	.2	-----
8613	Optical instruments.....	(15)	6,219	.1	13.9	8,818	.1	14.7	4,322	.1	16.5
7293	Tubes, transistors, photocells, etc.....	(16)	3,205	0	-----	5,412	.1	-----	3,225	.1	-----
86161	Image projectors.....	(17)	1,946	0	-----	793	0	-----	927	0	-----
8611	Optical elements.....	(18)	581	0	-----	1,315	0	-----	873	0	-----
71142	Jet and gas turbines for aircraft.....	(19)	535	0	-----	187	0	-----	85	0	-----
7297	Electron and proton accelerators.....	(20)	463	0	14.0	218	0	14.7	0	0	16.6
72911	Primary batteries and cells.....	(21)	444	0	-----	97	0	-----	10	0	-----
7117	Nuclear reactors.....	(22)	343	0	-----	0	0	-----	0	0	-----
73492	Aircraft parts.....	(23)	195	0	-----	148	0	-----	242	0	-----
7341	Aircraft, heavier than air.....	(24)	55	0	-----	5,172	0	-----	439	0	-----
	High technology exports.....		1,627,106			1,583,522			1,036,208		
	Total exports.....		11,653,042			10,714,789			6,250,003		
	High technology as percent of total IW exports.....		14.0			14.8			16.6		

TABLE 5.—IW SOURCES OF SOVIET HIGH TECHNOLOGY IMPORTS AND MANUFACTURED GOODS IMPORTS

[Dollar amounts in millions]

Source country	1972				1974				1976			
	High technology imports		Manufactured imports		High technology imports		Manufactured imports		High technology imports		Manufactured imports	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
United States.....	\$39,008	6.7	\$102.5	4.2	\$137,581	13.3	\$294.4	5.3	\$207,109	12.7	\$794.1	8.7
Canada.....	1,330	.2	13.8	.6	.729	.1	13.2	.2	8,587	.5	50.6	.6
Japan.....	83,916	14.4	492.3	20.2	88,559	8.6	1,052.8	19.0	225,506	13.9	2,160.0	23.6
Belgium/Luxembourg.....	2,690	.5	80.1	3.3	13,685	1.3	347.5	6.3	14,390	.9	257.0	2.8
France.....	66,077	11.3	271.9	11.1	155,501	15.0	546.1	9.9	177,187	10.9	963.3	10.5
Federal Republic of Germany.....	209,484	36.0	699.3	28.7	352,446	34.0	1,805.6	32.6	560,777	34.5	2,625.7	28.6
Italy.....	62,463	10.7	255.6	10.5	78,713	7.6	599.0	10.8	136,713	8.4	959.6	10.5
Netherlands.....	2,315	.4	40.8	1.6	41,214	4.0	104.7	1.9	39,148	2.4	129.3	1.4
Austria.....	9,036	1.6	93.0	3.8	20,446	2.0	188.4	3.4	38,469	2.4	237.1	2.6
Norway.....	.417	.1	18.4	.7	1,316	.1	38.7	.7	7,231	.4	69.3	.8
Sweden.....	11,769	2.0	66.2	2.7	41,197	4.0	156.5	2.8	49,265	3.0	254.9	2.8
Switzerland.....	32,211	5.5	69.0	2.8	63,511	6.1	142.0	2.6	100,503	6.2	200.7	2.2
United Kingdom.....	56,062	9.6	202.2	8.3	36,931	3.5	230.1	4.2	53,594	3.3	407.1	4.4
Denmark.....	5,662	1.0	23.6	.9	4,919	.5	28.6	.5	8,627	.5	60.4	.7
Total.....	582,440	100.0	2,430.4	100.0	1,036,208	100.0	5,545.8	100.0	1,627,106	100.0	9,169.3	100.0

Finally, Table 6 presents 1976 U.S. high technology product exports and total exports to each of the communist countries and to the world. The \$366.3 million of high technology product exports to communist countries equalled 9.3% of the \$3.9 billion of total U.S. exports to these countries; in contrast, U.S. high technology product exports to the world of \$19.4 billion constituted a 17.2 percent share of these products in total U.S. exports to the world. These data suggest that U.S. exports to communist countries do not contain unusually large shares of high technology products, but instead tend to contain a lower portion of high technology products than U.S. exports to the world as a whole.

TABLE 6.—U.S. HIGH TECHNOLOGY EXPORTS TO THE COMMUNIST COUNTRIES AND TO THE WORLD, 1976

[Dollar amounts in thousands]

	High technology exports	Total exports	Percent high technology
Exports to:			
Cuba.....	\$3	\$89	3.4
People's Republic of China.....	22,907	135,390	16.9
Yugoslavia.....	60,307	296,882	20.3
Bulgaria.....	2,872	43,320	6.6
Czechoslovakia.....	8,716	147,470	5.9
German Democratic Republic.....	1,462	64,770	2.3
Hungary.....	4,068	62,960	6.5
Poland.....	38,703	621,040	6.2
Romania.....	20,158	249,030	8.1
U.S.S.R.....	207,109	2,305,930	9.0
Total Communist countries.....	366,305	3,926,871	9.3
World.....	19,445,897	113,323,145	17.2

The data presented up to this point suggest that the volume of U.S. and IW exports of high technology products to communist countries is not great and the general composition not unusual. But while such aggregate data may be useful in evaluating the general economic impact of IW technology exports, specific exports of advanced products, though insignificant in value terms, could still be of a significant benefit to the military capabilities of potential adversaries, and thereby be a matter of Western concern. The U.S., of course, controls the exports of products and technology with potential military-industrial applications. Generalizing, the export control procedure identifies products with significant potential military applications and requires that a validated license be obtained before such "controlled" products are exported to communist countries.³ The Office of Export Administration (OEA) issues the validated license only after a detailed review insures that no significant national security risk is created by export of the product. Export of all other products may be made under a general license, which does not require a case-by-case review.

OEA has issued estimates of the proportion of total U.S. exports to East Europe (Bulgaria, Czechoslovakia, G.D.R., Hungary, Poland and Romania), the U.S.S.R. and the PRC that went out under validated license, as opposed to the general license that is sufficient for the export of non-strategic products. These estimates are as follows:

³ Export controls may be applied for foreign policy and short supply reasons as well as protection of U.S. national security. Protection of national security is the pertinent justification for virtually all controls applied on exports to communist countries.

*Percentage of U.S. Exports to Eastern Europe, U.S.S.R., and PRC
under validated license*

Time period:	Percent
3rd quarter 1974.....	1.8
4th quarter 1974.....	2.7
4th quarter 1976.....	3.1
1st quarter 1977.....	1.1

These data suggest, first, that the share of U.S. exports to communist countries falling under detailed review procedures for items having even the *potential* for direct military industrial application is significantly lower than the shares of high technology product exports calculated using commodity export data. Second, inasmuch as validated licenses are required for export of an important share of those commodities that, in addition to their military relevance, are recognized to play a leading role in general industrial state-of-the-art advancement, the OEA data suggest that the high technology export shares calculated in this paper using commodity data may tend to overstate levels of U.S. export to communist countries of truly "high technology products."

IV. SUMMARY AND CONCLUSION

Analysis of U.S. and IW exports of the high technology products defined in this paper reveals that:

Communist countries, taken together, purchase a relatively small share of total IW high technology product exports (approximately 5-7 percent);

The share of high technology products in total IW exports to communist countries is similar to the share of high technology products in IW exports to the world;

In spite of rapid growth of IW exports to communist countries, the share of high technology products in those exports has remained relatively constant;

The U.S. is the fourth leading IW exporter of high technology products to the communist countries, accounting in 1976 for 12.7 percent of such IW exports, while the U.S. share of IW high technology product exports to the world is approximately 30 percent;

U.S. exports of high technology products accounted for 9.3 percent of total U.S. exports to communist countries, in comparison with a 17.2 percent share in U.S. exports to the world; and

Analysis of exports to communist countries processed under validated license reveals that very small shares (1 to 3 percent) of U.S. exports were judged to have even potential for application to communist country military industrial production.

In terms of high technology content, this preliminary analysis suggests that U.S. and IW exports to communist countries do not differ markedly from overall U.S. and IW export patterns. To the degree that commodity flows are a reasonable proxy for trends in the flow of technology as a whole, the same conclusion is valid for generalized technology transfer. Indeed, embodied technology transfer (in products) is probably relatively more dominant in technology transfer to communist countries than is the case within the IW community; thus, analyses such as this one, that by necessity ignore the modes of disembodied technology transfer, will tend to overstate the relative importance of technology transfer to communist countries in

comparison with the level of technology transfer in the world as a whole.

If communist governments are pursuing a strategy of preferential imports of high technology from the West, this analysis suggests that they have not been markedly more successful than other U.S. and IW trading partners. All countries turn to the West for those products for which the West has a genuine comparative advantage—high technology products. It is evident that U.S. and COCOM export control regulations significantly (and appropriately) restrict or eliminate communist country imports of advanced products and technologies. However, this denial and other special features of East-West economic relations have not prevented a rapid expansion of East-West economic exchange that is not sharply different from patterns of West-West and North-South economic exchanges.

APPENDIX A

MACHINERY, TRANSPORT EQUIPMENT AND INSTRUMENTATION ITEMS FROM SITC 7 AND 86 THAT WERE NOT CLASSIFIED AS HIGH TECHNOLOGY IN THIS REPORT

SITC	Description
7112	Boiler house plant.
7113	Steam engines.
71141	Internal combustion engines for aircraft.
7115	Other internal combustion engines.
7116	Gas turbines, excluding for aircraft.
71189	Other engines, n.e.s.
712	Agricultural machinery and implements.
7141	Typewriters and checkwriting machines.
71491	Duplicating, addressing, etc., machines.
7152	Metal-working machinery, exc. machine tools.
717	Textile and leather machinery.
7181	Pulp, paper and paper article machinery.
71821	Bookbinding machinery.
71829	Printing machinery, n.e.s.
7183	Food-processing machinery
7184	Construction and mining machinery, n.e.s.
71851	Mineral crushing, sorting, etc., machinery.
7191	Nonelectric heating and cooling equipment.
7193	Mechanical handling equipment.
7194	Domestic appliances, nonelectric.
71953	Motorized hand tools, nonelectric.
7196	Other nonelectric machines (including packaging and weighing machinery, vending machines, etc.).
7197	Bearings.
7198	Nonelectric machinery, n.e.s.
71991	Foundry and other molds.
71993	Transmission shafts, etc.
71999	Nonelectric machinery parts, n.e.s.
722	Electric power machinery and switchgear.
723	Machinery for distributing electricity.
7241	TV receivers.
7242	Radio receivers.
725	Domestic electric machinery.
72912	Storage batteries.
7292	Electric lights.
7294	Automotive electrical equipment.
72951	Electric supply meters.
7296	Electro-mechanical hand tools.
731	Railway vehicles.
732	Road motor vehicles.
733	Road vehicles, nonmotor.
73491	Airships and balloons.
7353	Ships and boats excluding warships.
7358	Ships, etc., for breaking up.
73593	Floating structures excluding vessels.
8612	Eyeglasses and frames.
8615	Movie and sound equipment.
86169	Photographic equipment, e.n.s.
8617	Medical instruments, n.e.s.
8618	Nonelectric meters and counters.
8623	Photographic chemicals in measured portions.
863	Developed movie film.

Note: In addition, the items described in app. B were omitted from our high technology list, although with a lesser degree of certainty.

APPENDIX B

ITEMS WHICH SOME OF THE OEA SPECIALISTS SUGGESTED MIGHT CONTAIN IMPORTANT HIGH TECHNOLOGY PRODUCTS, BUT WHICH WE CHOSE TO OMIT FROM OUR SELECT LIST

SITC	Description	Remarks
111	Steam-generating boilers	Might include nuclear plant types, but these are highly developed in U.S.S.R. as well.
1181	Water turbines	Hydroelectric turbine technology is also very advanced in the U.S.S.R.
71822	Type making and setting machinery	Advanced models have built-in computers.
71994	Metal-plastic joints (gaskets)	One model (viton) is made of high technology plastic material.
726	Electromedical and X-ray apparatus	Perhaps some is classifiable as high technology.
8614	Photographic cameras	High-speed cameras might be considered high technology.
8624	Photographic plates, film, etc	Some are of advanced type.
8641	Watches	Some are high technology consumer products.
8642	Clocks	Perhaps some are high technology.

Note: In fact, if these items are added in, the effect on dollar volume calculations is slight. For example, for the U.S.S.R. in 1976, the fraction of total imports—from the IW that would be classified as high technology imports under the augmented definition would be 14.6 percent instead of the 14 percent provided by the narrower definition (see table 3). For the U.S.S.R., steam generating boilers and electromedical and X-ray apparatus composed 72 percent of the value of the items in this additional list in 1976.

Chapter 4. THE ROLE OF WESTERN TECHNOLOGY IN THE SOVIET ECONOMY

BY GEORGE D. HOLLIDAY*

CONTENTS

	Page
The Stalinist model of economic development.....	46
The post-Stalinist model.....	49
Technology absorption and Soviet resource allocation.....	56

Increasing interest among Soviet economic policymakers in borrowing Western technology is largely the result of the emergence of a new Soviet economic growth strategy. While the traditional approach (the "Stalinist model") was to promote economic growth by rapidly increasing capital and labor inputs, the new growth strategy emphasizes technological change as a primary factor in Soviet economic growth. In this paper, the change in Soviet economic policy and its implications for Soviet foreign economic relations are explored. In addition, the implications of increasing imports of Western technology for Soviet decisions on resource allocations are examined.

THE STALINIST MODEL OF ECONOMIC DEVELOPMENT

What has come to be known as the Stalinist model for economic development was initiated during the First Five-Year Plan and lasted until well after Stalin's death. The model was quintessentially a strategy for rapid industrialization. Stalinist economic planners began with an economy which had a large capacity for producing agricultural products and a relatively small capacity for producing machinery, equipment and the other industrial goods which provide the means for industrialization. Their task during the First Five-Year Plan was to restructure the economy in order to provide an industrial base for future growth. This required both a major reallocation of resources and a fundamental change in Soviet industrial technology. These structural changes were to be largely accomplished by 1932. A corollary prerequisite was to create a new economic administrative apparatus which could exert the necessary controls over economic resources.

The reallocation of resources was accomplished largely by channeling labor, capital and materials into the "leading sectors" of the economy (primarily heavy industry), while minimizing outlays on non-growth promoting and non-defense sectors. Soviet planners operated with what has been described as a simple set of imperatives:

*The author is an Analyst in International Trade and Finance, Congressional Research Service.

(1) Allocate to the military the resources needed to fulfill strategic goals, and lay aside the minimum requirements for consumption and the development of the economic infrastructure;

(2) Maximize the flow of resources into heavy industry and specify how the resources are to be combined to maximize output; and

(3) Distribute the residuals to non-priority sectors, such as agriculture and light industry.¹

Implicit in these imperatives was an unbalanced growth pattern, with some parts of the economy growing at the expense of others. Another essential element was a very high investment (and savings) rate, with the consequent deprivation of the consumer.

In changing Soviet industrial technology, Soviet planners relied heavily on foreign trade during the First Five-Year Plan and made little use of it thereafter. Large amounts of raw materials—particularly timber, petroleum products and grain—were exported to pay for a massive influx of new machinery, equipment and industrial materials from the industrial West. Western technology transfers, which had already begun to play a significant role in the Soviet economy, increased dramatically. Like domestic resources, imports of capital and technology were concentrated in a small segment of the economy. As described by Soviet economists and policymakers, there were two major aspects of Soviet foreign trade policy. First, Soviet foreign trade was import oriented: it was valued primarily for the contribution imports could make to the industrialization process. Goods were exported only to pay for imports. In the words of a Stalinist foreign trade official, “. . . the main task of Soviet exports is to accumulate foreign exchange resources through the sale of Soviet goods abroad to pay for Soviet imports.”² Secondly, the goal of foreign trade was import substitution—to rid the Soviet Union of the need for further imports:

* * * The necessity of faster tempos of industrialization, of a creation of high-powered metallurgical and machinebuilding industries in the shortest possible time demanded an expansion of our trade relations with capitalist countries in order to utilize their advanced technology for the quickest realization of our goals. This posed the problem of not wasting foreign exchange on items of secondary importance, but importing as much as possible and as quickly as possible the machinery and metals needed to create heavy industry and to free the country from the need to import machinery and equipment * * *

Given such an import substitution strategy, a cutback of imports at some time in the future was predictable. In fact, because of severe balance of payments problems the curtailment of imports was more abrupt than planned. Imports of Western machinery and equipment peaked in 1931, and there was a sharp cutback, beginning in 1932 and accelerating in 1933. In the five years preceding the First Five-Year Plan, annual imports of machinery and equipment averaged approximately 0.3 billion rubles. During the First Five-Year Plan, they averaged 1.4 billion rubles, and during the Second Five-Year Plan, they fell back to the previous level of 0.3 billion rubles.

¹John P. Hardt and Carl Modig, “Stalinist Industrial Development in Soviet Russia,” in Kurt London, ed., *The Soviet Union: a Half Century of Communism* (Baltimore: The Johns Hopkins Press, 1968), p. 310.

²Dmitrii Dmitrievich Mishustin, *Vneshniaia torgovlia i industrializatsiia SSSR* (Moscow: Izdatel'stvo Mezhdunarodnaia kniga, 1938), p. 88.

³Dmitrii Dmitrievich Mishustin, *Statisticheskaia monopolia vneshnei torgovli SSSR* (Moscow: Izdatel'stvo Mezhdunarodnaia kniga, 1938), pp. 4–5.

The most active technology transfer mechanisms—the so-called technical assistance agreements and concessions—were also cut back sharply after 1931. By the end of the 1930's, there were few such agreements in effect. With the curtailment of these active technology transfer mechanisms, travel by technicians and businessmen between the Soviet Union and the West declined rapidly. After the large infusion of Western technology during the First Five-Year Plan, Soviet planners relied only on occasional, passive borrowing of Western technology.

The Stalinist growth strategy in the First Five-Year Plan must be judged a success in one important respect: it changed radically the structure of the Soviet economy. From a basically agricultural economy, the Soviet Union emerged as a major industrial power. The overall economic growth rate was modest in the First Five-Year Plan, but quite rapid during the Second. Richard Moorsteen and Raymond Powell estimate that Soviet gross national product grew at a rate of 6.2 percent per year (in 1937 prices) for the entire period 1928–1937.⁴ Most of the increased output came in the industrial sector. Moreover, by the mid-1930's, high priority industries had achieved a relatively high degree of technological sophistication. Partially, the basis of acquired Western technology, the Soviets had built the necessary base to increase industrial output at a rapid rate. Thus, their primary goal—rapid industrialization—was largely achieved.

However, there were distinctive shortcomings in Soviet economic performance. First, performance in the Soviet economy was uneven. The concentration of resources in heavy industry predictably resulted in the neglect and consequently poor performance in agriculture, light industry, and infrastructural activities. More importantly for long-run Soviet needs, performance with respect to technological progress was poor. This is evidenced by Soviet productivity performance. Soviet industry seriously underfulfilled the First Five-Year Plan goals for increases in labor productivity. While Soviet planners had anticipated a doubling of productivity, the actual increase by the end of 1932 was only 41 percent (according to Soviet estimates).⁵ In his history of the period, Maurice Dobb notes that the planned productivity improvement was expected to come from new plant and equipment and more rationalized industrial organization, but that “there had evidently been excessive optimism as to the speed with which many of the new plants could be brought into full and successful operation . . .”.⁶ Estimates by Moorsteen and Powell confirm that Soviet factor productivity performance during this period was disappointing. After rising by 6 percent from 1928 to 1930, productivity fell by 10 percent from 1930 to 1932, then rose by 24 percent from 1932 to 1937. (It fell again in the late 1930's and during the War, and began to increase after the War.) While acknowledging that their productivity estimates are crude, they found that the growth rate of Soviet productivity “does not appear unambiguously high” for the period they studied (1928–1961).⁷

⁴ Richard Moorsteen and Raymond P. Powell, *The Soviet Capital Stock, 1928–1962* (Homewood, Ill., Richard D. Irwin, Inc., 1966), p. 286.

⁵ Maurice Dobb, *Soviet Economic Development Since 1971* (London: Routledge and Kegan Paul Ltd., 1948), p. 239.

⁶ *Ibid.*

⁷ Moorsteen and Powell, p. 283.

Their estimates for the entire period range from 0.1 percent to 3.2 percent. This represents the same order of productivity growth rates as the advanced industrial countries. (By comparison, the U.S. productivity advances during the same period averaged 1.5 to 2 percent.) They conclude that Soviet productivity performance was surprisingly poor, when the potential productivity gains which might have been derived from technology imports from the West are considered. Only a part of this poor performance can be accounted for by the setbacks during World War II. Their estimates show no large increases in the prewar period when technology imports were heavy. Moorsteen and Powell attribute the relatively poor performance to managerial inefficiency, to the concentration of technology imports and other resources in a relatively small part of the economy, and to the limited capacity of the Soviet economy "to obtain and make use of new techniques."⁸

In an extensive study of the contribution of Western technology to Soviet economic development, Antony Sutton concludes that "Western technical assistance was the major causal factor in Soviet economic growth for the period 1928-1945."⁹ This view, generally expressed in less extreme terms, has gained considerable currency among many observers in the West. However, Sutton's finding is contradicted by Moorsteen's and Powell's estimates of Soviet productivity performance. An important conclusion of their study is that Soviet economic growth during the 1928-1961 period was extensive; i.e. that growth can be attributed primarily to increments of capital and labor, rather than increases in factor productivity. They thus suggest that technology, including technology imports from the West, accounted for a relatively small part of Soviet growth. While Western technology is assigned an important role by Moorsteen and Powell and most other Western students of Soviet economic growth, its contribution was undoubtedly limited by Soviet absorption problems and by Soviet measures to restrict economic and technological ties to the West. Naturally the Moorsteen-Powell estimates pertain to the economy as a whole. If one looks at individual Western-assisted projects, one may find huge gains from Western assistance. It is important to keep in mind, however, that the benefits of Western technology were concentrated in certain sectors and limited primarily to particular periods of time. Western technology contributed relatively little to some Soviet economic activities, and the cutback of technological ties to the West in the 1930's reduced the potential gains from technology imports.

THE POST-STALINIST MODEL

The extensive pattern of economic development which characterizes the Stalinist model far outlived its chief architect. Indeed Stalin's legacy in economic planning is felt acutely by Soviet economists today. For a number of years, a major theme in Soviet economic literature has been the need to shift from an extensive to an intensive growth strategy. The continuation of an extensive growth pattern in the post-World War II Soviet economy has been clearly demonstrated by Stanley

⁸ *Ibid.*, p. 294.

⁹ Antony Sutton, *Western Technology and Soviet Economic Development* Vol. II: 1930-1945 (Stanford: Hoover Institution Press, 1971), p. 339.

Cohn.¹⁰ Cohn uses an approach developed in Edward Denison's studies of economic growth in the Western industrial countries¹¹ to analyze the pattern of Soviet growth. He finds that the Soviet growth rate has not been unusually high: it is only slightly higher than Denison's estimates for Northwest European countries and barely half that of Japan. The most distinctive feature of Soviet growth performance, he finds, is the comparatively low rate of growth of output per unit of input, i.e., joint factor productivity. Japan, France, Germany and Italy had substantially higher rates of increase, while the United States and the United Kingdom had somewhat lower rates. At the same time, the Soviet Union had rapid rates of increase for all three factor inputs—land, labor, and capital—rates which were exceeded only by Japan. Cohn further shows that in terms of proportionate contribution to economic growth, factor productivity accounted for a smaller percentage in the Soviet Union than in any other country compared.

Not only is the growth rate of Soviet productivity comparatively low, it is also declining. According to estimates by Rush V. Greenslade, Soviet labor productivity, after growing rapidly in the 1950's, slowed to a still respectable 3.4 per cent average annual growth rate in the 1960's and then to a disappointing 1.8 per cent during 1971–1975.¹² Productivity growth rates for the other factors of production have also slowed noticeably. The reasons for declining factor productivity growth in the Soviet economy are numerous. Poor agricultural performance, inefficient planning and management, the end of the rapid productivity increases associated with recovery from World War II, and declining marginal returns to large infusions of capital are among the major contributing factors.¹³

From the standpoint of increasing economic growth, the Soviet predicament is exacerbated by less favorable trends in resource availabilities. Shorter work hours and a slowdown in the growth of the work force are expected to create a substantial labor shortage in the Soviet Union in the late 1980's and 1990's. According to Western estimates, increments in the able-bodied ages in the Soviet Union during the 1980's will be only about one-fifth of the numbers of the period 1971–1975. Increments in the 1990's will also be lower than the current period.¹⁴ Since the traditional sources of new labor supplies—migration of labor from the agricultural sector and increased participation of women in the labor force—are almost exhausted, this trend will be a serious constraint on future growth.

At the same time, Soviet planners are finding it difficult to maintain the high rates of capital investment which characterized the Stalinist model.¹⁵ Moreover, the number of claimants on Soviet capital investments has grown. The needs of agriculture, defense, and the infrastructure are diverting resources away from the growth-promoting heavy

¹⁰ Stanley H. Cohn, "The Soviet Path to Economic Growth: A Comparative Analysis," *Review of Income and Wealth*, March, 1976, pp. 49–59.

¹¹ See Edward Denison, *The Sources of Economic Growth in the United States and the Alternatives Before Us*. (New York: Committee for Economic Development, 1962.)

¹² Rush V. Greenslade, "The Real Gross National Product of the U.S.S.R., 1950–1975," in U.S. Congress, Joint Economic Committee, *Soviet Economy in a New Perspective* (Washington, D.C., U.S. Government Printing Office, October 14, 1976), p. 279.

¹³ Cohn, pp. 56–57, and Abram Bergson, "Soviet Economic Perspectives: Toward a New Growth Model," *Problems of Communism*, March–April, 1973, pp. 2–4.

¹⁴ Murray Feshbach and Stephen Rapaway, "Soviet Population and Manpower Trends and Policies," in *JEC*, pp. 113–154.

¹⁵ Bergson, *passim*.

industrial sector. In addition, the needs of Soviet consumers can no longer be overlooked; quality consumer goods must be made available to meet rising expectations and to provide incentives to increase labor productivity.

TABLE 1.—U.S.S.R.: AVERAGE ANNUAL RATES OF GROWTH OF TOTAL GNP PRODUCTION, FACTOR INPUTS, AND FACTOR PRODUCTIVITY, 1951-75

	[Percent]				
	1951-55	1955-60	1961-65	1966-70	1971-75
Total GNP.....	6.0	5.8	5.0	5.5	3.8
Inputs:					
Labor (man-hours), capital and land ¹	4.5	3.9	4.1	3.9	4.1
Man-hours.....	1.9	.6	1.6	2.0	1.9
Capital.....	9.0	9.8	8.7	7.5	7.9
Land.....	4.0	1.3	.6	-1.3	.9
Factor productivity:					
Labor (man-hours), capital, and land.....	1.4	1.8	.9	1.5	-2
Man-hours.....	4.6	5.1	3.4	3.4	1.8
Capital.....	-2.7	-3.6	-3.3	-1.9	-3.8
Land.....	1.9	4.4	4.4	5.8	2.9

¹ Inputs have been combined using a Cobb-Douglas (linearly homogeneous) production function with weights of 60.2, 36.7, and 3.1 percent for labor, capital, and land, respectively.

Source: Rush V. Greenlade, "The Real Gross National Product of the U.S.S.R., 1950-1975," in JEC, p. 279.

The net effect of factor input and productivity trends has been to create a declining Soviet growth rate. After averaging between 5 and 6 per cent increases in GNP in the 1950's and 1960's the average growth rate in 1971-1975 slipped to 3.8 per cent (see table 1). This trend is particularly disturbing to Soviet leaders, who have long emphasized high growth rates as the key success indicator of the Soviet economy and who stress the need to surpass the capitalist economies.

These adverse economic trends have created the rationale for adoption of an intensive growth strategy. Abram Bergson maintains that the Stalinist model's influence on Soviet planning, which has been waning since Krushchev's reign, has finally given way to a "new growth model."¹⁶ The major elements of the new model are a more balanced growth pattern, with more resources being allocated to formerly low-priority sectors of the economy, and reliance on increasing productivity to bring about economic growth. Central to the intensive growth strategy is an increasing emphasis on technological progress in the economy. The attention to technological progress has become increasingly prominent in Soviet economic plans. Thus, the Ninth Five-Year Plan projected ambitious growth rates for industry and agriculture which were to be accomplished largely by productivity gains and introduction of new technology. In his foreword to the published version of the Ninth-Year Plan, Nikolai K. Baibakov, Chairman of the State Planning Committee, reaffirmed the 24th Party Congress's directive that the "main task" of the plan was:

* * * to ensure a substantial rise in the material and cultural standard of living on the basis of high rates of development of socialist production, a rise in production efficiency, scientific and technical progress, and a faster growth of labor productivity.¹⁷

¹⁶ *Ibid.*

¹⁷ N. K. Baibakov, ed. *Gosudarstrennui piatiletnii plan razvitiia narodnogo khoziaistva SSSR na 1971-1975 godu* (Moscow; Izdatel'stvo politicheskoi literatury, 1972), p. 9.

Some of the specific goals of the plan, such as planned labor productivity growth, proved to be overly optimistic and were not met.

The Tenth Five-Year Plan again placed major emphasis on technological progress. The "Basic Guidelines of Development of the USSR National Economy in 1976-1980," issued at the Twenty-Fifth Party Congress, make it clear that most of the anticipated growth is expected to come from increases in productivity. Brezhnev, in his report to the Congress, said, "The first order task remains the speeding up of scientific and technical progress." He called the new Five-Year Plan "the Five-Year Plan of effectiveness and quality."¹⁸ According to a Soviet planning official, increases in labor productivity are expected to account for 90 per cent of the increase in industrial output and practically the entire increase in agricultural production and construction and assembly operations.¹⁹ The Plan directives indicate that most of the productivity increase is to be achieved through technological progress—both by increasing the tempo of domestic innovation and by importing foreign technology.

Productivity increases have also been linked by Soviet economists to economic reform. Since Stalin's death, Soviet leaders have experimented with a variety of reforms designed to improve national economic planning through improved collection of statistical data and application of mathematical techniques. At the microeconomic level, they promised more efficient enterprise management through various decentralization schemes and more effective incentive structures. Judging from both Soviet press commentary and Soviet economic performance, the results of the reforms have been disappointing. Since 1973, emphasis has been placed on creation of large industrial associations—conglomerates of enterprises with similar or complementary output. Associations are designed primarily to give managers some degree of independence in decisionmaking and to improve coordination of inputs and outputs of related enterprises. In addition, Soviet leaders hope that this reform will improve technological performance in Soviet industry.

Foreign trade has clearly been assigned a central role in the new growth strategy. According to the Soviet economist I. Ivanov, the following goals in foreign trade have been discussed in relation to Soviet long-term planning (i.e., for the period 1975-1990):

Ensuring a growth of foreign trade surpassing that of national income;

Expanding export specialization in the most advanced industries and industrial capacities oriented to exports;

Evaluating new products and technology for the reduction in practice exclusively on the basis of conforming to the world technological level and world market requirement;

The USSR taking a major place as an exporter not only of raw materials but also of machinery and technology, including "research-intensive" ones and ones destined for Western markets;

Setting up a well-established foreign trade infrastructure abroad (transport, service, financing, insurance facilities, commercial representation network, etc.);

Expanding the geography of foreign trade relations.

Evaluating imports as an alternative source while making decisions on domestic investments;

¹⁸ *Pravda*, February 25, 1976.

¹⁹ N. I. Rogovskiy, "Proizvoditel'nost' nashego truda," *Pravda*, June 9, 1976, p. 2.

Allocating to imports a larger share in improving the technological level of Soviet agriculture, the service sector, and the economy as a whole; and

Incorporating international technological exchange in R&D plans and programmes.²⁰

Efforts to implement many of the goals identified by Ivanov are evident. During the Eighth and Ninth Five-Year Plans, foreign trade was one of the most dynamic sectors of the Soviet economy. For example, from 1971-1975, it grew about two and one-half times faster than Soviet GNP. While the planned growth rate of foreign trade during that period was 35 per cent, the actual growth rate was 186 per cent. The 10th Five-Year Plan goal of a further 30-35 per cent increase in foreign trade also seems likely to be exceeded.²¹ Trade with Western industrial countries is accounting for an increasingly large share of total Soviet trade. From an average of less than 20 per cent in the 1960's, trade with the West rose to 31 per cent of total trade turnover in 1974-1975.²² While some of the increased trade with the West can be accounted for by larger grain imports, high-technology imports have also increased rapidly and are playing an increasingly important role in Soviet investment plans. Imports have accounted for 10-12 per cent of total Soviet investment in machinery and equipment in the 1970's.²³

Donald Green and Herbert Levine have attempted to quantify the contribution of Western technology to Soviet economic growth during the 1968-1973 period. Their analysis, based on the Soviet Econometric Model constructed by the Stanford Research Institute and Wharton Econometric Forecasting Associates, suggested that increases in Western technology transfers to the Soviet Union during this period had made a major contribution to Soviet economic growth. Specifically, they concluded that without the new Soviet emphasis on importing Western machinery, 15 per cent of the Soviet industrial growth rate during 1968-1973 would have been foregone.²⁴

Soviet imports of Western technology tend to be much broader based than in the past. A wide spectrum of Soviet industries have benefited from Western technology transfers. For the first time, these include consumer industries, such as passenger cars, food-processing, tableware, and tourist facilities, as well as producer goods industries. In addition, Soviet agriculture has been the recipient of Western technology in the chemical fertilizers, farm machinery and animal husbandry sectors.²⁵

²⁰ I. Ivanov, "Foreign Trade Factors in the USSR's Economic Growth and Some Perspectives for the U.S.-Soviet Economic Cooperation," paper presented at the Conference on U.S.-U.S.S.R.: Problems and Opportunities, sponsored by Stanford Research Institute, and the Institute of World Economy and International Relations, Arlington, Virginia, April 17-19, 1973).

²¹ U.S. Central Intelligence Agency, *Soviet Economic Plans for 1976-80: A First Look* (ER 76-10471), August 1976, p. 29.

²² U.S. Central Intelligence Agency, *The Soviet Economy: Performance in 1975 and Prospects for 1976* (ER 76-10296), May 1976, p. 17.

²³ CIA, *Soviet Economic Plans*, p. 26. Similar figures are cited by Soviet economists. See, for example, O. Bogomolov, *Izvestia*, February 26, 1974.

²⁴ Donald W. Green and Herbert S. Levine, "Implications of Technology Transfers for the USSR," in *East-West Technological Co-operation: (Main Findings of Colloquium held 17th-19th March 1976 in Brussels NATO, Directorate of Economic Affairs, Brussels, 1976, p. 56.)*

²⁵ U.S. Congress, House, Committee on Foreign Affairs, Subcommittee on National Security Policy and Scientific Developments, *U.S.-Soviet Commercial Relations: The Interplay of Economics, Technology Transfer, and Diplomacy*, by John P. Hardt and George D. Holliday (Washington, D.C.; Government Printing Office, June 10, 1973), pp. 15-22 and 45-47.

The changing role of foreign trade in the new growth model goes beyond a mere increase in volume and diversification of imports. Soviet economists are paying increasing attention to the advantages of progressive integration of the Soviet economy into the world economy. There has been particular interest in international specialization or international division of labor in industrial production. One of the clearest expositions of what Soviet economists mean by these terms is provided by the Soviet economist N. P. Shmelev.²⁶ He bemoans the predominance of "national industrial complexes" in the industrialized world, which include "if not all, at least a significant part of all the branches of modern industry." In obvious reference to the development strategies of the Soviet Union and other socialist countries, Shmelev notes the negative consequences of building parallel, duplicative and relatively small-scale industries in separate countries. While maintaining that this pattern of development was the logical result of political tensions between socialist and capitalist countries, he claims that the new international environment dictates a new strategy of international specialization to include industrial enterprises in both economic systems. This, he explains, means specializing investments in such a way as to allow long production runs and economies of scale. It entails cooperative industrial relations between all advanced industrial countries, taking advantage of a common market for supplies of raw materials, manufactured goods and the results of research and development.

To put Soviet discussions of international specialization into perspective, it should be noted that this process of international specialization has not proceeded very far in Soviet economic policy. Even within the confines of the Council of Mutual Economic Assistance (CEMA), where policymakers have long talked of coordinating their annual and long-term plans, there has been relatively little specialization. However, traces of such a process are already evident. Several kinds of industrial cooperation agreements, such as those involving long-term Soviet commitments to deliver raw materials in exchange for Western technology, fit into this framework. Another important manifestation of a new approach to international specialization is the development of special export capacity in some Soviet manufacturing industries.

Soviet foreign trade planners no longer rely on commodities that happen to be in surplus to meet their export needs. There has been a concerted drive to produce high-quality manufactured goods which can compete successfully on international markets.²⁷ This new approach has led to assignment of a high priority for exportable products, which sometimes results in higher quality for exports than for domestic goods.²⁸ Large projects assisted by imports of Western technology often earmark a part of their output for foreign markets in order to repay hard currency credits. Exports of manufactured goods

²⁶ N. P. Shmelev, ed., *Ekonomicheskie svyazi Vostok-Zapad: problemy i vozmozhnosti* (Moscow: Izdatel'stvo "Mysl'" 1976), pp. 16-18.

²⁷ Paul Ericson, "Soviet Efforts to Increase Exports of Manufactured Products to the West," in *JEC*, pp. 709-726.

²⁸ "Planirovanie i upravlenie nauchno-tehnicheskim progressom v X platiletke," *Voprosy ekonomiki*, No. 8, 1975, p. 118.

are seen as a means of promoting Soviet economic growth by allowing Soviet industry to reap the benefits of comparative advantage and international specialization. The emphasis on exports of manufactured goods is largely a result of the increasingly high cost of exploiting domestic natural resources. This rationale is particularly compelling because major new sources of traditional Soviet raw material exports—wood products, oil and other minerals—are located in remote areas of Siberia.

The Soviet drive to expand exports of manufactured goods to the West is necessitated in part by continual Soviet hard currency balance of trade deficits. In the 10-year period 1966–1975, the Soviet Union had only one surplus in its hard currency trade (see table 2).

TABLE 2.—U.S.S.R.: HARD CURRENCY TRADE DEFICIT
[In millions of U.S. dollars]

	Exports	Imports	Balance
1966.....	1,517	1,755	-238
1967.....	1,711	1,616	+95
1968.....	1,909	2,018	-109
1969.....	2,125	2,436	-311
1970.....	2,197	2,711	-514
1971.....	2,652	2,955	-303
1972.....	2,815	4,171	-1,356
1973.....	4,818	6,566	-1,748
1974.....	7,630	8,541	-912
1975.....	7,800	14,081	-6,281

Source: John Farrell and Paul Ericson, "Soviet Trade and Payments with the West," in JEC, p. 728.

At the end of 1976, the Soviet Union had accumulated an estimated hard-currency debt of \$14 billion, and the debt is expected to continue growing in the immediate future. This aspect of Soviet trade with the West bears strong resemblance to Soviet foreign trade problems of the early 1930's. However, the current response—allowing indebtedness to grow while developing export industries—is in sharp contrast to Soviet policy in the earlier period.

The export of manufactured goods is also seen as a means of promoting domestic technological progress. On the one hand, increased foreign exchange earnings allow greater imports of Western technology. One of the means developed in recent years to provide incentives for Soviet enterprises to export is to return a part of the hard currency earnings to the enterprise. These earnings are allotted to the acquisition of new foreign licenses, technical specifications and machinery. The primary purpose of the acquired technology is the production of additional exports and improving their quality.²⁹ The Soviets are also becoming aware of the importance of competition on international markets as an incentive to produce higher quality, more sophisticated goods. One Soviet economist has described the international market place as a "filter" which allows only high-quality goods to pass. This infiltration process, he says, has a beneficial influence on the structure and quality of domestic production. It encourages the production of goods which meets the highest world stand-

²⁹ In. Samokhin, "Stimulirovanie eksportnogo proizvodstva," *Ekonomicheskaya gazeta*, No. 12, March 1975, p. 20.

ards.³⁰ The development of Soviet export industries is in its formative stages. There are still formidable problems in industrial organization, quality control, marketing skills, servicing and other matters that must be solved in order to succeed in this endeavor.³¹

The new export orientation of Soviet foreign trade suggests an effort to imitate the Japanese example of using foreign technology to create export industries. Indeed, the Soviet press reflects a keen Soviet interest in this aspect of Japanese economic development.³² There is a particular Soviet interest in the contribution of foreign technology to Japan's high growth rate and Japan's success in capturing export markets in both high technology and mature manufacturing industries. Some Soviet observers betray a scarcely hidden admiration of the Japanese government's role in screening technology imports, Japanese industry's ability to put new ideas rapidly into the production process and the quality control and marketing techniques of Japanese managers.³³ Perhaps underlying Soviet interest in the Japanese model is the recognition that Japan has borrowed technology without allowing substantial control by foreign firms in the domestic economy.

The major departure in Soviet economic growth strategy portends a continued expansion of demand for Western technology transfers to the Soviet Union. The underlying economic conditions which inspired the new strategy will not change in the foreseeable future. Because of its inability to generate major increases in factor inputs, the Soviet economy will have to rely on technological change as a source of continued growth. Indeed, the logic of the new growth model will become more compelling in the 1980's. The need for technological progress, in turn, provides an incentive for continued technological interchange with the West. Thus, Soviet leaders will be unable to change courses, as they did in the 1930's, without considerable economic costs.

TECHNOLOGY ABSORPTION AND SOVIET RESOURCE ALLOCATION

What are the implications of increased Western technology transfers to the Soviet Union for Soviet decisions on resource allocations? In the first place, the Green-Levine conclusions from the Soviet Econometric Model, as well as microeconomic studies, suggests that the total resources available to Soviet economic decisionmakers will be greater: the Soviet economy will reap the normal benefits of comparative advantage and technology borrowing which accrue to all countries. In particular, Soviet technological resources—technical manpower, high-quality materials, research and development funds and other inputs—are released for other economic purposes. By importing technology, Soviet economic planners are able to concentrate scarce domestic technological resources on alternative economic needs.

At the same time, the increasing prominence of the foreign trade sector in the Soviet economy generates pressures for reordering tradi-

³⁰ P. S. Zaviyalov, *Nauchno-tekhnicheskaya revoliutsiia i mezhdunarodnaia spetsializatsiia proizvodstva pri kapitalizme* (Moscow: Izdatel'stvo "Mysl," 1974), pp. 13-14.

³¹ Ericson, pp. 724-726.

³² See, for example, B. Komzin, "Iaponskii put' nauchno-tekhnicheskogo razvitiia," *Mirovaia ekonomika i mezhdunarodnye otnosheniia*, June, 1973, pp. 51-62; and N. N. Smeliakov, *S chego nachinaetsia rodina* (Moscow: Izdatel'stvo politicheskoi literatury, 1975, pp. 472-505).

³³ Smeliakov, *passim*.

tional resource allocation patterns. The absorption of Western technology creates a demand for domestic resources which might otherwise be allocated to other sectors of the economy. Imports of technology must be complemented by various kinds of domestic inputs. They must also be paid for with exports. Thus, greater priority must be accorded to export expansion.

The resource-releasing aspect of transferring technology to the Soviet Union has received considerable attention in the West. For example, opponents of trade with the Soviet Union frequently maintain that any trade benefits the Soviet economy and ultimately Soviet military power because resources which would have been required for civilian projects are released for military expansion. The resource-demanding aspect of technology transfer has received little attention. Yet there is evidence that the resource-demanding effect is substantial. In some cases, the net result may be to draw resource away from traditionally high priority sectors of the economy (such as those in the military sector).

Several factors support the general conclusion that Soviet technology imports have a large resource-demanding effect on the domestic economy. First, the technology transfer process itself consumes domestic, as well as foreign resources. The adaptation and absorption of technology which has been developed for another country requires considerable inputs from the Soviet economy. For, example, Soviet engineers are needed to adapt foreign production techniques and product designs to local conditions. The "Zhiguli" passenger car, produced with the assistance of FIAT and modeled after the FIAT-124, required modifications of 65 percent of its parts in order to perform adequately under Soviet conditions. Additional resources are consumed while managers, technicians, and workers are learning to operate and maintain new plants or machinery. During such learning periods, labor and material resources are often wasted, and output is reduced.

Research by David J. Teece suggests that the costs of transferring technology can be high, particularly for countries which do not have well-developed infrastructures.³⁴ He also finds that a country tends to spend different kinds of technological resources on borrowing technology than it would on independent R & D. Specifically, domestic R & D involves intensive utilization of research scientists and engineers (who are relatively plentiful in the Soviet Union). Successful technology transfer depends only incidentally on research personnel, but requires extensive employment of competent manufacturing engineers and project managers. Teece's findings, if they are applicable to the Soviet Union, suggests that the alternative costs of borrowing technology are quite high for the Soviet Union, since it seems to have a shortage of highly qualified manufacturing engineers and project managers.

A second factor contributing to a large resource demanding function is the high quality requirements for domestic inputs for projects using Western technology. Frequently, the highest quality domestic

³⁴ David J. Teece, *The Multinational Corporation and the Resource Cost of International Technology Transfer* (Cambridge, Mass.: Ballinger Publishing Company, 1976), p. 100.

labor and material resources are needed to insure that imports of advanced technology are effectively exploited. An example is the diversion of experienced construction crews from Moscow projects to work on construction of the Western-assisted Volga Automobile Plant (VAZ) and the Kama River Truck Plant (KamAZ). Likewise, some of the best Soviet designers and engineers were employed in planning and building the two projects.

The requirement for substantial allocations of domestic resources to complement technology transfers is illustrated by Soviet investments at VAZ and KamAZ. At VAZ, hard currency expenditures, estimated at \$550 million, were supplemented by approximately \$1 billion in domestic expenditures (i.e., a ratio of foreign to domestic investment of roughly 1:2).³⁵ It has been estimated that KamAZ required over \$1 billion in hard currency expenditures and \$2-3 billion in domestic expenditures (i.e., a ratio of 1:2 or 1:3).³⁶

These sums represent merely the initial investments for the projects. Substantial investments are required to expand and modernize complementary industries and to provide an improved infrastructure for the rapidly growing Soviet automobile park. Such secondary and tertiary investments are a third factor which contributes to the high resource-demanding effect of Western technology transfers to the Soviet Union. For example, the expansion and modernization of Soviet automotive output which has accompanied the construction of VAZ and KamAZ has generated a demand for metals, plastics and other materials with specifications which were not formerly produced by Soviet industry. Production of new automotive components, tires, high-octane gasoline and diesel fuel must be increased rapidly. Perhaps the largest expenditures are required for expansion of the small Soviet network of first-class highways, service facilities and other infrastructure.

Finally, the large Soviet expenditures on Western technology must be paid for with hard currency earnings. In order to sell Soviet products abroad, resource allocations must be shifted to export industries. Soviet exporters, particularly those attempting to market manufactured products in Western countries, must be given high priority for sophisticated technological inputs.

The long-term effect of Western technology transfer to the Soviet Union will be to expand and modernize Soviet industrial output. Such benefits are the primary motivation for the Soviet Union to purchase technology from the West. At the same time, the net effect of such transfers may be to direct Soviet resource allocations toward those sectors of economy that are the primary recipients of Western technology. To some extent, Western-assisted projects may compete with traditional high-priority sectors for scarce technological inputs.

³⁵ For additional details on technology transfer to the Soviet automotive industry, see George D. Holliday, *Western Technology Transfer to the Soviet Union*, publication forthcoming, Westview Press, 1979.

³⁶ Imogene U. Edwards, "Automotive trends in the USSR" in U.S. Congress, Joint Economic Committee, *Soviet Economic Prospects for the Seventies*, Washington, U.S. Government Printing Office, 1973, p. 296; and Chase World Information Corporation, *KamAZ, the Billion Dollar Beginning*, 1974, p. 66.

Chapter 5. TECHNOLOGY TRANSFER AND CHANGE IN THE SOVIET ECONOMIC SYSTEM*

BY JOHN P. HARDT AND GEORGE D. HOLLIDAY

AN OVERVIEW

In the 1970's, importation of advanced technology from Western industrial nations is perceived by the Soviet leaders as an important contributing factor to attainment of their high-priority economic goals. In a wide variety of economic sectors, such as production of automobiles and chemicals, energy development, metal processing, shipping, and animal husbandry. Western machinery and industrial processes have made a significant impact on Soviet production. Official Soviet pronouncements indicate a continuing and expanding commitment to use of Western technology in these and other sectors.

The traditional Soviet arrangements for importing Western technology are being challenged, and in many cases there is evidence of evolution toward a "modified systems approach" to technology transfer. The new approach is characterized by (1) a long-term or continuous connection; (2) complex or project-oriented industrial cooperation; (3) systems-related construction, production, management, and distribution; (4) Western involvement in training and in the decision-making process both in the Soviet Union and abroad. The modified systems approach contrasts with the traditional approach employed by the Soviets in the Stalinist period and by the tsarist regimes in pre-Revolutionary Russia. The traditional approach relied on short-term arrangements designed to rapidly achieve specific domestic production goals with minimal personal contacts with Western managers, engineers, and technicians. The old policy, which aimed at Soviet economic and technological independence from the West, appears to be giving way to a new policy that accepts a greater degree of technological interdependence.

To maximize the benefits of Western technology imports, the Soviet leadership may have to accept a degree of change in the Soviet economic control system. In order to gain Western levels of efficiency, they may have to go beyond simple imports of machinery and equipment and accept Western management methods and foreign involvement in the operation of the Soviet economy. Such a change would tend to subvert the traditional Soviet control and information system. Moreover, the efficient absorption of technology may require a con-

* John P. Hardt and George D. Holliday, "Technology Transfer and Change in the Soviet Economic System," *Technology and Communist Culture: The Socio-Cultural Impact of Technology Under Socialism*. Ed. Fredric J. Fleron, Jr. 1977 Praeger Publishers. A division of Holt, Rinehart and Winston, CBS, Inc., pp. 183-223. Reprinted by permission of Holt Rinehart and Winston/CBS, Inc.

Special acknowledgments to a number of readers are in order: Joseph Berliner; Frederic J. Fleron, Jr.; Robert Fraser, Philip Hanson, Paul Marer, Carl McMillan, and Henry Nau. The final responsibility of the contents is that of the authors.

centration of high-quality Soviet goods, personnel, and other research and development resources in Western-assisted projects. In addition, substantial Soviet investment in complementary industries and infrastructure may be necessary to bring about the desired results.

This chapter describes the changing Soviet need for Western technology and provides a more detailed explanation of what we have called the modified systems approach to technology transfer. A case study of Western technology transfer to the Soviet automotive industry in two periods of Soviet economic development—the First Five-Year Plan (1928–32) and the current period (mid-1960s to present)—highlights some of the changes that have occurred in the Soviet orientation to Western technology. The case study also provides a basis for discussing possible changes in Soviet domestic economic policies and institutions that might follow from prolonged interaction between the Soviet and Western industrial economies. The central point of this study is not that Soviet absorption of Western technology inevitably leads to changes in the Soviet economic system, but rather it suggests the rationale for such change and describes a new Soviet flexibility, evidenced in part by evolutionary changes in Soviet institutions and in part by active Soviet consideration and discussion of alternatives to traditional methods.

THE CHANGING SOVIET NEED FOR WESTERN TECHNOLOGY

The Traditional and Modified Systems Approach to Technology Transfer

Sometime between the December 1969 Party Plenum and the Twenty-Fourth Party Congress in March–April 1974, when the Ninth Five-Year Plan was unveiled, the Soviet leadership apparently had made the decision that the lagging economic performance required a more explicit modification or abandonment of the Stalinist principle of technological and economic independence and a turn toward a policy of selective interdependence with the industrially developed nations of the West, including the United States.¹ In retrospect it appears that the decision was based more on a Brezhnev-led consensus than on a formal and explicit action by the General Secretary, although public statements indicated a willingness to shift from independence to interdependence.² This coincided with the broader Soviet discussions on a scientific and technological revolution.³ While the general need to draw on Western expertise, products, and processes had been recognized by

¹ John P. Hardt and George D. Holliday, *U.S.-Soviet Commercial Relations: The Interplay of Economics, Technology Transfer, and Diplomacy*, U.S., Congress House, Committee on Foreign Affairs, Subcommittee on National Security Policy and Scientific Developments, 93d Cong., 1st sess. (Washington, D.C.: Government Printing Office, 1973); U.S., Congress, Joint Economic Committee, *Soviet Economic Prospects for the Seventies*, 93d Cong., 1st sess. (Washington, D.C.: Government Printing Office, 1973, hereafter *Soviet Economic Prospects for the Seventies*). John P. Hardt, "Soviet Commercial Relations and Political Change," in *The Interaction of Economics and Foreign Policy*, ed. Robert A. Bauer (Charlottesville: University Press of Virginia, 1975, hereafter "Soviet Commercial Relations and Political Change").

² Brezhnev speech on West German Television, *Pravda*, May 22, 1973; Philip Hanson, "Import of Technology" in *The USSR Since the Fall of Khrushchev*, ed. A. H. Brown and M. C. Kaser (London: Macmillan, 1972); N. K. Baibakov, *Gosudarstvennyi pyatiletnyi plan razvitiia narodnogo khoziaistva SSSR na 1971–1975 gody* [State five-year plan for development of the USSR national economy for the period 1971–1975] (Moscow: Politizdat, 1972).

³ See Julian M. Cooper in Chapter 3 of this book.

the Soviet leadership during Nikita Khrushchev's regime, technology imports had been affected basically within the traditional Stalinist economic framework. It was left to Khrushchev's successors, Leonid Brezhnev and Alexei Kosygin, to shift the Soviet economy toward a new degree of technological interdependence with the West.⁴

Western economists such as Abram Bergson and Stanley Cohn have noted the long-term problems of Soviet growth retardation and the need to improve factor productivity, especially to lower capital-output ratios.⁵ A selective inflow of Western capital goods could add a critical margin of effectiveness to Soviet investment. It appears that a similar assessment by the Soviet leadership provided a rationale for a new approach to economic and technological interaction with the West. The use of Western technology is especially attractive to Soviet economic planners when long-term credits defer repayment of foreign investment to future time periods and when payback agreements tie repayments to the incremental productive capacity provided by Western investments in specific Soviet projects.

Some such general calculus probably has been the basis for a reassessment by Soviet leaders of their strategy of Western technology imports. This general logic was probably reinforced by the specific economic requirements of Soviet economic planners. For example, among the most important goals of recent Soviet economic plans have been the following:

1. Modern regional oil and gas complexes in West Siberia, including not only increased energy supply but a significant expansion of the related chemical and petrochemical industries. The stepped-up development of these regional energy complexes is intended to ensure adequate supplies of efficient energy for domestic, CMEA, and hard-currency export needs. Foreign capital and technology were essential to meeting the time and quality standards of this objective.⁶

2. A modern metallurgical industry based on new processes of steel output, such as pelletized steel and higher-quality output and utilization of other metals. The Krasnoyarsk-East Siberian aluminum-hydro development, the Yadokan copper development, and the Kursk metallurgical development are major projects in this modernization effort. The Baikal-Amur railroad development (BAM), a featured development of the Tenth Five-Year Plan (1976-80), will correlate with the East Siberian-Far Eastern metal modernization effort.⁷ Western capital and technology seem to be critical to meeting the time and quality criteria of the planned expansion.

3. Computer-assisted systems for processing national economic data and operation of a number of critical sectors in transportation and industry, such as Intourist and Aeroflot bookings, port operations, and air traffic control. Western computer and periph-

⁴ Hardt, "Soviet Commercial Relations and Political Change." op. cit.

⁵ Abram Bergson, "Soviet Post-War Economic Development." *Wicksell Lectures 1974* (Stockholm: Almqvist and Wiksell International, 1974); Stanley Cohn, "Economic Burden of Defense Expenditures," in *Soviet Economic Prospects for the Seventies*, op. cit., pp. 147-62. See also U.S. Congress, Joint Economic Committee, *Soviet Economy in New Perspective*, (Washington, D.C.: Government Printing Office, 1976).

⁶ John P. Hardt, "West Siberia: The Quest for Energy," *Problems of Communism*, April-May 1973, pp. 25-36; *Planovoe khoziaistvo*, no. 10 (1974), p. 52 ff.

⁷ "Directives for the Tenth Five-Year Plan." *Pravda*, December 14, 1975.

eral equipment was purported to be necessary to provide the basis for transition to a new system of national economic reporting and enterprise planning and management.

4. Animal husbandry complexes, based on the latest Western agribusiness techniques to provide a significant increase in meat and poultry output.

5. Construction and operation of modern truck and passenger car complexes to provide the basis for Soviet entrance into the automobile age in cargo and passenger transport. The mammoth Kama River truck project and the FIAT-Soviet passenger car plant, started in the Ninth and Eighth Five-Year Plans, respectively, are the central projects of this step-up in Soviet automotive capability. Each project has been based heavily on foreign technology and capital inflow. Attainment of this objective is the subject of a more detailed assessment in the second part of this paper, a case study from which we may draw inferences of potential validity for attaining the other objectives.

In attaining or making a major beginning on the process of accomplishing such economic tasks, there seems to be a changing Soviet view on the appropriate form of technology transfer. In spite of the path-breaking FIAT example in the Eighth Five-Year Plan, one might say that the Soviet planners began the Ninth Five-Year Plan in 1971 with a traditional Soviet concept of a narrow, restricted form of technology transfer and ended the plan period in 1975 with a much more flexible, systems-oriented view.⁸ These views may be referred to as the traditional Soviet model of technology transfer and the modified systems form of technological interchange, respectively. The possible forms of technology transfer range from a narrow, short-term, discontinuous, politically-insulated process to a broader, longer-term, continuous, less institutionally constrained process. In earlier cycles there have been temporary, short-term, controlled openings to the West. The special relationships with the United States and other Western nations were considered temporary retreats from the basic policy of technological and economic independence. The current policy, in contrast, may be a cautious, case-by-case movement along a scale from economic independence toward economic and technological interdependence. This is a view that appears to be shared by most U.S. corporations involved in the Soviet trade; that is, each agreement is expected to be followed by another, or several others, of at least equal value. Moreover, the conventional U.S. corporate wisdom seems to be that increasing Soviet flexibility may lead to more conventional direct investments in the Soviet Union.

The two variants of technology transfer, the traditional and modified systems approaches, represent points in the spectrum of minimum to maximum Western involvement in Soviet industrial cooperation. Those Soviet leaders who argue for political and institutional stability tend to favor the former; while those who are most concerned about improved economic performance tend to favor the latter. Some of the

⁸ The FIAT-assisted Volga Automobile Plant in Tol'jatti, built during the eighth five-year plan, seems in some ways to be the most advanced example of the new approach. In retrospect, as noted below, it appears to be the forerunner of an approach to technology transfer that became more widely accepted during the ninth five-year plan.

characteristics of the traditional approach were exceeded in historical cases, such as the Ford-assisted Gorkiy Automobile Plant built in the early 1930s, but during the interim period, from the early 1930s through the 1960s, Soviet policy was to isolate the Soviet economy from Western influence. Technology imports from the West tended to be relatively small in scale and accomplished through passive mechanisms, such as simple imports of machinery and equipment. Some of the characteristics of the modified systems approach were not adopted in the major projects of the Ninth Five-Year Plan, such as the Kama River truck plant, but have been the subject of recent discussions in the Soviet press and of negotiations with Western firms.⁹

The traditional Soviet model of technology transfer has characteristically minimized all aspects of Western involvement in the Soviet economy in order to maintain Soviet independence of foreign capital, technology, and influence. In the modified systems approach, the Soviet concern for independence is tempered by a recognition of the economic benefits of more active technology transfer mechanisms. The differences in the approaches can be highlighted by reference to three stages in building and operating an industrial project: design and construction; operation and production; and distribution, marketing, and pricing.

Design and construction.—The traditional model minimizes foreign involvement in the design of production facilities and products. Soviet planners and engineers control the choice of location and the actual construction of the project and specify which machinery and equipment are needed. The modified systems approach encourages the use of Western consultants for a variety of planning, design, and construction activities; for the use of Western designs or the adaptation of Western designs to meet Soviet conditions; for the planning of regional complexes or specific production facilities; and for the supervision of construction, installation, and start-up.

Operation and production.—The traditional model minimizes foreign involvement in the management of Soviet production facilities. The history of tsarist and early Soviet foreign concessions, which resulted in dependence on foreign managerial expertise, has made this a paramount concern for Soviet leaders. However, the modified systems approach allows Western involvement in management to the extent that it is deemed necessary for the rapid reproduction of Western levels of technology and performance. Western involvement includes training by Western specialists in Western facilities and some degree of Western decision-making power in Soviet-based projects.

Distribution, marketing, and pricing.—The traditional model minimizes foreign involvement in the distribution and pricing of the products of Western-assisted projects. Soviet central planning practices made it necessary to retain this power in Soviet hands; however, the modified systems approach does permit Western managerial advisors to participate in decisions that influence the ability of a new facility to meet foreign and domestic demand, such as matters concerning

⁹ V. Sushkov, "O torgovo-ekonomicheskome sotrudnichestve s kapitalisticheskimi stranami v stroitel'stve v SSSR krupnykh promyshlennykh ob'ektov," *Vneshniaia torgovlia*, no. 2 (1976) pp. 8-11; N. P. Shmelyov, "Scope for Industrial, Scientific and Technical Cooperation between East and West," paper delivered at the International Economic Association Round Table in Dresden, German Democratic Republic, 1976.

advertising, servicing, and maintenance. The Soviet need to export competitive products to Western markets creates special requirements for continuing Western involvement.

The transition from the Soviet traditional form of technology transfer to the modified systems approach has not yet been accomplished as a standard or norm of technology transfer or industrial cooperation. Indeed, the norm is still closer to the traditional form. However, all of the aspects of the modified systems approach appear to have been subject to active Soviet study and discussion, and many have been introduced into the negotiation process among Soviet and Western industrial interests.

The Soviet leaders have broadened their view of Western technologies that may have applications in the Soviet economy. Technology embodied in management techniques, computer applications, and economic analysis systems has been added to the range of technologies transferred. Examples of these new forms of technology borrowing include (1) greater use of Western consultant firms for management assistance and computer applications; (2) increased participation in Western research activities, joint management projects, and joint East-West trade research efforts; (3) intergovernmental bilateral exchanges with Western nations, focusing not only on production techniques but on complex applications of management techniques; and (4) increased participation in multilateral forums, such as the International Economic Association and UN research activities.

The Time Dimension in the Transfer of Western Technology to the Soviet Economy

A central question in assessing the significance of the transfer of Western technology to the Soviet economy is the time dimension. Has the Soviet economy become linked to the industrially advanced Western economies on a long-term, expanding trend, or is the Western technology bridge a short-term catch-up expedient that will peak in the not-distant future and give way to earlier patterns of independence?

In the past, certain Soviet and Russian leaders—Stalin, Peter the Great, Catherine—have temporarily opened their Western windows to bring in the latest industrial techniques and shortly thereafter closed them. The political desire for independence from Western influence or domination was an apparent rationale for this policy. Modifications of the traditional insular policy led to cycles of Western exposure. Moreover, the economic costs of the short-term policy of technological catch-up seemed to have been modest or at least manageable.

Historical patterns, however, may no longer be a valid guide. The Soviet leaders now seem confident in their Great Power status. They may perceive an ability to limit the impact of critical Western influences to their "in-system modernizers." They have publicly stated that the old Stalinist policy of independence and isolation has ended. International division of labor, a form of comparative advantage, has been espoused, ideological and political control may no longer override economic advantages. The economic advantage of progressively joining the world economy may become greater over time.

The general trend toward a modified systems approach to technology transfer seems dictated by a desire to copy Western measures of efficiency in output, for example, to produce a car or truck model that may be efficient and competitive in the Western market, including model changes under mass production conditions, or to duplicate U.S. levels of feed-grain conversion, shorter gestation periods for marketing animals, and other agribusiness measures. Technology absorption, diffusion, and domestic innovation—the whole Western cycle of technological interchange—compel the Soviet Union toward the systems approach, including Western involvement in management. In technologically dynamic areas this systems approach, involving a broad pattern of technological interchange, tends to be iterative and more efficient through successive iterations. This tends to accelerate Western involvement over time.

The Soviet leadership's concern with broad economic objectives such as an efficient automotive transport system, modern hydrocarbon energy complexes, and an efficient meat supply sector, creates incremental needs for expansion of infrastructure and other investment. The development of modern truck plants, such as the Kama River truck plant, may generate requirements for better highways, repair facilities, warehouses, and another truck plant. Likewise, the next large truck plant based on improving Western technology may be more, rather than less, tied to the Western partners. As the Soviet economy modernizes and closes the technology gap (even to the point of exporting under competitive conditions), the Soviet Union may import more rather than less. Thus the traditional progressive process of international trade among industrialized economies, based on comparative advantage, may affect the Soviet economy.¹⁰

The political calculus may involve a weighing of the pressures for improvement in economic performance promised by Western technology imports, against the institutional and political changes that could result from accommodations to Western standards of efficient organization and management. The latter risks may be considered more containable than they would have been in earlier periods. A strong, mature Soviet superpower may be able to sort out the advantages of Western technology without exposing itself to undue Western economic leverage. It therefore may not consider Western commercial contacts subversive to its ideological system.

By modernizing basic industries such as energy, metals, and machine building; entering the automotive age; and developing an agribusiness base of modern agriculture, the Soviet leaders appear to want not only to catch up but to stay up with the economically developed nations. The domestic need for a new trend in civilian technology is reinforced by the marginal but significant requirements that must be met in order to export in a competitive world market.

In the past, especially in the 1930s, the Soviet leadership was content to import only enough technology to establish a mass-production capability in selected high-priority industries. At that time the benefits of keeping up with the modest technological changes occurring in the depression-ridden West were apparently overridden by the political

¹⁰ Hardt, *Soviet Commercial Relations and Political Change*, op. cit.

cost perceived in limited dependence on the West. Moreover, overtaking the West in physical levels of output was perceived by Stalin as more important than improving the efficiency of output that might result from a continued pattern of Western technology transfer. Closing the technology gap in selected economic sectors was enough; keeping up was neither necessary nor worth the political risk.

In order to get on the world trend lines for technological change in the current period, the Soviet economic sectors require more than the ability to duplicate the current or recent Western models. In the modern automotive, computer, petroleum, chemical, metallurgical ages that Soviet officials wish and probably need to enter, their industries must be able to keep up with the Western rates of technological change. Worldwide technological changes must be imported and quickly and efficiently reflected in mass production model changes. Lewis Branscomb, a vice-president of IBM, and Western corporate executives in other fields have noted that this mass production capability is a serious deficiency in Soviet industry.¹¹ The perceived need for Western systems analysis, management, and new economic forms in the Soviet economic system seems to flow from the need to keep up and become competitive by world standards. Western plans, designs, management and production methods, and marketing techniques are a part of the modified systems approach. The truck and passenger car facilities to follow KamAZ and Tol'jatti may well proceed far beyond their current pattern of industrial cooperation.

Another indication of the long-term, continuous, expanding nature of the Soviet market are the apparent long-term commitments of major Western corporations to the Eastern market. Implicit in Western firms' commitments to economic relations with the Soviet Union is the notion that it is a unique market. In the short run the Soviets may demand and receive some preferential prices and credit, and profits may be low. However, in the long run, early Western entrants to the Eastern market may be in a strong competitive position in an expanding, large, profitable market. At the same time the political costs and security risks of Soviet commercial relations might limit the advantages of normal predictable trade. For example, Western computers with potential military applications may be subject to unpredictable export controls. The Soviet planners may place large orders in one year and no orders in the following year. Difficulties in financing trade or domestic political factors affecting trade may lead to sharp changes in Soviet import policy.

Among the other indications of a Soviet commitment to long-term, expanding interdependence with the West are long-term scientific and technological agreements with various corporations; the web of bilateral governmental exchanges;¹² construction of a trade center in Moscow; and the apparent projection of expanding Western involvement in the Tenth Five-Year Plan (1976-80).

¹¹ Lewis M. Branscomb, "Science, Technology and Detente," Occasional Paper No. 17 (Washington, D.C.: George Washington University, Program for Policy Studies, 1975).

¹² U.S., Congress, House, Committees on Aeronautics and Technology, *Background Materials on U.S.-U.S.S.R. Cooperative Agreements in Science and Technology*, 94th Cong. 1st sess. (Washington D.C.: Government Printing Office, (1975)).

THE TRANSFER OF WESTERN TECHNOLOGY TO THE SOVIET
AUTOMOTIVE INDUSTRY ^{12a}

In the two periods of intensive Soviet interest in Western technology, the First Five-Year Plan (1928-32) and the current period (the mid-1960s to the present), the automotive industry has been one of the high-priority areas of Soviet technology borrowing. This case study is intended to provide a basis for evaluating the hypothesis that the Soviet orientation to the international economy has undergone a fundamental change since the 1930s. Specifically, Western technology transfers to major Soviet automotive projects in the two periods are analyzed in order to determine whether there is movement toward what has been termed a modified systems approach to technology transfer, characterized by more permanent technological ties and more active involvement of Western firms in the Soviet economy. In addition, evidence is examined of changes in Soviet economic institutions induced by technology transfer. The case study concentrates on three major projects in the Soviet automotive industry: the Gorkiy automobile plant, which was built with the assistance of the Ford Motor Company in the late 1920s and early 1930s; the Volga automobile plant, which was built during the Eighth Five-Year Plan with the assistance of FIAT; and the Kama River truck plant, which is now under construction with assistance from a number of Western firms.

In some ways the use of foreign technology by the Soviet automotive industry has been typical of Soviet industry as a whole. The contractual arrangements in both periods—technical assistance contracts in the earlier period and various industrial cooperation arrangements in the 1960s and 1970s—were similar to those used in many branches of Soviet industry. Moreover, the rationale for borrowing foreign technology and the domestic environment into which the technology was transplanted were similar for the automotive and other Soviet industries. In the 1920s and 1930s Soviet economic planners sought foreign assistance to transform a backward domestic industry with insignificant production into a modern mass-production industry capable of meeting the needs of a rapidly industrializing economy. In the 1960s and 1970s, purchases of foreign technology have been viewed by the Soviet leadership as a means of modernizing a large but in many ways inadequate industry and overcoming the increasingly evident technology gap between the Soviet Union and the industrial West. In both periods, efforts in the Soviet automotive industry paralleled developments in other sectors of the economy.

In the *scale* of Western technology transfers to the Soviet Union, the automotive industry may be regarded as somewhat atypical. During the two periods studied, the Soviet automotive industry has been the recipient of more Western technology than most other branches of Soviet industry. According to one Soviet source, the Soviet Union spent 311.4 million rubles of scarce foreign exchange for machinery

^{12a} This case study is based on research by George Holliday for a Ph.D. dissertation at George Washington University.

and equipment for the Gorkiy and Moscow automobile factories during the First Five-Year Plan (189.2 million rubles for Gorkiy and 122.2 million rubles for Moscow).¹³ These two factories alone accounted for over 4 percent of all Soviet imports during the First Five-Year Plan and exceeded the hard-currency expenditures for such huge Western-assisted projects as the Magnitogorsk metallurgical works and the Dnepr hydroelectric station. Additional funds were spent for expansion of the Yaroslavl automobile plant and for various supplies for the automobile industry, such as glass, metal, and electrical equipment. These expenditures continued, though at a reduced rate, during the Second Five-Year Plan.

Similarly, large expenditures have been and are being made for purchasing Western technology for the Soviet automotive industry during the 1960s and 1970s. The construction of the passenger automobile plant at Tol'iatti, for example, was assisted by purchase of about \$550 million of Western machinery and equipment.¹⁴ The Kama River truck plant is expected to result in over \$1 billion in purchases from the West.¹⁵ The Tol'iatti and Kama projects represent the major industrial undertakings of the Eighth and Ninth Five-Year Plans respectively. In addition, to modernize other parts of the Soviet automotive industry, large purchases of Western technology have been made during the current periods. Thus it appears that the Soviet automotive industry has been the beneficiary of a disproportionate share of Soviet hard-currency expenditures.

One implication of the high priority given to foreign automotive technology is that the evidence of changes induced by technology transfer may be more pronounced in this sector than in others. However, as research by Antony C. Sutton¹⁶ and others has shown, many Soviet industries have benefited from Western technology transfers. Moreover, the experience of the automotive industry does appear to be representative of a Soviet pattern for using foreign technology that is characterized by the concentration of purchases of foreign technology in large new "showcase" projects. This pattern has been evident in the Soviet chemical, metalworking, and other industries. The large scale of automotive technology transfer during both periods makes it a useful case study because it highlights the differences and continuities of the Soviet approach to economic ties with the West.

The Gorkiy Automobile Plant

On May 31, 1929, the Ford Motor Company signed a contract with the Soviet Supreme Economic Council to assist in the construction of an automobile plant at Nizhni-Novgorod (renamed Gorkiy in 1932). The initial agreement provided for Ford assistance in building a factory to produce annually about .1 million vehicles of two types: a passenger car modeled after the Ford Model A (the Soviet version was called GAZ-A) and a light truck modeled after the Ford Model

¹³ D. D. Mishustin, *Vneshniata torgovlia i industrializatsiia SSSR* (Moscow: Mezhdunarodnala Kniga, 1935), p. 174.

¹⁴ Imogene U. Edwards, "Automotive Trends in the U.S.S.R.," *Soviet Economic Prospects for the Seventies*, op. cit., p. 296.

¹⁵ Chase World Information Corporation, *KamAZ, the Billion Dollar Beginning* (New York: the Corporation, 1974).

¹⁶ Antony C. Sutton, *Western Technology and Soviet Economic Development* (3 vol., Stanford, Calif.: Hoover Institution Publications, 1968, 1971, 1973).

AA (the Soviet GAZ-AA).¹⁷ The 1929 contract was followed by supplementary agreements with Ford to increase the capacity of the plant and by contracts with other Western firms providing for their assistance in various specialized operations at the plant. Western assistance to the automotive industry was intended to coincide with the First Five-Year Plan, though the contract with Ford continued into the Second Five-Year Plan.

The Soviet contracts with Ford and other Western firms for assistance in automobile production were among the many "technical assistance agreements" concluded by the Soviets in the late 1920s and early 1930s. The technical assistance agreements involved Soviet payments to Western firms for technical data, patents, know-how, and other assistance, to be provided over a specified period of time. They differed from the concessions agreements that the Soviet government had more commonly signed with Western firms in the 1920s. Under concessions, Western firms invested capital equipment in designated areas of the Soviet economy to develop resources or to exploit other economic opportunities. Typically, a Western firm managed the project and was allowed to repatriate profits after making royalty payments to the Soviet government. Ownership of the capital was transferred to the Soviet government. Concessions were gradually phased out in the 1930s, when technical assistance contracts became the preferred means of cooperating with Western companies.

Technical assistance agreements, unlike concessions, did not provide for repatriated profits or royalty payments to the government. Instead the Soviet government purchased machinery and equipment and paid a set fee for the services provided by the Western partners. In addition, the technical assistance contracts provided no management role for the Western firms. While technical assistance inevitably involved some Western advice on managerial matters, the contracts were essentially vehicles for transferring engineering skills. The Western firms generally showed Soviet specialists how to set up a factory and operate machines and then left the management of the completed factories to the Soviets. In this important respect—the absence of a foreign managerial role—the technical assistance contracts represented a step back from the Soviet policy of allowing selective Western involvement in the economy and a reassertion of the industrial bureaucracy's absolute control in Soviet industry. Another key feature of these agreements was the provision of a schedule according to which the Soviet factory would achieve progressive independence from the Western partner. The ultimate success for the Soviet enterprise or industry involved was ridding itself of the need to import from the West or to rely on Western technology.

The Ford arrangement with Soviet government was typical of the technical assistance contracts and is generally cited in the Soviet literature as one of the more successful agreements with Western firms.¹⁸ Indeed, it was a well-conceived device for transferring technology to a country that lacked the economic and technical infrastructure needed

¹⁷ Details of the contract are provided in Amtorg Trading Corporation, *Economic Review of the Soviet Union*, July 1, 1929, pp. 230–31.

¹⁸ L. Merts et al., "Gaz i Ford," *Planovoe khoziaistvo*, nos. 6–7 (1932), p. 258; V. Kaslanenko, *How Soviet Economy Won Technical Independence* (Moscow: Progress Publishers, 1966).

for such a massive undertaking. In collaboration with other Western firms, which helped to set up certain parts of the production process, Ford assisted in every phase of the creation of the plant, from design to start-up of production.

Ford specialists developed the designs for a complete factory and provided detailed specifications for machinery and materials, operating instructions for the factory, and designs for the automobiles to be produced. Drawings of all the tools, machines, and fixtures at the Ford River Rouge plant were also provided. The Gorkiy factory was not an exact replica of the River Rouge plant, though many of the operations were essentially the same. The plans that the Ford specialists provided contained modifications designed to meet the conditions under which the Soviet factory would operate. This was accomplished by working with a team of Soviet specialists who had the authority for final approval of the factory's design and for selection of the machinery and equipment to be purchased in the West. During the planning process for the factory, several Ford engineers traveled to the Soviet Union to consult with Soviet engineers. The Soviets, in turn, sent a team of technicians to the United States, where they were allowed to study production processes at the Ford plant and also at the plants of Ford suppliers.

Ford was not a general contractor for the entire Gorkiy plant. The Soviet engineers and managers jealousy guarded their prerogative in matters of design and selection of machinery. Their reliance on Ford and others was clearly a matter of necessity, to be ended at the earliest possible opportunity. Moreover, the Soviet specialists showed no compunction in rejecting or changing the proposals offered by their foreign counterparts.

The Soviet government signed contracts with other U.S. firms to perform specialized tasks in building and equipping the factory. Contracts were signed with companies such as the Timken-Detroit Axle Company, the Brown Lipe Gear Company, and the Austin Company.¹⁹ The Austin Company, which had built several U.S. automobile plants (including Ford plants) signed a contract with the Soviet government in August 1929 to design and direct the construction of the buildings housing the factory. This was to be completed not later than the fall of 1931 and would accommodate a revised planned capacity of 120,000 vehicles.²⁰ A number of Austin engineers traveled to the Soviet Union to supervise the work. The Soviet engineers were dissatisfied with Austin's initial design and made changes in it;²¹ however, Austin's contract was successfully executed.

The contract with Ford provided for Soviet automobile production to start up in phases. Initially the Soviets merely assembled the vehicles from parts produced by Ford in the United States. For this purpose there were two assembly plants, one at the Gorkiy site and the other in Moscow. The Moscow plant, called the Kim Works, was an unused railroad shop that the Soviets, with Ford's assistance, converted to auto production. The Moscow plant assembled the first vehicles, while the Gorkiy plant gradually phased in production of

¹⁹ Sutton, *op. cit.*, vol. 1, p. 248.

²⁰ Amtorg Trading Corporation, *Economic Review of the Soviet Union*, November 15, 1929, p. 378.

²¹ Polina Aleshina, et al., *Gor'kovskii avtomobil'nyi* (Moscow: Profizdat, 1964), p. 20.

various parts. After the first year, bodies, fenders, hoods, and all sheet-metal parts were to be produced. Over the next four years, fittings, engines, axles, instruments, batteries, and electrical equipment would be phased in; so that after five years the Gorkiy plant would be working at capacity and producing most of the parts needed for the two vehicles it would produce. In fact, the production schedule proceeded much slower than planned; but in the end this plan succeeded in giving the Soviets the largely self-sufficient automobile industry they wanted.

An integral part of the contract was Ford's agreement to train Soviet workers and technicians, both in the Soviet Union and the United States. Ford agreed to allow 50 Soviet specialists per year, over a period of five years, to study operations in his factories in the United States. Ford sent a number of engineers and foremen to the Soviet Union to train the Soviets. The training was rapidly phased out as the factory neared completion. By 1932 only three Ford specialists remained as instructors at the Gorkiy factory.²² Thus, after only three years the involvement of Ford technicians at Gorkiy was virtually ended.

The Soviets attempted to insure that once in operation the Gorkiy factory would represent the latest word in Western technology. The agreement required Ford to place all of its patents at the disposal of Soviet specialists. It further required that any innovations or improvements that would be introduced in Ford automobiles during the life of the contract (nine years) were to be made available to the Soviet plant.²³ Some evidence suggests that Ford took this stipulation seriously. For example, Ford offered to help the Soviets introduce its new V-8 engine, probably the most important Ford innovation during the life of the contract, at the Gorkiy plant.²⁴ (The new engine was still on Ford's drawing boards when the contract was signed.) The Soviets declined, preferring to produce the simpler and proven Model A. In 1932 Ford discontinued production of the Model A and put the V-8 engine into production in the United States. Soviet specialists noted the development, pointing out that they had the option to acquire the new technology, but they did not do so during the life of the contract.²⁵

The V-8 episode reflected a soberness among some Soviet specialists about their technological capabilities that contrasted sharply with the boastfulness about the Gorkiy plant that was often exhibited in the Soviet press. To be sure, the production facilities at Gorkiy were as modern as any automobile plant in the West. Gorkiy's engineers even maintained that the plant was technologically superior to Ford's River Rouge plant, which was generally considered to be the most advanced in the West.²⁶ The Soviet technicians claimed that the Soviet plant was more carefully planned, had more modern machinery, and was more automated than the Ford plant. Nevertheless, the Soviets had great difficulty in mastering this new technology. The factory produced its first vehicles in 1932, but production was interrupted nu-

²² Mertts et al., op. cit., p. 259.

²³ Amtorg, July 1, 1929, op. cit., p. 230.

²⁴ Charles E. Sorenson (with Samuel T. Williams), *My Forty Years with Ford* (New York: Norton, 1956), p. 198.

²⁵ N. Osinskii, "Novyy 'Ford'; v Amerikanskoi i nashei obstanovskii, "Za rulem, nos. 9-10 (1932), p. 9.

²⁶ Mertts et al., op. cit., p. 239.

merous times because of a variety of problems. Among the problems in the first year were the production of many defective parts, frequent accidents on the assembly line, inadequately equipped laboratories, and insufficient supplies.²⁷

The supply problem was perhaps the most difficult. By 1934 the Soviets had achieved their goal of independence from Western suppliers—all parts and materials were supplied internally.²⁸ However, these were frequently of poor quality and, especially in the early years, seldom in sufficient quantities. As a result the Gorkiy plant was not producing to capacity when its contract with Ford expired. In fact, total Soviet automobile production (from all Soviet plants) did not reach .1 million until 1936.²⁹

The Ford-Soviet contract was a relatively "active" technology transfer mechanism in that it provided frequent and specific communications between Soviet engineers and their Ford counterparts. However, the effectiveness of the arrangements was limited by the provision for an abrupt cutoff of commercial ties with Ford and with Western industry in general. Soviet economic independence involved not only an end to imports of materials and parts but also substantial isolation from technological developments in Western automotive industry. Between the termination of the Ford contract and the mid 1960s, the Soviet automotive industry's technological ties to the West consisted only of sporadic and relatively passive technology transfer mechanisms.

The massive transfer of Western technology to the Soviet automotive industry and to other industries in the 1930s brought important changes to Soviet economic institutions. The construction of the Gorkiy automobile plant was part of the abrupt shift away from small-batch production in small, local factories to modern mass production techniques that had been associated primarily with U.S. industrialization. This shift obviously necessitated changes in Soviet industrial organization. However, the Gorkiy plant was not a simple recreation of a U.S. factory. Gorkiy emerged as a Soviet factory, which like other new Soviet factories developed a uniquely Soviet solution to the problems of mass production. The differences in the Soviet plant were most apparent in the emerging Stalinist system of enterprise management, with its emphasis on meeting plan directives for physical output. Henry Ford's renowned attention to consumer demand had no role in the Soviet manager's world.

There were other important differences between the Gorkiy factory and Western factories such as the Ford River Rouge plant. First, there were differences in the technological characteristics of machinery and equipment. In some cases the Ford plant did not have the most modern machinery available in the West. When Gorkiy engineers believed that superior technology was available, they purchased it from other firms in the West.³⁰ In other cases the Soviets rejected what they considered "too specialized machinery," apparently motivated by the belief that, under Soviet conditions, more labor-intensive operations would be efficient.³¹

²⁷ *Ibid.*, pp. 2160-21661.

²⁸ Sutton, *op. cit.*, p. 247.

²⁹ U.S.S.R. Tasentral'no staticheskoe upravlenie pri Sovete Ministrov SSSR, *Promyshlennost' SSSR; statisticheskii sbornik*, 1957, p. 223.

³⁰ Mertts et al., *op. cit.*, p. 239.

³¹ David Granick, "Organization and Technology in Soviet Metalworking: Some Conditioning Factors," *American Economic Review*, 47, no. 2 (1957): 632.

The Gorkiy factory was also much more vertically integrated than Western automobile factories. Gorkiy not only assembled automobiles but also manufactured most of the parts and even some of the machine-tools it needed. This was a departure from the system of subcontracting that had developed in the Western, especially the U.S., automobile industries. The absence of complementary industries in the Soviet Union and the consequent problem of an unreliable supply system made the Gorkiy approach necessary.

A unique feature of the Gorkiy plant was the combined construction of the factory and of an entire new city to provide housing and services for the factory's employees. The Soviets chose not to locate the factory in a large metropolitan area where workers and an urban infrastructure would already be in place. The plant was actually constructed outside of Gorkiy (then Nizhni-Novgorod), where no infrastructure existed. Although the construction of auxiliary facilities required additional allocation of scarce capital resources, Soviet planners seemed determined to create a completely modern island within the backward Soviet economy. This pattern was copied for future "avtogiganty" in Tol'iatti and Kama.

Finally, an important difference between Gorkiy and plants in the West was the lack of attention and resources that the former paid to technological progress. The research and development facilities at Gorkiy, as in other Soviet factories, were kept to a minimum. Some Soviet specialists objected to this deficiency. For example, E. A. Chudakov, a prominent Soviet automotive engineer, pointed out that Western methods of producing automobiles were constantly changing, resulting in more efficient production and improved vehicles. In the Ford plant, he wrote, over 4,000 changes in production techniques had been introduced in 1929 and 1930 alone.³² Chudakov believed that Soviet industry could maintain this pace of technological progress only by spending considerable funds on research and development:

Thus, mere copying of foreign production, although it might be the most rational approach at present, is in practice impossible and dooms us to falling immediately behind the general tempo of production abroad. Parallel with the development of production, it is necessary to establish at the factory a research organization for improving production and making it more efficient.³³

The subsequent retardation of technological change in the Soviet automotive industry suggests that Chudakov's advice was not accepted. Chudakov noted in 1936 that the GAZ-AA truck had already fallen behind the technological levels of comparable Western models. The GAZ-AA, he wrote, "is not the most modern model and has a comparatively weak engine. The most modern trucks of this tonnage have better dynamic qualities."³⁴ Chudakov's approach, while it was undoubtedly ideal from the Soviet engineer's viewpoint, could not be accommodated to the overall needs of the Soviet economy during the period of rapid industrialization. The economic development strategy of the first two five-year plans placed priority on maximizing physical output, not on improving quality. For automobile production, maximization of output was particularly important because of the ex-

³² E. A. Chudakov, "Problemy avtotransporta," *Sotsialisticheskaia rekonstruktsiia i nauka*, nos. 2-3 (1931), p. 154.

³³ *Ibid.*, p. 155.

³⁴ E. A. Chudakov, "Razvitiie dinamicheskikh kachestv avtomobilii," *Sotsialisticheskaia rekonstruktsiia i nauka*, no. 3 (1936), p. 34.

tremely small existing automobile park in the Soviet Union, the importance of the automobile to other sectors of the economy, and the high cost of importing them. To expand the production of automobiles at the necessary rate, the Soviets had to concentrate scarce capital on tooling up on the basis of existing technology and mass producing a few standardized vehicles—primarily trucks. With this goal in mind, research and development and retooling for new models had to be considered a luxury. Likewise, continuing contracts with the West were considered too costly, both in economic and in political terms.

THE LEGACY OF THE STALINIST ECONOMIC GROWTH STRATEGY

In view of the priorities of economic planning during the period of rapid industrialization, the performance of the Soviet automotive industry in the Stalinist period must be considered a partial success. A mass production industry was established in an extremely short period of time. While the ambitious output goals of the economic planners were not met, the level of production rose at an impressive rate—sufficient to meet many of the needs of the economy. The industry attained a reasonably high level of technology in the prewar period, although it proved incapable of keeping pace with the automotive industries in the West. Perhaps most importantly, from the vantage point of the political leadership, it was a self-contained industry, independent of the industrial West.

However, the structure of the Soviet automotive industry was not suitable for the needs of an increasingly complex post-Stalinist Soviet economy. Predictably, the Soviet emphasis on maximizing output on the basis of a given technology and the drive to isolate Soviet industry from the West resulted in a backward, stagnant industry. The state of the industry became increasingly evident to Soviet specialists, who in the post-Stalinist era began to offer public criticisms.³⁵

Efforts to spur technological progress were also thwarted by factors other than the Stalinist growth strategy and the industry's isolation from the West. It was also recognized that organizational problems, particularly the high degree of vertical integration in Soviet automotive plants, were partially responsible for its backwardness.³⁶ On the model of the Gorkiy factory, each Soviet automobile plant tended to produce as many of its own components, parts, and tools as possible and to develop networks of specialized suppliers that were primarily responsible for supporting production of one type of vehicle. As a result, the industry is plagued by a lack of standardization, resulting in inefficient production of a large number of parts in small quantities for the different types of vehicles in the various factories.

The creation of large, independent enterprises generated other problems. First, these enterprises tend to duplicate each others' efforts, particularly in the field of research and development. Technology that is developed in one plant is not always shared with other enterprises. Small, self-contained R&D facilities have proven inadequate for keep-

³⁵ See, for example, *Promyshlenno-ekonomicheskaya gazeta*, February 3, 1957, and November 14, 1956, cited in Barney K. Schwalberg, "The Soviet Automotive Industry: A Current Assessment," *Automotive Industries*, January 1, 1958, p. 69.

³⁶ N. Khartsiev and G. Bazylenko, "Kakie avtomobili nuzhny narodnomy khoziaistvu?" *Pravda*, May 18, 1965, p. 2; William P. Baxter, "The Soviet Passenger Car Industry," *Survey* 19 (1973): 228.

ing abreast of new technological developments. Moreover, the automotive industry tended to grow primarily by expanding old enterprises. This practice, Soviet specialists claimed, brought about growth without modernization.³⁷ The expanded plants tended to produce at the same level of technology as the parent plants.

This state of affairs was also recognized by the political leadership. In a speech to the 22nd Party Congress, Nikita Khrushchev singled out the Moscow Likhachev automobile factory as an example of how slowly new technology was being introduced to Soviet industry.³⁸ According to Khrushchev, the factory was producing four-ton trucks that had been put into production 14 years earlier and had had no significant improvements during that period. Substantial resources and time (about six years) had been spent to design and organize production of a better truck, but no progress had been made.

Khrushchev himself bore responsibility for continuing the Stalinist neglect of the Soviet passenger car industry. On a number of occasions he expressed his disdain for widespread private ownership of cars in the West and advocated further development of mass transit and car rentals as an alternative for the Soviet Union. Apparently this was a controversial position. Some Soviet engineers criticized the existing Soviet passenger cars as obsolete and wasteful of resources.³⁹ A substantial lobby advocating a transition to mass production of inexpensive, small cars, developed in the industry. A half-hearted attempt to produce such a car began with production of the "Zaporozhets" in 1962. However, the Zaporozhets (which is still being produced) has proved to be an unsuccessful venture, both in terms of its ability to incorporate the latest technology and its appeal to the Soviet consumer. Its lack of success, which was apparently a result of inadequate experience and opposition from supporters of Khrushchev's position, probably contributed directly to the decision to seek foreign help in building a new small car factory at Tol'atti.

In a 1965 speech to the State Planning Committee, Khrushchev's successor as Premier, Alexei Kosygin, criticized the previous leadership for stubbornly adhering to the idea that the Soviet Union did not need to develop production of passenger cars on a large scale.⁴⁰ Kosygin suggested that the new leadership would change this approach. In the same speech, Kosygin criticized the automobile industry for manufacturing obsolete trucks that did not meet the needs of the Soviet economy. He claimed that Western manufacturers had long ago ceased production of some of the types of trucks still being produced in the Soviet Union. He expressed pessimism about the Soviet automobile industry's ability to improve the situation: "We are reconstructing ZIL and GAZ for output of vehicles with greater capacity, but I am not certain that everything has been done properly."⁴¹ Kosygin's speech reflected an awareness on the part of the new leadership of two elements in the stagnation of the Soviet automotive

³⁷ Ibid.

³⁸ Nikita S. Khrushchev, speech to the 22nd congress of the Communist Party of the Soviet Union, October 17-31, 1961 (Moscow: Gosudarstvennoe izdatel'stvo politicheskoi literatury, 1962), p. 62.

³⁹ V. Papkovskii, "Kakogo tipa legkovye avtomobilli nam nuzhny," *Kommunist*, 36, No. 14, 1959, pp. 126-28.

⁴⁰ Aleksei N. Kosygin, "Polyshenie nauchnoi obosnovannoosti planov-vazhneishaiia zadacha planovyykh organov," *Planovoe khoziaistvo*, no. 4 (1965), p. 6.

⁴¹ Ibid., pp. 9-10.

industry. Not only was it falling behind Western industry technologically—a state of affairs that had been recognized by Khrushchev—but it was also failing to meet the growing and changing needs of the Soviet economy. These needs included fulfilling consumer demands as well as modernizing the freight transportation system.

In his 1965 speech, Kosygin did not mention the possibility of turning to Western automotive firms for assistance. However, his assessment of the state of affairs in Soviet passenger car and truck production suggested the rationale for the leadership's future decisions regarding the Tol'iatki and Kama plants. One aspect of the new leadership's approach has been an attempt to satisfy at least a part of the Soviet consumer demand for passenger cars. The leadership has recognized a need to provide quality consumer goods as incentives for Soviet citizens, and Soviet researchers have found that the average citizen desired a passenger car above all other consumer goods.⁴² Initially, production plans could only meet the needs of relatively well-to-do Soviet citizens. The cost of the new Zhiguli—the passenger car produced at Tol'iatki—is prohibitive for most Soviet citizens, and the waiting lists are still long. While long-run production plans suggest an effort to provide passenger cars for a wider spectrum of the population, it is unlikely that cars will be available for most Soviet citizens in the near future.

The other important goal of the new approach to automobile production is to provide a flexible, comprehensive automotive freight transport system. The Soviets have long recognized the need for trucks to complement their rail and marine transport systems. Their present truck park is considered inadequate, both in terms of numbers and of technological sophistication. Perhaps equally important is the shortage of specialized vehicles for the many different jobs required of truck transport in a modern economy.⁴³

One glaring deficiency recognized in the early and mid-1960s was the shortage of heavy-duty trucks with large load capacities, a problem that will be ameliorated by the start-up of production at Kama. However, Kama will not meet the needs for other types of vehicles. For example, there will still be an unsatisfied need for various types of specialized vehicles, such as trucks to be used on construction sites and very rough terrain, which is found in Siberia and elsewhere. Even more important is a steadily growing need for trucks with a high cargo carrying capacity (larger than Kamaz trucks) to be used on the small Soviet network of first-class roads.⁴⁴ The engines and bodies of Kamaz trucks are specially designed with good cross-country capabilities, making them suitable for roads without good foundations, that is, for the vast majority of Soviet roads. However, they will not be the most efficient vehicles for intercity superhighway freight transport. The latter accounts for a growing percentage of Soviet automotive freight transport. The need for such vehicles will presumably be met by further expansion of existing facilities and construction of new truck plants.

⁴² U. A. Zamožikin, L. N. Zhilina, and N. I. Frolova, "Sdviigi massovom potreblenii lichnost'." *Voprosy filosofii* 6 (1969) : 33.

⁴³ A. A. Anders, "Problems of the Automotive Industry for 1972 and the Development of New Automotive Technology," *Avtomobil'maia promyshlennost'*, no. 1 (1972).

⁴⁴ D. Velikanov, "Needs of National Economy in Technical Progress in Development of Motor Transport Facilities," *Avtomobil'nyi transport*, no. 11 (1974), translated by Joint Publications Research Service, *USSR Trade and Services: the Service*, 1975, pp. 25–26.

The current expansion of the Soviet automotive industry appears to be only a first step. To meet the economy's need for automobiles, as perceived by Soviet specialists, a continuing rapid expansion can be expected in the foreseeable future.

The Volga Automobile Plant at Tol'iatti

Within four months after Kosygin's speech to Gosplan, the Soviet government signed a protocol for scientific and technical cooperation with the Italian automobile manufacturer FIAT. This type of agreement was unusual in 1965 but has since become a commonly used Soviet device for initiating long-term contacts with Western firms. The protocol led to discussions between FIAT and Soviet officials that culminated in the signing of a contract on August 15, 1966, providing for FIAT assistance in the construction of a massive new passenger car factory in Tol'iatti.

Under the contract, FIAT agreed to provide designs for a factory to produce 600,000 passenger cars.⁴⁵ Included in the contract were the license to manufacture the vehicles in the Soviet Union, technological and organizational studies for the factory, and assistance during the start-up period. The agreement foresaw production of the first automobiles in 1969 and attainment of capacity production in 1972. This ambitious schedule was not met because of a variety of problems not unlike those that had been experienced by the Gorkiy plant in the 1930s. Once again the major problem was deficiencies, both quantitative and qualitative, in the Soviet supply system.⁴⁶ The first cars were produced one year behind schedule (in August 1970), and full production capacity, which had been revised upward to 660,000, was attained late in 1974.

Tol'iatti's products are three modified versions—standard, luxury, and family—of the FIAT 124, named the "Zhiguli" in the Soviet Union and the "Lada" for export. Production was scheduled to begin on another model, the "Niva," in 1976.⁴⁷ FIAT's engineers were forced to make extensive modifications in order to make the vehicle suitable for Soviet conditions. Many parts, the suspension system, and the frame had to be reinforced, and the frame had to be raised to withstand rough Soviet road conditions. All the mechanical parts had to be adapted to the extremely low temperatures of some regions of the Soviet Union. Gas tanks were enlarged because of the small number of service stations. In the end, 65 percent of the parts were different from those of the standard FIAT 124.⁴⁸

Like Ford's role at Gorkiy in the 1930s, FIAT participated in every phase of the project, from designing to initial start-up of production. However, FIAT's advisory role went beyond the role of Ford in several respects. First, compared to perhaps a few dozen Western specialists at the Gorkiy plant of the 1930s, about 2,500 Western personnel went to Tol'iatti, including 1,500 from FIAT.⁴⁹ During the

⁴⁵ Some of the details of this contract are provided in Antony C. Sutton, *Western Technology and Soviet Economic Development, 1945 to 1965*. (Stanford: Hoover Institution Press, 1973), pp. 200-203; and V. Buffa, "Economic and Commercial Cooperation between East and West," draft of a speech, November 3, 1973, provided by Italian Embassy, Washington, D.C. (Buffa was in charge of FIAT's operations at Tol'iatti.)

⁴⁶ "Why the Volga Automobile Plant's Production Schedule Has Been Disrupted," *Radio Liberty Dispatch*, November 8, 1972.

⁴⁷ *Sotsialisticheskaia industriia*, September 10, 1975, p. 4.

⁴⁸ Buffa, op. cit.

⁴⁹ *Ibid.*

same period, over 2,500 Soviet technicians went to Italy for training and technical work—about ten times the number of Soviet personnel who traveled to the United States in the earlier period. Moreover, foreign involvement at Tol'jatti continued for a much longer period of time than at Gorkiy. Thus the personal contacts accompanying the technology transfer were far more numerous in the FIAT-Soviet transaction. In Western countries, such personnel exchanges are generally considered to be an essential element of effective technology transfer. The Soviet political leadership, while apparently aware of the need for personal contacts, has generally tried to limit them because of real or imagined harmful side effects. Thus the scale of personnel exchanges in the FIAT-Soviet transaction represents a significant political concession and an important new development in Soviet economic relations with the West.

FIAT also had a different role as a supplier of capital equipment and licenses for the plant. The contract provided not only for FIAT to sell machinery and equipment to the Soviet plant but for FIAT to act as a consultant for other Soviet purchases in the West. Thus a large percentage of the Western machinery installed in the Tol'jatti plant was produced for FIAT by other Western manufacturers on a subcontract basis. FIAT specialists selected and purchased the equipment and supplied it to the Soviet plant. FIAT also acquired licenses to produce components manufactured by other Western firms and sold them to the Soviets. The assembly and installation of all Western machinery and equipment were supervised by FIAT, and Soviet manufactured materials were sent to FIAT's factory in Turin to be tested for quality control. The degree of FIAT's involvement at Tol'jatti appears to be unparalleled in Soviet foreign economic relations. A similar foreign involvement was considered but could not be arranged to the initial planning of Kama and may be considered for future industrial cooperation arrangements.

Another important aspect of the FIAT-Soviet arrangement is the prospect for a continuing long-term relationship. The traditional Soviet agreements with Western firms, including the agreement with Ford, provided a definite cutoff date, followed by complete independence from the West. FIAT, on the other hand, has established a relatively permanent working relationship with the Soviet Union. The 1965 scientific and technical cooperation agreement provides a basis for negotiating contracts for FIAT involvement in other parts of the Soviet economy. The original five-year agreement has been renewed twice, in 1970 and 1975. Moreover, consideration has been given to a new contract for FIAT assistance in expanding the capacity of the Tol'jatti plant to perhaps twice its present size,⁵⁰ though FIAT's willingness to expand the capacity of a potential competitor is questionable. The Soviets are clearly interested in maintaining this relationship. One Tol'jatti engineer, citing the development of new equipment at FIAT's Italian plant, remarked, "This experience cannot be ignored; we must simply use the established USSR-Italy channel more actively and on a larger scale."⁵¹

⁵⁰ Edwards, *op. cit.*, p. 296.

⁵¹ "Organizatsiya nauchno-tekhnicheskikh razrabotok na Vaze, *"Ekonomika i organizatsii promyshlennogo proizvodstva*, no 1 (1976) p. 162.

A major new development in the Tol'iatti project has been Soviet solicitation of Western assistance on an industrywide basis. Western technical assistance is involved not only in the automobile production but in building and modernizing Tol'iatti's supply network, developing a domestic service network for the new Zhigulis, and marketing the cars in the West. Western assistance in these areas parallels Tol'iatti's divergence from the traditional Soviet pattern of building isolated, vertically integrated plants responsible for all phases of production but having inadequate ties to their suppliers and little responsibility for the ultimate disposition of their products.

To be sure, the plant is a highly integrated operation by Western standards, combining all the basic production processes in Tol'iatti: casting, forging, stamping and pressing, engine production, assembly, and tooling.⁵² However, a large network of suppliers—much more extensive than previous Soviet automobile plants—has been developed for Tol'iatti. Two-thirds of all the parts and materials for the Zhiguli come from other plants,⁵³ many of which have been newly constructed or modernized with the assistance of Western firms.⁵⁴ In addition, many parts and components are being supplied by East European countries. Poland and Yugoslavia, which also produce FIAT-designed cars, are major suppliers, while Bulgaria and Hungary also supply some parts.⁵⁵ The factory might have been even more decentralized. Before the Tol'iatti plant was built, there was a debate among Soviet planners over whether to disperse it by building smaller factories in several towns. This variant lost out because of the leadership's insistence on starting production as soon as possible. It was decided that an early start-up could best be accomplished by building the entire plant at one location.⁵⁶

In 1972 Tol'iatti introduced a "company system" for servicing its cars—an important first in the Soviet automotive industry.⁵⁷ The system, which is apparently patterned after similar operations in the West, includes presale preparation, technical maintenance, and warranty and general repairs. For the first time, the Soviet automobile purchaser receives a service booklet that describes maintenance schedules, and the purchaser is entitled to free warranty repairs for a year or 20,000 kilometers. The purpose of this system is to correct a chronic problem of Soviet car owners—inadequate servicing facilities and a lack of spare parts.

A large spare-parts production department has been put into operation at Tol'iatti, and a nationwide network of auto centers is being developed. Of the 33 such centers planned by the end of 1973, however, only one-third were completed on schedule.⁵⁸ Western firms are playing an important role in equipping these centers. The service network, along with the production facilities at Tol'iatti, the suppliers of some

⁵² *Ibid.*, p. 296.

⁵³ *Izvestiia*, December 18, 1974, p. 3.

⁵⁴ Edwards, *op. cit.*, p. 296.

⁵⁵ *Ibid.*, p. 296.

⁵⁶ Aron Katsenelinboigen, "Soviet Sciences and the Economists/Planners," paper delivered at the Workshop on Soviet Science and Technology sponsored by George Washington University and the National Science Foundation, Airlie House, Airlie, Virginia, November 18-21, 1976.

⁵⁷ *Izvestiia*, Mar. 3, 1974, p. 3.

⁵⁸ Andreas Tenson, "Too Few Service Stations for Soviet Cars," *Radio Liberty Dispatch*, Aug. 20, 1974.

parts and components, the engineering and design sections, and the training facilities, are all supervised by the production association (*proizvodstvennoe ob'edinenie*), AvtoVAZ.

Tol'iatii is also departing from traditional Soviet practice by earmarking a large part (30 percent) of its production for foreign sales. Most of its foreign sales have gone to Eastern Europe, but an effort is underway to market a significant number of Ladas in Western Europe and North America. Ladas and other Soviet cars, particularly the Moskvich, are exported by a foreign trade enterprise, which has developed a novel approach to marketing these vehicles in the West. Joint stock companies have been created with foreign firms that have experience in meeting the special needs of Western markets. Two of the best-established of these joint ventures are Konela in Finland and Scania-Volga in Belgium.

Tol'iatii's managers have shown an awareness of the need for continued technological progress that is uncharacteristic of past Soviet industry officials. Tol'iatii's general manager, A. A. Zhitkov, recently complained to a *Pravda* correspondent of the tendency of Soviet suppliers to "lower the technical level of equipment offered to us," which, he said, "is a retreat by some branches associated with us from positions already won."⁵⁹ He asserted that their ability to improve the Zhiguli depended on improving the quality of the machinery and materials supplied to the plant. The management's concern with maintaining technological progress at the plant has resulted in continued purchases of foreign technology, such as a 2,000-ton press and a set of mechanical conveyors, including operational know-how,⁶⁰ from the Japanese firms and a license to manufacture a new automatic ignition device from a French subsidiary of Bendix Corporation.

A Soviet economist, E. B. Golland, has suggested that it is time to formulate a complete program for reconstruction and modernization of the Tol'iatii plant.⁶¹ He noted that the world level of automobile manufacturing technology is progressing at an extremely rapid rate and that the Tol'iatii machinery and equipment are already becoming obsolete and worn out. Golland recommended that the Tol'iatii's managers proceed on two fronts: creation of a domestic industry capable of producing modern automobile manufacturing machinery and equipment, and purchase of foreign equipment and licenses. Thus, foreign involvement at Tol'iatii reflects a continuing pattern of technological interdependence, in sharp contrast to the Gorkiy project.

The Kama River Truck Plant

The Kama River truck plant (KamAZ) was undertaken to boost rapidly the production of trucks in order to provide a more balanced freight transport system for the Soviet economy. The project was also designed to bring about another massive infusion of Western automotive technology to complement Tol'iatii's contributions to technological progress in passenger car production. KamAZ is being built

⁵⁹ *Pravda*, Aug. 29, 1975, p. 2.

⁶⁰ *Business International*, *Eastern Europe Report*, Sept. 19, 1975, p. 266; and Jan. 9, 1976, p. 5.

⁶¹ E. B. Golland, "Tekhnicheskaiia osnova vysokoi proizvoditel'nosti truda," *Ekonomika organizatsiia promyshlennogo proizvodstva*, no. 1 (1976), pp. 84-86.

at Naberezhnye Chelny with a capacity to produce 150,000 heavy-duty, three-axle trucks and 250,000 diesel truck engines a year. Western technology transfers consist of machinery and equipment shipments and engineering and design assistance for various parts of the complex. The Soviet hard currency payments to the numerous Western firms providing assistance are expected to total over \$1 billion.

In the construction and equipping of KamAZ, the Soviets are following a markedly different approach than that of the FIAT contract. The most important difference is the absence of a Western general consultant to select foreign technology and coordinate the deliveries of Western machinery and equipment to the Soviet site. The new approach is dictated by necessity, not choice. In the initial planning stage, Soviet officials approached several Western firms, including Ford and Mack Trucks in the United States, Daimler Benz in West Germany, and Renault in France. These firms declined the role of general consultant for a variety of reasons. Ford decided against involvement after the U.S. Department of Defense opposed the transaction. Mack Trucks believed that the project was too large and would tie up too much of the company's resources. Apparently all of the Western firms were influenced by problems that had been encountered by FIAT in its role as general consultant for the Tol'iatti plant.

Faced with the unwillingness of Western firms to undertake the job, KamAZ's managers were forced to do it themselves. To assist the project's directors in Naberezhnye Chelny, a special purchasing commission (Kamatorg), with permanent offices in New York and Paris, was established. The commission's purpose is to search for the best Western technology and to sign contracts with suppliers. Western businessmen who have dealt with KamAZ's specialists have been impressed with their expertise in general and their knowledge of Western manufacturers in particular.⁶² Most Western observers believe that the Soviets have done a good job in selecting the best Western technology for various production processes at KamAZ.

However, the absence of a general consultant has contributed to serious problems. In general these problems have been related to the task of blending various technologies—those from various Western countries and that of the Soviet Union—into a consistent, integrated manufacturing process. A dramatic example of this kind of problem surfaced in the dispute between Soviet officials and representatives of Swindell-Dressler, the U.S. firm that has assisted in designing and equipping the foundry at KamAZ. At one point, Soviet officials charged that Swindell-Dressler was not fulfilling its contracts on time. Swindell-Dressler spokesmen, in turn, complained that they were not given sufficient information about related machinery supplied by other firms or about the buildings in which the foundry was to be housed.⁶³ These problems were exacerbated because the Soviets initially did not allow Swindell-Dressler's engineers adequate access to the construction site. In some cases Western machinery was delivered but would not fit into the buildings that had already been constructed, necessitating modifications in the buildings. In other cases machinery purchased

⁶² Donald E. Stingel, speech delivered at George Washington University, Washington, D.C., on February 25, 1975.

⁶³ *Ibid.*

from one supplier had not met the specifications required by the machinery and equipment supplied by other firms. The job of coordinating the infusion of foreign technology, one of the most difficult tasks in any technology transfer, had been a vital part of FIAT's assistance at the Tol'iatti project.

Confronted with delays that have put KamAZ's schedule back at least two years, Soviet officials have shown an awareness of the shortcomings at the project. Without attributing their problems to the lack of a Western general contractor, M. Troitskiy, the Party regional secretary in the province where KamAZ is located, identified the major problem in the construction of KamAZ as the absence of a "systems approach." Troitskiy indicated that large numbers of sophisticated machines have been brought to KamAZ without careful planning of the way the different parts of the plant would fit together. "In short," he concluded, "for projects such as KamAZ, what is needed is not simply many machines and mechanisms, but systems of complementary machines."⁶⁴ This is precisely the contribution that the Soviets had sought from a Western firm. Since the experience at KamAZ, Kamatorg officials have publicly indicated that they prefer Western general consultants for future large projects.⁶⁵

The size of KamAZ appears to be the major cause of many of its problems. When completed, it will be the world's largest heavy truck plant. Like FIAT and other Soviet automotive plants, it will be a highly integrated facility, combining all of the main processes for producing trucks and diesel engines. In fact, the finished complex will be considerably larger and more integrated than the Tol'iatti plant. Moreover, Soviet engineers have more responsibilities at KamAZ than they did during construction of previous Western-assisted projects. Consequently there was no previous experience or model from which KamAZ's planners could learn. Troitskiy pointed this out as follows:

Even the construction of such a modern and in every respect progressive plant as VAZ (Tol'iatti), was not an adequate model. In erecting that plant, the type and design of the future vehicles and the technology for producing them were already known. At KamAZ, the models for the vehicles and the technology were being created at the same time that the construction was proceeding.⁶⁶

Some Western businessmen believe that the Soviets made a mistake in deciding to concentrate such a large production facility at one site.⁶⁷ The decision was made only after extensive debate (which paralleled the earlier debate over the location of the Tol'iatti plant) among Soviet economic planners and engineers.⁶⁸ Apparently the opposition to the KamAZ complex was strongest among the economists at the State Planning Committee: Its opponents argued that truck production should be more dispersed, along the lines of the U.S. automotive industry. Specifically, they advocated placing only the plant for production of diesel engines in Naberezhnye Chelny, while locating the main truck plant in another city in Siberia and plants for various parts and components in other cities. A major argument for this approach

⁶⁴ M. Troitskiy, "Na novom etape," *Novyi mir*, no. 1 (1975), p. 177.

⁶⁵ *East-West Markets*, January 27, 1975, p. 11.

⁶⁶ Troitskiy, *op. cit.*, p. 176.

⁶⁷ Peter Osnos, "The Soviets at Kama River: Big Complex, Big Problems," *Washington Post*, November 24, 1974, p. B-2; Donald Stingel, *op. cit.*

⁶⁸ Some details of the KamAZ debate are given in Troitskiy, *op. cit.*, pp. 10*-171 and 178-79.

was that the more dispersed industry would assist in providing employment for the surplus labor existing in some small cities. This "American" approach was successfully opposed by the proponents of a single complex in Naberezhnye Chelny. Apparently the victors were primarily engineers from the automotive and construction ministries. They argued that the Naberezhnye Chelny site was ideal from the standpoint of availability of hydroelectric power, water transport, and labor and because of its proximity to the major Soviet automotive centers.

While Troitskiy does not identify foreign technology as a consideration in the debate, it is interesting to consider the advantages of the two variants from the standpoint of facilitating the absorption and diffusion of foreign technology. Considering the importance of foreign technology at KamAZ, this may indeed have been an element of the debate that Troitskiy, a strong advocate of the victorious variant, conveniently ignores. With the advantages of hindsight and in view of the problems the project is experiencing, one is tempted to conclude for several reasons that the Soviets made the wrong choice. First, the construction and equipping of several smaller plants would have been easier to manage. It seems likely that the Soviets could have attracted Western firms to act as general consultants; if not, they probably would have had an easier time managing the separate projects. In either case, there were models, particularly in the West, that could have provided practical experience in truck production. Second, Western technology is logically more suited for the dispersed industry that exists in the West. By taking this into account, the problems of coordinating and blending Western and Soviet technological inputs might have been minimized. Third, the less-concentrated variant probably would have facilitated the diffusion of KamAZ's modern technology to other parts of the industry and the economy. Fourth, Soviet needs might better have been served with something less than the largest, latest, and most complex technologies. There is little evidence that Soviet specialists agree with this assessment, but it is interesting that Troitskiy does not rule out the "cooperative," or dispersed, approach for future projects.

Of course, the KamAZ experience is not the only possible solution of such problems. A detailed study of all of the factors of production in the conditions of our country allows us to decide in each concrete case which is more advantageous—concentration or cooperation.⁹⁹

Troitskiy's discussion of such issues, which is part of a more general debate that has surfaced during the discussion of the Tenth Five-Year plan and the Fifteenth-Year Plan, indicates that Soviet officials are continuing to actively consider different variants of technology transfer and domestic economic organization.

KamAZ diverges from the pattern established by Ford and FIAT in another important way. Its products, the diesel engines and trucks, were originally designed by Soviet engineers, without assistance from the West. They are basically modifications of other Soviet vehicles, redesigned from other parts of the Soviet automotive industry. Although the Soviet officials were initially inclined to seek assistance in building a new engine through a licensing arrangement with a Western

⁹⁹ Ibid., p. 178.

firm, they decided that their own engineers at the Yaroslavl Engine Plant could provide a better design.⁷⁰ However, in 1972 they enlisted the help of Renault to make improvements on the engines that had been designed for KamAZ trucks.⁷¹

Soviet officials have placed high priority on developing managerial techniques at KamAZ that will insure efficient production and maintenance of a rapid pace of technological progress. According to one Soviet source, the managers of the complex will use "the leading domestic and foreign experience in organizing the management of the big production complex."⁷² The Soviets hope to achieve a new style of management, partially by organizing the complex in accordance with the latest institutional changes in the Soviet economy and partially by seeking assistance from the West. On the one hand, KamAZ is organized as a production association, as are the Tol'jatti plant and several other Soviet automotive enterprises. This form of management will theoretically give KamAZ managers a degree of independence from the central ministry and also control over some of the specialized enterprises that provide vital inputs to KamAZ. On the other hand, the KamAZ managers will be assisted by imports of foreign managerial techniques and hardware. Although direct Western managerial assistance appears to be more limited at KamAZ than at other Soviet projects, the Soviets do plan to import a computerized management and automated control system from IBM. Moreover, KamAZ may be a testing ground for new management techniques that are imported through other channels, such as formal study of Western management science.

THE TRANSFER OF WESTERN TECHNOLOGY AND SOVIET ECONOMIC CHANGE

The Limits on Change

Technology transfer from the West to the Soviet Union may lead to significant change in the Soviet economic system. Technology transfer is broadly interpreted to include the use of Western systems of attaining economic objectives as well as the importation of products, techniques, and knowledge associated with specific production goals. The time for assessing change is not limited to the Fifteen-Year Plan (1976-90) but extends to the turn of the century. Economic changes may include modifications of both policies and institutions. While it might be assumed that changes in the Soviet economic system leads to changes in other parts of Soviet culture, these are outside the scope of this chapter.⁷³

The changes induced by technology transfer may not be revolutionary. Some may suggest that the absorption of foreign technology leads inevitably to the destruction of the old regime, after the lesson of the Paris Commune, but we do not think this is true. Significant change, in our view, might occur within a more flexible but essentially Leninist system. Likewise, we do not assume that economic, technological

⁷⁰ L. Bliakhman "Glavnyi vygrvsh—vremia: zametki o problemakh uskorenia nauchno-tekhnicheskogo progressa," *Neva*, no. 1 (1973), p. 173.

⁷¹ Edwards, op. cit., p. 309.

⁷² B. Mil'ner, "On the Organization of Management," *Kommunist*, no. 3 (1975), translated in *Joint Publications Research Service 64452*, April 1, 1975, p. 50.

⁷³ See especially the introduction; Chapters 1, 2, and 9, and the Afterword of this book.

transfer will act as an Archimedes-like lever, forcing a dialectic process of change on the reluctant managers of the system.

Perhaps "in-system modernizers" (to use a term employed by Marshall Shulman) may, within Party guidelines and in their own institutional self-interest, take actions that gradually lead to political and institutional change. The motivations of the leaders (*nachal*) (*niki*)⁷⁴ may lead them toward change in the interest of improved economic performance and strengthening of the Party's role in the economy. Even though trade in technology is a small part of total output, it may represent the critical margin necessary for attaining the priority economic goals of the leadership.⁷⁵ Even though Soviet leaders say, and probably believe, that they are not engaged in a process leading to significant change, this may be the unintended long-term result.

Interdependence and Modified Systems Transfer

The case studies of automotive technology transfer in the 1930s and in the 1966-75 period indicate some movement in overall policy from independence to technological interdependence and, more specifically, from the traditional Soviet model of technology transfer to a modified systems approach. No longer is independence of the Western supplier a primary criterion of success; companies such as FIAT and Swindell-Dressler are encouraged to expect long-term, expanding relations. Moreover, the policy of the earlier period of producing a Soviet plant in the indigenous administrative setting has been challenged and modified. There appears to be increasing acceptance of the idea that improved performance requires not only broad Western involvement in the entire cycle of technology transfer but also new kinds of production facilities that more fully adapt Western managerial and technical methods to Soviet conditions. The new kinds of facilities, in turn, are not expected to fit into the existing Soviet administrative hierarchies; new organizational forms, such as regional complexes and production associations, are in order. Such changes in organization suggest a shift in power and control from the established ministries and region Party organizations to the central governmental and Party organs—probably the State Planning Committee (Gosplan), the Academy of Science Institutes, and the Central Committee Secretariat departments. The modified systems approach, especially through joint management and joint production decisions, opens the Soviet system to more Western influence.

The new organizational forms in Soviet industry may be unlike both traditional Soviet and modern Western institutions. Just as Western technology was combined with the Soviet conditions of the 1930s to produce new but uniquely Soviet institutions, the current influx of Western technology may produce still another variant. Thus the case study of the Soviet automotive industry suggests only that

⁷⁴ The *nachal'niki* are defined as a Soviet social group—"those in positions of authority and management whose main work is the control of men." Z. Katz, "Insights from Emigrés and Sociological Studies of the Soviet Economy," *Soviet Economic Prospects for the Seventies*, op cit., pp. 101-102.

⁷⁵ A multiplier effect of about three is suggested in several recent studies, including the econometric assessments of Donald Green and Herbert Levine, "Macro Econometric Evidence of the Value of Machinery Imports to the Soviet Union," in *US-USSR Technological Interaction*, ed. J. Thomas (Washington: National Science Foundation, forthcoming). Philip Hanson, "The Impact of Western Technology: A Case Study of the Soviet Mineral Fertilizer Industry" in *East European Integration* ed. Paul Marer and Montias (Bloomington, Ind.: University of Indiana Press, forthcoming).

traditional methods are perceived by Soviet leaders as inadequate and in need of change. Some of the broad outlines of that change are emerging, and the absorption of Western technology appears to be influencing the direction of change.

In the short run the changes resulting from the process of economic interdependence are likely to be selective and limited. Even in the long run the Party and the government may succeed in insulating key sectors of change from the system as a whole. Among the key policy problems that require accommodation to the impact of Western technology are resource allocation priorities,⁷⁶ the role of the state trading monopoly, and the economic information control system.

In order to effectively absorb Western automotive production technology, it may be necessary to give higher priority to a domestic supply of high-quality goods, personnel, and research. More important to the attainment of the presumed leadership objective of developing a modern automotive transport system would be extensive investment in an automotive system infrastructure, such as roads and repair facilities. The effectiveness of Western technology transfer to the Soviet Union will depend not only on the systems approach to absorbing the technology but on the development within the Soviet Union of an automotive transport system to effectively utilize modern trucks and passenger cars to provide maximum economic utility. The discussion of the "Auto BAM"—the transcontinental highway from Brest to Vladivostok, a discussion that was quietly, even secretly, begun in 1967, is illustrative of this larger resource commitment.⁷⁷

Resource allocation policy is also likely to be influenced by balance-of-payments considerations, particularly the need to pay for the Western technology. In view of the difficulty experienced by the Soviet Union in maintaining its hard currency balance of payments, Soviet planners are confronted by hard choices. For example, they will have to apportion the expanded output of industrial cooperation ventures between domestic claimants and foreign markets. Will the export passenger car from the Tol'jatti plant, the Lada, be given priority in quality and delivery schedule over the domestic product, the Zhiguli? We already note aggressive European sales efforts for the Lada. A future variant of such preference for foreign over domestic markets might be the establishment of a new plant or a separate line at Tol'jatti that would be designed to meet the foreign market's special demands for high-quality products and timely delivery. For example, the Soviets may be forced to imitate the Japanese auto producers, who have made special export arrangements to meet U.S. environmental standards. Such attention to the requirements of the export market might be a step toward establishing export branches of Soviet industry that might even rival the Ministry of Defense as a claimant for high-quality inputs.

The percentage of total economic activity represented by Western trade and industrial cooperation is likely to be a small but critical margin. Much of the new investment in the upcoming plans will be in Siberian raw materials, transportation, and industrial development. Attainment of the various modernization objectives will be keyed to Siberia and to Western technology transfer—"the biggest programs

⁷⁶ See especially Hardt, *Soviet Commercial Relations and Political Change*, op. cit.

⁷⁷ *East-West Markets*, June 1975.

in the history of the U.S.S.R.”⁷⁸ A large portion of the new investment for the Tenth Five-Year Plan and the concurrent Fifteen-Year Plan will be in Siberian modernization projects. The time for completion, the efficiency, and indeed the feasibility of many of these projects are likely to depend on the effectiveness of the Western technology bridge and on the priority given to related Soviet supply plans.

One important institutional change that may occur is erosion of the dominance by the Ministry of Foreign Trade over Soviet foreign economic relations. A major purpose of the State Trading Monopoly has been to insulate the Soviet domestic economy from the outside influence of powerful capitalist nations and to maintain the influence of the domestic Soviet enterprises and ministries on foreign commercial policy. This concept is now being eroded or modified. For example, the Ministry of Foreign Trade and its subordinate foreign trade organizations and related agencies no longer monopolize commercial negotiations with foreign firms. At the center, the State Planning Committee (Gosplan) has begun to play an important role. Likewise, the ministries of key industries such as metallurgy, chemicals, gas, and oil increasingly have direct contact with Western firms. The State Committee on Science and Technology, especially through Dzherman M. Gvishiani, its ubiquitous deputy chairman, has made agreements on technology exchanges that narrow the scope or infringe on the mission of the Ministry of Foreign Trade's monopoly. To be sure, the Ministry of Foreign Trade has resisted a dilution of its power and has reorganized to adjust to changing conditions. However, the system of foreign trade administration is in flux.⁷⁹

Payments in kind out of subsequent output by the industrial cooperation ventures have been modified. Concurrent rather than sequential payments are now possible. Now ministry lines are crossed in repayment. Current or concurrent payment is possible, and either hard currency or product may be the form of payment. Thus the dominance of the State Bank (Gosbank) and the Foreign Trade Bank (Vnesh-torgbank) has also been eroded. The direct quota control of the Soviet state trading monopoly has limited Soviet end users from participating in the choice of firms with cooperative advantage and otherwise profiting from direct contact. It has also left the Western firms in a more restricted position than have Common Market-type quotas.⁸⁰

Another consequence of the new approach to technology imports may be modification in economic information control systems. The exchange of economic information has become part of the bilateral, government-to-government exchange program. The exchange of agricultural data, such as current and future crop forecasts, was a subject of summit agreements with Washington in June 1973. Data related to creditworthiness, such as hard currency indebtedness and gold stocks, have been the subject of considerable discussion. Successive presidents of the U.S. Export-Import Bank have stressed the necessity for Soviet disclosure of the information normal to a determination of creditworthiness. However, in spite of numerous discussions, no

⁷⁸ Mil'ner, *op. cit.*

⁷⁹ L. Brainard, "Soviet Foreign Trade Planning", in *Soviet Economy in a New Perspective*, (Washington, D.C.: Government Printing Office, 1976), pp. 695-708.

⁸⁰ See Oleg Bogomolev's discussion paper of G. Haberler and John P. Hardt "Integration by Market Forces and Through Planning" at World Congress of International Economic Association, Budapest, Hungary, August 19-24, 1974.

significant data has been provided. The formal agreement between the Export-Import Bank and the Foreign Trade Bank of April 1973 apparently did not require disclosure. Moreover, the formal and solemn agreement to provide agricultural data did not lead to disclosure, which makes it seem unlikely that there will be general disclosure of the more sensitive monetary data.

The reasons for lack of general disclosure may be traced to several sources: the continued legal barrier to disclosure of a wide range of economic data (the state secrecy laws); the lingering Soviet view that foreign knowledge of the inner workings of the Soviet economy, such as information on stocks of grain, petroleum, and gold, is intelligence information that might reveal strengths and vulnerability to a putative enemy; the apparent view of the leadership that availability of information and statistics represent mechanisms of control within the Soviet society; and the habit of secrecy. V. N. Starovskii, former head of the Central Statistical Agency, seemed to treat economic data more as a treasure to be guarded and stored than as a common property to be freely circulated. If he is truly a man of the Stalinist past, his successor may take a less restrictive view of data disclosure.⁸¹

Despite the Soviet penchant for secrecy, there have been marked changes or exceptions made for some foreign commercial arrangements. The economic and technological ties to the West that have been established in the 1970s require a more flexible attitude toward disclosure of economic information. For example, the Soviet desire to obtain equal and nondiscriminatory prices and credit terms may lead to more responsiveness to Western pressures for more specific information. On-site exploration of the West Siberian gas fields by Western firms was permitted, to allow them to make an objective assessment of the Siberian gas reserves.

The modified systems approach to technology transfer provides much more access to the Soviet economy. As Western companies become involved in the construction and design of projects, the supply of plants, and the distribution of products, the specific "need-to-know" within those particular branches of the economy increases, and as the FIAT relationship has become a long-term one, and it is likely that Italian specialists in Soviet auto production have become more knowledgeable about domestic Soviet economic matters than the general secrecy system usually proscribes. Moreover, companies such as McKinsey Management Consultants and Control Data Corporation which provide advice and guidance on Western management techniques and computer applications, are likely to be given greater access to Soviet economic data. Perhaps management and computer consultation will provide a better basis for interpreting and understanding Soviet economic practices than the traditional sources of information and economic data. The intergovernmental exchange programs are another source of data exchange and disclosure. The information exchanged with Western colleagues on research and development in the USSR may be greater in many cases than that exchanged among research institutes within the USSR.

The implication of these foreign disclosures through specific private commercial and governmental channels is that the traditional

⁸¹ V. G. Trembl and John P. Hardt, ed. *Soviet Economic Statistics* (Durham: Duke University Press, 1972).

general system of secrecy is being breached, however selectively and modestly. Certainly the Western corporations protecting industrial secrets or information that provide market advantage may be closed-mouthed and discrete; however, the specific disclosures are made largely in order to obtain more competitive terms and more efficient operations. The latter criteria for wider disclosure might become persuasive within the Soviet Union, especially as the old guard passes from the scene.

Modification of the Administration of Soviet Enterprises With Western Technological Connections

Perhaps coincidentally with these expanding Western ties, some economic sectors appear to be exploring new administrative forms or variants of the old. What seems to be involved is a removal of these Western-connected enterprises from the traditional bureaucracy and relaxation of the old ministerial ties and of the control by the local Party organizations. The establishment of regional complexes and production associations is a part of this apparent new trend.

The regional complexes, such as the Tyumen petroleum complex, the West Siberian gas development, and the Baikal-Amur railroad development, appear to require considerable Western economic involvement and seem to be moving away from traditional lines of control. Referring to the regional complexes, a Soviet writer noted the following:

They require a new approach to the creation of an organizational management mechanism, for their effective implementation requires the specific coordination of thousands of organizations and establishments. Such programs are not included within the limits of individual ministries and departments or territorial administrative organs; their management, i.e., the organization, coordination, and control of the joint activities of a large number of scattered enterprises and establishments, could be effective and rational only on the basis of a complex approach.⁸²

The large regional complexes tend to upgrade the role of the central Party and governmental organs—the departments (*otdel*) of the CPSU Secretariat of the Central Committee, the Gosplan, and the Council of Ministers. More direct involvement of important ministries and Party leaders is characteristic of these projects. For example, Western corporate leaders have found that discussions with Brezhnev, Kosygin, and important ministers appear to be essential links in negotiation about industrial cooperation ventures. Moreover, the heads of departments in the Central Committee secretariats, such as Victor Bushuyev in chemicals, Vasily Frolov in machine building, Fedor Mochalin in light and food industry, and Fedor Kulakov in agriculture, may become more important if the roles of subordinate ministries and regional branches of the Party decrease. It is not surprising to find the latter officials arguing for the traditional bureaucratic approach of the past.⁸³

Lev Vasiliev, general director of the Kama River truck complex, is reported to have special and high government and Party access. A Western writer commenting on Vasiliev's unique position noted the following:

⁸² Mil'ner. op. cit.

⁸³ Troitskil. op. cit.

What is important is that the Russians seem finally to have got the point that industrial efficiency requires that a manager be given operating authority commensurate with his responsibilities. In the West this is traditional; in the U.S.S.R. it is almost revolutionary.⁸⁴

The role of the local Party in industrial management has been the subject of considerable debate in recent years. According to Darrell P. Hammer, the Leningrad view, expressed by G. Romanov while he was Leningrad Party Secretary, was that the economic role of the Party organization should be enhanced. This would be accomplished by more economic training of the younger Party leaders. Romanov's call for more economic training is concerned with the economics of management rather than with engineering skills. He is said to have had more support among local and regional Party secretaries than among the central Party officials, who have less concern with emulating Western economic practices. In this sense Romanov's new emphasis on managerial over traditional engineering favors decentralized reform. That is, he advocates better-trained industrial managers and management-oriented local branches of the Party, operating within the traditional bureaucracy.⁸⁵

The Party has some difficult problems in deciding whether the new Western-oriented complexes are to be given some autonomy from traditional ministerial and local Party direction and controlled more by the central government and Party organs. The training of local managers and Party officials, from the shop leaders up, would probably involve retraining several million people. Converting those trained as engineers, over half of whom are probably over 50 years old, into effective managers by modern management science criteria would be a formidable task.⁸⁶ Although the Romanov view seems to have merit, the short-run solution of removing the large Western-assisted complexes such as Tol'jatti and KamAZ from the control of local branches of the Party and traditional ministerial hierarchy seems to be more effective and expedient.

A third variant to the centralized approach, the decentralized upgrading of Party and managers, is a mixture. Some ministers such as chemicals, have been strengthened—a "head" ministry approach—and some have been weakened, as in the centralization of the automotive industries. This would be a blend of the two variants: some more regional power to complexes, some more central control by the Central Committee.

To date the debates on organization and control are waged within the parameters of Soviet party guidelines acceptable to the leadership. The dominant position of the Party is not in question. The Leninist concept of democratic centralism is kept intact. Whether progressive forms of Western contacts and technology transfer can be contained within the traditional Party and governmental bureaucratic frameworks remains to be seen. The ripple effect of modest institutional change may lead to more profound substantive change, especially in the long run.

⁸⁴ Herbert E. Meyer, "A Plant That Could Change the Shape of the Soviet Industry," *Fortune*, November 1974, p. 155; see John P. Hardt and T. Frankel, "The Industrial Managers," in eds. H. Gordon Skilling and Franklyn Griffiths, *Interest Groups in Soviet Politics* (Princeton: Princeton University Press, 1971) pp. 171-208.

⁸⁵ Romanov was elevated to the Politburo in 1973. Darrell P. Hammer, "Brezhnev and the Communist Party," *Soviet Union* Vol. II, Part 1, 1975, pp. 8-12.

⁸⁶ Hardt and Frankel, *op. cit.*, pp. 198-208.

Chapter 6. ECONOMIC DEVELOPMENT AND MODERNIZATION IN CONTEMPORARY CHINA: THE ATTEMPT TO LIMIT DEPENDENCE ON THE TRANSFER OF MODERN INDUSTRIAL TECHNOLOGY FROM ABROAD AND TO CONTROL ITS CORRUPTION OF THE MAOIST SOCIAL REVOLUTION*

BY ROBERT F. DERMBERGER

INTRODUCTION

The Problem

Economic development is a primary goal of all societies, both communist and noncommunist. Regardless of the wide variety of cultural values, patterns of social behavior, ideological objectives and constraints, political and administrative institutional organizations, and even specific economic priorities to be found in these societies, the results of empirical research and theoretical reasoning by economists indicate that the accumulation and effective implementation of technological innovations is perhaps the most important and difficult of the necessary conditions for any successful economic development program. By definition, the developed countries are the repositories of advanced technology. The developing countries must rely to a significant extent on borrowing this technology in their efforts to achieve economic development.¹ Simon Kuznets states the argument clearly as follows:

* Robert F. Dernberger, "Economic Development and Modernization in Contemporary China: The Attempt to Limit Dependence on the Transfer of Modern Industrial Technology From Abroad and to Control its Corruption of the Maoist Social Revolution." *Technology and Communist Culture: The Socio-Cultural Impact of Technology Under Socialism*. Ed. Frederic J. Fleron, Jr. 1977 Praeger Publishers, A division of Holt, Rinehart and Winston, CBS, Inc. pp. 224-264. Reprinted by permission of Holt, Rinehart and Winston/CBS, Inc.

Due to space limitations and the comments of readers, this is a significantly revised and reduced version of the research paper. "The Resurgence of 'Chung-hseuh wei-t'i, Hsi-hsueh wei-yung' (Chinese learning for the fundamental principles, Western learning for practical application) in Contemporary China: The Transfer of Technology to the PRC," which I presented to the Conference on Technology and Communist culture held at Bellagio, Italy, in August 1975. I wish to thank the participants in that conference, especially the discussants of my paper, for their many helpful comments.

All of the data cited in this chapter, unless otherwise noted, are taken from a 29-page statistical appendix prepared for the version of the paper presented at Bellagio. Unfortunately, limits of space do not permit the inclusion of the statistical appendix in this article. That statistical appendix, however, is used as the basis of a statistical analysis of China's machinery and equipment trade that is in preparation. Those readers who are interested in obtaining a copy of this appendix should write to the author.

¹ China is a most unique example of this flow of technology from the "advanced" to the "backward" societies. At one point in history, China was the most advanced or developed nation in the world and Europeans "borrowed" from the Chinese treasure chest of inventions. After contributing to the world's stock of technology in the premodern period, however, the Chinese entered the modern period as an underdeveloped country without a modern technological base. Borrowing R. H. Tawney's excellent way of capturing this unique phenomenon, China's peasants "ploughed with iron when Europe used wood, and continued to plough with it when Europe used steel." R. H. Tawney, *Land and Labor in China* (Boston: Beacon Press, 1966), p. 11.

No matter where these technological and social innovations (i.e., those innovations which are the source of the "high rate of aggregate increase and of the high rate of structural shifts that characterize modern economies") emerge—and they are largely the product of the developing countries—the economic growth of any nation depends upon their adoption. In that sense, whatever the national affiliation of resources used, any single nation's economic growth has its base somewhere outside its boundaries.²

Historically this intercultural transfer of technology, a necessary component of modernization for the less-developed countries, has involved serious pernicious effects on the borrowing country's social and cultural system. How the Communist countries have coped with this problem and their success in doing so is a major theme of this volume.

Although seriously concerned with the historical tendency for borrowed technology to bring along with it the germs of undesirable social change, the Chinese communists argue that "national science and technology bear no class characteristics"; that is, whatever its origin, foreign technology can be useful in China's attempt to modernize, and it should be possible to sanitize the borrowed technology so it does not lead to undesired changes in the borrowing country's society.³ The real danger is to be found in the unquestioned and slavish adoption of modern Western technology; the process of defusing its harmful effects lies in its careful adaptation to fit China's needs and environment. Mao's words are as follows:

China has suffered a great deal from the mechanical absorption of foreign material. . . . We should assimilate whatever is useful to us today not only from the present-day socialist and new-democratic cultures but also from the earlier cultures of other nations. . . . We should not gulp any of this foreign material down uncritically, but must treat it as we do our food—first chewing it, then submitting it to the workings of the stomach and intestines with their juices and secretions, and separating it into nutriment to be absorbed and waste matter to be discarded.⁴

The Chinese have encountered severe problems in their attempt to "digest" foreign technology and history tells us what previous attempts to separate the good from the bad in this manner have often lead to the demise of the would-be gourmets. In an allegorical argument remarkably similar to Mao's, but much less optimistic, Arnold J. Toynbee concludes as follows from his detailed study of contacts between civilizations:

The truth is that, if once the besieged have permitted even one isolated member of the besiegers' storming column to force his way inside their enceinte, their only remaining chance of saving their fortress from ultimately falling is to take the intruder prisoner before any of his eagerly following comrades-in-arms have had time to rejoin and reinforce the audacious pioneer. An intrusive alien culture-element cannot be purged of its dangerous capacity for attracting to itself other elements, of the same provenance, with which it was associated in its original cultural setting. The rash recipient's only chance of demagnetizing his formidable acquisition is to metabolize and assimilate it to a degree at which it becomes amenable to being worked into his native cultural pattern as an enrichment and not a dissolvent of the prevailing harmony. If the intrusive alien element succeeds in defeating the operation of its host's digestive system by

² Simon Kuznets, *Modern Economic Growth: Rate, Structure, and Spread* (New Haven and London: Yale University Press, 1966), p. 287.

³ The phrase quoted in the text comes from a serious discussion of science and technology contained in several articles published in *Hung Ch'i* (Red Flag) in October and November of 1962. For our purposes here, an even more appropriate quote from these articles is, "Thus, the point is not whether we need or do not need to learn good things from foreign countries, but how to learn them." *Hung Ch'i*, no. 20 (Oct. 16, 1962), p. 4.

⁴ *Selected Works of Mao Tse-tung* (1967 edition), Vol. 2, p. 380.

retaining its magnetic alien quality after lodgment, the unhappy host will find himself condemned to look on helplessly while the defiantly intrusive culture-element behaves in his body social like a loose electron disintegrating an atom.⁵

In this chapter I shall show that the Chinese communists have relied rather heavily, despite policy statements to the contrary, on technology borrowed from abroad in their economic development efforts. Furthermore, they are well aware of the possible pernicious effects of this borrowed technology on the Maoist culture they are trying to create in China, and they have actively attempted to limit and neutralize these pernicious effects. I shall provide a tentative judgment about their possible successes or failures in these efforts.

The specific organization of the chapter should be self-evident from the headings for each section. There will be a discussion of China's unique and unhappy experience in attempting to control the disruptive effects of modern technology on the indigenous culture in the pre-1949 period. Then there will be a summary review of post-1949 Chinese policy statements regarding the transfer of technology, followed by an analysis of the empirical record of their actual behavior in this regard over the past 25 years. A description and evaluation of contemporary Chinese attempts to insulate domestic efforts to achieve new socialist (that is, Maoist) behavioral attitudes and values from the corrupting effects of modern Western technology is then presented in the final sections of the chapter.⁶

A LESSON FROM HISTORY: THE FAILURE OF EARLIER MODERNIZERS TO INSULATE CHINA'S CULTURE AGAINST THE CORRUPTING EFFECTS OF MODERN INDUSTRIAL TECHNOLOGY

Whatever the outcome of the contemporary attempt by the Chinese Communists to digest foreign technology while avoiding any ill effects on their social body, they are well aware of the utter failure of an earlier generation of Chinese who tried to accomplish this same difficult task.

By the middle of the nineteenth century, the oldest and most stable cultural and political system in the world's history had begun to crumble. Responsible Chinese leaders, serving an alien rule, went through a considerable period of anguish and soul-searching in the attempt to save China's traditional culture and institutions.⁷ These Chinese believed in the superiority of their cultural tradition but were forced to recognize, following a disastrous series of wars and "unequal" treaties, the superiority of Western technology and economic productivity. Thus the solution many of them believed possible was in the adoption of Western "things" to sustain and develop the Chinese "way of life." The popular slogan used to convey the argu-

⁵ Arnold J. Toynbee, *Contacts between Civilizations in Space*, vol. 8 in *A Study of History* (New York: Oxford University Press, 1963), pp. 548-49.

⁶ For my earlier attempts to deal with the question of the transfer of technology to China, the reader should see Robert F. Dernberger, "The Role of the Foreigner in China's Economic Development: 1840-1949," in *The Chinese Economy in Historical Perspective*, ed. Dwight Perkins (Stanford, Calif.: Stanford University Press, 1975), pp. 19-47; and Robert F. Dernberger, "The Transfer of Technology to China," *Asia Quarterly*, 1973-74, pp. 229-52.

⁷ For an excellent survey of "the way in which the scholar-official class of China" tried to "take action to preserve their own culture and their political and social institutions," see Teng Ssu-yü and John K. Fairbank, *China's Response to the West* (Cambridge: Harvard University Press, 1954).

ment was "Chung-hseuh wei-t'i, Hsi-hsueh wei-yung," which can be translated as "Chinese learning for the fundamental principles, Western learning for practical application."⁸

The efforts of these 19th century reformers were in vain. Not only did it prove most difficult to transplant Western technology, even on a limited scale, into an unmodified traditional Chinese cultural and institutional environment without greater official support than they had in these efforts, but these inexperienced indigenous efforts to introduce Western industry also were exposed to unrestrained foreign competition when China's domestic economy was finally opened to the forces of "imperialism."

The resulting foreign trade and investment were concentrated in a few major areas of China, but the capital inflow of gross private and public foreign investment between 1902 and 1930 totaled over 6 billion U.S. dollars.⁹ Much of this foreign investment was directly related to the foreigners' trading activities and residential facilities (transportation, banking, public utilities, and real estate), and only 18 percent of the total was private direct investment in manufacturing. Thus the output of foreign-owned factories in 1931 accounted for less than one-third the total output of China's modern manufacturer.

Quite simply, although earlier reformers had been unable to preclude a Western economic invasion by developing their own domestic industrial base, indigenous entrepreneurs did emerge, especially after the revolution of 1911, and were able to hold their own in the face of foreign competition.¹⁰ The important feature of this development, however, is not that the Chinese were able to learn from the Westerner and successfully begin their own indigenous industrialization, but that in doing so the borrowed Western technology brought with it its own complementary values and institutions, as follows:

In the end, the remnants of the old China—its dress and manners, its classical written language and intricate system of imperial government, its reliance upon the extended family, the Confucian ethic, and all the other institutional achievements and cultural ornaments of a glorious past—had to be thrown into the melting pot and refashioned. The order was changed within the space of three generations.¹¹

This experience of failure in trying to cope with the undesirable effects of foreign technology is an important part in the heritage of China's present leaders, who are in a significant sense the product of the early reformers' failures. According to Mao, "the Chinese learned a good deal from the West, but they could not make it work and were

⁸ Three of the most famous reformers who preached and practiced this slogan were Tseng Kuo-fan (1811-72), Ling Hungchang (1832-1901), and Chang Chih-tung (1837-1909). The Kiangnan Arsenal, founded jointly by Tseng and Li in 1861, can be considered the first Western-style factory in China. Although they differed on the definition of the Chinese culture to be saved by borrowing the fruits of Western technology for the "self strengthening" of that culture, the two most notable descendants of these earlier reformers were Chiang Kai-shek and Mao Tse-tung.

⁹ Unless otherwise noted, these statistics and those in the immediately following paragraphs are from Robert F. Dernberger, "The Role of the Foreigner," op. cit.

¹⁰ This is the consensus emerging from recent attempts to reexamine the received argument that the forces of imperialism completely killed off nascent attempts by the Chinese to industrialize. See Chi-ming Hou, *Foreign Investment and Economic Development in China* (Cambridge: Harvard University Press, 1965); John K. Chang, *Industrial Development in Pre-Communist China*, (Chicago: Aldine, 1969); Robert F. Dernberger, "The Role of the Foreigner," op. cit.; and Bruce Reynolds, "The Impact of Trade and Foreign Investment on Industrialization: Chinese Textiles, 1875-1931" (Ph.D. dissertation, University of Michigan, 1975).

¹¹ Teng and Fairbank, op. cit., p. 1.

never able to realize their dreams." In other words, their digestive system was unable to absorb the nutriments and discard the waste matter.¹²

An important contributing reason for the failure of China's early reformers to achieve the objective of "Chung-hsueh wei-t'i, Hsi-hsueh wei-yung" was the Chinese government's inability to control the foreigners.¹³ In the West the normal channels of trade and investment were the successful transmission belt for the foreigners' modern technology. Not only did the foreigners encounter limited resistance to their activities in host cultures with cultural, social and political environments similar to their own, but there often was an eager solicitation and acceptance of their activities.

In countries with alien cultures, however, the Western purveyors of modern technology encountered significant resistance. If the "limited aggression" implied by the Westerners' access to the economic and military superiority of their home countries did not succeed in creating a more friendly environment for their activities in the host countries, then this period of "limited aggression" often produced "open aggression" and colonialization. Colonialization made it possible for the Westerners to directly transplant not only their modern technology, but their own cultural, social, legal, and political institutions as well.

Given this traditional problem in the transfer of modern Western technology to the non-Western countries, why were Russia, Japan, and even the People's Republic of China relatively successful in coping with this problem, while traditional China was not? A brief review of these countries' experiences indicates that the role played by their governments was critical. Popular sentiment in all four cases would appear to have been strongly antiforeign, but unlike the case of traditional China, the governments in Russia, Japan and the Peoples' Republic (1) actively pursued the objective of economic development, (2) recognized the need for and advantages of heavily borrowing foreign technology, and (3) effectively controlled and limited the activities of the foreigners within their economies. The fragile balance of control over domestic antiforeign sentiment with simultaneous heavy borrowing of technology from abroad via foreign trade has been one of the striking features of their economic development. In the case of Russia and Japan, this transfer of technology has been eminently successful; these two countries now rank as the second and third largest economies in the world.

It would be premature to claim that the Chinese have been successful, but their prospects for success are very good and their record of past success and expectations of future success owes a great deal to their practice of active borrowing of modern technology from abroad and their ability to control its impact on the domestic economy and society. The empirical record of their borrowing of modern technology from abroad and an evaluation of their attempts to control its impact on the domestic economy and society are presented in

¹² Quote from Mao Tse-tung, *On the People's Democratic Dictatorship*.

¹³ The following argument is put forward here as a tentative hypothesis of why some cultures are able to absorb foreign technology more readily and with less ruinous effects on their indigenous cultures and institutions than others. The argument was first suggested to me by Simon Kuznets.

following portions of this chapter. First, however, it can be shown that despite their frequent arguments concerning the need for self-reliance in achieving economic development, Chinese economic development policy statements have always allowed for and even emphasized the equal importance of borrowing technology from abroad.

THE DOMINANT THEME OF SELF-RELIANCE IN THE POLICY PRO- NOUNCEMENTS OF CHINA'S CONTEMPORARY MODERNIZERS

Policy statements on economic development in China over the past 25 years can be compared to a great symphonic work. Self-reliance, the dominant theme, provides the basic framework and the ideological spirit of the piece; heavy reliance on borrowed technology, the minor theme, is an ever-present haunting tune in the background. By definition, the dominant theme is loudly emphasized at certain times, but the minor theme never completely disappears. In fact, at times it threatens to take over as the dominant theme. The merit of the work, however, is the intricate and ingenious weaving together of these two themes.

Thus, during some periods over the past 25 years, Chinese policy statements could be interpreted as calling for extreme self-reliance or autarky and, at other times, calling for heavy borrowing of foreign technology from abroad. Furthermore, the advocates of these two conflicting points of view have continued to fight over these differences in determining what particular policy should be adopted. Nonetheless, both a careful reading of their policy statements and an analysis of their actual behavior make it clear that, with the possible exception of the early 1950s, the Chinese communists have continuously followed a policy that represents a compromise: a policy of dual technological development. On the one hand there is the modern sector—the core of China's industrialization, consisting of large-scale, capital-intensive projects, relying heavily on imported technology. On the other hand, there is the rural, small-scale sector, which is very significant in both its contribution to total supply and to China's development potential. The Chinese recognize, however, that this rural industrial sector alone is not a sufficient condition for successful economic development, consisting as it does of smaller-scale, more labor-intensive projects that rely to a greater extent on indigenous technological innovations, which are mostly adaptations of technology available in the modern sector. Although at times they definitely appear to be separated in the thinking of the Chinese economic development policy makers, and although Chinese economic development policy may place greater stress on one of these sectors at a particular time, there is considerable interaction between them. It is their emphasis on both *sectors* that represents, I believe, the evolution of a rational and wise approach to the economic development problem in China today. I shall return to a discussion of the distinction between these two sectors in the concluding section of this chapter.

As for the modern sector, however, three very representative and important examples of the Chinese appreciation of the need for and benefits to be derived from borrowing foreign technology can be cited here: the Chinese First Five-Year Plan, the three short essays by Mao

that were required reading during the 1960s, and the authoritative statement on China's economic development policies published at the end of the 1960's.

The First Five-Year Plan (1953-57) represents the most explicit statement of the Chinese leaders' decisions about the means and objectives of China's economic development program following the restoration of the economy in 1952. The language of the plan itself is as follows:

Our industrial capital construction plan which puts the main emphasis on heavy industry is designed to set our technically backward national economy onto the road of modern technology and lay an up-to-date technical foundation for our industry, agriculture and transport. To achieve this aim our plan of industrial capital construction provides for the establishment of new industries equipped with the most up-to-date technique, and for the similar reequipment of existing industries, step-by-step. This plan is the core of our Five-Year Plan, while the 156 projects which the Soviet Union is helping us to build are in their turn the core of our industrial construction plan.¹⁴

Following their open break with the Soviet Union in 1960 and their agreement that the unquestioned borrowing of the Soviet approach to economic development during the First Five-Year Plan period had been wrong, the Chinese leadership placed much greater emphasis on self-reliance in their public statements of economic policy. Nonetheless, throughout the last decade or so, the three most emphasized required readings from the works of Mao—the brief gospel for one-fourth of mankind—are “Serve the People” (September 1944); “The Foolish Old Man Who Removed the Mountain” (June 1945); and “In Memory of Norman Bethune” (December 1939). These brief essays crystallize the three major “thoughts of Mao”; the socialist virtue of dedicating one's life to working for the people; the ability of the people to overcome any obstacle through self-reliance and sacrifice; and the life of Norman Bethune, a Canadian, as an excellent example of not adopting something new just because it is new, but also not ignoring the contributions modern technology (meaning technology brought by a foreigner) can make to China's future. Thus the “thoughts of Mao” stress both self-reliance and borrowed technology.

Finally, an article in the October 1969 issue of *Hung Ch'i* (Red Flag), entitled “China's Path of Socialist Industrialization,” was the most explicit statement of China's economic policy in the period after the Cultural Revolution.¹⁵ This article does indeed stress self-sufficiency as the proper means for achieving economic development. Nonetheless, as always, it admits that lessons can be learned from other countries and are desirable; it is the mere imitation of foreign technology that is wrong, and the Chinese must learn to rely on their own initiative in generating technological progress.

This simultaneous commitment to both rural, small-scale, “native” industries and urban, large-scale, modern industries is neither schizophrenic behavior nor dishonest propaganda. It is merely sound development policy for the central government of a country with scarce capital to tell the local authorities in underdeveloped rural areas to develop their areas by utilizing the resources and technology

¹⁴ *First Five-Year Plan for Development of The National Economy of The People's Republic of China in 1953-1957* (Peking: Foreign Languages Press, 1956), p. 38.

¹⁵ This article drew heavily from two of Mao's works written in the mid-1950s, “On Ten Major Relationships” and “On the Correct Handling of Contradictions among the People.”

available to them in small-scale, labor-intensive industrial projects and not look to the central government for help while the central government is importing advanced technology for large-scale industrial projects in the urban, modern sector.¹⁶

This ability of China's leaders to conceptually separate these two sectors and advocate dissimilar technological policies in each is related, of course, to their ability to control the flow of technology borrowed from abroad and its utilization in China. In this regard, the institutional organization of the Chinese economy, as in other socialist economies, places considerable control in the hands of the central government. For all practical purposes, since the mid-1950s at least, all industrial enterprises in China are owned by the state and run by managers appointed by the state.¹⁷ Investment in new industrial projects and the acquisition of new capital in existing enterprises on any significant scale are also controlled through the central budgetary process and require the explicit permission of central authorities, that is of the State Capital Construction Commission.

What foreign technology is obtained from abroad, and who uses it in China, are determined largely, at least in the first instance, by economic agencies directly under the control of the central government.

Although over the past 25 years the development policy of the Chinese has always combined elements of an effort to develop a domestic industrial sector built through their own efforts while simultaneously building a modern industrial sector incorporating technology imported from abroad, this dual industrial-sector development was made possible by the state's centralized control over the importation, distribution, and utilization of foreign technology. Changes in economic and in domestic or international political circumstances have resulted in episodic changes in emphasis from one aspect of this dual policy to the other.

For example, with the creation of the PRC in 1949, the continued success of the Chinese communists depended upon their rapid restoration and development of all industries, but especially the producer goods industries. Self-sufficiency was out of the question, as was the piecemeal grafting on of imports to the domestically produced supply of producer goods, given the magnitude of the new industrial capacity required and the time limit for acquiring it if the Chinese hoped to accomplish their goals of national security and industrialization. Thus, even during the period of recovery in 1950-52, the Chinese actively sought and obtained imports of complete and modern plants from their new Socialist allies. As pointed out earlier, these imports of complete plants were the core of the First Five-Year Plan for the industrialization of China in 1953-57. At the end of the plan period, due to their failure to achieve significant increase

¹⁶ For example, even when telling the workers and peasants to rely on their own devices in the "native" sector, the Chinese leaders point out the obstacles to using these same techniques in the modern sector and the need to continue to rely on modern technology in the modern sector. See report, New China News Agency (NCNA), May 11, 1963, and in *Hsin Chien-she* (New Construction), no. 1-2 (1966).

¹⁷ I use the phrase "for all practical purposes" because there have been several different forms of ownership in effect and different types of management formats employed over the past two decades. Nonetheless, the conclusion that the state (that is, political authorities at various levels) owns and manages industrial enterprises in China is a valid one, especially for the purpose of this chapter.

in agricultural production, as well as Mao's desire to speed up the pace of the socialist revolution, the Chinese adopted a new approach in their general attack on the economic development problem.¹⁸

Known as the Great Leap, this new policy emphasized reliance on the mass mobilization of China's rural labor force in county-sized political and economic units—commune—in a guerrilla-type effort not only to increase agricultural output but also to develop small-scale native industries throughout the countryside that would not rely on imports of modern technology, that is, of producers goods. Nonetheless, this new policy also called upon the Chinese to “walk-on-two-legs.” Thus large-scale imports of complete plants continued as the Chinese also pursued the expansion of the modern industrial sector, signing agreements in late 1958 and early 1959 that called for additional Soviet deliveries of complete plants in the belief their new development policy had been successful.

By the end of 1959 the failure of the Great Leap became obvious to even the most optimistic of Mao's supporters. The severe agricultural crises of 1959 and 1960 greatly reduced the supply of inputs for industry. These shortages soon generated excess capacity in industry, and in addition, the domestic shortage of foodstuffs created a need for large-scale imports of foodstuffs in order to maintain a minimum standard of living for the Chinese. At the same time, China's foreign exchange earnings were rapidly declining due to the shortage of raw and processed agricultural products for export. Thus both the need for and ability to obtain imports of machinery and equipment, especially complete plants, declined sharply in 1961, regardless of the existing Chinese policy toward the transfer of technology from abroad or the unwillingness of the Soviet Union to supply complete plants to China after 1960.

There was a considerable time lag between the failure of the Great Leap and the adoption of a new economic policy to correct the consequences of that failure. A series of secret documents (articles) calling for specific readjustments in policy were finally issued in 1961 and were summarized in a speech by Chou En-lai in March 1962. These new policies called for a retrenchment in the pace of investment, while the priorities of the previous ten years were to be turned upside down, with agriculture (the foundation) to receive the highest priority in development. In regard to the transfer of technology, policy statements indicated that self-sufficiency was to be an essential principle.

Despite the emphasis given to self-sufficiency in policy statements, the new program of readjustment actually supported the continued borrowing of foreign technology from abroad. China's scientific and technological establishment was to be strengthened for the purpose of achieving the desired self-sufficiency, but the efforts of these scientists were to be rewarded and left relatively free from ideological pressures in their work. That is, emphasis was once more placed on their being experts, although lip service was paid to the desirability

¹⁸ For a discussion of the economic factors contributing to the need for adopting a new approach to China's economic development problems in 1957-58, see Robert F. Dernberger, “Foreign Trade, Innovation and Economic Growth in Communist China,” in *China in Crisis*, ed. Tsou Tsang and Ping-ti Ho (Chicago: University of Chicago Press, 1968), vol. 1, book 2, pp. 739-52.

of being both "red and expert." This attempt to increase China's scientific and technological capacity, therefore, kept the door open for these scientists to acquire their expertise by borrowing foreign technology. In addition, imports of foreign technology by commodity trade were explicitly recognized as an important contribution to China's economic development.

As the level of domestic economic activity and investments in fixed industrial capital revived in the 1960s, the Maoists' hopes for the socialist transformation of Chinese society were becoming more and more frustrated. With the approval of guidelines in the "revisionist" economic program and the active encouragement of these administering that program, bourgeois tendencies stressing skills, increased income differentials, individualism, a vertical chain of authority and responsibility rather than group responsibility and decision making, enlargement of the market sector, and all the other complements of "economism" and "efficiency" because common features of China's economy. In an attempt to revive the goals of their continuous socialist revolution, the Cultural Revolution in 1966 and 1967 was an open confrontation between the followers of Mao and the Chinese "revisionists."¹⁹

As a result of this campaign, there was a significant change in China's policy in regard to the transfer of technology. The policy of self-sufficiency was emphasized to a much greater extent than previously; that is, it was more widely and frequently expressed as an operational rule in the short run, rather than as a guiding principle in the long run.

Discussions in the Chinese press during 1970 made it obvious that many of the several radical changes in economic policy that had been proclaimed following the Cultural Revolution either were being seriously reconsidered or had not been effectively carried out.²⁰ In any event, the economic developments of the early 1970s clearly indicated a return to the policies of the 1950s, at least in the area of transfer of technology. There was a renewal of the decision to strongly push for the simultaneous development of both rural, small-scale industry and modern, large-scale industry. In the 1970s, however, greater emphasis has been placed on the need for improvement in the level of technology utilized in the small-scale industries and for the creation of better ties to the modern industrial sector for this purpose.²¹ The

¹⁹ There is a voluminous literature on the Cultural Revolution, but for an interpretation of the economic issues involved, see Robert F. Dernberger, "Radical Ideology and Economic Development in China: The Cultural Revolution and Its Impact on the Economy," *Asian Survey* 12, no. 12, (1972): 1048-65.

²⁰ "The fact that . . . traditional institutions and attitudes continued to flourish despite the drastic measures instituted by Mao in 1966 to purify the nation, must have been a bitter blow." Leo Goodstadt, *China's Search for Plenty: The Economics of Mao Tse-Tung* (New York: Weatherhill, 1973), pp. 202-203. "In retrospect, the Cultural Revolution demonstrated that the economic society developed under the Communists in China since 1949 had sunk fairly strong roots. In spite of the political turbulence during the Cultural Revolution, the institutional organs in the economy continued to function. . . . Mao and his radical cohorts never were disposed to, or perhaps never able to, push the Cultural Revolution beyond a certain state of disruption. Towards the end the sting had gone out of their blows, and their initiatives met almost universal resistance." Arthur G. Ashbrook, Jr., "China: Economic Policy and Economic Results, 1949-71." In *People's Republic of China: An Economic Assessment*, a compendium of papers submitted to U.S. Congress, Joint Economic Committee (Washington, D.C.: Government Printing Office, 1972), p. 30.

²¹ See Jon Sigurdson, "Rural Industry—A Traveler's View," *China Quarterly*, no. 50 (April-June 1972), pp. 315-32, and his forthcoming monograph on the technology of China's small-scale industries.

simultaneous development of these two types of industry is now proceeding in a much more integrated fashion than was true in the 1950s and early 1960s, when the small-scale industries were a more purely local and indigenous effort.

This most recent episode in China's policy regarding the transfer of technology provides strong support for the Chinese reaffirmation of the need for and desirability of large-scale borrowing of modern technology from abroad. As far as the emphasis on self-sufficiency is concerned, the growth of China's foreign trade in the 1970s has rapidly increased China's participation in the world market, to the point where China is currently the largest purchaser of modern technology among the less-developed countries of the world.²²

This brief review of China's policy in the area of technology transfer clearly indicates that despite the repeated emphasis on self-sufficiency, the large-scale transfer of technology from abroad could easily be considered the dominant theme of that policy, except perhaps in the early 1960s, when economic conditions greatly reduced the need and ability of the Chinese to pursue that policy, and the late 1960s, when zealous Maoists temporarily gained control and began to implement a program of extreme self-sufficiency. This conclusion is made much more convincing by a review of the empirical record of the transfer of technology to China over the past 25 years, organized according to the episodic swings in emphasis in policy described above.

THE EMPIRICAL RECORD OF THE PAST 25 YEARS: LARGE-SCALE TRANSFERS OF MODERN TECHNOLOGY FROM ABROAD

The transfer of technology from abroad can accurately be described as including the entire range of contacts and intercourse between the two societies. Even when limited, however, to a few specific means of transmission such as publications, exhibitions, meetings, delegations, foreign experts, and training abroad, as well as the importation of technology by means of licensing agreements and/or imports of machinery and equipment embodying modern technology, the definition still remains too broad to allow for a meaningful analysis of the transfer of technology if the objective of that analysis is the identification and quantification of the specific causes and effects of the technology transferred.²³ Therefore, we chose to concentrate our analyses of the empirical record on the technology transfer involved in China's commodity trade, but strongly emphasize that the Chinese have relied on the other means for the transfer of technology to a considerable extent as well.²⁴

²² This is my own judgment, based on the fact that China's import trade ranks seventeenth in the world, ahead of all the other less-developed countries except for Spain and Brazil, and the fact that one-fifth of China's imports consists of machinery and equipment.

²³ Sometimes, the concept [transfer of technology] is so loosely defined as to be analytically nearly useless," Charles Cooper, "The Mechanisms for Transfer of Technology from Advanced to Developing Countries," (mimeographed, Science Policy Research Unit, University of Sussex, 1970), p. 1.

²⁴ The version of the paper delivered at Bellagio included a detailed discussion of China's importation and dissemination of Western and East European technical books and journals, industrial exhibitions held in China by Western and East European industrial countries, China's participation in the research activities of the socialist bloc's Council of Mutual Economic Assistance as an "observer" member, the Soviet and East European scientists and technicians who were assigned to work and teach in China during the 1950s, the technical data and designs those countries supplied to China, and the Chinese sent abroad for study and training. Limitations of space have required the exclusion of that discussion from this chapter.

Despite the importance of the means outside the commodity trade for transferring technology from abroad, a very strong case can be made for identifying the flow of technology embodied in imported producer goods in normal commodity trade as the major means by which the Chinese have obtained foreign technology over the past two decades. That argument can be summarized briefly, and I present it below, before turning to the quantitative analysis of this import of technology from abroad.

First of all, there is the conceptual basis for the argument: the contribution of modern technology to an economy's economic development and growth lies in its contribution to increasing the productivity of labor. For the most part, it only achieves this effect when it is embodied in the physical capital the labor works with in production. Thus, as some economists argue, there are very few disembodied technological innovations that contribute to increased output without a simultaneous adoption and use of modern physical capital. Rather than be treated as a separate source of increased production in the production function, technological innovation should enter as an increased value of the complementary physical inputs.²⁵

Equally important with this conceptualization of the process is the actual extent to which the Chinese have relied upon this particular means of technology transfer over the past two decades. In 1952-73 China imported over \$8 billion worth of machinery and equipment, accounting for more than one-fifth of China's total imports. In terms of domestic capital accumulation, these imports were over one-tenth of the total domestic supply of new machinery and equipment over these same two decades. In 1952-60, China's imports of machinery and equipment accounted for over one-third of total imports and over one-fourth of the total domestic supply of new machinery and equipment, compared with less than one-fifth and less than one-tenth, respectively, in the 1961-73 period. Nonetheless, after weathering the ill effects on their industrialization program of the agricultural crisis at the beginning of the 1960s and those of the Cultural Revolution in the mid-1960s, imports of producer goods increased by approximately 40 percent a year between 1969 and 1973; and in 1974 they reached the highest level of any year since 1949.

Even these impressive summary statistics for China's reliance on imported technology by means of commodity imports fail to indicate the significance of these imports on China's economic development effort. These statistics treat one dollar's worth of imported machinery and equipment embodying modern technology as if it were equivalent to one dollar's worth of domestically produced machinery and equipment; that is, they are additive to domestic supply on the margin. Domestic and imported machinery and equipment are not perfect substitutes for one another, however, and to the extent that the imports are essential complements to the domestic supply in the construction of domestic production facilities, China's inability to acquire these imports would greatly reduce the productivity of the domestically produced machines. China's development program could well have

²⁵ This adjustment of the value of the physical inputs would not just apply to the machinery and equipment used, but would also apply to the value of labor, to the extent that labor acquired greater skills.

suffered an irreparable setback for want of those imported machines, which are included as a necessary component of most modern factories; even most of the machines in those factories were produced domestically.²⁶

TABLE 1.—SUGGESTED PERIODIZATION OF CHINA'S TRANSFER OF TECHNOLOGY VIA COMMODITY TRADE, 1952-73

[Annual averages, absolute values in U.S. dollars]

Imports of machinery and transport equipment	Transplants (1952-60)	Transition (1961)	Piecemeal grafts (1962-66)	Hothouse cultivation (1967-69)	Revival of transplants (1970-73)
Total.....	540	272	220	261	550
Percent of total imports.....	35	18	14	14	18
Percent of total investment.....	27	17	8	6	7
From Communist country X.....	501	246	123	126	236
Percent of China's total M of machinery and equipment.....	93	90	56	48	43
Percent of Communist country total X to China.....	47	34	26	39	45
From non-Communist country X.....	39	26	99	136	314
Percent of China's total M of machinery and equipment.....	7	10	45	52	57
Percent of non-Communist country total X to China.....	8	3	9	9	12
Percents by largest Communist suppliers:					
U.S.S.R.....	56	40	26	8	12
Czechoslovakia.....	11	12	6	7	5
East Germany.....	15	19	9	12	8
Hungary.....	3	6	3	3	3
Poland.....	4	9	5	7	5
Rumania.....	3	3	5	12	10
Percents by largest non-Communist suppliers:					
Japan.....	11	--	12	14	21
France.....	11	2	6	8	9
Great Britain.....	11	2	10	5	5
West Germany.....	12	1	8	11	6
Percent by all 10 largest suppliers.....	97	94	90	87	84

1 1955-60.

Source: Summary of the annual data for "Chinese Imports of Machinery and Transportation Equipment, 1952-73," which is table A1 in the statistical appendix given in the paper presented at Bellagio, Italy, in August 1975. Other tables included in the statistical appendix are table A2: "Communist Country Supply of Complete Plants, 1950-73," table A3: "List of 200 Complete Plant Projects in China Supplied by Socialist Countries," table A4: "Commodity Composition of China's Imports of Machinery and Equipment from the Noncommunist Countries, 1961-73," table A5: "China's Purchases of Complete Plants from the Noncommunist Countries, 1963," and table A6: "Commodity Composition of China's Import Trade 1928, 1950, and 1953-73," and table A7: "Output of Selected Producer's Goods Industries in PRC."

Table 1 traces China's transfer of technology, using commodity trade figures, through five successive stages between 1952 and 1973. Not all of these imports of machinery and equipment represent embodied modern technology that the Chinese do not have available domestically. They simply represent modern machinery that the Chinese cannot produce in sufficient quantity domestically. Nonetheless, they do embody modern technology, whether new to China or not, and do increase the intensity of the impact this modern, "foreign" technology has on Chinese social norms and behavior. This is the third justification for concentrating on the Chinese borrowing of foreign technology by means of commodity trade that has been given in this chapter:

²⁶ Elsewhere, using a very simple economic model with fixed coefficients, assuming that domestic production was a perfect substitution for imports and restricting the analysis to the First Five-Year Plan period (1953-57), for which sufficient data is available, I have estimated that the loss China would have suffered if denied these imports of machinery and equipment would have been a 20 to 30 percent reduction in its official rate of growth. Using a similar model, Alexander Eckstein estimated that the loss would have been a 20 to 50 percent reduction in China's estimated rate of growth. Robert F. Dernberger, "The Foreign Trade and Capital Movements of Communist China," (Ph. D. diss., Harvard University, 1965). Alexander Eckstein, *Communist China's Growth and Foreign Trade* (New York: McGraw-Hill, 1966), pp. 123-24.

the technological imperative of major concern in this book results from the interaction of the Chinese labor force with these imported machines.²⁷ It is through the use of these machines in the production process that a society is pressured into recognizing not only the tremendous contribution modern technology can make to increased productivity, but also the necessity to create and develop a host of complementary conditions so that this potential contribution can be realized.

These necessary complementary conditions often involve fundamental changes in a whole host of social and economic policies, with a resulting change in social values and behavior. If they desire to generate and implement their own modern technology, in their educational system the Chinese must put significant emphasis on a wide range of scientific knowledge, most of which is devoid of any ideological content, since it is apolitical. To achieve progress in the acquisition, spread, and effective use of this knowledge, the knowledge and those who use it must become specialized. To obtain the effective implementation of modern technology, some systems of material rewards must be introduced. To obtain its effective utilization, a hierarchical form of management with fixed responsibilities and authorities must be introduced with the necessary natural incentive differentials to go with these responsibilities and authorities. As for the work force that directly interacts with these modern machines in production, the need for regularity in use, maintenance, and care and the acquisition of manual skills naturally leads to worker discipline, job specialization, and wage differentials. Finally, the economies in scale, the large externalities to be gained from a cluster of producers who produce inputs for each other, and the high cost of the necessary social overhead capital for modern industry lead to the concentration of these factories in urban industrial centers.

Even though optimum efficiency does not appear to be one of China's top economic objectives, all of these forces are at work in contemporary Chinese society and bring modern technology into direct conflict with Maoist ideological goals. Thus the desire of China's leaders to integrate town and country and especially to narrow the difference in income between these two sectors, to elevate "reds" over "experts" as the elite class with decision-making power; to reduce income differences within the industrial labor force as far as possible; to foster group instead of individual responsibilities and job assignments; to make education "practical" and nonelitist, that is, not based on talent and ability but on social merit; and to generate and implement new technology and innovations from and by the masses instead of only among specialists—all are subject to the undermining forces unleashed by the use of modern technology. Thus, in concentrating on China's import of modern technology via commodity trade, we are emphasizing not only the most important source by which the Chinese borrowed modern technology but that source that sets lose the greatest counter-

²⁷ Inasmuch as this book is devoted to the technological imperative resulting from borrowed technology in the socialist societies, it is necessary to emphasize here that this result is effected mainly by the interaction of the indigenous society with the imported producer goods, which embody the foreign technology. Nonetheless, it is important not to overlook the much more significant technological imperative at work in these societies due to the entire program of modernization and industrialization adopted in these countries, regardless, of what particular modern engineering technology is borrowed from abroad, from whom, and how or whether or not the producer goods embodying that "borrowed" foreign technology are produced domestically or abroad.

productive pressure in the form of modern technological imperatives on the social values and patterns of behavior the Chinese leaders are simultaneously pursuing in their attempt to transform Chinese society into their form of socialism.

In the final section of this chapter, I shall return to this topic and describe how the Chinese have tried to thwart these negative consequences of modern technology imported from abroad. In the remaining portions of this section I shall show that the level of these imports has been quite significant. The discussion is organized according to the episodic swings in emphasis in Chinese policy. However, our earlier argument should not be forgotten: over the past 25 years the most important feature of China's economic development policy has been the ever-present attempt to develop both sectors simultaneously.

The Wholesale Transplanting of Technology, 1950-60

In the first 11 years of their rule, the Chinese communists imported over \$5 billion of machinery and equipment (M&E). These imports, for the period as a whole, exhibited a growth that was faster than the growth in total imports.²⁸ This growth in M&E imports, rapid though it was, did not keep pace with the growth in domestic investment in machinery and equipment during the 1950's.²⁹ As a result, China's rate of self-sufficiency in machinery and equipment was increasing by approximately .5 percent each year in 1952-60.

The Western embargo on shipments of producer goods to China was fairly effective during the 1950s, with only 7 percent of China's M&E imports coming from these countries.³⁰ Despite the importance of these suppliers in filling the gaps in China's domestic supply on an item-by-item basis, they were but a trickle compared with China's M&E imports from the socialist countries. For example, Poland and Hungary, China's fourth- and fifth-largest suppliers in the socialist block, together provided China with more machinery and equipment during this period than did all the countries in the non-communist world. The socialist countries as a whole supplied China with 13 times the amount of machinery and equipment supplied by the Western nonsocialist countries in the 1950s.

The data for the commodity composition of China's imports of machinery and equipment from these Socialist countries are limited, but enough are available to indicate that less than half of these imports were piecemeal or item-by-item M&E imports,³¹ which would still leave the socialist bloc as China's major supplier of single order machinery and equipment for filling the gap between domestic production and the needs of China's investment program during the 1950s.

The gap between domestic needs and supply created by China's investment program during the 1950's was not, however, met by the piecemeal importation of individual machine tools, electrical machin-

²⁸ The annual rate of growth of M&E imports was 18.3 percent in 1952-60, while the rate of growth of total imports was 9.7 percent.

²⁹ The annual rate of growth of investment in machinery and equipment was 24.3 percent in 1952-60.

³⁰ The largest market share attained by the Western industrialized countries during the 1950s (1952-60) was in 1957, when supplies from these sources accounted for 12 percent of the total.

³¹ This is based on a sample, admittedly biased, of the commodity trade returns for the Soviet Union in 1952-60, Hungary in 1952-59, and Poland in 1958-60.

ery, power equipment, and so on, but by the importation of complete plants. In the 1950's these complete plants, which made up more than 50 percent of their M&E exports to China, were the major contribution to China of the socialist suppliers of machinery and equipment, especially in regard to the transfer of technology.

Perhaps the best means to convey the importance of these complete plants is to quote from a Chinese book written for the purpose of illustrating to the Chinese how important this contribution was in their development efforts. Written at a time when expression of such appreciation was still encouraged and directed specifically to Soviet assistance, this book clearly identifies the crucial role the Soviet Union and East Europeans played in transferring technology to China by means of these complete plants, as follows:

In regard to these enterprises, the Soviet Union renders assistance from beginning to end. In the process of the new construction or reconstruction of these industrial enterprises, from the collection of construction data, surveying, the clearing of the construction site, planning, provision of necessary materials, management of construction and operation, training of technicians, and provision of necessary technical data and plans to the production of the new product, the Soviet Union completely and systematically provides our country with sincere assistance.³²

During the 1950s China probably imported over \$2.5 billion of complete plant projects, more than three-fourths of the total being supplied by the Soviet Union. After the Sino-Soviet split in 1960, less than \$50 billion dollars worth of complete plants was sent to China from the Soviet Union. Fewer details are available concerning the 68 complete plants supplied by the East European members of the Soviet bloc during the 1950s. The information that is available indicates that they were smaller than the projects supplied by the Soviet Union and that they included several light industrial projects.

Of the 11,000 Soviet technicians working in China during the 1950s, about half were estimated to have been directly involved in the complete plant project. Over 25,000 Chinese technicians and workers received training in the Soviet Union.³³ These personnel and the work they did were obviously at the core of the technology transfer process during the 1950s. The abrupt disruption of this process in 1960 placed a severe strain on China's development efforts. The Chinese have not been able to reestablish a similar relationship with any single source of modern technology, at least not on the same scale. Quite the contrary, their experiences with the Russians during the 1950s are used as arguments in their calls for self-sufficiency and in their hesitancy and caution in accepting large numbers of foreign technicians to work in China, now that they are buying complete plants in the West.

Whatever the effect of the technological imperative on China's society since the early 1950s, it was certainly set loose by these complete plant imports and the foreign technicians who accompanied them, a massive attempt to transplant Soviet and East European modern production units onto Chinese soil. In addition to the magnitude of this technology transfer by commodity trade, however, its gen-

³² Huang Chen-ming and Huang Jun-t'eng, *The Extraordinary Sino-Soviet Peoples Friendship Looked at from the Standpoint of Sino-Soviet Cooperation* (Peking: Finance and Economics Publishers, 1956). The quotations in the following paragraphs are taken from my typed translation of the original in Chinese.

³³ Chu-yang Cheng, *Scientific and Engineering Manpower in Communist China* (Washington: Government Printing Office, 1965) pp. 194 and 196.

eration of the technological imperative was reinforced by the sectoral and geographical distribution of these complete plant projects.

The contrast with the waves of technology transfer to China before World War II is quite significant in this regard. The treaty port system that evolved during the 19th century limited the foreigners' residence and business activities to several ports along the coast and the navigable rivers.³⁴ Shanghai accounted for almost half the total direct foreign business investment in China, the remainder being Japanese and Russian investment in Manchuria.³⁵ This geographical concentration of foreign economic activity served to severely limit the points of contact between the foreign and domestic sector, and these contacts were restricted even further by the legal restrictions on the movement of foreigners.

The Chinese communists have also severely restricted and controlled foreigners' access to the domestic producers and consumers of China's exports and imports, but the significant difference between the pre-1949 period and the 1950s is the fact that while foreigners may not have had access to the internal economy in the 1950s, the producer goods they sold, which embodied modern technology, did have this access, and they had it on a large scale. Equally important was the significantly different sectoral and geographical distribution of these producer goods. Not only were the foreigners' residences and economic activity concentrated in the coastal treaty ports, especially Shanghai, but their direct investments, as noted earlier, were concentrated in activities associated with their residences and foreign trade businesses. Of the total of direct foreign investment in 1931, only 17 percent was in manufacturing. Even here the foreigners invested in activities closely associated with their foreign trade activities, which were connected with tobacco (an import substitute), cotton spinning mills (an import substitute), the processing of egg products for exports, shipbuilding, saw mills, and skin products.³⁶ In any event, an almost negligible share of the foreigners' total direct investments was in the producer goods sector.

A casual glance at the Chinese industrial investment program during the 1940s, which generated the large demand for imports of producer goods, and at the list of complete plant projects clearly shows the contrast between the 1950s and the pre-1949 period in the geographical and sectoral distribution of technology transfer via commodity trade. Of the total capital construction investment in industry during the First Five-Year Plan period (1953-57), over 75 percent was in enterprises under the Ministries of Heavy Industries, Fuel Industries, and Machine-building, while only 7 percent was in enterprises under the ministries of Textiles and Light Industry.³⁷

As for the geographical distribution of fixed industrial capital during the 1950s, the traditionally developed regions still accounted for

³⁴ A more extensive discussion of the geographical and sectoral concentration of foreigners' economic activities in the pre-1949 period is presented in Robert F. Dernberger, "The Role of the Foreigner in China's Economic Development: 1840-1949," in *China's Modern Economy: Historical Perspective*, ed. Dwight Perkins (Stanford, Calif., Stanford University Press, 1975), pp. 19-47.

³⁵ C. F. Remer, *Foreign Investments in China* (New York: Howard Fertig, 1968), p. 97. Remer, op. cit., p. 86. A paper could be written on the technological imperative set loose by the substitution of machine-spun for hand-spun yarn in China's cloth weaving industry, a technological imperative that led to tremendous economic and social unrest in China's countryside.

³⁷ Chu-yuan Cheng, *China's Allocation of Fixed Investment, 1952-1957*, Michigan Papers in Chinese Studies, no. 17 (Ann Arbor: Center for Chinese Studies, University of Michigan, 1974), p. 48.

over two-thirds of the industrial capacity in China at the end of the 1950s.³⁸ The same can be said of the complete plant projects supplied from abroad, a large number being located in the traditionally industrialized Northwest and North coastal provinces. Nonetheless, very few of these complete plant projects were located in Shanghai, and even those were in the heavy industrial sector. Furthermore, those that were located in the interior were the key heavy industries in the development of new industrial centers.

The active search for the large-scale supply of this transplanted technology (from socialist countries), obtainable by commodity trade during the 1950s, changed dramatically after 1960 as a result of the open break between China and the Soviet Union and because of the domestic agricultural crises at the end of the 1950s and the resulting greater emphasis the Chinese placed on self-sufficiency during the 1960s.

The Transition Period, 1961

In a true sense the Chinese were without any active economic policy in 1961. They were merely trying to cope with the simultaneously interacting consequences of their break with the Soviet Union and the agricultural crises. The agricultural crises created excess capacity in industry and thus a significant reduction in the Chinese investment program because of a reduced demand for machinery and equipment. Both were necessary and sufficient explanations for the drastic decline in China's M & E imports from all foreign sources in 1961. Using simple correlation estimates, the changes in domestic fixed construction investment in 1958-62 can explain almost 100 percent of the variance in M & E imports over the same period.

These economic consequences of the agricultural crises alone would explain most of the decline in the level of M & E imports by two-thirds in 1961, although the Sino-Soviet split may well explain the somewhat larger than proportionate decline (almost 80 percent) in M & E imports from the Soviet Union, along with the slightly smaller than proportionate declines in M & E imports from the East European countries (slightly less than 50 percent). Even so, the Soviet Union continued to be China's largest supplier of modern technology by commodity trade, supplying 40 percent of China's M & E imports in 1961. The real impact of the Sino-Soviet split was the failure of China's M & E imports from the Soviet Union to revive during the 1960s as China turned to other sources of supply, especially the noncommunist countries.

Based on China's trade with the Soviet Union and Poland, the only socialist-bloc countries for which detailed data are available for 1961, imports of complete plans—the major catalyst for the transfer of technology by commodity trade during the 1950s—continued to account for over 70 percent of China's M & E imports from the socialist countries. Thus the import of complete plants continued to play a dominant role in the transfer of technology by commodity trade in 1961, although at a much lower level due to the major retrenchment in China's investment program.

³⁸ Yuan-li Wu, *The Spatial Economy of Communist China* (New York: Hoover Institution Publications, Praeger, 1967), Chapter 3.

*Economic Revival and the Piecemeal Grafting of Foreign Technology
Onto the Chinese Stock, 1962-66*

It is very difficult to determine the extent to which China's development policies during the early 1960s were forced on the Chinese by the harsh dictates of the economic realities they faced or were due to the advocacy of those in the leadership who championed the cause of agricultural development, favored the Chinese consumer, and promoted self-reliance. Whatever the cause, and both causes reinforce each other, China's foreign trade in 1962-66 reflected a significant reduction in the pace of investment in heavy industry and in the importance of M & E imports, especially complete plant imports, in the domestic accumulation of fixed capital.

A close examination of the data, however, indicates that the switch in emphasis to greater self-sufficiency was neither complete nor stable during this period, growing considerably weaker as China's economic revival gathered momentum. For example, starting from their extreme lows of 1962-63, M&E imports were increasing at an annual rate of more than 60 percent a year, much faster than total imports and total domestic investment in machinery and equipment. Thus, although it was still lower than during the 1950s, M&E imports were rapidly re-establishing their former position as China's dominant import commodity and were becoming a more significant ingredient in China's domestic investment program. The dynamics of China's import trade during the early 1960s, therefore, indicate the policy of self-sufficiency; although it was actively being pursued, it was becoming less effective as time went on.

This argument is further supported when we look at the imports of complete plants. Following its break with the Soviet Union, China began shifting the direction of trade from the Soviet bloc to Western Europe and Japan. In 1961 China obtained 90 percent of its M&E imports from the socialist Countries, but by 1966 their share of China's M&E import market had declined to less than 50 percent. Not only were the Chinese shifting from the socialist countries to the Western industrial countries for imports of individual pieces of equipment and machinery to provide the necessary supplements and complements to their domestic production of machinery and equipment, but they were also shifting their orders for complete plants.

Between 1963 and 1966 the Chinese purchased 46 complete plants from firms in 10 West European countries and Japan. The total value of these purchases amounted to almost \$.2 billion. The share of these imports of complete plants in total imports in 1962-66, of course, was much smaller than during the 1950s, just as the share of M&E imports was a smaller share of total imports and of total domestic investment in machinery and equipment. Nonetheless, this relatively aggressive acquisition of complete plant deliveries for the heavy industrial sector, many of which included provisions for the supply of Western technological information and for the training of Chinese technicians in the West, does not indicate that the Chinese had turned their backs on this vital method of acquiring modern technology.

After their split with the Soviet Union, self-sufficiency was an important slogan for the Chinese to use in order to mobilize their en-

forced indigenous assault on the economic development problem and to assert their position of independence in dealing with foreigners. Self-sufficiency did not operate to deny the very important past contribution of, or their continued need to rely upon, the borrowing of foreign technology.

Intensive Efforts at Self-Sufficiency, 1967-69

The Maoists' victory in the Cultural Revolution introduced a brief period when emphasis on self-reliance as an operational policy was at its greatest level of any period in the preceding 25 years.³⁹ In fact, in a meaningful way the Cultural Revolution itself can be seen as the Maoists' last stand against the technological imperatives that had been generated in China's socialist revolution over the previous two decades.⁴⁰

The seriousness of the campaign for self-sufficiency during this brief period can be seen in three major developments, two in the domestic economy and the third in the foreign trade sector. In the domestic economy, the rural, small-scale industries—the showpieces of China's self-sufficiency—were no longer to be isolated from the large-scale modern industries—the showpieces of transferred technology. Quite the contrary, the modern sector was now urged to serve and assist the small-scale sector in its acquisition of technology and training of the labor force. Thus these small-scale industries emerged from their status of a neglected and self-supporting stepchild of economic development to a key position in the acquisition and distribution of technology, foreign as well as indigenous, in China.

A second major institutional reform with significant implications for the transfer of technology and, especially, for China's ability to generate its own self-sufficient technological base was the drastic changes made in the educational system. In essence, formal disciplinary and elitest education was to be abandoned. Institutions of higher learning were ordered to suspend their operations in June 1966 and were not reopened until the latter part of 1970. The changes made in China's educational system in the interim were truly one of the most revolutionary social innovations in the 20th century. Basically, book learning and "useless" theory were out, and practical training came into command. While studying, students are expected to divide their time between reading and study in the classroom and practical experience and application in the field. The curriculum is designed to meet China's practical needs, and not the mere acquisition of impractical knowledge. The time spent in school has been reduced. Most of these reforms represent an attempt to make education an egalitarian exercise in learning how to produce.

Finally, the seriousness of the campaign for self-sufficiency during 1967-69, at least as far as the transfer of technology is involved, is revealed by the developments in China's foreign trade. M&E imports experienced a steady decline at an annual rate of more than 20 percent between 1966 and 1969. These declines continued after the economy

³⁹ For a brief but good discussion and interpretation of the events in the Cultural Revolution, see William Hinton, *Turning Point in China*. (New York: Modern Reader, 1972).

⁴⁰ Almost every reform or institutional change ensuing from the Maoists' victory in the Cultural Revolution can be readily identified as an attack on a particular result of the way these technological imperatives were working to thwart the continuing socialist revolution. More will be said concerning this point in the concluding sections of this chapter.

had revived following the disruptions of the Cultural Revolution. Moreover, this rate of decrease led to a significant decline in the share of total imports accounted for by M&E imports. More important as a reflection of the self-sufficiency campaign, however, was the rapid decline in the share of imports in total domestic investment in machinery and equipment. This reached the lowest level for any year in the history of the People's Republic, with a rate of self-sufficiency of over 95 percent. The absolute level of M&E imports was so low in 1969, and the obvious downward trend so strong, that this result can only reflect the effectiveness of the policy of self-sufficiency that had been followed during the previous few years. With no new contracts for complete plants, a virtual absence of foreign technicians, an interruption in the flow of scientific journals received from abroad, a dwindling share of imports in the domestic investment program, and reform of the educational system, the most zealous Maoists had cause to hope that they could stem the perverse effects of the technological imperative.

The Chinese, however, were not yet capable in 1969 of providing their own modern technology, that is, of pursuing extreme self-sufficiency in their efforts to industrialize. The harsh dictates of reality, therefore, would force the Chinese to abandon self-sufficiency as an operational principle in the transfer of technology, and they soon revived their attempt to transplant foreign technology on a large scale when they rapidly increased the pace of the investment program in the early 1970s.

Reemergence of the Wholesale Transplanting, 1970-75

By the end of 1969 almost all of Mao's most outspoken opponents had been removed, and local, small-scale industries were accepted as a key to China's economic future. Nonetheless, the more moderate economic leaders remained in power, especially Chou En-lai and Li Hsien-nien, and others reemerged during the early 1970s. As one report notes,⁴¹ a sort of "old-boy" network protected the modern industrial sector from attempts to make it completely subservient to the small-scale rural sector and from the repeated press attacks on the large investments and wastes involved in the past development of modern, large-scale industry. As the Chinese began work on the Fourth Five-Year Plan, scheduled to begin in 1971, pragmatism and a generally hardheaded attitude to development reappeared, with the result that the state attempted to gain greater centralized control over the economy, due to the realization that the rural industrial systems would compete directly with the modern sector for inputs of raw materials, capital, and trained labor. Thus, statements appeared in the Chinese press emphasizing that national needs would require the fulfilling of state targets in the modern sector before satisfying local demand and recognizing the state-owned and supervised factories as "the economic lifeline of the state."⁴² In short, the pendulum was swinging back toward the modern sector.

⁴¹ "China Economy," in *Far Eastern Economic Review*, 1971 Yearbook, pp. 137-39.

⁴² For a very good analysis of the many press reports during 1969, 1970, and 1971 concerning the very subtle tug of war between the advocates of the rural, small-scale sector and the advocates of the modern industrial sector, see Leo Goodstadt, *China's Search for Plenty*, op. cit., Chapter 9.

Thus the early 1970s saw the rapid increase in the level of investment and heavy industrial production in another round of rapid industrialization. It is unlikely that China's leaders adopted this new policy of rapid industrialization in the Fourth Five-Year Plan without knowing its implications concerning the borrowing of foreign technology. Rather, their pursuit of rapid industrialization was an explicit commitment, based on the lessons of the previous two decades, to a renewal of a policy of borrowing foreign technology on a large scale.⁴³ Thus, beginning in 1970, China's M&E imports increased rapidly, although the share of these imports in the total investment in machinery and equipment increased slowly due to the very rapid rate of increase in the domestic production of producer goods over the same period. In 1974 China's M&E imports reached their highest level in the history of the People's Republic.

Most of the rapid increase in M&E imports after 1969 came from the Western industrialized countries (the United Kingdom, the Federal Republic of Germany, France, and the United States) and Japan. China's M&E imports from the noncommunist countries increased in 1969-73 at a rate of 50 percent a year. Although Japan clearly emerged as China's dominant supplier of machinery and equipment during this period, a more significant development was the opening of trade between China and the United States, for the first time in over twenty years. The Chinese acted quickly to secure supplies of machinery and equipment from this new source.

Despite these rather surprising developments in the transfer of technology from the United States to China in the early 1970s—a transfer that had been prohibited by U.S. laws before 1971 and was still under rather stringent control by the U.S. government—the United States was only China's third-largest supplier of machinery and equipment in 1974 because of the equally surprising increase in China's imports from the Soviet Union. Quite simply, in the early 1970s China was rapidly increasing the transfer of technology by commodity trade from all sources, especially those sources most able to provide it, regardless of any political differences that might exist.⁴⁴ This is only another reflection of the influence of pragmatism or moderation among China's leaders in the early 1970s. In general, however, the socialist countries were losing out to China's Western suppliers as the major source of China's imports of technology by commodity trade.

The Western, noncommunist countries' replacement of the socialist countries as the dominant source of transferred technology by commodity trade in 1969-73 was not a continuous process but consisted of two distinct stages. In 1970 the Western noncommunist countries increased their share of China's M&E import market to 63 percent,

⁴³ The decision to renew their search for modern technology was also intertwined with the almost simultaneous decision to seek improved political and economic relations with the United States.

⁴⁴ Ranking China's major sources of machinery and equipment during the early 1970s according to the increase in those imports between 1969 and 1973 yields the following results. The increase from the United States (the third largest) was infinite, since the United States did not trade with China in 1969; from Great Britain (fifth) there was more than a tenfold increase; from the USSR (second) the increase was 350 percent; from Japan (first), it was 300 percent; from Bulgaria (tenth), 300 percent; from France (sixth), 300 percent; from West Germany (seventh), 250 percent; from Poland (tenth), 150 percent; from Romania (fourth), 150 percent; from East Germany (seventh), 67 percent; and from Czechoslovakia (ninth), 50 percent.

from 46 percent in the previous year, due to the restoration of M&E imports to their previous peak level in 1966. This restoration did not rely extensively on the import of complete plants but was largely due to a very sizable increase in transport equipment imports, especially trucks, and—to a lesser extent—to increases in metalworking machinery imports. Thus the revival of Western supplies of machinery would appear to be the restablising of the pre-Cultural Revolution pattern of piecemeal grafting on of Western supplies to fill in the gaps of China's domestic supply. No contracts had been signed by the Chinese with Western firms for the supply of complete plants in 1969, and none were signed in 1970 or 1971. Furthermore, once the pre-Cultural Revolution peak had been restored, the level of Western non-communist country M&E exports to China remained relatively stable (1971-72); in 1972 the level of Western, noncommunist country M&E exports actually declined.

This decline in 1972, however, hides the emergence of the most startling and significant story in the transfer of technology to China in the history of the People's Republic. Beginning in 1972, the start of the second stage in the growing Sino-Western trade after 1969, the Chinese revealed their explicit decision to borrow foreign technology on a massive scale through the purchase of complete plants in the West. The volume of these imports in the 1970s is comparable to the flow of technology via complete plant projects imports in the 1950s. What is more important, however, is that the level of technology begin transferred during the 1970s period of transplanting complete units of foreign technology is considerably more advanced than in the earlier period.

Both periods of massive technology transfer have played a vital role in China's economic development efforts. In the 1950s the socialist countries supplied China with much-needed technology in the basic industries (power, steel, mining, metallurgy, machine buildings, and so on) when China was faced with the need to restore and expand those industries at the core of the producer goods sector. In the 1970s, after the Chinese have accomplished a considerable expansion of those basic industries, the Western countries are supplying China with much-needed technology in what might be called "advanced" industrial sectors, such as the chemical industry. Another contrast between the two periods is the use of foreign technicians. The plants supplied by the socialist countries were accompanied by large numbers of technicians, but despite the much higher level of the technology involved, the Chinese are limiting the number and strictly controlling the activities of the foreign technicians assisting in the construction of the complete plants supplied by the West.

China began purchasing complete plants from the West in the fall of 1972 with the purchase of two thermoelectric power stations from Hitachi Ltd. (Japan), worth \$16 million, and a chemical plant from Mitsui, Toatsu, and Toyo Engineering (Japan), worth \$11 million. These relatively small purchases preceded a flood of major contract negotiations in 1973. China purchased 32 chemical plants and 5 electric power projects, worth \$1.25 billion. In 1974 the Chinese continued these large-scale purchases of chemical plants and electric power stations, but they also signed several very large contracts for deliveries

of a cold strip steel mill, a hot strip steel mill, a silicon steel plating facility, and a continuous casting facility. The value of the deliveries negotiated during 1974 was approximately \$.9 billion. The volume of these purchases continued in 1975. Thus, despite the often repeated emphasis on self-sufficiency and the actual embodiment of that slogan in the development of rural, small-scale industry throughout the countryside, as well as its significant role in stemming the blind reliance on and copying of foreign models and expertise, China has again emerged as one of the world's leading borrowers of foreign technology.

MAO'S SOCIALIST CULTURAL REVOLUTION AND THE CORRUPTING EFFECTS OF MODERN, WESTERN INDUSTRIAL TECHNOLOGY

Imports of machinery and equipment, of course, are not the sole means by which China borrows technology from abroad, and not all these imports embody technology that is newly introduced in China. Since the early 1960s, however, these imports have been the principal carriers that in some areas introduced, and in other areas reinforced, the germ of the technological imperative associated with the disease of modern industrialization. Thus far in this chapter my purpose has been to present and analyze the statistical evidence to show that the Chinese communists have actively and willingly engaged in this form of technological transfer on a large scale, despite the emphasis given to self-sufficiency in their policy statements. Although the principle of self-sufficiency did emerge as a dominant element in China's operational economic policy in the latter half of the 1960s, the volume of China's transfer of technology by commodity trade during the 1950s and in the 1970s must rank among the largest such efforts in the world's history.

This attempt to describe the means by which foreign technology was transferred to China and an indication of the magnitude of that transfer was the major assignment I accepted in agreeing to write this chapter—that is, an attempt to disprove or at least balance the popular belief that China's economic development effort was representative of an autarkic development policy with very limited dependence on modern technology borrowed from abroad. In this concluding section, however, I desire to specifically address myself to the central question in this volume, which is the compatibility of modern industrial technology with the communist cultural values in China. These are three major reasons why I believe it is useful to include this discussion here in my chapter.

Reactions Against the Technological Imperative

The first of these reasons is that a failure to present an explicit statement on the extent to which the transfer of modern industrial technology from abroad has corrupted Mao's socialist, cultural revolution may imply a conclusion from the arguments already presented that I believe to be wrong. Quite simply, if my efforts in the preceding sections of the chapter have been to argue that the Chinese have relied very heavily on borrowed technology in their industrialization program over the past 25 years, a reasonable reader could easily conclude

that this large-scale borrowing implies the corollary large-scale corruption of the Maoist socialist, cultural revolution.

Whatever the validity of the technological imperative in other societies, the massive and ever-growing flow of technology from abroad has presented the Chinese leaders with a serious dilemma. Faced with their own inability to provide the necessary technology and with the role of that technology as a necessary condition for successful industrialization, their hopes for immediate success have left them little choice but to import this technology from abroad by commodity trade and on a large scale. Their unhappy experience with the borrowing of Western technology during an earlier period in history; their status in 1949 as leaders of an inferior economic power that had to rely on foreign assistance; and their program of social change, that which called for the rejection of almost all the implications of the technological imperative generated by modern foreign technology, created serious conflicts within the leadership that have erupted into the open periodically over the last 25 years.

For example, the technological imperatives set loose and reinforced by the transfer of modern technology led to a reaction that found its focus in the Cultural Revolution; however, the need for modern technology in the process of industrialization worked to erode the extreme position of self-sufficiency that was a result of the Cultural Revolution. Once again, the transfer of technology by commodity trade is being carried out on a massive scale, once more raising the serious question of whether or not the technological imperatives of this borrowed technology can be absorbed and controlled by China's leaders. The important point to be made here, however, is that the renewed decision to engage in the transfer of modern industrial technology on a massive scale in the 1970s does not simultaneously imply the abandonment or failure of the Maoist socialist, cultural goals. Although they recognize the many contradictions that exist between the technological imperatives of that technology and those goals, the cohabitation and interdependence of this technological borrowing and social revolution is a key feature of contemporary China. Thus I do not believe that the presently available evidence enables us to use China's experience over the past 25 years to support any particular answer to the central question in this volume; the attempt to make modern industrial technology and Maoist socialist culture consistent is being carried out with great intensity at the present time.

Richard Baum's Evaluation From Observations in Urban Areas

This brings me to the second major reason for including a discussion of the impact of modern industrial technology on Chinese society in this article, the inclusion in this volume of Richard Baum's chapter on technological development and social change in Chinese industry, which strongly argues that this attempt has failed in China. Based on his reading of the Chinese press and his observations during a recent visit to factories in the modern, urban industrial sector in China, Baum believes that the technological imperatives of modern industrial technology have indeed had their hypothesized effect in China. Material incentives or wage differences based on skills, and management

and worker assignments with specialization and specific lines of responsibility and authority—all the characteristics of Western industrial activity that the Maoists attacked as indicative of the restoration of capitalism or socialist revisionism in the early 1960s have reemerged as the dominant characteristics of Chinese industry in the 1970s. Even if correct, Baum's conclusions are specifically restricted to the large-scale, modern, urban industrial sector, which is the direct recipient and user of imported machinery and equipment and the modern technology it embodies. That sector, however, is a relatively small segment of China's total society.⁴⁵

My Own Evaluation From Observations in Rural Areas

During my own visit to China in the summer of 1975, when I visited over 50 rural, small-scale factories in the countryside—the countryside is the heartland of the Maoist socialist, cultural revolution and the bulk of China's population—I became convinced of the clear-cut distinction that exists between the rural, small-scale industrial sector and the urban, large-scale industrial sector in the economic development policies of China's leaders.⁴⁶ Nonetheless, the distinction between these two sectors is not made on the basis of the scale or technology utilized, as will be explained below, but on the different degree to which an attempt is being made to neutralize or contain the impact of the technological imperative upon the goals of the Maoist socialist, cultural revolution. This recent personal experience in observing what I believe to be a unique and explicit attempt to cope with the undesirable effects of the technological imperatives of modern technology in a socialist culture—the major theme of this book—is the third and most important reason that I have included a discussion of the topic in this chapter.

The Chinese obviously have appreciated the need for the large-scale borrowing of modern industrial technology from abroad if the industrialization, that is, the socialist revolution, in China is to succeed. This technology is transferred largely by means of imports of machinery and equipment, and these imports are almost exclusively destined for the urban, modern, large-scale industrial sector, located in a relatively limited number of urban centers and employing a relatively small segment of the total labor force. The Chinese define the modern, large-scale industrial sector as those industries owned and operated by the central government, the provincial governments, or the municipalities, regardless of their scales of operations or the technology utilized. Thus the direct effects of the technological imperatives are felt in the most isolated, smallest, and most directly controlled industrial sector in the economy.

The rural, small-scale industrial sector is defined as all industry owned by the counties, communes, brigades, and production teams, that is, by the lowest units in the government and economy. Again, this is

⁴⁵ The limited statistical evidence (estimates) available for the 1960's indicates that the urban population was less than 15 percent of China's total population, while factory employment itself accounted for less than 3 percent of the total.

⁴⁶ I visited China for four weeks during June 1975 as a member of the Delegation on Rural, Small-Scale Industry. The report of the delegation will be published as a monograph in the near future. Many of the points made on the following pages are discussed at greater length in this forthcoming monograph.

regardless of their sizes of operations or the technology utilized.⁴⁷ Obviously it is true that the rural, small-scale industries are somewhat smaller, on the average, and utilize less modern technology than the modern, large-scale industries. Nonetheless, we were startled to learn that these rural, small-scale industries, especially those owned by the county government (and these were the dominant type in this sector in terms of employment and output) could not be described as small-scale in an absolute sense and were utilizing relatively modern technology on a considerable scale. The showpiece crude workshop, with a few workers using a few crude hand tools or simple machines to produce elementary agricultural implements, still exists. Probably these workshops were more typical of the small-scale industrial sector in its formative days during the late 1950s, however. On the other hand, the county-run factory that employs between 250 and 500 employees and uses modern machinery and equipment is very representative of rural, small-scale industry in China in the late 1970s.

If both sectors tend to utilize modern technology, how then does the distinction made between the urban, large-scale sector and the rural, small-scale sector serve any purpose in the attempt to weaken the negative effect of the technological imperative of modern technology on the Maoist socialist, cultural revolution during the course of China's modernization? For one thing, a major feature of the distinction made between these two sectors is the "nationality" of the modern technology they use. The presence of imported modern industrial technology is quite obvious in the modern, large-scale sector. This sector is the direct recipient and user of the imported machinery and equipment, which embodies the modern technology and clearly displays a foreign name plate. Once borrowed, however, this same technology is supplied to the rural, small-scale sector embodied in a "Chinese"-made machine, either carrying a nameplate from a factory in China's ever-growing modern, large-scale industrial sector or produced by one of the well-equipped machine shops in the rural, small-scale industrial sector itself, having been produced according to blueprints supplied by a national or provincial design bureau. This is the real meaning and common use of the term "we built it ourselves," which is frequently heard in China today; this machine was made in China, or perhaps in the same province or county, and even more frequently today, in the same plant. Rarely if ever did our delegation encounter a foreign-made piece of machinery or equipment in the rural, small-scale factories we visited.

The "nationalization" of the modern technology before its introduction into the rural, small-scale industries may serve to increase the rural labor forces' receptivity to modern technology and their pride and efforts to develop the local industrial capacity to supply local needs for cement, electric power, iron and steel, nitrogenous fertilizer, agricultural implements, and consumer goods; but this "nationalization" does not remove the technological imperatives associated with the modern technology. In other words, the engineering characteristics

⁴⁷ Jon Sigurdson estimates that the rural, small-scale industrial sector includes approximately .5 million plants, accounting for approximately one-half of the total employment in industry and mining in China. See Jon Sigurdson, "Rural Industrialization in China," in *China: A Reassessment of the Economy*, a compendium of papers submitted to U.S. Congress, Joint Economic Committee, (Washington, D.C.: Government Printing Office, 1975), pp. 411-35.

of the technology are without nationality. Rather, it is the use of that technology or the social organization of the work place in which it is used that differs from nationality to nationality.

Those who believe that static efficiency in its narrow economic definition is a necessary and absolute objective of modernization would of course argue that there is only one "best" way to utilize this modern technology, and that would be the way it was designed to be used in the Western industrialized countries.⁴⁸ Presumably if the technological imperative is a valid concept at all, it is the economic gains of this one "best" way to use this modern technology that force a society to give in to the technological imperatives and accept the "Inevitable" need for material incentives and income differences related to technical skill levels, these skills being apolitical and based on a classless rationality of cause and effect. This "best" way entails recognition of the increases in productivity that come from the ever-increasing specialization in both machine use and operator tasks; the creation of a hierarchy of individual responsibility in decision making, also related to technical expertise; and integrated placement of machines and workers so as to enable the production process to be coordinated in a continuous flow, that is, serial production of an assembly line.

It is in this area that the rural, small-scale industrial sector in China represents a unique approach to industrialization, despite the use of modern industrial technology. Even in the area of social organization of the work place, however, the differences between the urban, large-scale industrial sector and the rural, small-scale sector are more a matter of degree than of form. For example, material incentives and money wages are also utilized in the rural, small-scale industrial sector, which commonly employs the same eight-grade wage system as is used in the urban, large-scale industrial sector. At the same time, however, the rural, small-scale sector employs some temporary employees, especially in the communal and brigade factories and workshops. These employees are paid in work points, receiving a share of the collective units of income along with those who work in the fields. In addition, these temporary workers in the factories also work in the fields during peak seasons of planting and harvesting. Thus the income received by these peasant-factory workers does not differ greatly from the normal distribution of income to other members of the collective unit.

The permanent labor force employed in the county-run factories in the rural small-scale industrial sector are paid differential wages according to the eight-grade wage scale. One gets the impression, however, that the major differences in wages in Chinese factories in both the large-scale and the small-scale sectors are due as much to age and experience as to skill differences. In addition, the variations in the distribution of wages would appear to be decreasing over time, especially in recent years. Many of the rural, small-scale factories we visited had eliminated the lower wage grades and were reducing the relative number of workers in the highest grades through the normal

⁴⁸ For example, many of those who use factor productivity comparisons to compare countries by their economic success implicitly, or even explicitly, assume that there is one most-efficient technology in existence, that it is available to all economies, and that it has one "best" use throughout the world.

process of retirements, along with limitations on promotions. If this procedure were to become widespread in the rural, small-scale industrial sector, income differences due to skill differences would become insignificant even if the eight-grade wage system were to remain in existence. Furthermore, considerable debate continues at all levels in China about why the Chinese need to use the eight-grade wage system within industry and also why there is a need for a difference between the income paid to the factory worker and that paid to a peasant. This problem has become even more important as the local units in countryside are creating their own industrial factories and transferring some of the peasants to work in those factories. Thus the question, Why should those transferred be paid more income? In other words, the problem is far from being solved, despite the continued existence of differential wages related to skill differences in their rural, small-scale industrial sector. The technological imperative of the modern technology used in that sector has not eliminated the Maoist attempt to pursue its socialist, cultural goals. At least not yet, anyway.

The practice in regard to specialization in job assignments varies widely in the rural, small-scale industrial sector, but the use of machinery and workers in a wide variety of tasks rather than for specific assignments is rather common. Not only are individual machines and workers shifted from task to task, but workers and machines are frequently grouped as a team and the team assigned first one task then another without much specialization within the team. Finally, even the entire factory will often devote its efforts to producing first one product, such as tractors, and then switch to the production of another, such as water pumps.⁴⁹ In short, repeated and continuous production of a single item, or the assignment of workers and machines to specific tasks for long periods of time, is not very common in many of the rural, small-scale factories. Quite the opposite, this lack of assembly line production processes means that a large amount of time is spent in merely setting work up on the machines in a job lot fashion and moving the work from machine to machine by hand. Despite the reduction in efficiency from this lack of causes for specialization in regard to the production of any one particular good, these factories are very versatile in their ability to produce a wide variety of products for the local area, which is one of their major objectives. Thus this failure to push specialization very far may be due not only to their attempt to eliminate the technological imperatives of the modern technology being used, but it may be a necessary feature of the output mix these plants are designed to produce.

The above remarks are directly related to those rural, small-scale factories that do not produce a standard product on a continuous basis. Although the difference was much more noticeable in these plants,

⁴⁹ Those rural, small-scale factories that produce such standard items as cement and nitrogenous fertilizer did utilize a technology that required a continuous production process: that is, there was constant input at one end of the process and constant output of a final product at the other. Our observations during our visit to these plants, however, indicated that they had considerable down time: they were producing at considerably less than full capacity, compared to similar factories in the urban, large-scale sector. In addition, it is reported that in a few cases factories producing standard products such as cement or nitrogenous fertilizer in the rural, small-scale sector have been converted to production of new and completely different products. Presumably this has occurred when a cheaper source of the original product has been introduced in the vicinity.

the work effort was also much less specialized, intensive, and continuous in the other Chinese factories we visited than it is in comparable Western factories. In other words, although they work with similar machines and technology, the work assignments, work attitudes, and work behavior of typical Chinese workers, especially those in the rural, small-scale sector, are substantially different from those of their Western counterparts. The Western workers' experience has been described as a reduction to a simple cog in a mammoth and complex machine; this is definitely not applicable to the Chinese worker in the rural, small-scale sector, and due to the organization of work in the factories, it is unlikely to become applicable in the near future.

The social organization of work is perhaps the greatest distinction between industries, especially the rural, small-scale industries in China and those in the Western industrialized societies. This distinction is obviously one of the most important means by which the Maoists hope to thwart the negative impact on the technological imperative on their socialist, cultural revolution.⁵⁰ Managerial and technical decisions are still largely the responsibility of those possessing the requisite skills. Nonetheless, these decisions are the subject of considerable discussion among the workers and are implemented with a significant degree of worker participation. In formal organizational terms, this popular participation is provided for by the many committees appointed for this very purpose, from the Revolutionary Committee at the top, which is responsible for running the factory, down to the shop-level committees for safety, innovation, and so on. The important aspect of the degree of popular participation in decisionmaking and implementation in these rural, small-scale factories, however, is not the system of worker representation on these committees or the actual decision-making power held by the workers, inasmuch as this aspect of the workers' participation is undoubtedly rather limited. Far more important and impressive is the average worker's rather extensive and detailed knowledge about, involvement in, and concern for the various different social, political, and economic activities of the factory. This in itself must be considered as one of the important goals in the Maoist socialist, cultural revolution.

The extent to which these various Maoist policies are being implemented in the rural, small-scale industries in China undoubtedly varies greatly from place to place. Nonetheless, the existence of these policies and the extent to which they are carried out cannot be denied. They add up to an active campaign specifically designed to eliminate the technological imperative of the modern industrial technology of the Western industrialized countries, as that technology is being introduced and used in China's rural, small-scale industrial sector. Furthermore, this campaign continues to be an important element in China's economic development policy even though Mao himself has gone to meet Marx and four of the prominent radical leaders have been

⁵⁰ The discussion in this paragraph touches on one of the most important features of the Maoist socialist, cultural revolution and one of the reasons why Mao labeled the Russian Revolution as having become revisionist. This feature is the primary importance of the relations in production rather than of the ownership of the means of production and the productive forces themselves in carrying out the true transformation to socialism. In other words, the revolution would fail if the state were to replace the capitalist and carry on business as usual. What is essential is the creation of equality in status and material rewards for the workers, technicians, and bosses in the work place.

purged. Whether or not these policies—the greater equalization of wages, the downgrading of economic status and decision-making power associated with technical skills, the reduction in emphasis on job specialization and serial production in favor of teamwork and job lot production, and the greater involvement of the average worker in the total activities of the factory—will realize Mao's vision of a modernized society utilizing modern Western industrial technology and enjoying a socialist culture of social, political, and economic equality, that is, whether or not these two objectives can coexist or, as Mao believed, can reinforce each other, must await the outcome of the present experiment in China. I believe that the presently available evidence is insufficient to allow for conclusions of either success or failure. Furthermore, the hypothesis of a technological imperative would be a logical necessity, if it were a necessity at all, only for those societies in which short-run static efficiency is a very important objective. Otherwise, a host of alternative socialist organizations, values, and behavior, including the Maoist socialist, cultural revolution, would appear to be potentially compatible with modern industrial technology. The Maoists, at least, believe this to be the case, and based on my visit to over 50 rural, small-scale industries in June–July 1975, I see no evidence that they will give up their attempt to achieve their objective. They would argue, and their argument is a logical one, that only by achieving the objectives of the Maoist socialist, cultural revolution can the Chinese achieve true long-run economic efficiency in the use of Western industrial technology to achieve their socialist goals. Whether their argument is realistic remains to be seen.

Part II. EASTERN EXPORTS TO THE UNITED STATES AND OTHER WESTERN COUNTRIES

U.S. trade with Communist countries has been characterized by consistently large trade surpluses accruing to the United States. The imbalance in U.S. trade with the East, which is typical of East-West trade overall, has been financed largely by private and official export credits. The hard currency debts accumulated by Eastern countries eventually must be repaid with exports to the West. Efforts by the Eastern countries to expand exports to the United States may create competition for some domestic industries. The authors of chapter 7, "Communist Exports to the West in Import Sensitive Sectors," provide an analysis of Communist exports to the West during 1973-1977, and the author of chapter 8, "Soviet-East European Export Potential to Western Countries," examines the Soviet and East European export potential to the West in future years.

Countering the destabilizing effects of imports from Eastern countries creates special problems because of the centrally planned foreign trade systems in the East. Government controlled foreign trade monopolies have the power, at least in theory, to gain dominant positions in foreign markets by selling below costs. Private Western firms, it is frequently maintained, face unfair competition from Communist foreign trade monopolies. The imbalance in East-West trade suggests that there are considerable constraints on the ability of Eastern exporters to gain significant portions of Western markets. Nevertheless, special legal safeguards against market disruption by Communist exporters have been enacted in the United States. U.S. laws applying to imports from Communist countries are summarized in chapter 9 "A Summary of U.S. Laws Applying to Imports of Communist Products."

Chapter 7. COMMUNIST EXPORTS TO THE WEST IN IMPORT SENSITIVE SECTORS

BY KAREN TAYLOR AND DEBORAH LAMB*

CONTENTS

	Page
Introduction	125
Background and statement of problem.....	125
General survey of CPE exports to the West in import sensitive sectors.....	128
Present barriers to Communist exports.....	129
CPE exports of steel.....	136
CPE exports of apparel.....	144
Summary and conclusions.....	151
Statistical appendix.....	157

INTRODUCTION

This article presents the initial results of ongoing research being undertaken in the Office of East-West Policy and Planning in the Industry and Trade Administration of the Department of Commerce. The objective of the research is to examine past exports (1973-1977) of communist products to the industrialized West, focusing on products competitive with those of Western industries which are sensitive to import penetration, in order to determine whether or not communist exports of these products have been significant. This article contains some preliminary calculations of the proportion of total communist exports to the West obtained by exports of products to which the West is import sensitive. The article then examines steel and apparel imports in order to obtain a more specific picture of the significance of communist exports in these two universally troubled sectors. Generalized conclusions about the disruptive effects of communist exports based on past experience, however, cannot be reached until further investigations into other sectors are concluded. Nevertheless, it was felt that the initial results of the research conducted to-date are of interest and would make a contribution to the discussion of issues contained in this volume. Needless to say, since this is a preliminary report, the views expressed here are solely those of the authors, do not necessarily reflect the views of any branch or Department of the U.S. Government, and are subject to revision pending the further results from ongoing study.

BACKGROUND AND STATEMENT OF PROBLEM

Beginning in the early 1970's communist country imports from the industrialized West began to exceed communist exports by wider and wider margins, resulting in rapidly increasing levels of hard

*The authors are from the Office of East-West Policy and Planning, Industry and Trade Administration, Department of Commerce. This paper was prepared to stimulate discussion and does not necessarily reflect the views of the Department of Commerce or the U.S. Government.

currency debt being compiled by the communist countries.¹ At the end of 1977, communist hard currency indebtedness had reached a level of about \$48 billion, despite efforts to hold down imports from the West.

While the communist countries can gain some short-run relief by reducing imports from the West, an action which some communist countries had clearly undertaken in 1977, the reasons which persuaded them to seek Western goods and advanced Western technology in the first place—the need for intensive economic development, increased efficiency, and to supplement agricultural shortfalls—remain as, if not more, compelling. In fact, there are indications that the communist economies (not unlike their non-communist counterparts) are facing a period of declining growth rates and increasing structural problems in such sectors as energy—conditions which will make it difficult to cut down on Western imports over the long-run. It is not unreasonable to believe that current levels of debt and the attendant interest payments would be sufficient to convince communist planners to increase hard currency exports to the West. However, the need to continue to import Western technology and grain over the long-term provides a more important motivation to expand exports to the West.

It is useful to superimpose this picture on the state of the world economy in the first half of 1978. Unequivocal economic recovery following the deepest Western recession in post-war history only lasted into early 1977. 1977 growth rates for most industrialized countries were considerably lower than anticipated and lower than necessary to remedy unemployment problems. By the end of 1977, the Organization for Economic Cooperation and Development (OECD) was predicting that, without appropriate action by member governments, real GNP growth in the OECD area might be only 3½ percent in 1978, with a weakening trend toward the end of the year.² The early 1978 decline in exchange rates for the dollar and increased inflation in the U.S. signalled the end of the ability of the U.S. economy to stimulate recovery in the rest of the West, and by mid-1978 only West Germany, Japan, Britain, France, Canada, Italy, Switzerland and Belgium were in a position to attempt to foster world economic growth through the stimulation of their domestic economies.

At the same time as the OECD was painting a dreary picture for 1978, the Secretariat of the General Agreement on Tariffs and Trade (GATT) released a study decrying worldwide demands for increasing protectionism arising out of current economic difficulties, the emergence of new barriers to trade, and arguments by policymakers about how to limit the less palatable implications of economic interdependence.³ Indeed, signs of increasing protectionism abounded in early 1978, not the least of which were moves by both the United States and the European Community (EC) to restrict imports of low priced steel.

¹ The countries included in this study are: Bulgaria, Czechoslovakia, German Democratic Republic (GDR), Hungary, People's Republic of China (PRC), Poland, Romania, USSR, Yugoslavia. These are the major countries which are covered by the market disruption provisions of the U.S. Trade Act of 1974.

² OECD Economic Outlook, December 1977, Paris, Vol. 22, p. 3.

³ Richard Blackhurst, Nicolas Marian, and Jan Tumlir, Trade Liberalization, Protectionism, and Interdependence. GATT Studies in International Trade, No. 5, November 1977, Geneva.

1978 also marked the first market disruption petitions filed under the provisions of the 1974 Trade Act against imports into the U.S. from communist countries. In these actions U.S. industry sought protection from imports of cotton work gloves from the PRC and wooden clothespins from the PRC, Poland and Romania.

Traditionally, imports from communist countries have faced stiffer restrictions in the industrialized West than imports from market economies. These extra restrictions have been of several different types. The most important types of Western restrictions have been a failure to grant "normal" trading privileges such as most-favored-nation treatment (the approach employed by the U.S.), or the presence of discriminatory quotas on goods from communist countries (the approach employed by the EC). The justification given for this behavior is usually the need to protect against the presumed superior ability of the centrally-planned economy (CPE) to effectively direct and control its trade, to price its exports without regard to production costs, and to act in a predatory fashion without regard to the market forces that constrain the behavior of other world traders.⁴

In addition to the denial of "normal" trading privileges, and the presence of discriminatory quotas, Western law, where it is based on the concept of "fair trade" (which means fair trade observing market-economy standards), can also work against imports from communist countries. Antidumping laws are a prime example. To resolve an antidumping case, authorities in the importing country must determine whether or not the import in question was sold at a price lower than the price would have been in the domestic market of the exporting country in the normal course of trade. Since domestic prices in centrally planned economies are by-and-large established by central authorities, the normal procedure in an antidumping case against a centrally-planned economy is to compare the price of the communist good as sold in the importing country with the price of a similar good produced and sold in a third country which has a market economy. This method automatically rules out the possibility that the centrally-planned economy might actually be the least-cost producer. These inherent biases are very often justified on precisely the same grounds noted above as being used to justify the denial of "normal" trading relations or the presence of quotas.

Despite arguments to the contrary, there are powerful inherent constraints on the ability of a centrally-planned economy to act in a predatory fashion. First, the weight and inefficiency of a centralized bureaucracy often mean a slower, not faster, reaction time than that of a Western company. Second, rather than disregard world market prices, some communist countries actually conduct most of their trade with the West and even some of their intra-CMEA trade at world market prices. Finally, the chronic deficits of these countries mean they must maximize their hard currency earnings by building a long-term, stable trading relationship, rather than try to make a quick "killing" and thereby ruin access to a hard currency market, possibly for years

⁴ For an example of U.S. Congressional opinion along these lines, see Report of the Senate Finance Committee on Trade Act of 1974. (Report No. 93-1298), 1974, pp. 210-211.

to come. Soviet acceptance of the terms of the market disruption clause in the aborted U.S.-Soviet trade agreement of 1972 was an example of the Soviets making an unusual concession at that time in order to build just such a long-term and stable trading relationship.

The industrialized West is facing a period of serious economic difficulties and increasing general protectionism armed with import protection systems that can be applied more restrictively against imports from communist countries. In light of the increasing need of the communist countries to export to the West in order to service current hard currency debt levels and to continue to import necessary technology, Western import protection policies as applied to communist goods will become crucial elements in determining whether or not East-West trade has a long-term chance of growing to become anything more than a marginal component of world trade. Given the likelihood that increased communist exports may meet increasing protectionism head-on, it appears important at this time to compare the trade behavior of centrally-planned economies with other world traders and to set concerns about the capability of communist countries to act in a predatory fashion against the perspective of actual communist trade patterns of the recent past.

PRESENT BARRIERS TO COMMUNIST EXPORTS

First, however, the number and types of restrictive actions that can be taken against communist countries should be assessed. All Western nations have a selection of import protection tools which can be brought into play against imports from communist countries. In addition to the denial of most-favored-nation treatment (MFN) by the U.S. and the presence of a quota system in the EC, communist products can be subject to safeguards actions, antidumping investigations, and countervailing duty complaints. In the U.S. they can face market disruption proceedings.⁵ In Europe generally, they can face "automatic" import licensing systems that can be less than automatic and minimum pricing systems in instances of threatened market disruption.⁶ Further, bilateral trade agreements with communist countries usually include either a safeguards or market disruption type of clause, and, in the absence of bilateral agreements, it is not uncommon to use the mechanisms of joint governmental commissions to seek relief from actual or potential problems caused by imports from communist countries.

Taken in the aggregate, it is almost impossible to judge how much protectionism is currently being directed against the communist countries. Econometric modelling techniques have been used to estimate the impact of the denial of MFN by the U.S. The findings of Raffel, Rubin and Teal suggest that exports from Eastern Europe and the USSR to the U.S. would have been 37.5 percent higher in 1975 had MFN been available. The percentage for individual countries, however, ranged from a high of 244 percent for the German Democratic Republic (GDR) to a low of 9 percent for the USSR.⁷ Preliminary

⁵ See Karen Taylor. "A Summary of U.S. Laws Applying to Imports of Communist Products," elsewhere in this volume.

⁶ For a description of the different types of import restrictions actions, see Karen Taylor, "Import Protection and East-West Trade: A Survey of Industrialized Country Practices" in *East European Economies Post-Helsinki*. Joint Economic Committee Print, August 25, 1977, pp. 1132-1174.

⁷ Raffel, Rubin and Teal. "The MFN Impact on U.S. Imports from Eastern Europe" in *East European Economies Post-Helsinki*, op. cit., pp. 1396-1427.

calculations for 1976 indicate similar results. The effects of the EC quota system are even more difficult to estimate, but since they, like the higher tariff rates of the U.S., act selectively against specific products, the impact on the trade of individual communist countries also varies considerably.

Given the level of *ex ante* protection provided by the denial of MFN and the EC quotas, it is difficult to make truly definitive statements about the overall cumulative effects of other protective actions which have been invoked by the U.S. and the EC once communist products have entered Western markets. However, considering the range of different types of actions available to Western governments and the fact that some of these either explicitly or implicitly discriminate against communist products, the number of *ex post* import restricting actions actually taken against communist countries has been relatively restrained. In the U.S. for example, only 6 antidumping actions have been initiated against communist countries since 1970 and only 2 of these have resulted in a finding of injury (golf carts from Poland and animal glue and gelatin from Yugoslavia). In the U.S. in 1977 and the first six months of 1978, some 168 escape clause, antidumping, countervailing duty, unfair trade practices and market disruption cases were under active investigation. Only 5 percent of these cases involved communist countries as contrasted to the fact that 56 percent of the cases involved industrialized countries and 39 percent involved developing countries.⁸

Clearly, countries tend to take more *ex post* import restricting actions against the countries which are major trading partners and countries whose goods have open access to the domestic market. This would appear to be the "normal" state of affairs, as contrasted to the pattern experienced by the communist countries which have restricted access, but which, heretofore at least, have not had to face a large number of restrictive actions once their products entered Western markets. As U.S. trade with the communist countries becomes more "normalized", for example, and as the volume of imports from communist countries increases, it would not be surprising if the number of antidumping and market disruption cases involving communist countries were to increase proportionately.

GENERAL SURVEY OF CPE EXPORTS TO THE WEST IN IMPORT SENSITIVE SECTORS

Methodology

Given present levels of protectionism against communist products and the potential for increased protectionism arising out of continued sluggishness in the world economy, it is useful to examine actual trade patterns in sensitive sectors to see if it is possible to determine whether and to what extent communist governments have in reality lived up to their billing as potential market disruptors. This study is limited to

⁸ It is difficult to assess the actions of the EC in a comparable fashion. For example, while the EC receives a large number of antidumping complaints very few of these ever get to the point of assessing interim duties. This is because the EC prefers to negotiate with exporters, resulting in agreements on the part of the exporters to raise prices, at which point the investigation is dropped. Sometimes cases are not even officially opened.

the trade of centrally-planned economies (CPEs) in sensitive sectors because, if no domestic industries are being injured, the consumer benefits by way of lower prices and increased choices. In short, in the absence of injury, one should not care whether predatory behavior is engaged in by the communist countries.

The term import sensitive is defined for purposes of this study as a condition of being sensitive to import competition to the degree that import restraint petitions are initiated by an industry. This is an observable behavior which can be taken to imply that a given industry feels sufficiently threatened by imports to expend the necessary funds to initiate a legal action against the imports in question. This definition of import sensitivity is admittedly arbitrary, but considered by the authors to be a reasonable approach.

While there are a number of economic indicators that might be used to judge import sensitivity (increased import penetration combined with declining employment, declining sales, declining profits, and/or declining productivity, to mention but a few), none of these indicators provides a guide to what the actual threshold of tolerance for import penetration really is in any given industry or enterprise. This threshold of tolerance depends not only on the factors set out above, but also on the structure of the industry, the size of the enterprises, the ability of the management group, the availability of financial resources, and many other factors.

It is not impossible to imagine that general economic indicators such as those mentioned above could give a rough approximation of the vulnerability of an industry to import competition. However, as can be deduced by the number of import restricting petitions that are initiated but lost on their merits, many other factors—primarily political and psychological—affect whether or not an industry “feels” vulnerable to import competition. To base a study on economic indicators alone would be to include many industries that do not perceive a sensitivity to imports, would not define themselves as such, and might not ever become so. Such a method would also ignore those industries which feel more sensitive to import competition than the economic circumstances alone might suggest.

The method adopted by this study, however, also suffers from limitations in that it is biased toward areas where problems are obviously occurring and therefore more limited than the economic indicator approach in its ability to focus on potential problems that have not become serious enough yet to surface. In order to ameliorate this problem, some products, such as chemicals, were included on the basis of reports that they might be a problem in the future. Further, since this study is not intended to be predictive, it was decided that this was an acceptable shortcoming of the methodology used.

The general survey section of this study examines CPE exports to the industrialized West (IW) in sectors defined to be sensitive at the SITC 2-digit level. The authors' knowledge of import protection actions taken in the West in general and also specifically against the communist countries was used to make up the list of sensitive sectors

serving as the basis of investigation in this section. In order to select the 2-digit categories that were deemed to be import sensitive in the West, components (products and product groups) of SITC 2-digit categories were evaluated on the basis of their known or suspected import sensitivity. SITC 2-digit categories where approximately less than 50 percent of the components (at the 4- and 5-digit level) were deemed to be sensitive were excluded from the list of sensitive sectors.

Raw materials were also excluded because most industrialized countries do not have significant supplies of raw materials and seek to import raw materials at the lowest possible prices. Domestic raw materials industries, where they exist, are usually protected by subsidies rather than import restraints. Agricultural products were also excluded because of the high level of protection (again, largely subsidization) most agricultural sectors already receive from their national governments. Other categories of items such as pharmaceuticals were excluded because national health, safety and consumer standards tend to control trade flows in these products making it difficult to sort out valid concerns about standards from protectionist sentiment disguised as concerns about standards.

Exclusion of any given product or sector from the list of sensitive sectors, as should be evident from the reasons given above for excluding agriculture, raw materials and pharmaceuticals, should not be taken to imply that the product or sector excluded is not now or may not become import sensitive in the general sense of the term, as contrasted to the definition adopted here. The list of sensitive sectors merely sets out those sectors in which import protection actions, particularly of the *ex post* variety are more likely to occur, given the fact that actions have already been initiated in these sectors.

Two categories of sensitive imports were established by the authors: 1. highly sensitive; and 2. moderately or potentially sensitive. The highly sensitive category includes those items where problems are well known and apply throughout the IW—that is textiles, clothing, steel and footwear. The moderately or potentially sensitive category includes those items which have caused less widespread problems or which have been mentioned frequently as potential problems, particularly with respect to the CPEs. The moderately or potentially sensitive category includes: textile fibers, chemical elements and compounds, manufactured fertilizer, plastic materials, various chemicals not specified elsewhere in the SITC classification, manufactures of metal not elsewhere specified, electrical equipment and electronic products, and transport equipment. Because of the somewhat arbitrary method of identifying and classifying import sensitive sectors, the data discussed in this section of the study should be regarded as rough indicators rather than as definitive quantifications.

TABLE 1.—CPE EXPORTS TO IW IN IMPORT SENSITIVE SECTORS AS A PERCENT OF WORLD EXPORTS TO IW, 1973-77

SITC and description	CPE exports to IW as a percent of world exports to IW					1973-77 exports to IW, percent increase	Principal CPE suppliers in 1977 (millions of dollars)
	1973	1974	1975	1976	1977		
I. MODERATELY OR POTENTIALLY SENSITIVE SECTORS							
26 Textile fibers.....	9.1	9.3	10.5	10.1	11.6	33.5	U.S.S.R. (512.2); People's Republic of China (278); other CPE's (82.8).
51 Chemical elements and compounds (organic and inorganic chemicals).	3.5	4.0	3.9	3.9	5.1	205.8	U.S.S.R. (570.7); Hungary (77.7); Poland (67.2); Czechoslovakia (65.5); other CPE's (175.6).
56 Manufactured fertilizer.....	9.1	6.6	7.7	8.0	6.9	56.5	U.S.S.R. (50.1); German Democratic Republic (45.4); Poland (22.8); Romania (19.2); other CPE's (25.3).
58 Plastic materials.....	.7	.6	.6	.7	.1	125.3	Czechoslovakia (16.5); German Democratic Republic (15.6); U.S.S.R. (15.1); other CPE's (21.5).
59 Chemical materials not elsewhere specified.	3.3	3.9	2.6	2.2	2.1	10.6	People's Republic of China (53.9); Poland (22.1); other CPE's (26.9).
69 Manufactures of metal, not elsewhere specified.	1.8	1.8	1.7	1.7	1.7	64.0	Poland (58.6); Yugoslavia (48.0); other CPE's (100.1).
72 Electrical equipment and electronic products.	1.6	1.3	1.3	1.3	1.3	78.0	Yugoslavia (166.6); Hungary (82.6); German Democratic Republic (66.8); Poland (61.3); other CPE's (110.4).
73 Transport equipment.....	1.3	1.5	1.0	1.2	1.1	68.3	Poland (313.0); U.S.S.R. (148.7); Yugoslavia (148.0) other CPE's (169.4).
Total for all moderately sensitive sectors.	2.3	2.2	2.1	2.1	2.3	76.9	U.S.S.R. (1,341.7); Poland (588.7); Yugoslavia (426.8); People's Republic of China (288.5); other CPE's (930.8).
II. HIGHLY SENSITIVE SECTORS							
65 Textile yarns and fabric products.	3.7	4.0	4.2	4.4	4.2	58.1	People's Republic of China (355.5); Czechoslovakia (104.5); Poland (80.1); other CPE's (277.2).
67 Iron and steel products....	4.1	3.2	3.0	3.6	3.6	33.7	Czechoslovakia (208.2); Poland (134.6); Romania (120.5); other CPE's (396.1).
84 Clothing.....	7.7	8.3	7.9	7.4	7.3	81.6	Yugoslavia (432.1); Hungary (218.7); Romania (204.9); People's Republic of China (200.6); Poland (194.9); other CPE's (204.1).
85 Footwear.....	5.1	5.2	5.6	5.4	5.3	109.1	Yugoslavia (84.4); Romania (66.1); Poland (50.8); Czechoslovakia (47.4); other CPE's (39.8).
Total for all highly sensitive sectors.	4.9	4.7	4.8	5.0	5.0	62.7	Yugoslavia (630.6); People's Republic of China (578.9); Poland (460.4); Romania (459.3); Czechoslovakia (455.4); other CPE's (785.8).
Total for all sensitive sectors—both moderately and highly sensitive.	3.1	3.0	3.0	3.0	3.1	69.8	U.S.S.R. (1,493.9); Yugoslavia (1,057.4); Poland (1,019.1); People's Republic of China (967.4); other CPE's (2,482.1).

Source: U.N. trade data as reported by member countries.

Findings

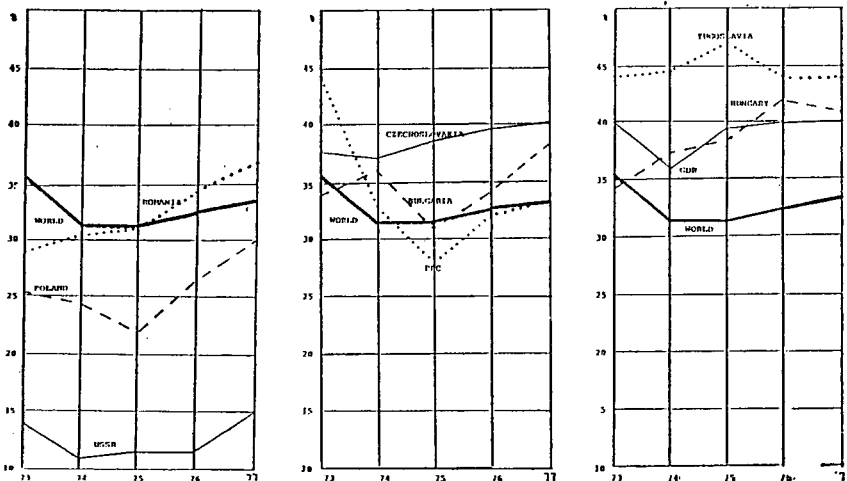
Table 1 shows the change in the share of IW imports captured by CPE exports in the designated sensitive sectors between 1973 and 1977. It also shows the percentage increase in sensitive CPE exports to the IW over that time period. What is striking is the fact that despite large *value* increases registered by CPE exports in most of these sectors (many at or over an average 10 percent annual increase), the CPE *share* of exports to the IW with a few exceptions remained both low and stable over the period. In short, CPE exports to the IW were expanding at about the same rate as the exports of the world to the IW in the selected sensitive sectors. Textile fibers and chemical elements and compounds were the only moderately sensitive sectors to register

clear increases in CPE shares of IW imports over the 5-year period. In the textile fiber sector, which registered a small increase in the share of exports to the IW provided by the CPEs, the CPE countries (primarily the USSR and the PRC) seem to have captured an unusually large share (over 11 percent) of IW imports. On closer examination, the textile fibers being supplied are cotton from the USSR and raw silk, fine animal hair and cotton from the PRC. The potential disruptiveness of these particular items is questionable and depends on the status of other major producers, as well as on world demand as affected by changing fashion trends. Chemical elements and compounds (almost 60 percent of which were from the USSR) increased more clearly than textile fibers in terms of CPE shares of IW imports, and also registered the largest percentage increase of all the sensitive sectors over the 5-year period. However, this large increase in Soviet exports can be explained by the fact that in 1977 Soviet exports of uranium to Western Europe more than tripled. Taken all together, however, data on the moderately sensitive sectors remained stable over the period.

The picture for the highly sensitive sectors was even more stable and differed mostly in the degree of CPE penetration of Western markets generally throughout this category. CPE shares of exports in the highly sensitive sectors fluctuated marginally but remained in all cases below historic (for the period under investigation, 1973-1977) highs. On the whole, the highly sensitive sectors recorded virtually stable CPE shares (of 5 percent) over the period. In aggregate, the CPEs provided a very stable 3 to 3.1 percent of all IW imports in sensitive sectors between 1973 and 1977, despite an expansion of CPE exports to the IW in all sensitive sectors of almost 70 percent during this period.

One interesting aspect of this data is the different export mixes (exports in highly sensitive sectors vs exports in moderately sensitive sectors, vs other exports) displayed by the various CPE countries. Looking at Figure 1, we can see that exports in sensitive sectors, generally, have played the smallest role in the export strategy of

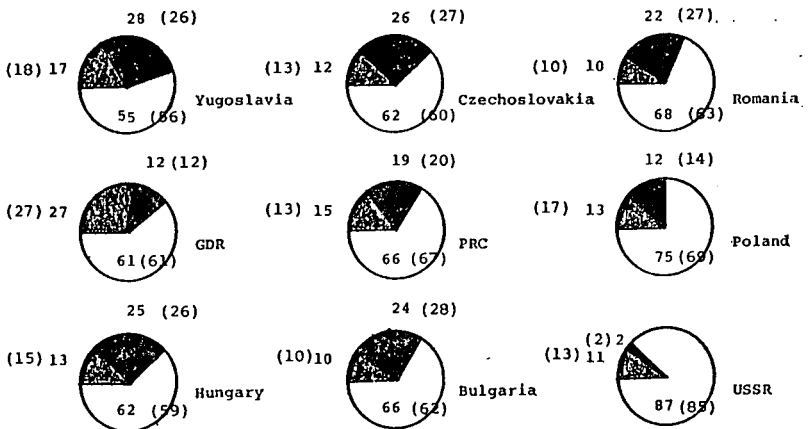
FIGURE 1: CPE EXPORTS TO IW IN SENSITIVE SECTORS AS A PERCENTAGE OF ALL CPE EXPORTS -- COMPARED TO WORLD EXPORTS TO IW IN SENSITIVE SECTORS AS A PERCENTAGE OF ALL WORLD EXPORTS TO IW (1973-1977)



Source: IIT trade data as reported by member countries.

the Soviet Union—largely due to its dependence on exports of raw materials. Poland has also relied to a lesser degree than the world as a whole on exports in sensitive sectors—due to Polish dependence on exports of agricultural and raw materials products. However, over the 1973–1977 period, the share of Poland's exports in sensitive sectors increased by 4.4 percent, and Polish exports in sensitive sectors were beginning to approach world average rates. Romanian exports were below the world's level of dependence on sensitive exports in 1973 and ended above it in 1977, after registering four successive increases in their dependence on sensitive exports totalling 8 percent. The PRC, on the other hand, in 1973 registered a very high level of dependence on sensitive exports, dropped below the world level in 1975 and was at the world level in 1977. The Bulgarian dependence on sensitive exports was erratic over the period, but slightly higher than world levels until 1977 when Bulgarian dependence on sensitive exports shot up to almost 6 percentage points above world levels. Czechoslovakian, GDR, and Hungarian patterns were close to each other, and all were above world levels. Czechoslovakian dependence continued to increase in 1977, but showed signs of slowing down. Hungarian dependence on sensitive exports actually declined in 1977. Exports in sensitive sectors from the GDR to the West held virtually steady as a percentage of all GDR exports. Yugoslavia registered consistently higher levels of dependence on sensitive exports than the other communist countries, and went up in 1977 to an all-time high with 44 percent of its exports being identified as sensitive. Similar charts for moderately sensitive and highly sensitive sectors (not reproduced here) show all CPE countries, except the GDR, well below world levels of dependence on exports of moderately sensitive goods, and all countries, except the USSR, above world levels of dependence on exports of highly sensitive goods.

FIGURE 2
CPE EXPORTS OF SENSITIVE GOODS AS A
PERCENTAGE OF ALL CPE EXPORTS TO IW
(Average for 1973-76) $\frac{1}{2}$



$\frac{1}{2}$ Figures in parentheses are 1977 figures.

■ Highly Sensitive ▨ Moderately Sensitive □ Remainder

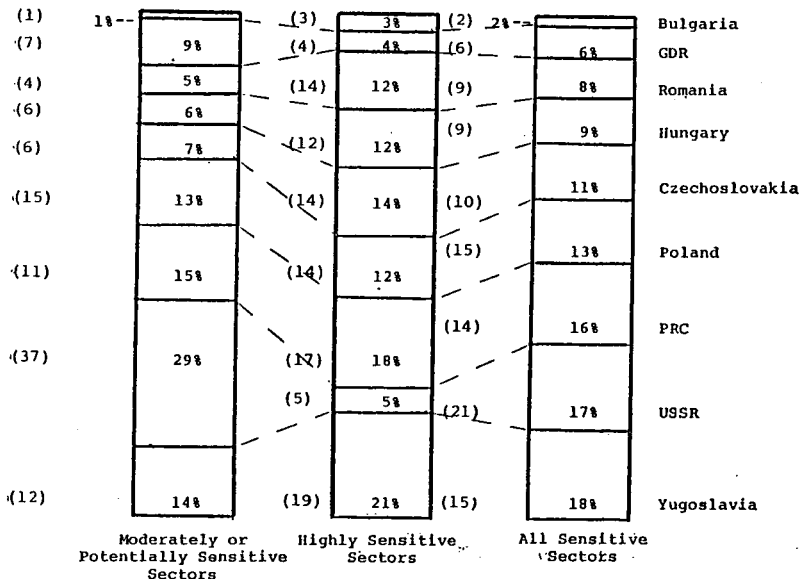
Source: U.N. trade data as reported by member countries.

Average (1973-1976) and 1977 CPE exports to the IW in moderately sensitive and highly sensitive sectors, as a percentage of all exports to the IW, are shown in Figure 2. Yugoslavia provides the extreme of 44 percent dependence on exports of all sensitive goods, 26 percent of which are in highly sensitive sectors in 1977; and the USSR provides the other extreme of only a 15 percent dependence on sensitive goods, of which 13 percent is in the moderately sensitive category. Of the remaining countries, only the GDR and Poland had larger shares of moderately sensitive goods than they had of highly sensitive goods, while Czechoslovakia, Hungary, Bulgaria, Romania and the PRC were to a large extent dependent (between 28 and 20 percent) on exports of highly sensitive goods in 1977.

Nevertheless, given the trade volumes involved of all the CPEs, Yugoslavia, the USSR, Poland and the PRC provided the largest dollar amounts of sensitive exports to the West in 1977. The USSR provided 37 percent (largely textile fibers and chemicals) of CPE exports in moderately sensitive sectors; Yugoslavia provided 19 percent (largely clothing and footwear) of communist exports in highly sensitive sectors; Poland provided the West with virtually equal percentage shares of exports to the IW in moderately and highly sensitive sectors; and the PRC shipped more to the IW (by 3-5 percent) in dollar volume in highly sensitive sectors than did Czechoslovakia, Poland, Hungary, and Romania. (See Figure 3.)

What the data suggest is that while, in the aggregate, past exports in sensitive sectors have not been exceptionally volatile, nor in the large part exceptionally divergent from world patterns, the export mix of specific countries may prove troublesome if not now, perhaps in the future. To identify the most likely problem countries and ex-

FIGURE 3
INDIVIDUAL CPE COUNTRY SHARES OF TOTAL CPE SENSITIVE EXPORTS
TO IW 1973-76 1/



ports it is necessary to look at specific products and determine whether they are now or might be expected to cause a problem in the future. The next two sections of this study look into two sectors which are known to be highly import sensitive in the West generally—steel and apparel.

CPE EXPORTS OF STEEL

Patterns in World Trade

In the past two decades, the steel industry has assumed an important role in the economic development of an increasing number of countries. Total world production of crude steel increased 153 percent between 1955 and 1976, to 753 million net tons.⁹ Trendline growth rates indicate that growth has not been evenly paced among the major producers. The historic rate of growth in productive capacity is estimated to be about 6 percent for Japan, 4 percent for the European Community (EC), and 1.4 percent for the U.S.¹⁰ Increased production has been accompanied by a dispersal of steel-making capability. In 1950, thirty-two countries produced steel; by 1977, the number of producers had increased to over seventy.

Not surprisingly, the growth in world production of raw steel has meant, among other things, that steel has become an increasingly international industry. Currently, approximately 22 percent of total world steel production flows in international trade, compared with the 13 percent recorded in 1955. The emergence in the late fifties of Japan and the USSR as major steel producers, the growth in world steel trading activity by the Europeans and Japanese, and the entry in the seventies of the developing countries as steel producers and traders are developments which have radically altered patterns in world steel trade. The role of the centrally-planned economies in world steel trade must be viewed against this background of fundamental change in world production patterns.

CPE Exports to the IW

Table A-1, which can be found in the Statistical Annex, summarizes CPE iron and steel exports to the industrialized West for the 1973-1977 period. While total CPE exports to the IW increased 58 percent between 1973 and 1977, exports of iron and steel products (SITC 67) increased only 34 percent during the same period. Iron and steel exports from the CPEs to the IW totalled just over three percent (\$859 million) of total 1977 CPE exports to the IW, and slightly over 8 percent of total manufactured goods exported to the IW, an indication that the communist countries, at least through 1977, did not rely heavily on iron and steel goods for hard currency earnings. Czechoslovakian exports accounted for 24 percent of CPE iron and steel exports to the IW in 1977.

Between 1973 and 1977, the share of total iron and steel exports (SITC 67) to the IW provided by the centrally-planned economies

⁹ See the Report to the President on Prices and Costs in the United States Steel Industry by the Council on Wage and Price Stability (COWPS), October 1977, p. 8.

¹⁰ Economics of International Steel Trade. American Iron and Steel Institute. Massachusetts: Putnam, Hayes and Bartlett, Inc., 1977, p. 51.

declined slightly from 4.1 percent to 3.6 percent. At the product level, CPE exports to the IW of iron and steel products have generally increased since 1973 at about the same rate as total world iron and steel export products to the IW. In most cases, the CPEs have held approximately the same share of total imports into the IW (an average of 3.4 percent at the three-digit SITC level) for each year of the 1973-1977 period. At the three-digit SITC level, the CPE share actually declined somewhat in all but two cases—wire rods and bars, and ingots and other primary forms—which posted marginal increases in 1977 over 1973.

To define more closely potential problem exports of the CPEs, exports having a significant share of total imports in 1977 should be analyzed. (A five percent share of total imports has been arbitrarily defined as "significant" for purposes of this analysis.) The products, at the four-digit SITC level, which accounted for over five percent of total imports of that particular commodity into the IW include blooms, billets, slabs; pig iron; iron and steel ingots; coils for rerolling; angles, shapes, sections; wire rod; heavy and medium weight plates and sheets; and iron castings. The 1977 CPE shares of total imports of four of these commodities—pig iron, medium plates and sheets, coils for rerolling, and iron castings—were actually lower by 9 to 64 percent than the historical high shares recorded in 1973 and 1974. However, 1977 CPE exports to the IW of blooms, billets, slabs; angles, shapes, sections, and heavy plates and sheets increased over 1973 values at a more rapid rate than total world exports to the IW. Only one CPE export, iron and steel ingots, has dramatically increased its share of total imports into the IW, from 0.31 percent in 1973 to 29.18 percent in 1977. The over four thousand percent increase in CPE exports of ingots over the 1973-1977 period, however, should not obscure the fact that the absolute value of those exports was low (\$29.15 million in 1977), and represented only slightly over three percent of total CPE exports of iron and steel to the IW in 1977.

Though analysis of shares of total imports shows that the CPEs did not dramatically increase their share of the IW market for steel imports, IW volume imports of steel from CPEs increased significantly between 1975 and 1977. At the same time, unit values of CPE steel exports dropped, indicating a CPE reliance on low-priced steel sales. Expressed in thousands of metric tons, Bulgarian exports of steel to the IW increased from 191 in 1975 to 260 in 1977; Czechoslovakian exports from 773 to 1,162; Hungarian exports from 175 to 395; Polish exports from 210 to 625; and Yugoslavian exports from 48 to 51.¹¹ (Quantity data for USSR, Romania, PRC and GDR are not available for 1977.)

CPE Exports to the United States

The U.S. steel industry, like steel industries worldwide, is in trouble. The world recession in steel is now entering its fourth year, with little hope for full recovery in light of a projected slowdown in the growth of world demand for steel. (World-wide demand is expected to grow

¹¹ United Nations Economic Commission for Europe. *Statistics of World Trade in Steel*. November, 1978.

only about four percent annually through 1980, one percentage point below the industry's long-term growth rate.)¹²

In 1977 U.S. mills were operating at an average capacity utilization of 77-80 percent, and employment problems were extensive. In 1967, the steel industry employed 550,000 persons (424,000 production workers); by 1977 the total was down to an average of 457,000 (242,000 production workers). Plant closures and lay-offs in 1977 alone left 20,000 persons unemployed, with 60,000 working part-time. Profit margins were only 3.6 percent of sales in 1976, compared to 6.4 percent in 1974, and an average of 4.2 percent each year for the 1969-1975 period, substantially below the average of all manufacturing industries.¹³

In 1977, U.S. raw steel production dipped 2.5 percent, falling from 128 million tons in 1976 to 124.7 million tons in 1977. Net sales for 30 steel companies, representing approximately 90 percent of the steel industry, rose 8.8 percent, from \$36.4 billion in 1976 to \$39.6 billion in 1977. However, net income dropped 55 percent, falling from 1976's \$1.2 billion to \$578 million in 1977.¹⁴ Indicators for early 1978 pointed in the direction of a partial recovery—the industry posted a capacity utilization rate for May 1978 of over 90 percent and an increase in steel production of 4.6 percent over the January-May 1977 period.¹⁵

The steel problem is complex, rooted in the cyclical pattern of demand for steel. Steel production depends heavily on the well-being of other industries for which steel is a major input—automobiles, appliances, construction, machinery—and these industries are highly dependent on the state of the domestic economy. The profit squeeze in the U.S. steel industry has circumscribed investment decisions, and certain U.S. mills in the East utilizing obsolete production techniques have been forced to give way to new, more modern plants. As a result, the focal point of the industry has been shifted to the Midwest.

Steel price hikes have eroded the U.S. steel industry's competitive position vis-a-vis foreign steel producers. Steel prices increased by 9.4 percent in the 12 months ending in August 1977, compared with 7.1 percent for all industrial products.¹⁶ But the industry still lost money, and further increases took effect in September and December, 1977. (In 1976, the Wholesale Price Index for steel mill products increased by 6.3 percent, the same as for all industrials, but between 1970 and 1975, the WPI for steel increased 72 percent, compared with 56 percent for all industrials.) The steep price increase in steel has resulted from cost increases in most steel inputs—coal, iron ore, steel scrap and, especially, labor. The increased mining costs reflect a steep fall in labor productivity in the mines, combined with large wage increases. Steel and coal workers have long been among the most highly paid industrial workers, and the differential between their hourly compensation and that of all workers in manufacturing industries has widened steadily from 18 percent in 1952 to 60 percent in 1977.¹⁷ In addition, labor productivity

¹² Central Intelligence Agency (CIA). "World Steel Market Continued Trouble Ahead." May 1977, p. 1.

¹³ COWPS study, p. xiv.

¹⁴ "Iron Age 1977 Metal Industries Financial Analysis: Steel Hit Bottom in 1977; Non-ferrous Had Mixed Year." Iron Age, April 24, 1978.

¹⁵ "Steel Rally Continuing; Output is Up." New York Times, May 31, 1978.

¹⁶ COWPS, p. xii.

¹⁷ COWPS, p. xiv.

in steel production increased at an annual rate of 1.9 percent between 1964 and 1976, compared with a productivity increase of 2.2 percent annually for the entire manufacturing sector over the same period. Nevertheless, the U.S. industry's productivity measured in man-hours per ton is very close to the Japanese, and higher U.S. steel costs reflect primarily higher costs of inputs, particularly labor. Industry spokesmen such as C. William Verity, Chairman of Armco Steel, also decry the high costs associated with compliance with environmental regulations.

In response to industry requests for aid, attention has focused on imports, as a highly visible problem, and one whose solution would appear relatively simple—i.e., to limit them. The Solomon task force, chaired by Treasury Under Secretary Anthony Solomon, designed a comprehensive program for the steel industry, which was introduced in February 1978. The task force recommendations included introduction of the trigger price system, general tax measures, suggestions for studying the feasibility of reducing the guideline life for depreciation, decreasing the rigidities in the Environmental Protection Agency regulations, and continued federal appropriations for community and labor assistance. The mainstay of the program is the trigger price system, which monitors imports of steel entering the U.S. below reference prices established by the U.S. Treasury Department. Steel goods entering the U.S. below established trigger prices, which are based on production costs in Japan (the world's most efficient producer), can be subject to an expedited anti-dumping investigation. However, any impact the trigger price system might actually have on steel import levels could be vitiated by the decisions the domestic industry makes regarding price hikes. Further, the trigger price system merely alerts the Treasury to low-priced imports and does not resolve the question of whether a specific product has been dumped.

In 1977, the United States imported 19.3 million net tons of steel, 40.5 percent from Japan, and 35 percent from the European Community. In contrast, the centrally-planned economies exported 247,700 net tons of steel to the U.S. in 1977, or about 1.3 percent of total U.S. imports. In 1976, steel imports from the centrally-planned economies accounted for only .81 percent of the total value of steel imports into the U.S., or 1.09 percent of total tonnage imported (CPEs exported 156,618 net tons of steel to the U.S. in 1976.)¹⁸ Further, the United States market received only 6.6 percent (\$57.08 million) of total CPE iron and steel exports to the IW for 1977. Thus, the U.S. cannot be considered a major market for CPE iron and steel exports. Table A-2 summarizes the market share changes in U.S. imports of iron and steel products from the CPEs for the 1973-1977 period. The share of total U.S. imports of iron and steel held by the CPEs in 1977 (0.9 percent) represented the lowest market share during the entire period. The principal CPE suppliers of iron and steel products to the U.S. are Poland, whose exports of iron and steel totalled \$22.4 million in 1977, Yugoslavia (\$18.7 million), Romania (\$13.3 million), and Czechoslovakia (\$2.5 million).

¹⁸ Statistics are from the American Iron and Steel Institute.

TABLE 2.—IRON AND STEEL EXPORTS TO THE U.S. BY SELECT CPEs, 1973-1977

[Dollars in millions]

Country of origin and SITC	Description	1973	1974	1975	1976	1977
Czechoslovakia:						
67	Iron and steel	4.75	12.67	16.01	3.23	2.46
671	Pig iron & ferro alloys	0	0	0	0	0
672	Ingots, other primary forms	0	0	0	0	0
673	Wire rod, bars, rails, angles	3.69	11.49	1.04	3.15	1.40
674	Plates and sheets	.05	.05	.01	0	0
675	Hoop and strip	0	0	0	0	0
676	Rails	.01	0	0	0	0
677	Wire	(¹)	.11	0	.01	0
678	Tubes and pipes	.99	1.02	2.29	.07	1.04
679	Castings and forgings	.01	0	(¹)	(¹)	(¹)
Poland:						
67	Iron and steel	12.40	49.89	15.06	12.94	22.4
671	Pig iron & ferro alloys	0	.18	0	0	0
672	Ingots, other primary forms	0	0	0	.01	(¹)
673	Wire rod, bars, rails, angles	3.79	23.28	3.72	1.22	3.50
674	Plates and sheets	6.29	22.68	10.06	9.13	17.03
675	Hoop and strip	.01	.53	0	0	.04
676	Rails	0	0	0	0	0
677	Wire	.98	2.87	.80	.90	.53
678	Tubes and pipes	1.33	.35	.13	1.67	1.16
679	Castings and forgings	0	0	.35	.01	0
Romania:						
67	Iron and steel	1.17	1.52	2.37	1.50	13.32
671	Pig iron & ferro alloys	0	0	0	0	0
672	Ingots, other primary forms	0	0	0	0	.03
673	Wire rod, bars, rails, angles	0	0	0	.01	0
674	Plates and sheets	1.17	.61	1.91	1.25	6.50
675	Hoop and strip	0	0	0	0	0
676	Rails	0	0	0	0	0
677	Wire	0	0	0	0	0
678	Tubes and pipes	0	.91	.46	.24	6.80
679	Castings and forgings	0	0	0	0	0
Yugoslavia:						
67	Iron and steel	8.24	22.88	16.31	18.69	18.70
671	Pig iron & ferro alloys	3.07	18.88	12.44	16.48	16.26
672	Ingots, other primary forms	0	0	0	.01	0
673	Wire rod, bars, rails, angles	2.17	.06	.61	0	0
674	Plates and sheets	1.75	0	0	0	0
675	Hoop and strip	0	0	0	0	(¹)
676	Rails	0	0	0	0	0
677	Wire	.01	.39	.01	0	0
678	Tubes and pipes	1.12	3.21	2.27	1.98	2.30
679	Castings and forgings	.12	.34	.98	.22	.21

¹ Negligible.

Source: U.S. Census Bureau.

Table 2 presents a summary of the dollar values of exports to the U.S. by those four countries during the 1973-1977 period. In three cases—Czechoslovakia, Poland and Yugoslavia—exports to the U.S. in 1977 were actually lower than in 1974. In addition, exports by individual countries were concentrated in the same categories at the three-digit SITC level throughout the period. Czechoslovakia concentrated on shipments of wire rod, tubes and pipes; Poland on wire rod, plates and sheets, and tubes and pipes; Romania on plates and sheets, and tubes and pipes; and Yugoslavia on pig iron and tubes and pipes.

A closer look at particular commodities at the four-digit SITC level reveals that no item represented a significant share of total imports into the U.S. in 1977. (Again, "significant" is arbitrarily defined as more than five percent of total imports.) Indeed, only one item, ferro alloys—excluding ferro manganese, even approached the "significant" level. In 1977, U.S. imports of those ferro alloys from CPEs represented 4.8 percent of total imports, which was a significant decline from the 8.3 percent share attained by the CPEs in 1974.

TABLE 3.—U.S. IMPORTS OF STEEL MILL PRODUCTS FROM CPE'S, 1973-77

[Net tons]					
Country of origin	1973	1974	1975	1976	1977
U.S.S.R.-----	21	28	1	126	0
Bulgaria-----	0	0	0	0	0
Czechoslovakia-----	26, 125	41, 996	10, 870	20, 161	11, 750
German Democratic Republic-----	233	561	947	499	72
Hungary-----	132	1, 837	131	0	38
Poland-----	28, 494	201, 543	72, 331	105, 805	170, 391
Romania-----	10, 249	5, 564	12, 598	8, 280	44, 444
Yugoslavia-----	42, 440	25, 919	11, 500	21, 389	20, 713
People's Republic of China-----	6	566	755	358	313
Total U.S. imports from CPE's-----	107, 700	278, 014	109, 153	156, 618	247, 721
U.S. imports from European countries-----	6, 509, 732	6, 423, 907	4, 117, 575	3, 187, 660	6, 832, 850
U.S. imports from Japan-----	5, 637, 402	6, 158, 961	5, 844, 005	7, 984, 131	7, 820, 376
Total U.S. imports-----	15, 149, 682	15, 970, 038	12, 012, 442	14, 284, 605	19, 306, 612
Imports from CPE's as percentage of total U.S. imports-----	.71	1.74	.91	1.09	1.28

Source: American Iron and Steel Institute.

Table 3 summarizes U.S. imports of steel in net tons from individual CPEs during the 1973-1977 period. Imports have fluctuated considerably over the period. U.S. imports in net tons from all CPEs under consideration, with the exception of Romania, were lower in 1977 than in 1974. While it is clear, therefore, that CPE exports of steel, in most product groups, to the U.S. have been so small as to be totally overshadowed by the volume of exports from other countries, the question remains whether any of the CPE exports of specific steel products to the U.S. have been increasing rapidly enough to constitute a threat of market disruption.

Monthly data on U.S. imports from CPEs compiled by the Office of East-West Policy and Planning, Industry and Trade Administration, Department of Commerce list all imports from the CPEs at the seven-digit TSUSA (Tariff Schedule of the United States Annotated) level which meet either of the following criteria: 1. an increase in the value of a specific import from a specific CPE of 15 percent or more above the average value of imports of that product from the CPE over the past three months, or 2. an increase of three percent or greater in the share of U.S. imports captured by that product from that CPE.

These data are designed to follow current, short-term movements in imports and, as such, complement the more historical analysis presented above which examined the changing longer-term SITC patterns. The limitations of the data, however, must be kept in mind. The data can only highlight rapid increases in imports from CPEs, or, conversely, reflect decreases in imports from other suppliers. Products which may account for a large proportion of CPE exports to the U.S. but which have not markedly increased their shares of the U.S. market or shown a rapid increase will not appear in the data.

Table A-3 presents a review of the steel commodities which were listed most frequently in the data. Of the top 14 items which were most frequently cited by the data, only two (flat steel bars and oilwell casings) showed both significant and sudden increases in market share.

The appearance of most of the other items in the monthly data can be explained by the fact that the data show the largest increases for

products which start at a zero base, i.e., that have not been exported previously by a particular country, or by any country, or for new categories of goods. This was found to be true in the following cases: steel sheet, not shaped; hot-rolled, pickled steel sheet; cold-rolled, pickled steel sheet; steel boiler tubes; and steel pipe of various diameters. Of the remaining seven-digit TSUSA items which appeared on the monthly data, two items showed fairly large changes in the CPE share—flat steel bars (from .75 percent in 1976 to 4.85 percent in 1977), and oilwell casings (from .46 percent in 1976 to 4.68 percent in 1977). Nevertheless, the CPEs still hold less than a five percent share of total imports of these two items. Of all CPE steel exports to the U.S. only two products represented a fairly large share of total U.S. imports. Certain steel plates have attained an 18 percent share of total U.S. imports, entirely attributable to imports from Poland, and certain steel pipes and tubes, all from Romania, accounted for over 17 percent of the total imports of that item into the U.S., valued at only slightly over \$1 million.

CPE Exports to the European Community

Although the CPEs have not pursued an aggressive steel export policy with respect to the IW as a whole, and most particularly not to the U.S., the European Community has alleged that imports into the EC of CPE steel products have increased inordinately. The EC Commission recommended imposing a provisional anti-dumping duty on certain steel sheets and plates from the GDR and Romania. In addition, investigations of dumping allegations have been launched against Bulgaria, Czechoslovakia, the GDR, Poland and the USSR for iron and steel coils and against Czechoslovakia, Hungary and Poland for wire rod.¹⁹

The EC Commission alleges that steel imports in 1976 from Eastern bloc countries (i.e., USSR, GDR, Poland, Czechoslovakia, Hungary, Romania, Bulgaria and Albania), increased an average of 70 percent over the 1975 level, and that the sectors most affected by the increase were wire rod, hot and cold rolled plate, coils, strips, beams and girders. These are among a number of products which were considered in the context of Mr. Davignon's (EC Industry Commissioner) anti-crisis recommendations for the steel industry. The EC cites a 154 percent increase in 1976 in the volume of imports of steel from Poland and the GDR over the 1975 level, a 138 percent increase from Hungary, and an 82 percent increase from Bulgaria.²⁰ However, subsequent statistics published by the European Community Commission noted that steel imports into the EC from East Europe increased at a much slower rate in 1977, an estimated 1.6 percent, from 2.545 million tons in 1976 to an estimated 2.585 million tons of steel in 1977.²¹

In order to stem this inflow of imports, the EC has attempted to negotiate bilateral steel agreements with the CPEs, along the lines of their recently concluded agreement with Japan. This has been a deli-

¹⁹ Official Journal of the European Community. No. C 19/7, January 24, 1978.

²⁰ Europe (EC Press Bulletin). Agence Internationale d'Information pour le presse. No. 2301, October 5, 1977, p. 8.

²¹ See Communication from the Commission to the Council COM(77) 670 final on "Measures to be Taken in Respect of State-Trading Countries of Eastern Europe." January 23, 1978.

cate task, however, since the EC remained, on the whole, a net exporter of steel products to the Eastern bloc by some 827 thousand tons in 1976. Agreements have been signed with Czechoslovakia and Hungary, and talks are underway with Bulgaria. Negotiations with Poland and Romania, however, have run into difficulties.

CPE Export Potential

To this point, our analysis has focused on the exports of the CPEs as a whole. Looking at individual countries, however, it becomes apparent that exports of iron and steel vary widely from country to country.

Since 1971 the USSR has been the world's largest steel producer (147 million metric tons in 1976) and the Soviet Union, China, Poland, Czechoslovakia, Romania, the GDR, Hungary, Yugoslavia and Bulgaria accounted for 229.7 million metric tons, or 33 percent of world raw steel output in 1976. However, despite the major changes which have occurred in steel production and trade patterns in the past two decades, the communist countries have maintained their approximate 30 percent share of global output. Until 1970, the CPEs were marginal net exporters of steel, but by 1973, their imports totalled about three percent of domestic requirements, principally due to large imports by China.²² The Central Intelligence Agency (CIA) estimates that by 1980 steel consumption in the CPEs will reach 298 million tons, and production will reach, 285 million tons, creating a 13 million ton shortfall in steel for the communist countries as a whole.²³

It is predicted that China will remain a net importer of steel in the coming years, with Japan as its principal supplier, though Japan has recently concluded an agreement with the PRC to build an integrated steel plant near Shanghai. Member countries of the Council on Mutual Economic Assistance (CMEA) have increased total foreign trade in steel from 40.7 to 44 million tons between 1975 and 1976. However, three-fourths of total CMEA steel trade was within Europe, and half within CMEA itself. In 1976, Czechoslovakia, with a steel trade surplus of 2.7 million tons, was East Europe's only significant net exporter.²⁴ Table 4 presents an historical summary of the performance of iron and steel exports from the individual CPEs at the two-digit SITC level.²⁵ Steel exports to the IW assumed greater importance in 1977 as compared to 1973 for the economies of Bulgaria, the GDR, and Romania. However, only in the case of steel exports from Bulgaria and Romania was the 1977 percentage share of total exports the highest share during the period. In the other cases, the share of iron and steel exports to the IW was higher in 1974 than in the 1975-1977 period.

It can be expected that iron and steel exports will continue to play an important role in CPE exports to the IW for a few communist countries. This is especially true for Czechoslovakia, Bulgaria, the GDR and Hungary, although only Czechoslovakia is predicted to remain, at least in the short-run, a significant net exporter to the IW.

²² CIA study, p. 1.

²³ CIA study, p. 9.

²⁴ Statement by William G. Barraclough, Deputy Assistant Secretary for Economic and Business Affairs, Department of State Bulletin, November 10, 1977.

²⁵ See the study by Allen J. Lenz and Hedija H. Kravalls, "An Analysis of Recent and Potential Soviet and East European Exports to Fifteen Industrialized Western Countries." in *East European Economies Post-Helsinki*, op. cit., pp. 1055-1131.

TABLE 4.—VALUE OF CPE EXPORTS TO THE IW, SITC 67 (IRON AND STEEL)

[In millions of dollars]

Country of origin	Percent of total exports		Percent of total exports		Percent of total exports		Percent of total exports		Percent of total exports	
	1977 value	1976 value	1976 value	1975 value	1974 value	1974 value	1973 value	1973 value	1973 value	1973 value
U.S.S.R.-----	94.1	0.9	88.6	1.0	87.1	1.2	78.9	1.2	89.9	2.0
Bulgaria-----	67.9	17.3	53.5	14.2	27.5	8.6	45.4	12.9	35.2	10.8
Czechoslovakia-----	208.2	12.2	198.8	12.9	168.7	11.3	195.4	13.9	160.6	13.7
German Democratic Republic ¹ -----	65.1	6.5	69.2	7.3	52.8	5.9	68.4	8.1	35.4	6.0
Hungary-----	102.9	6.6	114.2	8.3	64.2	5.5	104.9	8.3	92.2	8.7
Poland-----	134.6	4.0	115.6	3.6	75.6	2.7	126.6	5.1	81.9	4.3
Romania-----	120.5	7.2	76.6	4.5	77.1	5.4	71.6	5.3	54.9	5.4
Yugoslavia-----	62.2	2.6	79.0	3.5	78.9	4.5	136.5	6.8	92.7	5.0
Peoples Republic of China-----	3.8	.1	9.4	.3	2.5	.1	4.1	.2	.1	(²)

¹ Excludes exports to Federal Republic of Germany.² Negligible.

Source: U.N. trade data as reported by member countries.

CPE EXPORTS OF APPAREL

Patterns in World Apparel Trade

Over one hundred countries actively compete in international trade in textiles and apparel, assigning to these industries important, and problematical, roles in world trade. In general, according to GATT international trade data (1976), the industrialized countries are net exporters of capital-intensive textiles, while importing from the developing countries labor-intensive garments.

The increased volume of apparel imports into the industrialized West has caused concern over the job impact of these imports. The developing countries with lower labor costs have gradually gained a competitive edge in apparel trade over the industrialized countries, which must contend with higher labor costs in this highly labor-intensive industry.

The bulk of clothing imports into the industrialized West comes from developing countries, such as South Korea, Taiwan, Hong Kong, India and Pakistan. The CPEs have also become net exporters of clothing, although CPE clothing exports to the industrialized West in 1977, totalling \$1.41 billion, accounted for only 7 percent of total apparel imports into the IW.

Since 1973 the rate of growth of apparel consumption in the West has slowed and imports have loomed as relatively larger threats. Since 1974, international textile trade has been largely governed by the Arrangement Regarding International Trade in Textiles (otherwise known as the multifiber arrangement or MFA) under the auspices of the General Agreement on Tariffs and Trade (GATT). All of the centrally-planned economies under consideration in this study, with the exceptions of Bulgaria, the PRC and the USSR, are signatories to the MFA.

CPE Exports to the IW

Apparel exports from the CPEs to the industrialized West have increased since 1973 from \$774 million to \$1.41 billion in 1977. However, the percentage share of total imports into the industrialized West attained by the CPEs under investigation was somewhat lower in 1977 than in 1973 (7.3 percent in 1977 versus 7.7 percent in 1973).

The absolute increase in CPE exports of clothing to the indus-

trialized West parallels the overall increase in total CPE exports to the IW from 1973 to 1977. CPE clothing exports, which registered an increase of 81 percent from 1973 to 1977, grew somewhat more rapidly than total CPE exports to the IW (58 percent) and more rapidly than all manufactured exports to the IW (51 percent) over the same period. Clothing exports in 1977 accounted for 5.6 percent of total CPE exports to the IW and 13.3 percent of all manufactured goods exports to the IW in 1977.

The share of IW imports attained by CPE clothing exports (on average about 7.7 percent) was higher every year during the 1973-1977 period than the shares posted for total CPE exports to the IW (with a five-year average of 4.1 percent) or for manufactured goods exports to the IW (with an average of 3 percent).

Yugoslavia was by far the main CPE clothing supplier to the IW in 1977. Its clothing exports totalled over \$432 million, representing 31 percent of all clothing exports from CPEs to the IW in 1977. Romania, with clothing exports totalling \$204 million and Hungary, with \$218 million were also significant suppliers in 1977.

A closer look at the structure of CPE clothing exports to the IW at the five-digit SITC level (see Table A-4) reveals that a number of categories of goods attained a significant share (again, "significant" is arbitrarily defined as five percent or greater) of the total imports into the IW in 1977, and are listed below: women's, girls', infants' undergarments, 10.8 percent; handkerchiefs, 14.6 percent; men's and boys' outer garments, 10.1 percent; fur clothing, 10.7 percent; men's and boys' undergarments, 9.4 percent; knitted gloves, 8.1 percent; knitted undergarments, 8.7 percent; knitted stockings, 8.1 percent; leather apparel, 8.3 percent; women's, girls', infants' outer garments, 7.3 percent; gloves, mittens, socks, 7.0 percent; felt headgear, 7.3 percent; and corsets and suspenders, 6.1 percent.

Of these items, four registered increases in the CPE share of IW imports in 1977 over 1973. Gloves, mittens and socks increased their share by almost three percent between 1973 and 1977. The other three categories which also increased their shares (knitted gloves, knitted stockings, and felt headgear) did so by 1 to 2 percent. Nevertheless, compared with total CPE clothing exports to the IW in 1977 of \$1.41 billion, the categories whose share of the market increased in 1977 represented relatively insignificant amounts—\$0.86 million for felt headgear; \$3.99 million for gloves, mittens, stockings, not knitted; \$10.5 million for knitted gloves; and \$23.7 million for knitted stockings.

CPE Exports to the United States

The textile and apparel industry is extremely volatile and highly competitive; in the United States, textile and apparel production is spread throughout the fifty States, in approximately 23,000 establishments. Production of textile products, including apparel, has fluctuated during the 1967-1976 period. In 1967, U.S. domestic production of cotton textile products exceeded 4.4 billion pounds; in 1971, it was 4.0 billion pounds; and in 1976—3.4 billion pounds. Wool textile production totalled 316 million pounds in 1967, 224 million in 1971, and 210 million in 1976; and man-made fiber textile production was 3.9 billion pounds in 1967, 5.9 billion pounds in 1971, and 7.6 billion pounds in 1976.²⁸

²⁸ See "U.S. Production, Imports and Import/Production Ratios for Cotton, Wool and Man-Made Fiber Textiles and Apparel." U.S. Department of Commerce, Industry and Trade Administration. January 1978.

The U.S. apparel industry's production and profits appear to be continuing an upward trend from recessionary lows in 1974. In 1976, sales rose 13 percent over 1975, and net profits as a percent of sales rose 43 percent. The value of the apparel industry's shipments has continued to increase, from \$21.3 billion in 1967, to \$31 billion in 1975, and to over \$38 billion in 1976. Employment in the apparel industry stabilized in 1977 at approximately 1.3 million workers, the same as employment in 1976 and a slight increase over the 1975 level of 1.2 million. The industry is highly labor-intensive; 86 percent of the work force is comprised of production workers, and the wage bill is high—in excess of \$13 billion in 1976.²⁷

The United States, during the past ten years, has been a significant net importer of apparel. In 1967, imports were valued at \$688 million, or 3.8 percent of domestic consumption. By 1976 imports had risen to over \$3.6 billion, representing over 10 percent of the U.S. domestic consumption. The increase in imported clothing is attributable to several factors. Although wages for apparel workers are low relative to the rest of the manufacturing sector, there nevertheless exists a significant differential between U.S. labor costs and labor costs in other producing countries (between 20–40 percent according to industry spokesman, Sol Brandzel, Vice President of the AFL-CIO Amalgamated Clothing and Textile Workers Union).²⁸

Since the 1950's, the U.S. textile and apparel industries, concerned about their vulnerability to swiftly growing imports, have sought government assistance in dealing with the problem. In 1957, Japan agreed to voluntarily control exports of cotton textiles, which accounted for nearly all of the early increases in imports. This led to a decline in the growth rate of imports from Japan in the late fifties, but other producers, such as Hong Kong, soon emerged as important suppliers, more than offsetting any relative gains that might have resulted from the Japanese agreement.

It became obvious that multilateral efforts to regulate trade in textiles were necessary, and in 1961, the Short-term Agreement under GATT auspices, went into effect to ensure market access while seeking to prevent market disruption. In 1962, the Long-term Agreement was negotiated and governed cotton textile trade through 1973.

From 1960 to 1970, cotton textile and apparel imports into the U.S. doubled, while imports of manmade fiber textile products increased ten-fold. Efforts to control imports of wool and manmade fiber textiles and apparel, in addition to cotton textiles, culminated in the multifiber arrangement, under the GATT, signed in 1974. In December 1977, the MFA was extended until December 1981. Under the MFA, the U.S. has concluded bilateral agreements with 18 countries, including Yugoslavia, Poland, and Romania, the largest CPE clothing suppliers to the U.S.²⁹

Apparel imports from the centrally planned economies to the United States have increased substantially and are concentrated in categories where the import penetration ratio is already high—men's and boy's outer garments, women's, girls', infants' outer garments, knitted or crocheted outer garments. (In 1976, the ratio of all imports to domestic production was as follows for selected categories: 38.7

²⁷ U.S. Industrial Outlook 1978. Department of Commerce, Industry and Trade Administration, January 1978, p. 245.

²⁸ "Imports Wreak Havoc in Clothing Industry." Journal of Commerce, April 5, 1978.

²⁹ For a detailed discussion of the evolution of the MFA, see The History and Current Status of the Multifiber Arrangement. U.S. ITC, January 1978.

percent for outerwear apparel—total; 26.5 percent for men's and boys' suit-type coats; 32 percent for men's and boys' other coats; 44 percent for women's, girls', infants' coats; 52 percent for men's and women's knit shirts; 49 percent for men's and women's woven shirts.³⁰

In 1977, the United States imported \$4.1 billion worth of clothing, of which only 3.2 percent (\$133 million) came from centrally-planned economies. At the same time, however, the increase (343 percent) in CPE clothing exports to the U.S. from 1973–1977, outstripped the overall increase (83 percent) in CPE manufactured exports to the U.S. and was markedly higher than the growth (94 percent) in total exports to the U.S. over the same period. Table A-5 summarizes the trends in CPE clothing exports to the U.S. from 1973–1977. Poland and Romania, followed by Yugoslavia and the PRC were the United States' largest CPE apparel suppliers in 1977, accounting for 98 percent of all CPE clothing exports to the U.S. Exports of clothing accounted for 9 percent of total CPE exports to the United States in 1977.

TABLE 5.—CLOTHING EXPORTS TO THE UNITED STATES BY SELECT CPE'S, 1973-77
(Dollars in millions)

Country of origin and SITC	Description	1973	1974	1975	1976	1977
Poland:						
84	Clothing	\$7.73	\$10.67	\$11.59	\$25.81	\$37.95
841	Outer and undergarments	7.50	10.40	11.50	25.20	37.18
8411	Clothing and textile fabric, not knitted or crocheted.	3.69	3.73	6.65	16.88	25.41
84111	Men's and boys' outer garments	3.21	2.91	4.43	11.11	19.66
84112	Women's, girls', infants' outer garments	.36	.76	2.22	5.76	5.17
84113	Men's, boys' undergarments	.13	.05	0	.01	.61
84114	Women's, girls', infants' undergarments	0	0	0	0	.03
8414	Clothing and accessories, knitted or crocheted.	2.08	4.88	2.90	6.67	11.22
Romania:						
84	Clothing	6.48	5.59	4.37	27.33	43.23
841	Outer and undergarments	6.48	5.59	4.37	27.33	43.23
8411	Clothing and textile fabric, not knitted or crocheted.	3.52	3.48	3.10	19.03	29.36
84111	Men's, boys' outer garments	1.98	1.33	1.60	15.01	17.28
84112	Women's, girls', infants' outer garments	1.17	1.41	1.27	4.87	9.73
84113	Men's, boys' undergarments	.37	.75	.23	1.14	2.31
84114	Women's, girls', infants' undergarments	(¹)	0	0	.01	.04
8414	Clothing and accessories, knitted or crocheted.	2.68	1.94	1.04	7.79	12.59
Yugoslavia:						
84	Clothing	12.45	14.11	15.11	19.49	23.24
841	Outer and undergarments	12.44	14.11	15.11	19.47	23.08
8411	Clothing and textile fabric, not knitted or crocheted.	7.42	10.14	11.42	15.58	19.08
84111	Men's, boys' outer garments	5.67	7.60	8.55	12.38	12.69
84112	Women's, girls', infants' outer garments	1.62	2.46	2.80	2.80	5.88
84113	Men's, boys' undergarments	.13	.07	.06	.32	.37
84114	Women's, girls', infants' undergarments	(¹)	0	(¹)	.08	.13
8414	Clothing and accessories, knitted or crocheted.	2.49	1.58	1.43	1.33	2.89
People's Republic of China:						
84	Clothing	1.56	5.47	8.83	16.46	25.54
841	Outer and undergarments	1.52	5.45	8.81	14.22	25.00
8411	Clothing and textile fabric, not knitted or crocheted.	.31	2.85	6.17	9.66	15.65
84111	Men's, boys' outer garments	.10	1.40	2.58	2.00	6.39
84112	Women's, girls', infants' outer garments	.18	.43	.47	3.39	4.69
84113	Men's, boys' undergarments	.02	.97	3.05	3.68	4.19
84114	Women's, girls', infants' undergarments	(¹)	.04	.06	.59	.37
8414	Clothing and accessories, knitted or crocheted.	.35	.89	.85	3.01	4.41

¹ Negligible.

Source U.S. Census Bureau.

³⁰ See "U.S. Production, Imports and Import/Production Ratios for Cotton, Wool and Man-Made Fiber Textiles and Apparel." Op cit.

Table 5 outlines trends in apparel trade between the United States and the four centrally-planned economies which are the largest clothing exporters to the U.S.—Poland, Romania, Yugoslavia, and the PRC. At the four-digit SITC level, two categories, SITC 8411 (clothing and textile fabric, not knitted or crocheted), and SITC 8414 (clothing and accessories, knitted or crocheted) account for most of the clothing exports of the CPEs and are reflected in the table. A further breakdown of the SITC 8411 category to the five digit SITC level permits closer scrutiny of the aggregate categories, and reveals that, over the four-year period, men's and boys' outer garments have provided over 42 percent of total U.S. apparel imports from Poland, Romania, Yugoslavia and the PRC.

There has been a large and steady increase in the absolute value of clothing exported to the United States in the period from 1973–1977 by all four major suppliers. Poland posted a 391 percent increase in the dollar value of clothing exports to the U.S. from 1973 to 1977; Romania, a 567 percent increase; Yugoslavia, an 87 percent rise; and the PRC, a 1,537 percent increase. Nevertheless, the volume of apparel trade between the individual CPEs and the U.S. remains low relative to total U.S. imports of clothing. In 1977, apparel imports from Poland accounted for .92 percent of total clothing imports; imports from Romania, 1.04 percent; from Yugoslavia, .56 percent and from the PRC, .62 percent, for a combined figure of 3.2 percent.

TABLE 6.—U.S. IMPORTS OF CLOTHING FROM SELECT CPE's, 1973-76

Country	[Equivalent square yards]			
	1973	1974	1975	1976
Poland:				
Cotton apparel.....	3,015,000	2,853,000	5,021,000	11,776,000
Wool apparel.....	613,000	629,000	227,000	555,000
Manmade fiber apparel.....	1,377,000	8,856,000	1,671,000	5,369,000
Total.....	5,005,000	12,338,000	6,919,000	17,700,000
Romania:				
Cotton apparel.....	7,042,000	7,204,000	4,405,000	15,383,000
Wool apparel.....	493,000	332,000	344,000	852,000
Manmade fiber apparel.....	898,000	1,168,000	77,000	8,143,000
Total.....	8,433,000	8,704,000	4,826,000	24,378,000

Source: U.S. Department of Commerce.

Table 6 reviews U.S. imports from the two largest CPE suppliers, Poland and Romania, measured in equivalent square yards. Both countries posted large volume increases in exports to the U.S. from 1975–1976, a 253 percent increase for Poland, and a 189 percent increase for Romania. In contrast, Polish imports increased in value terms only 123 percent in 1975–76, while the value of Romanian imports increased by 525 percent.

Bilateral textile agreements have been negotiated by the U.S. with both Romania and Poland. A bilateral agreement, effective as of January 1, 1978, with Romania covers Romanian exports to the U.S. of manmade fiber and wool textiles and apparel. This agreement permits the volume of Romanian manmade fiber exports to increase by

7 percent annually over the life of the agreement (through December 31, 1980); and wool exports to increase by 1 percent annually. An earlier agreement covers exports of Romanian cotton textile products and permits a 6 percent annual volume growth rate. In early 1978, a three-year textile agreement went into effect with Poland which covers exports of Polish cotton, wool and manmade fiber textiles and textile products. This agreement provides for annual volume growth rates of 6.5 percent for cotton and manmade fiber products and 1 percent for wool. In addition, Yugoslavia has signed an agreement that sets ceilings for their men's and boys' manmade fiber suit exports. There are also agreements with Czechoslovakia and Hungary which provide for discussions of possible limitations should problems arise.

Looking at specific commodities at the four-digit SITC level (Table A-5), almost all communist country apparel exports to the U.S. registered slight increases in import shares in 1977 over 1973, except for leather apparel. However, when examining the five-digit SITC level, only four categories of goods attained a significant share (over five percent) of U.S. imports in 1977—felt headgear obtained 18.0 percent; gloves, mittens, stockings, 6.5 percent; men's and boys' outer garments, 9.9 percent; and knitted or crocheted headgear, 7.7 percent.

Nevertheless, in three of the instances of increasing and significant import shares, the value of goods imported from the communist countries in 1977 was low: imports of gloves, mittens, stockings totalled only \$2.3 million, all from the PRC; felt headgear imported from Czechoslovakia and Poland amounted to \$480,000; and knitted or crocheted headgear from the PRC and Czechoslovakia amounted to only \$1.5 million in 1977. Only in the case of imports of men's and boys' outer garments was a large dollar amount (\$57.5 million) involved—43 percent of total CPE apparel exports to the U.S. in 1977.

Analysis of CPE clothing exports to the U.S. at the seven-digit TSUSA level permits closer scrutiny of trade patterns in individual categories. Table A-6 represents the apparel items which appeared most frequently on the Commerce Department's monthly data (discussed earlier in the section of this report on steel), which is designed to monitor short-term increases in exports to the U.S. from the communist countries. The data can only pinpoint rapidly increasing imports from CPEs, but do not provide an historical perspective. The table summarizes the trends of CPE exports for those categories which, in 1977 most frequently showed sudden increases in market shares or experienced a 15 percent (or greater) absolute increase based on a three-month moving average.

As the table indicates, of the 56 categories at the seven-digit TSUSA level which appeared most frequently in the monthly data, 33 categories showed a share of over 5 percent of total U.S. imports in that particular category in 1977. But of those 33 categories, only 21 represented instances in which CPE exports in 1977 attained the highest CPE share of U.S. imports over the 1973-1977 period. And in only six of the 33 categories did exports from the CPEs to the U.S. exceed \$5 million in 1977—men's and boys' cotton knit sweatshirts, accounting for 81 percent of total U.S. imports of that item; men's and boys'

cotton knit suit-type coats, accounting for 46 percent; men's and boys' cotton suit-type coats, 42 percent; women's raincoats, 22 percent; men's and boys' wool suits, 12 percent; and men's cotton flannel sport shirts, 10 percent.

CPE Exports to the European Community

World textile exports to the EC have also been increasing; EC textile and clothing imports from the LDCs, for example, rose 80 percent from 1973-1977. However, increased imports are not the sole source of the problems facing the European industries. West European countries have registered significant gains in productivity (e.g., the Federal Republic of Germany can boast of a 57 percent increase in productivity in textiles since 1970, and the United Kingdom a 50 percent rise since the mid-sixties) which have also caused jobs to disappear. In addition, overcapacity in certain sectors of textile production, such as synthetic fibers, has contributed to the plight of the industry.³¹

CPE clothing exports to the EC increased approximately 58 percent from 1973 to 1976, from \$612 million to \$966 million.³² In contrast, CPE apparel exports to the U.S. increased 203 percent over the same period, but represented a much lower value—from \$30 million in 1973 to \$91 million in 1976. The most important suppliers to the EC in 1976 were Yugoslavia, whose apparel exports totalled \$354 million, Hungary (\$173 million), Romania (\$165 million), and Poland (\$117 million). The European Community has taken restrictive actions against textile and apparel imports from the state-trading countries, as well as against other exporters of textile and apparel items. The EC's decision to renew for another four years the multifiber arrangement under GATT auspices in December 1977 was contingent upon the acceptance of two important reservations: (1) that the EC Textile Committee's protocol and conclusions, which provide for the possibility of "departing, in a reasonable manner and by common accord" from certain provisions of the arrangement (in particular, the rule of the annual six percent increase in imports) have the same legal value as the MFA and (2) (as communicated to the GATT in a separate note circulated by Mr. Olivier Long, GATT General Director), that the EC would not consider itself bound by the provisions of the MFA with respect to countries which might not approve or apply the bilateral agreements concerning them.³³ Under the terms of the MFA, bilateral textile agreements have been negotiated by the EC with Romania and Yugoslavia, and quantitative restrictions on certain textile and apparel imports into the EC from those countries have been imposed. The EC has initialed a preliminary agreement with Poland, and is negotiating an agreement with Hungary. In addition, the individual EC countries maintain unilateral quantitative restrictions on certain textile and apparel imports from individual state-trading countries.

³¹ From "Free Trade to Adjustment." *The Economist*, December 31, 1978, p. 91.

³² Statistics are from United Nations data tapes. Trade between CPEs and Ireland, and between the FRG and the GDR, is excluded.

³³ Europe (EC Press Bulletin) January 4, 1978.

TABLE 7.—VALUE OF CPE EXPORTS TO THE IW, SITC 84 (APPAREL)

[In millions of dollars]

Country of origin	1977 value	Percent of total exports	1976 value	Percent of total exports	1975 value	Percent of total exports	1974 value	Percent of total exports	1973 value	Percent of total exports
U.S.S.R.	0.77	(?)	0.61	(?)	0.39	(?)	0.76	0.01	0.38	0.01
Bulgaria	37.66	9.58	35.41	9.40	32.29	10.20	36.63	10.40	35.63	10.90
Czechoslovakia	95.40	5.60	83.33	5.40	80.12	5.40	71.24	5.10	57.10	4.90
German Democratic Republic ¹	20.20	2.03	17.10	1.82	14.16	1.59	10.73	1.26	9.40	1.59
Hungary	218.50	14.00	190.28	14.10	170.19	14.5	152.70	12.10	114.95	10.80
Poland	194.90	5.75	158.58	4.90	133.76	4.80	133.57	4.60	86.61	4.50
Romania	204.91	12.17	209.77	12.30	152.08	10.60	126.39	9.30	103.16	10.20
Yugoslavia	432.15	17.96	392.87	17.44	378.82	21.55	329.63	16.39	275.93	14.90
Peoples Republic of China.....	200.60	6.83	159.42	5.84	127.45	4.79	164.12	6.83	91.31	4.99

¹ Excludes exports to Federal Republic of Germany.² Negligible.

Source: U.N. trade data as reported by member countries.

CPE Export Potential

It is apparent when looking at the structure of exports of the individual communist countries that apparel exports to the IW have greatly varying degrees of importance for each CPE. For seven countries—Bulgaria, Czechoslovakia, Hungary, Poland, Romania, Yugoslavia, and the People's Republic of China—clothing exports accounted for over five percent of total exports to the industrialized West in 1977. As Table 7 indicates, on average, the CPEs under consideration in this study increased the absolute value of apparel exports to the IW in 1977 by 6 to 26 percent over the 1976 level. However, only Bulgaria (whose garment exports represented 9.6 percent of total exports to the IW in 1977), the PRC (whose clothing exports were 6.8 percent of the total), Poland (with 5.8 percent), Czechoslovakia (with 5.6 percent), Yugoslavia (with 18 percent); and the GDR (with 2.0 percent), were apparel exports to the IW more important in 1977 than they were in 1976. Yugoslavia is by far the IW's largest clothing supplier of all the CPEs (\$432 million in 1977). Hungarian apparel exports (second largest in 1977) recorded a slight decline in the percentage of total Hungarian exports to the IW from 14.7 in 1976 to 14.0 in 1977. Romania, the third largest supplier, posted a 3-percent decline in 1977 apparel exports to the IW over 1976 values.

However, CPE clothing export potential to the industrialized West may be constrained in the future by the agreements negotiated (or under discussion) between the U.S. and the individual communist countries and between the European Community and the state-trading countries.

SUMMARY AND CONCLUSIONS

East-West trade has witnessed a remarkable expansion since the early 1970's. However, much of the trade growth to date has been financed by Eastern borrowing, with a resulting sharp growth in Eastern debt to the West. While there remains capacity for additional Eastern borrowing, further growth in East-West trade cannot be based indefinitely on continued expansion of Eastern debt. Looking to the future, the growth of debt can be reduced either by curtailing East-ern imports and/or an expansion of Eastern exports.

Despite the fact that the communist countries are trying to limit their imports, communist needs for Western equipment, technology,

industrial goods, and grain will continue to be significant. It will therefore not be a lack of Eastern demand that will limit the growth of East-West trade. Rather, Eastern ability to export to the West in sufficient quantity to pay for the goods it needs to import will be the principal factor limiting further growth of East-West trade.

Western economic sluggishness, increasing general protectionism, and import protection systems that can be applied more restrictively against imports from centrally-planned economies, all impose constraints upon the ability of the CPEs to increase their exports to the West. Restrictions against CPEs have been maintained largely in order to offset the supposed "advantages" of centrally-planned economies which allegedly enable them to act in a predatory fashion in world markets.

It is therefore particularly relevant to examine the pattern of CPE exports to the West in sectors which are sensitive to import penetration, in order to determine whether or not CPE exports of these products have been significant. The term import sensitive has been defined for purposes of this study as a condition of being affected by import competition to the extent that import restraint actions are initiated by an industry. Sensitive sectors are, therefore, those sectors in which import protection actions, particularly of the *ex post* variety are more likely to occur, given the fact that actions have already been initiated in these sectors.

CPE Exports in Sensitive Sectors

An examination of CPE trade patterns in sensitive sectors reveals that despite the fact that large *value* increases were registered by CPE exports in most of the sensitive sectors, the CPE *share* of exports to the IW in sensitive sectors by and large remained both low and stable between 1973 and 1977. Another finding is the fact that various CPE countries displayed different export mixes in highly sensitive and moderately sensitive products, and relied in differing degrees on exports in sensitive sectors. When our definitions are applied against 1977 figures covering communist exports to the West, *Yugoslavia* demonstrates the extreme of 44 percent dependence on exports in all sensitive sectors, 26 percent of which were in highly sensitive sectors; and the *USSR* demonstrated the other extreme of only a 15 percent dependence on exports to the West in sensitive sectors, of which 13 percent was in the moderately sensitive category. Of the remaining countries, only the *GDR* and *Poland* had larger shares of exports moderately sensitive in the West, than they had in the highly sensitive category. *Czechoslovakia*, *Hungary*, *Bulgaria*, *Romania* and the *PRC* were to a large extent dependent (between 28 and 20 percent) on exports in highly sensitive sectors. Nevertheless, given the trade volumes involved, of all the CPEs, *Yugoslavia*, the *USSR*, *Poland*, and the *PRC* provided the largest dollar amounts of sensitive exports to the West.

What the data suggest is that while, in the aggregate, past CPE exports in sensitive sectors have not been exceptionally volatile, nor

in the large part exceptionally divergent from world patterns, the export mix of some individual countries could perhaps prove troublesome in the future. To identify the most likely problem countries and exports, it would be necessary to look at more products in greater detail than has been possible in this study. CPE exports of steel and apparel were examined here because these are universally troubled sectors and it was thought desirable to define the CPE role in world trade in these two sectors.

CPE Exports of Steel

Iron and steel exports from the CPEs to the IW totalled \$859 million in 1977, or just over three percent of total 1977 CPE exports to the IW, an indication that the communist countries, at least through 1977, did not rely on iron and steel exports as a major source of hard currency earnings. The market share of CPE iron and steel exports to the IW declined slightly from 4.1 percent in 1973 to 3.6 percent in 1977.

In 1977, the United States imported 19 million net tons of steel, 40.5 percent from Japan, and 35 percent from the European Community. Steel imports from the CPEs accounted for only 1.3 percent of total steel imports into the U.S. in 1977. The principal CPE suppliers of iron and steel products to the U.S. are *Poland, Yugoslavia, Romania, and Czechoslovakia*. Iron and steel exports from these four countries represented 99 percent of total CPE exports of iron and steel to the U.S.

At the four-digit SITC level, only one CPE export, *ferro alloys*, represented a significant share (nearly 5 percent) of the U.S. market in 1977, and that was a sharp decline from the high (8.4 percent) CPE share recorded in 1974. Looking at imports at the TSUSA seven-digit level, and focusing on items which increased rapidly in 1977, two items show a fairly large change in import share—*flat steel bars*, and *oilwell casings*. Nevertheless, the CPEs still hold less than a five percent share of the U.S. imports in these two categories. Of all the rapidly increasing CPE exports to the U.S. at the seven-digit TSUSA level, only two products have captured a fairly large share of U.S. imports: *certain steel plates* from Poland have attained an 18 percent share of total U.S. imports, and *certain steel pipes and tubes*, from Romania account for over 17 percent of the total imports of that item into the U.S. It is clear that CPE exports of steel in most product groups have been so small as to be largely overshadowed by the volume of exports from other areas.

Major changes have occurred in world steel production and trade patterns in the past two decades. Nevertheless, the communist countries have maintained their approximate 30 percent share of global output. Until 1970, the CPEs were marginal net exporters of steel, but by 1973, their imports totalled about three percent of domestic requirements, principally due to large imports by China. The CIA estimates that by 1980, steel consumption in the CPEs will reach 298 million tons, and production will reach 285 million tons, creating a 13 million ton short-

fall in steel for the communist countries as a whole. However, it is expected that iron and steel exports will continue to play important roles as hard currency earners for individual communist countries. This is especially true for *Czechoslovakia*, *Bulgaria*, the *GDR* and *Hungary*, although only *Czechoslovakia* is predicted to continue to be a significant net exporter to the IW.

CPE Exports of Apparel

Since the late 1950s, the developing countries have been major actors in world apparel trade. The CPEs have also become net exporters of clothing, although CPE clothing exports to the West in 1977 accounted for only 7 percent of total apparel imports into the IW. Since 1973 the rate of growth of apparel consumption in the West has slowed and imports have consequently loomed as relatively larger threats.

Apparel exports from the CPEs to the IW have increased since 1973. Clothing exports in 1977 accounted for 5.6 percent of total CPE exports to the IW and 13.3 percent of all manufactured goods exports to the IW in 1977. However, the percentage of the West's market attained by the CPEs was somewhat lower in 1977 than in 1973. *Yugoslavia* was by far the main CPE clothing supplier to the IW in 1977. Its clothing exports totalled over \$432 million in that year. *Romania* and *Hungary* were also significant suppliers in 1977.

At the five-digit SITC level, CPE exports in a number of categories attained a significant share (five percent or over) of total IW imports in 1977. These were: *women's, girls', infants' undergarments, handkerchiefs, men's and boys' outergarments, men's and boys' undergarments, knitted gloves, fur clothing, knitted undergarments, knitted stockings, leather apparel, women's, girls', and infants' outergarments, gloves, mittens and socks, felt headgear, and corsets and suspenders*. However, of all these items, only four registered increases in CPE shares of the IW market between 1973 and 1977, and those categories whose shares increased represented relatively insignificant import values.

U.S. apparel imports from the CPEs have increased substantially and are concentrated in categories where the import penetration ratios are already high—*men's and boys' outergarments, women's, girls' and infants' outergarments, women's, girls' and infants' undergarments, and knitted or crocheted outergarments*. *Romania* and *Poland*, followed by the *PRC* and *Yugoslavia* were the largest CPE suppliers of apparel to the U.S. in 1977. There has been a large and steady increase in the absolute value of clothing exported to the United States in the period from 1973–1977 by all four major suppliers. Nevertheless, the volume of trade in apparel between the individual CPEs and the U.S. remains low relative to total U.S. imports of clothing, and imports from *Yugoslavia, Poland* and *Romania* are constrained by bilateral textile agreements negotiated under the MFA.

Looking at specific commodities, at the four-digit SITC level, communist country exports to the U.S. registered slight increases in export shares in 1977 over 1973 in all cases but one. But at the five digit level, only four categories of goods attained a significant share of U.S. im-

ports in 1977. These were: *felt headgear, gloves, mittens and stockings, men's and boys' outer garments, and knitted or crocheted headgear.* Nevertheless, in three of the cases experiencing increased CPE import shares, the absolute value of goods imported from the communist countries in 1977 was low. Only in the case of imports of *men's and boys' outer garments* was a large dollar value involved. Of the 56 categories of goods examined at the TSUSA seven-digit level, which increased rapidly in 1977, 33 categories attained over 5 percent of the U.S. market in 1977. However, in only six of these 33 categories did imports from CPEs amount to over \$5 million.

It is apparent that apparel exports to the IW have greatly varying degrees of importance for each CPE. For seven countries—*Bulgaria, Czechoslovakia, Hungary, Poland, Romania, Yugoslavia* and the *PRC*—clothing exports accounted for over five percent of total exports to the industrialized West in 1977. However, for only *Bulgaria, the GDR, Poland, Yugoslavia, and the PRC* were exports of clothing more important as hard currency earners in 1977, than they were in 1976. Apparel exports from *Yugoslavia*, the largest CPE supplier to the IW, posted a marked decline in percentage of total exports in 1977 over 1975. In addition, future increases in CPE exports of clothing to the IW will be constrained in large part by the bilateral agreements negotiated or under discussion with the U.S. and the European Community.

General Conclusions

The scope of this study has been limited to a very general survey section and detailed study in only two sectors. Nevertheless, the preliminary results indicate that, in the aggregate, CPE export composition does not reveal a pattern of concentration on sensitive sectors that differs notably from world patterns. However, certain individual CPEs have penetrated Western markets to a degree in a few product lines which *are* sensitive, and though the CPE share of total imports in those sectors remains low and steady, those countries may nevertheless meet with increasing import restrictions.

A shortcoming of the data base used for this study is obvious here—that is the lack of data on the trade patterns of developing countries. The use of data on world trade patterns in sensitive sectors blends the trade patterns of industrialized countries (which depend to a lesser degree on exports in highly sensitive sectors and which have a large volume of trade) with the developing countries (some of which depend a great deal on exports in sensitive sectors, but which have a low volume of trade). So, when compared to world trade patterns in sensitive sectors, CPE exports may look somewhat alarming. It has not been possible, within the confines of this study, to compare CPE trade patterns and export mixes with the trade patterns of the developing countries—a comparison that might put CPE trade in sensitive sectors into a different light.

A comparison of findings with respect to steel and apparel reveals that the apparel industry has long had a significant role in world trade,

and has been considered, at least since the mid- to late-fifties, a sensitive industry, whose international trade was in need of multilateral management. The CPEs have established themselves as minor but relatively successful exporters of apparel. CPE exports to the IW, totaling \$1.41 billion in 1977, represented over 7 percent of total IW apparel imports. On the other hand, in 1977, U.S. imports of apparel from CPEs totalled only \$133 million, and accounted for only 3.2 percent of total U.S. clothing imports. Because the CPEs have been successful exporters and because the highly labor intensive apparel industry is sensitive to import penetration there are relatively more CPE apparel products which could be considered potentially disruptive in Western markets.

The steel industry, on the other hand, is still in the process of being internationalized, and it has been only since the early- to mid-seventies that the excess of world capacity over demand has threatened domestic industries. The CPEs have been less successful exporters of steel to the IW and to the U.S., both in terms of dollar value and in terms of percentage share of total steel imports. CPE exports of steel to the IW in 1977 totalled \$859 million, or 3 percent of total IW steel imports, while U.S. imports from CPEs amounted to \$571 million, or about 1 percent of total U.S. steel imports. Currently CPE steel exports are not serious problems for the IW as a whole, or for the U.S. Even if CPE steel-making capability improves, the crucial question is how much faster the CPE steel supply will be able to grow vis-a-vis expanding CPE demand.

The final conclusion the authors have come to is that despite the fact that some CPE countries may depend more heavily on exports of sensitive goods (a strategy which could mean that their products might face import restraints in the future), and despite the fact that from time to time specific sectors or specific products might prove troublesome, CPE exports in the import sensitive sectors examined here have not been overly disruptive or exceptionally significant.

STATISTICAL APPENDIX

TABLE A-1.—CPE IRON AND STEEL EXPORTS TO IW, 1973-77¹

SITC	Description	CPE exports to IW as a percent of world exports to IW					1973-77 exports to IW, increase (percent)	Principal CPE suppliers in 1977 (millions of dollars)
		1973	1974	1975	1976	1977		
	Total exports to IW.....	4.2	4.06	4.29	4.37	3.57	58.37	
5-8	Manufactured exports to IW.....	3.05	3.06	2.87	3.03	5.40	51.16	
67	Iron and steel exports.....	4.09	3.55	2.96	3.64	3.64	34.31	Czechoslovakia (208.1); Poland (134.6); Romania (120.5); U.S.S.R. (94.1); Hungary (102.9); Bulgaria (67.9); German Democratic Republic (65.1); Yugoslavia (62.2); People's Republic of China (3.8).
671	Pig iron and ferro alloys.....	8.61	9.92	7.47	5.11	5.07	-5.06	U.S.S.R. (48.9); Yugoslavia (39.4); other (26.7).
6711	Spiegeleisen.....	11.39	45.26	7.35	10.71	0	-100.00	
6712	Pig iron.....	23.31	23.71	21.27	10.71	8.29	-62.26	U.S.S.R. (17.7); Romania (5.5); other (8.6).
6713	Iron and steel pellets, powder.....	1.84	1.99	1.28	1.22	1.46	52.52	Czechoslovakia (1.1); Poland (0.07); Yugoslavia (0.07); German Democratic Republic (0.27).
6714	Ferro manganese.....	2.15	1.08	1.13	.88	1.74	53.19	Yugoslavia (4.14); U.S.S.R. (1.44); other (0.9).
6715	Other ferro alloys.....	3.98	6.14	5.25	4.83	4.87	116.68	Yugoslavia (30.02); U.S.S.R. (23.11); other (15.47).
672	Ingots and other primary forms.....	8.69	6.26	4.86	8.01	10.16	80.41	Poland (36.4); Romania (35.7); German Democratic Republic (34.0); Czechoslovakia (26.9); U.S.S.R. (22.7); other (80.1).
6721	Ingots and other primary forms.....	0	0	0	.30	0	0	
6723	Iron and steel ingots.....	.31	.30	.91	21.51	29.15	7,571.00	Bulgaria (23.4); German Democratic Republic (3.6); other (2.1).
6725	Blooms, billets, slabs, sheet bars, roughly forged pieces.....	5.59	6.05	3.33	4.88	9.87	2,168.30	German Democratic Republic (29.6); Poland (18.9); Romania (16.86); Czechoslovakia (12.3); other (3.2).
6727	Coils for rerolling.....	10.30	5.52	6.22	8.75	8.30	20.81	Bulgaria (23.2); U.S.S.R. (22.6); Hungary (15.2); Czechoslovakia (14.6); Poland (13.3); Romania (12.8); other (5.3).
6729	Blanks for tubes and pipes.....	13.18	8.60	5.17	7.53	2.86	-59.76	German Democratic Republic (0.11); U.S.S.R. (0.12).
673	Wire rod, bars, rails, angles, sheet piling.....	2.95	2.48	1.97	3.29	3.28	50.42	Czechoslovakia (60.2); Hungary (51.4); Poland (26.3); Romania (11.2); other (11.3).
6731	Wire rod.....	3.01	4.87	2.86	5.05	6.49	221.02	Czechoslovakia (38.8); Hungary (20.5); Poland (14.7); other (0.7).
6732	Bars and rods.....	2.63	1.67	1.80	2.68	2.25	2.43	Czechoslovakia (16.4); Poland (10.3); Hungary (7.9); other (12.5).
6734	Angles, shapes and sections, 80 mm or more.....	3.54	1.54	1.24	2.30	1.72	-36.00	Hungary (13.1); Czechoslovakia (3.7); other (3.1).
6735	Angles, shapes and sections, less than 80 mm.....	2.80	2.06	2.10	4.10	7.59	65.21	Hungary (9.9); Romania (4.7); other (3.9).
674	Plates and sheets.....	3.23	2.81	2.70	2.91	2.70	27.61	Czechoslovakia (81.4); Romania (46.1); Poland (42.6); other (55.5).
6741	Heavy plates and sheets.....	6.64	7.16	6.68	7.86	8.37	40.63	Czechoslovakia (43.8); Romania (23.6); Poland (18.6); other (28.6).
6742	Medium plates and sheets.....	7.57	4.36	3.85	5.33	5.21	-12.09	Czechoslovakia (6.6); U.S.S.R. (6.2); other (7.9).
6743	Plates and sheets less than 3 mm thickness, uncoated.....	3.11	1.53	1.21	2.25	2.15	-8.82	Czechoslovakia (29.2); Romania (14.2); other (10.7).
6747	Tinned plates and sheets.....	.01	.02	.01	.02	.10	700.00	Bulgaria (0.3); Czechoslovakia (0.02).
6748	Plates and sheets less than 3 mm thick, coated.....	.44	.52	.51	.81	1.93	346.81	Poland (3.4); Romania (2.7); other (7.9).
675	Hoop and strip of iron and steel.....	3.08	1.96	1.85	3.37	2.72	21.05	Poland (14.9); Czechoslovakia (9.50); other (4.2).
676	Rails, track material.....	.56	.08	.39	.23	.34	-48.98	Poland (0.15); other (0.10).

TABLE A-1.—CPE IRON AND STEEL EXPORTS TO IW, 1973-77 —Continued

SITC	Description	CPE exports to IW as a percent of world exports to IW					1973-77 exports to IW, increase (percent)	Principal CPE suppliers in 1977 (millions of dollars)
		1973	1974	1975	1976	1977		
6761	Rails of iron or steel	.57	.11	.49	.28	.22	-42.10	Poland (0.15); other (0.07).
6762	Sleepers, other railway track material	.53	0	0	.10	.06	-72.72	Poland (0.03).
677	Wire	1.41	1.64	.96	1.37	1.37	61.99	Czechoslovakia (4.8); Romania (3.1); Poland (2.5); other (1.1).
678	Tubes and pipes	3.16	2.29	1.72	2.37	2.10	7.35	Romania (16.3); Yugoslavia (13.4); Czechoslovakia (12.1); Hungary (9.3); Poland (8.6); other (13.3).
6781	Tubes and pipes of cast iron	3.02	2.07	1.30	1.52	1.44	-40.71	Poland (0.6); other (0.0).
6782	Tubes and pipes, seamless	4.34	3.41	2.26	2.45	2.32	-8.32	Romania (8.6); Czechoslovakia (8.2); Hungary (6.1); other (7.9).
6783	Tubes and pipes, welded, clinched	2.72	1.76	1.67	2.85	2.24	24.53	Romania (7.6); Yugoslavia (5.7); U.S.S.R. (4.8); other (11.4).
6784	High pressure hydroelectric conduits of steel	.05	.04	.01	.05	.13	185.71	Poland (0.2).
6785	Tube and pipe fittings	2.77	1.81	1.57	1.92	1.85	24.37	Poland (6.0); Yugoslavia (4.8); other (1.0).
679	Castings and forgings	3.30	4.08	3.46	3.62	3.41	60.80	Poland (2.8); Romania (2.7); other (2.9).
6791	Iron castings	7.27	7.42	7.23	7.63	6.62	68.17	Romania (2.6); Poland (2.6); other (2.6).
6792	Steel castings	.82	.49	.41	.35	.53	0	Czechoslovakia (0.09); Yugoslavia (0.07); other (0.11).
6793	Iron and steel forgings	.49	.25	.23	.35	.37	-3.33	Poland (0.15); Yugoslavia (0.09); other (0.05).

† Trade between the German Democratic Republic and Federal Republic of Germany is excluded.

Source: U.N. trade data as reported by member countries.

TABLE A-2.—CPE IRON AND STEEL EXPORTS TO U.S., 1973-77

SITC	Description	CPE exports to United States as a percent of world exports to United States					1973-77 exports to United States increase (percent)	Principal CPE suppliers in 1977 (millions of dollars)
		1973	1974	1975	1976	1977		
	Total exports to United States.....	1.08	1.26	1.18	1.19	0.98	94.05	
5-8	Manufactured exports to United States.....	1.04	1.51	1.19	1.31	1.09	83.55	
67	Iron and steel exports.....	.89	1.70	.99	.81	.95	113.54	Poland (22.4); Yugoslavia (18.7); Romania (13.3); Czechoslovakia (2.5) U.S.S.R. (0.14); German Democratic Republic (0.06). Yugoslavia (16.3); other (0.01).
671	Pig iron and ferro alloys.....	1.32	5.92	3.89	3.09	3.14	419.30	
6711	Spiegeleisen.....	0	0	0	0	0		
6712	Pig iron.....	0	6.67	13.30	0	0		
6713	Iron and steel pellets, powder.....	0	0	0	0	0		
6714	Ferro manganese.....	0	0	.23	.27	1.39	9,999.00	Yugoslavia (2.2).
6715	Other ferro alloys.....	2.13	8.26	3.57	5.47	4.81	350.63	U.S.S.R. (0.13); Yugoslavia (14.1).
672	Ingots and other primary forms.....	0	0	0	0	.05	9,999.00	Romania (0.03).
6721	Puddled bars and pilings.....	0	0	0	0	0		
6723	Iron and steel ingots.....	0	0	0	0	0		
6725	Blooms, billets, slabs, sheet bars, roughly forged pieces.....	0	0	0	0	0		
6727	Coils for rerolling.....	0	0	0	0	0		
6729	Blanks for tubes and pipes.....	0	0	0	0	0		
673	Wire rod, bars, rails, angles, sheet piling.....	1.27	2.27	.57	.53	.44	-48.35	Poland (3.6); Czechoslovakia (1.4).
6731	Wire rod.....	1.96	5.83	1.09	1.14	.43	-66.67	Czechoslovakia (1.4); Poland (0.09).
6732	Bars and rods.....	.35	.21	.29	.57	1.04	302.30	Poland (3.5).
6734	Angles, shapes and sectns, 80 mm or more.....	1.84	0	.23	.01	(1)	-99.51	Poland (0.02).
6735	Angles, shapes and sections, less than 80 mm.....	.06	.03	.01	(1)	0	-100.00	
6741	Plates and sheets.....	.70	1.04	.70	.54	.83	153.72	Poland (17.0); Romania (6.5).
674	Heavy plates and sheets.....	0	0	.03	.03	0		
6742	Medium plates and sheets.....	0	0	0	0	0		
6743	Plate and sheets less than 3 mm thick, uncoated.....	0	0	0	0	0		
6747	Tinned, plates and sheets.....	0	0	0	0	0		
6748	Plates and sheets less than 3 mm thick, coated.....	0	0	0	0	(1)	9,999.00	Poland (0.03).
675	Hoop and strip of iron and steel.....	.01	.71	0	.14	.09	700.00	German Democratic Republic (0.04); Poland (0.04).
676	Rails, track material.....	.13	0	0	0	0		
6761	Rails.....	.16	0	0	0	0		
6762	Sleepers, other railway track material.....	0	0	0	0	0		
677	Wire.....	.60	1.16	.45	.43	.19	-44.44	Poland (0.53); German Democratic Republic (0.02).
678	Tubes and pipes.....	.87	.78	.50	.48	1.14	229.65	Romania (6.8); Yugoslavia (2.3); Poland (1.2); Czechoslovakia (1.1).
6781	Tubes and pipes of cast iron.....	1.92	0	1.33	.48	0	-100.00	

TABLE A-2.—CPE IRON AND STEEL EXPORTS TO U.S., 1973-77—Continued

SITC	Description	CPE exports to United States as a percent of world exports to United States					1973-77 exports to United States increase (percent)	Principal CPE suppliers in 1977 (millions of dollars)
		1973	1974	1975	1976	1977		
6782	Tubes, pipes, seamless	0	1.20	0.60	0.33	1.79	9,999.00	Romania (6.8); Yugoslavia (1.2); Czechoslovakia (1.1).
6783	Tubes and pipes, welded, clinched	1.62	.67	.53	.71	.56	-31.27	Poland (1.1); Yugoslavia (1.1); Romania (0.03).
6784	High pressure hydroelectric conduits	0	0	0	0	0		
6785	Tubes and pipe fittings	.08	.06	.06	.01	0	-100.00	
679	Castings and forgings	.77	1.39	4.31	1.14	.43	-7.69	
6791	Iron castings	0	2.06	6.71	1.69	.65	9,999.00	Yugoslavia (0.12).
6792	Steel castings	0	0	0	0	0		
6793	Iron and steel forgings	1.96	0	0	0	0		

¹ Negligible. Source: U.S. Census Bureau.

TABLE A-3.—CPE STEEL EXPORTS TO UNITED STATES WHICH INCREASED RAPIDLY IN 1977

TSUSA ¹	Description	CPE exports to United States as a percent of world exports to United States					1973-77 exports to United States, increase (percent)	Principal CPE suppliers in 1977 (millions of dollars)
		1973	1974	1975	1976	1977		
608.4620	Flat steel bars, not alloyed, not coated, not cold formed	(?)	0.21	0.08	0.75	4.85	2,010.42	Poland (2.23).
608.4660	Steel bars, not alloyed, not coated, cold formed	(?)	.17	.03	.06	.25	90.81	Poland (0.09).
608.8420* (old)	Steel plate, not shaped, not cold rolled, not coated, not alloyed	(?)	4.26	2.68	2.7			
608.8410 (new)	Steel plate in coils, not shaped, not cold rolled, not coated, not alloyed							Poland (16.49); Romania (1.86); Czechoslovakia—(0.004).
608.8415	Steel plate not in coils, shaped, cold rolled, or alloyed					18.31	160.64	
608.8440	Steel sheet, not shaped, not cold rolled, not coated	.13	1.05	.14	.10	.13	-76.76	Poland (0.51).
608.8742	Steel sheet, pickled and hot rolled	0	0	0		.33	99,999.00	Romania (0.74).
608.8744	Steel sheet, pickled and/or cold rolled	0	0	.42	.23	.23	99,999.00	Romania (1.93).
610.3205	Steel boiler tubes	(?)	1.23	0	2.07	.71	39.11	Yugoslavia (0.04).
610.3215 (old)	Steel pipe weld, excluding boiler not over 2.375 in diameter.	(?)	.31	1.48	.22			
610.3216 (new)	Steel pipe weld, excluding boiler not over 2.375 in diameter, including coupling.							
610.3218	Steel pipe, etc., excluding coupling					.78	20.97	Yugoslavia (1.06); Poland (0.14); Romania (0.03).
610.3225 (old)	Steel pipe weld, excluding boiler over 2.375, not over 4.5 in diameter, not alloy.	(?)	.52	.79	1.49			
610.3226 (new)	Steel pipe, etc., including coupling							
610.3228	Steel pipe, etc., excluding coupling					.78	-25.37	Poland (0.48); Yugoslavia (0.03).
610.3245 (old)	Steel pipe weld not alloy, over 4.5 but not over 8.625 in diameter.	(?)	0	0	1.54			
610.3246 (new)	Steel pipe, etc., including coupling							
610.3248	Steel pipe, etc., excluding coupling					1.14	32.37	Poland (0.55).
610.4220 (old)	Oil well casing	(?)	4.23	.37	.46			
610.4225 (new)	Oilwell casing, seamless					4.68	62,811.88	Romania (4.00); Czechoslovakia (1.05); Yugoslavia (0.18).
610.4240 (old)	Steel pipes and tubes with wall thickness 0.156 and over, threaded	0	7.19	4.59	4.13			
610.4245 (new)	Steel pipes and tubes, except casing, unalloyed, seamless					17.21	99,999.00	Romania (1.02).

¹ The TSUSA items (Tariff Schedules of the United States Annotated) listed in this category represent the top 1/2 of the products which comprised the top 50 percent of the frequency distribution of goods (at the 5-digit TSUSA level) which appeared most often on monthly data printouts in 1977.

* Negligible.

² In 1977, changes were made in certain TSUSA categories. In certain cases, old categories were subdivided. To provide a historical comparison, the old categories will be for the 1973-76 period, along with the new 1977 categories, which comprise the older categories.

Source: U.S. Census Bureau.

TABLE A-4.—CPE APPAREL EXPORTS TO IW, 1973-77^a

SITC	Description	CPE exports to IW as a percent of world exports to IW					1973-77 exports to IW, increase (percent)	Principal CPE suppliers in 1977 (millions of dollars)
		1973	1974	1975	1976	1977		
	Total exports to IW.....	4.20	4.06	4.29	4.37	3.57	58.37	
5-8	Manufactured exports to IW.....	3.05	3.06	2.87	3.03	5.40	51.16	
84	Clothing.....	7.66	8.30	7.92	7.38	7.29	81.43	Yugoslavia (432.2); Hungary (218.5); Romania (204.9); People's Republic of China (200.6); Poland (194.9); Czechoslovakia (95.4); Bulgaria (37.7); German Democratic Republic (20.2); U.S.S.R. (0.8).
841	Outer and under garments.....	7.53	8.25	7.88	7.32	7.17	80.21	Yugoslavia (418.9); Romania (204.3); Hungary (207.1); People's Republic of China (179.6); Poland (185.6); other (139.8).
8411	Clothing and textile fabric, not knitted or crocheted....	9.55	10.41	10.21	9.19	8.73	89.64	Yugoslavia (269.6); Poland (128.2); Romania (124.7); Hungary (123.5); People's Republic of China (91.3); other (79.6).
84111	Men's and boys' outer garments, not knitted or crocheted.	10.97	11.61	12.24	10.69	10.13	83.72	Yugoslavia (126.6); Romania (62.4); Poland (55.7); People's Republic of China (43); Czechoslovakia (32.3); other (50.6).
84112	Women's, girls, or infants outer garments, not knitted or crocheted.	7.56	8.77	8.24	7.76	7.30	111.40	Yugoslavia (93.5); Hungary (70.6); Poland (58.7); Romania (46.1); People's Republic of China (20.8); other (25.5).
84113	Men's and boys' undergarments, not knitted or crocheted.	11.14	11.30	10.16	9.12	9.38	68.59	Yugoslavia (49.3); People's Republic of China (23.6); Romania (15.1); Poland (13.4); other (14.6).
84114	Women's, girls', infants' undergarments, not knitted or crocheted.	13.52	14.33	14.88	13.81	10.79	36.53	Yugoslavia (5.2); People's Republic of China (4.0); other 6.1).
8412	Clothing accessories of textile fabrics, not knitted or crocheted.	5.66	6.01	5.01	5.13	5.30	94.09	People's Republic of China (15.1); Yugoslavia (12.3); Czechoslovakia (5.6); other (12.0).
84121	Handkerchiefs.....	17.85	19.99	14.81	12.71	14.58	63.51	People's Republic of China (9.6); Czechoslovakia (3.2); other (2.0).
84122	Shawls, scarves, mufflers, veils, not knitted or crocheted.	.79	1.03	.76	.91	1.14	300.00	People's Republic of China (1.5); Czechoslovakia (0.5); other (0.3).
84123	Ties, bow ties, cravats.....	.04	.08	.03	.18	.05	100.00	German Democratic Republic (0.03); People's Republic of China (0.01).
84124	Collars, cuffs, jabots.....	.87	.76	2.61	.01	0	-100.00	

84125	Corsets, suspenders, garters	6.13	5.55	5.92	6.17	6.10	88.58	Yugoslavia (12.2); Hungary (6.0); other (4.9).
84126	Gloves, mittens, stockings, socks, not knitted or crocheted	5.43	7.03	4.55	7.53	7.06	262.73	People's Republic of China (3.3); Hungary (0.58); other (0.1).
84129	Other clothing accessories	.98	2.46	1.86	1.81	1.80	311.76	People's Republic of China (0.65); other (0.05).
8413	Apparel and clothing accessories of leather	9.96	9.12	8.63	7.94	8.32	70.77	People's Republic of China (24.9); Yugoslavia (23.0); Hungary (21.2); Poland (11.4); other (12.2).
8414	Clothing and accessories, knitted or crocheted	5.44	6.03	5.47	5.25	5.31	63.27	Yugoslavia (113.8); Romania (72.1); Hungary (53.6); Poland (44.7); People's Republic of China (41.4); other (45.6).
84141	Gloves, knitted or crocheted, not elastic or rubberized	9.28	9.71	8.23	8.99	8.14	54.64	People's Republic of China (8.9); other (1.6).
84142	Stockings, knitted or crocheted; not elastic or rubberized	7.48	7.52	7.75	8.10	8.49	88.48	Romania (6.8); Yugoslavia (4.4); People's Republic of China (4.0); German Democratic Republic (3.4); other (5.1).
84143	Undergarments, knitted or crocheted, not elastic or rubberized	11.97	12.22	10.83	8.97	8.75	48.18	Yugoslavia (69.4); Romania (34.1); Poland (19.0); other (37.6).
84144	Outer garments, knitted or crocheted, not elastic or rubberized	3.31	3.55	3.29	3.63	3.75	77.02	Hungary (40.3); Yugoslavia (40.0); Romania (30.8); Poland (24.2); other (41.4).
84145	Knitted, or crocheted fabric, elastic or rubberized, and articles thereof	.72	.62	.81	.68	.66	55.55	German Democratic Republic (0.24); other (0.04).
8415	Headgear	2.93	3.49	3.51	3.14	3.66	119.67	People's Republic of China (6.8); other (2.5).
84151	Headgear of felt	5.09	5.98	6.74	6.63	7.29	59.26	Czechoslovakia (0.4); Poland (0.3); other (0.2).
84152	Headgear, plaited	1.61	1.19	2.07	2.07	1.84	85.71	People's Republic of China (0.38); Yugoslavia (0.01).
84153	Headgear, knitted, crocheted or of textile fabric other than felt	2.37	3.20	3.42	3.89	4.86	352.14	People's Republic of China (5.4); Czechoslovakia (0.4); Hungary (0.2); other (0.3).
84154	Other headgear	.53	0	0	.18	0	-100.00	Peoples Republic of China (1.0); other (0.6).
84159	do	3.53	4.10	3.66	1.95	1.96	-18.72	Czechoslovakia (0.23); other (0.19).
8416	Apparel and clothing accessories of rubber	1.09	1.09	.72	.67	.56	-6.67	People's Republic of China (20.9); Yugoslavia (13.2); Hungary (11.4); Poland (9.3); Czechoslovakia (7.8); Bulgaria (5.7); other (1.3).
842	Fur clothing, other articles made of fur	12.61	10.23	9.44	9.38	10.68	103.15	

† Trade between the German Democratic Republic and Federal Republic of Germany is excluded.

Source: U.N. trade data as reported by member countries.

TABLE A-5.—CPE APPAREL EXPORTS TO UNITED STATES, 1973-77¹

SITC	Description	CPE exports to United States as a percent of world exports to United States					1973-77 exports to United States increase (percent)	Principal CPE suppliers in 1977 (millions of dollars)
		1973	1974	1975	1976	1977		
	Total exports to United States.....	1.08	1.26	1.18	1.19	.98	94.05	
5-8	Manufactured exports to United States.....	1.04	1.51	1.19	1.31	1.09	85.55	
84	Clothing.....	1.40	1.63	1.63	2.53	3.22	341.09	Romania (43.2); Poland (37.9); People's Republic of China (25.5); Yugoslavia (23.2); Czechoslovakia (2.3); Hungary (0.69); German Democratic Republic (0.01).
841	Outer and undergarments.....	1.39	1.63	1.63	2.52	3.23	342.04	Romania (43.2); People's Republic of China (25.5); Yugoslavia (23.1); Poland (37.1); other (3.0).
8411	Clothing and textile fabric not knitted or crocheted...	2.03	2.39	2.73	3.90	4.83	490.15	Romania (29.4); Poland (25.5); Yugoslavia (19.1); People's Republic of China (15.6); other (1.5).
84111	Men's and boys' outer garments not knitted or crocheted.	4.79	5.03	5.34	7.79	9.86	401.92	Poland (19.7); Romania (17.3); Yugoslavia (12.7); People's Republic of China (6.4); other (1.4).
84112	Women's, girls', infants' outer garments not knitted or crocheted.	.86	1.32	1.39	2.28	2.71	667.57	Romania (9.7); Yugoslavia (5.9); Poland (5.1); People's Republic of China (4.7); other (1.0).
84113	Men's and boys' undergarments, not knitted or crocheted.	.50	1.00	1.79	1.52	2.25	1,070.31	People's Republic of China (4.2); Romania (2.3); other (1.0).
84114	Women's, girls', infants' undergarments, not knitted or crocheted.	0	.30	.57	3.54	2.41	9,999.00	People's Republic of China (0.37); Yugoslavia (0.13); other (0.07).
8412	Clothing accessories of textile fabric, not knitted or crocheted.	1.05	1.38	.60	1.47	1.55	295.00	People's Republic of China (2.8); other (0.4).
84121	Handkerchiefs.....	5.23	3.73	1.96	1.86	3.11	140.62	People's Republic of China (0.42); Czechoslovakia (0.33); other (0.02).

84122-----	Shawls, scarves, mufflers, veils, not knitted or crocheted.	.06	0	.28	.43	.17	600.00	People's Republic of China (0.04); other (0.03).
84123-----	Ties, bowties, cravats-----	0	.20	0	0	0	-----	
84124-----	Collars, cuffs, jabots-----	0	0	0	0	0	-----	
84125-----	Corsets, suspenders, garters-----	0	0	0	.15	.01	9,999.00	People's Republic of China (0.10).
84126-----	Gloves, mittens, stockings, socks, not knitted or crocheted.	6.27	6.80	2.58	8.04	6.53	393.62	People's Republic of China (2.3).
84129-----	Other clothing accessories-----	0	0	0	0	0	-----	
8413-----	Apparel and clothing accessories of leather-----	2.91	2.22	2.10	1.46	.78	-42.07	Romania (1.3); Yugoslavia (1.1); other (0.6).
8414-----	Clothing and accessories knitted or crocheted-----	.71	.89	.57	1.32	2.09	318.15	Romania (12.6); Poland (11.2); People's Republic of China (5.5); other (3.2).
84141-----	Gloves, knitted or crocheted, not elastic or rubberized..	.91	1.22	.66	2.87	1.77	50.00	People's Republic of China (0.2); other (0.01).
84142-----	Stockings, knitted or crocheted not elastic or rubberized.	0	0	.01	(¹)	.29	9,999.00	People's Republic of China (0.01).
84143-----	Undergarments, knitted or crocheted, not elastic or rubberized.	1.43	1.82	1.24	2.14	3.03	320.63	Poland (7.0); Romania (6.1); other (2.8).
84144-----	Outer garments, knitted or crocheted, not elastic or rubberized.	.48	.48	.19	.86	1.61	325.19	Romania (6.5); Poland (4.2); People's Republic of China (3.4); Yugoslavia (2.3).
84145-----	Knitted or crocheted fabric, elastic or rubberized, and articles thereof.	0	0	0	0	0	-----	
8415-----	Headgear-----	1.84	3.06	4.93	4.34	4.16	247.46	People's Republic of China (1.4); other (0.6).
84151-----	Headgear felt-----	13.10	17.36	20.00	12.90	18.04	17.07	Czechoslovakia (0.25); Poland (0.2); other (0.03).
84152-----	Headgear, plaited-----	.24	.14	.68	.96	.46	2,000.00	People's Republic of China (0.06).
84153-----	Headgear, knitted, crocheted or of textile fabric other than felt.	1.36	4.12	7.71	7.37	7.71	964.28	People's Republic of China (1.3); Czechoslovakia (0.2).
84154-----	Other headgear-----	0	0	0	0	0	-----	
84159-----	do-----	.29	.07	0	0	.14	-33.33	People's Republic of China (0.02).
8416-----	Apparel and clothing accessories of rubber-----	0	0	0	0	0	-----	
842-----	Fur clothing, other articles made of fur-----	1.75	1.61	.94	3.06	2.85	262.57	Poland (0.8); Yugoslavia (0.16); other (0.12).

¹ Negligible.

TABLE A-6.—CPE APPAREL EXPORTS TO UNITED STATES WHICH INCREASED RAPIDLY IN 1977

TSUSA 1	Description	CPE exports to United States as a percent of world exports to United States					1973-77 exports to United States, increase (percent)	Principal CPE suppliers in 1977 (millions of dollars)
		1973	1974	1975	1976	1977		
370.6020	Cotton handkerchiefs, hemmed, fancy	2.53	3.26	5.38	6.07	3.82	577.05	People's Republic of China (0.029); Poland (0.02); other (0.023).
380.0404	Men's and boys' knit coats, manmade fiber	(?)	0	(?)	3.55	6.46	9,999.00 (1974-77)	Poland (0.26); Romania (0.13); Yugoslavia (0.004).
380.0423	Men's and boys' ornamented sweaters, manmade fibers	(?)	0	0	.46	5.14	9,999.00 (1974-77)	Romania (0.41); People's Republic of China (0.13); Poland (0.08).
380.0428	Men's and boys' ornamented slacks, manmade fibers	0	.11	.04	4.53	1.75	9,999.00	Yugoslavia (0.092); Poland (0.08); Romania (0.003).
380.0615	Men's and boys' cotton knit coats	0	0	15.16	50.29	18.29	9,999.00	Romania (0.63); Yugoslavia (0.09); Poland (0.02).
380.0640	Men's and boys' cotton knit T-shirts, except all white	25.07	6.64	9.19	10.14	8.62	-34.77	People's Republic of China (0.44); Czechoslovakia (0.04); Romania (0.04); other (0.01).
380.0645	Men's and boys' cotton knit sweatshirts	0	0	44.64	48.42	81.12	9,999.00	Romania (3.8); Poland (2.4); Hungary (0.03).
380.0650	Men's and boys' cotton knit shirts	5.65	9.36	6.80	6.25	2.96	28.27	Poland (0.09); Romania (0.04); other (0.04).
380.0660	Men's and boys' cotton knit trousers	0	0	11.08	49.42	30.08	9,999.00	Romania (0.31); Yugoslavia (0.08); Poland (0.02).
380.1220	Men's and boys' raincoats, ¾ length	1.5	3.49	9.59	24.65	40.62	2,491.00	Poland (1.1); Yugoslavia (1.1); other (0.5).
380.1240	Men's, boys' cotton suit-type coats (corduroy)	19.36	15.16	33.43	41.98	42.52	557.14	Poland (5.6); Romania (0.8); Yugoslavia (0.6); other (0.2).
380.1260	Men's, boys' cotton knit suit-type coats	21.38	37.67	33.39	34.85	46.23	332.17	Romania (3.3); Poland (2.6); Yugoslavia (2.4); People's Republic of China (0.02).
380.1280	Men's, boys' cotton, not knit coats, corduroy	3.10	3.01	5.76	5.50	4.94	-15.67	Poland (0.18); Romania (0.06); Czechoslovakia (0.05); People's Republic of China (0.03).
380.1290	Men's, boys' cotton coats not ornamented	19.52	6.32	5.39	18.34	17.82	119.53	Yugoslavia (1.9); Poland (0.90); Romania (0.28); People's Republic of China (0.007).
380.2759	Men's cotton dress shirts	0	0	.24	2.21	2.56	9,999.00	People's Republic of China (0.28); Yugoslavia (0.19); Hungary (0.01).
380.2787	Men's cotton sport shirts of gingham	.86	2.93	6.85	9.87	10.32	5,029.46 (1975-77)	People's Republic of China (2.9); Romania (2.1); other (0.6).
380.3320	Men's, boys' cotton vests not over \$24	(?)	(?)	41.84	48.84	30.37	0	Romania (0.07); Yugoslavia (0.015); other (0.19).
380.3620	Men's, boys' cotton vests, over \$24	0	0	28.45	31.85	27.47	9,999.00	Poland (1.6); Romania (0.7); Yugoslavia (0.6); Czechoslovakia (0.5); People's Republic of China (0.2).
380.3927	Men's cotton trousers and shorts, corduroy	7.35	23.25	20.91	28.08	26.24	731.99	Poland (1.7); People's Republic of China (0.9); Romania (0.41); Yugoslavia (0.05); Czechoslovakia (0.04)
380.3929	Men's cotton trousers and shorts, not knit	2.78	7.51	5.13	8.09	8.96	684.04	Poland (1.3); Romania (1.2); Yugoslavia (0.9); other (0.3).
380.3937	Boy's cotton trousers, corduroy	.07	1.74	.16	23.97	30.60	27,900.00	People's Republic of China (0.5); Poland (0.03).
380.6150	Men's, boys' wool sweaters	.94	.06	8.1	.68	.99	244.23	Yugoslavia (0.24); People's Republic of China (0.12).
380.6610	Men's, boys' wool suit-type coat	8.19	1.83	.10	4.95	8.28	77.88	Yugoslavia (0.5); Poland (0.4); Romania (0.3); People's Republic of China (0.01).
380.6620	Men's, boys' wool coat	2.43	3.53	8.04	5.72	15.71	1,370.21	Yugoslavia (1.2); Poland (0.7); other (0.2).
380.6650	Men's, boys' wool suits	5.06	2.13	1.35	8.80	12.03	593.60	Poland (3.2); Yugoslavia (2.3); Romania (2.1); other (0.4).
380.8107	Men's, boys' coats, manmade fiber	(?)	.05	.22	.36	4.01	9,999.00 (1974-77)	Romania (0.5); Poland (0.4); other (0.1).

380.8137	Men's, boys' knit shirts, manmade fiber	(2)	.67	.81	1.81	1.41	144.46 (1974-77)	Romania (0.5); Poland (0.4); Yugoslavia (0.3).	
380.8147	Men's, boys' knit sweaters, manmade fiber	(2)	.93	.61	.84	4.10	527.69 (1974-77)	Romania (0.9); Yugoslavia (0.8); Poland (0.4); People's Republic of China (0.1).	
380.8165	Men's, boys' trousers, shorts, manmade fiber		.55	.03	.22	1.64	105.49	Romania (0.3); Poland (0.2); other (0.06).	
380.8415	Men's, boys' suit-type coats, manmade fiber		5.73	1.59	1.08	5.11	236.82	Romania (0.8); other (0.04).	
380.8420	Men's, boys' coats, not knit, manmade fiber		.17	.01	.43	1.89	1,718.05	Romania (1.2); People's Republic of China (0.05); Yugoslavia (0.02).	
382.0044	Women's cotton blouses		.26	.35	.26	.55	1.82	2,660.00	Romania (0.2); People's Republic of China (0.04); other (0.03).
382.0427	Infants' sweaters	(2)	(2)	(2)	18.62	8.98	618.52 (1974-77)	People's Republic of China (0.16); Romania (0.03).	
382.0660	Women's, girls, infants' cotton knit T-shirts		3.46	4.62	1.76	2.36	5.89	900.99	People's Republic of China (0.7); Poland (0.1); Romania (0.1); other (0.1).
382.0665	Women's, girls', infants' cotton knit sweatshirts		0	0	3.08	2.44	16.09	9,999.00	Poland (0.32); Romania (0.08).
382.0670	Women's, girls', infants' cotton knit shirts		5.88	2.87	3.22	4.19	3.51	574.16	People's Republic of China (1.1); Poland (0.7); Romania (0.2); Yugoslavia (0.08).
382.1206	Women's raincoats		5.27	10.04	22.36	31.66	21.74	1,052.89	Poland (2.6); Yugoslavia (1.8); Romania (0.8); People's Republic of China (0.05).
382.1218	Women's, girls', infants' cotton coats		.28	.24	.38	6.70	18.98	2,807.14	Romania (1.0); Yugoslavia (0.11); Poland (0.09).
382.1220	Women's, girls', infants' corduroy cotton coats		3.81	1.23	5.33	2.97	5.03	80.87	Yugoslavia (0.19); other (0.02).
382.1224	Women's, girls', infants' cotton coats, not elsewhere specified		5.24	5.42	7.14	11.05	11.33	301.74	Romania (1.3); Yugoslavia (1.0); People's Republic of China (0.4).
382.3310	Women's other cotton blouses	(2)	.49	.51	.13	.43	49,233.00	Poland (0.15); People's Republic of China (0.04); Romania (0.09); Yugoslavia (0.01).	
382.3313	Women's, girls', infants' cotton coats and jackets	(2)	(2)	(2)	2.19	6.80	177.24 (1976-77)	Romania (0.18); Yugoslavia (0.12); Poland (0.09); People's Republic of China (0.01).	
382.3342	Women's cotton skirts, not knit		.36	.67	1.53	1.37	2.64	6,580.00	Yugoslavia (0.27); other (0.06).
382.3362	Women's other cotton slacks		1.82	3.30	1.55	.94	5.77	765.72	Romania (1.6); other (0.5).
382.5870	Women's, girls' wool knit sweaters		.09	(3)	.01	.1	.33	816.13	Yugoslavia (0.18); People's Republic of China (0.09).
382.6320	Women's, girls', infants' wool coats		1.33	3.71	.25	2.92	7.52	1,585.24	Poland (0.57); Yugoslavia (0.37); other (0.08).
382.6340	Women's, girls', infants' wool suits		2.50	0	2.24	11.63	22.24	5,975.00	Romania (1.4); Yugoslavia (0.6); other (0.4).
382.6345	Women's, girls', infants' wool slacks		3.16	.39	.01	4.99	3.59	147.18	Yugoslavia (0.29); other (0.06).
382.7264	Women's, girls' silk blouses	(2)	(2)	.31	2.62	2.29	4,181.81 (1975-77)	People's Republic of China (0.42); other (0.05).	
382.7809	Women's, girls', infants' other coats, knit	(2)	.01	0	.52	.52	14,300.00 (1974-77)	Poland (0.12); other (0.02).	
382.7859	Women's, girls', infants' other shirts, knit, manmade fiber	(2)	.35	.30	.35	.55	101.80 (1974-77)	Poland (0.66); Romania (0.40).	
382.7870	Infants' sweaters, manmade fiber	(2)	(2)	(2)	5.84	16.66	1,020.69 (1976-77)	Poland (0.57); People's Republic of China (0.32); Romania (0.07).	
382.7873	Women's, girls', infants' wearing apparel manmade fiber, knit, n.e.s.	(2)	(2)	(2)	1.14	2.19	1,024.11 (1976-77)	Romania (2.7); Poland (1.6); other (1.0).	
382.8110	Women's, girls', infants' manmade fiber coats		.57	.54	.45	1.27	.46	79.41	Romania (0.2); other (0.1).
382.8122	Women's, manmade fiber skirts, not knit	(2)	1.36	.05	1.08	2.27	786.67 (1974-77)	Romania (0.12); other (0.01).	
382.8126	Women's, girls', infants' fiber suits		.84	.84	1.40	7.98	7.12	3,486.96	Romania (0.5); other (0.3).

¹ The TSUSA categories listed in this table represent the top 1/2 of the products which comprised the top 50 percent of the frequency distribution of apparel items (at the 5-digit TSUSA level) which appeared most often on the monthly data printouts in 1977.

* The United States imported no items in that particular category for the given year.
 † Negligible.

Source: U.S. Census Bureau.

Chapter 8. SOVIET-EAST EUROPEAN EXPORT POTENTIAL TO WESTERN COUNTRIES

By HEDIJA H. KRAVALIS*

Despite recent cutbacks in Soviet-East European (EE) imports from the West, Eastern needs for Western technology, manufactured goods, and grain remain large, holding the prospect of enlarging Western exports in the years ahead. Increased Soviet-East European imports alone, however, cannot create an enduring East-West trade relationship. Over the long term, continued growth in East-West trade is to a large extent dependent upon Eastern countries' ability to export to the West, not only to service and repay the already large debt, but to earn enough hard currency to be able to sustain a trading relationship approaching some degree of balance.

The year 1976 was in a sense a turning point in the development of East-West trade. The large growth in Eastern imports of prior years slowed sharply, while Eastern export growth, which had virtually been stagnated by Western recession, rebounded to a pre-recession growth rate. In spite of these developments, the 1976 hard currency trade deficit was about \$11 billion for Eastern Europe and the USSR as a whole. Considering earnings from invisibles, arms shipments and gold sales on the one hand and interest on debt requirements on the other, net debt grew \$11 billion, to a year end 1976 total of \$40 billion. A better export position would not only have stemmed some of this growth but would also have allowed the Eastern countries to import more of the Western commodities they clearly need.

There are, no doubt, opportunities for the Soviet Union and Eastern Europe to expand future hard currency earnings from shipping, tourism, insurance, arms and gold sales. Inevitably, however, their hard currency earning capability will have to be based primarily on expanded merchandise exports, i.e. larger sales of raw materials, food, semiprocessed and manufactured goods. Looking only at merchandise trade, balancing of 1976 Soviet-East European hard currency trade would have required additional exports of \$11 billion, or about 50 percent greater than actual exports.

Given the proposition that future levels of trade with the West will be constrained by Soviet-EE export capabilities, we have undertaken

*The author is from the Office of East-West Policy and Planning, Industry and Trade Administration, Department of Commerce. This paper was prepared to stimulate discussion and does not reflect views of the Department of Commerce or the U.S. Government.

This paper is a synopsis of a more detailed, ongoing study being undertaken by the Office of East-West Policy and Planning, Industry and Trade Administration, U.S. Department of Commerce.

The first paper from this project, "An Analysis of Recent and Potential Soviet and East European Exports to Fifteen Industrialized Western Countries", by Allen J. Lenz and Hedija H. Kravalis, appeared in the 1977 Joint Economic Committee Compendium of Papers entitled *East European Economies Post Helsinki*. An update of the JEC paper, which includes presentations of more recent data, is available from H. Kravalis, Office of East-West Policy and Planning, ITA, U.S. Department of Commerce. Future iterations of the paper will be made available annually with each new release of yearly data.

an examination of the volume and composition of Eastern countries' recent exports, using import data of fifteen industrialized Western countries as a proxy for Eastern hard currency export capability. (Although hard currency exports of the USSR-EE to LDC's have been increasing rapidly in recent years, they still represent a minor source of foreign exchange. Furthermore, elimination of hard currency trade deficits and establishment of enduring East-West trade relationships will, by nature of the sheer volume of that projected trade, have to be dependent upon exports to major industrialized Western countries.)

Our analysis has revealed the following:

Supplying about 2 percent of Western imports from the world, the USSR and East European countries are not significant exporters to the West.

The large dollar value increases in Eastern exports to the West achieved since 1972 have only marginally increased their share of total Western imports from the world.

Export dollar value increases achieved since 1972 were due largely to increases in price, rather than volume exported.

Nearly 60 percent of 1976 Soviet-East European exports to the Industrialized West consisted of primary products—i.e. foods, fuels, raw materials.

The second largest group of exports was semi-processed goods, which accounted for 20 percent of hard currency earnings, these included chemicals and semi-processed raw material commodities.

The smallest group of exports was found to be finished manufactures—machinery, transport equipment, consumer goods, etc. These comprised about 17 percent of hard currency earnings for the Soviet-East European countries, and were generated primarily by Eastern Europe.

The largest exporter among the Soviet-EE group was the USSR, accounting for 43 percent of the area's exports. The USSR was followed by Poland and East Germany. Czechoslovakia, Romania, and Hungary were in the middle of the range. On the low side was Bulgaria, whose exports have been limited not only by the smallness of its economy but also by substantial integration with the Soviet Union.

Export patterns among individual Eastern countries varied considerably. In general, the Soviet Union had very little diversification in its export structure, i.e. fewer commodities accounted for a larger share of export trade than in other Eastern countries. The remaining countries of Eastern Europe were more diversified in their exports, largely because of their expansion into manufactures and food products.

Three-fourths of Soviet exports in 1976 consisted of raw materials and fuels, primarily oil, gas, timber. Because the Soviet Union is the largest exporter among East European countries, its heavy concentration in these products throws a good deal of weight into the raw material and fuel exports

group for the Eastern countries as a whole. Aided further by substantial Polish coal and sulfur exports, and Romanian oil exports, raw materials and fuels accounted for one-half of Soviet-EE hard currency earnings from exports to the Industrialized West.

Soviet export weakness has been greatest in the finished manufactures area. In value terms, USSR's exports of manufactures (transport equipment, machinery, consumer goods) were less than those of any other Eastern country except Bulgaria.

East Germany and Czechoslovakia, the most industrialized of the Eastern countries, were the most diversified in their exports westward, with about even distribution among the foods and raw materials group, semi-processed goods, and finished manufactures.

Poland's hard currency earnings sources were less diversified because of its export strength in coal, which boosted earnings from fuel exports to nearly 30 percent of total earnings in 1976. Romania's export composition was also weighted in favor of primary products because of its large petroleum exports.

Hungary and Bulgaria had more concentration in agricultural products exports (meat, fruits/vegetables, tobacco) than any of the other East European countries.

Looking to the future, a number of developments will significantly affect Soviet-East European hard currency earnings. Perhaps the most important among these is the question of Soviet oil. The recent widely publicized report on Soviet oil production capability, put out by the CIA, predicted that production could peak as early as 1978 and would do so no later than the early 1980's. Clearly this would have serious dampening effects on the 44 percent of Soviet hard currency earnings that come from oil and oil products. While the pace of Soviet petroleum export growth had increased rapidly in 1976, this was probably achieved at the cost of cuts in domestic consumption. Data for 1977 are not yet available; there are indications however, that oil production growth did indeed slow, and that oil exports, though continuing to rise, did so at a much slower rate than in the year prior.

On the more positive side, the Soviets are rapidly increasing gas exports. These can be expected to double in volume by 1980, with dollar value earnings increasing much faster. Outlets for gas exports are assured as they will be payment for the numerous "gas-for-pipe" deals concluded by the Soviets with several West European countries.

Exports of Soviet raw materials will also probably rise, as Western demand increases with continuing economic recovery. Sales of platinum, aluminum, diamonds, chrome, nickel, wood, cotton—important raw material export commodities—will earn larger amounts of hard currency, not only from moderately expanding volume deliveries, but also from rising world market prices. Earnings from exports of these commodities, however, will be hard pressed to compensate for the potentially large decreases in earnings from oil and oil products. As for

manufactures, the Soviets will continue to pay lip service to expanding finished goods exports. In the near term, however, these probably will not contribute much more to hard currency earnings than the current 4 percent.

The prospects for improved export performance among the East European countries vary. Like the Soviet Union, countries with raw materials available for export, e.g. Poland with its coal, copper, sulfur, will benefit from increasing demand and rising prices. However, by and large, Eastern Europe relies heavily on agricultural and manufactured products for hard currency earnings. Exports of semi-processed commodities such as chemicals, iron/steel products, and textiles, have also been on the rise in recent years. Expansion of earnings from manufactures exports will be hampered by traditional problems of quality, style, and servicing. Those manufactures which have proven acceptable on Western markets—footwear, clothing—are potentially susceptible to Western import restrictions which are becoming more threatening with the rising tide of protectionism. Semi-processed exports are also beginning to evoke restrictions as Western producers of chemicals, iron and steel products, and textiles seek barriers against increased imports.

For many commodities in all the major groups—primary goods, semi-processed goods, finished manufactures—one cannot ignore increasing domestic needs of Eastern countries, which will constrain any large volume increases in supplies available for export. Clothing and some semi-processed goods such as chemicals, iron and steel, fibers, may be exceptions to this rule.

In sum, prospects for hard currency export growth through the near term vary significantly within the Soviet-EE group, with each country capable of some growth, but the USSR and Poland probably capable of the fastest advances. However, barring high rates of Western inflation, or further very large price increases in key export items, the USSR, Poland and the other East European countries will be hard pressed during the 1977–80 period, to match the 1972–75 rates of growth in exports to the industrialized West.

Perhaps a greater surge in export earnings will come early in the 1980's, if, as many predict, raw material prices rise, and as many of the raw material development projects, particularly in the USSR and Poland, come on stream. Eastern Europe may also experience increased growth to the extent that it can: (1) overcome some of the quality problems in its manufactured exports; and (2) restructure its export commodities so they encounter a minimum of Western import restrictions.

USSR AND EASTERN EUROPE: VALUE AND COMPOSITION OF 1976 EXPORTS TO INDUSTRIALIZED WEST

[Amounts rounded to millions of U.S. dollars]

SITC and description	USSR		Poland		German Democratic Republic		Czechoslovakia		Romania		Hungary		Bulgaria		Total Soviet-Eastern Europe	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
0 Food and live animals.....	131	1.5	552	17.0	364	14.7	98	6.4	191	11.2	373	27.7	94	25.0	1,803	9.3
1 Beverages and tobacco.....	16	.2	22	.7	13	0.5	6	.4	15	.9	15	1.2	61	16.2	148	.8
2 Crude materials, inedible, except fuels	1,958	22.3	321	9.9	130	5.3	191	12.4	90	5.3	118	8.8	26	6.9	2,834	14.6
3 Mineral fuels, lubricants, and related products.....	4,666	53.2	948	29.3	340	13.7	205	13.3	497	29.2	46	3.4	5	1.4	6,707	34.5
4 Vegetable oils and fats.....	64	.7	10	.3	15	0.6	4	.2	21	1.2	18	1.3	6	1.5	138	.7
5 Chemicals.....	343	3.9	133	4.1	234	9.4	101	6.6	79	4.6	100	7.4	23	6.1	1,013	5.2
6 Manufactured goods.....	1,182	13.5	473	14.6	596	24.0	452	29.4	282	16.5	278	20.7	84	22.1	3,347	17.2
7 Machinery and transport equipment.....	294	3.4	429	13.3	311	12.5	224	14.5	111	6.5	120	8.9	32	8.5	1,521	7.8
8 Miscellaneous manufactured articles NEC ¹	62	.7	320	9.9	466	18.8	229	14.9	405	23.7	265	19.7	41	10.8	1,788	9.2
9 Commodities NEC ¹	58	.7	28	.9	13	0.5	29	1.9	13	.8	13	1.0	5	1.5	159	.8
Total.....	8,773	100.0	3,237	100.0	2,481	100.0	1,541	100.0	1,703	100.0	1,345	100.0	377	100.0	19,457	100.0
Percent of total U.S.S.R.-Eastern Europe exports.....	45.1		16.6		12.8		7.9		8.8		6.9		1.9		100.0	
0-4 Primary products.....	6,834	77.9	1,853	57.2	861	34.7	504	32.7	814	47.8	570	42.3	192	51.0	11,628	59.8
5-6 Intermediate goods.....	1,525	17.4	606	18.7	830	33.4	554	35.9	360	21.1	378	28.1	107	28.2	4,360	22.4
7-8 Manufactured goods.....	357	4.1	749	23.2	777	31.3	454	29.4	516	30.3	385	28.6	73	19.4	3,311	17.0
Growth 1972-76.....	5,928	208.4	1,874	137.5	1,270	104.9	672	77.3	977	134.6	599	80.3	135	55.8	11,455	*143.2

¹ Not elsewhere classified.

² Determined by adding cumulative growths for total Soviet Union-Eastern Europe in 1976 and then comparing that figure with comparable 1972 figure.

Chapter 9. A SUMMARY OF U.S. LAWS APPLYING TO IMPORTS OF COMMUNIST PRODUCTS

BY KAREN TAYLOR*

I. GENERAL LAWS APPLYING TO IMPORTS REGARDLESS OF SOURCE COUNTRY

A. *Escape Clause and Adjustment Assistance: Title II of 1974 Trade Act*

The *escape clause* is primarily designed to protect against rapidly increasing imports which are, or threaten to be, a substantial cause of serious injury to a U.S. industry producing a like or directly competitive product.

Application to Communist countries.—No special problems of application to communist countries. A communist exporter would be likely to face an escape clause action only if it were one of several suppliers of the product in question. If the communist exporter were the major supplier it is more likely that a market disruption action (Section 406) would be taken—due to the easier standard of injury. (See explanation of market disruption actions.)

Adjustment assistance is designed to provide relief for workers, firms and communities which have experienced unemployment due to import competition. Increased imports must have contributed importantly to the severance of workers and a decline in sales.

Application to Communist countries.—No special problems of application to communist countries. Adjustment assistance is available regardless of the source of the problem imports.

B. *Antidumping: Antidumping Act of 1921 as Amended (Section 321 of 1974 Trade Act)*

The U.S. antidumping law is designed to protect against sales at less than fair value which result in injury to a U.S. industry. Sales at less than fair value occur when the sale price in the U.S. is lower than the sale price in the domestic market of the exporting country in the normal course of trade.

Application to Communist countries.—Since prices in state-controlled economy countries are not set by market forces, special provisions have been made to apply this law to communist countries. In the case of a state-controlled economy country, the U.S.

*The author is from the Office of East-West Policy and Planning, Industry and Trade Administration, Department of Commerce. This paper was prepared to stimulate discussion and does not necessarily reflect the views of the Department of Commerce or the U.S. Government.

compares the sales price of a similar product in a third country which is a market economy country (and could be the U.S.), or the constructed value of a similar product produced in a third country which is a market economy. This procedure precludes taking into account the possibility that the state-controlled economy country might be the least-cost producer.

C. Countervailing Duties: Tariff Act of 1930 as Amended (Section 331 of 1974 Trade Act)

Countervailing duties are designed to offset effects of a bounty or grant paid on the production, manufacture or export of product. If the product happens to be duty free, the U.S. must prove injury. If the product is not duty free, the U.S. need not prove injury.

Application to Communist countries.—There has never been a countervailing duty case against a communist country. Were one to occur, however, it would be extremely problematic. It is easy to hypothesize that subsidization occurs in state-controlled economies. It would be almost impossible, however, to measure the amount of any given subsidy in order to assess the proper offsetting duty.

D. Responses to Certain Trade Practices of Foreign Governments: Section 301 of 1974 Trade Act

While basically designed to protect U.S. exports from unfair competition, this legislation can also be used to act against export subsidies and other practices of foreign governments detrimental to U.S. commerce.

Application to Communist countries.—No special problems of application to communist countries. Only one 301 case has been brought against a communist country—a complaint about Soviet marine insurance practices.

E. Unfair Practices in Import Trade: Section 337 of 1974 Trade Act

Mainly utilized to protect against patent infringement cases, this legislation can cover a wide range of unfair import practices which destroy or substantially injure U.S. industry or restrain or monopolize trade and commerce in the U.S.

Application to Communist countries.—No special problems of application to communist countries except with cases involving pricing or subsidization complaints. (See discussions under anti-dumping and countervailing.)

II. SPECIAL LAWS APPLYING TO IMPORTS FROM COMMUNIST COUNTRIES

A. Market Disruption: Section 406 of the 1974 Trade Act

This law was designed to protect against increasing imports (either absolute or relative) which are or threaten to be a significant cause of material injury. This section of the Trade Act applies to communist countries whether or not they receive MFN and regardless of whether or not they are members of GATT. Except for the lower standard of injury (significant cause of material injury vs substantial cause of

serious injury), its application only to specific communist countries (as opposed to all suppliers of a given product), and certain procedures for expeditious handling, a market disruption action is very similar to an escape clause action.

B. Requirement for Market Disruption Clauses in Bilateral Trade Agreements: Section 405 of 1974 Trade Act

The 1974 Trade Act also requires that any bilateral agreements negotiated with communist countries have a safeguards clause which requires consultation and authorizes restrictions when actual or prospective imports cause, or significantly contribute to, market disruption.

For a comparison of the major U.S. laws applying to communist imports, see table 1 below.

TABLE 1

	Antidumping	Countervailing
Practice directed against...	Dumping—sales at less than fair value which result in injury to a U.S. industry.	Subsidization—bounties or grants paid on the manufacture and/or export of products (it is necessary to prove injury only with respect to duty-free items).
Remedy.....	Antidumping duty—a duty equal to the margin of dumping (difference between purchase price or exporters sales price and foreign market value or constructed value).	Countervailing duty—equal to bounty or grant.
Legislative authority.....	Antidumping Act of 1921 as amended (c.f. sec. 321 of the 1974 Trade Act).	Tariff Act of 1930 as amended (c.f. sec. 331 of 1974 Trade Act).
Competent U.S. agency....	Treasury (for determination of sales at LTFV); ITC (for determination of injury).	Treasury (ITC when injury is involved).
Proceedings initiated by...	Petitions can be filed by any party on behalf of a U.S. industry as long as the petition contains adequate factual substantiation of alleged dumping.	Same as for antidumping, except that petitions from third countries can be considered.
Time limits on procedures..	Treasury 6-9 mo. for tentative decisions; 12 mo. for final decisions; ITC 3 mo. to determine injury once case is referred to it by Treasury. If Treasury determines that there is reasonable doubt that a U.S. industry has been injured, Treasury may request ITC to conduct 30-day preliminary inquiry. If ITC finds no reasonable indication that a U.S. industry is being injured, investigation will be terminated.	6 mo. for preliminary determination; 12 mo. from date of initiation for final determination.
Applicability.....	All countries (special provisions for state-controlled economies).	All countries.
	Escape clause	Market disruption
Practice directed against...	Injurious imports—importation in such increased quantities as to be a substantial cause of serious injury or threat thereof to a domestic industry.	Market disruption—rapidly increasing imports (absolute or relative) so as to be a significant cause of material injury or threat thereof to a domestic industry.
Remedy.....	<ol style="list-style-type: none"> 1. Increase or imposition of a duty.. 2. Tariff rate quota..... 3. Quantitative restriction..... 4. Orderly marketing agreement.... 5. Any combination of above..... Subject to limitations of sec. 203.	Same as 1-5 listed under escape clause (applied only against products imported from Communist countries).
Legislative authority.....	Historically dates back to U.S. trade agreement with Mexico of 1942; Trade Agreements Extension Act of 1952, et al.; title II of 1974 Trade Act.	Sec. 406 of 1974 Trade Act.
Competent U.S. agency....	ITC and the President (Labor and Commerce for adjustment assistance applications).	ITC and the President.
Proceedings initiated by...	Trade association, firm, recognized union, workers, industry representative, the President, STR, House Ways and Means Committee, Senate Finance Committee, ITC.	Same as escape clause.
Time limits on procedures..	ITC 5 mo to report to President with recommendations. President 60 days to decide on type of relief. If Presidential recommendations are different from ITC, must report immediately to Congress which has 90 days to disapprove his report. If Presidential recommendations are disapproved, ITC recommendations must be proclaimed within 30 days. Orderly marketing agreements must go into effect within 90 days of final determination.	Same as for escape clause except; ITC 3 mo to report to President. President can take emergency measures pending final determination, and orderly marketing agreements must go into effect within 60 days of final determination.
Applicability.....	All countries (nondiscriminatory).....	Communist countries only.

Part III. FINANCING EAST-WEST TRADE

The rapid growth of East-West commercial relations has been accompanied by a growing hard-currency indebtedness of the Communist countries. Indeed, because of the imbalance in trade, Western credits to the East have been a prerequisite for the expansion of commercial ties between the two regions. The Eastern economies have been unable to generate enough exports to pay for their import requirements. Consequently, the net external hard currency debt of the Council for Mutual Economic Assistance (CMEA) countries increased sharply, from approximately \$6.5 billion in 1970 to \$47-50 billion by the end of 1977. The CMEA deficits are expected to continue through the 1980's.

Although additional credits appear to be available for financing trade for the immediate future, it seems unlikely that a major credit expansion from the United States and other Western countries will take place over the long run. Despite their excellent credit ratings of the past, a few East European countries are accumulating debt burdens which cause concern about their creditworthiness. Moreover, some of the private U.S. banks which have been active in financing East-West trade are approaching (for both legal and practical financial reasons) maximum exposures in some Communist countries. The Soviet Union and several other Communist countries remain ineligible for U.S. official export credits. Thus, in the long run, Communist countries must steadily increase their hard currency exports in order to maintain a stable trading relationship with the West.

Chapter 10 of this volume entitled, "Communist Country Hard Currency Debt in Perspective" provides an analysis of the debt levels of the CMEA countries, discussing the debt as a percentage of GNP, debt to export ratios and factors affecting CMEA credit ratings. The author suggests that the aggregate CMEA debt is modest compared with the aggregate debt held by developing countries and that CMEA nations compare favorably with developing nations of similar size in their ability to service debts through exporting.

Chapter 11, "Potential 1980 and 1985 Hard Currency Debt of the USSR and Eastern Europe Under Selected Hypotheses" focuses on the role of credit in East-West trade, provides estimates of the debt, and discusses some of the foreign trade choices of Eastern policy-makers.

Chapter 12, "Statistical Abstract of East-West Trade Finance" compiles statistics on CMEA trade balances, the Soviet/East European net hard currency debt, composition of the debt, Western official export credit commitments, debt service ratios, Eurocurrency borrowings, the position of U.S. and other Western banks vis-a-vis CMEA, the position of official U.S. export credit agencies vis-a-vis CMEA, and other data relevant to the finance of East-West trade.

U.S. private bank lending to the CMEA countries is the subject of chapter 13, "The Theoretical Capacity of the U.S. Commercial Banking System for Financing East-West Trade." This article examines the effects of legal lending regulations on U.S. commercial banks financing East-West trade under certain scenarios. This analysis suggests that, while for the banking system as a whole, considerable loan capacity exists, the banks which have played a leading role in East-West finance are approaching the legal lending limit. This may limit the amount of major syndications put together for East-West trade in the future.

The issue of extending U.S. official credits, through the Export-Import Bank or the Commodity Credit Corporation, to Communist countries has been surrounded by controversy since the passage of the Trade Act of 1974 and the Export-Import Bank Amendments of 1974. (The former linked the eligibility of non-market economy countries for U.S. Government credits to the liberalization of their emigration policies, and the latter set limitations on the level of Eximbank participation in U.S.-Soviet trade.) The economic and political impact of this restrictive legislation has been a subject of considerable discussion among the business, academic, and government communities.

It is frequently contended that, if legal restrictions of Eximbank lending to the Soviet Union were removed, the Bank could play a major role in expanding U.S.-Soviet trade. This expectation is tempered somewhat by the analyses in chapters 14 and 15. Chapter 14, entitled "The Potential Role of Eximbank Credits in Financing U.S.-Soviet Trade," suggests that, without the present legal impediments, economic and political considerations would probably limit new Eximbank lending to the U.S.S.R. through 1983 to not more than \$1 billion. This level of financing, if maintained, would have a limited impact on the volume of U.S. exports to the Soviet Union. Chapter 15, "Impact of Eximbank on U.S. Exports," provides an analysis of the impact which Eximbank direct loans had on U.S. exports to all destinations during the 1975-1976 period. The author takes issue with a Treasury Department report which attributes a high degree of "additionality" in Eximbank's programs and suggests that the direct loan program increased U.S. exports by only about half a billion dollars in 1976.

Chapter 10. COMMUNIST COUNTRY HARD CURRENCY DEBT IN PERSPECTIVE

BY LAWRENCE H. THERIOT*

CONTENTS

	Page
Introduction	179
CMEA versus LDC debt.....	180
GNP versus debt.....	180
Debt to export ratios.....	180
A "market" evaluation of risks.....	181
Factors affecting CMEA credit ratings.....	181
Creditor position of U.S. commercial banks.....	182
Summary and implications.....	182

INTRODUCTION

Recently, the level of Communist country external indebtedness has become a widely publicized aspect of East-West economic relations. Industrialized West (IW) country trade with CMEA¹ has increased dramatically since 1972, growing 165 percent by the end of 1977. Growth, however, has been asymmetrical because CMEA imports have greatly exceeded export capacities. As a result, the Soviet Union and the other CMEA countries have incurred large hard currency debts.² Net external debt of CMEA, including Cuba, has grown from about \$8 billion in 1970 to \$48.7 billion by the end of 1977. Private commercial banks have been the major source of funds for CMEA trade financing. Claims of banks in the Group of Ten Countries (G-10) reached \$25.2 billion by mid-1977. However, Western governments have also played a significant role, both as guarantor of private lending and as direct lenders in their own right. Outstanding officially supported credits to CMEA countries stood at \$14.7 billion as of end year 1976.

Since it appears unlikely that export capabilities of most CMEA countries will expand sufficiently to close the existing trade gaps in the near term, the availability of Western credit to finance additional imports and to allow further expansion of the CMEA debt will be a crucial factor for the future of East-West trade.

No statement quantifying the willingness of Western commercial banks and governmental credit institutions to extend further credit

*The author is from the Office of East-West Policy and Planning, Industry and Trade Administration, Department of Commerce. This paper was prepared to stimulate discussion and does not necessarily reflect the views of the Department of Commerce or the U.S. Government.

¹ IW Countries: Austria, Belgium-Luxembourg, Canada, Denmark, Federal Republic of Germany, France, Italy, Japan, Netherlands, Norway, Sweden, Switzerland, United Kingdom, and United States. CEMA Countries: Bulgaria, Czechoslovakia, GDR, Hungary, Poland, Romania, U.S.S.R. and Cuba.

² The People's Republic of China has not incurred any significant hard currency debt.

is possible because, in the final analysis, extending credit is largely a matter of the lender's confidence in the borrower's ability and willingness to pay. Analyzing risk for CMEA countries is even more complicated than for private corporate borrowers because the borrower is always a sovereign governmental entity. As a result, the evaluation of individual country risks inevitably reflect the state of East-West political relations. However, some comparisons of communist country debt with that of other developing capitalist countries may help to place current CMEA debt levels in perspective and hence give some indications of Western willingness to further expand lending to CMEA countries.

Borrowing foreign capital to finance industrial investment has characterized the economic growth strategies of many developing countries. The United States in its early years, Japan in the 1950's, and Brazil today are examples of the successful application of such a development strategy. Consequently, substantial external debt in CMEA countries should not be surprising, given that they have opted for a development strategy based on a level of capital imports from the West that makes debt accumulation inevitable.

CMEA VERSUS LDC DEBT

CMEA debt is relatively small compared with the aggregate external debts of developing countries worldwide. The outstanding debt of all developing countries increased from \$137 billion in 1974 to about \$210 billion at end year 1976. Since the CMEA countries³ do not have access to Western multilateral economic assistance programs, and since they do not permit equity investment, commercial bank lending has played a far greater role in financing CMEA debt than for capitalist developing countries. At the end of 1976, G-10 bank claims comprised 52 percent of outstanding CMEA debts compared to only 16 percent for the developing countries.

GNP VERSUS DEBT

Table 1 shows individual CMEA country external debt and GNP levels in comparison with those of several other developing capitalist countries. At end 1976, the Soviet Union had an external debt about 60 percent as large as that of Brazil, but a GNP six times larger. Poland's 1976 debt was 40 percent that of Mexico, but its GNP was 17 percent larger. Romanian debt was less than half that of South Korea, but its GNP about 2.1 times as large.

DEBT TO EXPORT RATIOS

Calculation of debt to export ratios (total debt divided by annual exports) gives some indication of a debtor's ability to repay foreign loans (see table 2). In 1976, Soviet hard currency exports totaled \$9.7 billion, compared to \$10.1 for Brazil, but the Soviet's debt to export ratio of 1.4 compared very favorably to Brazil's 2.6. Both Poland and Mexico had identical exports of \$3.3 billion in 1976; however, the Polish 1976 debt to export ratio was 3.1 compared to 6.5 for Mexico.

³ Except Romania which is the only CMEA country that is also a member of the IMF and the World Bank.

A "MARKET" EVALUATION OF RISKS

While the preceding analyses are relatively simplistic, in assessing loan risks "the market" presumably makes much more sophisticated judgments, incorporating all available information in arriving at loan and interest rate decisions. International financial markets, where lending decisions are made by profit-motivated bankers whose profession is the assessment of financial risk, including political factors, presumably provide a sophisticated and objective evaluation of the credit worthiness of sovereign governments. It may, therefore, be useful to compare the Eurocurrency market evaluation of the credit standing of the CMEA countries, as reflected in recent loan transactions, with similar recent loans to other countries.

Table 3 provides the total Eurocurrency borrowings of CMEA and selected developing countries during the period 1972 through September 1977, together with the interest rate charged on the most recent loan to a public entity borrower. With the exception of borrowing by Poland and the CMEA investment bank (IIB), CMEA use of the Eurocurrency markets has been relatively modest compared to most of the other capitalist countries included in the table. Furthermore, international bankers have rendered relatively favorable interest rate judgments on the CMEA countries. In fact, the highest recent CMEA spread rate over LIBOR (1 $\frac{3}{8}$ percent ⁴) compared favorably with the rates charged to most of the other developing countries shown. Higher management fees could, in some cases, marginally reduce the differentials apparently enjoyed by some CMEA borrowers.

FACTORS AFFECTING CMEA CREDIT RATINGS

Buttressing the financial markets' relatively high credit rating of the CMEA countries are several factors frequently cited by financing institutions, including the following:

The vast, largely untapped natural resources of the U.S.S.R. and to a lesser extent, of Poland;

Given their monopoly control over foreign trade, a presumed ability of centrally planned economies to regulate imports and exports in a manner to enable the prompt servicing of debt payment obligations. The recent sharp improvement in the hard currency trade balances of many CMEA countries has probably increased the importance of this factor for international bankers;

An assumption (on the part of some) that the Soviet Union will assist other CMEA countries through short term financial difficulties that may arise. This belief was probably reinforced by Moscow's economic assistance package for Poland in 1976; and Ability of CMEA banks (the IBEC and IIB) to provide IMF type assistance by borrowing on the international financial markets and relending hard currency to any member country facing financial difficulties.

Available information thus seems to indicate that there is some room for further expansion of the debt of most communist countries

⁴ The market's assessment of Cuban credit risk is somewhat different than for the European members of CMEA. Part of the reason may be the political and economic costs of Cuba's involvement in Africa which probably have had a negative impact on banker risk evaluation. It is also the least developed member of CMEA with the greatest dependence on a one-crop agricultural sector. Recent sharp changes in earnings from sugar have caused some serious disruptions in Cuban hard currency trade.

to the West, although perhaps at relatively higher interest rates for the more heavily borrowed countries. However, international credit markets are affected by a great many often interrelated variables including: the level of Western demand, particularly from corporate borrowers, for investment capital; the level of liquidity and consequent desire for earning assets on the part of banks; and bank emphasis on return on assets which can lead to more or less selectivity in making new loans. Additionally, the state of political relations between East and West has always been an important influence on overall economic relations and will likely continue to have an impact on the willingness of Western banks to continue financing communist country indebtedness. Consequently, not only the general state of East-West relations, but the continued availability of additional official support through direct credits and loan guarantees is likely to be a significant factor influencing future lending decisions of private Western banks.

CREDITOR POSITION OF U.S. COMMERCIAL BANKS

American banks have a relatively small share of CMEA debt, as would be expected, since the share of U.S. companies in I.W. trade with CMEA is also small. As of June 1977, U.S. private bank claims (see table 4) totaled \$4.9 billion or about 10 percent of net debt of the U.S.S.R. and the six countries of Eastern Europe. The share in CMEA trade was similar, accounting for 8.8 percent of two-way I.W. trade with European CMEA in 1976. By contrast, U.S. banks hold 41 percent of Brazilian debt and 44 percent of Mexico's, while U.S. trade shares are comparably large. Close geographical, business, and cultural ties to Latin America have apparently resulted in extensive U.S. banking involvement. In a similar way, West European ties to European CMEA have led to more extensive trade and banking involvement. Interestingly, close ties with CMEA have also apparently had an impact on the European branches of U.S. banks which have been the source of 77 percent of total U.S. bank lending to CMEA.

Although U.S. banks hold about 10 percent of CMEA aggregate external debt, their claims represent only a relatively small commitment of the total equity capital of the banks. The shares of capital accounted for by loans outstanding range from 9/10 of one percent for Czechoslovakia to 5.6 percent for the Soviet Union. By contrast, U.S. bank loans to Brazil represent a commitment of $\frac{1}{3}$ of the equity capital of the lending banks as of June 1977. Of course, the scale of commitment of a bank resources in part reflects the bank's assessment of the relative economic importance of the borrower to the bank, i.e., the U.S.S.R. with its massive economy and vast raw materials base would be expected to be the major borrower in CMEA. The heavy commitments of U.S. banks in Brazil and Mexico can be interpreted as reflecting a continued extensive economic relationship.

SUMMARY AND IMPLICATIONS

The rapid buildup of CMEA hard currency indebtedness in recent years has been a normal and expected economic consequence of the following factors:

A new commitment in the early 70s by CMEA countries to expand economic ties with the capitalist West;

Implementation of plans for rapid domestic economic development fueled by intensive industrial investment; and Communist country prohibitions on foreign direct investment and a consequent preference for debt-type capital inflows.

Aggregate CMEA debt is moderate compared with that of the total held by developing countries. Similarly, the ability of individual CMEA countries to service their debts through exporting compares favorably with other developing economies of comparable size. Other things being equal, the credit worthiness of CMEA countries is also enhanced by the unique institutional framework of their centrally planned economic systems.

In apparent recognition of these factors, international bankers have generally found lending to CMEA very attractive. U.S. banks have concurred in that assessment and have made substantial loans to CMEA as well. However, in doing so, they have committed only small amounts of their available capital bases. This generally positive assessment of CMEA lending continues today, reinforced by the ample availability of funds in the international financial markets.

Looking to the future, however, the current favorable market conditions could be temporary and international banks are unlikely to continue the rapid expansion of lending to CMEA indefinitely. For U.S. banks, legal limits on lending related to individual banks' equity capital could act to limit loans to some CMEA countries, particularly the U.S.S.R. and Poland. Indeed, some banks may have already reached their internal country limits which are usually substantially less than the legal limit.

While additional loan capital appears to be available now, in the long run the continued growth of East-West trade cannot be financed indefinitely by borrowing. If their economic relations with the capitalist West are to continue growing, CMEA countries must expand and diversify their hard currency earnings from exports and/or allow for inflows of capital through direct investment.

TABLE I.—COMPARISON OF EXTERNAL DEBT OF CEMA COUNTRIES AND SELECTED WESTERN COUNTRIES
[In millions of U.S. dollars]

Country	1976 GNP ¹	Net debt 1976 ¹	1976 debt as a percent of GNP	Percentage held by public authorities
CMEA countries:				
Bulgaria	20.9	\$2.3	11.0	100
Czechoslovakia	58.0	2.1	3.6	100
German Democratic Republic	66.2	4.9	7.4	100
Hungary	25.8	2.8	10.4	100
Poland	92.2	10.2	11.1	100
Romania	52.6	3.3	6.3	100
Total EE	316.7	25.6	8.1	100
U.S.S.R.	921.7	16.2	1.8	100
Cuba	10.6	1.3	12.3	100
Total, CEMA	1,249.0	43.1	3.5	100
Other developing countries:				
Argentina	37.5	6.7	17.9	NA
Brazil	145.9	25.9	17.8	75
Colombia	20.1	2.6	12.9	NA
Mexico	79.0	26.0	32.9	75
South Korea	25.1	7.4	29.5	NA
Spain	102.3	10.7	10.5	64
Venezuela	31.0	2.6	8.4	NA
Yugoslavia	33.1	5.7	5.7	NA

¹ Current dollars.
² Estimated CIA.

TABLE 2.—1976 HARD CURRENCY DEBT AND FOREIGN TRADE OF CMEA AND SELECTED WESTERN COUNTRIES

[Millions of U.S. dollars except debt]

Country	1976 debt ¹	1976 exports	1976 imports	Balance	Ratio of debt/ hard currency exports
CMEA countries:					
Bulgaria.....	2.3	486	969	-483	4.7
Cuba.....	1.3	744	1,305	-561	1.7
Czechoslovakia.....	2.1	1,730	2,370	-640	1.2
German Democratic Republic.....	5.0	3,000	4,350	-1,350	1.7
Hungary.....	2.8	1,321	1,894	-573	2.1
Poland.....	10.2	3,329	6,634	-3,305	3.1
Romania.....	3.3	1,893	2,116	-223	1.7
U.S.S.R.....	14.0	9,712	15,228	5,516	1.4
Total, CEMA.....	41.0	22,215	34,866	12,651	1.8
Other developing countries:					
Argentina.....	6.4	3,916	3,033	-883	1.7
Brazil.....	25.9	10,100	12,500	-2,200	2.6
Colombia.....	2.6	1,866	1,991	-125	1.4
Mexico.....	26.0	3,298	6,030	-2,732	6.5
South Korea.....	7.4	7,715	8,774	-1,059	1.96
Spain.....	10.7	8,723	17,455	-8,732	1.2
Venezuela.....	2.6	9,289	6,445	+2,844	.3
Yugoslavia.....	5.7	4,932	7,447	-2,515	1.2

¹ Billions of U.S. dollars.

TABLE 3.—COMPARISON OF EUROMARKET LENDING TO CMEA AND SELECTED WESTERN COUNTRIES

[U.S. dollars in millions]

Country	Net claims held by banks in group of 10 countries, Sept. 1977	Total Euromarket borrowings 1973-Sep- tember 1977	Interest rate spread over LIBOR on most recent loans ¹
Bulgaria.....	1,760	660.0	1
Cuba.....	870	534.7	1½
Czechoslovakia.....	706	410.0	1½
German Democratic Republic.....	3,173	842.3	1
Hungary.....	2,373	990.0	1
Poland.....	5,610	1,840.7	1½
Romania.....	709	131.1	1
U.S.S.R.....	7,709	1,032.0	(*)
IBEC.....	NA	260.0	-----
IIB.....	NA	1,520.0	1
Argentina.....	-133	1,786.5	1½
Brazil.....	15,393	9,363.1	1½
Colombia.....	331	447.5	1½
Mexico.....	14,219	8,186.4	1½
South Korea.....	1,836	2,291.9	2
Spain.....	3,704	5,441.7	1½
Yugoslavia.....	871	1,070.1	1½
Venezuela.....	-2,525	3,100.6	½

¹ Indicates interest spread over the floating London interbank rate for most recent borrowing of a public entity through September 1977.² Three-fourth on \$400,000,000 loan in March 1978.

TABLE 4.—OUTSTANDING U.S. BANK CLAIMS ON CMEA AND SELECTED COUNTRIES AS A PERCENT OF EQUITY CAPITAL OF LENDING BANKS, END JUNE 1977

	Outstanding claims ¹ (millions)	Number of banks with claims ²	Total equity capital ³ (millions)	Claims as percent of total equity capital ⁴
CMEA:				
Bulgaria.....	\$416	29	\$23,000	1.8
Czechoslovakia.....	154	18	16,970	0.9
German Democratic Republic ⁵	708	38	24,517	2.9
Hungary.....	663	39	25,500	2.6
Poland.....	1,248	53	27,659	4.5
Romania.....	217	25	20,800	1.0
U.S.S.R.....	1,592	56	28,379	5.6
Total.....	(4,998)	(⁶)	(⁶)	(⁶)
Other:				
Brazil.....	10,588	96	32,113	33.0
Mexico.....	11,322	105	34,623	32.7
Venezuela.....	4,548	84	31,629	14.4
Total.....	(26,458)	(⁶)	(⁶)	(⁶)

¹ Includes claims by head offices, foreign branches and wholly-owned foreign subsidiaries. Claims are defined as all extensions of credit and securities, including interest and noninterest bearing deposits due from other banks whether at demand, call, or for a specified term.

² Total number of U.S. banks with claims on country indicated.

³ Capital surplus, undivided profits, and contingency reserves.

⁴ Outstanding claims as a percent of the total equity capital of those U.S. banks with claims on the country indicated.

⁵ Not available.

Source: Federal Reserve.

Chapter 11. POTENTIAL 1980 AND 1985 HARD CURRENCY DEBT OF THE USSR AND EASTERN EUROPE UNDER SELECTED HYPOTHESES

BY ALLEN J. LENZ*

CONTENTS

	Page
Background and objectives.....	186
The role of credit in recent expansions of East-West trade.....	187
Projections of Eastern debt-export growth under various hypotheses....	187
1980 debt levels.....	188
1985 debt levels.....	189

BACKGROUND AND OBJECTIVES

The rapid growth in trade between the Communist Countries of Europe and the Industrialized Western nations over the last few years has, to a significant degree, been fueled by heavy infusions of Western credit. Without continued expansion of Western credit, Western exports must decline markedly and/or Western imports must increase dramatically. It seems unlikely that large expansions of credit will continue to be available indefinitely. But, whether or not large volumes of new Western credit are available to the East in the years immediately ahead, in the final analysis the West must realize payment for its exports by accepting imports of Eastern goods and services. This implies that at some point, to obtain payment or even to stabilize debt at existing levels, Western trade surpluses will have to be replaced by Western deficits.

Given their perennial problems of unemployment, the industrialized Western countries have welcomed the trade surpluses accompanying the recent expansion of East-West trade. However if a future choice is between continued trade surpluses financed by an expansion of existing levels of Eastern debt on the one hand or increased imports from the East and a resulting trade deficit on the other hand, East-West trade could be seen as less attractive.

The objectives of this paper are several:

To make a generalized quantification of the role of credit in the recent growth of East-West trade;

To provide some crude estimates of future debt-import growth under selected hypotheses; and

To call attention to the expansion of Western imports essential to a healthy and continued expansion of East-West trade.

*The author is from the Office of East-West Policy and Planning, Bureau of East-West Trade, Department of Commerce. This paper was prepared to stimulate conference discussion and does not necessarily represent the views of the U.S. Government or the author.

Throughout, the focus is not on U.S. credit to or U.S. imports from Eastern countries, but rather on bilateral East-West credit/export/import relationships. Given that the Eastern countries lack convertible currencies and that trade between East and West is conducted in Western convertible currencies, this kind of bilateral aggregation seems useful to an analysis of the requirements essential to and the limits on, an expansion of East-West trade.

THE ROLE OF CREDIT IN RECENT EXPANSIONS OF EAST-WEST TRADE

Table 1 provides recent year (1975 through 1977) hard currency export and import volumes for the U.S.S.R., Poland, and the other countries of Eastern Europe, as well as the accompanying growth of their debt.¹ During the three year period, debt for the whole of the Eastern European countries probably grew about \$30 billion, to a total of \$48.0 billion. This \$30 billion increase in debt is equivalent to 30 percent of the total value of 1975-77 imports from the West. Polish debt growth over the 75-77 period will be equivalent to about 47 percent of Polish hard currency imports for the period, with a corresponding figure for the Soviets of about 25 percent. For Eastern Europe as a whole, the end of 1977 debt level was about twice the level of estimated 1977 merchandise exports to the West.

Heavy Eastern deficits in trade with the West backed by expansion of Western credit cannot continue indefinitely. Eastern debt can ultimately be reduced or serviced only by Western imports of Eastern goods and services. Assuming an interest rate of 7.5 percent, the annual interest payment alone on a debt of \$48 billion is about \$3.6 billion. Thus, not only would reduction in the level of current debt require a Western trade deficit, but even stabilizing existing debt levels might require a Western trade deficit.²

PROJECTIONS OF EASTERN DEBT-EXPORT GROWTH UNDER VARIOUS HYPOTHESES

Future levels of East-West trade cannot be estimated with any degree of accuracy. Estimates inevitably are only as valid as the assumptions on which they are based and assumptions frequently turn out to be incorrect. What follows should therefore not be considered to be forecasts of debt or import growth, but rather arithmetic calculations of resulting debt-import growth that would occur under selected hypotheses.

Each of the hypotheses used can be challenged, and some observers may disagree with that portion of the quantitative data utilizing estimates. However, even if the data and assumptions are challengeable, some useful insights into future trade relationships can be obtained through what follows.

Table 2 utilizes estimates of 1977 levels of Eastern European imports, exports, net invisible earnings, and interest payment requirements to derive the annual Eastern debt or export growth required to sustain 1977 levels of Eastern imports.

¹ Tables 1 and 2 rely in large measure on unofficial estimates whose accuracy obviously cannot be guaranteed. However, pin-point accuracy of data concerning the debt levels is not essential to the objectives of this paper.

² Sufficient Western deficits in the "invisibles" balances could also serve to stabilize the debt levels.

Total 1977 Eastern hard currency imports were probably about \$33.8 billion and exports about \$23.6 billion, yielding a trade deficit of some \$10.2 billion. Soviet and East European earnings from various invisibles (e.g., shipping, tourism, gold sales, arms sales, etc.) may be about \$5.0 billion, significantly narrowing the hard currency gap. Interest payments on the debt, however, constitute another hard currency drain. These payments in 1977 and 1978 may not amount to the \$3.6 billion shown in Table 2 by reason of relatively low interest rates obtained in the early days of the expansion of East-West trade. Ultimately, however, if Eastern debt were maintained at the level of \$48 billion, an interest rate of 7.5 percent seems reasonable, yielding the indicated level of interest payments.

Given these assumptions, Table 2 indicates that to balance accounts, continuation of Eastern imports at the expected 1977 levels would require either an increase in Eastern exports of about \$9 billion per year as compared to 1977, or a \$9 billion annual increase in debt, or some combination of debt and export increases totalling about \$9 billion.

Further increases in the annual volume of Eastern imports would, of course, increase annual Eastern debt-export growth requirements still further.

It is obvious that, if debt growth is to be stopped or even slowed significantly, Eastern exports must grow more rapidly than Eastern imports. But required growth rates and resulting debt levels are not so obvious. However, using the 1977 estimates provided in table 2 as a starting point, some calculations of the effects of a few alternative combinations of import and export growth rates can provide useful insights into future debt levels and Eastern export growth requirements.

1980 DEBT LEVELS

For example, if the 1977 levels of Eastern exports, imports and invisible earnings³ were to persist unchanged, by end 1980 the situation described in table 3 would pertain.

Few may expect the 1977 deficit levels to persist through another three years. Indeed, in all likelihood Western banks might be unwilling to finance such a level of deficit. Rather, most may expect increased Eastern exports to the West and/or reduced imports will act to narrow the annual deficit. Nevertheless, it is striking to note the \$76.6 billion level of debt and \$5 billion in annual interest costs that would pertain after only three more years of deficits at the estimated 1977 level. And we need to remember that the only alternatives to continued debt growth are a reduction in Eastern imports or an increase in Eastern exports or invisible earnings.

Clearly, from the Eastern viewpoint, an increase in their exports would be more desirable than a decrease in their imports. Alternatively, then, let us examine results if Eastern hard currency imports were held constant at 1977 levels while Eastern hard currency exports were to increase at a compound rate of 10 percent per annum from 1977 levels. Under this assumption, by end 1980 the following situation would exist.

³ Invisible earnings are held constant in this and each of the following calculations. While this assumption may be invalid, changes through 1980 are unlikely to be large enough to significantly alter the general conclusions reached in this paper.

Table 4 indicates that, even under an assumption of 10 percent annual growth in Eastern exports, the debt reaches \$60.7 billion by 1980, with interest payments alone over \$4 billion and Polish and other East European debt still continuing to increase. In fact, the growth of total Eastern debt can be attributed solely to the East Europeans because under this set of assumptions the Soviets have been able to reduce their debt as well as lower interest payments on the debt.

To obtain some additional insights, we can first hold constant the annual volume of Eastern imports and, alternatively, reduce the volume by 2.5 percent annually and for both scenarios calculate the compounded annual growth rate of Eastern merchandise exports that would be required to achieve a "no growth in debt" situation in each case by the end of 1980 (see table 5).⁴

Of particular interest, in each case is the high level of the annual growth in Polish exports that would be required to reach a current account balance by 1980. Such rates would seem extremely difficult to achieve, even if Western economic recovery picks up steam. Also striking is the \$62 billion level of debt that would accrue by 1980 for Eastern Europe as a whole, and the resulting \$4.5 billion in annual interest payments. Furthermore, interest costs would require "other EE" to achieve a hard currency trade surplus to prevent further increases in debt to the West, given our assumption about invisibles.

So far, under the assumptions we have used, all of the East European countries have reduced their imports to control the growth of their hard currency debt. However, it will be difficult for them to sustain an absolute decline in import levels or maintain 1977 levels for a sustained period without seriously affecting economic growth rates and living standards. Rather, there is little doubt but that future Eastern import needs will exceed their 1977 import levels. Therefore, under yet another set of assumptions we let Eastern imports increase at 5 and 10 percent per year and calculate the export growth rate required to achieve a "no debt growth" situation by end 1980 (see table 6).

In these instances total debt increases only marginally over that of Table 5, but the required export growth rates required to sustain such levels of import growth would be particularly difficult in the Polish and "other EE" cases.

1985 DEBT LEVELS⁵

Tables 7 and 8 illustrate the annual growth of Eastern merchandise exports under alternative import growth rates that would be necessary to achieve a "no growth" in debt situation by the end of 1985. In the table 7 first cases (-2.5% and zero growth in imports), it appears that the East Europeans would have no problem in achieving the required growth in exports to stabilize debt levels by 1985. Total end-1985 debt in these instances would, nevertheless, rise to \$86 to \$89 billion. It is unlikely, however, that the East Europeans would be able to sustain such growth rates. Serious economic disruptions might result, with a concomitant rise in consumer unrest over sharply reduced living standards.

⁴ "No growth in debt by end of 1980" means that debt increases through 1980, but remains constant in 1981.

⁵ As in 1980 cases, invisible earnings are held constant for the 1985 calculations. Changes in invisible earnings through 1985 could be large enough to make significant changes in the levels of debt by 1985.

On the other hand, a 5 or 10 percent rise in annual imports would make it harder for the East Europeans to stabilize their debt by 1985 (see table 8). Total debt levels would be significantly higher, than in the previous case, in the \$98 to \$108 billion range and export growth rates might be achievable.

In summation, the foregoing examples appear to provide a useful means of projecting the effects of continued Eastern trade deficits and emphasizing the Western trade deficits that, sooner or later, will be required to reduce, or even to service, accumulated levels of debt.

TABLE 1.—ESTIMATED SOVIET AND EASTERN EUROPEAN END-1977 HARD CURRENCY DEBT LEVELS AND "DEBT TO EXPORT" AND "DEBT GROWTH TO IMPORT" RATIOS¹

[Millions of dollars]

	Hard currency exports		Hard currency imports		Hard currency debt		End 1977 debt percent exports	1975-77 debt growth percent imports
	1975-77	1977 estimate	1975-77	1977 estimate	Growth, 1975-77	End 1977		
U.S.S.R.....	28,506	11,000	44,357	15,000	11,000	16,000	1.5	0.25
Poland.....	10,106	3,750	19,186	6,450	9,050	13,000	3.5	.47
Other Eastern European.....	24,400	8,870	34,744	12,340	9,900	19,000	2.1	.28
Total.....	63,012	23,620	98,287	33,840	29,950	48,000	2.0	.30

¹ Estimated data obtained from unofficial sources.

TABLE 2.—ESTIMATED ANNUAL SOVIET AND EASTERN EUROPEAN DEBT/EXPORT GROWTH REQUIREMENTS UNDER STEADY STATE 1977 LEVELS OF IMPORTS

[Millions of dollars]¹

	U.S.S.R.	Poland	Other Eastern European	Total
Imports (1977 levels).....	15,000	6,450	12,390	33,840
(Less) exports (1977 levels).....	11,000	3,750	8,870	23,620
(Less) invisibles (shipping, tourism, gold sales, arms sales, etc.).....	3,750	600	625	4,975
(Plus) interest on end 1977 level of debt ²	1,200	975	1,425	3,600
Required growth of debt/exports to balance accounts.....	1,450	3,075	4,320	8,845

¹ Estimates of 1977 data obtained from unofficial sources.

² Interest calculations are based on the table 1 and 1977 debt levels; i.e., U.S.S.R. \$16,000,000,000, Poland \$13,000,000,000 other Eastern European progressively increase the interest payments and the amount of exports or new debt growth required to cover the combination of imports and interest payments.

TABLE 3.—1980 EASTERN DEBT LEVELS AND INTEREST COSTS, ASSUMING CONTINUATION OF 1977 DEFICITS THROUGH 1980

[Millions of dollars]

	End 1980 debt	1980 annual interest only on debt
U.S.S.R.....	20,684	1,426
Poland.....	22,934	1,454
Other Eastern European.....	32,956	2,097
	76,574	4,977

TABLE 4.—1980 EASTERN DEBT AND INTEREST PAYMENTS ASSUMING 1978-80 IMPORTS AT 1977 LEVELS, EXPORTS GROW 10 PERCENT ANNUALLY

[Millions of dollars]

	1980 imports	1980 exports	1980 balance of trade	End 1980 debt	1980 interest only cost
U.S.S.R.....	15,000	14,641	-359	13,289	1,164
Poland.....	6,450	4,991	-1,459	20,414	1,364
Other Eastern European.....	12,340	11,806	-584	26,992	1,886
Total.....	33,840	31,438	-2,402	60,695	4,414

TABLE 5.—MERCHANDISE EXPORT ANNUAL GROWTH RATES REQUIRED TO ACHIEVE STABILITY IN LEVEL OF EASTERN DEBT BY END 1980, UNDER VARIOUS IMPORT GROWTH RATES

[Millions of dollars]

	Annual required growth rate (percent)	1980 imports	1980 exports	1980 trade balance	Current account balance excluding interest	End 1980 debt	1980 interest
U.S.S.R.....	+0.4	3,903	11,133	-2,770	+980	18,079	1,330
Poland.....	+14.9	5,978	5,688	-290	+300	18,059	1,282
Other Eastern European.....	+8.9	11,484	11,455	-29	+596	25,765	1,839
Total.....		31,365	28,276	-3,089	+1,886	61,903	4,451
U.S.S.R.....	+3.5	15,000	12,196	-2,804	+946	18,180	1,334
Poland.....	+17.8	6,450	6,083	-367	+233	18,309	1,294
Other Eastern European.....	+11.5	12,390	12,296	-94	+531	26,033	1,853
Total.....		33,840	30,575	-3,265	+1,710	62,522	4,481

TABLE 6.—MERCHANDISE EXPORT ANNUAL GROWTH RATES REQUIRED TO ACHIEVE STABILITY IN LEVEL OF EASTERN DEBT BY END 1980, UNDER VARIOUS IMPORT GROWTH RATES

[Millions of dollars]

	Annual required growth rate (percent)	1980 imports	1980 exports	1980 trade balance	Current account balance excluding interest	End 1980 debt	1980 interest
5-percent import growth:							
U.S.S.R.....	+9.6	17,364	14,482	-2,882	+868	18,487	1,350
Poland.....	+23.2	7,467	7,012	-455	+145	18,680	1,313
Other Eastern European.....	+16.7	14,343	14,097	-246	+379	26,602	1,882
Total.....		39,174	35,591	-3,583	+1,392	63,769	4,545
10-percent import growth:							
U.S.S.R.....	+15.6	19,965	16,993	-2,972	+778	18,816	1,367
Poland.....	+28.6	8,585	7,994	-591	+9	19,138	1,336
Other Eastern European.....	+21.8	16,491	16,027	-464	+161	27,284	1,915
Total.....		45,041	41,014	-4,027	+948	65,238	4,618

TABLE 7.—MERCHANDISE EXPORT ANNUAL GROWTH RATES REQUIRED TO ACHIEVE STABILITY IN LEVEL OF EASTERN DEBT BY END 1985, UNDER VARIOUS IMPORT GROWTH RATES

(Millions of dollars)

	Annual required growth rate (percent)	1980 imports	1980 exports	1985 trade balance	Current account balance excluding interest	End 1985 debt	1985 interest
-2.5-percent import growth:							
U.S.S.R.....	-1.3	12,250	9,907	-2,344	+1,407	21,837	1,622
Poland.....	+6.4	5,267	6,160	+893	+1,493	26,620	1,961
Other Eastern European.....	+3.4	10,118	11,590	+1,472	+2,097	37,490	2,762
Total.....		27,635	27,657	+21	+4,997	85,947	6,345
0-percent import growth:							
U.S.S.R.....	+1.8	15,000	12,687	-2,313	+1,437	22,277	1,654
Poland.....	+8.7	6,450	7,309	+859	+1,459	28,032	2,058
Other Eastern European.....	+5.8	12,390	13,925	+1,535	+2,160	38,914	2,866
Total.....		33,840	33,921	+81	+5,056	89,223	6,578

TABLE 8.—MERCHANDISE EXPORT ANNUAL GROWTH RATES REQUIRED TO ACHIEVE STABILITY IN LEVEL OF EASTERN DEBT BY END 1985, UNDER VARIOUS IMPORT GROWTH RATES

(Millions of dollars)

	Annual required growth rate (percent)	1985 imports	1985 exports	1985 trade balance	Current account balance excluding interest	End 1985 debt	1985 interest
5-percent import growth:							
U.S.S.R.....	+7.6	22,162	19,765	-2,397	+1,353	24,546	1,807
Poland.....	+13.5	9,530	10,328	+798	+1,398	30,969	2,258
Other Eastern European.....	+10.5	18,306	19,716	+1,410	+2,035	43,072	3,147
Total.....		49,998	49,809	-189	+4,786	98,587	7,212
10-percent import growth:							
U.S.S.R.....	+13.3	32,154	29,870	-2,284	+1,466	26,781	1,971
Poland.....	+18.4	13,826	14,483	+657	+1,257	34,451	2,491
Other Eastern European.....	+15.4	26,559	27,898	+1,339	+1,964	47,240	3,433
Total.....		72,539	72,251	-288	+4,687	108,472	7,895

Chapter 12. STATISTICAL ABSTRACT OF EAST-WEST TRADE FINANCE

BY WILLIAM F. KOLARIK, JR.*

SUMMARY

CMEA Trade Balances

On the whole, CMEA countries made significant progress in 1977 in cutting hard currency trade deficits. In particular, preliminary estimates indicate that the U.S.S.R. reduced its overall hard currency trade deficit from \$5.5 billion in 1976 to \$2.4 billion at end-1977. Poland managed to trim its deficit by about \$803 million to \$2.5 billion (mainly as a result of reduced imports). The GDR lowered its deficit from \$1.4 billion to \$1 billion and Bulgaria, by cutting imports, managed to reduce its deficit from 1976 by about 25% (down from \$483 million to \$360 million). Mainly as a consequence of improved export performance, Czechoslovakia's trade deficit decreased from \$792 million to \$570 million.

Several CMEA countries posted increases in trade deficits for 1977. Hungary's trade balance went from a \$753 million deficit in 1976 to a \$817 million deficit at end-1977, and Romania more than doubled its deficit from \$223 million to \$500 million (table 1).

Net Hard Currency Debt

Net hard currency debt of the U.S.S.R./Eastern Europe at end-1977 was estimated at about \$47 billion, up from \$40 billion in 1976 and \$29 billion in 1975. The Soviet Union and Poland held the largest share of the debt with \$16 billion (34% of total net debt) and \$12.8 billion (27%) respectively. Following Poland, the German Democratic Republic held obligations of \$6 billion (13%); Romania \$3.8 billion (8%); Hungary \$3.4 billion (7%); and Bulgaria and Czechoslovakia each had a net hard currency debt of \$2.7 billion (accounting for 6% apiece) (table 2).

Composition of the Debt

According to figures compiled by Chase World Information Co., approximately 62% of the U.S.S.R.'s end-1977 hard currency debt consisted of drawings on official Western government credits. Western commercial banks held about 25% of Soviet debt, and supplier credits made up the remainder. In contrast, the East European countries evidently have relied much more heavily on Western commercial banks

*The author is from the Office of East-West Policy and Planning, Industry and Trade Administration, Department of Commerce. This paper was prepared to stimulate discussion and does not necessarily reflect the views of the Department of Commerce or the U.S. Government.

to finance their trade deficits. Fifty-three percent of total net East European hard currency debt at end-1977 was accounted for by commercial bank loans. Government credits amounted to 38% of total net debt, and supplier credits made up the remainder. Of the East European countries, Poland has been one of the most dependent on Western commercial banks, with about 58% of its net debt consisting of these credits. (As might be expected, the CMEA multilateral banks—IIB and IBEC—have continued to rely exclusively on commercial bank credits and have received no known funds from other Western sources.) (Tables 3 and 8.)

Western Official Export Credit Commitments

With reference to official credits, Chase World Information has estimated that Western government export credit agencies had outstanding commitments to the U.S.S.R. and Eastern Europe totalling almost \$32 billion at the end of 1977. Of this amount, approximately \$22 billion had been drawn down, leaving an undrawn balance of \$9.4 billion. The U.S.S.R. and Poland have received the bulk of Western government credit commitments, with \$14.2 billion and \$8.3 billion respectively.

Among Western countries extending official credits to the U.S.S.R. and Eastern Europe, Canada had the least amount of commitments at \$639 million, followed closely by the United States at \$945 million (only 3% of total Western export credit commitments to the U.S.S.R./EE). West Germany held the most commitments at \$7.5 billion; France ranked second at \$7 billion; and Japan held third place at about \$5 billion (table 9).

Debt Service Ratios

Preliminary estimates indicate generally high end-1977 debt service ratios for the U.S.S.R. and Eastern Europe, led by Bulgaria at 85 percent and Poland at 60 percent. The U.S.S.R. continues to have the lowest debt service ratio in the area, currently estimated at 28 percent (table 10). It should be noted that there is considerable disagreement as to whether or not debt service ratios are a meaningful measure of creditworthiness in the case of centrally planned economies. It is alleged that compared with Western countries and most LDCs, communist countries have a superior capability for controlling imports. Because debt service ratios ignore this capability, it has been argued that such ratios do not represent a valid measure of country risk.

Eurocurrency Borrowings

During 1977, communist countries (U.S.S.R., East Europe, Cuba, North Korea, Vietnam, and CMEA multilateral banks) arranged some \$3.4 billion in publicized Eurocurrency credits. (Note: Although publicly announced in 1977, some of these loans were not actually completed until early 1978.) While considerable, this borrowing by communist countries accounted for only about 8 percent of total borrowing on the Euromarket during 1977. In contrast, non-oil developing countries accounted for 32 percent of total borrowings. Viewing

it from another perspective, borrowings by *all* communist countries on the Eurocurrency market during 1977 were roughly equal to the borrowings of Canada, which equalled \$3.3 billion. For January–May 1978, borrowing by the communist countries has accounted for only 6 percent of total Eurocurrency borrowings, whereas the figure was 7 percent for the same period in 1977. Nonetheless, although the relative *share* of communist country borrowing on the Eurocurrency market for the first part of the year has not changed appreciably from 1977, the absolute dollar *amount* of borrowing is up significantly due to an overall expansion of international lending. From January–May 1978 communist countries obtained about \$1.6 billion in Eurocredits compared to \$972 million for the same period last year (tables 11 and 12).

Although the London interbank rate for 6 month Eurodollar deposits (LIBOR) exhibited an upward trend during 1977 which has continued into 1978, the interest margin above LIBOR which is charged on loans to CMEA borrowers has generally declined. Spreads have narrowed rapidly in recent months and now stand at $\frac{5}{8}$ percent to $\frac{3}{4}$ percent over LIBOR for medium-term loans to prime CMEA borrowers. Falling spreads have been accompanied by lengthening maturities (e.g. an 8 year term on a \$250 million syndication for Poland in January 1978). Both developments are consistent with overall trends on international money markets as Western banks contend with unusual liquidity and slack domestic loan demand (table 13).

Position of Western Banks Vis-a-vis CMEA

Western commercial banks held \$26 billion in net claims on CMEA as of end-1977. However, debts of the U.S.S.R./Eastern Europe to Western banks do not appear unusually large when compared with borrowings by other country groupings. For example, non-oil LDCs owed Western banks a net total of almost \$30 billion at end-1977 (tables 14 and 15).

With net commercial bank obligations of \$6.4 billion at end-1977, Poland led the CMEA countries in this regard. The U.S.S.R. was a close second with net bank debts of \$6.3 billion, and the GDR and Hungary ranked third and fourth respectively with obligations of \$3.4 billion and \$3.3 billion. End-1976 statistics on the maturity structure of CMEA debt to Western banks indicate that 50 percent of obligations fell due during 1977. If accurate, this suggests that CMEA countries were able to meet their financial commitments to Western banks without major difficulty. Conversely, the data indicate that Western commercial banks continue to be prepared to meet the financial needs of CMEA countries, particularly as regards the refinancing of maturing loans. This is due in part to the considerable liquidity of the banks and the persistence of relatively weak loan demand in industrialized Western countries.

Position of U.S. Banks Vis-a-vis U.S.S.R./Eastern Europe

Total claims by U.S. banks (domestic offices, foreign branches and wholly-owned foreign subsidiaries) on the U.S.S.R. and Eastern Europe at end-1977 stood at about \$5.7 billion, or about 18% of Soviet-East European debt to Western commercial banks. Viewed from another perspective, U.S. bank claims represented not more than 12% of total net Soviet-East European hard currency debt at end-1977. Overall U.S. bank claims on the Soviet Union at \$1.6 billion represented 27% of total U.S. bank claims on East European CMEA countries. Poland followed the U.S.S.R. with obligations of \$1.3 billion (23% of the total), while the GDR and Hungary ranked third and fourth respectively with debts of \$980 million (17%) and \$896 million (16%) (table 19).

While U.S. bank claims on the U.S.S.R. and Eastern Europe are considerable, they are less significant when viewed from the perspective of U.S. bank claims on developing countries. For example, U.S. bank claims on the U.S.S.R. and Eastern Europe at end-1977 amounted to only 18% of U.S. bank claims totalling \$32 billion on Brazil, Indonesia, South Korea, Mexico, Peru, and Turkey. Alternatively, outstanding U.S. bank claims on the U.S.S.R. and Eastern Europe represented only 3% of total U.S. bank claims on all foreign nations at end-1977. In contrast, U.S. bank claims on non-oil developing countries made up 24% of the total (tables 23 and 24).

Data on the maturity structure of Soviet-East European obligations to U.S. commercial banks suggest that, as of end-1977, 48% of this debt was short-term, maturing in one year or less. For the U.S.S.R., short-term obligations amounted to 47% of total debt to U.S. commercial banks, and for Poland 41%. About 46% of total Soviet-East European debt to U.S. banks had a maturity of 1-5 years. For the U.S.S.R. the figure was almost exactly 46%, and for Poland 55%. Maturities of 5 years and over represented only 6% of total Soviet-East European debt to U.S. banks. In the case of the U.S.S.R., these longer maturities comprised about 7% of total U.S. bank claims and for Poland 4.4% (table 19).

Position of Official U.S. Government Export Credit Agencies Vis-a-vis CMEA

In light of existing legislative restrictions on U.S.G. export credits to all CMEA countries except Poland, Romania, and Hungary, outstanding loans and new commitments to CMEA countries are limited. However, following President Carter's trip to Warsaw in late 1977, the Commodity Credit Corporation's 1978 budget was increased by \$200 million to allow additional financing of U.S. agricultural exports to Poland. Total CCC credits authorized for Poland in 1978 equalled about \$500 million—substantially more than for any other country (South Korea ranked second at \$366 million) (tables 25 and 26).

TABLE 1.—HARD CURRENCY TRADE OF THE U.S.S.R. AND EASTERN EUROPE¹

[In millions of dollars]

	1974	1975	1976	1977 ²
Bulgaria:				
Exports.....	403	364	486	490
Imports.....	928	1,204	969	850
Balance.....	-525	-840	-483	-360
Czechoslovakia:				
Exports.....	1,639	1,600	1,578	1,970
Imports.....	2,031	2,178	2,370	2,540
Balance.....	-392	-578	-792	-570
German Democratic Republic:³				
Exports.....	2,646	2,574	3,100	3,400
Imports.....	3,540	3,616	4,520	4,400
Balance.....	-894	-1,042	-1,420	-1,000
Hungary:				
Exports.....	1,221	1,096	1,321	1,483
Imports.....	1,862	1,843	1,894	2,300
Balance.....	-641	-747	-573	-817
Poland:				
Exports.....	2,865	3,026	3,373	3,660
Imports.....	5,233	6,076	6,636	6,120
Balance.....	-2,368	-3,050	-3,263	-2,460
Romania:				
Exports.....	1,902	1,653	1,893	1,900
Imports.....	2,436	2,164	2,116	2,400
Balance.....	-534	-511	-223	-500
Total East Europe:				
Exports.....	10,676	10,313	11,759	12,673
Imports.....	16,030	17,081	18,333	18,600
Balance.....	-5,354	-6,768	-6,574	-5,927
U.S.S.R.:				
Exports.....	7,436	7,794	9,712	11,271
Imports.....	8,432	14,129	15,228	13,702
Balance.....	-996	-6,335	-5,516	-2,431
Total CMEA:				
Exports.....	18,112	18,107	21,471	23,944
Imports.....	24,462	31,210	33,561	32,302
Balance.....	-6,350	-13,103	-12,090	-8,358

¹ Figures for the U.S.S.R. reflect all known hard currency trade (excluding arms sales and gold) with the Industrialized West as well as Developing Countries. Due to unavailability of data, figures for Eastern Europe reflect only trade with the Industrialized West. Figures for Czechoslovakia, Hungary, Poland, and the U.S.S.R. are based on official Soviet and East European foreign trade statistics. All other figures are estimates based on trends in Western foreign trade statistics.

² Preliminary estimates.

³ Calculations for the German Democratic Republic include the GDR's trade with the Federal Republic of Germany. The official West German Deutsche mark/United States dollar exchange rate was used to convert intra-German trade in East German marks to United States dollars (assuming parity between the Deutsche mark and the East German mark).

Source: Office of Economic Research, CIA.

TABLE 2.—U.S.S.R. AND EASTERN EUROPE: NET HARD CURRENCY DEBT 1970-77¹

[In billions of dollars]

	1970	1974	1975	1976	1977 ²
Bulgaria.....	0.7	1.2	1.8	2.3	2.7
Czechoslovakia.....	.3	1.1	1.5	2.1	2.7
GDR.....	1.0	2.8	3.8	5.2	6.0
Hungary.....	.6	1.5	2.1	2.8	3.4
Poland.....	.8	3.9	6.9	10.2	12.8
Romania.....	1.2	2.6	3.0	3.3	3.8
Total Eastern Europe.....	4.6	13.1	19.1	25.9	31.4
U.S.S.R.....	1.9	5.0	10.0	14.0	16.0
Total CMEA.....	6.5	18.1	29.1	39.9	47.4

¹ All hard currency debt, including drawdowns on official export credit commitments and claims of Western commercial banks in the form of short term interbank placements. Debts of the CMEA banks (IIB and IBEC) are excluded from the calculations.

² Preliminary estimate.

Source: Office of Economic Research, CIA.

TABLE 3.—CMEA DEBT SUMMARY, END 1977

[In millions of dollars]

	U.S.S.R.	East Europe	IIB/IBEC
Estimated drawings on official credits.....	10,730	11,585	0
Supplier credits ¹	2,200	2,100	0
Net position with Western banks ²	4,377	16,290	3,500
Outstanding bonds and notes.....	0	265	0
IMF, IBRD drawings.....	0	670	0
Total net debt.....	17,307	30,910	3,500

¹ Includes outstanding a forfeit obligations.

² Net liabilities as of end-September 1977 to banks in Group of Ten countries, Switzerland, and branches of United States banks in the Caribbean and the Far East.

Source: Miriam Karr, "CMEA Debt Review," "East-West Markets," Chase World Information Co., May 15, 1978, p. 3).

TABLE 4.—AGGREGATE LIABILITIES OF THE EAST EUROPEAN COUNTRIES IN HARD CURRENCY, END 1975¹

[In billions of dollars]

	Bank loans and credit ²	Government guaranteed credit ³	Supplier credit ⁴	Other	Total
Bulgaria.....	2.06	0.40	0.08	* 0.08	* 2.61
Czechoslovakia.....	.56	.70	.95	0	2.21
German Democratic Republic.....	3.43	1.44	* 1.26	5.13
Hungary.....	2.74	.18	.36	(*)	3.28
Poland.....	4.64	2.22	.29	10.77	7.92
Romania.....	1.53	.95	.15	11.34	2.97
Total.....	14.96	4.89	1.83	2.45	* 24.12

¹ Together with German Democratic Republic liabilities under the clearing account with West Germany.

² Including assets of banks in countries reporting to the BIS and Austrian banks and estimated drawings on known OPEC credits.

³ And associated supplier credits ("self-financing").

⁴ Supplier credits not included in other entries; only from West Germany.

⁵ For Bulgaria, "other" liabilities are estimated West Germany "official" credits.

⁶ Discrepancy between the addenda and the sums caused by rounding error when converting Deutsche marks into dollars.

⁷ The figure for Government-guaranteed credit owed by the German Democratic Republic excludes credit from West Germany, covered in the overall liabilities separately entered.

⁸ Total liabilities to West Germany under the clearing account are entered.

⁹ Negligible.

¹⁰ The entry includes West Germany "official" credits to Poland, Poland's liabilities to the United States under Public Law 480 and CCC program and liabilities to other than banks in Austria and Switzerland.

¹¹ Romania's "other liabilities" include those to West Germany under official credits, to the United States under CCC, and drawings from the IMF and IBRD.

Source: Kathryn Melson and Edwin M. Snell, "Estimating East European Indebtedness to the West," "East European Economies Post-Helsinki," Joint Economic Committee, August 1977.

TABLE 5.—SOVIET TRADE BALANCES AND HARD CURRENCY POSITION 1975-85¹

Year:	Net exports, CMEA	Net exports, developed West	Net hard cur- rency trade balance	Debt service ratio ²	Debt/export ratio ³
1975.....	0.4	-5.0	-6.3	0.19	1.10
1976.....	.9	-3.9	-4.3	.23	1.17
1977.....	1.0	-2.2	-2.8	.23	1.17
1978.....	.7	-1.7	-2.3	.27	1.15
1979.....	.6	-1.3	-1.9	.30	1.12
1980.....	.3	-1.3	-2.0	.31	1.07
1981.....	.5	-1.6	-2.4	.32	1.07
1982.....	.3	-1.4	-2.2	.32	1.02
1983.....	.6	-1.6	-2.3	.32	1.00
1984.....	.3	-1.9	-2.5	.31	.96
1985.....	.4	-2.6	-3.1	.31	.94

¹ Potential growth path for the U.S.S.R. given smooth and favorable conditions in weather and the world economy. Projection should not be regarded as a "forecast," but rather as a scenario representative of the upper range of plausible outcomes. All figures in billions of dollars except debt service and debt/export ratios. Estimates of Soviet gold reserves, hard currency reserves, and indebtedness which form the basis for the projections are from J. T. Farrell and P. Ericson, "Soviet Trade and Payments with the West" in the "Soviet Economy in a New Perspective," U.S. Congress, Joint Economic Committee, 1976, pp. 727-738.

² Principal repayment plus interest divided by exports to the developed West.

³ End-year debt less hard currency reserves divided by exports to the developed West.

Source: Adapted from Donald W. Green, "Soviet Economic Growth and Foreign Trade in the 1980's: Alternative Projections with SOVMOD III." Paper presented at the NATO Colloquium on Soviet Economic Growth, Brussels, Jan. 17-19, 1978.

TABLE 6.—POLAND: ESTIMATED HARD CURRENCY BALANCE OF PAYMENTS, 1970-77

[In millions of dollars]

	1970	1971	1972	1973	1974	1975	1976	1977 ¹
Merchandise exports, f.o.b. ²	962	1,099	1,397	2,063	2,865	3,026	3,373	3,660
Merchandise imports, f.o.b. ²	-901	-1,075	-1,772	-3,431	-5,233	-6,076	-6,636	-6,120
Services, net.....	2	2	5	-11	-5	-15	-25	-25
Interest income.....	-40	-40	-45	-80	-240	-400	-640	-860
Transfer payments, net.....	110	140	220	300	320	375	560	600
Current-account balance.....	133	126	-195	-1,159	-2,293	-3,090	-3,368	-2,745
Financed by medium- and long-term credits, net ³	-6	30	250	700	1,400	2,000	2,200	2,000
Errors and omissions ⁴	-127	-156	-55	459	893	1,090	1,168	745
Outstanding net debt.....	770	800	1,090	1,890	3,950	6,930	10,200	12,800
Debt service ratios (percent) ⁵	20	19	20	21	27	43	49	60

¹ Preliminary estimates.

² Trade with developed West.

³ Medium- and long-term credits are those with maturities of more than 1 year.

⁴ Includes short-term borrowing as well as some credits of up to 5 yr. Also included are hard-currency trade balances with the less-developed countries and changes in foreign exchange reserves.

⁵ Repayments of principal on medium- and long-term debt and interest on all debt as a percentage of merchandise exports to the developed West.

Source: Office of Economic Research, CIA.

TABLE 7.—POLAND: ESTIMATED NET HARD CURRENCY DEBT AND DEBT SERVICE¹

Year:	Outstanding net debt at year end			
	Total	Known medium- and long-term ²	Repayments of principal and interest ³	Debt service ratio
1970.....	766	700	192	20
1971.....	798	750	209	19
1972.....	1,088	900	279	20
1973.....	1,893	1,450	433	21
1974.....	3,944	2,500	774	27
1975.....	6,933	4,250	1,301	43
1976.....	10,200	6,250	1,653	49
1977 ⁴	12,800	(⁵)	2,196	60

¹ All figures except debt service ratios are in millions of dollars.

² Medium- and long-term debt refers to debts with a maturity of more than 1 year.

³ Scheduled repayments of principal on medium- and long-term debt plus interest payments on total debt as a percent of exports to the developed West. If estimated gross earnings on invisibles are added the debt service ratio falls to 30 percent in 1975 and 35 percent in 1976.

⁴ Preliminary estimates.

⁵ Not available.

Source: Office of Economic Research, CIA.

TABLE 8.—POLAND: ESTIMATED STRUCTURE OF NET HARD CURRENCY DEBT¹

[In millions of dollars]

	1970	1975	1976	1977
Total net debt.....	770	6,930	10,200	12,800
Western government backed credits ²	320	2,130	2,600	3,200
Direct credits from western governments ³	370	506	760	1,000
Private credits from western commercial banks.....	80	4,010	5,800	7,400
Other ⁴		284	1,040	1,200

¹ All figures are end of year.

² For example, official export credit insurance and reinsurance of commercial bank credits.

³ Including amounts outstanding on U.S. Export-Import Bank, Commodity Credit Corporation, and Public Law 480 credits as well as on a West German official financial credit.

⁴ Including errors and omissions.

Source: Office of Economic Research, CIA.

TABLE 9.—OFFICIAL EXPORT CREDIT COMMITMENTS TO CMEA COUNTRIES, AS OF END-1977

[In millions of dollars]

	Bulgaria	C.S.S.R.	GDR	Hungary	Poland	Romania	U.S.S.R.	Total
Commitments on signed contracts offered by: ¹								
Austria.....	183	85	455	395	600	36	260	2,014
Britain.....	30	50	45	40	960	100	720	1,945
Canada.....	0	3	0	0	454	9	173	633
France.....	540	350	480	110	1,800	390	3,400	7,070
West Germany.....	140	450	² 1,200	65	1,900	430	3,300	7,485
Italy.....	80	70	530	70	800	200	1,950	3,700
Japan ³	280	0	400	200	450	500	3,150	4,980
United States.....	0	0	0	0	⁴ 408	74	463	945
Other.....	265	195	465	95	950	215	750	2,935
Total.....	1,518	1,203	3,575	965	8,322	1,954	14,166	31,713
Estimated drawings on official credits ⁵	798	841	2,455	460	5,775	1,256	10,730	22,315
Undrawn balances.....	720	362	1,120	515	2,547	698	3,436	9,398

¹ Refers to active commitments of official credit. Figures take into account maturing credits and are adjusted for repayments.

² Intra-German trade swing credits.

³ Includes supplier credits which are provided jointly by Japan's Eximbank and commercial banks.

⁴ Includes \$220,000,000 in U.S. Eximbank commitments and \$188,000,000 in CCC credits.

⁵ Approximate disbursements.

Source: Adapted from a review of CMEA debt by Miriam Karr in East-West Markets, Chase World Information Co., May 15, 1978, p. 3, and May 29, 1978, p. 3.

TABLE 10.—U.S.S.R. AND EASTERN EUROPE: ESTIMATED DEBT SERVICE RATIOS¹

[In percent]

Country	1970	1973	1974	1975	1976	1977 ²
Bulgaria.....	35	35	45	66	75	85
Czechoslovakia.....	8	15	17	22	30	34
German Democratic Republic.....	20	25	24	27	33	40
Hungary.....	20	20	24	35	39	44
Poland.....	20	21	27	43	49	60
Romania.....	36	35	29	42	41	42
U.S.S.R.....	18	17	15	22	26	28

¹ Debt service ratios are based on repayments of principal on medium and long term debt (i.e. obligations of 1 yr and over) and interest on all debt as a percentage of hard currency merchandise exports (including gold sales). Earnings from the sale of services are excluded.

² Preliminary estimate.

Source: Office of Economic Research, CIA.

TABLE 11.—PUBLICIZED COMMUNIST COUNTRY EUROBORROWING 1975-78, CONTRASTED WITH EUROBORROWING BY OTHER COUNTRY GROUPINGS

[Dollar amounts in millions]

	1975	1976	1977	January to May 1978 ¹	1977 borrow- ing as percent of total 1977 Eurocredits ²	January to May 1978 borrowing as percent of total January to May 1978 Eurocredits ^{1,2}
Industrial countries ³	\$7,231	\$11,254	\$17,255	\$10,829	41.5	43.4
Developing countries.....	11,098	15,017	20,976	12,538	50.4	50.3
Non-OPEC countries ⁴	8,199	11,019	13,494	8,316	32.4	33.4
OPEC countries.....	2,899	3,999	7,481	4,222	18.0	16.9
Communist countries.....	2,597	2,503	3,394	1,564	8.2	6.3
Hungary.....	250	300	300	300	.7	1.2
Poland.....	475	525	19	290	.05	1.2
U.S.S.R.....	650	282	234	400	.6	1.6
Other ⁵	1,222	1,396	2,841	574	6.8	2.3
Total.....	20,926	28,774	41,625	24,931	100.1	100.0

¹ Preliminary figures.

² Publicized Eurocurrency credits extended by commercial banks to public and private sector borrowers in the country group (or country) indicated, as a percent of total Eurocurrency bank credits extended to public and private sector borrowers in all countries during the period specified.

³ Includes borrowings by multinational organizations of the industrialized countries.

⁴ Includes borrowings by regional development organizations.

⁵ Includes borrowings by CMEA institutions (e.g. International Bank for Economic Cooperation, International Investment Bank).

Source: Computed from "World Financial Markets," Morgan Guaranty Trust Co., May 1978.

TABLE 12.—COMMUNIST COUNTRY PUBLICIZED EUROCURRENCY CREDITS
[In millions of dollars]

	1974	1975	1976	1977	Total 1974-77
Bulgaria.....	160.0	125.0	240.0	20.0	545.0
Cuba.....	119.7	237.0	140.5	10.0	507.2
Czechoslovakia.....	0	60.0	20.0	150.0	410.0
German Democratic Republic.....	12.0	280.3	235.0	670.0	1,197.3
Hungary.....	150.0	250.0	300.0	350.0	1,050.0
Poland.....	507.8	475.0	468.9	19.0	1,470.7
U.S.S.R.....	0	750.0	282.0	0	1,032.0
IBEC ¹	100.0	60.0	0	0	160.0
IIB ²	0	420.0	600.0	1,100.1	2,120.1
North Korea.....	65.3	0	0	0	65.3
Vietnam.....	0	38.1	0	74.1	112.2
Total.....	1,114.8	2,695.4	2,466.4	2,393.2	8,669.8

¹ International Bank for Economic Cooperation of the CMEA.

² International Investment Bank of CMEA.

Source: IBRD

TABLE 13.—TRENDS IN SPREADS FOR SYNDICATED EURO CREDITS ARRANGED BY CMEA BORROWERS
[Percent over LIBOR]¹

Country	1975	1976	1977	January to May 1978
Bulgaria.....	1.5	1.375	{ 1.0 1.125	0.875 1.0
Czechoslovakia.....	1.25	1.25	{ 1.125 1.25	.75 1.0
German Democratic Republic.....	{ 1.375 1.375}	1.25	{ 1.25 1.0	1.125 .625
Hungary.....	1.5	1.125	1.125	{ .75 1.375
Poland.....	1.5	1.5	1.5	{ 1.5 .875
Romania.....	(²)	{ 1.375	1.0	1.0
U.S.S.R.....	1.25	{ 1.625 1.25	-----	.75
CMEA banks.....	1.5	{ 1.375 .875	1.0	-----
Prime non-CMEA borrowers.....	1.25	1.0	.625 .75	----- .75

¹ LIBOR—London Interbank offering rate on 6-mo Eurodollar deposits. Spreads listed refer to the last syndication publicly announced during the year indicated. Loan maturities are mostly "medium term," usually ranging from 5 to 8 yr.

² Indicates a split spread on a multiyear loan.

³ No publicly announced syndications during year indicated.

Source: Compiled from OECD Financial Market Trends, December 1977; announcements in Euromoney magazine and Financial Times.

TABLE 14.—POSITION OF WESTERN COMMERCIAL BANKS VIS-A-VIS CMEA, END-DECEMBER 1977¹
[In millions of dollars]

Country	Gross claims	Liabilities	Net claims
Bulgaria.....	2,345	445	1,900
Czechoslovakia.....	1,259	444	815
German Democratic Republic.....	4,145	707	3,438
Hungary.....	4,219	872	3,347
Poland.....	6,791	384	6,407
Romania.....	1,186	195	991
U.S.S.R.....	10,554	4,222	6,332
Residual ²	2,407	455	1,952
Total U.S.S.R./East Europe.....	32,906	7,724	25,182
Cuba.....	1,278	260	1,018
Total CMEA.....	34,184	7,984	26,200

¹ External positions in domestic and foreign currency of banks in Belgium, Luxembourg, France, Germany, Italy, Netherlands, Sweden, Switzerland, United Kingdom, United States, Canada, and Japan; Also includes claims by foreign branches of U.S. banks located in the Bahamas, Cayman Islands, Panama, Hong Kong, and Singapore. Includes claims on public and private sector borrowers. Positions of West German banks vis-a-vis the GDR are excluded.

² Complete country breakdown not available.

Source: Bank for International Settlements.

TABLE 15.—WESTERN COMMERCIAL BANK CLAIMS ON THE U.S.S.R. AND EASTERN EUROPE AS CONTRASTED WITH CLAIMS ON OTHER COUNTRY GROUPINGS, END-DECEMBER 1977¹

[In millions of dollars]

	1975	1976	1977
Banks' net claims (+) and liabilities (-) to:			
G-10 and Switzerland.....	-35.0	-50.1	-64.3
Non G-10 developed ²	+7.6	+19.5	+29.1
U.S.S.R. and Eastern Europe ³	+15.3	+21.2	+25.1
Oil exporting countries.....	-37.5	-40.1	-42.2
Nonoil developing countries.....	+26.0	+31.1	+29.5
Offshore banking centers ⁴	+21.1	+27.5	+26.7
Unallocated ⁵	-2.9	-5.2	-4.9

¹ External positions in domestic and foreign currency of banks in Belgium, Luxembourg, France, Germany, Italy, Netherlands, Sweden, Switzerland, United Kingdom, United States, Canada, and Japan. Also includes claims by foreign branches of United-States banks located in the Bahamas, Cayman Islands, Panama, Hong Kong, and Singapore. Includes claims on public and private sector borrowers. Positions of West German banks vis-a-vis the German Democratic Republic are excluded from calculations.

² Austria, Australia, Finland, Greece, Iceland, New Zealand, Norway, Portugal, Spain, South Africa, Turkey, Denmark, Ireland.

³ Bulgaria, Czechoslovakia, German Democratic Republic, Hungary, Poland, Romania, U.S.S.R.

⁴ Bahamas, Barbados, Bermuda, Cayman Islands, Hong Kong, Lebanon, Liberia, Netherlands Antilles, New Hebrides, Panama, Singapore, West Indies.

⁵ Bank positions for which an area breakdown is not available. Includes international institutions.

Source: Bank for International Settlements.

TABLE 16.—MATURITY STRUCTURE OF WESTERN BANK CLAIMS ON CMEA, END-DECEMBER 1976

[In millions of dollars]

	Amount maturing in—						Unallocated	Percent	Total	Unused credit commitments
	1977	Percent	1978	Percent	1979 and over	Percent				
Bulgaria.....	1,109	56.6	156	8.0	604	30.8	92	4.7	1,961	358
Czechoslovakia.....	540	62.2	21	2.4	271	31.2	36	4.1	868	185
German Democratic Republic ²	1,885	53.9	611	17.5	821	23.5	178	5.1	3,495	586
Hungary.....	1,680	57.7	204	7.0	860	29.5	168	5.8	2,912	305
Poland.....	1,813	32.3	747	13.3	2,800	49.9	255	4.5	5,615	1,215
Romania.....	567	74.9	51	6.7	70	9.2	69	9.1	757	281
U.S.S.R.....	5,193	52.7	656	6.7	3,446	35.0	560	5.7	9,855	1,901
Total U.S.S.R./East Europe.....	12,787	50.2	2,446	9.6	8,872	34.8	1,358	5.3	25,463	4,858
Cuba.....	528	52.6	51	5.1	213	21.2	211	21.0	1,003	91
Total CEMA.....	13,315	50.3	2,497	9.4	9,085	34.3	1,569	5.9	26,466	4,949

¹ External positions in domestic and foreign currency of banks in Belgium, Denmark, Ireland, Luxembourg, France, Germany, Italy, Netherlands, Sweden, Switzerland, United Kingdom, United States, Canada, and Japan. Also includes claims of affiliate banks in offshore centers. Includes claims on public and private sector borrowers.

Source: Bank for International Settlements.

TABLE 17.—POSITION OF CENTRALLY PLANNED ECONOMICS WITH WEST GERMAN COMMERCIAL BANKS 1975-77¹

[DM millions]²

	Gross claims					Liabilities					Net claims				
	Total	Foreign currency	DM	Short ³ term	Long ⁴ term	Total	Foreign currency	DM	Short term	Long term	Total	Foreign currency	DM	Short term	Long term
As of year end:															
1975.....	8,869	1,663	7,206	2,763	6,106	712	232	480	681	31	8,157	1,431	6,726	2,082	6,076
1976.....	10,996	2,048	8,948	2,924	8,072	1,184	662	522	1,153	31	9,812	1,386	8,426	1,771	8,041
1977.....	12,265	2,319	9,946	3,282	8,983	1,178	487	691	1,147	31	11,087	1,832	9,255	2,135	8,952

¹ Excludes West German bank balances with the German Democratic Republic. Countries covered include Albania, Bulgaria, Czechoslovakia, Hungary, Poland, Romania, U.S.S.R., Mongolia, North Korea, Vietnam, and the People's Republic of China.

² Exchange rate for the U.S. dollar as of end-December 1977 was approximately 2.1 DM.

³ Claims maturing in less than 1 year.

⁴ Claims maturing in 1 year or more.

Source: Deutsche Bundesbank, Balance of Payments Statistics, Series 3, March 1978.

TABLE 18.—EXTERNAL BOND OFFERINGS BY CMEA COUNTRIES 1972-77

[In millions of dollars]

	1972-74	1975	1976	¹ 1977	Total, 1972-77
Hungary.....	90	99	25	75	289
Poland.....	0	0	47	86	133
Romania.....	0	100	0	0	100
Total.....	90	199	72	161	522

¹Preliminary figures.

Source: OECD "Financial Market Trends," December 1977.

TABLE 19.—U.S. BANK CLAIMS ON CMEA COUNTRIES, END-DECEMBER 1977¹

[In millions of dollars]

	Maturity distribution ²				Contingent claims ³
	Claims outstanding	1 yr and under	1 to 5 yr	Over 5 yr	
Bulgaria.....	527.6	269.9	235.8	21.8	105.6
Czechoslovakia.....	192.7	131.2	51.4	10.1	12.0
German Democratic Republic.....	979.9	476.6	438.9	64.3	157.9
Hungary.....	896.4	417.2	390.8	88.3	38.2
Poland.....	1,313.8	542.0	724.9	57.4	561.7
Romania.....	226.0	200.1	30.9	0	143.9
Total Eastern Europe.....	4,136.4	2,037.0	1,872.7	241.9	1,019.3
U.S.S.R.....	1,551.6	727.1	711.8	112.6	272.5
IIB/IBEC ⁴	85.1	22.6	62.4	0	0
Total CMEA.....	5,773.1	2,786.7	2,646.9	354.5	1,291.8

¹ Includes claims by domestic offices, foreign branches, and wholly owned foreign subsidiaries. Data is based on reports by the 124 largest U.S. banks with significant international banking operations.² Refers to maturities on claims outstanding.³ Commitments to advance funds. Includes only the following items: Fee paid loan commitments (less any amounts actually outstanding on the loans); undisbursed portions of loans contracted where the funds are available at the borrower's request; commercial letters of credit either issued or confirmed; stand-by letters of credit; and formal and legal guarantees issued. It excludes commitments that are subject to further bank approval before disbursement of funds and credit authorizations.⁴ CMEA multilateral financial institutions: International Investment Bank and the International Bank for Economic Cooperation.

Source: Federal Reserve Board, Treasury Department.

TABLE 20.—POSITION OF U.S. BANKS VIS-A-VIS CMEA, END MARCH 1978¹

	Bulgaria	Czechoslovakia	GDR ²	Hungary	Romania	Poland	Total East Europe	U.S.S.R.	Total CMEA
Gross claims held by:									
Domestic offices.....			³ 216			361	577	371	948
Foreign branches.....	454	142	919	788	145	769	3,217	1,056	4,273
Total.....			12,664			1,130	3,794	1,427	5,221
Liabilities of:									
Domestic offices.....			⁴ 93			100	193	72	265
Foreign branches.....	1	18	206	17	15	9	266	283	549
Total.....			4350			109	459	355	814
Net claims held by:									
Domestic offices.....			⁵ 123			261	384	299	683
Foreign branches.....	453	124	713	771	130	760	2,951	773	3,724
Total.....			2,314			1,021	3,335	1,072	4,407

¹ Includes claims and liabilities of domestic offices of U.S. banks and their foreign branches. Includes foreign branches of U.S. banks in The Bahamas, Cayman Islands, Belgium, France, West Germany, Italy, Luxembourg, the Netherlands, Switzerland, the United Kingdom with liabilities of \$10,000,000 or more. Also includes branches in Panama, Japan, Hong Kong, and Singapore with liabilities payable in U.S. dollars of \$30,000,000 or more, and branches elsewhere with total liabilities of \$100,000,000 equivalent or more. Also includes data reported by the branches, agencies, subsidiaries and other affiliates in the United States of foreign banks. Foreign subsidiaries of U.S. banks are excluded from the calculations. Claims are defined as all extensions of credit and securities, including interest and non-interest-bearing deposits due from other banks, whether at demand, call, or for a specified term.

² German Democratic Republic.

³ Individual country breakdown not available. Represents U.S. bank domestic office claims (liabilities) vis-a-vis all East European countries except Poland and the U.S.S.R.

⁴ Individual country breakdown not available. Represents sum of claims (liabilities) of domestic offices and foreign branches of U.S. banks vis-a-vis all East European countries except Poland and the U.S.S.R.

⁵ Individual country breakdown not available. Represents net U.S. bank domestic office claims vis-a-vis all East European countries except Poland and the U.S.S.R.

⁶ Individual country breakdown not available. Represents net claims of domestic offices and foreign branches of U.S. banks vis-a-vis all East European countries except Poland and the U.S.S.R.

TABLE 21.—U.S. BANK CLAIMS ON CMEA COUNTRIES, END JUNE 1977¹

[In millions of U.S. dollars]

	Claims outstanding			Maturity distribution ²			Contingent claims	
	Total claims ³	Place-ments ³	Credits and securities ⁴	1 yr and under	1 to 5 yr	5 yr and over	Other commitments ⁵	L/C's ⁷
Bulgaria.....	483	81	336	223	189	5	45	21
Czechoslovakia.....	172	106	48	105	46	3	16	2
German Democratic Republic.....	930	63	646	282	372	55	196	25
Hungary.....	790	252	412	292	339	32	123	3
Poland.....	1,501	161	1,088	350	771	127	165	87
Romania.....	366	94	123	157	49	10	141	8
U.S.S.R.....	1,951	464	1,128	653	776	164	358	1
Total CMEA.....	6,193	1,221	3,781	2,062	2,542	396	1,044	147

¹ Includes claims by head offices, foreign branches, and wholly owned foreign subsidiaries.² Outstanding claims plus contingent claims.³ Refers to all interest or non-interest bearing deposits due from other banks whether at demand, call, or for a specified term.⁴ Mostly loans.⁵ Refers to maturities on claims outstanding.⁶ Includes all fee-paid commitments to grant loans, undisbursed portions of loans contracted, standby letters of credit, and guarantees issued.⁷ Letters of credit covering the movement of goods, whether issued or confirmed. Excludes deferred payment letters of credit and past due or refinanced acceptances (which are included under "credits and securities") and standby letters of credit which are reported under "other commitments."

Sources: Federal Reserve, Treasury Department.

TABLE 22.—SOURCING OF OUTSTANDING U.S. BANK CLAIMS ON CMEA, END-DECEMBER 1977¹

	Total claims	Domestic office claims	Foreign branches	Foreign subsidiaries
Bulgaria.....	528	} = 216	454	} = 159
Czechoslovakia.....	193			
German Democratic Republic.....	980			
Hungary.....	896			
Romania.....	226			
Poland.....	1,314	361	769	184
Total East Europe.....	4,137	577	3,217	343
U.S.S.R.....	1,552	371	1,056	125
Total CMEA.....	5,689	948	4,273	468

¹ Claims are defined as all extensions of credit and securities, including interest and noninterest bearing deposits due from other banks whether at demand, call, or for a specified term.² Country breakdown not available.

Sources: Federal Reserve; Treasury Department.

TABLE 23.—U.S. COMMERCIAL BANK CLAIMS ON CMEA AS CONTRASTED WITH CLAIMS ON SELECTED DEVELOPING COUNTRIES, END-DECEMBER 1977¹

[Dollars in millions]

Country	Outstanding claims
Brazil.....	11,993
Indonesia.....	2,159
South Korea.....	3,072
Mexico.....	11,213
Peru.....	1,831
Turkey.....	1,465
Total	31,773
U.S.S.R.....	1,552
Poland.....	1,314
Other East Europe ²	2,907
Total	5,773

¹ Includes claims and liabilities of domestic offices, foreign branches and wholly-owned subsidiaries of U.S. banks. Claims are defined as all extensions of credit and securities to all public and private borrowers; including interest and non-interest bearing deposits due from other banks, whether at demand, call, or for a specified term. Contingent claims, such as undrawn credits on existing commitments, are excluded.

² Bulgaria, Czechoslovakia, German Democratic Republic, Hungary, Romania and IIB/IBEC.

Sources: Federal Reserve, Treasury Department.

TABLE 24.—OUTSTANDING U.S. COMMERCIAL BANK CLAIMS ON FOREIGN NATIONS BY COUNTRY GROUPINGS, END-DECEMBER 1977¹

Country grouping	Outstanding claims (millions)	Claims as percent of total U.S. bank lending ²
G-10 and Switzerland ³	\$83,610	43.0
Non-G-10 developed ⁴	18,640	9.6
U.S.S.R./Eastern Europe ⁵	5,773	3.0
Oil exporting countries ⁶	14,686	7.5
Non-oil developing countries ⁷	46,934	24.1
Latin America/Caribbean.....	33,535	17.2
Asia.....	10,965	5.6
Africa.....	2,434	1.3
Offshore banking centers ⁸	23,618	12.1
Miscellaneous ⁹	1,312	.7
Total	194,573	100.0

¹ Includes claims and liabilities of domestic offices, foreign branches and wholly-owned subsidiaries of U.S. banks. Claims are defined as all extensions of credit and securities to all public and private sector borrowers, including interest and noninterest bearing deposits due from other banks, whether at demand, call, or for a specified term. Contingent claims, such as undrawn credits on existing commitments, are excluded.

² Outstanding U.S. bank claims on the region indicated as a percent of total U.S. bank claims on public and private sector borrowers in all foreign countries.

³ Belgium, Luxembourg, France, Germany, Italy, Netherlands, Sweden, Switzerland, United Kingdom, Canada, and Japan.

⁴ Austria, Australia, Finland, Greece, Iceland, New Zealand, Norway, Portugal, Spain, South Africa, Turkey, Denmark, and Ireland.

⁵ Bulgaria, Czechoslovakia, German Democratic Republic, Hungary, Poland, Romania, U.S.S.R. Also includes IIB and IBEC. Yugoslavia has been reallocated to "miscellaneous."

⁶ Algeria, Ecuador, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela.

⁷ Argentina, Bolivia, Brazil, Chile, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Paraguay, Peru, Trinidad/Tobago, Uruguay, Taiwan, India, Israel, Jordan, South Korea, Malaysia, Pakistan, Philippines, Thailand, Egypt, Ghana, Ivory Coast, Morocco, Sudan, Tunisia, Zaire, and Zambia.

⁸ Bahamas, Bahrain, Caymans, Hong Kong, Panama, Singapore, Liberia, and Lebanon.

⁹ Represents primarily U.S. bank claims on Yugoslavia. Also includes international and regional organizations (except IIB and IBEC which are included under "U.S.S.R./Eastern Europe").

Source: Federal Reserve, Treasury Department.

TABLE 25.—COMMODITY CREDIT CORPORATION CREDITS TO CMEA, JUNE 1978

[In millions of dollars]

	Credit lines authorized fiscal year 1978 ¹	Sales registered as of June 6, 1978 ²	Disburse- ments as of Apr. 30, 1978 ³	Total CCC principal outstanding as of June 2, 1978 ⁴
Poland.....	514.0	467.6	229.2	396.2
Romania.....	23.0	23.0	0	27.5
Total CMEA.....	537.0	490.6	229.2	423.7

¹ Authorization in fiscal year 1978 CCC budget for the offering of credit to the country indicated.² Value of agricultural contracts registered under the fiscal year 1978 credit line. Registration generally signals an intention to draw down on the available credit line, although sometimes a buyer may opt for alternative financing on part of the purchase prior to shipment.³ Drawdown (i.e. actual disbursements) on the fiscal year 1978 CCC credit line as of the date indicated.⁴ Total outstanding CCC principal owed by the country indicated.

Source: Commodity Credit Corporation.

TABLE 26.—EXIMBANK DIRECT LOANS TO CMEA, INCEPTION TO END-MARCH 1978

[In millions of dollars]

	Export contract value ¹	Exim financed portion	Disbursements ²	Loans outstanding ³
Poland.....	490.6	236.7	170.7	164.5
Romania.....	163.2	74.9	57.0	56.2
U.S.S.R.....	1,042.1	469.0	433.9	432.7
Total CMEA.....	1,695.9	780.6	661.6	653.4

¹ Total value of export contracts financed under the Eximbank direct loan program for the country indicated.² Drawdown (i.e. actual disbursements) on contracts approved for Eximbank financing.³ Total amount owed on Eximbank loans by the country indicated.

Source: Export-Import Bank of the United States.

Chapter 13. THE THEORETICAL CAPACITY OF THE U.S. COMMERCIAL BANKING SYSTEM FOR FINANCING EAST-WEST TRADE

BY WILLIAM F. KOLARIK, JR.*

CONTENTS

	Page
Introduction	210
Major banks and regional banks defined.....	212
Scenario 1. Theoretical capacity of major U.S. banks for CMEA lending.....	213
Scenario 2. Supplementary capacity of regional U.S. banks for CMEA lending	215
Estimated current position of U.S. banks.....	215
Summary and conclusions.....	216

INTRODUCTION

Unlike many of their West European counterparts, U.S. banks operate under legal limitations as to the amount of loans that a given bank can extend to any "single borrower", whether the entity is a "person, copartnership, association, or corporation." For banks chartered by the federal government (i.e. national banks) the statutory lending limit is specified at 10 percent of a bank's "total equity capital." State-chartered banks sometimes operate under somewhat more liberal restrictions, although most states appear to have modeled their legal lending limit regulations after national banking laws.

A review of academic and government studies since 1972-1973 on the subject of U.S. trade with the U.S.S.R. and East Europe reveals that numerous observers have been preoccupied with the possible effects of U.S. banking regulations on the financing of East-West trade. However, despite considerable interest in the topic only limited research has been conducted, and questions remain concerning the effects of legal lending regulations on U.S. commercial bank financing of trade with East European non-market economies.

The following text attempts to develop rough estimates under alternative scenarios regarding the theoretical capacity of the U.S. commercial banking system for financing East-West trade. In view of the fact that the effort is a simple exercise hampered by limited data, resulting estimates are not purported to be precise. Rather, they are intended as "ball park" figures to stimulate discussion, and are dependent on a series of assumptions listed below:

It is assumed that the 10 percent legal lending limit for national banks (12 U.S.C. 84) will remain on the books essentially intact,

*The author is from the Office of East-West Policy and Planning, Industry and Trade Administration, Department of Commerce. This paper was prepared to stimulate discussion and does not necessarily reflect the views of the Department of Commerce or the U.S. Government.

as it has since 1864. Furthermore, it is assumed that the 10 percent limit applies to state-chartered banks as well. Although a few states have legal lending regulations which are somewhat more liberal than the federal statute, in practice it is unlikely that these differences would have much impact on U.S. bank lending to communist countries.

The "U.S. commercial banking system" is assumed to consist of the 119 largest national and state-chartered institutions with assets of \$1 billion or more which participated in the Federal Reserve's 1977 "Country Exposure Lending Survey." Although there are over 14,000 commercial banks in the U.S., it is deemed unlikely that banks with assets under \$1 billion will ever become a significant factor in U.S. international banking.

The term "total equity capital" is defined as the capital surplus, undivided profits, and contingency reserves of the 119 largest U.S. banks as of end-June 1977. Debentures are excluded from equity capital figures cited in the following text. Although debentures are included in equity capital by bank regulators when computing legal limits for national banks and certain state banks (e.g. New York state banks), in the aggregate debentures comprise only a small portion of the total equity capital of the largest U.S. commercial banks.

CMEA (Council for Mutual Economic Assistance) is defined for the purposes of this paper as consisting of Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania, and the U.S.S.R. Cuba and associate members of CMEA are excluded from consideration in the following text.

It is assumed that each CMEA country will continue to conduct most borrowing from U.S. commercial banks through a single public agency (i.e. a central bank or foreign trade bank). In addition, it is assumed that no CMEA country will make significant efforts to decentralize its economy to any substantial degree, nor attempt to establish new public borrowing entities with "separate legal and accounting status" and independent financial resources. Hence, it is taken as given that most U.S. commercial bank loans to each CMEA country will continue to be viewed as loans to a single borrower.

It is assumed that U.S. banks are willing to lend to CMEA countries to the maximum of their legal lending limits. This, of course, is a questionable assumption since most banks are known to maintain internal bank policy limits well below legal lending limits for most CMEA countries. Among other reasons, existing bank policy limits on loans to CMEA countries are the result of the natural tendency of senior bank managers (as well as loan officers) to diversify international loan portfolios to the maximum extent possible.

It is assumed that U.S. banks currently lending to the U.S.S.R. are, in the aggregate, the same banks which are lending to one or more of the East European countries. Conversely, it is assumed that there is no bank lending to an East European country which is not also lending to the Soviets.

TABLE 1.—U.S. BANK CLAIMS ON CMEA COUNTRIES, END JUNE 1977¹

[In millions of U.S. dollars]

	Total claims	Claims outstanding		Maturity Distribution ³			Contingent claims		U.S.G. guaranteed claims
		Place-ments ²	Other	1 yr and under	1 to 5 yr	5 yr and over	Undrawn credits	L/C's ⁴	
Bulgaria.....	483	81	336	223	189	5	45	21	0
Czechoslovakia.....	172	106	48	105	46	3	16	2	0
German Democratic Republic.....	930	63	646	282	372	55	196	25	0
Hungary.....	790	252	412	292	339	32	123	3	0
Poland.....	1,501	161	1,088	350	771	127	165	87	35
Romania.....	366	94	123	157	49	10	141	8	1
U.S.S.R.....	1,951	464	1,128	653	776	164	358	1	5
Total CMEA.....	6,193	1,221	3,781	2,062	2,542	396	1,044	147	41

¹ Includes claims by head offices, foreign branches, and wholly owned foreign subsidiaries.² Refers to all interest or non-interest-bearing deposits due from other banks whether at demand, call, or for specified term.³ Refers to maturities on claims outstanding.⁴ Letters of credit.

Sources: Federal Reserve, Treasury Department.

TABLE 2.—OUTSTANDING U.S. BANK CLAIMS ON CMEA AND SELECTED COUNTRIES AS A PERCENT OF EQUITY CAPITAL OF LENDING BANKS, END JUNE 1977

	Outstanding claims ¹ (Dollars in millions)	No. of banks with claims ²	Total equity capital ³ (Dollars in millions)	Claims as percent of total equity capital ⁴
CMEA:				
Bulgaria.....	416	29	23,000	1.8
Czechoslovakia.....	154	18	16,970	.9
German Democratic Republic.....	708	38	24,517	2.9
Hungary.....	663	39	25,500	2.6
Poland.....	1,248	53	27,659	4.5
Romania.....	217	25	20,800	1.0
U.S.S.R.....	1,592	56	28,379	5.6
Totals.....	(4,998)	(⁵)	(⁵)	(⁵)
Other:				
Brazil.....	10,588	96	32,113	33.0
Mexico.....	11,322	105	34,623	32.7
Venezuela.....	4,548	84	31,629	14.4
Totals.....	(26,458)	(⁵)	(⁵)	(⁵)

¹ Includes claims by head offices, foreign branches and wholly-owned foreign subsidiaries. Claims are defined as all extensions of credit and securities, including interest and noninterest bearing deposits due from other banks whether at demand, call, or for a specified term.² Total number of U.S. banks with claims on country indicated.³ Capital surplus, undivided profits, and contingency reserves.⁴ Outstanding claims as a percent of the total equity capital of those U.S. banks with claims on the country indicated.⁵ Not available.

Source: Federal Reserve.

MAJOR BANKS AND REGIONAL BANKS DEFINED

As of end-June 1977, a total of 56 out of the top 119 U.S. commercial banks were active in lending to the U.S.S.R. These banks held a total of \$1.6 billion in outstanding claims on the Soviets, and had a total equity capital of \$28.4 billion. The total equity capital of the remaining 63 banks which were not extending credits to the U.S.S.R. was only \$7.8 billion (tables 1 and 2). From this data and based on our earlier assumptions, it is evident that the group of 56 banks lending to the U.S.S.R. could be characterized as the "major" U.S. banks, whereas

the remaining 63 banks might be labeled the "regionals" which as yet have not shown interest in the CMEA loan market.

SCENARIO 1. THEORETICAL CAPACITY OF MAJOR U.S. BANKS FOR CMEA LENDING

Utilizing data displayed in table 2 and under our operating assumptions concerning the 10% rule, a theoretical maximum of \$2.84 billion can be postulated for loans by "major" U.S. banks to the Soviet Union. If one further hypothesizes that at some point all 56 major banks lending to the U.S.S.R. may become active in all other CMEA countries, then the \$2.84 billion ceiling would apply to each of these countries as well. This would mean a combined legal limit of \$19.9 billion for all seven CMEA nations. If the multilateral CMEA banks (i.e. IIB and IBEC) are added to the ranks of "independent borrowers", the collective limit would increase to \$25.56 billion.

Note that these figures pertain only to *loans* by major banks to CMEA. If short-term interbank deposits (placements) by major U.S. banks in CMEA institutions are factored in, then total claims could range significantly higher. This is because such interbank deposits are usually exempt from most U.S. legal lending statutes. At end-June 1977, these placements amounted to approximately 24.4% of total U.S. bank claims on CMEA. The U.S.S.R., which led CMEA with \$1.6 billion in total outstanding obligations to U.S. banks, also held the largest share of short-term deposits. These deposits were reported at \$464 million, representing 29% of total U.S. bank claims on the Soviet Union. Poland, which ranks second in total liabilities to U.S. banks, held \$161 million in placements equal to 13% of its outstanding obligations.

If short-term deposits are factored in as a variable and the above percentages are used as a guide, the theoretical maximum for total claims (i.e. loans and placements) by major U.S. banks on the U.S.S.R. would be \$3.7 billion, and for Poland \$3.2 billion. Equivalent estimates for the other East European countries and CMEA as a whole are difficult to derive because of deficiencies in available data.

TABLE 3.—POSITION OF U.S. BANKS VIS-A-VIS CMEA, END MARCH 1987¹

	Bulgaria	Czechoslovakia	GDR ²	Hungary	Romania	Poland	Total East Europe	U.S.S.R.	Total CMEA
Gross claims held by:									
Domestic offices			\$ 216						
Foreign branches	454	142	919	788	145	361 769	577 3,217	371 1,056	948 4,273
Total			\$ 2,664			1,130	3,794	1,427	5,221
Liabilities of:									
Domestic offices			\$ 93						
Foreign branches	1	18	206	17	15	100 9	193 266	72 283	265 549
Total			\$ 350			109	459	355	814
Net claims held by:									
Domestic offices			\$ 123						
Foreign branches	453	124	713	771	130	261 760	384 2,951	299 773	683 3,724
Total			\$ 2,314			1,021	3,335	1,072	4,407

¹ Includes claims and liabilities of domestic offices of U.S. banks and their foreign branches. Includes foreign branches of U.S. banks in The Bahamas, Cayman Islands, Belgium, France, West Germany, Italy, Luxembourg, the Netherlands, Switzerland, the United Kingdom with liabilities of \$10,000,000 or more. Also includes branches in Panama, Japan, Hong Kong, and Singapore with liabilities payable in U.S. dollars of \$30,000,000 or more, and branches elsewhere with total liabilities of \$100,000,000 equivalent or more. Also includes data reported by the branches, agencies, subsidiaries and other affiliates in the United States of foreign banks. Foreign subsidiaries of U.S. banks are excluded from the calculations. Claims are defined as all extensions of credit and securities, including interest and non-interest-bearing deposits due from other banks, whether at demand, call, or for a specified term.

² German Democratic Republic.

³ Individual country breakdown not available. Represents U.S. bank domestic office claims (liabilities) vis-a-vis all East European countries except Poland and the U.S.S.R.

⁴ Individual country breakdown not available. Represents sum of claims (liabilities) of domestic offices and foreign branches of U.S. banks vis-a-vis all East European countries except Poland and the U.S.S.R.

⁵ Individual country breakdown not available. Represents net U.S. bank domestic office claims vis-a-vis all East European countries except Poland and the U.S.S.R.

⁶ Individual country breakdown not available. Represents net claims of domestic offices and foreign branches of U.S. banks vis-a-vis all East European countries except Poland and the U.S.S.R.

SCENARIO 2. SUPPLEMENTARY CAPACITY OF REGIONAL U.S. BANKS FOR CMEA LENDING

What would be the effect on the theoretical capacity of the U.S. banking system for lending to CMEA if regional banks became active and expanded lending to the maximum of their legal limits? (Under this scenario, short-term deposits would probably play only a limited role, since involvement by smaller banks would likely come about through participation in syndications managed by the major banks, or through export financing at the request of the regional banks' traditional customers). Under our operating assumptions and based on equity capital figures referred to earlier, additional loan funds of \$780 million would become available to each CMEA country. This would bring the theoretical limit for loans by the majors and the regionals to any one CMEA country to \$3.62 billion. Thus, the combined theoretical maximum under the 10% limit for loans to all seven CMEA countries is \$25.34 billion. If IIB and IBEC are factored in, then the collective limit would increase to \$32.6 billion.

ESTIMATED CURRENT POSITION OF U.S. BANKS

An examination of tables 1 and 2 clearly reveals that there is no question that U.S. commercial banks are well within the theoretical ceilings postulated above. Total outstanding claims by U.S. banks on CMEA stood at only \$5 billion at end-June 1977. The data suggest that U.S. commercial banks with claims of CMEA have committed only relatively small amounts of their total equity capital to these borrowers. For example, for the U.S.S.R. and Poland—countries with the largest U.S. bank debt—total U.S. claims (including short-term deposits) amounted to only 5.6% and 4.5% respectively of the equity capital of lending banks. If claims in the form of short-term interbank deposits are factored out (because they are exempt from legal limits), the figures drop to 3.9% for the U.S.S.R. and Poland alike. The percentages of equity capital which lending banks have committed to other individual East European countries are small, ranging from 0.9% for Czechoslovakia to 2.9% for the German Democratic Republic.

The capital exposure of U.S. banks lending to CMEA stands in marked contrast to the exposure of U.S. banks lending to certain developing countries (table 2). For example, data indicate that U.S. banks lending to Brazil and those lending to Mexico are exposed to the extent of 33% of their total equity capital in each country. How is this possible under existing legal lending limit restrictions? The answer lies in the fact that Brazil and Mexico have "mixed" economies which are considerably less-centralized than the state-controlled and state-owned economies of the communist countries. Hence, various public corporations and private-sector entities in both Brazil and Mexico may qualify as "independent borrowers" under federal and state legal lending statutes. Legal lending regulations have similar application to free-market economies. Thus, in terms of limiting U.S. commercial bank exposure in any single country or group of countries, it would appear that the 10% rule is potentially most restrictive when applied to communist countries.

SUMMARY AND CONCLUSIONS

There appears to be significant capacity left in the U.S. commercial banking system for financing trade with the U.S.S.R. and Eastern Europe. Using the 10% legal lending limit as a guide, those banks which are lending to the U.S.S.R. and Poland could on the whole probably double their exposure in these countries (assuming that U.S. bank placements are factored out of the legal lending limit equation). Nonetheless, while considerable capacity remains in the banking system as a whole, a few important U.S. banks which have played a leading role in facilitating U.S. exports to CMEA apparently are approaching their 10% limits for the U.S.S.R. and Poland. This is significant to the extent that it might have some negative impact on the desire of these key banks to put together major syndications which would mobilize available resources in the U.S. banking system.

For the foreseeable future, the role of regional U.S. banks in financing trade with communist countries is likely to remain limited. Even if the number of U.S. banks currently lending to CMEA could be doubled, this would have only a limited impact on the theoretical maximum capacity of the banking system to finance East-West trade.

Chapter 14. THE POTENTIAL ROLE OF EXIMBANK CREDITS IN FINANCING U.S.-SOVIET TRADE

BY ALLEN J. LENZ AND LAWRENCE H. THERIOT*

CONTENTS

	Page
Summary -----	217
Background -----	219
Eximbank's current East-West financing role -----	220
Potential constraints on Eximbank lending to the U.S.S.R. -----	221
Future levels of Eximbank lending for exports to the U.S.S.R. -----	221
Estimated effect of Eximbank lending on U.S. exports to the U.S.S.R. -----	223

SUMMARY

The Trade Act of 1974 and Amendments to the Export-Import Bank Act severely restrict the ability of the U.S. Export-Import Bank to extend direct loans and loan guarantees to the Soviet Union and some other communist countries. The passage of these restrictions was an important ingredient in slowing movement toward normalization of commercial relations between the United States and certain communist countries, particularly the Soviet Union, and remains today a source of controversy.

The availability of official U.S. government credits is an important issue to all those countries of Eastern Europe which are not currently eligible. However, because of the political implications and the potential trade volumes involved, the key issue remains Eximbank credits for the U.S.S.R. This paper seeks to examine only one aspect of the complicated issue of whether the communist countries should be granted official credits. It attempts to quantify the potential effects of Export-Import Bank credits on U.S. exports to the U.S.S.R.

The Soviets cite restrictions on access to official credits and the U.S. refusal to grant MFN status as reasons for their unwillingness to bring into force a bilateral trade agreement negotiated with the United States in 1972. They have also indicated that U.S. firms have lost more than \$2 billion in orders since January 1975 because of the lack of U.S. Eximbank credits. Many U.S. businessmen thus see a renewal of Eximbank lending to the U.S.S.R. as the key to a resurgence in U.S.-Soviet trade.

Availability of official U.S. government credits is an important issue to the Soviets, not only because such credits would help in financing trade with the United States, but because they view denial of access to official U.S. government credit facilities as discrimination

* The authors are from the Office of East-West Policy and Planning, Industry and Trade Administration, Department of Commerce. This paper was prepared to stimulate discussion and does not necessarily reflect the views of the Department of Commerce or the U.S. Government.

and an affront to Soviet prestige. Their response to this perceived discrimination can be twofold: First, where credit is an important ingredient in a transaction they will obviously buy from those who, other things being equal, provide the best credit terms. Additionally, however, the U.S.S.R. may likewise apply discriminatory economic counter measures against the United States by diverting business away from U.S. suppliers to foreign competitors in transactions where credit is not a major factor.

The current restrictions on official credits can thus have an important effect on U.S.-Soviet trade in both direct and indirect ways. This paper seeks to quantify only the *direct effects* that a renewal of Eximbank lending might have in future U.S. exports to the U.S.S.R., i.e., it estimates the amount of U.S. exports that might reasonably be financed by the Bank absent existing legislative restrictions.

In formulating estimates, then, a first step is to assume removal of all existing legal impediments peculiar to Eximbank lending to the communist countries and the Soviet Union. Secondly, a legislative extension of the Bank's charter to 1983 and a new total Bank lending authority of \$40 billion is assumed. Given these assumptions the maximum volume of lending to the U.S.S.R. that political and economic considerations seem likely to permit is then estimated.

The potential effects of the selected lending level on U.S. exports are then projected in a simple model, under a further set of specified assumptions.

Finally, the flow-back resulting from repayment of long-term credits is projected, in order to demonstrate the resultant effects on exports and the relationship between exposure and lending terms.

In summary, the following conclusions are reached:

Even without the current legislative restrictions, our estimate is that economic and political considerations would probably limit new Eximbank lending the Soviet Union through end-1983 to not more than \$1 billion, with total Eximbank exposure (outstanding loans plus disbursed commitments) reaching not more than \$1.4 billion.

Assuming Eximbank credits financed 45 percent of total export contract value, incremental U.S. exports facilitated by an additional \$1 billion of exposure would be about \$2.2 billion, or about \$444 million per year each year of a five year period.

However, once the \$1 billion in new funds is committed, unless new lending were authorized above \$1.5 billion, the supportive effect on exports would drop sharply because substantial repayments from \$1 billion in commitments made during the 1979-1983 period would not begin until 1990. Thus repayment funds available for new lending drop sharply to \$21 million in 1984.

The brief supportive effect on exports of a one time infusion of long term official government export credits is, of course, not peculiar to the U.S. The substantial amounts of official credits exposure already existent in the cases of Japan, France, Italy, the U.K., and others will have to be further increased if recent levels of governmental support for exports are to be maintained in the years immediately ahead.

The longer-term effect on exports of a given amount of loan capital is, however, significantly greater. Given recycling of repayment funds into new loans and assuming 45% of the export value is financed by Eximbank funds, it is estimated that an addition of \$1 billion of U.S. Eximbank loans to the \$469 million already outstanding could directly facilitate nearly \$8 billion in cumulative U.S. exports to the U.S.S.R. through 1985.

BACKGROUND

The 1972 report by then Secretary of Commerce Peter G. Peterson, *U.S.-Soviet Commercial Relations in a New Era*, has been viewed by many as a basic blueprint for U.S. policy in East-West trade. Although it addressed only U.S.-Soviet trade, the report implicitly offered a framework for the development of trade relations with most of the communist countries. The report was based on several fundamental assumptions which outlined a scenario for the development of trade. One crucial assumption pertained to the role of credit in the expansion of East-West commerce.

The report foresaw that an expansion of trade between the communist countries and the United States would require heavy infusions of U.S. credit at the start, with Eastern import needs greatly exceeding their export capabilities. The report also anticipated that the U.S. Eximbank could not undertake the financing of massive projects, particularly in the Soviet Union, without radically altering its historical practices. Correctly assessing the real limits on commercial sources for financing trade, Secretary Peterson indicated that new types of credit institutions might be required if East-West trade's large potential was to be actually achieved.

What has been learned about the role of credit in East-West trade in the six years since the report was written? U.S. trade with the communist countries has, indeed, increased dramatically, growing 165% since 1972. But, as foreseen, growth has been asymmetrical, with the result that the U.S.S.R. and most of the Eastern European countries have incurred large volumes of hard currency debt to Western countries. This debt reached a *net* total of about \$48 billion at end of 1977, with continued increases expected for the foreseeable future. Loans from private Western commercial banks have supplied about 54 percent of the total, but governments have also played a significant role, both as guarantors of private lending and as direct lenders through governmental credit institutions. Thus, the 1972 Peterson report was correct in forecasting a significant role for credit in the growth of East-West trade.

Hard currency debt of the U.S.S.R. itself has grown to about \$16 billion, with future plans calling for a large number of massive development projects requiring additional external financing. At the same time, however, events since 1972 have demonstrated a lack of support in the United States for official export credits to finance massive projects in the U.S.S.R. Historical Eximbank practices have not been altered to accommodate these projects. Indeed, not only did Congress fail to support any expansion of governmental trade financing for the U.S.S.R., but in the Trade Act of 1974, it excluded all of the nonmarket countries (except Poland) from eligibility for U.S.

government trade financing programs (i.e., Eximbank, OPIC and the Commodity Credit Corporation programs). Since then, only Romania and Hungary have reestablished eligibility for governmental credits. In addition, the Congress legislated specific constraints on any new Eximbank operations with the Soviet Union, even if the U.S.S.R. should comply with the free emigration provisions of the Trade Act.

EXIMBANK'S CURRENT EAST-WEST FINANCING ROLE

The role of Eximbank is to facilitate U.S. exports through direct loans, as well as guarantees and insurance for commercial bank lending. Of the communist countries, Poland has been eligible for Eximbank credits since 1972; the U.S.S.R. qualified from 1972 until the 1975 passage of the Trade Act; Romania satisfied the Trade Act provisions in 1975; Hungary did so in 1978.

Of the several Eximbank programs, direct loans have been most significant in financing East-West trade, accounting for 85 percent of the value of Eximbank's total operations to date with Poland, Romania and the Soviet Union. During the period of its eligibility, the U.S.S.R. used only direct loans, indicating that as a prime credit risk, it need not incur the added costs of guarantees.

Eximbank's current direct loan exposure to the communist countries, as well as exposure to some other developing nations, is presented in table 1.

TABLE 1.—EXIMBANK DIRECT LOAN EXPOSURE IN SELECTED COUNTRIES AS OF DEC. 31, 1977
(U.S. dollars in millions)

	Total commitments since 1950	Undisbursed commitments	Loans outstanding	Total exposure
Soviet Union.....	469.0	43.3	419.9	463.2
Romania.....	77.6	25.8	49.7	75.5
Poland.....	298.9	69.3	155.0	224.3
Total CPE's.....	845.5	138.4	624.6	763.0
Yugoslavia.....	752.9	86.5	442.1	528.6
Brazil.....	3,170.5	195.9	970.4	1,166.3
Spain.....	2,164.0	3,441.3	820.7	1,262.0
Mexico.....	2,813.5	754.0	577.4	1,331.4
Argentina.....	1,096.6	40.5	209.6	250.1
Colombia.....	540.3	1.0	47.6	48.6
South Korea.....	802.0	241.5	330.9	572.4
Venezuela.....	533.2	34.6	77.3	111.9
Chile.....	894.1	0	219.7	219.7
All others.....	27,784.8	1,434.8	7,027.5	8,462.3
Total.....	41,397.4	3,608.5	11,347.8	14,956.3

In absolute amounts, the \$763 million sum of Eximbank's current exposure to the U.S.S.R., Poland and Romania is less than its position in some individual Developing Countries such as Brazil and Mexico. Indeed, the Bank's direct loan exposure to the U.S.S.R. is less than its exposure to either South Korea or Yugoslavia. Overall, Eximbank direct loan exposure to eligible communist countries is only about 5 percent of its total direct loan current exposure of \$14.9 billion.

Even if the U.S.S.R. were to comply with provisions of the Trade Act of 1974 regarding free emigration, access to Eximbank credits would still remain subject to strict limits and Congressional oversight. Under the 1974 Eximbank Act Amendments, total new authorizations

for direct loans and guarantees cannot exceed \$300 million without prior approval of the Congress. Further, no more than \$40 million can be loaned for transactions involving research or exploration for fossil fuel energy resources in the U.S.S.R., and no lending can be used for production, processing and distribution of such resources without further approval of Congress.

POTENTIAL CONSTRAINTS ON EXIMBANK LENDING TO THE U.S.S.R.

In addition to these specific legislated limitations on lending to communist countries, there remain other fundamental limits on the Export-Import Bank's ability to be a major factor in U.S.-Soviet trade. At present, the Bank's overall operating capacity is limited by a ceiling of \$25 billion on total commitments under all programs, including direct loans. Legislation currently pending (passage seems likely), would extend the bank's charter to 1983 and increase its overall lending ceiling to \$40 billion. Under normal banking practices which emphasize diversification of risk, Eximbank has only a rather limited capacity for financing projects in any one country. For this reason alone it would seem that commitments to communist countries are likely to comprise only a small portion of either current or future ceilings on overall Exim lending. It would seem, therefore, that *U.S.-Soviet Commercial Relations in a New Era* was probably correct in foreseeing that financing the very large resource extraction projects envisioned by the U.S.S.R. would exceed Eximbank's capabilities, an insight that preceded the specific legislative constraints imposed on lending to the U.S.S.R. under the 1974 Eximbank Act Amendments.

FUTURE LEVELS OF EXIMBANK LENDING FOR EXPORTS TO THE U.S.S.R.

Under its present operating authority, if the Trade Act limitations were neutralized, Eximbank could make \$300 million in new direct loans to the U.S.S.R. in support of U.S. exports. This would be in addition to the \$469 million already committed. At that point, loan exposure to the U.S.S.R. would be \$768 million (less a small amount of repayments).

Under the terms of the 1974 Eximbank Amendments, the \$300 million ceiling could be raised by a Presidential national interest determination, subject to approval by concurrent Congressional resolution. The central purpose of this paper, however, is to answer two questions: (1) absent legislative restrictions what level of support for U.S.-Soviet trade could be realistically expected from Eximbank and, (2) what direct effects might that support have on U.S.-Soviet trade volumes? For purposes of illustration, we therefore assume that all existing legislative impediments peculiar to lending to the communist countries and to the Soviet Union are removed. We then make a judgment on what level might be reached, given normal bank risk diversification and other banking practices and likely public and Congressional attitudes.

Some analysis of Eximbank lending to other large borrowers can shed light on the potential for lending to the U.S.S.R. Brazil, with outstanding direct loans and commitments from Eximbank of \$1.2 billion is currently among Eximbank's largest debtors, holding 7.5 percent of the Bank's outstanding loans. These loans, however, are diversi-

fied among 122 different borrowers, with 77 percent of the total held or guaranteed by Brazilian government entities. Further, these debt levels have gradually mounted over a period beginning in 1958. The Brazilian debt today exists in the context of a vigorous two-way trade relationship, with 1977 U.S. exports to Brazil totaling \$2.5 billion, \$2.1 billion of which was manufactures, the type of export typically financed by Eximbank credits. During 1977, new Eximbank commitments to Brazil were \$55 million. Eximbank disbursements on loans to Brazil totaled \$129 million and thereby supported 6.1 percent of U.S. manufactures exports. Similarly current exposure to Mexico of \$1.3 billion contrasts with \$4.8 billion of 1977 U.S. exports to Mexico, 74 percent of which was manufactured goods.

The U.S.S.R. could also be potentially a very large customer for U.S. exports and, with the second largest GNP in the world, could merit a substantial portion of Eximbank's total exposure. Certainly, absent political considerations, loans well above current levels would seem appropriate in the context of an expanding trade. An expansion of exposure would, however, probably have to occur rather gradually.

If an additional \$1 billion of Eximbank's loans were committed to the U.S.S.R. between now and 1983, total bank exposure would increase to just under \$1.5 billion.

Total loans of \$1.5 billion to the U.S.S.R. would represent 3.75 percent of an expected \$40 billion total authorization for the Bank through 1983, compared with the 8.6 percent of total loans now held by various Brazilian borrowers. However, the additional \$1 billion of new commitments that would result in a total exposure to the U.S.S.R. of \$1.5 billion would constitute over 6 percent of the \$15 billion in additional Eximbank lending authority hoped for from forthcoming congressional action.

Considering these factors we see the following constraints on Eximbank lending to the U.S.S.R. :

The demands on the bank to support exports to other countries from a probable total of \$40 billion in authorization ;

Lack of widespread support in the U.S. Congress for governmental export financing (particularly for a country perceived as an adversary) ;

The probable limited volume of U.S. exports of manufactured goods (796 million in 1976 was a record high) ;

The concentration of all Eximbank lending risk in a single borrowing entity, the Soviet Foreign Trade Bank ; and

Concerns that the U.S.-Soviet political environment could worsen and that a large debt level could further complicate relations between the two countries.

Overall, then, our judgment is that, lacking a specific Congressional mandate for support of one or more large projects (for example, a major energy or raw material extraction project), relatively modest levels of Eximbank financing of exports to the Soviet Union seem likely, even if existing legislative restraints were removed. Our estimate is that loan exposures to the U.S.S.R. exceeding \$1.5 billion (\$463 million previously committed plus \$1 billion in new commitments) by end 1983 seems unlikely.¹ Indeed, an optimistic view of political and

¹ In actual practice, Eximbank loans are authorized on a case by case basis to support specific U.S. exports. Eximbank does not set a specific exposure limit for any individual country.

other conditions is required to see even that amount. This estimate could, of course, be wrong, and the reader may wish to substitute his own judgment in the calculations that follow.

We further conclude, however, that the United States is unlikely to become a major competitor in the extension of official export credits. A possible end 1983 level of exposure of \$1.5 billion contrasts with the \$12.8 billion of official Western government credits lines available to the U.S.S.R. from other Western governments as of end year 1977 (see table 2).

TABLE 2.—GOVERNMENTAL CREDIT LINES AVAILABLE TO SOVIET UNION
[U.S. dollars in millions, end year 1977]

Country	Authorized	Commitments on signed contracts
United States.....	469	420
Canada.....	500	175
United Kingdom.....	1,805	855
Italy.....	2,650	2,000
France.....	2,560	2,050
Japan.....	2,800	2,000
West Germany.....	12,000	2,000
Totals.....	12,784	9,500

¹ Represents German credits to U.S.S.R. insured by HERMES. Total limit on HERMES insurance for U.S.S.R. is not known.
Source: Unofficial sources in private industry.

ESTIMATED EFFECT OF EXIMBANK LENDING ON U.S. EXPORTS TO THE U.S.S.R.

Certainly, lack of official credits and MFN status are important considerations to the U.S.S.R. Extending these normal trading conditions could have a catalytic effect on U.S.-Soviet trade far exceeding their theoretical economic value by simulating the trade in a number of ways, including increased willingness of U.S. commercial banks to enlarge their lending. This paper, however, attempts to assess only the direct effects on U.S. exports likely from Eximbank participation. The previous section estimated that, under favorable conditions, by end-1983 Eximbank lending to the Soviet Union might be raised to a total of \$1.5 billion, allowing new loan business of about \$1 billion. What support would \$1 billion of new Eximbank loans to the U.S.S.R. give to U.S. exports? Some simple calculations can provide insights.

First, however, a description of the commitment-disbursement-export-payback cycle typically involved in the Bank's lending will be useful. While the time periods obviously vary from loan to loan, table 3 depicts a typical sequence:

TABLE 3.—TYPICAL CYCLE FOR AN EXIMBANK LOAN

	Year number											
	1	2	3	4	5	6	7	8	9	10	11	
1. Commitment (no cash flow).....	×											
2. Disbursement export (cash outflow).....			1									
3. Grace period of Eximbank portion of loan (no cash flow).....				×	×	×	×					
4. Repayment installments on Eximbank loan (cash inflow).....								¼	¼	¼	¼	

The steps noted in table 3 are essentially as follows:

(1) Eximbank commitment to a loan to finance a specified export (year 1).

(2) Disbursement of loan funds to finance the export (year 3); the gestation period for manufacture/assembly of the material to be exported may be less than the two years indicated, but periods are frequently longer; for example, of the \$469 million committed to the U.S.S.R. during the 1972-74 period, \$50 million still had not been disbursed as of end 1977.

(3) Eximbank lending is typically for the longer maturity portion of the loan. Hence, the 4 year grace period (years 4-7) on repayments indicated in the table is representative.

(4) Assuming 4 equal payments, flowback occurs in our example in years 8 through 11. Some paybacks may be faster, but others will be slower.

Turning to the specific of Eximbank lending to the U.S.S.R., table 4 applies the cycle described by the model in table 3 in estimating the effects on trade that would flow from the following assumptions:

(1) An additional \$1 billion in Eximbank lending to the U.S.S.R. becomes available, with new commitments of \$200 million per year made each year during the 1979-1983 period; and

(2) Repayments from outstanding loans are used for new commitments/loans the year following repayment.

TABLE 4.—ESTIMATED DISBURSEMENT AND REPAYMENT EFFECTS OF EXPANSION OF EXIMBANK DIRECT LOAN COMMITMENTS TO THE SOVIET UNION TO \$1,500,000,000 BY 1983

[in millions of U.S. dollars]

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1995
Commitments:																
1. New annual.....	224	245					1 207	211	215	217	211	2 21	39	68	156	177
2. Of which from repayments.....							7	11	15	17	11	21	39	68	156	177
3. Net cumulative, end of year ³	210	402	294	153	49		207	418	426	132	428	232	60	107	224	390
Disbursements:																
4. Annual ⁴	14	53	108	141	104	6 49			207	211	215	217	211	21	39	259
5. Cumulative end of year.....	14	67	175	316	420	469	469	469	673	884	1,099	1,316	1,527	1,548	1,587	3,465
Principal Repayment: ⁶																
6. Annual.....						7	11	15	17	11	21	39	68	156	206	145
7. Cumulative end of year.....						7	18	33	50	61	82	121	189	345	551	2,534
8. Principal outstanding ⁷ end of year.....	14	67	175	216	420	462	451	436	623	823	1,017	1,195	1,338	1,203	1,036	931
9. Net exposure, end of year ⁸	224	469	469	469	629	465	658	854	1,949	1,255	1,445	1,427	1,398	1,310	1,260	1,321
10. Total exports financed: ⁹																
11. Annual.....	31	118	240	313	231	109			460	469	478	482	469	47	87	576
12. Cumulative.....	31	147	389	702	933	1,042	1,042	1,042	1,502	1,971	2,449	2,931	3,400	3,447	3,534	7,707

¹ Assumes congressional approval for new loan authorizations of \$1,000,000,000 during 1979-83 with new commitments of \$200,000,000 annually.

² Assumes Eximbank does not accept exposure in excess of \$1,000,000,000 of new lending capital plus recycled funds from payback of earlier loans. Therefore, Eximbank can relend to U.S.S.R. only proceeds from repayment of past loans.

³ Equals carryover commitment and new commitments less disbursements. U.S.S.R. ineligible for Eximbank prior to 1973.

⁴ Assumes for periods in which actual data not available, 2-yr lag between commitment and disbursements.

⁵ Assumes \$49,000,000 of undisbursed commitments as of December 1977, will be entirely disbursed in 1978.

⁶ In 16 direct loans to the U.S.S.R., Eximbank has assumed, on average, the 5- through 8-yr maturities. For period after 1985 when repayment of 1979 loans begins. Annual repayments through 1985 reflect actual amounts due from U.S.S.R.—illustration, the table assumes equal annual repayments of principal in years 5 through 8.

⁷ Equal cumulative disbursements less cumulative repayments.

⁸ Equal total net cumulative commitments plus principal outstanding.

⁹ Assumes Eximbank continues to finance 45 percent of each export contract.

Under the assumptions, 1979 new commitments (line 1 of table 4) are \$207 million (\$200 million of new funds plus \$7 million available from repayment of earlier loans). This particular 1979 commitment is disbursed in 1981 (line 4) and repayments from the 1981 disbursements are accomplished in four equal increments in years 1986 through 1989 (line 6). Repayments through 1985 reflect actual amounts due Eximbank from the U.S.S.R.

Applying similar assumptions to subsequent years, annual new commitments increase only slightly and peak at \$217 million in 1982 (line 1). In 1984, however, the \$1 billion of new lending authorization is exhausted. If the bank then relies only on funds recycled from repayment of earlier loans, and holds its exposure to a maximum of about \$1.5 billion, new commitments must decline to a low of \$21 million in 1984 before funds from payback of the 1979 commitments begin to become available. Such repayments would not again permit new commitments exceeding \$200 million until 1988.

A similar, but delayed, cycle applies of course to disbursements of funds and the exports they finance (lines 4 and 11). Assuming that Eximbank loans finance 45 percent of the value of the export, with commercial banks, suppliers, or the buyer providing the remaining 55 percent, the \$207 million committed in 1979 and disbursed in 1981 would play a role in the financing of \$460 million of 1981 exports. Of course, if Eximbank moves to match other Western official credit programs and lends more than 45 percent of the value of an export contract, total exports generated by \$1.5 billion in Eximbank lending would be correspondingly less. However, the assumption of 5 through 8 year maturities employed in the Table 3 model and the Table 4 example seems realistic, based on Eximbank's past history of lending to the U.S.S.R., and in consideration of the 8½ year maximum maturity allowed under the "gentlemen's agreement" to which the major industrialized Western countries have subscribed.

Under the assumption of 45 percent financing by the Eximbank, the effect on exports would peak in 1984 at \$482 million, falling in 1986 to \$47 million and gradually recovering to a new peak of \$744 million in 1993. By 1995 the original investment of about \$1.469 billion of loan capital, through recycling, has resulted in total loans of about \$3.465 billion (line 5), supporting exports totalling \$7.707 billion (line 12).

The "valley" in lending capability illustrated by Table 4 as occurring if exposure is held constant is, of course, not something that would be unique to the U.S. Eximbank. Rather, it may pose a dilemma for all those Western countries which have extended large amounts of long-term official credits or guarantees and/or insurance on private credits in recent years. Although lending maturities vary somewhat among Western countries, most official credits to the U.S.S.R. have been in the 8-10 year category and frequently incorporate substantial grace periods (often up to 5 years) before principal repayments commence. Consequently, with major extensions of credits to the U.S.S.R. beginning in the early 1970's, various lender countries will face the prospect of either reducing official financing for exports or continuing to increase exposure. In the interests of developing new markets in the East, governments have welcomed the short-term boost to exports provided by their long-term lending. However, a need in the years ahead to further increase risk exposure in order to continue a high level of new official credits may be less welcome.

Chapter 15. IMPACT OF EXIMBANK ON U.S. EXPORTS

BY JANE GRAVELLE*

CONTENTS

	Page
Summary	227
I. Introduction	227
II. Value of the Eximbank direct loan program	228
III. Calculation of export impact for 1975	228
IV. Extension of results to 1976	229
V. Factors affecting the magnitude of the export estimates	229
VI. Comparison of the current estimate with that contained in the Treasury study	229
Appendix	230

SUMMARY

This report estimates the expected impact of Eximbank on exports for 1975 and 1976. The method used is based on supply and demand curve analysis and the use of price elasticities (relationships which indicate the percentage change in quantity demanded and supplied associated with a given percentage change in price). The estimates indicate that the Eximbank direct loan program increased exports by about half a billion dollars in 1976.

I. INTRODUCTION

The Eximbank program provides several forms of assistance to stimulate exports: export guarantees for export loans, direct loans at lower than market interest rates, discount loans and export insurance. The most significant program in terms of budget outlays and expected effects on exports is the direct loan program. This direct loan program provides loans at discount rates which are lower than loans which could be obtained in the marketplace. If one assumes that at some interest rate these loans could be obtained, then the direct loan program would be perceived by foreign purchasers as the equivalent of a price reduction, as long as the seller does not capture any of the initial subsidy.

From the point of view of U.S. sellers of export products, the effect is as if the demand for these Eximbank subsidized exports had shifted upward. Therefore, if supply and demand elasticities are known and the percentage price reduction can be determined, conventional application of elasticities will yield a new value of exports.

*The author is a Specialist in Taxation and Fiscal Policy, Economics Division, Congressional Research Service, Library of Congress.

II. VALUE OF THE EXIMBANK DIRECT LOAN PROGRAM

The Congressional Budget Office has estimated the subsidy value of the direct loan program for 1975.¹ The procedure used was to determine the present value of the difference between the going rate of Eximbank direct loans and an alternative commercial rate and was based on a weighing of maturities. The study assumed a 6 percent rate for Eximbank and a 12 percent rate for alternative commercial loans. The present value was estimated at \$683 million for 1975. In that same year, the total of Eximbank direct loans was \$2.69 billion.

According to the Eximbank 1976 Annual Report, direct loans accounted for about 38 percent of the total value of exports which had some Eximbank direct loan financing.² Therefore, the subsidy value as a percentage of total export volume is 9.6 ($(\$683/\$2,690) \times 0.38$).

III. CALCULATION OF EXPORT IMPACT FOR 1975

From the point of view of U.S. exporters, the demand curve for these goods has shifted upward. The increased value of exports can be derived from the following formula:

$$\text{Percentage change in exports} = \frac{Ed(1+Es)P^*}{Ed + Es}$$

Where

Ed = price elasticity of demand

Es = price elasticity of supply

P^* = subsidy value expressed as a percention reduction in price.

The derivation of this formula is shown in the Appendix.

The Treasury Annual Report on the Domestic International Sales Corporation (DISC) made use of price elasticities of supply and demand in estimating the impact of DISC on exports, in a somewhat similar manner to this estimate.³ That study indicated a demand elasticity of 1.9 and a supply elasticity of 5. Inserting these values along with the 9.6 percent value for P^* leads to:

$$\text{Percentage change in exports} = \frac{(1.9)(1+5)(0.096)}{1.9+5} = 0.1586$$

Now assuming that the actual observed value of exports is the amount reported by Eximbank and represents the new equilibrium, the observed value of exports would be 1.1586 times the original value. The increase in exports is equal to the observed value minus the original value.

The elasticity analysis indicates that for 1975 the increase in exports due to the subsidy value of the direct loan program was (.1369) times the observed value of exports related to Eximbank.⁴

¹ Congressional Budget Office. U.S. Government Involvement in Commercial Exports: Program Goals and Budgetary Costs. November, 1977.

² Export-Import Bank of the United States. 1976 Annual Report.

³ Department of the Treasury. The Operation and Effect of the Domestic International Sales Corporation. 1975 Annual report, April, 1977.

⁴ To solve for x , the original level of exports: $1.1586x = \$E$; where $\$E$ = the observed value of exports.

Therefore: $x = \$E/1.1586 = \$E \times 0.8631$.

The incremental increase in exports is: $\$E$ minus $(0.8631)(\$E)$ or $\$E \times (1 \text{ minus } 0.8631)$ or $\$E$ minus (0.1369) .

Eximbank's annual report indicates that the value of exports relating to direct credits was \$6,642.6 million. Therefore, the incremental impact of Eximbank on exports is \$909 million.

IV. EXTENSION OF RESULTS TO 1976

If this same value can be applied to 1976 loans of \$4,895.8 billion, the resulting estimate for 1976 would be \$670 million. However, it seems likely that the subsidy value would have decreased from 1975 to 1976 because interest rates on Eximbank direct loans were about two percentage points higher. However, this interest rate effect is partially offset by the higher portion that direct credits were as a percentage of total export value related to direct credits. As a result the estimate would be expected to be somewhat lower, and in the neighborhood of half a billion dollars.

V. FACTORS AFFECTING THE MAGNITUDE OF THE EXPORT ESTIMATES

As with any estimate, this present estimate is based on a series of assumptions which influence the outcome. Relaxation of these assumptions would tend to influence the outcome in various ways. The following is a brief discussion of the directional effects of some of the assumptions.

There is one assumption which would tend to understate the estimate. The estimate assumes that the only Eximbank program which has a significant impact is the lower rates allowed on Eximbank direct credit loans. Thus the impact of the Eximbank guarantee and credit programs and the implicit guarantee in the direct credit program⁵ are not considered. While it may be reasonably assumed that these programs have a much smaller effect than the value of lower interest rates, if they could be quantitatively measured they would tend to increase the estimate.

The estimates assume that the entire subsidy is initially captured by the purchaser, an assumption which, if incorrect, tends to overestimate the effect of Eximbank on exports.

The third factor which affects the estimate is the assumption of fixed exchange rates. However, it is unclear what directional effect the assumption of flexible exchange rates would have, since the Eximbank program generates an increased demand for dollars but also may involve the equivalent of addition to the U.S. investment position abroad, effects which work in opposite directions in affecting the price of the dollar.

VI. COMPARISON OF THE CURRENT ESTIMATE WITH THAT CONTAINED IN THE TREASURY STUDY

The estimate generated in this report is substantially smaller than the estimate generated by the Treasury Department in their paper, "Additionality" in the Activities of the Export-Import Bank of the

⁵ Note however that the price reduction estimates allow a very high commercial interest rate (12 percent). One would expect that funds could be borrowed in private markets at some interest rate.

United States.”⁶ This study estimated a total incremental increase of \$3,870.7 million in fiscal year 1976 due to the Eximbank program. This amount is almost eight times as large as the estimate generated in this paper. A very small portion of the difference can be found in the use of slightly different statistics from those in the Eximbank report. In addition, this estimate includes amounts for guarantee and insurance programs of \$498 million; thus the number directly comparable to the estimate in this report is \$3,372 million.

The major reason for the difference is that the Treasury study is based on determining “additionality” factors. These additionality factors assume that a specified percentage of exports are additional given certain characteristics. In fact, it appears that a very large portion of the additionality associated with direct credits is due to the assumption that loans with certain characteristics (such as long maturities) mean that the sale would not have been made at all without such a characteristic.

The Treasury study indicated that the basis for their additionality factors is popular assumptions. Given such a qualitative basis for these estimates, it is of course difficult to assess such an estimate.

APPENDIX

The elasticity formula is derived from a basic supply and demand equilibrium, where:

$$(1) \quad Qd(P) + C = Qs(P)$$

where

Qd = quantity demanded

Qs = quantity supplied

P = price

c = a shifter parameter denoting the distance the demand curve lies to the right (along the horizontal quantity axis) because of the subsidy.

The first step is to totally differentiate equation (1);

$$(2) \quad \frac{dQd}{dP}dP + dc = \frac{dQs}{dP}dP.$$

Note that the elasticity of demand, Ed , can be expressed as:

$$(3) \quad -Ed = \frac{dQ}{dP} \frac{P}{Q}$$

and the elasticity of supply, Es , can be expressed as:

$$(4) \quad Es = \frac{dQ}{dP} \frac{P}{Q}$$

By substituting (3) and (4) into (2):

$$(5) \quad -EdQ \frac{dP}{P} + dc = EsQ \frac{dP}{P}.$$

Dividing through by Q :

$$(6) \quad -Ed \frac{dP}{P} + \frac{dc}{Q} = Es \frac{dP}{P}$$

⁶ Reprinted in U.S. Congress. House. Hearings before the Subcommittee on International Trade, Investment and Monetary Policy, of the Committee on Banking, Finance and Urban Affairs, on H.R. 11314, to Amend and Extend the Export-Import Bank Act of 1945. March 13-17, 1978, pp. 54-66.

The term dc/Q represents the percentage shift of the demand curve to the right. This movement also involves a shift up in the price which can be expressed as:

$$(7) \quad Ed = \frac{dc}{ds} \frac{P}{Q} \text{ or } \frac{dc}{Q} = Ed \frac{ds}{P}$$

where ds equals the shift along the vertical axis. Denoting ds/P as P^* as the percentage exogenous increase in price:

$$(8) \quad -Ed \frac{dP}{P} + EdP^* = Es \frac{dP}{P}$$

$$(9) \quad \frac{dP}{P} [-Ed - Es] = -EdP^*$$

$$(10) \quad \frac{dP}{P} = \frac{-EdP^*}{-Es - Ed} = \frac{EdP^*}{Ed + Es}$$

The new equilibrium quantity corresponding to this new price can be measured as a movement along the supply curve. Since:

$$(11) \quad Es \frac{dP}{P} = \frac{dQ}{Q}$$

then:

$$(12) \quad \frac{dQ}{Q} = \frac{EsEdP^*}{Ed + Es}$$

The total percentage change in the value of exports is:

$$(13) \quad \frac{d(PQ)}{PQ} = \frac{PdQ + QdP}{PQ} = \frac{dQ}{Q} + \frac{dP}{P}$$

Therefore:

$$(14) \quad \frac{d(PQ)}{PQ} = \frac{EsEdP^*}{Ed + Es} + \frac{EdP^*}{Ed + Es} = \frac{Ed(1 + Es)}{Ed + Es} P^*$$

Part IV. U.S.-SOVIET AGRICULTURAL TRADE

U.S. agricultural exports are a major component of its trade with the Soviet Union and other Communist countries. In the past, large, sporadic Soviet grain purchases had destabilizing effects on international grain markets and U.S. domestic prices. Since the signing of the five-year grain agreement in 1975, U.S.-Soviet agricultural trade has stabilized considerably, and the Soviet Union has become a large and consistent importer of U.S. grains.

Chapter 16 of this volume, "Soviet Agriculture and the Grain Trade" examines current agricultural trade and performance in the USSR, suggesting that, due to inefficiencies in production, low productivity and uncertain weather conditions, the Soviet agricultural sector will most likely lag behind other sectors of the economy. As a result of unpredictable agricultural performance the leadership's desire to increase livestock herds, raise meat production, and improve the Soviet diet, it is likely that the United States will continue to be a major source of feedgrain imports to the Soviet Union.

Chapter 16. SOVIET AGRICULTURE AND THE GRAIN TRADE

BY RONDA A. BRESNICK AND JOHN P. HARDT*

CONTENTS

	Page
Historic background.....	235
Soviet agricultural performance in the mid-1970's.....	237
Eastern Europe.....	238
The grain trade.....	239
Conclusion.....	242
Statistics.....	243

Poor agricultural performance due to unfavorable weather in 1963, 1965, and 1975 has propelled the Soviet Union into the role of major importer in the world grain market. In recent years, with the Soviet Union emerging as a large, albeit intermittent, grain importer, the United States has become the Soviet's major grain source. A Soviet leadership commitment to raise meat output—a goal which depends upon sustained increases in feedgrain availability—accounts for steadily increasing imports of corn and soybeans, with demand less dependent than wheat on the vagaries of weather. Due to a continuing need for feedgrain and an intermittent need for wheat in crop shortfall years, it is likely that Soviet agricultural imports will remain substantial, continue to rise but also widely range from year to year.

It appears possible that the Soviet Union might become not only a significant but also stable factor in the U.S. agricultural export market with the existence of the 5 year grain agreement and other agricultural understandings. An expanding, predictable Soviet demand for U.S. cereal grains, feedgrains and soybeans would improve the U.S. balance of payments situation and have a steadying influence on the world grain market. In addition, it is likely that in the years ahead, the East European countries—particularly Poland, Czechoslovakia and the German Democratic Republic—will purchase increasing amounts of feedgrain and wheat from the United States as such imports from the USSR become less likely. These East European demands, which exceeded Soviet imports in some recent years, might add further benefits to the United States if they were both expanding and predictable.

HISTORIC BACKGROUND

In 1928, to extract investment funds for needed industrial growth, Premier Joseph Stalin began to collectivize Soviet agriculture. Forced grain extractions and harsh penalties for grain hoarders, including starvation, deportation and execution were carried out

* The authors are Research Assistant and Senior Specialist in Soviet economics respectively, at the Congressional Research Service, Library of Congress.

against all segments of the peasantry. Poor weather conditions and resistance to collectivization led agricultural production to plummet, resulting in the great famine of 1932-1933 which—according to some Western estimates—took up to five million lives, virtually wiping out the kulak or wealthier peasant class.

World War II and the German seizure of most of the Soviet Union's agricultural land interrupted a slow and only partial recovery. The aftermath of the war found Soviet Russia's grain heartland devastated, the peasantry dislocated, and millions of military and civilian war dead. By 1948, although collectivization had been restored, industrial recovery was given priority over the devastated agricultural sector. Government control over the peasant population continued to be absolute until Stalin's death in 1953, and agricultural production remained at or near pre-revolutionary levels.

Nikita Khrushchev, after coming to full power in 1956, began an intensive campaign against the works and policies of Stalin, charging him, among other things, with criminal neglect of the agricultural sector. To help rectify the years of abuse, Khrushchev raised procurement prices for agricultural products by as much as 300 percent over several years. The government abolished centralized State control over agricultural equipment and began to sell its tractors to state collective farms, providing a further incentive to produce. A more accurate system of reporting agricultural statistics was introduced to substitute for Stalinist exaggerations of agricultural productivity. In an extensive effort to increase crop output, Khrushchev brought vast amounts of additional acreage under cultivation in West Siberia and Kazakhstan and introduced corn-growing to Soviet farms on a massive, although apparently excessive, scale.

Even after Khrushchev's needed reforms, Soviet agriculture still lagged far behind that of the West and remained vastly undercapitalized. The poor performance of agriculture reflected the low priority which had been assigned to it throughout the years. Only after Khrushchev's downfall, hastened by the 1962-64 crop failures, did the Kremlin reassess agricultural policy and allot more resources to farming. Secretary Brezhnev, in the March 1965 Plenum of the Soviet Communist Party, announced that the agricultural sector would receive special priority under the new government and allotted large increases in capital investment on a scale beyond Khrushchev's inclination. The average annual percentage rate of growth of investment in agriculture was 9 percent during 1966-70, and 9.6 percent during 1971-75. However, increases in 1976 and 1977 have been only 4 percent and 2.5 percent respectively. Capital investment plans for 1978 call for an increase of less than 2 percent above 1977. This slowdown seems largely related to the general tightening of investment funds planned throughout the economy.

In spite of much evident progress, Soviet agriculture is not easily being changed into highly mechanized, capital-intensive agribusiness such as is found in Western Europe and the United States. A major reason is the falling productivity of investment capital. Although the amount of investment has increased, the productivity of added capital has steadily fallen for a decade.

In an effort to deal with falling capital productivity the Central Committee of the Communist Party, on June 1, 1976, ordered new measures to streamline agriculture and put it on a more efficient and intensive basis. The decree from the Central Committee set out provisions for increased cooperation among farms, more intensive specialization, and close links between farming and industry.

In a report to the Central Committee in July 1978, entitled "On the Further Development of Agriculture of the USSR", Brezhnev restated the leadership's commitment to the agricultural sector and the party's fundamental policy of steadily increasing capital investments in agriculture. [The share of agriculture in overall investments has grown from 20 percent under the 7th Five Year Plan to 23 percent under the 8th Five Year Plan, 26 percent under the Ninth Five Year Plan and to more than 27 percent under the 10th Five Year Plan.] In his report, Brezhnev expressed concern that although more capital investments and material resources have been allocated to agriculture each year they do not "yield the proper returns in the form of output". He stressed the need to intensify agricultural production and strengthen the material and technical bases of agriculture, noting that for the first two years of the Tenth Five Year Plan the target for gross agricultural production was not met. He particularly stressed that grain production remains the most urgent job in agriculture.

SOVIET AGRICULTURAL PERFORMANCE IN THE MID-1970's

In 1975, the agricultural sector suffered a major setback when poor weather conditions resulted in the lowest harvest—140MMT—under the Brezhnev leadership. Grain production was less than two thirds of the planned goal and as a result, net livestock production, directly affected by the feed grain shortage, fell 7 percent for the year. Total agricultural output fell by 9 percent, because of the poor harvest, thereby forcing any future livestock programs to a standstill for the next several years.

Historically, the USSR has stressed the production of food grains such as wheat and rye, however, the expansion of the livestock herd has significantly raised demand for feed grain and oil concentrates. Although taking this need into account, Soviet planners are having difficulty reorienting the agriculture sector to the production of livestock feed. Problems in growing corn and soybeans—two major sources of high protein livestock feeds—have contributed to large import requirements to satisfy growing demands for the herds.

With a lower level of oil concentrates, Soviet livestock rations are considerably inferior to US rations in protein and digestible nutrients. Correspondingly, livestock output per equivalent caloric unit of feed is much lower for the USSR than the United States. Dr. Gale Johnson, an economist from the University Chicago, noted that it takes the Soviets one year—twice as long as Americans—to produce a hog of 190 pounds. With an animal stock roughly equal to that of the US, the Soviets obtain only about $\frac{3}{4}$ the yield in animal products. Also, because Soviet livestock do not eat as much total feed as their American counter parts, Soviet cattle yield less beef than American cattle.

Unable to make up the 1975 feed grain shortfall, the Soviets were compelled to import grain extensively from the West (they committed themselves to a 5-year grain import agreement with the United States in October 1975), release reserve stocks, cancel export commitments to Eastern Europe, and increase slaughtering to conserve available feed and grain supplies.

The 1976 grain output reached 224 million metric tons, 60 percent more than the 1975 crop, however, it contained substantially more moisture and trash. With a larger harvest, the Soviets were able to increase livestock herds, begin rebuilding grain reserves and increase the weight of the animals being marketed.

The 1977 grain harvest once again fell short of its target reaching only 195.5 MMT. This shortfall of approximately 18 MMT, was attributed primarily to poor weather conditions with most of the losses occurring in the region east of the Volga River. Although disappointing, the 1977 grain crop was the fourth best in history and a vast improvement over the 1975 crop of 140 MMT.

According to Soviet President Leonid Brezhnev, the 1978 grain harvest totalled 235 MMT, an all time record.

EASTERN EUROPE

Most East European governments, like the Soviet Union, are placing a stronger emphasis on increasing agricultural output and the productivity of land and labor. Particular emphasis has been placed on animal output in recent years, as East European leaders attempt to satisfy the increasing demand for meat products caused by rising incomes. To accomplish this, more resources have been channeled into the agricultural sector in the form of increased investment in machinery and equipment, improving technology on farms, providing farmers with more incentives, and developing pricing systems more responsive to market conditions.

Agricultural performance has remained uneven in spite of increased allocations. Various factors contribute to this unevenness, with weather being a major factor. While wheat and rye crops were affected only moderately by unfavorable weather—such as drought—during 1975, feed grain crops were hurt more severely. As a result, Eastern Europe imported more than 6 MMT of grain from the United States that year in efforts to sustain the rate of growth of animal output.

According to the U.N. Economic Commission for Europe (ECE), the COMECON region had its highest grain production in 1976, despite unfavorable weather. Total grain output of about 302 MMT—nearly one-fifth above the average for the last five years—resulted largely from record harvests in the USSR, Romania, and Bulgaria. Grain production rose elsewhere except in Hungary and the German Democratic Republic (GDR). The ECE attributed the all-time high to the more intensive use of modern farming methods and the greater mechanization of agricultural work. Although progress in mechanization of agriculture has been impressive in Eastern Europe, its level, except in Czechoslovakia and the GDR, is still behind that of Western Europe.

During 1977, total agricultural production in Eastern Europe remained unchanged compared with 1976. Although livestock production increased, it was offset by a drop in crop output, further widening the gap between feed requirements and domestic feed supply.

Grain imports during the 1977/78 period have reached and estimated 13 million tons. The East European trade deficit—in part caused by lagging agricultural production, the deterioration in the terms of trade and the eagerness of the Eastern countries to supply their consumers with increasing quantities of meat at artificially low prices—continued to rise in 1977 putting serious agricultural import constraints on each country. Future increases in such imports will turn on the ability of the Eastern countries to raise exports and the willingness and ability of exporters to continue to extend credits.

Agricultural production plans for 1978 vary in Eastern Europe from a planned 2 percent in Hungary to a 9 to 16 percent planned increase in Romania. Crop production overall is scheduled to grow faster than livestock production. Increases in grain output are being particularly encouraged to help reduce import requirements.

The East European countries have chronic shortages of hard currencies, and therefore the financing of agricultural imports is difficult. Consequently, the denial of official U.S. agricultural credits from the Commodity Credit Corporation (CCC) is an obstacle to U.S. agricultural trade with the area. Three East European countries—Poland, Romania and Yugoslavia—have been eligible for CCC credits and a fourth—Hungary—became eligible in 1978. During 1977, CCC credits to Eastern Europe totaled about 75 million, virtually all going to Poland.

During 1978, in an effort to increase US agricultural exports, legislation was introduced in the Congress which would have, among other things, authorized the Commodity Credit Corporation to extend commercial credit to non-market economy countries that are presently denied Most Favored Nation status. While such credits were made available to the PRC, they were not extended to those East European countries unwilling to adhere to the provisions of the Trade Act of 1974.

Aggravating the overall problems of finance and lagging production is the fact that the USSR, itself beset with agricultural shortfalls, has been forced to cut back on its exports to Eastern Europe. Thus the East European countries have become gradually more dependent upon the West for future grain needs.

THE GRAIN TRADE¹

On four occasions in recent years, Soviet leaders have been compelled to purchase huge quantities of grain from foreign markets. In 1963, the Soviet Union's grain harvest fell to 92 million tons from the 1962 level of 109 million tons, and Soviet leaders purchased grain on the world market. In 1964 they imported 9.9 million tons of grain, including 1.8 million tons from the United States. A further disap-

¹ For statistics on "U.S. Agricultural and Nonagricultural Trade With Centrally Planned Economies, 1972-1977," see appendix pp. 306-307.

pointing harvest in 1965, plus the need to rebuild grain reserves, increased total grain imports to 21.4 million metric tons from 1964-66.

The year 1972 was disastrous for Soviet agriculture and a crucial one for Soviet policy-makers. An unusually harsh winter and a short summer led to massive crop failures, and the import of 39.4 million metric tons of grain in 1972 and 1973. The United States sold 25 percent of its 1972 wheat crop to the Soviets, a total of 12 MMT of wheat. Also sold were 6MMT of US feed grain and 1MMT of soybeans. The total USSR imports in that year were 29 MMT.

The Commodity Credit Corporation extended a credit of \$750 million (of which \$550 million was actually used) to the Soviet Union for imports of US grain. The credit was extended for a three-year period at interest rates of $6\frac{1}{8}$ to $9\frac{1}{2}$ percent. Under the wheat export subsidy program that began in 1949, the USDA provided subsidies to US grain exporters in order to compensate them for the difference between domestic prices (which prior to 1972 had been relatively high) and lower world market prices. Thus exporters to the Soviet Union were provided subsidies to sell US wheat at \$1.63-1.65 per bushel—the market target price—that they had purchased in the United States at \$1.68 to \$2.49 per bushel.² Since little non-US grain was available on world markets at the time of the Soviet purchase the target price was considered in retrospect to be too low. In addition, critics of USDA's handling of the transactions maintain that no subsidy was needed to consummate the sales. Criticism of the 1972 sales was based largely on the cost to US taxpayers, which, including subsidies to US shippers who carried the grain, totaled an estimated \$305 million. The secrecy with which sales were concluded also became an issue, particularly among producers who claimed they would not have sold their grain so early or so cheaply if they had known the size of the Soviet purchases. Defenders of USDA's action countered that these costs were offset by net savings to the U.S. Treasury of \$457 million as a result of a reduced storage cost for U.S. stockpiles and reduced federal payments to U.S. farmers. However, the inflationary impact of the sales, the rapid depletion of U.S. grain reserves, and the inability of developing countries to compete for scarce grain, either as concessional sales or donations, generated pressures for change in USDA's operating procedures.

In the aftermath of criticism that enveloped the 1972 grain deal, several laws have been enacted pertaining to the regulation of agricultural trade. The Agriculture and Consumer Protection Act of 1973, P.L. 93-86, requires exporters of certain agricultural commodities to report any contract for export to the Secretary of Agriculture. According to regulations adopted in pursuance of the law, a grain exporter must now notify the USDA within one business day of any sale in excess of 100,000 tons per day or 200,000 tons per week, to a single destination. The Jackson-Vanik amendment to the Trade Act of 1974, enacted in January 1975, prohibits CCC credits to non-market economies with restrictive emigration policies.

² In mid-August 1972 the USDA announced that it would no longer maintain the target price at the \$1.63-\$1.65 level. On September 22 the subsidy was reduced to zero, and market demand set the export price.

Another significant law passed after the 1972 grain deal was the 1974 amendment to the Export Administration Act, which authorizes the President to institute export controls if any level of foreign demand resulted in an excessive drain of scarce materials and serious domestic inflation.

In addition to the above legislation regulating trade, in 1973, the United States and the USSR signed a joint agreement to exchange agriculture information. Article II of this agreement stipulates that both countries shall work toward the exchange of information such as crop forecasts for current and future grain production, consumption, and international trade. However, despite the presence of U.S. agricultural attaches in Moscow, the United States has had continuing difficulties in obtaining Soviet agricultural information. The regime's extreme sensitivity about its past agricultural failures and the historical importance of grain stocks explains why crop predictions are still treated as virtual state secrets by the USSR. Critics have called for the Soviets to give US officials reasonably advanced warnings on grain needs from year to year and permit on-the-spot inspection of Soviet croplands to determine more accurately the size of Soviet harvests from year to year. Representatives of the USSR have indicated that they can provide only the annual and 5-year goals for crop production and that they would like more information on US long-range plans for agriculture.

The effect of Soviet grain sales on U.S. food prices has been a controversial factor in U.S.-Soviet grain trade. The 1972 sales contributed to the highest round of food price increases for the American consumer in several decades. However, total U.S. grain exports to other countries, especially Japan and Western Europe, were considerably higher than grain exports to the USSR in 1972, and therefore also contributed to the high food prices.

Soviet purchases in 1975 were not as large as those of 1972 and therefore did not have such an adverse effect on food prices. Nevertheless, some price increases, due at least in part to the Soviet grain deal, did occur. Supporters of the Soviet grain sales argued that moderate price increases were necessary to keep U.S. farm prices from dropping in a bumper-crop year, and to allow farmers to break even. The USDA suggested that there was a "crossover point" (the amount of grain the U.S. could sell to the USSR before experiencing any large inflationary effects) of 14 million tons. However, critics stated that the crossover point had already been reached and additional sales to the USSR during 1975 would cause much more than a minimal impact on prices. On July 23 the International Longshoremens' Association (ILA) convention gave unanimous approval to a resolution authorizing ILA leadership to forbid loading of grain for shipment to the USSR if the shipments would boost US food prices. On July 29, Federal Reserve Board Chairman, Arthur Burns testified before the Joint Economic Committee that grain sales to the USSR could lead to a sharp rise in food prices. Partly in response to such events, Secretary of Agriculture Earl Butz on August 11, 1975, asked U.S. grain exporters to voluntarily withhold future sales to the Soviets until such time as the domestic price impact of such sales could be more clearly ascertained.

The low level of U.S. grain stocks was cited as a further reason why U.S. sales to the Soviets should be more carefully analyzed. On August 18, longshoremen began their boycott of ships loading grain for the USSR. On September 9, 1975, President Ford extended the moratorium on sales until mid-October and announced his intention to seek a long-term trade agreement with the USSR and the ILA agreed to end its boycott.

In October of 1975 the U.S. and the USSR signed an agreement providing for annual Soviet grain purchases from the United States between 1976 and 1981. This agreement has provided a greater degree of stability to U.S.-Soviet grain trade. The agreement commits the Soviets to buy at least 6 million tons of U.S. grain—half wheat and half corn—per year starting October 1, 1976. The agreement also provides that whenever the United States has a total supply of grain of more than 225 million metric tons in a given crop marketing year, the USSR has the option to purchase an additional 2 million metric tons—or a total of 8 million metric tons of wheat and corn—in each crop marketing year without consulting the U.S. government. Also provided under the agreement are consultations by the two Governments in advance of purchases in excess of 8 million tons of wheat and corn in any one crop year. Shipment of grain under the agreement is to be made in accord with the U.S.-U.S.S.R. Maritime Agreement. Soviet purchases of other U.S. grains such as barley and grain sorghums or of soybeans are not covered by the agreement. After the agreement was signed on October 20, President Ford ended the export controls on grain sales to the Soviet Union.

Because the 1976 record grain crop in the U.S.S.R. made domestic grain more available and reduced import requirements, during the 1977 calendar year, the USSR was able to cut grain imports from the U.S. substantially, purchasing only 6.7 million tons. (Wheat imports were 3.0 million tons, a substantial increase above the 1976 total of 1.7 million tons, but corn imports at 3.6 million tons, declined by almost 60%.)

Under the terms of the U.S.-U.S.S.R. trade agreement, during the first year (October 1976-September 1977) Soviet wheat and corn imports totaled 6 million tons, the minimum amount called for under the agreement. During the second year of the agreement (October 1977-September 1978) USSR imports were significantly higher due to the 1977 grain crop shortfall. Purchases of U.S. wheat and corn totalled 14.6 million tons.

CONCLUSION

Agriculture will remain a most uncertain link in the Soviet economic chain for many years to come. Inefficiencies in production, low productivity, and an ideological preference for increasing industrial capability at the expense of agriculture almost guarantee that agriculture will lag behind other sectors of the Soviet economy. Since the Soviet Union, like all nations, is unable to insulate the agricultural sector from capricious weather conditions and natural limitations, it is not likely to increase meat consumption to Western levels without being propelled frequently into the world feedgrain market. The 1972

and 1975 grain purchases clearly illustrate the desire to continue expanding livestock herds and increase meat consumption rather than risk a decline in herds and the attendant fall in the quality of the Soviet diet. The United States can expect a growing Soviet demand for large amounts of feedgrain, and depending on the weather, an occasional demand for bread grain. A growing dependency on the U.S. for increasing the amount of protein in the Soviet diet, some Western observers believe, could give the United States increased bargaining power in its political and commercial relationships with the Soviet Union. On the other hand, with a growing need for feedgrain, the USSR can become a significant and stable factor in the U.S. agricultural export market thus contributing to an overall improvement in U.S.-Soviet relations.

Periodic grain sales to the USSR have raised several important policy questions:

(1) How much grain should the United States continue to sell to the USSR at a time when there is a critical need for U.S. grain in the underdeveloped countries and other markets?

(2) Should the United States continue to sell grain to the USSR on a nondiscriminatory basis without first obtaining Soviet crop forecasts, advance warnings on future grain needs, and/or Soviet promises of participation in an international grain organization?

(3) Should the United States link its grain trading policy to Soviet political affairs?

(4) Should the Federal Government use its pre-notification policy on grain sales to control sales including embargoes as appropriate?

(5) In an effort to increase U.S. agricultural exports, should the United States extend CCC credits to all non-market economy countries?

STATISTICS

U.S. AGRICULTURAL TRADE WITH THE U.S.S.R., 1971-77

[In millions of dollars]

Commodity	1971	1972	1973	1974	1975	1976	1977 ¹
Exports:²							
Wheat.....	0.7	160.0	556.6	124.1	672.7	264.0	426.8
Coarse grains ³	27.1	232.7	360.8	177.6	457.8	1,179.0	405.6
Corn.....	25.2	186.5	294.5	159.5	452.6	1,164.5	405.6
Soybeans.....	(4)	53.6	87.2	(4)	2.9	126.4	154.3
Cattle hides.....	10.9	9.6	1.1	7.9	5.2	2.5	.8
Fruits, nuts, and berries.....	1.5	1.1	2.8	5.3	5.8	5.8	15.3
All other.....	4.4	2.4	8.6	8.8	25.9	22.6	43.0
Total.....	44.6	459.4	1,017.1	323.7	1,170.3	1,600.3	1,045.8
Imports:							
Bristles.....	(5)	.2	.5	.4	(5)	(4)	(4)
Casein and glue.....	(4)	(4)	.2	2.0	1.7	.7	1.7
Furskins.....	2.7	3.0	3.1	4.5	3.5	6.1	7.4
Gelatin.....	(4)	(4)	.3	.3	(5)	(5)	(5)
Licorice root.....	.1	(4)	(4)	(4)	1.0	.6	(4)
All other.....	.2	.6	.6	1.3	1.0	1.0	1.8
Total.....	3.0	3.8	4.7	8.5	7.2	8.4	10.9

¹ Preliminary. Includes transshipments through Canada only.

² Including transshipments through Canada, Belgium, the Netherlands, and West Germany.

³ Includes corn, rye, barley, oats, and sorghum.

⁴ = Negligible or none.

⁵ Less than \$500,000.

Source: "U.S.S.R. Agricultural Situation. Review of 1977 and Outlook for 1978." U.S. Department of Agriculture, Economics, Statistics, and Cooperative Service.

U.S.S.R. FOREIGN TRADE IN GRAIN, TOTAL AND WITH THE UNITED STATES, 1971-72—1977-78¹

[In million metric tons]

Year beginning July 1	Wheat			Rye, net trade	Feed grains			Rice, net trade	Total grain		
	Imports	Exports	Net trade		Imports	Exports	Net trade		Imports	Exports	Net trade
Total grain trade:											
1971-72	3.5	5.8	-2.3	-0.2	4.3	0.7	+3.6	+0.2	8.0	6.7	+1.3
1972-73	15.6	1.3	+14.3	+1.0	5.9	.4	+5.5	+1.1	22.6	1.7	+20.9
1973-74	4.5	5.0	- .5	+1.0	5.5	.9	+4.6	+1.1	11.1	5.9	+5.2
1974-75	2.5	4.0	-1.5	(²)	2.7	1.0	+1.7	+1.2	5.4	5.0	+ .4
1975-76	10.1	.5	+9.6	0	15.5	0	+15.5	+1.3	25.9	.5	+25.4
Average	7.0	3.3	+3.7	+ .4	6.9	.6	+6.3	+1.2	14.6	4.0	+10.6
1976-77	4.5	1.0	+3.5	0	5.5	2.0	+3.5	+1.2	10.2	3.0	+7.2
1977-78 ³	8.0	1.0	+7.0	0	11.0	1.0	+10.0	+1.2	19.2	2.0	+17.2
1978-79											
1979-80											
1980-81											
Average											
Trade with the United States: ⁴											
1971-72	(²)	0	(²)	0	2.9	0	+2.9	0	+2.9	0	+2.9
1972-73	9.5	0	+9.5	+ .2	4.0	0	+4.0	0	13.7	0	+13.7
1973-74	2.7	0	+2.7	+ .5	4.6	0	+4.5	0	7.7	0	+7.7
1974-75	1.0	0	+1.0	(²)	1.3	0	+1.3	(²)	2.3	0	+2.3
1975-76	4.0	0	+4.0	0	9.9	0	+9.9	+1.1	14.0	0	+14.0
Average	3.4	0	+3.4	+ .2	4.5	0	+4.5	(²)	8.1	0	+8.1
1976-77	2.9	0	+2.9	0	4.6	0	4.6	(²)	7.5	0	+7.5
1977-78 ³	4.0	0	+4.0	0	9.5	0	9.5	+1.1	13.6	0	+13.6
1978-79											
1979-80											
1980-81											
Average											

¹ Plus equals net imports and a minus, net exports.² Less than 50,000 metric tons.³ Forecast.⁴ U.S. grain exports to the U.S.S.R. are shown as U.S.S.R. imports.

Source: "U.S.S.R. Agricultural Situation, Review of 1977 and Outlook for 1978" U.S. Department of Agriculture, Economics, Statistics, and Cooperative Service.

Part V. MARITIME PRACTICES

U.S.-Soviet maritime relations have been characterized by aspects of both cooperation and conflict. Both countries have benefited from maritime cooperation. For example, the 1972 U.S.-U.S.S.R. Maritime Agreement has provided the Soviet Union better access to U.S. grain and other goods, and increased opportunities for using its expanding merchant fleet to earn hard currency. The maritime agreement also facilitated U.S. grain exports to a new market, thereby making a positive contribution to the U.S. trade balance. In addition, the agreement reserved a part of the grain trade for U.S. flagships. At the same time, increased Soviet involvement in world maritime activities has generated considerable controversy about the economic and political consequences of Soviet maritime policy. In particular, the rapid expansion of the Soviet merchant marine and its penetration of Western markets has caused concern about Soviet intentions.

Chapter 17 of this volume, "Maritime Developments Involving the Soviet Union, the United States, and the West," highlights areas of common interests and areas of conflict in U.S.-Soviet maritime developments, particularly in shipping, fishing, off-shore drilling and deep-sea mining. The author examines U.S.-Soviet maritime issues within the context of three alternative ocean regimes—open access and free use, national management, and international management. U.S. legislation on shipping and deep-sea mining, which may have considerable impact on bilateral relations in these areas, is also discussed.

Chapter 17. MARITIME DEVELOPMENTS INVOLVING THE SOVIET UNION, THE UNITED STATES, AND THE WEST

BY JOHN P. HARDT

CONTENTS

	Page
I. Overview -----	247
II. Changing ocean regimes-----	249
III. Shipping -----	250
IV. Fishing -----	257
V. Offshore drilling and deep seabed mining-----	259
VI. Areas of cooperation and conflict in Soviet-American oceans policy--	261
Appendix. Basic ocean regime alternatives-----	262

I. OVERVIEW

Maritime policy in such fields as shipping, fishing, and off shore drilling and deep sea mining may be sources of Great Power cooperation or conflict. From the viewpoint of many in Washington Soviet marine developments represent areas of East-West conflict require more immediate remedial attention. However, in each area positive steps toward cooperation have been taken in recent years laying the basis for possible further progress founded on mutual interest. In shipping, fishing, and deep sea mining these communities of interests coexist with competitive and divergent views. Some of the central topics in these areas of potential conflict or cooperation are highlighted herein because they represent United States policy and legislative issues on which the outcome is currently in balance. Current conflicts of interest are singled out where prompt action can yet facilitate solutions conducive to putting United States-Soviet maritime relations on a longer term track of cooperation. In order to fully comprehend where either cooperation may be possible and fruitful or confrontation or conflict necessary also we need to broaden our conceptual framework so as to be able to examine specific maritime policy issues in the broader context of alternative ocean regimes: open access and free use, national management and international management. These alternatives of confrontation or cooperation stressed by President Carter in his June 1978 speech at Annapolis is the national policy context within which the specific maritime issues may be viewed.

Some of the common interests and specific areas of conflict in the maritime and ocean's developments may be summarized as follows:

Shipping

The United States, the other Western industrial nations and Soviet Union share an interest in efficient, low cost oceanic transport. A larger

volume of overseas trade at least cost via national carriers is generally thought, on both sides, to serve our respective national economic and security interests. Adherence to the agreed rules of the various shipping conferences may best serve these interests as agreed to in the United Nations agreement on "Code of Conduct for Liner Conferences" in April 1974.

On the other hand low, discriminatory pricing designed to maximize short-term earnings may destabilize the shipping market. Fair prices needed to ensure reasonable return on capital outlays and improve ship technology are more likely in a stable international maritime market. But tying imports or exports automatically to the national carriers of one or the other nation may not encourage efficient low-cost transport, in the long run. A step, at this time, toward establishing a basis of resolving differences might well be Soviet participation in the various shipping conferences and adherence to the conference rules. The problem the United States, Japan, and the United Kingdom, and the Federal Republic of Germany appear to see with recent Soviet marine expansion are focused variously on rapid growth in Atlantic, Pacific, and intra-European river-ocean shipping.

Fishing

Technical means for catching various species of fish runs well ahead of the reproduction and replenishment of fish stocks. Extension of coastal waters, in some cases out to 200 miles, facilitates national conservation programs and control of fishing grounds by indigenous fleets. Joint recognition of the need for conservation and respect for each others coastal waters have facilitated cooperation, but problems continue. Fish do not respect political boundaries nor, sometimes do fishing boats. The necessary conservation measures can not be effectively implemented solely within national waters. The Soviet Union, Japan and the United States could consider undertaking new and constructive global and regional initiatives toward fish conservation involving all the major fishing nations. Where Soviet conflicts with the United States over shared fishing waters have been reduced by establishment of the 200 mile U.S. national zone, some frictions between Japan and the Soviet Union continue.

Offshore Resources and Deep Sea Mining

As on-shore reserves of energy, metals, and other materials become scarce and more expensive to exploit, offshore and deep sea sources are becoming economically competitive with the traditionally cheaper, more accessible sources on land. The Soviet Union has some of the most abundant, potentially economic offshore deposits of petroleum and minerals. The United States and other Western nations with less potential resources have special advantages in advanced offshore technology.

The United States and the Soviet Union also have considerable interest and potential ability to extract minerals from the deep seabed; although actual capabilities of the United States run well ahead of any other nation at this time. The stalemated discussions in the Law of the Sea conference increase the likelihood of unilateral national ex-

exploitation of the deep sea treasures in the near future. A coordinated approach, along with other nations capable of exploiting the deep seabed appears prudent for the avoidance of conflict.

Great powers, especially those with systems as different as that of the United States and the Soviet Union, may be expected to have divergences of national interest and competition. As we explore widened areas of cooperation we may find the potential for mutual advantage in oceans cooperation outweighing the possible gains in bilateral competition. Need for exchange of materials and technology may give weight to the benefits of cooperation over the cost of continued independence and self sufficiency.

Specific attention may be given to joint exploration and exploitation of rich oil and gas reserves in the offshore of the Soviet Union where Soviet national resources may be productively wed with advanced American technology. Beyond national boundaries lie other resources in the deep seabed. The economic and technological basis appears available for rapid expansion of deep seabed mining. A joint Soviet-American understanding on the thorny jurisdictional issues may ease the uncertainties in this area and permit early development of benefit to Great Powers as well as all nations.

An American-Soviet understanding and cooperation in these ocean areas could provide the umbrella for adjudications of other East-West maritime conflicts, e.g. between Japan and the U.S.S.R. Further aggravation of American-Soviet conflicts would tend to exacerbate other East-West conflicts. We shall, in this context dwell mainly on American-Soviet cooperation and conflict.

II. CHANGING OCEAN REGIMES

The potential for U.S. Soviet conflict and cooperation in maritime affairs may be inadequately perceived if the focus is exclusively on the issues at hand. Many of the policy alternatives advocated for issues of shipping, fishing, and offshore drilling and ocean mining imply assumptions about basic ocean regimes. A fairly detailed examination of the basic regime alternatives is therefore appropriate. Dr. Seyom Brown and his associates have structured these alternatives under the concepts of open and free use, national management, and international management. Some rather extensive extraction from their work may be useful:¹

Open access and free use.—The traditional principle by which the ocean is considered common property, open to the access and free use of all but belonging to no one.

National management.—With the sharpening of political and economic competition for the oceans, as well as the increased risk of ecological damage, the most prevalent response has been to extend national responsibility to the area.

International management.—Such a regime alternative would involve regional and global cooperation and institutions designed to serve not only the interests of their immediate constituents but also those of the international community as a whole.

¹ These categories have been elaborated by Dr. Seyom Brown and his associates, and their description is quoted at some length in the appendix to this chapter. Seyom Brown, Nina W. Cornell, Larry L. Fabian and Edith Brown Weiss, *Regimes for the Ocean, Outer Space and Weather*; Brookings Institution, 1977, pp. 13-18, 29-34. (Italics added)

While one or another of these basic patterns are implied in the various approaches to shipping, fishing, offshore drilling and deep seabed mining, it does not appear likely that the international community will resolve the specific issues by a conscious choice of a basic regime. Rather, developments in the various fields of ocean use are likely to mature in the form of specific conflicts and limited initiatives at cooperation is likely within specific sectors of ocean use:

In the shipping field, bills have been introduced in the U.S. Congress effecting non-national carriers operating in U.S. trade, which would involve the Soviet Union's merchant marine operations (H.R. 9998 of the 95th Congress, passed July 1978 and S2873 introduced by Senator Inouye April 11, 1978). The Ocean Shipping Act of 1977 was signed into law in October 1978.^{1a}

Fishing rights and conservation violations in the 200 mile U.S. continental limit and the possibilities for tightening fishing regulations in the open seas are under continuous discussion by the two governments.

American deep seabed hard mineral legislation affecting sovereign interests in foreign policy matters relating to maritime powers is under active consideration in the Congress. (H.R. 3350 of the 95th Congress.)

However, in evaluating these initiatives and suggesting alternatives, the decision-makers in Congress and the Executive should be aware of the large ocean regime implications.

The specific ocean fields will be discussed in more detail in order to provide a balance sheet of likely areas of U.S.-Soviet conflict and cooperation in ocean affairs as well as selective East-West considerations. We will then return to a consideration of the usefulness of the basic regime alternatives as a guide to policy in each of the fields.

III. SHIPPING

The Soviet merchant marine operations on major ocean trading routes have increased markedly in recent years at a time when United States liner flag carriage on these various shipping routes has modestly decreased or risen very slightly. Other nations carrying third country (by flag ships other than those of national origin or destination of cargo) trade have increased their cargo tonnage more, especially in petroleum transportation, but there has been an apparent shift of non oil trade from U.S. carriers on certain trade routes; some to Soviet ships² (see table 1). Although the Soviet percentage increase in Table 1 is not unusually high it has been concentrated in certain routes (Pacific and Atlantic), and reportedly of high value cargo and non-oil trade.³ Moreover the reason for the shift is perceived to be consistently low rates which may be considered "unfair" and "discriminatory" in the context of U.S. legislation, as it would require many American lines to operate at a loss to compete.⁴

^{1a} The Federal Maritime took steps potentially leading to suspension of Soviet Baltic Shipping Company from U.S. trades. Soviet authorities in January, after hearings at the FMC, indicated suspension might be a basis for abrogating the bilateral shipping agreements.

² Maritime Administration of U.S. Department of Commerce, *Expansion of Soviet Merchant Marine into the U.S. Maritime Trades, August 1977*; Federal Maritime Commission, *Soviet Maritime Activities in Liner Trades of the United States, October 1977* [hereafter referred to as MARAS and FMC, respectively].

³ FMC, pp. 11-13.

⁴ *East-West Markets* May 29, 1978, p. 11.

A similar pattern applies for the Federal Republic of Germany and Japan as relates to Soviet shipping. Soviet ships currently carry an average of 80% of all goods in bilateral FRG-USSR trade. Poland and the GDR have also cut into trade of the FRG fleets. German-Soviet talks on bilateral trade have occurred, but the Soviet Union has reportedly resisted discussions on cross trade involving the United Kingdom, the Benelux, and Germany.⁵ The extension of Soviet trade dominance of the Danube to the Rhine when the connecting canal opens is also a concern.

Japanese authorities report a similar problem:

The Transport Ministry says that the Japanese shipping industry, whose survival depends on carrying international cargoes, has been seriously affected financially by "profit-disregarding, rate-cutting" competition from the Soviet Union.

The ministry said in a recent statement that Japan's 40 ocean shipping companies sustained an aggregate loss of \$110 million in the fiscal year ended last March 31. More than half of the nation's international shipping companies were reported in financial difficulty.⁶

TABLE 1.—GROWTH OF FLEETS OF MAJOR MARITIME COUNTRIES, DEC. 31, 1965, AND DEC. 31, 1975, OCEANGOING SHIPS OF 1,000 GROSS TONS AND OVER

(Tonnage in thousands)

Country	1965		1975		Percent tonnage increase
	Number	Total dead-weight tons	Number	Total dead-weight tons	
World total.....	7,974	215,668	22,123	553,675	+57
Liberia.....	1,313	30,906	2,546	132,694	+329
Japan.....	1,333	16,450	2,051	63,238	+184
United Kingdom.....	2,052	216,385	1,576	54,913	+108
Norway.....	1,365	23,538	991	47,796	+103
Greece.....	916	10,388	1,804	37,638	+262
Panama.....	564	7,228	1,556	22,112	+206
France.....	542	6,406	444	17,690	+176
Italy.....	588	6,917	633	16,081	+132
U.S.S.R. ¹	990	8,000	1,655	15,353	+92
United States privately owned.....	948	14,650	580	15,028	+3
West Germany.....	843	7,184	611	13,453	+87

¹ The Maritime Administration concurs with the Navy data on vessels and deadweight tonnage of the Soviet fleet. The Navy data excludes the coastal/river type and fishing fleet vessels over 1,000 grt on the assumption that they normally operate in the Soviet inland/coastwise and fishing trades and are therefore not relevant for deep-sea domestic and foreign trade operations.

Source: Maritime Administration, U.S. Department of Commerce and Department of the Navy.

Japanese shipping interests are concerned about future developments:

The Soviet Union, which owns the world's second-largest cargo carrying fleet, is expanding its business on Pacific and Far Eastern trade routes by giving shippers lower rates than shipping companies of other nations can offer.

According to Japanese shipping circles, Soviet ships operated by the Government-owned Far Eastern shipping corporation totaled 47 vessels on the Pacific and Far Eastern routes at the end of 1977.⁷

Whereas in 1976 Soviet participation directly in U.S. liner oceanborne foreign trade was less than 3 percent in tonnage, thirteen of the top 20 commodities by value carried by the Soviet fleet in the U.S. trade were high-value liner cargoes representing 36 percent of the total value of all cargoes carried. There has also been a concentration

⁵ Ibid.

⁶ Junnosuke Ofusa, "Japanese Shipping Hard Hit", *New York Times*, August 7, 1978.

⁷ Ibid.

of Soviet trade in "cross trade" cargoes, involving third countries rather than bilateral trade:

Since the signing of the U.S.-U.S.S.R. Maritime Agreement in 1972, bilateral liner cargoes carried by the Soviet fleet have averaged around 10-15 percent of their total liner carriage with the remaining 85-90 percent being "cross trade" cargoes.⁸

Soviet liner carriage during 1977 shows a concentration of cargo carriage on the following selected trade routes (percentage of total trade in parentheses):

TR 7: North Atlantic to West Germany-----	(12.0)
TR 8: North Atlantic to Netherlands, Belgium-----	(4.1)
TR 10: North Atlantic to Mediterranean and Black Sea-----	(3.9)
TR 17: Atlantic, Gulf, Pacific to Indonesia, Malaysia and Singapore-----	(10.3)
TR 21: Gulf to United Kingdom and Continent-----	(4.4)
TR 22: Gulf to Far East-----	(12.8)
TR 29: Pacific to Far East-----	(6.1)

An official U.S. view is that the problem of Soviet penetration of major U.S. routes is due to "unfair" rate practices:

By 1985 the Soviet liner fleet carriage of U.S. liner cargoes is forecast to increase to 6.6 percent if the Soviet Union continues its present practice of rate cutting. However, if the Soviets eventually become members of the liner conferences, their level of penetration would thereafter remain relatively constant.⁹

The question of liner conference rates was raised earlier in the so-called "Leningrad Agreement" between Federal Maritime Commissioner Karl Bakke and Soviet Minister Guzhenko in July 1976. Another proposed two-tier rate agreement—the A/AA system . . . allowed the Soviet Baltic shipping company to operate under a temporary lower trade rate schedule for two years until Soviet ship technology in the trade could be upgraded to be more competitive. This exception, which would have provided a basis for Soviet membership in the North Atlantic Conference, was found objectionable by the U.S. Department of Justice and eventually withdrawn.

Other western trading nations have expressed similar concern and interest in the Soviet Union joining shipping conferences:

During the summer talks between Soviet Merchant Marine Minister Guzhenko and Edmund Dell, British Secretary of State for Trade in London, Mr. Guzhenko admitted that Soviet lines were undercutting liner conference rates. He said, however, that the Soviet Union wanted to join the North Atlantic and Pacific conferences and did not intend to act in any way to deepen differences. They also discussed major problems on East African and other routes.¹⁰

It should be noted that conferences are formed for long run stability of maritime operations at some sacrifice in competition:

It has been the traditional practice of major ocean carriers to band together in conferences on important trade routes for the purpose of limiting competition, and establishing a pattern of rates that will insure reasonable profits. Traders have been willing to accept these "cartels" because they were offered a regular service at somewhat predictable rates.¹¹

⁸ MARAD, op. cit., p. 4.

⁹ Ibid., p. 4.

¹⁰ East-West Markets, Nov. 28, 1977, p. 11.

¹¹ Robert G. Adam and Marvin H. Wittereen, "Soviet Maritime Activities in Liner Trades of the United States" in *Soviet Oceans Development*, Senate Commerce Committee, GPO, Oct., 1976, p. 357.

In 1974-75 some 79 member states of the United Nations, including the U.S.S.R. and the United States, agreed to certain principles and objectives for developing a Code of Conduct for Liner Conferences:

Desiring to improve the liner conference system;

Recognizing the need for a universally acceptable code of conduct for liner conferences;

Taking into account the special needs and problems of the developing countries with respect to the activities of liner conferences serving their foreign trade; and

Agreeing to reflect in the Code the following fundamental objectives and basic principles:

(a) The objective to facilitate the orderly expansion of world sea-borne trade;

(b) The objective to stimulate the development of regular and efficient liner services adequate to the requirements of the trade concerned;

(c) The objective to ensure a balance of interests between suppliers and users of liner shipping services;

(d) The principle that conference practices should not involve any discrimination against the shipowners, shippers or the foreign trade of any country;

(e) The principle that conferences hold meaningful consultations with shippers' organizations, shippers' representatives and shippers on matters of common interest, with, upon request, the participation of appropriate authorities; and

(f) The principle that conferences should make available to interested parties pertinent information about their activities which are relevant to those parties and should publish meaningful information on their activities.¹²

In addition to rate cutting there is some concern that the current composition and projected expansion of the Soviet fleet indicate an intent to cut farther into the profitable cross trade rather than concentrate on meeting the bilateral trading needs.

The technologically advanced intermodal fleet forecast for construction through 1985 is not considered to be in line with future Soviet foreign seaborne trade vessel requirements.¹³

The expansion of the Soviet fleet is anticipated to continue at past high rates and the technology gap is expected to narrow or close in most categories.¹⁴

Soviet Merchant Marine Minister Timofei Guzhenko in projecting a growth of 4.6 million deadweight tons in the current Five Year Plan (1976-1980) characterized the growth as "slow and steady".¹⁵

The Soviet fleet composition is indicated in Table II and compared with the U.S. privately owned merchant fleet. In time the scale and technology of the U.S. and Soviet ships seems likely to draw closer, weakening the case for temporary two rate arrangements of the Leningrad Agreement.

The legislative remedy being sought to this perceived problem of liner trade penetration is legislation on third country carriers. Senator Inouye of Hawaii introduced a bill prior to the "Leningrad Agree-

¹² United Nations Conference on Trade and Development (UNCTAD), *United Nations Conference of Plenipotentiaries on Code of Conduct for Liner Conference: Final Act*, Vol. II 1975, p. 4.

¹³ MARAD, *op. cit.*, p. 3.

¹⁴ The Soviet merchant marine is projected by MARAD to be 1.717 vessels of 18.4 million dwt in 1980 and 1,812 vessels of 23 million dwt in 1985. This projection is based upon the historical growth trend of the Soviet merchant marine since 1959.

The Soviet intermodal fleet in 1975 consisted of 30 vessels totaling nearly 158,000 dwt with a 1981 forecast of 54 vessels totaling 1.2 million dwt.

During 1975 and 1976 the Soviet merchant marine began operating large full container-ships and Roll-On/Roll-Off (RO/RO) vessels in the U.S. liner trades. These vessels are considered to be the technological equivalent of western intermodal vessels. *Ibid.*, pp. 3-4.

¹⁵ Albert Axelbank, "Soviet Official Reveals Plan for Merchant Fleet Expansion" *The Journal of Commerce*, March 4, 1978, p. 1.

ment" on the subject which apparently was set aside by that understanding. Hearings chaired by Representative John Murphy of New York in the House Merchant Marine Committee in October 1977 on Soviet liner penetration revived consideration of such legislation, (Ocean Shipping Act of 1977, H.R. 9998), subsequently signed into law.

On the more cooperative side the United States and Soviet Union agreed to maintain a shipping rate of \$16 a long ton during 1978 for U.S. grain exported to the U.S.S.R. in the first half of 1977. U.S. flag ships carried 41.3 percent of the Soviet bound grain, above the one-third share guaranteed by the agreement.¹⁶

TABLE 2

	U.S. privately owned merchant fleet composition by vessel type (Jan. 1, 1976) ¹			Soviet merchant fleet composition by vessel type (Jan. 1, 1976) ²				
	Number	Total dead-weight tons (in thousands)	Percent of total dead-weight tons	Average dead-weight tons	Number thousands	Total dead-weight tons (in thousands)	Percent of total dead-weight tons	Average dead-weight tons
Total.....	580	15,028	100	25,900	1,655	15,353	100	9,300
Tanker.....	250	9,475	63	37,900	286	4,980	32	17,400
Combination oil/bulk/ore carrier (OBO).....	2	164	1	82,200	4	370	2	92,500
Dry cargo.....	328	5,389	36	16,400	1,365	10,003	66	7,300
Dry bulk carrier.....	17	380	3	22,400	110	1,277	8	11,600
Freighters.....	161	2,170	14	13,500	798	6,466	42	8,100
Full container.....	110	1,802	12	16,400	12	82	1	6,800
Roll-on/roll-off.....	13	191	1	14,700	18	85	1	4,700
Barge carrier.....	23	809	5	35,200				
Timber carrier.....					399	1,959	13	4,900
Refrigerated.....	4	37	(4)	9,200	28	134	1	4,800

¹ Based on Maritime Administration data.

² Based on Department of Navy data.

³ Percent of dry cargo may not add due to rounding.

⁴ Actual percentage is 0.2.

Congressional attention has not been solely directed to the drain of dollars to provide for non-American flag transport for non-oil trade. Tanker changes to bring in Middle East and other foreign oil to the United States has also come in for attention. Tanker costs have perhaps the more significant adverse long term effect on U.S. balance of payment (see table 2). Representative Murphy sponsored a bill to require that a percentage of oil imported to the United States be carried on American flag ships. (H.R. 1037—Energy Transportation Security Act of 1977). Although the bill was strongly supported it was not passed. The concern expressed by Congressional supporters of the legislation was not only over the balance of payments deficits occurring from tanker costs but also U.S. security interests related to dependence on foreign flag carriers.

Soviet policy in maritime activities may be injurious or supportive of United States interests and policy. The chronic shortage of hard currency, i.e. dollars, yen, Deutsche mark, francs, pounds, appears to be the economic touchstone of Soviet maritime policy, and the core of the problem.

¹⁶ *Wall Street Journal*, October 18, 1977.

Marine insurance has been another sore point in Soviet-American maritime relations:

The long-simmering dispute between the U.S. marine insurance underwriting industry and the Soviet Union has exploded into a presidential finding that the Soviets have put "an unreasonable burden and restriction on U.S. commerce" in allocating coverage.

An interagency committee will be appointed to study possible U.S. action to end Soviet practices found to be in violation of Section 301 of the 1974 Trade Act. Under the law the Special Trade Representative (STR) may retaliate selectively against anti-U.S. discrimination in bilateral services as well as in trade.

A hearing conducted last spring by the STR, in response to a complaint by the American Institute of Marine Underwriters (see EWM Feb. 21, 1977, p. 3), produced these findings:

The Soviet Union requires virtually all insurance on U.S.-USSR trade to be placed with Ingosstrakh, the official insurance monopoly, thereby excluding U.S. marine underwriters. The Soviets have applied a higher rate to insurance of U.S. flag vessels in bilateral grain trade than U.S. insurers would have charged.

The U.S. could retaliate by levying high fees on Soviet ships using U.S. ports, or by barring them from ports or some aspects of bilateral trade. A countervailing duty on Soviet insurance fees and other possibilities will also be discussed, and a report submitted to Congress as required by Section 301.

"Our goal is a negotiated settlement," an STR Official told EASTWEST MARKETS. "If the Soviets do not respond positively in a reasonable amount of time, we will have to go ahead. We have told them directly that their actions are considered unreasonable."¹⁷

Earlier, S. Krapovitch, chairman of Ingosstrakh, the Soviet insurance company, had argued that the Soviet position was in line with the guidelines of the International Chamber of Commerce.¹⁸ On 26 October, 1978, the dispute was resolved by memorandum of understanding which developed a formula for sharing of marine insurance.

The short run goal for the Soviet Ministry of Merchant Marine appears to be to maximize hard currency earnings. In order to do this the Soviet Union attempts to carry as much of its own trade in its flag ships and add as much non Soviet cargo to those activities as possible. Maximizing tonnage of non Soviet cargo to earn hard currency often leads to practices not accepted as fair competition among Western liner companies, rate cutting and rebates for example. Shipping services may have netted the U.S.S.R. \$600 million in 1976, possibly more in 1977.¹⁹

The claims of unfair and discriminatory pricing are based on a perception that Soviet shipping rates do not cover full, including capital, costs as western lines calculate them. Although the Soviet liner trade is based on a cost accounting system, there seems to be an important difference between "soft" and "hard" currency costs and revenue. "Soft" currency includes rubles, and other nonconvertible East European and third world currencies. Hard currencies are the generally convertible currencies of Western Europe, Japan, and North America. In order to pay for badly needed grain and high technology imports from the West ruble costs are not covered, the argument goes, in order to earn dollars, marks, yen and other convertible currencies. It is noted that in this decade the only year the Soviet Union has had a hard currency trade surplus was 1974 and that the prospects are for future balance

¹⁷ EASTWEST MARKETS, June 26, 1978, pp. 3, 4.

¹⁸ *Journal of Commerce*, September 22, 1977.

¹⁹ "Red Flag, Western Governments Must Do More, Harder About Cut-Price Russian Shipping", *London Economist* June 17, 1978, pp. 89, 90.

of payments deficits which must be financed by increased Western indebtedness, gold sales and other means. It is noted that in Western trade the one major Soviet export has been petroleum. Keeping up high levels of petroleum exports will be difficult. In fact likely reduced petroleum exports will make financing rising Western imports increasingly difficult. In this context every net dollar or equivalent earned by the Soviet Merchant Marine may be not only welcome, but critical.

It is further argued that capital costs are not recouped as outlays are in "soft" currencies. Capital costs for expanding the Soviet Merchant Marine are mainly sustained in soft currency as they rely on Polish and German Democratic Republic (GDR) shipyards as well as Soviet. Current expenses in ship operating costs are, in turn, paid in soft, ruble accounts. With the choice of running over the ruble cost estimates and not recouping investment or earning more hard currency the latter choice would tend to win out. It is in the context of this kind of argument that western charges of rate cutting, sharply competitive Soviet practices may be better understood.

Operating outside the conferences, the Soviet merchant marine is perceived as penetrating U.S. liner trade by unfair and discriminating rate policy; it is not hard to understand the pressure for remedial American policy or legislation. This point of view was summarized by the Federal Maritime Commission in a presentation to the U.S. Congress as follows:

Soviet penetration in the U.S. liner cross trades has increased steadily from 1971 to the first half of 1977 . . .

Given this historical trend toward increasing penetration and industry reports which predict that the Soviets will triple their containership and ro/ro tonnage, increased Soviet penetration of the U.S. liner trades does not seem unreasonable.

Unless the Soviets consider membership in conferences in the near future, their increased vessel capacity could cause serious instability in our international trades.²⁰

The often unstated fear of Western shippers is that if Western carriers are eliminated from trading lanes the Soviet liners would exploit their monopoly position by raising the rates higher than present conference rates and otherwise use their monopoly position.

In the long run it appears to be in the Soviet interest to join shipping conferences and obtain a more stable share of the international trade at higher rates. Cutting rates and offering in expensive services to obtain trade may provide some small short term gain in additional dollar income but, in the long run, rate cutting should be counter to Soviet interests as it would reduce short run hard currency earnings. It is assumed likely that Western governments will not permit their shipping companies to go bankrupt, withdraw from the seas, and leave the trade to the Soviet lines.

To be sure to obtain the mid- and long-term advantages of stable market income from the liner trades Soviet vessels must be able to provide services similar to other carriers, charge competitive rates, and be acceptable otherwise to the conference members. In some trades Soviet equipment is currently inferior and acceptance of the conference rates would place them in a short term disadvantage. It was in this context

²⁰ *FMC*, pp. 11-12.

that the Soviet membership was proposed at the "Leningrad Agreement" on the basis of a short term exception in rates for participation in the North Atlantic conference to allow time to improve Soviet ship technology in the Atlantic conference trade. The logic of this agreement may still hold even though exception was not allowed, at that time.

There is a broader inducement for the Soviet Union to join shipping conferences and become a stability factor in the world market. If the Soviet Union is to improve its balance of payments position it needs more cooperation from the West, the United States in particular, in tariffs and other trade restrictions, e.g. MFN, credits—especially government credits such as provided by Eximbank and Commodity Credit Corporation—and industrial cooperation in technology transfer. In this broader context of commercial relations or economic interdependence the Soviet Union was well aware of the poisoning effect of widespread American perception that grain imports in 1972 were one sided. The Soviet leaders may wish to balance the negative effect of charges of "unfair" grain purchasing and maritime practices in the broader balance sheet of improved East-West commercial relations.

IV. FISHING

In the 1950's the Soviet Union began to extend its fishing activities beyond coastal and riverine waters to the Atlantic and Pacific. During recent decades the catch has increased about 18 percent per annum, from 1.8 million tons in 1950, to over 10 million tons in 1975.²¹ This increased catch resulted from a dramatic increase in the size and structure of the fishing fleet. It brought Soviet fishing vessels into direct competition in the Atlantic and Pacific with American fishing interests.

Several Pacific Coast bilateral agreements were negotiated between the United States and the Soviet Union in the 1960's:

- (1) Agreement between the United States of America and the Union of Soviet Socialist Republics on fishing operations in the northeastern Pacific Ocean, commonly referred to as the "Kodiak Gear Agreement," signed December 14, 1964;
- (2) Agreement between the United States of America and the Union of Soviet Socialist Republics of fisheries for King Crab, commonly referred to as the "Crab Agreement," signed February 5, 1965; and
- (3) Agreement between the United States of America and the Union of Soviet Socialist Republics on fisheries in the northeastern part of the Pacific Ocean off the United States coast, once referred to as the "Contiguous Fishery Zone Agreement" and now usually described as the "Northeast Pacific Fisheries Agreement," signed February 13, 1967.²²

International negotiations had been successful in establishing in 1949 the International Commission for the Northwest Atlantic Fisheries (ICNAF). The United States has taken the leadership in pressing for the necessarily difficult negotiations on conservation upon the 17 members of the Commission (Cuba being the most recent member). Bilateral negotiations and international mechanisms had helped address the urgent problem of conservation not only in Atlantic and Pacific waters of direct interest to the U.S. fishing industry but else-

²¹ Milan A. Kravanja, "The Soviet Fishing Industry: A Review," in *Soviet Oceans Development*, Senate Commerce Committee; GPO: October 1976, p. 377.

²² Lorry M. Nakatsu, "U.S./U.S.S.R. Cooperation in Fisheries," in *Soviet Oceans Development*, Senate Commerce Committee, GPO, October 1976, p. 464.

where on the high seas. The Soviet fishing fleet then reached all waters, even the seas off Antarctica.

The extension of the coastal waters to 200 miles have returned to American primacy the control of fishing and responsibility for conservation in traditional American fishing waters. However, depletion problems among selected species continue and are not effectively addressed by either the bilateral and multilateral agreements or the extended coastal zone. Recently the United States extended its sovereignty to a 200 mile zone from its coasts by legislation. In accordance with this legislation the Fishing Conservation and Management Act of 1976 (P.L. 94-265), a governing international fishing agreement [GIFA] was signed between the U.S.S.R. and the United States on November 26, 1976. This, with some 20 other agreements [GIFAs] established United States control over its 200 zones. The United States also withdrew from the ICNAF on December 31, 1976, two months prior to the date, 1 March 1977, when the Act extended U.S. management to the broader dimensions.

Whereas the fishing conflicts between the Soviet Union and the United States have abated, with Japan the issues are, if anything, reportedly more divisive:

Japan, in particular, has suffered from the Soviet 200-mile limit. Its fish quota in Russian-controlled waters dropped 36% in the June-December 1977 period for a year earlier. Fishing areas were curtailed and fleets were slashed by about 1,000 vessels. Following protracted negotiations last year the two nations signed a fishing agreement. But Japanese fishermen complain that Soviet levy arbitrary and inflated fines when their patrol boats confront Japanese fishermen in Soviet waters. They complain, too, of being unreasonably detained by Soviet officials.

Even more abrasive to the Japanese is Soviet naval strength in the Pacific. Some defense analysts in Japan call the Sea of Japan "a Soviet Lake," and there have been mounting calls for increased defense spending by Japan to counter a Soviet naval buildup. Even some Chinese officials have advocated a stronger defense posture by Japan further rolling the military waters.

Soviet diplomats in Tokyo deny a substantial naval buildup in North Asia. They say reports of such an increase are motivated by American and Japanese defense officials who want to increase their military budgets. One Russian says, "We think the Sea of Japan is an American lake."²³

Bilateral relations on fishing between the United States and the Soviet Union are influenced by actions of other nations such as Japan, Peru, and Mexico. The international regime for fishing may be influenced in time by negotiations on the Law of the Sea. However, as the size of catches seems to continue to run ahead of the reproduction of many important species, some joint action by all fishing nations to further conserve fish in the Atlantic, Pacific and seas beyond seem in order. It follows for the above that a bilateral initiative by the Soviet Union and the United States to initiate more comprehensive, global conservation measures might be deemed timely and in the interest of all fishing nations. Traditionally fishing nations have adhered to the ocean regime concept of open use and access. With the increasing need for comprehensive conservation, national management of coastal waters must now be blended with more international management of international fishing if some balance between fish catches and stock is to be attained.

²³ Wall Street Journal, June 6, 1978, p. 48.

V. OFFSHORE DRILLING AND DEEP SEABED MINING

The resources of the continental shelf and deep sea have become important to the Soviet Union and the United States alike. As the United States is now an importer of oil, gas, and many metals, exploitation of resources in the American continental shelf and deep-sea mining in the open seas is very important for American economic growth and balance of payments. The Soviet Union seems to be relatively more endowed in offshore resources; the United States appears to have superior technical capability.

The Soviet leadership's plan for development of world's ocean resources is both integrated with their central economic plans and interconnected with Soviet global policy as illustrated by the following:

The sea's economy today is determined by the fishing industry and maritime transport. The situation will change somewhat as we approach the year 2000. The fishing industry will continue to occupy the leading place in the maritime economy. According to our rough estimates, second place will be taken by the petroleum and gas industry, while maritime transport will move from second to third place. Other branches of the U.S.S.R.'s maritime economy will rise and be developed.²⁴

In the development of the continental shelf issues of open use and access, national or international management are not central as they are in the case of deep-sea mining.

American assessments concur with Soviet estimates of abundant energy resources in the continental shelf of the U.S.S.R.:

Approximately 75 percent of the extensive Soviet continental shelf has good oil and gas potential. . . .

More than 70 percent of the prospective shelf are in the Arctic, where deep depressions containing great thicknesses of sedimentary rocks are present on the shelves and are connected closely with proven oil and gas provinces onshore. These shelf areas, however, will require further study.

Climate and geography, as well as geology, favor continued development of the Caspian region. In the Far East, the Sakhalin shelf and Anadyr basin should be of primary interest because of the discoveries already made there.

The U.S. Geological Survey estimates potential U.S.S.R. offshore gas reserves at 100 to 1,000 trillion cubic feet and potential U.S.S.R. offshore petroleum reserves at 100 to 1,000 billion barrels.²⁵

Joint development of Caspian Sea and Sakhalin deposits by American and Japanese petroleum interest may be the forerunner of more extensive joint efforts. Recent extension of control lists to petroleum and gas drilling and processing equipment suggest a restrictive future United States energy equipment export policy, however.²⁶

Estimates of self sufficiency in onshore minerals suggest less immediate economic pressure on the Soviet Union to move to either offshore or deep sea mining.

With continuing balance of payment problems the Soviet Union may wish to expand its extraction of mineral resources of the deep sea in order to supplement hard currency income. Indeed this would seem

²⁴ S. Mikhailov, review article in *Voprosy ekonomiki*, No. 7, 1972 of *Mirovoi okean i chelovechestvo* (The World's Oceans and Mankind). Moscow: "Ekonomika" Publishing House, 1969.

²⁵ Joseph Riva, "Soviet Offshore Oil and Gas," *Soviet Oceans Development*, *op. cit.*, p. 478.

²⁶ *Federal Register*, August 1, 1978, pp. 33699-33702.

to be in some ways a better candidate for more hard currency income than merchant shipping.

Deep sea mineral mining, presumably within the range of current U.S. economic and technical capability, may, if begun on a large scale soon, materially reduce the prospects of U.S. material shortages in several key materials and reduce the American balance of payment drain by the end of the century.

As evidence of the interest of the U.S. Congress in the riches of the seas, a bill, the Deep Seabed Hard Mineral Act (H.R. 3350) is making its way through Congress. The focus of the bill includes considerations of foreign and national security policy including:

1. Probable effects of the legislation on the law of the sea negotiations;
2. The issue of investment guarantees;
3. The compatibility of licensing arrangements with international law and U.S. foreign policy;
4. Provisions for the protection of the ocean environment;
5. The issue of extraterritorial sovereignty;
6. Reciprocation states provisions;
7. Provisions for an international revenue sharing fund; and
8. Effects of the legislation on the supply of critical minerals and on the economics of current suppliers.

The current interest in pursuing the prospects of deep seabed mining in the U.S. Congress turns in part on the problem of management and the meaning of the concept of common heritage. While in the Law of the Sea discussions, the United States supports the principle of common heritage with regard to deep seabed resources, the issue, to a great extent, revolves around the definition of this concept. Many developing countries consider common heritage to mean common property. On the other hand, the United States considers common heritage to mean common benefit to mankind. For any deep seabed resource to have any benefit or value to mankind, it must be recovered from the seabed; recovery capabilities currently are the property of those who have developed them. While private utilization of this capability will benefit those who have developed it, mankind will ultimately benefit, in the United States view.

Currently the various prospects of international management leave potential American investors and developers in a state of uncertainty. There have been sharp differences among Americans on whether to proceed unilaterally with legislation or proceed collectively within the Law of the Sea context. As the latter Law of Sea discussions drag on the pressure for the former builds up. If a combination of national and international regimes can be worked out that will assure some long term certainty of return on capital there may well be an early beginning of large scale activity. Although the Soviet Union has less pressing current needs for materials and limited offshore technology, the gains in materials and limited hard currency might generate an interest in early Soviet development. Cooperative mechanisms for joint exploration and development of the Soviet continental shelf through forms of U.S.-U.S.S.R. industrial cooperation may be extended to deep seabed effort with some considerable mutual benefit if together the two super powers can spearhead an equitable resolution of the policy differences at the Law of the Sea Conferences.

VI. AREAS OF COOPERATION AND CONFLICT IN SOVIET-AMERICAN OCEANS POLICY

We may consider the selected aspects of Soviet-American oceans policy, shipping, fishing, offshore resources and deep-sea mining in the context of alternative ocean regimes: open access and free use, national management and international management. Therein may be perceived areas for cooperation and conflict in Great Power policy.

A. Open Access and Free Use

We share a continuing interest in the traditional freedom of the seas for navigation. We also appear to share a view that our sovereign national interests in coastal ocean affairs should be continued and expanded as appropriate even to the 200 mile limit. We appear to differ on the open access and free use of fishing rights outside our now extended limits. American interests in conservation of fish appear to extend to all waters; Soviet policy on global fish conservation is less clear.

B. National Management

Most of our areas of common interest in maritime affairs emphasize sovereign national management of resources. These national interests may be modified or adjudicated by bilateral agreements. We have provided greater shipping access to each other's ports and waters. This process may be extended. We have dozens of bilateral fishing agreements which largely affect Soviet fishing in or near our waters, but also involve our common interests in the Atlantic and Pacific fishing banks. We share an interest in national management of the extraction of oil and gas from our continental shelves. In fact we are involved in cooperative ventures in Soviet offshore development in the Caspian Sea and off Sakhalin Island in the Pacific.

We currently do not, however, have the same view on extending some aspects of national management to deep seabed mining. This difference in view may reflect our differing current sense of present need to reduce material shortages and our respective technological capabilities to proceed in expanded deep seabed mining ventures.

C. International Management

In shipping the U.S. prefers adherence to international shipping conference rules to ensure market stability, quality of service and avoid domestic economic impact. The Soviet position may in the long run be compatible with this view, but some competitive practices to date raise questions. Soviet adherence to the UNCTAD agreement for developing a Code for liner Conferences is a promising common basis for discussion.

International commissions and groups to encourage conservation and constructive fishing practices are more akin to the United States policy than the Soviet positions to date. Advantageous bilateral agreements and wider control of national waters may be spread to the entire ocean regime.

Offshore resources exploitation will continue to be a national affair but management of deep seabed mining is much in dispute. The requisites of technical capability and willingness to invest do not necessarily run counter to those of equity and wider distribution of income. In the Law of the Sea discussions apparent differences between the Soviet, United States and Third World positions reflect aspects of these perceptions.

D. U.S.-U.S.S.R. Ocean Policy Problem Agenda

Ocean regimes.—What kinds of ocean regimes will best serve our national and global interests in shipping, fishing, and offshore resource and deep seabed mining activities?

Shipping.—Will the joining and adherence to shipping conferences resolve our maritime differences?

Fishing.—Can the U.S./U.S.S.R. develop a global policy of fish conservation and sharing of the catch by various nations?

Offshore drilling and deep seabed mining.—Is offshore oil and gas resource development an area of likely joint activity?

Can we agree on appropriate management mechanisms to effectively utilize the riches of the deep seabed in an economic and equitable fashion?

APPENDIX. BASIC OCEAN REGIME²⁷ ALTERNATIVES

Open Access and Free Use

This type of regime considers the realm common property, but no one can use it as his own property. No one owns it; no one can be denied entry; no one can collect economic rent for its use; and the only legal constraints on its use are the rules necessary to maintain the open access regime itself. Users have virtually no accountability to the international community, and are accountable to no state other than those in which they hold citizenship. For the most part, they act only to maximize their own direct returns.

For some 300 years now, the concepts of open access and free use have been reflected in state practice and international legal conventions for the ocean. In recent years, these traditional concepts of the law of the sea have been transferred heavily into the evolving law for the use of outer space and the weather and climate. Until recently, the no land realms have appeared particularly congenial to regimes that allow open access and free use for two reasons: being essentially fluid, moving, and intangible, they have been less susceptible than land areas to being sliced up into multiple political jurisdictions; and their vastness or the presumed abundance of their resources gave little reason to limit their use. Except for areas that could be considered natural borders or extensions of national land areas, no attempts to vest any particular party or country with title or dominion to portions of these realms have proved viable.

As indicated above, however, some resources of the nonland realms that were once plentiful have become scarce and, in some cases, even subject to dangerous depletion or degradation because no substantial regulation existed. The increasing scarcity of these resources has made them more valuable; this, in turn, makes serious conflict among potential exploiters more likely. Meanwhile, changing international political norms and growing world interdependence have made it increasingly difficult for the technologically advanced countries to use these realms at will, without obtaining at least the consent of other countries. The weakening of the premise that there is no important incompatibility among users

²⁷ See Seyom Brown; Nina W. Cornell; Larry L. Fabian and Edith Brown Weiss; *Regimes for the Ocean; Outer Space and Weather*; Brookings Institute; 1977; pp. 13-18; 29-34. (Italics added) for full references (copyrighted); reproduced with permission of principal author who kindly reviewed the paper as well).

has begun to undermine confidence in the practicality and legitimacy of open access and free use as the basic prime concept for the nonland realms . . .

The international legal principle that most of the ocean should be accessible to all, and that no one should be charged a fee for its use was premised on the assumption that the ocean resources (ocean space as well as materials) were abundant and that they were unsuitable for division or ownership. The water itself, covering nearly three-fourths of the globe, was hardly scarce, and its fluidity would make a mockery of assignments of title. Harvestable fish, also mobile, were thought to be abundant, if not inexhaustible, and subject to apparently sensible rule that captive confers ownership.

The seminal statement of this doctrine was provided by the seventeenth-century Dutch jurist, Hugo Grotius, whose conceptions still dominate international discourse about the law of the sea. The sea can be the property of no one, maintained Grotius, because its natural characteristics make it incapable of being seized or divided. God must have intended it for common use, because all require its use for navigation and fish. Moreover, he contended, with its inexhaustible supply of waters and food, there can be no morally justifiable grounds for any state to deny its use to any other state.

Actually, Grotius published his *Mare Liberum* (Freedom of the Seas) nearly thirty years after Queen Elizabeth I asserted and enforced the principle of open access and free use against Spain and Portugal. The two Iberian countries, acting under the authority of a Papal Bull that divided the Atlantic Ocean between them had been attempting to interfere with British and Dutch trade with the East Indies. Elizabeth frontally challenged their authority with a major buildup of British naval power, and pronounced in 1580 that "the use of the sea and air is common to all; neither can any title to the ocean belong to any people or private man, forasmuch as neither nature nor regard of the public use permitteth any possession thereof."

Although freedom of access and movement on the high seas was consistent with their naval and shipping interests, the British found the Elizabethan-Grotian conception inadequate protection against continental invasions of their coastal fishing beds. An Englishman, John Selden, led the doctrinal counter-attack against Grotius, arguing in his treatise *Mare Clausum* that the right of dominion gave nations the right to exclude others from claimed portions of the sea, to prevent fishing, navigating and landing, and the taking of gems within territorial water. Tolls and other restrictions of access could be imposed. The ocean's resources *were* exhaustible, argued Selden; its space *could* be divided; its uses could be effectively controlled. Grotius was compelled, by state practice more than by conceding Selden's arguments, to modify his doctrine to the point that it allowed every country to exercise sovereignty over its coastal waters. The real problem he admitted, was to determine how far such coastal prerogatives should extend. But this real problem, given the lack of incentive to extend territorial jurisdiction far from shore, turned out in fact to be a relatively minor issue among the powerful states until the technological revolution of the mid-twentieth century transformed man's uses of the ocean.

Despite the difficulties of maintaining open access to the ocean and free use of its resources as ocean uses proliferate, this principle continues to be propounded as the most valid basis for a general regime by some interests notably military users, shippers, long-distance fishermen, and oceanographers. These interests have been satisfied with the tradition of relatively unimpeded access to the ocean, and are generally opposed to attempts to restrict their movements or put constraints on the type of vessels or equipment they deploy.

National Management

The most prevalent response thus far to the opening up of the ocean, outer space, and the weather to political and economic competition and ecological damage has been to attempt to increase national responsibility for these realms. National governments are still the best institution for ensuring that users of the nonland areas act in accord with broader public interest, both national and international. It can be argued that, unless nations assert greater authority, no agency possessing real power and economic weight will be responsible for the performance of the increasingly complicated management tasks.

The most conspicuous extensions of national management authority have been occurring in the ocean. The claims of most coastal states to twelve-mile territorial

seas are about to be universally recognized—either by a new law of the sea treaty, or by common acquiescence. Many coastal states already claim rights to the resources of margins. Many also claim exclusive national fisheries, unilaterally proclaim wide areas for pollution control, and insist on controlling all scientific research activity off their coasts. Hard mineral mining interests are pressuring their governments to license and underwrite commercial exploitation of the deep seabed.

There are practical arguments for these attempts to replace the traditional ocean regime of open access and free use (beyond the narrow three-mile territorial sea) with zones clearly under the control of specific national governments. Developing countries that border the ocean contend this is the only way to protect the resources off their coast from raiding by more advanced countries or by multinational corporations. Coastal interests cite the need to enforce pollution control, navigation lanes, and traffic separation schemes in congested straits and other crowded international waterways; these situations cannot wait for the sluggish international negotiating process to standardize rules, which would probably be too lax in any event. Mining interests argue that only national governments can provide the security of license and title arrangements that will encourage further progress by the venturesome firms now developing the capability to extract hard minerals from the deep seabed. . . .

Although various maritime interests continue to endorse freedom of the seas, the actual regime that has evolved since the Second World War is more accurately characterized as a regime of creeping national jurisdiction. Unilateral national extensions of areas of oil exploitation, beginning with the Truman Proclamation of 1945, were followed by similar unilateral claims to broad national fishing zones. The law of the sea conferences of 1958 and 1960 attempted to redefine the limits of dence with unilateral practice. But the conference failed to agree on precise territorial sea limits, leaving a legal vacuum for further unilateralness—a convention according coastal states sovereignty over the seabed and subsoil “to a depth of 200 meters or beyond that limit where the depth of the superadjacent waters admits of the exploitation of the natural resources of the said areas.”

By the time the Third Law of the Sea Conference convened in 1973, maritime law was shambles. Only twenty-five countries still adhered to the three-mile territorial sea limit; four nations claimed four-mile limits; eleven claimed six miles; one claimed ten miles; fifty-four claimed twelve miles; one claimed fifteen miles; one claimed eighteen; three claimed thirty; one claimed fifty; one claimed one hundred thirty miles and ten claimed two hundred miles. Assertions of exclusive national fishing zones were almost as varied, although few coastal states claimed less than twelve miles. Many states claimed special-purpose zones of differing width, some for pollution control, others for conservations, still others for general economic or security purposes.

Why not let what has been happening in fact become the new regime in law? Why not make the test of jurisdictional legality whether other countries will respect a unilateral claim? Indeed, it can be argued that such a “positivistic” approach to the law of the sea is fully consistent with the way the interstate system works.

Some economists contend that clear assignment in particular nations of jurisdictional areas of the seabed would cause a more stable investment climate which, in turn, would promote efficient development of ocean resources, reducing their prices to consumers. Many coastal states feel that they could more effectively prevent overfishing, pollution, and general ecological abuse if they were given unambiguous authority over all activities in extended territorial waters.

Some would go so far as to have international law endorse national ownership of all resources in extended coastal zones. Their chief argument is that assigning legal title to national governments would remove two major sources of irresponsibility in regard to care of the resources—namely, the instability of ownership of the resources and, therefore, the lack of sufficient assurance of future gains from present conservation and care; and the inability to insist (under the mantle of international law) that others who penetrate the domain adhere to the local standards of use.

International Management

The other basic regime alternative would feature regional and global cooperation, and institutions designed to service not only the interests of their

immediate constituents, but also the interests of the whole international community in the nonland realms. At a minimum, attempts would be made to stimulate consultative processes capable of reflecting the involved interests and their current and emerging functional interdependencies. Its fullest elaboration contemplates vesting ultimate ownership of the nonland areas in the whole international community; supranational institutions would have the power to make and enforce rules superior to national policies for the nonland areas; national and multinational authorities with the limited membership would be regarded only as custodians, exercising temporary grants of management authority.

International management need not impose a structural unity on the evolving plurality of international arrangements, but it would imply at least substantial international oversight of such arrangements to ensure that the interests of the general international community are served, including the distribution of benefits and the care of global ecologies. Accordingly, international management would bring together highly interdependent functions under umbrella institutions.

Numerous UN resolutions affirm that at least the deep ocean floor and outer space are the common heritage of mankind. This could be taken to mean that they should be used only in ways authorized by the whole community. Additional support for some kind of community regime for these realms is found in the field of political economy.

In domestic economic systems, efficient use of public or collective goods—those which, by nature or by community choice, are precluded from private or special-group ownership—has argued against free-access regimes. Whether the good in question is the community's supply of fresh water, recreational parkland, or essential communications and transportation networks, the hope has proved ill-founded that, in the absence of incentives or sanctions imposed by the community, all users would spontaneously act in their long-term, enlightened self-interest and limit immediate consumption in order to conserve the long-term supply and quality of the resource. Incentives and sanctions run the gamut from charges directly to the user to ownership and management by public corporations. While there remains considerable debate over the substance of the needed limitations on use and the institutions that would enforce them, all modern nation-states have virtually abandoned free-use regimes from handling the resources within their jurisdictions that are not suited for private appropriation.

Domestically, considerations of social justice and equity have tended to reinforce considerations of economic efficiency in the rejection of open-access, free-use regimes for public goods. Even if some users of such goods might take it upon themselves, out of self-interest or community-mindedness, to conserve and care for the resource, social experience suggests that enforced sharing of the burdens of upkeep and protection encourages the users to greater conservation and thus contributes to an overall reduction in the cost of providing the goods. Moreover, such sharing of the burdens strikes most people as just. The other side of the question of domestic social justice relates to the problem of inequitable results: It is generally agreed to be unjust for users who are favored by location or technological capability to act unilaterally, without being held accountable for the consequences to other users—for example, raising the price to others of access to preferred supplies, using up those supplies, or degrading the quality of future supplies.

Internationally, however, such community obligations still operate mostly at the level of aspirations or rhetoric. International management of the nonnational realms presupposes cooperation by the members of the international community (in pursuit of their own best interest) with community norms, interest, and decision processes.

One may conclude that it is more advantageous to act in accord with community interest either because one's own participation in the community yields greater returns (protection or wealth) than could be obtained unilaterally or because one's own support of a community regime is a condition for the participation of others, and their subordination to community norms is a more efficient way to influence their behavior than any attempt to influence them unilaterally. (The predominance of such perceptions among members of national societies explains the persistence of relatively cohesive national communities and their institutionalization in the form of nation-states. The emergence of such perceptions among the states of Western Europe is reflected in the evolving, but still fragile, European Community.) On a world scale, such perceptions are still rare,

and, in the few fields where they exist, they have given rise only to the loosest of supranationalism—as, for example, in the International Atomic Energy Agency, INTELSAT, and some regional fisheries commissions.

The case for substantial international management of the ocean derives from the premise that many ocean resources have become *scarce*, yet remain essentially *indivisible*. The national management approach is a response to the growing scarcity of the resources, but appears to bypass their persisting indivisibility. Advocates of international management fault national management of the ocean on the grounds that it lacks the means to assure that interdependent uses, some of which would be under different national jurisdictions, would be adequately coordinated with one another. National authorities, they argue, would have spans of control too narrow to allocate the relevant external costs.

To reflect adequately the far-flung, often global, interdependencies of ocean users, broadly based negotiating and decisionmaking forums would be required to implement the international management concepts. Moreover, the periodic readjustment of jurisdictional boundaries, the renegotiation of exploitation and fishing quotas—all of which is inevitable as expanding technologies affect the use of the ocean—point to the importance of permanent multinational institutions.

A regime of international management would feature processes and institutions to assure that ocean users would be accountable to those whom they substantially and directly affect; and that ocean users who significantly affect the condition of the ocean itself would be answerable for their actions to the international community. Processes would be needed to relate the various ocean uses to one another and to effect exchanges among them.

International management should be seen more as a process than as a particular institutional configuration. It could evolve incrementally, and eclectically, where it is attractive to core groups of countries because they wish to avoid conflict or because it is more economical to work together. Some of the institutions could be regional, some would be regulation, and the traditional pattern of open access and free use might persist.

Underlying these processes and institutions would be a basic agreement, perhaps tacit, by the members of the international community that the ocean belongs to all human beings in common. Therefore, no segment of the human community, be it a corporation or nation-state, has ocean rights other than those conferred on it by the international community. This would not rule out, before universal collective arrangements are set up, temporary management of parts of the ocean by particular regional or national authorities, who would act as custodians for the human community and remain accountable to it.

Part VI. PROBLEMS AND PROSPECTS

Chapter 18. UNITED STATES-SOVIET TRADE POLICY*

BY JOHN P. HARDT

CONTENTS

	Page
The historical pattern of Soviet-American trade, pre-1970's.....	268
Soviet-American trade prospects come of age.....	270
The disengagement of Congress from United States-Soviet trade negotiations.....	273
The reengagement of Congress.....	275
Trade and diplomacy: Penalties and rewards.....	277
Carter policy: Confrontation or cooperation.....	280

The signing of the U.S.-Soviet trade agreement in Washington, on October 18, 1972, represented a major milestone in the changing U.S. foreign economic policy toward the Soviet Union and the Eastern economies. A new American East-West trade policy conditioned by changing U.S. Soviet commercial relations came after several years of discussion and review of a foreign trade policy designed in the early years of the Cold War. The new commercial arrangements were to be a part of an overall change in U.S.-Soviet diplomatic relations. The political detente between the two countries further was to provide a favorable atmosphere for long-term and mutually beneficial technological transfers; and tightly linked to the evolving commercial and technological relationships which were expected to themselves influence political decisionmaking in both the United States and the Soviet Union. Although the trade agreement did not go into force, as the Soviet Union was unwilling to accept the conditions of the Jackson-Vanik amendment to the Trade Act, many of the commercial understandings reached by the Nixon Administration negotiators were largely held open or continued. To be sure the U.S. government credit window was closed and tariffs were retained at the non-MFN level, but old accounts, such as Lend Lease, were agreed on and trade facilitation arrangements, such as the U.S. Commercial office in Moscow, reciprocal use of ports, and many bilateral commissions and exchanges were agreed on and set in motion. Even the deterioration in relations in Angola and the Shcharansky trial did not appear to bring the bilateral economic U.S.-U.S.S.R. relations back to the *status quo ante* of the pre-1972, pre-detente period.

*Portions of this chapter adapted from, John P. Hardt and George D. Holliday, *United States-Soviet Commercial Relations: The Interplay of Economics, Technology Transfer and Diplomacy*, House International Relations Committee, 1973.

THE HISTORICAL PATTERN OF SOVIET-AMERICAN TRADE, PRE-1970'S

The central feature of U.S. foreign trade policy toward the Soviet Union during the Cold War period was an attempt to deny the Soviet Union the benefits of trade with the more advanced industrial West. Those who advocated restrictions on U.S.-Soviet trade argued that the United States should not contribute to both the military *and* economic power of a country whose domestic and foreign policies were inimical to U.S. interests, since the military and economic strength were so interwoven. This dual denial argument was based on the assumption that we could retard the growth of Soviet economic as well as military power by restricting trade by U.S. and Western companies with the Soviet Union. While exports of high technology were considered to be particularly important to the Soviet Union and were therefore singled out for extremely strict unilateral and multilateral [CoCom] controls, even grain was considered important to their economy and embargoed until the early sixties.

Another recurrent argument against trading with the Soviet Union was the alleged existence of unethical monopolistic and unfair Soviet foreign trade practices. Among the charges directed at Soviet foreign trade organizations, with varying degrees of evidentiary support, were those of pirating of foreign inventions, disrupting of Western markets for political purposes, and using of slave labor. As a result, numerous artificial barriers were erected to inhibit economic ties between the United States and the Soviet Union. Economic rationality gave way to national security considerations as a major determinant of U.S.-Soviet economic relations in the early post war period. The curtailment of commercial transactions with the Soviet Union and their allies was consequently made an important U.S. foreign policy goal.

U.S.-imposed restrictions were not the only causes of Soviet economic isolation. To a large extent, Soviet foreign economic policy in the late 1940's and early 1950's was a continuation of its prewar strategy of minimizing its economic ties to the industrial West. During the 1930's, Soviet foreign economic relations had been characterized by a policy of self-sufficiency or autarky. Although the importation of high-technology products and, for a time, the services of foreign engineers were permitted to meet high-priority, short-run needs, minimum reliance on the non-Communist world economy was a primary indicator of economic success. Throughout his rule, Soviet Party Leader Joseph Stalin adhered to the principle that the world was divided into two hostile camps—the capitalist and socialist economic and political systems.

The Soviet leadership's ideological hostility toward the United States and the unresolved issue of Tsarist and Russian Provisional government debts (which Soviet leaders refused to pay) further inhibited economic relations between the two countries. The situation was exacerbated by a sharp fall in the world market prices for Soviet raw materials, which accounted for most of Soviet exports to the United States. Despite these problems, the establishment of diplomatic relations in 1933 and the signing of bilateral trade agreements in 1935 and 1937 provided the basis for a modest expansion of trade even under Stalin's policy of economic independence of the West. Ameri-

can business interests were in the forefront of those encouraging President Roosevelt to recognize the Soviet Union in the early 30's to further the development of bilateral commercial relations. Soviet prototypes of the Ford River Rouge Plant [Gorki Auto Plant]; U.S. Steel Fairless Plant (Magnitogorsk Iron and Steel Complex); and the Muscle Shoals hydro station in the TVA (the Dnieper hydro electric station) were leading accomplishments of the Soviet-American cooperation in the First Five Year Plan (1928-1934). The Export Import Bank was created in 1935 to further facilitate U.S.-Soviet trade. Although 1930-33 was the greatest expansion period, the bilateral trade agreements of 1935 and 1937 were keyed to credit by the United States and an expected conscious build-up of trade turnover by the Soviet Union. However, with the increasing imminence of war after Munich the Soviet Union's general pattern of autarkical foreign trade and isolation from the West revived and was fortified. By the eve of World War II Soviet trade with the United States and the West as a whole had all but disappeared.

The interwar policies were interrupted only temporarily by Soviet alliances with Western countries during World War II. Expectations that the wartime alliance might be followed by peacetime cooperation proved unfounded. Discussions of U.S. aid and credits to the Soviet Union and Soviet participation in a new multilateral world economic system came to an end with the emergence of the Cold War. The Soviet leadership's general suspicion of Western "capitalist" countries and the Soviet predilection for comprehensive planning, control, and reliance on their domestic economy probably led them to revert to a deliberate policy of economic independence for themselves and their Eastern allies. CMEA (Council for Mutual Economic Assistance) was in part a response to the Marshall plan. The economic isolation of the U.S.S.R. from the West reached a peak in the early 1950's when less than 20 percent of Soviet foreign trade was conducted with countries outside the Communist area.

In the late 1950's and throughout the 1960's attitudes toward U.S.-Soviet trade gradually moderated in both countries. In the Soviet Union, the post-Stalin leadership gradually began actively to seek business deals with Western industrial countries. Soviet Party Leader Nikita Khrushchev, in his travels abroad, personally lobbied for improved economic relations. Typical was his appearance at the Leipzig Trade Fair in 1959, where he presented himself as a businessman rather than a political leader. The West European countries and Japan took advantage of this economic opening to the East before the United States; their trade tripled. Reduced trade restrictions, liberal credit policies, and participation in joint industrial ventures allowed them rapidly to expand their trade with the Soviet Union and other East European countries. The attitudes of U.S. policymakers toward East-West trade, however, tended to be more sensitive to political differences with the Soviet Union. The Berlin Wall, the Cuban missile crisis, the Vietnam War, and the invasion of Czechoslovakia all set back efforts to improve American economic ties with the Soviet Union during the Sixties.

In spite of the generally unfavorable political climate during the Sixties small but significant steps were made to remove some of the im-

pediments to U.S.-Soviet trade. Several administrative changes, such as loosening export controls and extending credits for Soviet agricultural purchases from the United States, facilitated a gradual increase in U.S.-Soviet trade during the 1960's. Moreover, the rationale for U.S.-Soviet trade restrictions slowly eroded. Restraints on bilateral trade were criticized on several grounds. Advocates of expanded East-West trade claimed that unilateral U.S. controls were not effective. Communist countries which were denied certain U.S. goods could often import the same products from other Western countries. It was argued that U.S. companies were needlessly forced to forego mutually advantageous trade opportunities. Those who favored more trade with the Soviet Union also claimed that such trade would improve political ties between the two countries and would help to achieve a more stable international order. President Lyndon Johnson appointed a special committee, headed by J. Irwin Miller, to reexamine U.S. trade policy toward the Soviet Union and other East European countries. The committee recommended several trade liberalization measures and concluded:

The intimate engagement of trade, over a considerable period of time, when taken with the process of change already under way, can influence the internal development and the external policies of European Communist societies along paths favorable to our purpose and to world peace. Trade is one of the few channels available to us for constructive contacts with nations with whom we find frequent hostility. In the long run, selected trade, intelligently negotiated and wisely administered, may turn out to have been one of our most powerful tools of national policy.¹

Such arguments led President Johnson to urge increased economic exchanges in order to "build bridges" to the East European countries. Similar arguments had led France under President DeGaulle and German policy of Ostpolitik under Chancellor Brandt to adopt New Eastern policies that were precursors of American policy change under President Nixon.

SOVIET-AMERICAN TRADE PROSPECTS COME OF AGE^{1a}

A political policy for revising American foreign relations with all Communist countries, the U.S. domestic economic concern fueled by the recession of 1969-70 and recurring balance-of-payments deficits gave rise to a far-reaching review by the Nixon Administration of foreign economic policy. Initially, however, the administration made no major effort to increase U.S.-Soviet trade presumably as it wanted to link this step with political progress. The early initiatives during the Nixon Presidency came from the U.S. Congress in the Export Administration Act of 1969. Senators Mondale and Muskie originally proposed an "Export Promotion Act" to symbolically reverse the old control policy. The more moderate Export Administration Act dropped the economic restriction of the Export Control Act and retained the emphasis on military capability. At that time the Nixon administration was largely passive or even hostile to this major moderation without explicit quid pro quo's in East-West communist policy, for changes

¹ "Report of the Special Committee on U.S. Trade with East European Countries and the Soviet Union," *Department of State Bulletin*, May 30, 1966, p. 885.

^{1a} For a chronology of East-West commercial relations from 1970-1978, see appendix, pp. 297-305.

from dual (economic-military) to undimensional (military) criteria for control or export licensing. Expanded trade with Communist countries was considered as a means for creating an improved international climate, providing for increasing U.S. exports and stimulating domestic production and employment.

This cautious policy of the Nixon Administration continued through 1970 and much of 1971. The report of the Commission on International Trade and Investment Policy, established by President Nixon in May 1970 to study major problems in the field of U.S. foreign trade and investment, was cautious in its appraisal of U.S. foreign trade policy toward the Communist world:

We see few economic problems in our trade relations with Communist countries. The course of these relations is mostly determined by political factors. The volume of U.S. trade involved is small and is likely to remain so for the 1970's.²

While recommending some change, the Commission expressed specific reservations on expanding technological transfers and on the use of bilateral arrangements in trade:

Within the bounds set by strategic considerations, the United States should attempt to expand its trade with the Communist countries. To this end, we should align our export restrictions and related regulations with those of other Western nations.

However, transfers of technologies, production processes, and/or assistance in the establishment of manufacturing facilities should continue to be subject to careful review by appropriate government agencies to ensure that they do not contribute significantly to the military capabilities of Communist countries.

The President should be given authority to remove the existing tariff discrimination against imports from Communist countries, in return for appropriate benefits for the United States.

We should explore with other Western governments possible multilateral arrangements designed to loosen the existing bilateral constraints on East-West trade.³

The Nixon Administration's "New Economic Policy," inaugurated in August 1971, proposed a program for attacking foreign, as well as domestic, economic problems. With the new initiative in foreign trade matters, interest in a more dynamic East-West trade policy grew. The issue of expanding East-West trade ties remained closely linked to the broader range of security and political issues that were to make up the agenda of the May 1972 Summit meeting of President Nixon and Party Secretary Brezhnev. In December 1971, Mr. Peter G. Peterson, Assistant to the President for International Economic Affairs (later Secretary of Commerce), issued a report ranging broadly over the foreign economic policy interests of the United States. The first *Peterson Report*, inter alia, called for a new U.S. approach to Communist trade in order to improve the trade prospects of the United States and to open the way for the Communist countries to join the world trading and monetary community.

Relations with the Communist world are now opening up rapidly. The United States has a long way to go in matching the trade levels of East and West Europe with each other. Presently, much of European trade with Eastern Europe and the Soviet Union is on the basis of bilateral agreements. A major

² A. L. Williams (Commission Chairman), *United States International Economic Policy in an Interdependent World* (Washington, D.C.: U.S. Government Printing Office, July 1971), vol. 1, p. 10. [Hereafter cited as: Williams Reports.]

³ *Ibid.*, pp. 15-16.

effort may now be needed to see how to fit the non-market Communist countries into the multilateral framework of economic exchange among the Western economies. We shall also have to review at home the kinds of guidelines to apply to trading with non-market enterprises.⁴

Mr. Peterson noted that the share of the United States in Western trade with the U.S.S.R. and Eastern Europe was about 3 percent of exports and 2 percent of imports—roughly unchanged from 1960. With the tripling of total Western exports to the Soviet Union and Eastern Europe during the period 1960–1970 (from \$3.7 to \$10.0 billion), Western European and Japanese exports accounted for most of the increase.⁵

The trips to Moscow by Maurice Stans, Secretary of Commerce, in November 1971, and Earl Butz, Secretary of Agriculture, in April 1972 resulted in optimistic appraisals of the future course of U.S.-Soviet trade, projecting substantial increases in the subsequent years. Secretary Butz was especially optimistic, suggesting that significant grain sales to the Soviet Union were forthcoming.

The Summit agreements in May 1972 did not, however, include a trade agreement. Instead, the Joint Commercial Commission was set up to negotiate: (a) an overall trade agreement including reciprocal most-favored-nation agreement; (b) arrangements for the reciprocal availability of government credits; (c) provisions for the reciprocal establishment of business facilities to promote trade; and (d) an agreement establishing an arbitration mechanism for settling commercial disputes.⁶

The Joint Commercial Commission had no precise parallels in earlier periods of temporary improvement in U.S.-Soviet relations, although it did parallel earlier Soviet arrangements with the Japanese and West Europeans. The Commission consisted on each side of one principal, three deputies, and staff. The U.S. Secretary of Commerce and the Soviet Minister of Foreign Trade, Mr. Peter G. Peterson, and Mr. Nikolai Patolichev, respectively, were the first principals.⁷ The U.S. staff for the new commission was supplied by a component of the new East-West Trade Bureau of the Department of Commerce.⁸

Even though the problems and issues of U.S.-Soviet trade were not resolved at the May 1972 Summit meeting, there appeared to be a serious disposition on the part of Soviet authorities to press for their early resolution.

The issues were formally joined again during the summer. In a report released by Secretary Peterson on his return from the first meeting of the U.S.-U.S.S.R. Commercial Commission (the second *Peterson Report*), he suggested that the United States was also willing to compromise—even in the area of high technology transfers, formerly restricted by association with national security, * * *.⁹

With the industrial and technological development of other major economies, the U.S. no longer has the monopoly it once enjoyed in the production of certain

⁴ Peter G. Peterson, *A Foreign Economic Perspective* (Washington, D.C.: U.S. Government Printing Office, December 1971), p. 28. [Hereafter cited as *First Peterson Report*.]

⁵ *Ibid.*, p. 23.

⁶ "Communique Regarding Joint U.S.-U.S.S.R. Commercial Commission, May 26, 1972," *Department of State Bulletin* (June 26, 1972), p. 898.

⁷ *Washington Post*, Mar. 7, 1973.

⁸ *Washington Post*, Mar. 7, 1973.

⁹ Peter G. Peterson, *U.S.-Soviet Commercial Relationships in A New Era*, Washington, D.C.: GPO, August 1972. [Hereafter cited as *Second Peterson Report*.]

goods. Our overall trade balance is a melancholy reminder of these changed circumstances. The increased availability of high technology products elsewhere rendered some of our original curbs on exports to the Soviet Union increasingly anachronistic. The real loser from these particular restraints would have increasingly been the U.S. producer and worker, not the Soviet consumer or the Soviet economy. There comes a point at which we must face the fact that business is business, and if it is going to go on in any event, we might as well have a piece of the action.¹⁰

The second *Peterson Report* further stressed the natural fit between the two economies and called for an expansion of some 10 billion dollars in credit facility for the U.S. Export Import Bank to facilitate long-term joint development of two massive Soviet Siberian natural gas projects, the "North Star" and Yakutia projects.

On July 8, 1972, an agreement was reached providing credit through the U.S. Commodity Credit Corporation for Soviet purchases of American grain. A maritime agreement was concluded on October 14, 1972, which removed several barriers to commercial shipping between the two countries including reciprocal opening of ports to each others commerce. On October 18, 1972, a trade agreement and a settlement of Soviet Lend-Lease debt were signed. The commercial agreement projected a tripling of U.S.-Soviet trade within a three-year period. The Lend-Lease settlement arranged a repayment schedule for the Soviet World War II debt to the United States linked to MFN.

Not all these commercial, debt settlement, and credit agreements required by law involvement and concurrence by the U.S. Congress, but in the euphoric thrust of Executive policy in 1972 this aspect of our governmental sharing of powers was not stressed, especially to the Soviet leaders. Although the trade agreement was clearly understood to require Congressional agreement, the required Congressional involvement and concurrence was neither sought nor obtained by the Nixon administration.

THE DISENGAGEMENT OF CONGRESS FROM UNITED STATES-SOVIET TRADE NEGOTIATIONS

Dealing with the broad question of American international economic policy, especially GATT negotiations, the *Williams Commission Report* in July 1971 made clear that a major and direct role of Congress in trade negotiations was necessary and desirable:

* * * The U.S. Congress has the constitutional responsibility for regulating trade. It delegates the administration of this responsibility to the Executive, which has the constitutional responsibility for negotiations with foreign governments. This makes it all the more important that we do our utmost to provide for continuous, close communications between the Executive and the Congress, so as to ensure the effective pursuit of our national objectives.

We recommend that the negotiations be buttressed in advance by appropriate congressional action. In some areas, such as tariffs, a specific delegation of authority to negotiate and proclaim changes in U.S. restrictions will be needed. In other areas, the Administration should negotiate on the basis of a congressional declaration of intent; the results of the negotiations would be submitted to Congress, either for affirmative action, or preferably subject to an under-

¹⁰ Peter G. Peterson, *U.S.-Soviet Commercial Relationships in a New Era* (Washington, D.C.: Department of Commerce, August 1972), p. 13. [Hereafter cited as *Peterson Report* (1972).]

standing within, say 60 days. Furthermore, some Congressmen should be included in the United States delegations to the negotiations.¹¹

The first *Peterson Report* in December 1971 also referred to a special congressional role in fashioning a new international economic order:

Of critical importance in our efforts will be the new legislation needed to equip American negotiators with the tools for constructing a new, open and fair world trading system. Defining the negotiating authority we need will require close collaboration with the Congress. In the international negotiations undertaken with this authority, our intention will be to construct a new trading system to take the place of the old.¹²

Although these statements referred to GATT negotiators and the New Economic Policy of August 1971 no effort was made to involve Congress in the U.S.-Soviet trade negotiations of 1972-73. Congress was not asked to pass enabling legislation to facilitate a trade agreement between the two countries. Congress has not been represented at the Moscow Summit and its sequels. The various Executive department delegations to the Soviet Union did not include congressional representation. The Joint U.S.-U.S.S.R. Commercial Commission set up at the Summit did not include congressional representation. Finally, the second *Peterson Report* in August 1972, on the first meeting of the Commission made no direct reference to Congress. Only after the trade agreement had been concluded did the Nixon Administration turn to Congress for enactment of a provision extending most-favored-nation treatment for the Soviet Union.

The Nixon administration made the difficult choice between separate legislation on U.S.-Soviet relations or inclusion in the omnibus trade bill in favor of the latter. Perhaps if the former had been the chosen legislative route there would have been more Congressional involvement.

The absence of congressional participation in U.S.-Soviet negotiations was similarly in contrast with multinational trade negotiations conducted under the authority of the *Trade Expansion Act of 1962* (19 U.S.C. 1973). Section 243 of that Act stipulated that four members of Congress (two members of the House Committee on Ways and Means and two of the Senate Committee on Finance) must be accredited as members of the U.S. delegation to trade negotiations authorized by the Act. Precedent indicated that Congress should have been involved in the exchanges, and political practicality arguably suggested the advisability of direct involvement in U.S.-Soviet negotiations of 1972-1973. Congressional approval was required for extension of MFN treatment to the Soviet Union. Moreover, Congress was being asked to consider other new arrangements to facilitate U.S.-Soviet trade, such as expansion of U.S. Government credit facilities both from the Export-Import Bank and CCC Loans. Further modifications were being sought to stimulate development of bilateral relations in agricultural trade, energy development and other areas of high technology transfer. Specifically, these issues were later formally referred to the Congress in 1973 in the Trade Bill, the Ex-

¹¹ Williams Report, op. cit., pp. 16-17.

¹² Peterson (1971), op. cit., p. v.

port-Import Bank amendments, and the Export Administration Act amendments. Congress, to paraphrase Senator Vandenberg, had been left off at the take off in a new policy where their constitutional and legislative requirements for action were soon to involve them. Moreover, serious doubts had been raised about the mutual, especially American, benefit from the newly expanded trade for the following reasons:

- (1) Grain purchases in 1972-73 had been below world market prices and were thought to feed domestic U.S. inflation.
- (2) Serious reservations were raised on the advisability of accepting long term low interest, possibly high risk, debts for joint energy projects in the Soviet Union.
- (3) The dual civilian-military use of many of the high technology exports was sufficiently blurred as to raise cautionary notes on the military risks inherent in exports related to the automotive, computer and other high technology industrial areas.

THE REENGAGEMENT OF CONGRESS

Although during 1972-1973 there were many opportunities for the Nixon administration to modify, withdraw or lobby for the new legislation working its way through Congress for decision in 1974, no effective action was taken by the Executive. When in February, 1974, the Jackson-Vanik amendment became for a time the Jackson-Mills-Vanik amendment with over 250 sponsors in the House and three quarters of the Senate, the administration might still, assuming that passage of the Act was genuinely desired, have dropped the section of the trade bill dealing with extending MFN to the communist countries. As debate on the "North Star" and Yakutia projects gained momentum, the Export-Import Bank amendments might have been modified or dropped. Some Executive initiatives also were possible and would have been timely on export licensing policy. At a late date some executive initiatives were taken. They were then very late and too poorly coordinated to be effective in developing a congressional-Executive consensus on U.S.-Soviet trade policy.

The effectiveness of the Nixon policy on Soviet commercial change was further related to the broader pattern of unilateral Executive action—the so-called "Imperial Presidency" and the subsequent Watergate crises that severely reduced the President's power.

The confrontation of the Congress with the "Imperial Presidency" through the impeachment proceedings of the President coincided with the consideration of three major pieces of East-West trade legislation. The key deliberations preceding votes on the Trade Bill, Export-Import Bank amendments and the Export Administration Act—all came at the same time when either Watergate or impeachment hearings were underway in the House of Representatives and the Senate. While Mr. Rodino was presiding in summer 1974 over the House Judiciary committee proceedings on impeachment, the critical Jackson-Vanik, Church, and Stevenson amendments were considered as amendments to the Trade and Export Import Bank bills, respectively. These amendments had special features in terms of their changes in the traditional consultative role of Congress in foreign economic

policy. Instead of setting basic principles and pursuing compliance through the oversight process of the Executive's adherence to the sense of Congress, specific directives for administering the laws and procedures for involving Congress in the administration of the laws were established:

The Jackson-Vanik amendment required that the Congress approve the President's determination that the emigration requirements of the Trade Act were adhered to on a periodic basis. This legislation required congressional approval be positive, i.e., unless the Congress specifically approved, the right to MFN and credits were not extended beyond 18 or 12 months, as appropriate, for countries involved. Traditionally when such provisions were built into legislation, they included provisions that were passive, i.e., if Congress did not act by 60 or 90 days, the President's determinations would go into force.

The Church amendment proscribed certain Soviet energy activities as not eligible for U.S. Government credits and set specific dollar limits for others. These legislative references to the Soviet energy projects were clearly directed toward explicitly preventing the financing and joint development of the "North Star" and Yakutia natural gas projects favored and highlighted in the second *Peterson Report*.

The Stevenson amendment placed a \$300 million limit on loans to the Soviet Union without explicit approval by Congress based on a detailed accounting of the disbursement of the initial \$300 million in terms of U.S. national interest.

These examples of explicit directives in the legislation for guidance of the Executive in administering trade and credit matters reflected not only concern over the mutual benefit from the new commercial relationship in the 1972-74 period, but an apparent distrust of the President by the Congress. Not only the intent of Congress was made clear in the legislation but the specific means for carrying out the intent were spelled out. Congress also became an active partner in central administrative aspects of the conduct of foreign economic policy.

Likewise, agricultural legislation included requirements for prior notification of prospective sales. These notifications could provide a basis for congressional involvement in the exercise of grain embargoes. In comparable vein, prior notification was required for final approval of Exim Bank loans over a certain dollar amount which could be used as a basis of Congressional reaction, a form of legislative veto.

The reemergence of Congressional participation in formulating legislation, administering the laws, and exercising oversight was not limited to East-West commercial relations but extended widely to other legislation, including appropriations and the exercise of war powers. The development of the legislative veto, i.e., the right to nullify executive rules and procedures, was even more extensive in domestic areas, such as housing, health, education and welfare than in foreign affairs. Some of this strong rebalancing of Federal powers was a reaction to the "Imperial Presidency" and the subsequent opportunity afforded by the weakness of the Nixon-Ford administrations in 1974-76 relative to a Congress of the opposition party. Some ob-

servers said there was a long overdue redressing of the balance between the executive and legislative branches, given the trend toward Presidential predominance since the days of the New Deal when greater power was concentrated in the Presidency. Some reaction came from a specific legislative concern, in particular areas, that the Executive would not administer the laws in the way the Congress intended. All of these reactions to the role of Congress were added to the anti-Détente sentiment stemming, perhaps in part, from overly optimistic expectations of the Nixon summit of 1972 and the Brezhnev Summit of 1973. The overall result of these converging trends was a very strong and far reaching reemergence of Congress in East-West policy and administration.

TRADE AND DIPLOMACY: PENALTIES AND REWARDS

Increased trade is generally argued to encourage more amicable and stable relations among nations. U.S. economic relations with the Soviet Union and Eastern Europe have specifically been assumed to be an effective lever to further U.S. national interests. For example, after World War II, U.S. leaders proposed including the Soviet Union and East European countries in the Marshall Plan for European recovery. U.S. leaders also specifically linked economic benefits from trade to assured access routes in the settlement of the 1948 Berlin Crisis. Conversely, Communist countries were apparently denied normal commercial relations because of their participation in the Korean War, other revolutionary ventures, such as in Castro's Cuba, and repressive Communist domestic policies. Withdrawal of MFN status and imposition of export controls were among the penalties applied by U.S. policy makers. Later Yugoslavia and Poland were rewarded for their independence from Soviet domination and/or for a degree of moderation in domestic politics by a moderating of U.S. foreign trade policy. Romania was singled out on various occasions for less restrictive commercial treatment in recognition of its relatively independent foreign policy. Thus, changes in U.S. foreign economic policy toward the Soviet Union and Eastern Europe traditionally have been used for a number of political ends deemed consistent with U.S. foreign policy. Overarching the specific applications of economic leverage has been the general attitude that the Communist nations were enemies of the United States and should be denied *any* assistance in development of capabilities which might be a threat to broadly defined U.S. security. Although somewhat inconsistent in application, a policy of penalty-reward was followed by the United States, apparently with three main objectives:

- (1) To reduce the danger of war through negotiations and action that might induce the USSR and the Warsaw Pact to reduce weapons development, lower force levels, and moderate crisis management, including those relating to the status of Berlin;
- (2) To encourage moderation and reform of the Soviet and East European regime's domestic policies, including religious tolerance, economic reform, freedom of expression, and the right to emigrate; and
- (3) To encourage polycentrism in the Communist world, including improved bilateral relations of the individual Communist

countries, other than the U.S.S.R., with the United States and moderation in their foreign policies to the West as a whole.

The importance of these several objectives has varied over time, but each appears relevant today. The general earlier approach is described as *penalty-reward* because the normal policy was a restrictive one with relaxation as reward for specific Eastern policy changes or actions by the Eastern nations.

With the Summit agreements the U.S. policy began to change. Although the United States and the Soviet Union after the Nixon Summit still had political differences in various world areas, there was some evidence of a moderation of international tension such as the Berlin Agreement of 1971. The U.S.-Soviet Strategic Arms Limitation Talks (SALT) provided a mechanism for moderation in the development of both strategic offensive and defensive weapons; the Treaty on the Limitation of Anti-Ballistic Missile Systems and the Interim Agreement on Certain Measures with respect to the Limitation on Strategic Offensive Arms signed in Moscow on May 26, 1972, were evidence of some progress.¹³ Vietnam hostilities began to be a restraint. The multilateral Conference on Security and Cooperation in Europe (CSCE) and discussions on mutual and balanced force reductions (MBFR) reflected a similar development in the area of military reductions.¹⁴ These arms talks were considered a useful forum for stabilizing crises and potentially leading to mutual reduction rather than arms competition and buildups. The essence of the agreements in the 1972-73 period was a shift by the United States to a *reward-penalty* system, i.e., the mutual benefits of expanding relations was established as a norm with withholding or withdrawing of benefits as an exception. This reward-penalty approach changed the character of the earlier penalty-reward system based on a normal policy of denial with occasional rewards or benefits as the exception.

The Helsinki Final Act of 1975 of the Conference on Security and Cooperation in Europe (CSCE) established additional norms not only in security matters, but in commercial relations and human rights. Although not a treaty, an accepted level of performance or code of conduct was further established on a multinational basis. Thus, commercial matters in the so-called basket "two" might be related to progress in security affairs or human rights in baskets "one" and "three" respectively. The follow-on meeting at Belgrade in 1977, however, illustrated the limits of too rigorous an application of this multilateral reward/penalty scale, especially. Moreover, questions were raised anew on the significance and enduring character of the change or moderation in U.S.-Soviet relations. In the three areas of detente—hostilities and security, internal moderation and reform, and easing of the Soviet Party control system in Eastern Europe—opinions vary on the signif-

¹³ The ABM Treaty limited the deployment of anti-ballistic missile systems to two designated areas in the United States and the Soviet Union, and at a low level. The Interim Agreement limits the overall level of strategic offensive missile forces.

¹⁴ Talks on European Security began in Helsinki on November 22, 1972. The purpose of the Conference, which included the countries of East and West Europe, the United States, and Canada, was to attempt to solve problems of European security and cooperation. Negotiations on mutual and balanced force reductions began on January 31, 1973 in Vienna. The purpose of the talks was to negotiate a reduction of military forces in Europe. These arms talks are still in progress.

icance of the changes from the Nixon Summit to the Carter Administration. Indeed, quite divergent views on these various benefits from the new relationship are expressed by different observers:

(a) *On hostilities and security.*—Some observers argue that the Soviet Union acted as a moderating influence on North Vietnam and with certain African and Middle Eastern leaders used its leverage to dampen tensions and hostilities. Others maintain that the Soviet Union fostered proxy wars to its own benefit, and that the continuation of the Arab-Israeli conflict, hostilities in the Horn of Africa, the continued South African and Indochinese conflicts were all compatible with Soviet aims and may have been fostered by the Soviet Union.

Moreover, some argue that Soviet leaders have a pressing need to réorder economic priorities and that the SALT agreements would permit them to proceed on badly needed civilian programs for modernization of their technologically backward Soviet economy. Others contend that the Soviet Union, with a well-developed military research and development base, is likely to continue to seek superiority e.g. by attempts to turn its numerical advantage in strategic and conventional offensive weapons into a position of overall superiority by closing the technological lead of the United States.

(b) *On internal moderation or reform.*—Some observers point to a continuing Soviet need for moderation to encourage professionalism and accommodate modernization. Others, however, doubt any necessary link between moderation and modernization and point to the continued, perhaps heightened restrictions, on civil liberties, religious freedom, the right to emigrate, and access to foreign media as evidence of a retrogression or revival of the Stalinist elements in the system. Trials in 1978, such as those of Shcharansky, Orlov, and Ginsburg, are cited by those with these critical views on Soviet moderation. Some others suggest that without the Helsinki agreement and Soviet system moderation the protests of the dissidents would not have been registered or heard. Many of the dissenters, it is noted, were members of unofficial committees set up in the U.S.S.R. to monitor observance of the Helsinki agreement. To this view the critics of moderation call attention to the harsh sentences and related actions against dissenters, Western journalists and businessmen which are said to reflect a return to older Stalinist methods of control.

(c) *On the control of the Eastern alliance or bloc.*—Some observers maintain that the relaxation of Soviet-U.S. tensions, the potential re-ordering of Soviet priorities, and a moderating of domestic controls may permit more foreign policy independence and internal reform in Eastern Europe. On the other hand, the Soviet Union, more skeptical observers note, given some relaxation of tensions vis-a-vis the West, may decide it is free to follow a policy emphasizing the post-Czech invasion "Brezhnev Doctrine," which severely limited Eastern European independence from Moscow.

Expressions in the Nixon-Ford era by Secretary of State Henry Kissinger appeared to incline toward the more hopeful, less threatening interpretation of the progress toward moderation. While accepting the view that opposing trends and pressures existed. The Soviet leadership, Dr. Kissinger pointed out in a congressional briefing in June 1972, was responding to the pressures which made for progress toward

moderation as well as toward retention of the older, conservative system :

* * * Some factors—such as the fear of nuclear war, the emerging consumer economy, and the increased pressures of a technological, administrative society—have encouraged the Soviet leaders to seek a more stable relationship with the United States. Other factors—such as ideology, bureaucratic inertia, and the catalytic effect of turmoil in peripheral areas—have prompted pressures for tactical gains.¹⁵

Earlier in the same briefing, Dr. Kissinger noted :

But now both we and the Soviet Union have begun to find that each increment of power does not necessarily represent an increment of usable political strength.¹⁶

Dr. Kissinger also saw enhanced security in the collective benefits or linkage among various agreements such as those on arms limitations, trade, and the environment :

We hoped that the Soviet Union would acquire a stake in a wide spectrum of negotiations and that it would become convinced that its interests would be best served if the entire process unfolded. We have sought, in short, to create a vested interest in mutual restraint.¹⁷

* * * The SALT agreement does not stand alone, isolated and incongruous in the relationship of hostility, vulnerable at any moment to the shock of some sudden crisis. It stands, rather, linked organically to a chain of agreements and to a broad understanding about international conduct appropriate to the dangers of the nuclear age.¹⁸

The process of developing a “vested interest in mutual restraint” was contemplated to be a gradual and protracted one. Moreover, future changes in Soviet foreign policy and the motivations of Soviet leaders in their conduct of diplomacy would not be quickly discerned. The political benefits to the United States must then, by their nature, be uncertain of fulfillment, especially in the short run. On the other hand, the economic benefits to the Soviet Union from improved commercial relations might be more certain and significant, even in the short run. Thus, the risk of unfulfilled expectations would appear to be greater for the United States than for the Soviet Union. More specifically, increased technology transfers to the Soviet Union might show primarily long-term benefits to the United States in the diplomatic and political area. What may have been expected by the Nixon-Ford leadership was that the Soviet Union would accept norms of behavior of conduct of policy that would minimize conflict and maximize mutual benefit.

CARTER POLICY: CONFRONTATION OR COOPERATION

The stated Soviet policy of the Carter Administration and arguably the 95th Congress as well, has been one of testing detente, of either inviting confrontation or cooperation through 1977 and 1978. This ambivalent interpretation of the reward-penalty approach was based on application of the central thesis of the President's Annapolis speech :

The Soviet Union can choose either confrontation or cooperation. The United States is adequately prepared to meet either choice. We would prefer cooperation through a detente than increasingly involves similar restraints for both sides,

¹⁵ Kissinger briefing to Congressional leaders, *Congressional Record*, June 19, 1972, p. S9600.

¹⁶ *Ibid.*

¹⁷ *Ibid.*, p. S9600.

¹⁸ *Ibid.*, pp. S9599-9600.

similar readiness to resolve disputes by negotiation and not by violence, similar willingness to compete peacefully and not militarily. Anything less than this is likely to undermine detente * * * A competition without restraint and shared rules will escalate into graver tensions and our relationship with the Soviet Union will suffer.¹⁹

Secretary of State Cyrus Vance stressed the preference of the administration for cooperation in his clarifying statement requested by members of the House International Relations Committee thus underlining the continuation of the new reward-penalty policy.²⁰

That the policy of the President and the Congress has been more ambivalent than a carefully conceived reward-penalty system may be illustrated by the legislative and policy actions in export administration. The Export Administration Act amendments passed by the 95th Congress and signed by President Carter in 1977 implied as Federal policy the following criteria.

A presumption of the right to export to all countries, including the Soviet Union.

A definition of national interest based on the individual countries' current policy and stability not its system of government. Terms such as "controlled country" and "Communist dominated" were dropped for the legislation.

Administration of license applications were to be expedited, criteria for disapproval was to be clear, and an increased element of certainty was to be built into the export licensing system.²¹

However, application of the system often shifted to the less clear or predictable "foreign policy" criteria. Among the more publicized denials of export license were the Control Data Cyber-76, in part to contribute to the World Weather Watch in Moscow, the Sperry Univac Computer for Tass, and the oil drilling bit plant of Dresser Industries. The relevant American companies argued that they had met all the requirements of the export administration procedure, but were, nonetheless, turned down at the point the transaction was to be made final. Each company argued that some unanticipated considerations were added at the final stage so that a presumed national benefit was obtained for the United States at the companies' cost. Indeed, in the Tass case, the link between the Shcharansky trial outcome and the sale appeared to be explicit. Also, the National Security Council staff in 1978 was brought further into the export approval process reportedly to evaluate the foreign policy implications of major high technology energy related sales to the Soviet Union. Subsequent Congressional action reflected this restrictive sentiment.²²

What this suggests is that American companies may be expected to negotiate industrial exports in energy related activities to the Soviet Union and receive export approval if they pass the test of

¹⁹ "Address at Commencement Exercises at the United States Naval Academy," June 7, 1978. *Weekly Compilation of Presidential Documents*, Monday, June 12, 1978, Vol. 14, No. 23, p. 1057.

²⁰ "Elements of U.S. Policy Toward the Soviet Union," *The Secretary of State*, Statement, Department of State Bureau of Public Affairs, Office of Public Communications, June 19, 1978, p. 1.

²¹ Conference Report, *Export Administration Act Amendments of 1977*, May 18, 1977.

²² *The Technology Transfer Ban Act of 1978* introduced in September 1978 was designed to restrict exports to the U.S.S.R. and enhance Congressional role in decisions on licensing. *Congressional Record*, Sept. 14, 1978, pp. H9786-7, H9850-2. c.f. Fall Issue, 1978 *Foreign Policy*. Passim. especially articles by Samuel Huntington, Franklyn Holzman and Richard Portes.

not "contributing significantly to the military" capabilities of the client country set out in the Export Administration Act, and the export administration procedures established through the Department of Commerce. However, the approval is more likely to be reversed if a foreign policy issue intruded during the process of approval that the Executive wished to react to. This inherent and enhanced uncertainty raises questions on the likely competitiveness of American companies in the Eastern market as well as throughout the world when human rights is the major foreign policy consideration. To the extent that companies like Dresser Industries have a clear technological and competitive margin the uncertainty will not shift orders to Western Europe or Japan. If that edge disappears, then so may the trade. In the long run this policy may have decreasing utility if U.S. advantages diminish, alternative sources arise and American companies withdraw from uncertain and potentially unprofitable trade. It should also be noted that foreign policy considerations that always dominated trade embargo policies to Cuba, Vietnam and other Communist nations were recently expanded to include other countries on grounds of human rights or other aspects of the foreign nations' domestic policies, e.g. Uganda and a multitude of other nations. In the waning days of the 95th Congress legislation was proposed reflecting interest in export policy, and a public debate ensued.²³

The use of agricultural exports were earlier suggested in the Kennedy and Nixon-Ford Administrations as prime candidates for linkage or calibration of foreign and commercial policy interest. However, after negative U.S. domestic response to several embargoes during the Ford Administration and with the signing of the long term grain agreement with the Soviet Union, little has been heard of use of grain in economic diplomacy with the U.S.S.R. The uncertainty of Soviet grain purchasing plans continues to be largely due to capricious Soviet weather and their secrecy policy on grain forecasts and status. There seems to be an Executive/Congressional consensus to move agricultural trade away from the policy linkage with U.S. foreign policy interest.

Senator Dole clearly stated this widely held view in August 1978:

Everyone recognizes the importance of grain sales both to the U.S.S.R. and to our own economy and that we should continue to encourage the Soviet to satisfy their import needs with U.S. grains, soybeans and other agricultural products.

American grain exports to Russia bring us into close contact with the Russian grain harvest, the Russian economy and to some extent the Russian people. Many Americans have been upset over recent developments in the Soviet Union which they feel were violations of human rights and the Helsinki agreement.

President Carter, in reprisal for the political trials in the Soviet Union, has decided to impose new controls on sales of American technology to Russia and to cancel the sale of a Sperry UNIVAC computer system to Tass, the Soviet news agency.

Some Members of Congress, myself included, have called for stronger measures. Some have suggested cancellation of the sale of a modern plant for producing oil well drilling bits.

Also, some officials say they had reports that Zbigniew Brzezinski, President Carter's national security adviser, was backing a proposal to use the administration's heaviest economic leverage against the Soviets—the 1975 grain agreement * * *.

Certainly the President must look at all the "options" including grain sales, but I do not believe grain exports to the Soviet Union should be embargoed unless

²³ Ibid.

there is an international situation severe enough to warrant a total embargo of all exports to and imports from the Soviet Union.

Unfortunately, farmers have been singled out in the past to bear the burden of international policies while other American producers have not. A policy of this type is not fair or equitable * * *.

A grain export embargo by itself would not be effective. The most immediate beneficiaries of a restriction on U.S. grain sales would be Australia, Canada, and other large grain-producing countries who would increase their sale of grain to Russia.

The world grain market seems to be peculiarly unsuited to embargoes because less than one-eighth of the grain produced in the world is traded internationally as compared with more than half of all the oil produced. Grain-producing countries have not established a cartel similar to the major oil-exporting countries.²⁴

Energy related exports became an issue in the Carter administration from differing points of view. After pessimistic reports on future Soviet petroleum output U.S.S.R.-U.S.A. energy cooperation was seized on by some as a means of keeping the Soviet Union from becoming a major oil importer from the Middle East. Commerce Secretary Juanita Kreps in December 1977 at the U.S.-U.S.S.R. Trade and Economic Council in Los Angeles encouraged the Soviets to consider cooperative petroleum ventures. One of the bottleneck areas in which American technology was clearly superior was production of oil drilling bits. Dresser Industries negotiated with the Soviet Union to build a plant in the U.S.S.R. to produce these advanced oil drilling bits. The complete plant sale was near completion at the time of the Shcharansky trial. There was some indication that the final critical components would not be licensed for export. However, the Presidential decision was to approve the export sale. Moreover by Presidential action the range of energy related equipment on the control list was broadened. The newly controlled energy related exports are now to be routinely placed under the foreign policy purview of the National Security Council.²⁵ This action in broadening the use of foreign considerations may have the effect of returning the Export Administration Act philosophy toward the Export Control Act dual-economic/military restrictions operative prior to 1969. The rebroadening and reemphasis of foreign policy considerations tend to increase the scope and impact of export controls and tend to increase the uncertainty of approval.

One might paraphrase several of Senator Doles' agricultural questions on energy related equipment:

(1) Would export denial of energy related equipment to the Soviet Union be effective? Does the United States have an effective monopoly in the short or long run? Would denial merely shift the orders elsewhere to other Western suppliers or foreign bases of U.S. multinationals?

(2) Why should the American producers of energy related equipment "bear the burden of international policies"? Should there be government compensation for license denial for foreign policy purposes that were otherwise eligible for approval? Should this include regions such as the nations in Africa and in Latin America on considerations such as human rights?

²⁴ *Congressional Record*, S14567, August 25, 1978.

²⁵ *Federal Register*, August 1, 1978, pp. 33699-33702.

An effective use of high technology exports as a foreign policy tool would further be facilitated by a common Western policy. Apparently consultation with other Cocom nations on sale of a computer to Tass in the wake of the withdrawal of Sperry Univac has not been successful. The history of non-coordination in Cocom in foreign policy matters is not a basis for anticipating cooperation. Other Western countries such as France explicitly reject the foreign policy-commercial sales link. A recent Cocom study appears to once again reject foreign policy as a criterion for restricting exports. The requirement of unanimity and limit of scope of licensing to military relationships reinforces this tendency.²⁸

If a comparable substitute to the Sperry-Univac computer is found elsewhere by the Soviet importers for use of Tass then the following assessment can be made: the Soviet Union paid little if any penalty; and the American company lost time, money, and a sale; and future prospects for leverage or influence were diminished. If no comparable substitute is found, then this assessment would follow: the Soviet program might be delayed, costs of development raised, and penalties of shortfalls in output accommodated. Future prospects for influence might be enhanced, although that is questionable.

Beyond the uncertainty of the recent Carter Administration policy of confrontation-cooperation is the impact of such incentives on Soviet leaders. Is our correlation of commercial-foreign policy to be a reward-penalty or penalty-reward system? If the former, then a system of relations, such as the Science and Technology exchanges, may be expanded or made more attractive or contracted and made less attractive to Soviet leaders. This reward-penalty approach implies a continuation of the pattern of relationship but variation in its application. The system may be more or less restrictive in terms of scope and criteria but more certain as to outcome. It also implies a less provocative establishment of rules of conduct and terms for attaining increasing benefits. Alternately a penalty-reward approach implies a prospect of termination of a recent pattern of relationship and a public and politically highly visible confrontation. These are not necessarily the conditions that always go with the penalty-reward incentive schemes, but may be attributes of such in current circumstances.

If the Carter administration and the new 96th Congress is to move to a less ambivalent combination of confrontation and cooperation and develop a more effective system of enforceable rules of conduct, a number of questions might be appropriate.

(1) Basically, does experience indicate that we can identify areas of mutual interest, e.g. in commercial relations, negotiate acceptable terms and proceed to a more normalized pattern of trade? Or does the Soviet Union represent a system so alien or threatening to our interests that no trade is prudent?

(2) If normalized commercial relations are possible, how do we deal with the risk of benefit to Soviet military capability and the possibly higher cost of trading with a centrally planned economy? Can "critical technologies" be identified and form a reasonable basis of exclusion so we may clearly identify a range of normal trade? Is equal and

²⁸ "Special Report on Multilateral Export Controls." Sent to Congress on July 10, 1978 by President Carter.

non-discriminating trade with the East always at higher prices and less favorable terms due to the greater cost and risk of dealing in the Eastern markets?

(3) If we routinely add foreign policy considerations to our conduct of trade, should these benefits be taken in lieu of the most favorable economic terms? How effective is the direct and explicit linkage of specific foreign policy issues to specific commercial transactions? If the reward-penalty system is to be applied, should the Congress legislatively provide not only licensing but credit, tariff and other tools to the executive?

(4) If we do develop normal commercial relations in certain areas, e.g. in agricultural sectors, should we consider large scale bilateral cooperation? At what terms and under what conditions? If in agriculture, are there other areas?

(5) What is the most appropriate and effective executive-congressional relationship in developing East-West commercial policy and administering it?

APPENDIX

CONTENTS

	Page
Executive response to Chairman Bolling's letter-----	287
Chronology on East-West commercial relations—Ronda A. Bresnick-----	297
East-West trade statistics:	
U.S. agricultural and nonagricultural trade with centrally planned economies, 1972-77-----	306
U.S. trade with centrally planned economies: Top 15 exports and imports, by country-----	308
Trade of industrial Western countries with centrally planned economies, 1972-76-----	315
Status of U.S. commercial relations with Communist countries-----	321
Membership of Communist countries in international economic-commercial organizations -----	322

EXECUTIVE RESPONSE TO CHAIRMAN BOLLING'S LETTER

CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, D.C., March 7, 1978.

Hon. CYRUS VANCE,
*Secretary of State,
Department of State,
Washington, D.C.*

DEAR SECRETARY VANCE: We feel it is timely for the Joint Economic Committee to reassess the prospects of East-West Commercial Relations with special attention to economic relations between the United States and the Soviet Union. To this end we have asked the Congressional Research Service to organize a workshop on the subject in early April. We noted with special interest some recent testimony of Ambassador Marshall Shulman on this subject. Perhaps you and your staff would provide us with some insights on the following questions that may help us in our inquiry:

(1) How important is our Eastern trade likely to be if it remains a small share of our total trade turnover and a smaller share of our GNP? Is the importance likely to be expressed in terms of the significance of Western transfers of technology to Eastern economies? If Western exports are significant to the Eastern economies are they also important to us in terms of the generation of new jobs and making production more efficient in the United States? Or should the significance of potentially increased trade be judged largely in terms of its political effects within and between the Eastern and Western societies?

(2) What promotion of commercial relations is likely to be effective in terms of improved terms of credit, relaxed trade restrictions, and improved business facilities? What are the prudent limits that we should place on the use of trade promotion in expanding our trade?

(3) To what extent should we now view trade relations with the Eastern countries as "normal" commercial relations? To what extent should our continued adversarial relations dictate limits on our exports, especially of high technology products of military significance? Can economic bargaining pressure be effectively utilized to change or moderate the adverse or threatening aspects of Eastern societies that run counter to our perceived national interests or minimum standards of conduct?

I would appreciate a response to the above noted questions by March 24. Dr. Kent Hughes of the Joint Economic Committee staff or Dr. John P. Hardt of the Congressional Research Service may provide you with technical advice and clarification of our needs.

Sincerely,

RICHARD BOLLING, *Chairman.*

DEPARTMENT OF STATE,
Washington, D.C., March 28, 1978.

Hon. RICHARD BOLLING,
*Chairman, Joint Economic Committee,
House of Representatives.*

DEAR MR. CHAIRMAN: The Secretary has asked me to reply to your letter of March 7, advising that the Joint Economic Committee will reassess the prospects for East-West commercial relations, with special attention to US-Soviet economic relations. I appreciate the opportunity to comment on this subject. Our responses to the questions raised in your letter follow the order in which they were asked. (The responses for the People's Republic of China are at the end of each section.)

1. While the volume of our trade with the Soviet Union and Eastern Europe has risen substantially over the last six years, it still is a minute share of our total trade. Total trade with the Soviet Union and Eastern Europe in the six years of 1972 through 1977 amounted to some \$17 billion, which was only 1.5 percent of total US trade in this period. We expect trade with Eastern countries to remain a small share of our total trade. The overall figures do not tell the whole story, however. The Soviet Union is an important market for US grain. The total value of grain and feedstuffs shipped from the US to the USSR in the period of 1972 through 1977 was \$5.2 billion. Poland is also a major customer for US feed grains, buying over \$600 million this year. Other Eastern European countries buy US agricultural products during times of poor harvests. In a period when we are running large balance of payments deficits, we have each year had large surpluses in our trade with the USSR and Eastern Europe amounting to about \$8.6 billion dollars in the six years, 1972 to 1977. A high proportion of US imports from these countries are energy products and important industrial raw materials.

The economic benefits of the sales of grain to these countries are shared by US farmers, shippers and others in the economy. The export of a substantial volume of equipment to the USSR and Eastern Europe helps strengthen the US economy by creating employment at a time when this is important for the US economy. (It is estimated that \$1 billion worth of US non-agricultural exports generates roughly 40,000 jobs.) During the recent recession, exports to non-market economy countries helped to limit the decline in total exports from Western countries, including the US, to all destinations.

The Soviets (and other Eastern Europeans) import machinery and equipment from the US to modernize their automotive and chemical industries, and to increase the output of Soviet oil and gas fields. They have depended on imported technology to overcome a sluggish industrial economy and to boost productivity. But it appears that the USSR and most Eastern European countries have great difficulty absorbing Western technology and spreading it to other sectors of their economies.

Expanded trade with the US and other Western countries gives the USSR and Eastern Europe a stake in the stability of the world economy. This trade also increases individual contacts. But the fundamental point about a healthy and growing trade relationship is that it can be an incentive for restraint in foreign relations. Just as closer trade relations follow improved foreign relations, deteriorating international relations can hinder progress in our trade relations. At the same time, expanded US trade relations with the countries of Eastern Europe provide these countries with an incentive and an opportunity to exercise more fully their national sovereignty.

US-PRC trade totaled about \$375 million in 1977, well under one percent of total US trade. At this level, it would only marginally affect the US job market and production efficiency, although it is important for some individual firms and industries. We and the Chinese are committed, under the terms of the Shanghai Communiqué, to facilitate the progressive development of trade. We consider improved economic relations with the PRC to have political as well as economic benefits.

2. The progressive development of economic relations is an important part of our overall relationship with the Soviet Union. The Soviet Union, on its part, has shown a keen interest in more trade with us, including interest in US Government supported credits and the relaxation of US tariff restrictions on Soviet imports.

With respect to Yugoslavia, Poland and Romania the US has been able to offer CCC and Export-Import Bank credits, has granted reciprocal nondiscriminatory tariff treatment, and has steadily pursued improved business facilities. These policy instruments have helped to expand trade in both directions on a broad commercial basis. The Department welcomes the expansion of US nonstrategic trade with the USSR and other Eastern European countries as well.

The Trade Act prohibits government-supported credits and nondiscriminatory tariffs for most non-market-economy countries unless they comply with the emigration provisions of Section 402 of the Act (the Jackson-Vanik Amendment). Except for Romania and Hungary, nonmarket economy countries have been unwilling to comply with the terms of the Act. We have the Jackson-Vanik question under continuing review, but do not at this time have any legislative proposals to make concerning revision of that Amendment. We believe that further examination of the risks and benefits of increased trade with the Soviet Union and other Eastern European countries by the Congress, the business and academic communities, and by the American public generally, would be helpful to the formulation of foreign economic policies toward these countries.

In any event, there are prudent limits to official promotion of trade with the East, which include multilateral coordination of Western controls on the export of strategic goods and understandings with other Western nations not to offer concessional credits to promote exports. The extent of US Government support for US firms engaged in this trade through such means as participation in fairs and seminars should continue to be based on judgments that the benefit to the US economy is commensurate with the costs.

We can also seek better business facilities, both through assistance in individual cases and through intergovernmental agreements, such as those with the USSR, Poland, Romania and Hungary. We have had some success in pressing Soviet authorities to grant accreditation to US firms in establishing permanent offices in Moscow, and to increase the number of US businessmen who receive multiple entry-exit visas. In turn, after taking into account security and commercial considerations, we have from time to time allowed the expansion of the Soviet commercial presence in the US both in absolute size and in scope of activity.

Current efforts to promote US-PRC trade are hampered by the absence of normal diplomatic relations with the People's Republic of China. The Chinese are reluctant to enter into government-to-government agreements (including trade agreements) with countries with which they have no formal relations. Also, we and the Chinese have yet to reach agreement on the problem of private US claims against the PRC and the related question of PRC assets frozen by the US Treasury. This lack of a claims/assets settlement further complicates our ability to expand commercial contacts with the Chinese, since Chinese properties (such as aircraft, ships, trade exhibitions, and monetary funds) entering the US are subject to court-ordered attachment by US citizen claimants. Lack of normal banking relationships also hampers US exporters.

3. Our trade relations with the USSR and other Communist countries vary widely, ranging from conditions nearly equivalent to our trade with Western market-economy countries (e.g. Yugoslavia), to total embargoes (North Korea, Cuba, Vietnam, Cambodia). "Normal" trade relations in the dictionary sense of the word have not existed between the US and the USSR since before World War II. Although trade has expanded, our overall relations have had ups and downs, and efforts to remove trade obstacles have sometimes been abortive. Progress in trade relations with other Eastern European countries has been uneven, but obstacles to trade have been gradually reduced. As a next step, we hope Congress will soon approve the Trade Agreement signed with Hungary on March 17.

Our relationship with the USSR and its Warsaw Pact allies will continue to have competitive as well as cooperative elements. Limits must therefore continue to be placed on the export of technology which might contribute to their military potential in a manner detrimental to our security.

American business dealings with the PRC are not "normal" commercial relations, as the term is understood in the West. Nor would normalization of our

political relations make them so. Steps, such as signing a trade agreement, we might take in connection with or following normalization could, however, reduce present barriers to "normal" commercial interchange.

We must, to some extent, treat the PRC as a potential adversary, and thus continue security export controls.

Because US-PRC trade is on such a small scale and principally involves commodities the PRC can trade elsewhere, use of trade policy to accomplish non-economic objectives has only limited validity.

I hope these responses will be helpful to you and the members of the Committee.

Sincerely,

DOUGLAS J. BENNET, Jr.,
Assistant Secretary,
Congressional Relations.

THE SECRETARY OF THE TREASURY,
Washington, D.C., March 24, 1978.

HON. RICHARD BOLLING,
Chairman, Joint Economic Committee,
Congress of the United States,
Washington, D.C.

DEAR MR. CHAIRMAN: Thank you for your letter of March 7, 1978, concerning the prospects for East-West economic relations. I appreciate the opportunity to comment on the issues you raised, and am responding to your questions in the same order in which they appear in your letter.

(1) East-West trade will continue to be significant from the standpoint of U.S. national interest, even if it remains a small share of our total trade turnover and an even smaller share of our GNP. Its importance is not measured merely in dollar terms, although our trade with the nonmarket-economy countries totaled over \$3.8 billion in 1977 and we had a trade surplus of about \$1.6 billion—a welcome contrast with our tremendous deficit worldwide. Of importance, also, are the implications of East-West trade for our international relations and our national security.

A significant aspect of East-West trade is the transfer of Western technology to Eastern economies. These countries suffer from low productivity, inefficient industrial equipment, and out-of-date technology. Imports of Western technology and equipment significantly increase the productivity of the factories where they are used. However, there appears to be relatively little dissemination of such improvements to other factories. This appears due to factors characteristic of centrally planned economies, which reward fulfillment of planned production quotas and penalize innovations which even temporarily interfere with production. The effects of imports of Western technology are also limited by the relatively small size of such imports. In 1976, for example, Soviet imports of machinery from the West were only about 5 percent of total Soviet investment in machinery and equipment. In part, this is due to shortages of hard currency, which limit imports of Western equipment.

East-West trade benefits the United States economy by promoting business activity and employment, and affording markets for American agricultural and industrial products. However, assuming that the present downturn continues in U.S. trade with the nonmarket-economy countries, it is not likely that this trade will generate many new jobs in the United States, except perhaps in producing certain types of industrial equipment which are in demand. U.S. exports of manufactured goods to these countries in 1977 were about 23 percent less than in 1976. This decline is in part due to a shortage of hard currency which these countries need to pay for imports. Many of them have incurred heavy indebtedness in the West to pay for past imports, and now tend to be more cautious about importing at the cost of incurring additional debt.

East-West trade contributes to making production more efficient in the United States. Exports of U.S. manufactured goods help keep U.S. factories operating at efficient levels of production when they might otherwise operate at less than optimum levels during periods of slack demand. The profits from such exports increase the funds available to U.S. companies for further research and development. This helps to maintain our lead in technology and to make production more efficient in the U.S. However, the effects of East-West trade in this respect should not be overestimated—the amounts involved are small in relation to the total output of American industry.

Significant benefits from potentially increased trade relate to its political effects within and between Eastern and Western societies. Trade promotes contacts between members of the two societies and fosters mutual understanding. It builds economic relationships which give each side an interest in continuing good relations. This encourages mutual restraint and promotes progress in our political relations.

(2) Our commercial relations with the Eastern countries would be effectively promoted if improved credit terms were available. At present, U.S. exporters are significantly handicapped in relation to their competitors in other Western countries which offer government-sponsored export credits on attractive terms. Over \$10 billion dollars' worth of such credits have been made available to the Soviet Union. U.S. Government agencies are prevented by law from offering credits for most nonmarket-economy countries, unless they meet certain requirements with respect to freedom of emigration. Poland and Romania are the only nonmarket-economy countries currently eligible for new Eximbank credits. The other countries tend to buy from non-U.S. suppliers which offer attractive credit terms, unless the U.S. product is significantly superior.

Relaxed trade restrictions, such as the removal of discriminatory tariffs, would do much to promote commercial relations. At present, Poland and Romania are the only nonmarket-economy countries enjoying most-favored-nation treatment on their exports to the United States. Products from other nonmarket-economy countries are, in many cases, subject to higher U.S. import duties than are assessed on the same products from almost all other countries. Removal of this discriminatory treatment would promote two-way trade, since it would help countries to increase their exports to the United States, thereby earning hard currency needed to pay for increased imports of U.S. goods. The amounts involved would, however, be relatively small—the estimated increase in U.S. imports from these countries would probably be less than ten percent a year.

Improved business facilities would also be effective in promoting commercial relations. At present, U.S. businessmen are handicapped by inadequate office facilities in Eastern countries, by difficulties in employing qualified local personnel, by delays in obtaining visas, by barriers to dealing directly with end-users of their products, and many other problems. We have had some success in improving the situation through government-to-government negotiations, through the work of joint councils in which U.S. businessmen participate, and through the efforts of the commercial officers of U.S. embassies. Much remains to be done, however.

We should place prudent limits on our use of trade promotion measures, particularly with respect to export credits. The United States Government has been a leader in building a consensus among the major Western industrialized nations with respect to export credits. We have sought to lessen counterproductive competition in offering concessional credit terms, not only to the Eastern countries, but worldwide. We believe that it is in the best interests of all concerned to base competition on quality, price, service, and commercial considerations other than concessional credit terms.

With respect to business facilities, in general we favor full normalization both for U.S. businessmen in Eastern countries and for their Eastern counterparts in the United States. As a rule, facilities in the United States are superior to those in Eastern countries, and restrictions in the United States are less severe. We recognize that there are situations in which some restrictions on Eastern personnel in the United States continue to be appropriate, if only in reciprocity so long as similar restrictions are imposed on U.S. businessmen in Eastern countries.

(3) Our trade relations with Eastern countries differ significantly from what is "normal" for our commercial relations with Western countries. In the Eastern countries, trade is conducted by government enterprises, usually with centralized control. It is not conducted for profit in the usual Western sense, and prices may be set with only secondary attention to costs. Official trading enterprises exercise concentrated bargaining power, and often impede direct contacts between producer and end-user. Trade is subject to the national economic plan and is conducted with a view to the national interest, including international political and military considerations.

U.S. law provides for controls on the export of goods and technology from the United States to any nation or combination of nations threatening the national

security of the United States if the President determines that their export would prove detrimental to the national security of the United States. The nature of our relations with the Soviet Union and of its ties with allied countries dictates strict limits on exports, especially of high-technology products of military significance, which would be detrimental to our national security.

Economic bargaining pressure can be effective to only a limited extent to change or moderate the adverse or threatening aspects of Eastern societies that run counter to our perceived national interests or minimum standards of conduct. In a general sense, our economic relationships with these countries exert a beneficial, long-term influence, promoting improved understanding and giving each side an incentive to exercise restraint in order not to jeopardize mutually advantageous economic relationships. However, experience indicates that attempts to use economic pressure to obtain non-economic concessions are likely to be ineffective.

This is particularly true of the Soviet Union. In part this is due to the fact that U.S. trade represents a small part of the foreign trade of the Soviet Union—about 7 percent of Soviet imports in 1976 and about 1 percent of exports. If necessary, the Soviet Union could meet almost all of its import needs from other suppliers. Also, if the United States were to attempt to bring pressure on the Soviet Union through withholding U.S. exports, such as grain or machinery, experience suggests that this would arouse strong resistance within the United States to the loss of export business.

I hope that this information will be helpful. If you believe that I can be of further assistance, please let me know.

Sincerely,

W. MICHAEL BLUMENTHAL

ASSISTANT SECRETARY OF DEFENSE,
INTERNATIONAL SECURITY AFFAIRS,
Washington, D.C., March 13, 1978.

In reply refer to I-2810/78.

Hon. RICHARD BOLLING,
U.S. House of Representatives,
Washington, D.C.

DEAR CONGRESSMAN BOLLING: This is in response to your recent letter regarding the prospects of East-West commercial relations with special attention to economic relations between the United States and the Soviet Union.

I believe the first two sets of questions you have posed are important in themselves and, in certain respects, to the mission of the Department of Defense. However, at this stage of preparations for your workshop, I wish to defer to the other departments and agencies who are primarily responsible for the subject matter covered by these questions and limit Defense comments to the set of questions in paragraph three. Our response to this part of your inquiry is attached.

When all of the information is in, I would appreciate an opportunity for my staff to participate in your workshop, if this is appropriate.

Sincerely,

ELLEN L. FROST,
Deputy Assistant Secretary,
International Economic Affairs.

Enclosure.

Question 3. To what extent should we now view trade relations with the Eastern countries as "normal" commercial relations?

If by "Eastern countries" is meant the Warsaw Pact (WP) countries and if "normal" commercial relations with these countries means withholding critical technologies and strategic products while at the same time encouraging trade in less critical technologies and non-strategic commodities, then we are currently in this pattern for the USSR, East Germany, Bulgaria, Hungary, and Czechoslovakia. If it means extending special trading privileges such as MFN, commercial credits, and approval of exports considered reasonable and necessary for the civilian economy, we treat only Poland and Romania of the WP countries in this manner. Finally, if it means treating them as Free World countries, we accord this status only to Yugoslavia (a non-WP Eastern European country). With respect to changing our commercial relationships with the WP countries,

we note that Section 4(a)(2)(A) of the Export Administration Act reads in part as follows: ". . . United States policy towards individual countries shall not be determined exclusively on the basis of a country's Communist or non-Communist status but shall take into account such factors as the country's present and potential relationship to countries friendly or hostile to the United States, its present and potential relationship to countries friendly or hostile to the United States, its ability and willingness to control retransfers of United States exports in accordance with United States policy, and such other factors as the President may deem appropriate." The Secretary of Commerce is charged with reviewing our policy towards individual countries, including WP countries, and reporting results to Congress not later than 31 December 1978 and annually thereafter. At the present time the interdepartmental Advisory Committee on Export Policy (ACEP) is reviewing the status of Romania to determine whether somewhat more favorable treatment should be accorded to that country in the near future.

To what extent should our continued adversarial relations dictate limits on our exports, especially of high technology products of military significance?

The 4 February 1976 Bucy Report found that the transfer of design and manufacturing know-how is of overwhelming importance to our national security. There is considerable evidence to indicate that there is a widespread effort on the part of the WP countries to acquire such technology and equipment through illegal means; and although the United States has a vigorous program to deny such illegal diversions and punish violators insofar as possible, our zeal and concern are not shared by our COCOM partners or other Free World countries. Since we are in a continuing adversarial relationship with the WP countries (somewhat less for Poland and Romania), with no indications of any lessening of tensions at this time, this situation must continue to dictate limits on our exports of high technology products of military significance. A key consideration is to maintain our margin of technological superiority over the USSR and its allies in the production and application of military equipment.

Can economic bargaining pressure be effectively utilized to change or moderate the adverse or threatening aspects of Eastern societies that run counter to our perceived national interests or minimum standards of conduct?

We find it difficult to provide a meaningful answer to this question. The particulars of a given situation, the constraints under which an Eastern country may be operating at the time, whether the U.S. has some unique economic asset with which to bargain, and whether the changes sought are short term or long term, are but a few of the variables on which a realistic answer would depend.

THE SECRETARY OF COMMERCE,
Washington, D.C., April 3, 1978.

HON. RICHARD BOLLING,
Chairman, Joint Economic Committee,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: Thank you for your letter of March 7 concerning re-assessment of prospects for East-West commercial relations. Enclosed are detailed responses to your questions.

We appreciate the opportunity to express our views on East-West trade matters. Overall, we see East-West trade as having very large economic potential for the United States in the long term as well as very important immediate and continuing political significance.

We look forward to the opportunity to be of assistance to you in the future.
Sincerely,

JUANITA M. KREPS.

Enclosure.

Question (1)(a).—"How important is our Eastern trade likely to be if it remains a small share of our total trade turnover and a smaller share of our GNP?"

Answer. In 1977, U.S. trade with the communist countries amounted to \$3.8 billion, constituting 1.4 percent of our trade with the world and 0.2 percent of our 1977 GNP. These very small percentages are unlikely to increase dramatically in the years immediately ahead. However, East-West trade is of larger significance to the United States than current aggregate dollar values might indicate:

U.S.-communist trade has been consistently imbalanced strongly in favor of the United States. In 1977, U.S. exports to the communist countries came to

\$2.7 billion, while imports were only \$1.1 billion, yielding a trade surplus of \$1.6 billion. U.S. surpluses in both 1975 and 1976 exceeded \$2 billion, and the 1978 surplus is again expected to exceed \$2 billion. These large surpluses are of obvious importance to the United States in light of the current overall U.S. trade deficit.

The communist countries constitute an important market for U.S. farm products with potential for further growth. In 1977, 13 percent of U.S. grain exports went to the communist countries and the share is expected to be higher in 1978. Two-thirds of total U.S. exports to the communist countries from 1972 to 1977 consisted of agricultural products.

Although the U.S. share of world exports of manufactured goods is about 20 percent, the U.S. share of Western exports of manufactured goods to the communist countries is only about 7 percent. We are thus far short of our full potential for sales of manufactured products to the communist countries.

A large portion of U.S. imports from the communist countries consists of energy products and other important industrial raw materials. In 1977, 27 percent of our imports from the Soviet Union, for example, were petroleum products; 41 percent were non-ferrous metals and metallic ores. Although Soviet petroleum provided only a very small fraction of total U.S. petroleum needs, the U.S.S.R. supplied 18 percent of total U.S. imports of platinum group metals in 1977, 11 percent of total U.S. imports of chrome ore, and significant percentages of our imports of nickel, titanium and other scarce materials. These products are essential to our domestic economy and they are not available in sufficient supply from domestic sources. They do not displace U.S. production. Had they not been obtained from the U.S.S.R., importation from some other foreign source would have been required. In the case of platinum metals and chrome ore, there are only a limited number of alternative world sources.

The communist countries comprise about one-third of the world's population and about one-quarter of its land area. Their combined GNPs in 1977 were roughly equal to the GNP of the United States—the GNP of the Soviet Union alone exceeded \$1 trillion. Their potential long-run impact in world markets, both as buyers and as sellers, is very much larger than their present trade would indicate. They represent markets and resources with a long-term potential that cannot be neglected.

In addition to its present and future economic significance, U.S. non-strategic trade with the communist countries and development of greater economic interdependence make important contributions toward improved political relations with these countries by giving them a greater stake in peaceful relations with the West. Furthermore, trade contacts are channels for better mutual understanding and for increased exposure of communist officials to Western attitudes and ideas.

Question (1)(b). "Is the importance (of our Eastern trade) likely to be expressed in terms of the significance of Western transfers of technology to Eastern economies?"

Answer. Obtaining Western technology is certainly a major objective of communist countries. East-West trade, however, does not provide them with military technology, and the non-strategic technology fraction of Western exports to the East is approximately the same as the non-strategic technology fraction of Western exports to the world.

U.S. export controls, in concert with multilateral COCOM controls, restrict transfer to communist countries of technology with direct military or military industrial applications. These controls must be continued and rigorously enforced.

The acquisition and sale of non-strategic technology is, however, an important incentive to trade, not only between East and West, but to trade among all nations. Our analysis of Western exports of machinery and equipment embodying "high technology" reveals that the share of "high technology" exports in total exports to the communist countries differs little from the respective shares in Western trade with LDC's and in trade among Western nations.

Furthermore, the impact of Western exports of technology on overall communist economic capabilities has not been great. In 1976, for example, the share of Western equipment in total Soviet investments in plant and equipment was approximately 5 percent. It is true that certain sectors of the Soviet economy, such as the chemical sector, have imported significant amounts of Western capital equipment. Yet diffusion of such technology is severely hindered by features of centrally planned economies which frustrate the adoption of new techniques.

Econometric studies have revealed that Western technology imports have increased Soviet economic growth only marginally while recent assessments of the technical state-of-the-art in the U.S.S.R. and other communist countries reveal few areas where the Western lead has been significantly eroded over the last 20 years.

Question (1) (c). "If Western exports are significant to the Eastern economies are they also important to us in terms of the generation of new jobs and making production more efficient in the United States?"

Answer. The present scale of our exports to the communist countries is too small to make a really significant impact on overall industry production efficiencies. Sales to communist countries have, however, been of great importance to a number of U.S. firms during recent years, providing a much needed outlet for excess capacity in some instances, and in others creating a need for new capacity. Grain exports have, of course, provided a particularly valuable outlet for surplus U.S. production. The employment effects of our trade with the communist countries have definitely been positive. Total 1977 U.S. exports to the communist countries of \$2.7 billion exceeded imports from the communist countries by \$1.6 billion; in 1976, \$3.6 billion worth of exports exceeded the corresponding import value by \$2.6 billion. These large values of net exports imply a strong positive effect on jobs.

Furthermore, our imports from the communist countries generally do not displace U.S. workers. As noted above, a large portion of these imports consist of raw materials needed by American industry, rather than finished goods that would be competitive with U.S. products. Additionally, a substantial portion of manufactured goods imports from the communist countries compete against imports from other foreign sources, rather than against U.S. production.

Question (1) (d). "Should the significance of potentially increased trade be judged largely in terms of its political effects within and between the Eastern and Western societies?"

Answer. It can reasonably be argued that the political effects of East-West trade are of even greater potential importance than the economic effects. Normal trading relationships and the accompanying commercial contacts expose mid-level communist officials, many of whom will assume leadership positions in the future, to Western society and its benefits. The more deeply and intricately involved in world economic matters the communist nations become, the greater will be their stake in developing a stable international economic system. President Carter has said, in his message to the 1977 meeting of the U.S.-U.S.S.R. Trade and Economic Council, "Bringing together businessmen from both countries for discussions on ways to expand economic, commercial, and technical cooperation is important not only for its positive impact on the American and Soviet economies, but also because the expansion of bilateral trade helps maintain and strengthen the fabric of world peace." Additionally, trade allows the countries of Eastern Europe an important alternative to complete dependence upon the Soviet Union and other CMEA relationships.

Question (2) (a). "What promotion of commercial relations is likely to be effective in terms of improved terms of credit, relaxed trade restrictions, and improved business facilities?"

Answer. A purely economic analysis suggests that providing of Export-Import Bank credits and Most-Favored-Nation tariff treatment to those communist countries which do not presently receive them (Poland, Romania, and Yugoslavia do) would not directly lead to large increases in U.S. trade with the communist countries.

The amount of additional official credit that could be generated by Soviet access to the U.S. Eximbank is likely to be relatively limited compared to Soviet needs. Official U.S. credits would probably be relatively more important to the countries of East Europe.

The economic effect of granting MFN on communist country exports to the U.S. would also be quite small, at least in the near future. This is because a large part of communist country exports—particularly those of the Soviet Union—are raw and semi-finished products which incur low U.S. tariffs even under the non-MFN schedule.

Despite the relatively small predicted *economic* impact of granting these normal trading privileges to the communist countries, the psychological effect of these steps toward normalization of trade is critically important and could lead to significant results for the United States. The Soviets claim they have diverted

\$2 billion dollars worth of orders away from the United States over the past few years as a direct reaction to the denial of Eximbank credits and MFN. While these claims appear exaggerated, a U.S. move towards improved commercial relations manifested by granting these normal trading privileges nevertheless could lead to a significant redirection of communist country purchases toward the United States. Indeed, further expansion of our trading relationships with the communist countries without extension of MFN and access to official credits will be extremely difficult.

In addition, improved business facilitation can have an important direct impact on East-West trade. U.S. business participation in trade shows, fairs, and technical seminars, and the opening of additional commercial representation offices in the communist countries can lead to increased U.S. exports.

Question (2) (b). "What are the prudent limits that we should place on the use of trade promotion in expanding our trade?"

Answer. Clearly, the promotion of exports to potential adversaries should be tempered by continuation of the strict control of these exports which might endanger the U.S. national security. Export promotion should avoid these items which are unlikely to be licensed. On the other hand, because of its political significance and its long term economic potential, an expansion of East-West trade in non-strategic items is of great importance to the United States. Furthermore, the Eastern markets are quite different from and more difficult to penetrate than the markets of the West or the South. There is a need, therefore, to maintain a strong U.S. trade promotion program to acquaint U.S. business with communist country market opportunities, to assist them in developing these opportunities, and to acquaint communist country end-users with the variety and capabilities of U.S. products.

Question (3) (a). "To what extent should we now view trade relations with the Eastern countries as 'normal' commercial relations?"

Answer. We see "normalized" trading relationships with the communist countries as implying continuation of the control of strategic technology exports, but providing them the same trading privileges (MFN, official credits, etc.) as those available to our other trading partners. Under this definition we now have "normal" trading relationships with Poland, Romania, and Yugoslavia, but not with the other communist countries. Existing legislative restrictions make further progress toward normalized relations with the U.S.S.R. extremely difficult, although it is possible that Hungary may receive MFN and Eximbank credits this year under the terms of the Trade Act of 1974.

Question (3) (b). "To what extent should our continued adversarial relations dictate limits on our exports, especially of high technology products of military significance?"

Answer. For the foreseeable future, exports to the communist countries of strategic products should continue to be stringently controlled. Within the bounds of these restrictions, however, it is U.S. policy to expand trade with the communist countries. We believe this policy must be followed consistently and not on a "stop and go" basis if the economic and political benefits of increased trade are to be realized.

Question (3) (c). "Can economic bargaining pressure be effectively utilized to change or moderate the adverse or threatening aspects of Eastern societies that run counter to our perceived national interests or minimum standards of conduct?"

Answer. Apart from complete embargo, the tools most frequently suggested for effecting leverage are withholding or controlling access to the following: Non-discriminatory tariffs (MFN); official export credits; high technology exports; and grain exports.

Non-discriminatory tariffs.—Quantitative estimates of the probable impact of MFN on the ability of the communist countries to export to the United States indicate that the effect would be relatively small and hence not of great economic importance to them in the foreseeable future. The principal exports of the Soviet Union, for example, are raw and semiprocessed materials that fall into the low to no tariff categories, even without MFN. It will be many years before the composition of Soviet exports could shift towards a large volume of manufactured goods of the type that presently incur high discriminatory U.S. tariff levels.

Official export credits.—Availability of official export credits would be useful to the communist countries, particularly those of Eastern Europe. However,

normal country limits exercised by the Export-Import Bank would probably preclude credits of the size that would be needed to accommodate the enormously expensive natural resource development projects contemplated by the Soviet Union. Only if sufficient U.S. industry and government support for these projects were to develop could special Eximbank credit lines be created. The current potential leverage in unilateral U.S. credit restrictions therefore appears negligible. Further, the Soviet Union has had no difficulty in obtaining large commercial bank credits and official government loans and guarantees from Western Europe and Japan, and recent experience has shown that it is difficult for Western countries to coordinate credit policies in order to exert leverage. Finally, despite the availability of open, undrawn credit lines in Western Europe, the Soviet Union has evidenced a reluctance of late to greatly increase its already large debt burden.

High-technology exports.—Except for certain highly specialized advanced products, including certain types of oil and gas field equipment, and products with military application to which Western countries now apply joint export controls through the COCOM mechanism, the United States has little means of controlling the flow of Western technology to the communist countries. Most items of non-strategic technology that we might try unilaterally to keep from the communists would be available to them from firms in other Western countries which have not evidenced a willingness to use their East-West trade as a bargaining lever.

Grain.—The use of restrictions on sales of foodstuffs as a weapon to achieve political objectives could set a dangerous precedent, running counter to U.S. positions on the use of oil embargoes by the Arab countries for political ends. Secondly, a food embargo would be contrary to our nation's humanitarian and moral traditions and would encounter extremely adverse world opinion. Thirdly, U.S. farmers would be significantly injured by a unilateral U.S. ban that succeeded in barring U.S. grain from the communist countries, while communist purchases from other Western grain-exporting nations (Canada, Australia, Argentina, France) would vitiate the effect of the U.S. ban. If transshipments of grain could not be stopped, a U.S. embargo would be virtually useless. Finally, access to U.S. grain, even in poor communist country harvest years, is only marginally important to the communists: they require the additional grain primarily to maintain livestock production levels, rather than for basic human consumption needs.

The conclusion must be that the ability to use economic leverage unilaterally to achieve non-economic objectives is very sharply limited. Political accommodation and change on the part of the communist countries appear more likely to emerge from normal trading relationships with the West, including the United States, than to be exacted by the U.S. as a quid-pro-quo. Comprehensive, continuing contacts between East and West hold the greatest promise for advancing U.S. interests over the long term.

CHRONOLOGY ON EAST-WEST COMMERCIAL RELATIONS

BY RONDA A. BRESNICK

September 7, 1978—President Carter approved the sale of oil drilling equipment to the Soviet Union. The sale calls for Dresser Industries to sell the Soviets a \$145 million plant which would produce oil drilling bits.

September 1, 1978—Since no disapproving action was taken by Congress, the President's authority to waive the freedom-of-emigration requirement extended through July 2, 1979, allowing the trade agreements with Hungary and Romania and the mutual grants of nondiscriminatory treatment to remain in force.

August 31, 1978—President Carter called for a review of a decision he made, approving the sale of oil drilling equipment by Dresser Industries to the U.S.S.R.

August 9, 1978—The Carter Administration announced it has approved the sale of oil drilling equipment by Dresser Industries to the U.S.S.R. Most of the sale had been approved, but a \$1 million electronic-beam welding machine was under presidential study.

July 25, 1978—The White House announced that it was deferring high level visits to the Soviet Union in general, although a spokesman said the policy would be applied on a case-by-case basis.

July 19, 1978—President Carter recommended to the Department of Commerce that it reject a Sperry Rand license application for the sale of a Sperry Univac

computer system to the Soviet news agency Tass. In addition, the President determined that all oil production equipment will require a Commerce Department license for sale to the U.S.S.R. Oil production equipment was placed on the U.S. Government "commodity control list."

July 18, 1978—A Soviet court convicted American newsmen Craig Whitney and Harold Piper of the Baltimore Sun of slander in reference to their reports on Soviet dissidents.

July 14, 1978—Soviet dissident Anatoly Scharansky was convicted of treason by a Soviet court and sentenced to 13 years in prison at hard labor.

July 13, 1978—Soviet human rights activist Alexander Ginzburg was convicted by a Soviet court of anti-Soviet activities and sentenced to eight years in prison.

July 7, 1978—Trade agreement and mutual granting of the MFN status between the United States and Hungary entered into force upon exchange of diplomatic notes between the two countries.

June 12, 1978—Soviet police arrested American businessman F. Jay Crawford in Moscow on charges of smuggling and violations of currency regulations. Crawford has been stationed in Moscow since 1976 as a representative of the International Harvester Company. His arrest was ostensibly linked to a Soviet U.N. employee arrest and his retention for trial.

June 7, 1978—President Carter delivered a major foreign policy speech in Annapolis in which he warned the Soviet Union that it must choose between confrontation and cooperation with the United States. He called for a "broadly defined and truly reciprocal detente."

January 23 to January 26, 1978—A visiting Soviet Parliamentary delegation, headed by Boris Ponomarev, held a series of talks in Washington with members of the U.S. House and Senate.

December 29, 1977—President Carter arrived in Poland on the first part of a six nation tour. In Warsaw, the President met with Edward Gierek and other Polish leaders to discuss East-West relations.

December 28, 1977—President Carter signed into law Public Law 95-223, amending the Trading-With-The-Enemy Act.

December 1977—The U.S. and U.S.S.R. signed a five year extension to the 1972 U.S.-U.S.S.R. Agricultural agreement.

November 15, 1977—Secretary of Commerce, Juanita Kreps, called for development of a policy that could open the way for joint U.S.-Soviet projects that would tap the Soviet Union's energy and raw material resources.

November 10, 1977—Soviet Foreign Trade Minister, N. S. Patolichev met with President Carter at the White House.

November 2, 1977—Brezhnev announced that the 1977 Soviet grain harvest would produce only 194 MMT.

November 1977—In an address to the U.S.-U.S.S.R. Trade and Economic Council Treasury Secretary, Michael Blumethal, remarked that increased trade and the improvement of economic relations with the U.S.S.R. are strongly favored by the Carter Administration.

October 26, 1977—In testimony before the House International Relations Subcommittee on Europe and the Middle East, Dr. Marshall D. Shulman, ranking Soviet specialist in the Carter Administration, gave a comprehensive public review of U.S. policy towards the Soviet Union.

October 4, 1977—The follow on meeting of the CSCE opened in Belgrade. The meeting, attended by 35 Eastern and Western nations, was scheduled to review the implementation of the Helsinki accords and to discuss further measure directed towards enhancing security and cooperation in Europe.

September 2, 1977—Defense Secretary, Harold Brown, released the memorandum "Interim DoD Policy Statement on Export Control United States Technology". This memorandum is based upon the recommendations of The Defense Science Board in its report "An Analysis of Export Control of U.S. Technology—a DoD Perspective".

August 22, 1977—Upon his arrival in Peking for a four-day visit and talks with Chinese leaders, Secretary of State Vance appealed for mutual efforts by China and the United States to normalize their relations.

August 4, 1977—President Carter signed the International Security Assistance Act of 1977. (Public Law 95-92)

July 21, 1977—In a major address to the Southern Legislative Conference in Charleston, South Carolina, President Carter explained at great length the wide-ranging aspects of Soviet-American relations.

July 1, 1977—Approximately 1,240 miles of the Orenburg gas pipeline was completed. In addition, the Soviets have started up the second of three planned processing units at the Orenburg fields, bringing production capacity to 1.1 trillion cubic feet annually. Eventually the field is intended to produce 1.7 trillion cubic feet per year.

July 1977—West Germany and Hungary sign a tax treaty which eliminates double taxation of profits and personal income.

June 23, 1977—The Control Data Corporation was denied an export license to sell a \$13 million Cyber 76 computer to the Soviet Union.

June 22, 1977—President Carter signed the Export Administration Amendments of 1977. (Public Law 95-52)

June 16, 1977—Secretary of State Cyrus Vance described U.S.-Soviet trade as "an important underpinning of our relationship" and said he hoped that Congress would repeal the Trade Act restrictions on MFN and credits.

May 1977—A special report to the Congress by the International Trade Commission concluded that the U.S. market would react positively to any lower prices that might accompany removal of the current high tariffs on Soviet exports. These high tariffs result from the fact that the U.S.S.R. is excluded from receiving MFN tariff treatment.

May 1977—In order to promote economic cooperation with Western firms, Hungary passed new joint venture regulations. The two most important provisions permit joint ventures in the production sector and majority equity ownership by the foreign partner in joint ventures operating in the financial and service sectors.

January 5, 1977—The Soviet Union announced that its grain harvest for 1976 totalled a record 223.8 MMT.

November 1976—A ten year agreement on economic, industrial and technical cooperation between the United States and Romania was signed.

October 29, 1976—A sophisticated Cyber 172 computer system valued at between \$4 and \$5 million had reportedly been approved by the State Department for sale by the Control Data Corporation to the Soviet Union. An almost identical system was also reportedly given State approval for sale to The People's Republic of China.

October 1976—The U.S. Office of Export Administration approved a request by Control Data Corporation to ship a \$5 million Cyber 73 computer with peripherals to the Soviet All-Union Research Institute of Geophysical Exploration.

September 30, 1976—The Export Administration Act of 1969 expired. President Ford signed an executive order continuing export controls under the authority of the Trading with the Enemy Act.

September 1976—The U.S. Office of Export Administration (OEA) granted a validated export license to IBM for delivery of its 370-145 data processing system valued at about \$5 million, to Intorrist, the Soviet travel organization.

August 5, 1976—The United States protested to the Soviet Union that an insufficient number of American owned and manned ships were being used to carry grain to the Soviet Union. According to an agreement signed in 1972, one-third of all grain shipped to the Soviet Union was to be carried on American-flag ships. State Department officials later remarked that "this situation is at the top of the list of concerns" in Soviet-American relations.

July 16, 1976—The Soviet Merchant Marine Ministry and the U.S. Federal Maritime Commission reach an agreement to end ocean cargo rate cutting by Soviet shipping carriers.

May 1976—The export administration office of the U.S. Department of Commerce issued new guidelines spelling out procedures for computer hardware sales to the Soviet Union, Eastern Europe and other Communist countries. The new guidelines were expected to result in a speed-up of the licensing process.

April 1976—Joint Soviet, Japanese and American financing of preliminary exploration of the Yakutsk natural gas deposits was resolved. The Soviets agreed to provide 50 percent of the financing (\$150 million) while bank of America and Japan's Eximbank agreed to provide 25 percent each. Under this tripartite agreement, El Paso Natural Gas Co., Occidental Petroleum Corporation and Japan's Natural Gas Co. will provide equipment and technical services—seismic surveys and drilling to confirm the deposits and delineate the fields.

March 15, 1976—The first cooperation agreement between the GDR and a U.S. firm, Rockwell International, was signed. The agreement calls for exchange of information and technology, as well as cooperation in third markets. Specific

areas covered include electronics, textile and printing machinery and oil pipeline valves.

February 24, 1976—The 25th Communist Party Congress opened in Moscow. The party Congress, which last convened in April of 1971, reviewed Soviet domestic and foreign policy, discussed and voted on the political report by party leader Leonid I. Brezhnev, approved the new Tenth five-year economic plan. (1976-1980) and elected the Central Committee of the Communist Party. The Central Committee elected a Politburo and a Secretariat.

February 4, 1976—A GAO report released on February 4, 1976 and entitled "The Government's Role in East-West Trade—Problems and Issues" stated that the United States government should extend more support to U.S. corporations involved in East-West trade. In general, the report suggested that the United States Government should become more involved in monitoring Soviet-American trade in the areas of commodity prices and supplies, technology, credits and export licenses.

November 18, 1975—The U.S. Department of Commerce announced that it had rejected an application by the International Business Machine Corporation to supply the Soviet travel agency Intourist with a computerized reservation system valued at approximately \$11 million.

December 15, 1975—The Senate ratified the U.S.-Soviet Tax Convention.

December 12, 1975—The United States and the Soviet Union reached an agreement on a maritime pact which includes continued Soviet commitment to pay \$16 a ton for grain shipment as previously agreed in September 1975. This agreement represents an extension of the basic arrangements established in 1972 concerning the carriage of cargoes between the United States and the U.S.S.R. The agreement will remain in force until December 31, 1981.

November 10, 1975—The Senate Foreign Relations Committee approved treaties with Poland and Romania. The treaties, aimed at promoting trade and investment, provide for lower tax rates on dividends and royalties, exempt interest payments from taxes and avoid double taxation. Tax exemptions would be extended to businessmen on limited stays.

October 20, 1975—The White House announced a five-year agreement with the Soviet Union for the Soviet purchase of 6 to 8 million tons of American grain a year. The agreement commits the Soviet Union to a minimum annual purchase of 6 million tons of American grain. The agreement specifies that purchases of wheat and corn are to be under the 6 million ton quota while other grains such as rye, oats, and rice will remain outside the agreement's coverage. Another important stipulation of the agreement was the ability of the United States Government to set aside the 6 million ton figure if grain production in the United States fell below 225 million tons in any given year.

September 29, 1975—U.S. and Poland agreed in principle to a long-term grain agreement.

August 18, 1975—In an attempt to display their discontent over the handling of United States grain sales to the Soviet Union the Maritime Unions of the AFL-CIO announced on August 18 that they would not load grain which was bound for the Soviet Union.

July 31 to August 1, 1975—Conference on Security and Cooperation in Europe met in Helsinki.

May 5 to May 8, 1975—U.S. Senator George McGovern visited Cuba, speaking with Cuban Premier Fidel Castro about the possibilities for improved relations between the United States and Cuba. Among the suggestions offered for better U.S.-Cuban relations was the proposed ending of the U.S. embargo against Cuba.

April 26, 1975—The Ford Administration announced that General Secretary Brezhnev and President Ford had agreed to postpone their upcoming summit meeting which had been originally scheduled for the summer. The main reasons cited for the delay were the summit meeting in June of the Conference on Security and Cooperation in Europe, the lack of progress on SALT II, the Middle East situation, and a general need to review Soviet-American relations.

April 11-12, 1975—Secretary of the Treasury William Simon met with General Secretary Brezhnev while attending a Moscow meeting of the U.S.-U.S.S.R. Joint Commission. During their meeting Brezhnev expressed his personal displeasure with the 1974 Trade Act and urged that the United States amend the law, omitting the emigration clause which was the main impediment to normalized

Soviet-American trade. Simon stated that the Ford Administration was attempting to amend the act so as to make it more acceptable to the Soviet Union but that the chances of Congressional approval for such an amendment were quite small.

April 11, 1975—The Soviet Union and a Western banking consortium headed by Lazard Freres & Cie completed arrangements for a \$250 million Eurocredit for the Soviet Vneshtorgbank. The borrowing arrangement, which is the largest loan the Soviet Union has ever taken with private western financial institutions, included only one U.S. bank, the National Bank of North America.

March 2, 1975—United States and Romania signed a trade agreement which included reciprocal grant of MFN.

January 14, 1975—Secretary of State Henry A. Kissinger announced that the Soviet Union had cancelled the 1972 trade agreement with the United States including the Lend-Lease debt settlement.

January 4, 1975—The President signed the Export-Import Bank Amendments (Public Law 93-646).

January 3, 1975—The Trade Act of 1974 (Public Law 93-618) was enacted.

October 29, 1974—Export Administration amendment of 1974 signed by President (Public Law 93-372).

October 18, 1974—U.S. Senator Henry Jackson, after meeting with President Ford and Secretary of State Kissinger, announced that a Soviet-U.S. agreement had been reached under which the Soviet Union would permit free emigration in exchange for U.S. trade concessions. Jackson agreed to modify his amendment to the trade bill he has sponsored in return for assurances from the Ford Administration that the Soviets will issue an initial 60,000 exit visas per year.

June 27-July 3, 1974—President Richard M. Nixon traveled to Moscow for his third round of summit talks with Soviet leaders. Negotiations resulted in only limited agreement on strategic arms limitations. These restricted each country to one anti-ballistic missile (ABM) site and placed restrictions on underground nuclear tests after 1976. The two sides pledged themselves to continue efforts at settling international problems and to expand cooperation in medicine, space exploration, environmental protection, energy and other areas.

A Soviet-American economic agreement was signed on June 29. It aimed at establishing the broad framework for trade relations over the next ten years. The accord listed possible areas of cooperation, such as contracts involving pulp and paper, timber, ferrous, non ferrous metallurgy, natural gas, the engineering industry and the extraction and processing of high-energy-consuming minerals. Efforts would be made by both countries to facilitate and encourage further trade.

May 21, 1974—A high level Supreme Soviet delegation headed by Boris Ponomarev visited the United States. The primary aim of the visit was to hold talks with members of Congress.

May 21, 1974—The Export-Import Bank of the United States, approved \$180 million worth of credits to the Soviet Union. The loan was to help finance the \$400 million worth of deals to supply fertilizer plants, chemical storage facilities, pumping stations, railroad tank cars, and a pipeline to the Soviet Union.

April 9, 1974—Secretary of Commerce Frederick Dent led an American trade delegation to the Soviet Union. In Moscow he visited a trade exhibit in which 76 American companies were participating. In talks with Soviet officials he expressed the hope that Congress would pass the Trade Reform Act quickly. He assured Soviet leaders of the U.S. business community's eagerness to expand trade relations with the Soviet Union.

March 8, 1974—Comptroller General found that the President must make a separate determination for each Eximbank transaction with a Communist country.

February 26, 1974—A 22-member Soviet delegation led by Soviet Foreign Trade Minister Nikolai S. Patolichev visited the United States to participate in the first full meeting of the U.S.-U.S.S.R. Trade and Economic Council. Patolichev, in public statements, said that if Congressional attempts to halt credits to the Soviet Union were successful, Soviet leaders would have to turn to other Western countries for the credits and large-scale projects.

December 11, 1973—West Germany and Czechoslovakia sign a treaty establishing formal diplomatic relations.

December 5, 1973—Romanian President Ceausescu travelled to Washington for talks with President Nixon. The two leaders signed a statement of principle,

pledging continued development of friendly relations between the United States and Romania on the basis of respect for sovereignty and territorial integrity. The United States reiterated its support for Romania's independent foreign policy. This was the fourth meeting between Ceaucescu and American leaders since 1967.

October 1 to October 3, 1973—Secretary of the Treasury George P. Shultz visited the Soviet Union to discuss matters concerning bilateral trade. At the end of the three-day visit, Secretary Shultz predicted that Soviet-American trade could reach \$1.5 billion in 1973. He noted that further trade expansion was being held up by the most-favored-nation issue. He indicated that Soviet leaders were unwilling to make further concessions on the Jewish emigration question, which was holding up MFN action in Congress. Other topics discussed in Moscow included joint ventures in mining and refining bauxite, copper and magnesium, Siberian oil and gas projects, and the problem of Soviet economic secrecy.

October 2, 1973—A number of American businessmen headed by Pepsico President Donald P. Kendal reached an agreement with Soviet officials to establish a U.S.-U.S.S.R. Trade and Economic Council. Its purpose was to facilitate American Business activities in the Soviet Union and to find markets for Soviet products in the United States. The Council would be made up of Soviet commercial agency representatives and member of the U.S. National Association of Manufacturers, the U.S. Chamber of Commerce, and executives of 23 large American companies.

July 3 to July 7, 1973—The first stage of the Conference on Security and Cooperation in Europe was held in Helsinki at the foreign ministers' level. The meeting confirmed the agreements reached in the preliminary talks and set Sept. 18 as the date for beginning the next stage of talks.

June 1 to June 25, 1973—Leonid Brezhnev travelled to the United States, returning President Nixon's visit to the Soviet Union in 1972. Seven Soviet-American agreements were signed during his stay. They aimed mainly to demonstrate the continuing determination of both countries to improve relations. The agreements were in the area of oceanography, agricultural research, transportation, cultural exchange, reciprocal taxation policies, and nuclear energy research. A declaration of principles was signed pledging both sides to a speed-up of Strategic Arms Limitation talks with a goal of a SALT II treaty by the end of 1974.

June 8, 1975—The Soviet Trade Ministry and the U.S. Occidental Petroleum Co. and El Paso Natural Gas Company reached an agreement whereby the American companies would participate in the exploration and development of natural gas fields in the Yakutsk region. The 25 year, \$10 billion project would involve the shipment of 2 billion cubic feet of gas to the United States daily.

June 5, 1973—Soviet and American officials negotiated a new shipping agreement whereby American ships would be paid higher rates for agricultural goods carried to the Soviet Union. According to the agreement, the rates would fluctuate in line with world prices. They would not apply to shipments stemming from the 1972 grain deals because contracts had already been signed covering them.

May 31, 1973—The National Broadcasting Company and the Soviet Council of Ministers Television and Broadcasting Committee agreed to future exchanges of radio and television programs and personnel.

May 27, 1973—The Soviet Union joins The Geneva Copyright Convention.

April 12, 1973—The Occidental Petroleum Corporation announced that it had signed an agreement with the Soviet Foreign Trade Ministry calling for Occidental to supply technology and equipment for a Soviet fertilizer manufacturing complex in exchange for Soviet shipments of ammonia, urea, and potash over the next 20 years. The value of the transaction was placed at \$8 billion.

March 20, 1973—The Export-Import Bank signed its first loan agreement with the Soviet Union. The Soviet Union Foreign Trade Bank was granted \$101.2 million in direct loans and another \$101.2 million in guaranteed American commercial bank loans for the purchase of industrial equipment in the United States.

February 21, 1973—The U.S. and Soviet Union announced the signing of several 2-year agreements designed to put an end to fishing incidents off the Pacific and Atlantic coasts of the United States and to conserve the resources of the oceans.

November 17, 1972—The Chase Manhattan Bank announced that its plan to open a Moscow branch had been approved by Soviet authorities. First National City Bank of New York which had also applied for authorization to open a branch in Moscow was still awaiting a reply.

November 16, 1972—The Pepsi-Cola Company concluded an agreement whereby the soft drink Pepsi-Cola would be made and sold in the Soviet Union. In exchange the American company would market Soviet vodka and wines in the United States.

October 18, 1972—A trade agreement was reached in Washington between Secretary of State Rogers and Soviet Foreign Trade Minister Patolichev. The agreement stipulated that (1) the Soviet Union would repay \$722 million in settlement of its World War II Lend-Lease debt, (2) the American Export-Import bank would grant credits to the Soviet Union for its purchases in the United States, (3) the United States would grant most-favored-nation status to the Soviet Union, (4) permanent commercial offices would be established by the United States in Moscow and the Soviet Union in Washington.

October 14, 1972—American Secretary of Commerce Peterson and Soviet Merchant Marine Minister Guzhenko reached an agreement opening forty ports of each country to merchant vessels of the other. It was also agreed that American ships carrying grain to the Soviet Union would be paid the highest current world market rates.

October 4, 1972—An amendment to the East-West Trade Relations Bill was introduced by Senator Henry M. Jackson (D-Wash.) with the cosponsorship of 72 Senators. It would prohibit the extension of credits or most-favored-nation status to a non-market economy which restricts or taxes emigration by its citizens. The amendment was aimed at the Soviet Union in response to its restrictive policies on Jewish emigration.

September 21, 1972—A broad agreement was reached in Moscow by the U.S.-Soviet Joint Committee on Cooperation in the Field of Environmental Protection. Thirty environmental projects were to be carried out in the two countries. The agreement to exchange seismic detector installations was believed to have importance beyond the field of environmental protection. The seismic devices could be used to police test ban agreements.

August 14, 1972—Secretary of Commerce Peterson issued a report entitled "U.S.-Soviet Commercial Relationships in a New Era." The report stressed the great potential for joint ventures between American companies and the Soviet Government, especially in the exploitation of the Soviet Union's natural resources.

July 20 to August 1, 1972—Secretary of Commerce Peter G. Peterson, accompanied by a thirty-member delegation, met with Soviet trade officials to discuss various aspects of U.S.-Soviet trade. The repayment of the Soviet Lend-Lease debt was discussed without agreement. The Soviet position was that settlement would come only after Congress granted most-favored-nation status to the Soviet Union. Settlement of Lend-Lease debts, meanwhile, stood in the way of granting American commercial credits to the Soviet Union.

July 14, 1972—Occidental Petroleum Corporation signed an agreement in Moscow, whereby the American company would provide technological assistance in the production of oil and natural gas, chemical fertilizers, metal plating, hotel construction, and solid waste utilization. In exchange, the Soviet Union would supply the company with raw materials, including oil and gas, fertilizers, nickel and chromium.

July 8, 1972—The United States and the Soviet Union signed a three-year grain export agreement that was the largest single transaction in the history of trade between the two countries. According to the agreement, the Soviet Union would purchase more than \$750 million worth of wheat and other grain from the United States.

May 22 to May 29, 1972—President Nixon and Soviet Party General Secretary Brezhnev signed numerous agreements, the most important of which was the Strategic Arms Limitation accord (SALT I) placing limits on total numbers of American and Soviet offensive and defensive missiles. The two sides agreed to begin consultations on a European security conference after final signature of the Four-Power agreement of Berlin. They also agreed to pursue the possibility of mutual force reductions in central Europe (MBFR). The two leaders initialed several other agreements previously negotiated. These included accords on cooperation in medical research, space exploration, avoidance of collision at sea,

increased cultural and scientific exchanges, joint efforts at solving environmental problems. The communique released at the end of the Nixon visit expressed continuing disagreement on the question of Vietnam and the Middle East.

April 21, 1972—An agreement was reached aimed at facilitating and expanding shipping traffic between the Soviet Union and the United States. The agreement called for broader access to the ports of each country by the ships of the other.

April 11, 1972—The United States and the Soviet Union signed an agreement that extended and expanded the existing agreement on cultural, educational and scientific cooperation. The new accord provided for larger numbers of scholars, artists, and scientists from each nation to visit the other.

April 8 to April 12, 1972—Secretary of Agriculture Earl L. Butz traveled to the Soviet Union for talks with Soviet officials. A proposed \$200 million grain deal was reportedly the main topic of conversation during his visit.

February 21, 1972—President Nixon made what was termed an historic trip to China, culminating months of steadily improving relations between the U.S. and China. He held talks with Premier Chou En-lai and Party Chairman Mao Tse-tung. Agreement was reached to continue improving relations.

February 16, 1972—The Department of Commerce announced that the Government had approved 51 licenses for the export of \$367 million worth of truck manufacturing equipment destined for the Kama River truck manufacturing complex. Two previous licenses had been issued. The amounts licensed were not necessarily an indication of the quantities delivered, as some authorized deals were not finally concluded.

December 30, 1971—An agreement to exchange data on the biological effects of space flight was reached between representatives of the National Aeronautics and Space Agency and the Soviet Academy of Science.

November 20, 1971—Secretary of Commerce Stans traveled to Moscow for exploratory talks on expanding Soviet-American trade. At the end of his visit, Stans termed his discussions with Soviet leaders "extremely cordial and constructive". He said that the two sides had discussed trade potentials and obstacles.

October 27 to November 2, 1971—Yugoslav President Tito spent six days on a visit to the United States. President Nixon praised Yugoslavia's policy of non-alignment as a significant factor in international affairs. Both leaders hailed the new "era of negotiation".

October 22, 1971—The United States and the Soviet Union announced that they had agreed on measures to prevent collisions and incidents at sea. The agreement was necessitated by the fact that Soviet American naval vessels were often engaged in close quarter mutual surveillance on the high seas.

October 12, 1971—The President announced that he planned to travel to Moscow in May, 1972, on a working trip.

September 15, 1971—Mack Trucks, Inc. announced that it had cancelled an agreement to supply \$750 million worth of truck manufacturing equipment to the Soviet Union.

September 3, 1971—France, Britain, the United States, and the Soviet Union signed an agreement on the status of Berlin. The Soviet Union accepted responsibility for the unimpeded flow of traffic between West Berlin and West Germany. Secretary of State Rogers said the agreement enhanced prospects for peace and security in Europe. He announced NATO preparations for intensive MBFR talks.

August 9, 1971—The Commerce Department disclosed that two licenses had been granted for the shipment of \$162 million worth of equipment for a truck manufacturing plant in the Soviet Union. This action followed the announcement on June 17 that the Soviet Union and Mack Trucks, Inc. had signed an agreement calling for Mack Truck to equip what was to be the largest truck manufacturing plant in the world.

July 15, 1971—President Nixon announced acceptance of an invitation to visit the People's Republic of China in 1972.

June 10, 1971—President Nixon removed grain from the list of items requiring licenses to be exported to the Soviet Union, Eastern Europe, and China. At the same time he suspended the requirement that half of all grain shipments to those countries must be made by American vessels.

June 1, 1971—The Department of Commerce announced that it had approved licenses for the export of \$85 million worth of truck manufacturing equipment to the Soviet Union.

May 20, 1971—The United States and the Soviet Union announced that they had agreed on a framework for the Strategic Arms Limitation Talk which had resumed in Vienna on March 15. The agreement was a compromise between the American position calling for across-the-board strategic arms curbs and the Soviet position exclusively calling for antiballistic missile curbs. According to the compromise, emphasis in 1971 would be placed on antiballistic missiles, but any agreement would be coordinated with some limit on numbers of offensive missiles.

March 30 to April 9, 1971—The 24th Congress of the Communist Party of the Soviet Union restated Soviet policies of peaceful coexistence and improved relations with the United States. Party General Secretary Brezhnev, in his speech to the Congress, said that the Soviet Union would support the mutual reduction of forces in Europe by East and West, raising hopes for MBFR negotiations.

February 4, 1971—The Soviet Union joined the 4th International Tin Agreement.

January 21, 1971—An agreement was signed by the President of the Soviet Academy of Sciences M. V. Keldysh and George Low, acting administrator of the National Aeronautics and Space Administration, calling for increased cooperation in space research and sharing of data gained from space exploration.

December 7, 1970—In a further step toward normalizing East-West relations, Poland and West Germany signed a treaty that recognized the Oder-Neisse line as the Western boundary of Poland and established formal diplomatic relations between the two countries.

November 6, 1970—Doubleday and Company signed an agreement with the Soviet Novosti Press Agency whereby the Soviet publisher would supply the manuscript of a Russian book on the Soviet space program to Doubleday for an undisclosed amount of money. Novosti guaranteed that the book would not be published in the Soviet Union until it had been released in the United States, thus establishing Doubleday's international copyright. The agreement marked the first time that the Soviet Union had recognized the copyright of an American publisher.

October 29, 1970—American and Soviet officials signed an agreement to establish a joint rendezvous and docking mission in space. It was the first Soviet-American agreement on such a cooperative space effort.

September 30 to October 2, 1970—President Nixon became the first American President to visit Yugoslavia. He praised Yugoslav President Tito for his independent course in foreign affairs.

August 12, 1970—A treaty was signed between West German Chancellor Willy Brandt and Soviet Premier Alexei Kosygin normalizing relations between their two countries. Both sides renounced the use of force; each recognized the inviolability of all European frontiers, including the Oder-Neisse line, and the unchanged Four-Power status of West Berlin.

May 14, 1970—Henry Ford II announced in Detroit that the Ford Motor Company had rejected a Soviet offer to participate in the building of a truck manufacturing plant in the Soviet Union.

April 20, 1970—Henry Ford II announced from the American Embassy in Moscow that the Ford Motor Company was considering a Soviet offer to build jointly a giant truck manufacturing plant near Kazan in the Soviet Union. According to plans, the factory would produce 150,000 trucks per year by 1974.

February 10, 1970—The U.S. State Department announced the signing of an agreement expanding cultural exchange programs between the Soviet Union and the United States in 1970-1972.

EAST-WEST TRADE STATISTICS

U.S. AGRICULTURAL AND NONAGRICULTURAL TRADE WITH CENTRALLY PLANNED ECONOMIES, 1972-77

U.S. AGRICULTURAL IMPORTS FROM THE CENTRALLY PLANNED ECONOMIES CPE's, 1972-77

[U.S. dollars by 1-digit commodity code]

Country	1972	1973	1974	1975	1976	1977
Albania.....	437,714	403,871	144,871	480,949	817,461	844,099
Bulgaria.....	2,508,755	3,402,316	7,706,359	19,513,001	26,332,503	15,343,824
Czechoslovakia.....	1,105,755	1,292,171	2,591,267	1,882,134	3,977,943	5,423,004
German Democratic Republic.....	173,433	555,192	1,016,034	573,090	905,112	1,703,745
Hungary.....	5,711,261	6,625,699	10,143,978	13,639,105	22,492,987	25,190,896
People's Republic of China.....	16,981,014	2,895,986	29,539,407	28,702,634	56,445,587	67,797,867
People's Republic of Mongolia.....	960,128	1,841,611	1,524,648	1,329,961	1,907,613	2,102,311
Poland.....	64,707,874	87,275,500	88,404,604	120,008,213	144,712,249	125,979,447
Romania.....	5,333,625	8,489,369	12,539,115	12,509,136	16,108,351	20,608,486
U.S.S.R.....	3,847,262	4,688,746	9,930,540	8,403,981	8,758,656	13,280,279
Yugoslavia.....	28,756,330	42,665,866	46,954,536	71,317,402	86,431,378	87,343,362
Total to Eastern Europe.....	108,734,740	150,709,970	169,500,750	239,922,010	301,777,970	283,436,850
Total agricultural imports.....	103,523,151	180,136,327	210,495,359	278,358,606	368,916,840	366,617,320

U.S. NONAGRICULTURAL IMPORTS FROM THE CPE'S, 1972-77

Albania.....	32,120	69,196	339,019	2,343,070	1,872,970	2,555,060
Bulgaria.....	362,798	1,055,887	692,522	704,071	622,226	2,607,060
Cuba.....	32,962	3,540	1,700	2,911	27,133	106,100
Czechoslovakia.....	25,865,146	33,816,902	42,970,779	32,746,980	32,397,575	31,175,538
German Democratic Republic.....	10,162,673	9,960,479	13,113,282	10,677,483	12,739,730	15,060,048
Hungary.....	7,014,014	9,794,228	65,270,398	21,012,826	26,520,733	20,393,888
People's Republic of China.....	15,338,652	41,055,927	85,136,841	129,627,838	145,471,334	134,863,309
People's Republic of Mongolia.....	4,563	480	256	3,500	10,702	6,690
Poland.....	74,463,114	94,628,038	177,526,734	123,070,300	174,051,149	203,105,982
Romania.....	26,157,841	47,214,531	117,976,997	120,447,198	182,636,792	212,678,847
U.S.S.R.....	91,593,787	209,057,124	339,587,409	245,794,822	211,831,989	221,062,398
Yugoslavia.....	121,381,596	124,128,411	221,430,378	189,261,949	300,728,117	248,620,711
Total to Eastern Europe.....	266,440,300	320,712,670	639,320,110	500,263,880	731,569,290	736,197,140
Total, nonagricultural imports.....	373,410,266	570,829,743	1,054,046,315	875,692,948	1,088,910,450	1,092,235,712
Total, agricultural and nonagricultural imports.....	503,933,417	750,966,070	1,274,545,028	1,158,060,952	1,457,827,290	1,458,853,032

[In U.S. dollars by country

U.S. AGRICULTURAL EXPORTS TO THE CPE'S

Albania.....	187,800	209,660	353,606	523,107	419,374	270,265
Bulgaria.....	1,566,236	1,953,192	15,747,317	19,610,362	31,558,209	2,430,033
Cuba.....		1,881	7,127			
Czechoslovakia.....	39,412,054	60,992,739	30,462,515	35,189,485	123,698,835	54,487,431
German Democratic Republic.....	11,631,383	24,532,152	17,167,738	10,556,031	58,273,277	31,196,631
Hungary.....	10,453,499	20,597,724	37,170,618	40,463,302	22,441,607	33,889,784
People's Republic of China.....	58,189,098	574,975,658	652,559,401	79,689,109	44,185	63,981,531
Poland.....	79,864,974	296,431,809	253,298,682	367,813,420	481,272,909	293,005,348
Romania.....	44,822,880	73,825,999	156,496,590	101,053,421	171,584,447	118,301,976
U.S.S.R.....	434,344,814	915,809,397	299,933,117	1,135,613,793	1,486,970,594	1,036,763,974
Yugoslavia.....	95,739,112	98,564,829	115,538,994	43,423,721	37,498,022	70,285,779
Total to Eastern Europe.....	283,677,930	577,108,070	626,236,050	618,632,840	926,746,670	603,867,240
Total, Agricultural exports.....	776,211,850	2,067,895,040	1,578,735,705	1,833,935,751	2,413,761,459	1,704,612,752

U.S. NONAGRICULTURAL EXPORTS TO THE CPE'S 1972-1977

Albania.....	29,301	11,300	131,656	140,093	656,443	1,938,575
Bulgaria.....	1,635,808	4,519,589	6,217,657	9,687,587	11,761,904	21,479,864
Cuba.....	6,572	29,884	64,138	35,255	88,641	588,209
Czechoslovakia.....	9,469,344	10,861,539	18,119,674	17,710,049	23,767,602	19,502,038
German Democratic Republic.....	3,155,793	3,481,652	3,714,146	6,622,876	6,493,398	4,902,003
Hungary.....	11,950,498	12,200,449	19,001,545	35,588,645	40,518,049	45,826,976
People's Republic of China.....	2,016,093	114,128,119	154,289,209	223,941,804	135,343,962	107,336,577
People's Republic of Mongolia.....	19,093	31,125	8,580	43,017	31,307	10,939
Poland.....	31,660,880	52,884,359	141,288,933	212,270,166	139,762,307	143,530,580
Romania.....	24,227,878	42,684,265	120,619,013	88,224,169	77,448,102	141,103,362
U.S.S.R.....	112,268,895	271,288,937	307,427,903	697,081,448	818,963,717	586,719,743
Yugoslavia.....	72,410,955	136,462,580	194,254,053	280,075,382	257,915,373	285,149,737
Total to Eastern Europe.....	154,540,450	263,105,730	503,346,660	650,318,960	558,323,170	663,433,130
Total, nonagricultural exports.....	268,853,110	648,583,798	965,136,507	1,571,420,491	1,512,750,805	1,358,088,603
Total, agricultural and nonagricultural exports.....	1,045,064,960	2,716,478,838	2,543,872,212	3,405,356,242	3,926,512,264	3,062,701,355

U.S. TRADE WITH CENTRALLY PLANNED ECONOMIES: TOP 15 (FOR 1977) EXPORTS AND IMPORTS 1972-77; BY COUNTRY; AND BY SITC 2 DIGIT COMMODITY CODE

[Dollar amounts in U.S. dollars]

	SITC	1972	1973	1974	1975	1976	1977	Percent of total 1977
U.S. domestic exports to Bulgaria:								
Machinery, other than electric.....	71	\$519,411	\$1,074,517	\$1,947,213	\$4,990,446	\$4,903,942	\$11,895,654	49.8
Electrical machinery, apparatus and appliances.....	72	185,966	453,343	1,207,302	1,846,812	1,585,933	4,011,212	16.8
Pulp and waste paper.....	25	2,552	3,016			141,063	1,374,896	5.8
Chemical materials and products, n.e.s.....	59	40,737	126,439	913,868	180,832	207,563	1,049,863	4.4
Fruit and vegetables.....	05	743,036	619,574	851,879		426,186	805,085	3.4
Miscellaneous manufactured articles, n.e.s.....	89	72,858	112,299	308,105		682,560	745,430	3.1
Hides, skins and furskins, undressed.....	21	724,172	98,775	621,560	907,324	746,471	583,175	2.4
Tobacco and tobacco manufacturers.....	12	49,679	1,044,800	79,960	22,146	274,696	528,820	2.2
Medicinal and pharmaceutical products.....	54	254,012	235,386	217,552	691,421	451,467	450,178	1.9
Chemical elements and compounds.....	51	232,994	311,545	235,791	86,213	422,130	435,630	1.8
Instrumentation, photo and optical goods, watches, clocks.....	86	88,663	339,856	218,800	212,738	424,217	421,030	1.8
Oil seeds, oil nuts and oil kernels.....	22		68,875			1,595	284,568	1.2
Manufacturers of metal, n.e.s.....	69	94,547	6,780	22,998	2,666	7,657	254,442	1.1
Paper, paperboard and manufacturers thereof.....	64		6,768	850	544,772	29,650	253,471	1.1
Nonferrous metals.....	68		6,365		3,308	75,100	235,478	1.0
Total.....		3,008,627	4,508,318	7,325,918	9,763,245	10,380,230	23,328,932	97.6
U.S. General imports from Bulgaria:								
Tobacco and tobacco manufacturers.....	12			4,006,352	17,202,329	24,150,584	13,851,588	77.2
Nonferrous metals.....	68		198,926		16,810		1,198,315	6.7
Machinery, other than electric.....	71	21,450	47,784	178,055	70,475	262,470	489,050	2.7
Fruit and vegetables.....	05	174,239	839,855	295,653	117,885	176,717	379,040	2.1
Dairy products and eggs.....	02	558,557	999,493	427,450	381,502	888,831	377,708	2.1
Essential oils and perfume materials, toiletries, cleaners.....	55	552,705	887,043	1,492,052	301,124	560,513	337,646	1.9
Coffee, tea, cocoa, spices and manufacturers thereof.....	07	538,852	411,113	836,791	935,850	333,231	522,533	1.4
Crude animal and vegetable materials, n.e.s.....	29	333,697	210,813	277,512	159,952	144,139	233,530	1.3
Nonmetallic mineral manufacturers, n.e.s.....	66	32,693	263,860	96,136	61,128	92,899	207,490	1.2
Chemical elements and compounds.....	51	72,223	6,200	69,492	254,494	35,941	120,110	.7
Miscellaneous manufactured articles, n.e.s.....	89	30,428	82,078	14,630	47,635	94,474	86,553	.2
Textile yarn, fabrics, made up articles.....	65	1,292	63,044	20,035	3,887	30,284	41,778	.2
Plastic materials, regen. cellulose and artif. resins.....	58	350	257,796				23,148	.1
Footwear.....	85	47,961	19,872	4,792	12,982		17,109	.1
Medicinal and pharmaceutical products.....	54	130,342	11,972	128,839	38,532	3,016	9,144	.1
Total.....		2,494,789	4,299,859	7,847,787	19,604,585	26,773,099	17,574,752	97.9

U.S. domestic exports from Czechoslovakia:								
08	14,563,959	31,017,888	15,134,909	18,149,126	27,330,866	17,125,965	23.1	
21	13,171,793	16,410,232	9,981,833	8,813,524	11,555,877	15,951,685	21.6	
04	4,224,726	7,150,350	84,396	62,444	69,680,151	8,936,293	12.1	
71	3,078,000	3,762,441	5,828,452	7,532,919	10,248,733	8,143,835	11.0	
22	3,530,086	4,604,729	2,083,078	3,665,673	7,114,233	8,116,486	11.0	
12	474,359	1,072,452	2,447,585	3,601,471	5,841,288	3,166,026	4.3	
72	1,688,358	2,147,326	3,649,171	2,311,042	2,803,600	2,202,194	3.0	
51	422,447	356,736	554,240	629,420	1,379,957	1,233,519	1.7	
89	259,526	592,690	456,997	1,549,558	1,662,522	1,200,956	1.6	
05	2,062,076	3,755,503	654,674	825,013	2,148,122	1,104,098	1.5	
86	1,226,861	1,136,007	1,435,339	869,867	1,473,930	1,057,625	1.4	
59	166,440	368,612	817,170	383,409	694,131	949,077	1.3	
73	37,730	371,452	2,293,255	560,784	607,992	910,998	1.2	
66	20,608	236,582	26,987	418,226	685,671	675,819	.9	
63	327,508	328,620	928,193	819,819	444,784	547,824	.7	
Total.....	45,254,477	69,901,621	46,416,279	50,192,295	143,671,857	71,322,400	96.4	
U.S. general imports from Czechoslovakia:								
71	2,859,740	4,974,280	7,573,382	7,149,752	7,178,979	6,666,264	18.2	
85	4,295,826	5,770,240	5,820,541	4,168,203	6,118,223	6,069,722	16.6	
66	4,010,653	4,215,682	4,521,845	3,948,040	5,146,123	5,795,745	15.8	
67	4,654,502	4,749,832	12,681,928	3,342,749	3,248,759	2,459,581	6.7	
84	653,976	941,092	1,369,310	1,106,128	1,887,274	2,352,589	6.4	
01	433,345	311,913	736,338	442,846	1,960,058	2,109,519	5.8	
65	712,168	955,937	1,542,420	1,359,956	1,800,088	1,833,369	5.0	
89	1,869,040	2,013,682	1,996,859	5,186,305	1,672,184	1,192,984	3.3	
05	1,671	58,947	342,173	413,004	704,707	1,148,337	3.1	
73	5,077,053	6,532,647	3,415,422	2,045,356	1,136,038	959,161	2.6	
82	680,172	887,133	834,788	494,425	823,623	893,370	2.4	
54	9,586	309,910	403,447	505,784	730,124	841,849	2.3	
89	126,709	59,412	54,560	86,712	15,436	832,829	2.3	
21	510,267	493,685	608,780	538,867	537,113	584,938	1.6	
81	45,783	324,782	340,294	242,576	395,419	536,689	1.5	
11	144,686	189,107	369,620	368,415	405,607	345,126	.9	
Total.....	26,085,177	32,788,217	42,611,707	31,398,818	33,759,755	34,622,072	94.6	
U.S. domestic exports to the German Democratic Republic:								
04	9,965,793	10,225,990	12,556,290	6,815,609	48,742,082	20,246,099	56.1	
08		10,764,747	307,500			5,117,753	14.2	
05	683,580	1,957,843	2,646,915	2,001,510	2,820,839	2,014,239	5.6	
71	832,000	879,125	659,919	2,695,441	2,322,666	1,612,919	4.5	
21	132,056	811,755	859,555	853,204	518,426	1,128,310	3.1	
22					840,000	1,079,891	3.0	
22					4,144,784	719,938	2.0	
72					601,965	5,973,919	1.6	
42	385,031	360,411	864,067	329,026	601,965	5,973,919	1.6	
86	164,999	260,234	184,571	412,546	574,515	501,746	1.4	
28	186,053	400,645	649,756	637,535	156,443	494,208	1.4	

U.S. TRADE WITH CENTRALLY PLANNED ECONOMIES: TOP 15 (FOR 1977) EXPORTS AND IMPORTS, 1972-77; BY COUNTRY; AND BY SITC 2 DIGIT COMMODITY CODE—Continued

[Dollar amounts in U.S. dollars]

	SITC	1972	1973	1974	1975	1976	1977	Percent of total 1977
U.S. domestic exports to the German Democratic Republic—Continued								
Non-metallic mineral manufacturers, n.e.s.	66	132,558	14,948	111,339	119,788	349,118	474,020	1.3
Crude animal and vegetable materials, n.e.s.	29	135,072	17,833	-----	-----	43,229	355,237	1.0
Non-ferrous metals	68	47,258	-----	-----	231,034	-----	253,247	.7
Textile fibers and their waste	26	176,281	210,011	343,726	332,944	268,639	205,422	.6
Crude rubber (synthetic and reclaimed)	23	-----	7,841	-----	-----	122,443	203,835	.6
Total		12,840,681	25,911,383	19,183,638	14,425,637	61,505,149	34,966,603	96.
U.S. general imports from the German Democratic Republic:								
Machinery, other than electric	71	2,558,829	2,843,908	2,194,316	3,366,347	3,538,197	3,586,056	21.4
Fertilizers, manufactured	56	-----	-----	-----	-----	2,070,773	3,158,988	18.8
Nonmetallic mineral manufactures, n.e.s.	66	1,416,077	1,324,761	1,122,902	1,499,522	1,157,983	1,846,905	11.0
Hides, skins, and furskins, undressed	21	133,401	493,314	800,700	461,073	696,629	1,495,734	8.9
Instrumentation; photo and optical goods, watches, clocks	86	1,456,830	1,678,146	1,296,159	1,296,438	1,462,152	1,470,254	8.8
Miscellaneous manufactured articles, n.e.s.	89	723,326	863,794	1,264,455	1,095,907	1,459,881	1,188,527	7.1
Leather, leather manufactures, n.e.s., and dressed furskins	61	236,347	52,500	8,341	172,500	608,455	956,200	5.7
Chemical elements and compounds	51	262,545	245,529	1,174,905	425,986	408,017	551,678	3.3
Wood and cork manufactures (excluding furniture)	63	277,594	468,281	601,600	350,349	364,252	490,996	2.9
Petroleum and petroleum products	33	1,328,212	1,020,274	1,351,949	1,094,703	561,732	452,415	2.7
Electrical machinery, apparatus and appliances	72	992,443	1,047,301	947,451	433,419	407,949	365,957	2.2
Transport equipment	73	18,766	37,426	2,052,001	150,788	42,358	167,958	1.0
Meat and meat preparations	01	25,395	-----	-----	40,169	105,546	99,571	.6
Textile fibers and their waste	26	641	-----	25,507	-----	2,154	98,270	.6
Nonferrous metals	68	275,742	4,348	178,063	-----	1,117	91,561	.5
Total		9,706,148	10,079,582	13,018,349	10,464,784	13,066,337	16,239,665	96.9
U.S. domestic exports to Hungary:								
Machinery, other than electric	71	7,086,971	8,828,106	9,412,343	16,269,596	11,870,330	16,247,697	20.4
Feed stuff for animals (excluding unmilled cereals)	08	6,627,727	14,721,252	25,649,110	34,908,209	14,521,231	12,254,864	15.4
Cereal and cereal preparations	04	-----	1,594,964	758,939	91,873	411,257	9,875,238	12.4
Fertilizers, manufactured	56	1,320	1,600	1,038,531	6,988,830	13,637,732	8,501,800	10.7
Hides, skins and furskins, undressed	21	2,557,929	2,598,092	7,576,446	2,791,043	5,174,924	8,104,079	10.2
Transport equipment	73	130,996	408,060	963,626	3,206,802	5,701,735	6,072,224	7.6
Electrical machinery, apparatus and appliances	72	460,699	572,113	1,324,442	1,255,974	1,429,963	4,972,961	6.2
Live animals	00	414,755	1,475,200	2,725,826	1,965,165	538,500	2,948,210	3.7
Iron and steel	67	-----	10,112	3,821	3,593	-----	1,703,744	2.1
Nonmetallic mineral manufactures, n.e.s.	66	435,029	457,481	736,719	711,729	1,502,958	1,664,082	2.1
Chemical elements and compounds	51	2,730,141	228,491	1,846,029	3,786,814	1,960,814	1,224,049	1.5

Instrumentation: optical and photo goods, watches, clocks.....	86	293,800	370,816	446,933	671,688	595,192	1,157,605	1.5
Miscellaneous manufactured articles, n.e.s.....	89	182,585	587,026	1,136,127	1,319,138	1,582,859	1,072,843	1.3
Medicinal and pharmaceutical products.....	54	4,810	48,367	143,196	89,810	359,730	981,763	1.2
Pulp and waste paper.....	25			743,300		325,616	671,690	.8
Total.....		20,926,762	31,898,680	54,505,388	74,060,264	59,612,841	77,452,849	97.2
United States general imports from Hungary:								
Meat and meat preparations.....	01	4,787,419	5,152,651	7,418,390	12,475,209	19,797,702	20,014,964	43.0
Electrical machinery, apparatus, and appliances.....	72	841,980	2,581,145	3,001,586	1,812,707	4,057,093	4,404,276	9.5
Transport equipment.....	73	139,534	142,062	4,620	2,531,048	6,702,491	4,056,521	8.7
Medicinal and pharmaceutical products.....	54	1,232,266	593,818	568,979	609,620	3,628,065	3,698,952	7.9
Miscellaneous manufactured articles, n.e.s.....	89	1,288,731	2,056,637	52,865,825	2,043,632	2,135,884	2,472,559	5.3
Footwear.....	85	12,126	108,235	151,422	161,639	474,764	1,859,466	4.0
Rubber manufacturers, n.e.s.....	62	3,527	5,614	22,251	43,512	2,315,670	1,760,559	3.8
Nonmetallic mineral manufacturers, n.e.s.....	66	1,545,837	1,701,463	2,294,405	2,048,280	1,728,421	1,674,722	3.6
Coffee, tea, cocoa, spices, and manufactures thereof.....	07	131,158	104,842	893,822	90,984	560,317	1,348,849	2.9
Machinery, other than electric.....	71	48,626	142,728	102,594	696,887	3,782,462	1,128,622	2.4
Clothing.....	84	770,658	900,351	646,577	495,009	364,465	682,592	1.5
Beverages.....	11	397,062	583,757	933,061	318,128	518,307	507,966	1.1
Chemical elements and compounds.....	51	140,178	292,694	373,613	168,979	225,026	494,560	1.1
Crude animal and vegetable materials, n.e.s.....	29	155,374	182,343	145,238	237,820	290,628	395,749	.9
Dairy products and eggs.....	02	97,326	282,882	407,021	173,771	184,500	370,322	.8
Total.....		11,591,802	14,831,222	69,829,404	23,907,225	46,765,795	44,885,689	96.4
U.S. domestic exports to the People's Republic of China:								
Textile fibers and their waste.....	26		103,276,395	187,484,694	81,628,854	7,482,673	36,486,337	21.3
Transport equipment.....	73	3,316	59,278,293	60,430,697	7,212,130	5,922,478	29,846,629	17.4
Fixed vegetable oils and fats.....	42	2,199,585	17,863,072				28,297,313	16.5
Machinery, other than electric.....	71	112,604	4,177,088	39,759,771	103,343,468	55,862,084	18,048,863	10.5
Oil seeds, oil nuts and oil kernels.....	22		43,364,627	126,548,257	8,500		14,385,752	8.4
Fertilizers, manufactured.....	56		4,735,965				8,075,987	4.7
Chemical elements and compounds.....	51		2,567,724	7,872,970	2,488,762	4,725,614	7,683,678	4.5
Nonferrous metals.....	68		6,420,458	428,803	46,820,627	26,593,499	5,331,921	3.1
Electrical machinery apparatus and appliances.....	72	1,899,029	5,300,503	6,563,682	8,246,943	3,333,895	3,985,348	2.3
Instrumentation: optical and photo goods, watches, clocks.....	86		130,284	2,227,209	2,138,826	1,773,160	3,743,665	2.2
Animal oils and fats.....	41		1,343,750	7,538,854			3,689,785	2.2
Paper, paperboard and manufactures thereof.....	64		2,405,426	7,148,751	1,363,221	25,697	3,397,364	2.0
Chemical materials and products, n.e.s.....	59		1,597	60,352	2,615,967	3,887,417	1,967,633	1.1
Plastic materials, regenerated cellulose and artificial resins.....	58		541,580	2,232,233	1,120	1,727,967	1,667,597	1.0
Pulp and waste paper.....	25		160,960	940,288	5,031,369	1,302,057	1,294,211	.8
Total.....		4,214,534	251,567,742	449,244,561	260,899,787	112,636,541	167,852,093	98.0

U.S. TRADE WITH CENTRALLY PLANNED ECONOMIES: TOP 15 (FOR 1977) EXPORTS AND IMPORTS, 1972-77; BY COUNTRY; AND BY SITC 2 DIGIT COMMODITY CODE—Continued

[Dollar amounts in U.S. dollars]

	SITC	1972	1973	1974	1975	1976	1977	Percent of total 1977
U.S. general imports from the People's Republic of China:								
Textile yarn, fabrics, made up articles.....	65	3,287,388	9,932,488	28,241,317	32,826,072	46,829,194	36,382,550	17.9
Crude animal and vegetable materials, n.e.s.....	29	7,777,969	7,735,040	9,796,954	7,560,702	24,396,708	30,758,024	15.2
Miscellaneous manufactured articles, n.e.s.....	89	4,899,687	8,871,396	12,786,751	14,716,508	25,300,825	25,678,462	12.7
Clothing.....	84	821,257	1,566,728	5,496,737	8,859,912	16,533,559	25,540,405	12.6
Coffee, tea, cocoa, spices and manufactures thereof.....	07	2,222,218	2,089,465	2,936,553	5,044,075	8,496,857	11,488,742	5.7
Explosives and pyrotechnic products.....	57	480,791	3,187,663	966,587	3,533,826	6,565,282	10,000,459	4.9
Fruit and vegetables.....	05	1,147,490	1,859,603	2,032,730	2,832,447	5,740,867	8,736,955	4.3
Textile fibers and their waste.....	26	4,075,769	6,164,532	4,640,619	4,374,665	8,193,005	7,539,658	3.7
Nonferrous metals.....	68	1,635,691	8,030,038	11,444,125	41,519,637	15,595,875	6,107,767	3.0
Essential oils and perfume materials; toiletries; cleansers.....	55	311,199	1,610,451	4,884,387	2,575,502	3,795,313	5,644,917	2.8
Nonmetallic mineral manufactures, n.e.s.....	66	1,378,515	1,776,887	1,770,681	3,454,538	3,971,088	4,660,769	2.3
Metallic ores and metal scrap.....	28	-----	213,541	1,125,183	2,624,013	3,377,109	4,660,335	2.3
Footwear.....	85	126,480	179,628	427,141	1,159,439	3,434,988	3,517,268	1.7
Fish and fish preparations.....	03	442,785	1,036,606	7,057,447	3,895,414	7,093,076	2,649,857	1.3
Chemical materials and products, n.e.s.....	59	1,101,757	2,728,695	9,407,325	4,527,406	1,728,855	2,581,314	1.3
Total.....		29,708,996	56,973,761	103,014,537	139,504,156	181,052,601	185,848,482	91.7
U.S. domestic exports to Poland:								
Cereal and cereal preparations.....	04	22,963,546	134,966,879	103,145,902	255,334,626	346,736,812	197,686,309	45.3
Machinery, other than electric.....	71	13,283,614	21,868,868	60,160,169	103,881,073	55,959,583	59,452,465	13.6
Feed stuff for animals (excluding unmilled cereals).....	08	13,180,402	76,762,706	63,004,109	37,693,990	74,958,874	46,110,417	10.6
Crude fertilizers and crude minerals (excluding fuels and precious stones).....	27	118,094	1,170,871	5,375,344	19,981,023	8,321,986	21,862,237	5.0
Transport equipment.....	73	242,868	2,503,933	9,261,850	11,768,709	14,307,725	13,753,047	3.2
Hides, skins and furskins, undressed.....	21	9,691,679	18,269,606	12,752,511	10,106,551	8,869,821	13,442,894	3.1
Tobacco and tobacco manufacturers.....	12	2,556,174	3,622,237	7,765,526	4,777,096	6,450,299	11,115,838	2.5
Electrical machinery, apparatus and appliances.....	72	1,601,222	2,178,452	11,892,880	20,962,287	19,041,013	10,340,318	2.4
Fruit and vegetables.....	05	1,183,651	2,692,324	4,575,977	4,729,621	7,466,527	5,667,003	1.3
Textile fibers and their waste.....	26	8,456,837	9,432,878	10,196,288	4,945,704	10,857,585	5,117,341	1.2
Oil seeds, oil nuts and oil kernels.....	22	11,847,879	38,309,790	42,610,998	36,473,268	12,873,335	5,049,055	1.1
Chemical materials and products, n.e.s.....	59	221,257	392,834	371,758	1,429,377	4,458,869	4,678,513	1.2
Instrumentation, optical and photo goods, watches, clocks.....	86	917,401	1,398,489	2,802,599	3,381,853	3,355,093	4,041,879	.9
Animal oils and fats.....	41	1,543,405	515,281	2,652,612	3,057,785	3,570,343	3,739,774	.9
Medicinal and pharmaceutical products.....	54	1,922,817	2,274,837	1,845,274	2,105,406	2,767,398	3,681,367	.8
Total.....		89,730,856	316,359,935	338,423,797	520,628,369	579,995,263	405,738,467	92.9

U.S. general imports from Poland:								
Meat and meat preparations.....	01	52,800,696	71,811,470	69,956,784	105,964,626	126,992,676	107,703,521	32.7
Clothing.....	84	4,695,046	7,821,181	10,738,796	11,676,587	25,891,464	37,954,721	11.5
Iron and steel.....	67	17,423,930	12,414,846	49,916,202	15,059,291	12,940,159	22,394,840	6.8
Machinery, other than electric.....	71	992,460	2,919,063	9,975,901	11,481,629	9,653,908	18,069,635	5.5
Manufactures of metal, n.e.s.....	69	10,316,736	12,298,785	21,569,936	14,127,540	17,188,186	16,587,917	5.0
Footwear.....	85	2,671,051	4,305,637	5,901,699	11,349,107	19,169,773	13,854,833	4.2
Textile yarn, fabrics, made up articles.....	65	6,418,147	8,372,185	8,866,887	6,953,932	11,107,855	12,976,208	3.9
Fish and fish preparations.....	03	5,504,902	5,415,966	5,876,651	5,455,313	8,785,869	11,155,965	3.4
Chemical elements and compounds.....	51	5,037,551	5,802,401	9,972,224	10,343,108	19,073,061	10,238,530	3.1
Petroleum and petroleum products.....	33					1,668,356	9,938,862	3.0
Transport equipment.....	73	2,530,360	4,204,448	6,124,404	9,093,182	9,014,311	9,603,588	2.9
Coal, coke and briquettes.....	32	169,658	131,403	7,056,482	2,581,297	7,529,062	8,880,337	2.7
Furniture.....	82	3,609,279	5,175,933	6,688,427	6,289,908	7,208,277	7,667,604	2.3
Nonmetallic mineral manufacturers, n.e.s.....	66	4,500,189	3,984,205	4,343,631	3,577,790	4,943,934	5,757,155	1.7
Miscellaneous manufactured articles, n.e.s.....	89	3,461,217	3,489,920	4,143,788	3,461,684	4,992,796	4,115,155	1.3
Total.....		120,131,222	148,147,392	221,131,812	217,450,994	286,159,687	296,898,871	90.2
U.S. domestic exports to Romania:								
Coal, coke, and briquettes.....	32	1,312,604	5,878,540	5,527,549	17,521,278	10,734,774	53,550,894	20.6
Cloth, oil nuts, and oil kernels.....	22	919	5,744,662		3,505,646	45,282,040	38,646,173	14.9
Cereals and cereal preparations.....	04	11,060,959	8,084,476	67,764,934	73,716,493	74,038,858	36,839,968	14.2
Hides, skins, and furskins, undressed.....	21	19,798,850	18,102,959	24,117,491	9,717,246	34,297,461	26,662,828	10.3
Machinery, other than electric.....	71	8,310,482	18,409,880	35,077,667	29,563,733	17,066,198	25,590,085	9.9
Crude fertilizers and crude minerals (excluding fuels, precious stones).....	27	2,770,916	1,351,778	769,265	6,403,017	7,057,174	14,988,241	5.8
Pulp and waste paper.....	25	1,497,054	3,382,722	3,031,879	5,824,898	9,375,421	11,166,806	4.3
Feed stuff for animals (excluding unmilled cereals).....	08	5,513,048	30,118,934	25,454,855	1,886,102	17,730,548	9,500,387	3.7
Electrical machinery, apparatus and appliances.....	72	1,054,696	1,490,444	3,651,949	4,586,490	2,592,363	8,220,314	3.2
Iron and steel.....	67	5,188,440	4,299,649	8,900,862	4,968,392	15,521,792	7,927,852	3.1
Transport equipment.....	73	1,572,611	507,577	49,508,210	8,220,683	6,305,489	6,791,192	2.6
Textile fibers and their waste.....	26	7,392,169	11,634,764	38,825,685	12,208,552	174,485	6,587,757	2.5
Instrumentation; optical and photo goods, watches, clocks.....	86	543,328	392,131	1,287,079	3,262,615	3,266,299	4,112,014	1.6
Chemical elements and compounds.....	51	104,913	3,877,129	3,223,219	3,714,800	520,674	2,873,337	1.1
Miscellaneous manufactured articles, n.e.s.....	89	240,163	189,918	324,992	460,583	395,210	1,289,431	.5
Total.....		66,361,152	113,465,563	267,465,636	185,560,528	244,358,786	254,729,179	98.2
U.S. general imports from Romania:								
Petroleum and petroleum products.....	33	8,752,951	15,763,018	80,242,789	82,350,373	81,869,332	74,497,412	31.9
Clothing.....	84	1,836,988	6,478,700	5,589,707	4,374,350	27,325,916	43,229,744	18.5
Footwear.....	85	3,457,886	8,310,021	11,412,794	8,250,314	17,850,443	20,426,961	8.8
Machinery, other than electric.....	71	2,144,655	5,724,369	8,214,910	9,932,602	14,648,403	19,862,949	8.5
Meat and meat preparations.....	01	2,845,021	6,318,502	9,929,567	8,348,876	12,997,767	14,756,334	6.3
Iron and steel.....	67	66,824	1,171,086	1,523,105	2,378,214	1,501,562	13,326,573	3.7
Textile yarn, fabrics, made up articles.....	65	732,843	642,647	259,651	621,592	5,580,638	8,804,086	3.8
Nonmetallic mineral manufactures, n.e.s.....	66	3,905,591	5,316,795	3,771,723	4,372,566	10,147,885	7,728,908	3.3
Furniture.....	82	1,519,107	1,523,538	1,692,849	1,886,368	4,065,154	6,869,667	2.9
Miscellaneous manufactured articles, n.e.s.....	89	334,060	473,536	415,615	504,488	1,759,366	3,236,436	1.4
Chemical elements and compounds.....	51	432,146	529,721	2,916,797	1,877,325	3,998,352	3,220,668	1.4
Textile fibers and their waste.....	26	58,660	72,164	103,280	358,790	2,767,090	2,560,744	1.1
Dairy products and eggs.....	02	781,481	752,689	600,045	953,804	1,699,393	2,303,442	1.0
Paper, paperboard and manufactures thereof.....	64		11,932			363,287	1,609,600	.7
Nonferrous metals.....	68	1,603,108		167,291		1,380,524	1,607,170	.7
Total.....		28,471,321	53,088,718	126,840,123	126,209,662	187,955,112	224,040,696	96.0

U.S. TRADE WITH CENTRALLY PLANNED ECONOMIES: TOP 15 (FOR 1977) EXPORTS AND IMPORTS, 1972-77; BY COUNTRY; AND BY SITC 2 DIGIT COMMODITY CODE—Continued

[Dollar amounts in U.S. dollars]

SITC	1972	1973	1974	1975	1976	1977	Percent total 1977	
U.S. domestic exports to the U.S.S.R.:								
Cereals and cereal preparations.....	04	368,852,395	836,691,844	277,925,047	1,105,449,222	1,346,938,103	848,628,612	52.3
Machinery, other than electric.....	71	53,448,556	181,852,885	188,184,218	461,191,253	521,054,170	291,217,162	17.9
Oil seeds, oil nuts, and oil kernels.....	22	52,145,758	67,302,153		2,668,135	124,689,500	159,022,036	9.8
Electrical machinery apparatus and appliances.....	72	7,228,418	14,474,037	27,572,584	69,212,220	54,107,536	63,879,515	3.9
Manufactures of metal, n.e.s.....	69	389,462	1,217,831	2,015,120	18,853,578	43,972,609	26,941,650	1.7
Miscellaneous manufactured articles, n.e.s.....	89	6,812,333	6,297,221	8,801,885	13,960,426	27,009,320	26,662,003	1.6
Textile yarn, fabrics, made up articles.....	65	4,966,420	10,585,326	5,999,522	6,556,701	16,004,767	22,768,691	1.4
Fruit and vegetables.....	05	1,064,149	4,712,179	8,392,402	7,080,026	8,833,291	18,706,030	1.2
Transport equipment.....	73	1,352,954	7,980,222	8,788,705	16,545,440	29,637,328	18,498,005	1.1
Iron and steel.....	67	173,545	13,908,939	7,786,349	6,029,156	28,265,007	17,940,560	1.1
Petroleum and petroleum products.....	33		25,855	1,336,185	3,162,123	9,272,818	16,854,685	1.0
Chemical elements and compounds.....	51	18,039,429	10,072,098	14,219,433	25,023,310	15,041,177	16,417,273	1.0
Chemical materials and products, n.e.s.....	59	1,325,359	1,654,841	4,355,553	9,557,042	7,698,151	14,466,373	.9
Instrumentation: optical and photo goods, watches, clocks.....	86	2,291,229	2,691,083	3,651,709	12,114,915	8,320,631	12,088,606	.7
Leather, leather manufactures, n.e.s., and dressed furskins.....	61	1,488,041	3,799,138	1,445,971	4,248,301	6,350,855	10,512,440	.6
Total.....		519,578,048	1,163,265,652	560,474,683	1,761,671,848	2,247,195,263	1,564,603,641	96.4
U.S. general imports from the U.S.S.R.:								
Petroleum and petroleum products.....	33	7,461,935	75,579,951	103,435,239	94,778,725	54,304,930	64,064,121	27.3
Nonferrous metals.....	68	46,596,184	93,831,108	186,910,282	81,047,512	62,115,053	60,209,246	25.7
Metallic ores and metal scrap.....	28	14,056,418	6,029,361	12,201,916	32,506,959	39,171,299	35,243,291	15.0
Nonmetallic mineral manufactures, n.e.s.....	66	15,627,103	20,597,067	13,610,516	14,351,268	18,155,130	25,617,149	10.9
Miscellaneous manufactured articles, n.e.s.....	89	2,816,113	3,597,286	3,344,486	4,804,818	16,123,090	10,019,502	4.3
Hides, skins and furskins, undressed.....	21	3,013,937	3,143,149	4,722,048	3,610,638	6,195,366	8,363,383	3.6
Chemical elements and compounds.....	93	799,303	1,367,459	1,144,807	1,166,313	1,881,747	5,600,506	2.4
Beverages.....	51	1,107,469	1,737,512	8,344,075	2,949,224	5,133,901	3,349,281	1.4
Crude fertilizers and crude minerals except fuels precious stones.....	11	176,982	519,958	514,639	819,453	1,280,229	3,305,510	1.4
Paper, paperboard and manufactures thereof.....	27	187,150	1,117,321	1,441,445	3,744,836	3,195,772	3,292,957	1.4
Machinery, other than electric.....	64	35,162	63,673	85,238	199,219	1,211,962	2,782,497	1.2
Wood and cork manufactures, except furniture.....	71	48,226	42,226	1,567,083	4,716,066	3,578,969	2,564,680	1.1
Chemical materials and products, n.e.s.....	63	671,723	1,327,089	1,382,744	1,228,037	2,278,750	2,406,300	1.0
Tobacco and tobacco manufactures.....	59	18,578	497,255	2,419,115	1,745,853	811,232	1,789,178	.8
	12	530		1,294	105,385	418,463	1,622,645	.7
Total.....		92,616,813	204,441,415	341,124,927	247,774,306	215,855,893	230,230,228	98.2

TRADE OF INDUSTRIAL WESTERN COUNTRIES WITH CENTRALLY PLANNED ECONOMIES, 1972-76

Country	1972		1973		1974		1975		1976	
	Amount	Per cent	Amount	Per cent	Amount	Per cent	Amount	Per cent	Amount	Per cent
IW¹ Export trade shares to Bulgaria, 1972-76 (amounts in thousands of dollars)										
Country Total.....	319,602	100.0	451,810	100.0	100,343	100.0	1,038,780	100.0	874,363	100.0
Canada.....	612	.2	486	.1	5,409	.7	2,494	.2	6,496	.7
United States.....	3,389	1.1	6,473	1.4	21,965	2.7	29,299	2.8	43,320	5.0
Japan.....	20,987	6.6	36,429	8.1	73,716	9.2	54,175	5.2	47,044	5.4
Belgium/Luxembourg.....	11,408	3.6	14,022	3.1	33,590	4.2	38,432	3.7	24,648	2.8
France.....	28,562	8.9	39,616	8.8	74,976	9.4	122,232	11.8	102,239	11.7
Federal Republic of Germany.....	97,212	30.4	157,383	34.8	298,184	34.8	415,910	40.0	338,135	38.7
Italy.....	59,710	18.7	67,013	14.8	95,181	11.9	131,621	12.7	95,646	10.9
Netherlands.....	12,985	4.1	21,178	4.7	32,345	4.0	35,130	3.4	27,632	3.2
Austria.....	23,789	7.4	33,613	7.4	56,494	7.1	66,722	6.4	53,092	6.1
Norway.....	9,855	3.1	3,484	.8	5,289	.7	4,017	.4	3,581	.4
Sweden.....	9,966	3.1	18,757	4.2	21,024	2.6	37,827	3.6	30,597	3.5
Switzerland.....	17,172	5.4	19,239	4.3	31,783	4.0	38,195	3.7	51,750	5.9
United Kingdom.....	21,059	6.6	30,268	6.7	42,081	5.3	51,668	5.0	41,369	4.7
Denmark.....	2,896	.9	3,849	.9	8,306	1.0	11,058	1.1	8,814	1.0
IW Import trade shares from Bulgaria, 1972-76 (amounts in thousands of dollars)										
Country Total.....	242,394	100.0	327,048	100.0	352,704	100.0	318,116	100.0	377,246	100.0
Canada.....	1,683	.7	1,708	.5	4,240	1.2	3,691	1.2	2,166	.6
United States.....	2,872	1.2	4,458	1.4	8,399	2.4	20,217	6.4	26,955	7.1
Japan.....	13,362	5.5	18,176	5.6	22,136	6.3	13,877	4.4	15,229	4.0
Belgium/Luxembourg.....	7,378	3.0	8,437	2.6	8,452	2.4	10,934	3.4	14,448	3.8
France.....	22,681	9.4	27,560	8.4	28,488	8.1	36,493	11.5	49,926	13.2
Federal Republic of Germany.....	74,860	30.9	105,689	32.3	90,545	25.7	94,072	29.6	113,210	30.0
Italy.....	62,742	25.9	89,380	27.3	96,777	27.4	65,406	20.6	68,514	18.2
Netherlands.....	8,355	3.4	10,203	3.1	7,214	2.0	6,406	2.0	8,263	2.2
Austria.....	15,781	6.5	19,300	5.9	30,008	8.5	24,688	7.8	27,113	7.2
Norway.....	3,504	1.4	1,288	.4	2,351	.7	2,688	.8	1,742	.5
Sweden.....	3,681	1.5	4,905	1.5	7,068	2.0	8,042	2.5	9,820	2.6
Switzerland.....	4,995	2.1	7,941	2.4	9,263	2.6	9,115	2.9	10,435	2.8
United Kingdom.....	17,156	7.1	22,877	7.0	31,231	8.9	16,254	5.1	20,166	5.3
Denmark.....	3,344	1.4	5,126	1.6	6,532	1.9	6,233	2.0	9,309	2.5
IW Export trade shares to Czechoslovakia, 1972-76 (amounts in thousands of dollars)										
Total.....	929,978	100.0	1,268,422	100.0	1,617,936	100.0	1,756,994	100.0	1,950,204	100.0
Canada.....	4,501	.5	9,958	.8	23,496	1.5	9,900	.6	17,897	.9
United States.....	49,469	5.3	71,854	5.7	48,604	3.0	52,904	3.0	148,303	7.6
Japan.....	14,967	1.6	38,695	3.1	41,724	2.6	44,765	2.5	30,071	1.5
Belgium/Luxembourg.....	40,137	4.3	39,449	3.1	50,925	3.1	62,595	3.6	59,140	3.0
France.....	64,074	6.9	79,282	6.3	105,054	6.5	158,929	9.0	161,741	8.3
Federal Republic of Germany.....	380,372	40.9	567,150	44.7	691,108	42.7	679,926	38.7	806,952	41.4
Italy.....	90,115	9.7	86,268	6.8	123,593	7.6	121,671	6.9	113,010	5.8
Netherlands.....	52,588	5.7	61,256	4.8	86,523	5.3	90,225	5.1	102,485	5.3
Austria.....	71,308	7.7	102,825	8.1	154,207	9.5	190,918	10.9	178,829	9.2
Norway.....	9,671	1.0	15,710	1.2	17,716	1.1	23,206	1.3	21,332	1.1
Sweden.....	33,196	3.6	46,690	3.7	62,486	3.9	75,268	4.3	66,787	3.4
Switzerland.....	44,788	4.8	62,973	5.0	81,695	5.0	105,218	6.0	103,915	5.3
United Kingdom.....	58,004	6.2	65,466	5.2	104,545	6.5	112,306	6.4	107,836	5.5
Denmark.....	16,788	1.8	20,866	1.6	26,260	1.6	29,163	1.7	31,906	1.6
IW Import trade shares from Czechoslovakia, 1972-76 (amounts in thousands of dollars)										
Total.....	868,849	100.0	1,172,210	100.0	1,401,172	100.0	1,487,433	100.0	1,541,001	100.0
Canada.....	34,537	4.0	42,791	3.7	63,228	4.5	45,654	3.1	41,290	2.7
United States.....	27,972	3.2	35,154	3.0	45,562	3.3	34,629	2.3	36,376	2.4
Japan.....	13,119	1.5	27,747	2.4	33,257	2.4	25,778	1.7	30,767	2.0
Belgium/Luxembourg.....	35,208	4.1	40,389	3.4	54,495	3.9	50,221	3.4	51,531	3.3
France.....	62,585	7.2	80,571	6.9	87,685	6.3	104,407	7.0	108,397	7.0
Federal Republic of Germany.....	269,041	31.0	377,201	32.2	401,990	28.7	469,757	31.6	505,823	32.8
Italy.....	90,846	10.5	132,400	11.3	140,048	10.0	126,557	8.5	150,237	9.7
Netherlands.....	49,340	5.7	63,834	5.4	78,678	5.6	85,903	5.8	98,567	6.4
Austria.....	86,516	10.0	114,337	9.8	165,778	11.8	191,468	12.9	173,219	11.2
Norway.....	15,600	1.8	24,639	2.1	32,216	2.3	37,577	2.5	29,826	1.9
Sweden.....	34,201	3.9	47,561	4.1	60,822	4.3	77,189	5.2	77,795	5.0
Switzerland.....	45,085	5.2	56,169	4.8	73,499	5.2	66,077	4.4	60,917	4.0
United Kingdom.....	79,719	9.2	93,692	8.0	125,154	8.9	131,652	8.9	126,063	8.2
Denmark.....	25,080	2.9	35,725	3.0	37,760	2.8	40,574	2.7	50,193	3.3

See footnotes at end of table.

TRADE OF INDUSTRIAL WESTERN COUNTRIES WITH CENTRALLY PLANNED ECONOMIES, 1972-76—Continued

Country	1972		1973		1974		1975		1976	
	Amount	Per-cent	Amount	Per-cent	Amount	Per-cent	Amount	Per-cent	Amount	Per-cent
IW exports—Country shares² in manufactured goods² trade with Czechoslovakia, 1972-76 (Amounts in millions of dollars)										
Total.....	695.6	100.0	936.2	100.0	1,300.2	100.0	1,488.7	100.0	1,587.3	100.0
Canada.....	1.4	.2	1.0	.1	5.5	.4	3.1	.2	2.1	.1
United States.....	9.1	1.3	10.3	1.1	17.6	1.4	16.2	1.1	22.8	1.4
Japan.....	14.3	2.0	37.4	4.0	38.5	3.0	41.4	2.8	27.0	1.7
Belgium/Luxembourg.....	24.5	3.5	33.7	3.6	42.4	3.3	53.1	3.6	47.8	3.0
France.....	51.8	7.4	66.9	7.1	86.0	6.6	134.3	9.0	144.0	9.1
Federal Republic of Germany.....	289.5	41.6	407.6	43.5	570.7	43.9	614.9	41.3	742.1	46.8
Italy.....	72.5	10.4	73.1	7.8	100.7	7.8	95.5	6.4	92.1	5.8
Netherlands.....	39.7	5.7	45.7	4.8	65.0	5.0	73.7	4.9	81.4	5.1
Austria.....	62.2	8.9	89.5	9.5	135.8	10.4	167.5	11.3	159.5	10.0
Norway.....	2.2	.3	4.5	.4	5.2	.4	8.4	.6	7.1	.4
Sweden.....	24.8	3.5	33.4	3.5	48.1	3.7	56.4	3.8	48.4	3.0
Switzerland.....	42.5	6.1	60.3	6.4	79.0	6.1	101.4	6.8	99.6	6.3
United Kingdom.....	52.9	7.6	59.5	6.3	93.1	7.2	101.7	6.8	94.4	5.9
Denmark.....	8.0	1.1	12.5	1.3	12.6	1.0	20.9	1.4	18.9	1.2
IW Imports—Country shares¹ in manufactured goods² trade with Czechoslovakia, 1972-76 (amounts in millions of dollars)										
Total.....	590.2	100.0	793.8	100.0	933.4	100.0	959.1	100.0	1,007.4	100.0
Canada.....	33.9	5.7	42.2	5.3	62.6	6.7	45.0	4.7	39.6	3.9
United States.....	26.6	4.5	32.9	4.1	42.8	4.6	32.1	3.3	31.7	3.2
Japan.....	7.6	1.2	16.7	2.1	20.7	2.2	12.2	1.3	12.7	1.3
Belgium/Luxembourg.....	21.0	3.5	22.9	2.9	30.7	3.3	32.1	3.3	35.2	3.5
France.....	52.3	8.8	68.8	8.6	74.0	7.9	86.2	9.1	88.0	8.7
Federal Republic of Germany.....	177.0	30.0	241.8	30.4	252.9	27.1	280.2	29.2	311.5	30.9
Italy.....	54.4	9.2	78.6	9.9	94.7	10.1	87.9	9.2	102.7	10.2
Netherlands.....	38.0	6.4	45.9	5.7	57.5	6.2	66.9	7.0	73.3	7.3
Austria.....	24.2	4.1	35.3	4.4	46.9	5.0	42.0	4.4	45.8	4.5
Norway.....	13.0	2.2	19.8	2.5	26.0	2.8	31.7	3.3	22.9	2.3
Sweden.....	29.5	5.0	42.1	5.3	51.3	5.5	63.5	6.6	62.4	6.2
Switzerland.....	27.6	4.6	34.9	4.4	41.3	4.4	32.3	3.4	33.0	3.3
United Kingdom.....	60.2	10.2	76.4	9.6	95.0	10.2	107.9	11.2	102.7	10.2
Denmark.....	24.3	4.1	34.8	4.3	37.2	4.0	39.1	4.0	46.3	4.6
IW Export trade shares to the German Democratic Republic, 1972-76 (amounts in thousands of U.S. dollars)										
Total.....	1,486,609	100.0	1,826,798	100.0	2,320,272	100.0	2,587,645	100.0	2,860,285	100.0
Canada.....	9,697	.7	3,035	.2	3,351	.1	4,199	.2	46,743	1.6
United States.....	17,326	1.2	28,014	1.5	20,882	.9	17,294	.7	64,802	2.3
Japan.....	47,643	3.2	38,389	2.1	45,829	2.0	48,962	1.9	48,791	1.7
Belgium/Luxembourg.....	26,286	1.8	47,237	2.6	58,569	2.5	74,904	2.9	76,046	2.7
France.....	139,447	9.4	81,740	4.5	94,725	4.1	179,842	7.0	212,648	7.4
Federal Republic of Germany.....	918,281	61.8	1,144,368	62.6	1,422,899	61.3	1,557,410	60.2	1,695,277	59.3
Italy.....	29,920	2.0	48,272	2.6	82,725	3.6	88,729	3.4	82,278	2.9
Netherlands.....	83,449	5.6	122,122	6.7	150,230	6.5	127,474	4.9	132,878	4.6
Austria.....	43,969	3.0	72,152	3.9	88,990	3.8	115,767	4.5	99,266	3.5
Norway.....	18,014	1.2	28,846	1.6	59,314	2.6	48,645	1.9	36,302	1.3
Sweden.....	62,413	4.2	91,998	5.0	113,681	4.9	155,474	6.0	165,765	5.8
Switzerland.....	28,698	1.9	56,323	3.1	60,160	2.6	72,209	2.8	85,154	3.0
United Kingdom.....	36,923	2.5	32,798	1.8	91,049	3.9	71,380	2.8	80,431	2.8
Denmark.....	24,543	1.7	31,504	1.7	27,869	1.2	25,353	1.0	33,904	1.2
IW Import trade shares from the German Democratic Republic, 1972-76 (amounts in thousands of U.S. dollars)										
Total.....	1,211,444	100.0	1,599,009	100.0	2,108,187	100.0	2,248,417	100.0	2,481,162	100.0
Canada.....	4,446	.4	5,747	.4	7,159	.3	5,295	.2	5,018	.2
United States.....	10,336	.9	10,516	.7	14,129	.7	11,250	.5	13,645	.5
Japan.....	12,068	1.0	16,090	1.0	47,598	2.3	28,712	1.3	13,650	.6
Belgium/Luxembourg.....	44,253	3.7	51,219	3.2	65,045	3.1	81,094	3.6	94,231	3.8
France.....	82,440	6.8	107,955	6.8	125,391	5.9	163,403	7.3	187,475	7.6
Federal Republic of Germany.....	746,619	61.6	1,008,301	63.1	1,260,639	59.8	1,358,378	60.4	1,539,590	62.1
Italy.....	50,821	4.2	56,842	3.6	94,973	4.5	86,943	3.9	93,667	3.8
Netherlands.....	54,676	4.5	67,115	4.2	82,758	3.9	78,318	3.5	87,551	3.5
Austria.....	38,671	3.2	53,246	3.3	72,334	3.4	70,169	3.1	74,603	3.0
Norway.....	27,154	2.2	30,704	1.9	38,574	1.8	32,756	1.5	34,897	1.4
Sweden.....	48,116	4.0	75,191	4.7	112,829	5.4	161,546	7.2	154,568	6.2
Switzerland.....	15,326	1.3	19,789	1.2	26,736	1.3	23,211	1.0	20,699	.8
United Kingdom.....	53,647	4.4	63,372	4.0	101,990	4.8	86,577	3.9	108,150	4.4
Denmark.....	22,871	1.9	32,912	2.1	58,032	2.8	60,765	2.7	53,418	2.1

See footnotes at end of table.

TRADE OF INDUSTRIAL WESTERN COUNTRIES WITH CENTRALLY PLANNED ECONOMIES, 1972-76—Continued

Country	1972		1973		1974		1975		1976	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
IW Export trade shares to Hungary, 1972-76 (Amounts in thousands of dollars)										
Total	793,156	100.0	1,055,490	100.0	1,702,211	100.0	1,753,285	100.0	1,725,828	100.0
Canada	5,304	.7	7,661	.7	7,343	.4	6,772	.4	6,124	0.4
United States	22,406	2.8	32,798	3.1	56,176	3.3	76,054	4.3	62,960	3.6
Japan	11,382	1.4	10,502	1.0	24,676	1.4	32,364	1.8	33,638	1.9
Belgium/Luxembourg	20,753	2.6	21,954	2.1	39,188	2.3	45,036	2.6	49,733	2.9
France	90,434	11.4	96,069	9.1	115,781	6.8	164,800	9.4	129,542	7.5
Federal Republic of Germany	261,991	33.0	397,446	37.7	601,635	35.3	573,522	32.7	617,337	35.8
Italy	102,949	13.0	113,353	10.7	205,436	12.1	189,325	10.8	168,911	9.8
Netherlands	46,519	5.9	55,802	5.3	88,007	5.2	85,673	4.9	97,014	5.6
Austria	93,541	11.8	133,740	12.7	272,374	16.0	270,061	15.4	249,833	14.5
Norway	6,747	.9	11,318	1.1	11,811	.7	8,928	.5	9,555	.6
Sweden	25,684	3.2	37,871	3.6	61,836	3.6	75,005	4.3	79,254	4.6
Switzerland	33,472	4.2	49,889	4.7	80,844	4.7	102,725	5.9	107,527	6.2
United Kingdom	55,702	7.0	63,356	6.0	102,278	6.0	96,463	5.5	88,874	5.1
Denmark	16,272	2.1	23,731	2.2	34,826	2.0	26,557	1.5	25,526	1.5
IW Import trade shares from Hungary, 1972-76 (Amounts in thousands of dollars)										
Total	745,761	100.0	1,059,712	100.0	1,264,152	100.0	1,172,672	100.0	1,345,222	100.0
Canada	11,722	1.6	13,275	1.3	16,071	1.3	14,775	1.3	16,203	1.2
United States	12,725	1.7	16,420	1.5	75,407	6.0	34,652	3.0	49,014	3.6
Japan	9,800	1.3	14,740	1.4	29,177	2.3	11,051	.9	12,136	.9
Belgium/Luxembourg	15,659	2.1	16,755	1.6	22,878	1.8	25,695	2.2	22,301	1.7
France	50,229	6.7	68,985	6.5	75,690	6.0	92,278	7.9	98,935	7.4
Federal Republic of Germany	204,925	27.5	317,390	30.0	351,150	27.8	365,718	31.2	451,915	33.6
Italy	205,175	27.5	270,691	25.5	229,099	18.1	214,840	18.3	221,620	15.7
Netherlands	43,862	5.9	49,140	4.6	70,652	5.6	68,146	5.8	68,879	5.1
Austria	85,460	11.5	131,741	12.4	174,559	13.8	139,120	11.9	175,896	13.1
Norway	7,775	1.0	11,269	1.1	15,829	1.3	14,713	1.3	19,262	1.4
Sweden	26,301	3.5	35,219	3.3	47,545	3.8	55,066	4.7	56,795	4.2
Switzerland	30,095	4.0	49,394	4.7	72,491	5.7	51,820	4.4	68,262	5.1
United Kingdom	29,275	3.9	41,032	3.9	58,485	4.6	58,292	5.0	55,167	4.1
Denmark	12,748	1.7	23,661	2.2	25,119	2.0	26,506	2.3	38,837	2.9
IW Exports—Country shares² in manufactured goods³ trade with Hungary, 1972-76 (amounts in millions of dollars)										
Total	654.5	100.0	865.1	100.0	1,425.0	100.0	1,520.1	100.0	1,504.8	100.0
Canada	2.1	.3	1.9	.2	2.9	.2	2.9	.2	3.4	.2
United States	11.9	1.8	12.2	1.4	18.2	1.3	35.3	2.3	40.0	2.7
Japan	10.4	1.5	10.2	1.1	21.7	1.5	31.1	2.0	32.1	2.1
Belgium/Luxembourg	13.8	2.1	17.0	1.9	31.2	2.2	38.0	2.5	39.7	2.6
France	66.1	10.1	72.2	8.3	100.2	7.0	148.4	9.8	111.9	7.4
Federal Republic of Germany	220.0	33.6	336.5	38.9	530.2	37.2	530.8	34.9	577.4	38.4
Italy	90.1	13.7	100.2	11.5	187.0	13.2	171.9	11.3	144.9	9.6
Netherlands	39.0	5.9	45.0	5.2	71.1	5.0	70.9	4.7	77.8	5.2
Austria	84.7	12.9	119.2	13.7	224.4	15.8	227.5	15.0	202.5	13.5
Norway	2.2	.3	1.8	.2	6.3	.4	7.3	.5	6.6	.4
Sweden	20.3	3.1	30.5	3.5	49.0	3.4	56.4	3.7	66.4	4.4
Switzerland	32.2	4.9	47.6	5.5	77.3	5.4	98.2	6.5	104.6	7.0
United Kingdom	50.8	7.7	56.1	6.4	85.0	6.0	84.0	5.5	80.1	5.3
Denmark	10.6	1.5	14.3	1.6	20.8	1.5	17.4	1.1	17.6	1.2
IW Imports—Country shares² in manufactured goods³ trade with Hungary, 1972-76 (amounts in millions of dollars)										
Total	325.4	100.0	502.6	100.0	684.4	100.0	614.6	100.0	765.2	100.0
Canada	10.6	3.2	11.5	2.3	13.5	2.0	12.2	2.0	13.0	1.7
United States	6.9	2.1	9.7	1.9	64.7	9.5	20.9	3.4	26.1	3.4
Japan	5.3	1.6	10.7	2.1	25.1	3.7	8.8	1.4	9.5	1.2
Belgium/Luxembourg	8.5	2.6	10.2	2.0	11.8	1.7	11.9	2.0	13.0	1.7
France	25.2	7.7	35.6	7.0	46.7	6.8	58.1	9.4	59.8	7.8
Federal Republic of Germany	109.6	33.6	184.1	36.6	199.6	29.2	214.1	34.9	281.7	36.9
Italy	25.8	7.9	41.9	8.3	60.2	8.8	48.8	8.0	65.2	8.7
Netherlands	31.0	9.5	34.4	6.8	49.6	7.2	52.6	8.5	56.1	7.4
Austria	33.6	10.3	57.2	11.3	75.5	11.0	52.6	8.5	73.5	9.6
Norway	7.2	2.2	10.4	2.0	14.6	2.1	12.3	2.0	16.7	2.2
Sweden	18.9	5.8	25.5	5.0	35.7	5.2	41.5	6.7	46.0	6.0
Switzerland	13.9	4.2	22.3	4.4	26.5	3.9	19.5	3.2	24.4	3.2
United Kingdom	17.1	5.2	28.1	5.6	39.2	5.7	39.1	6.4	43.7	5.7
Denmark	11.1	3.4	20.2	4.0	21.6	3.2	22.2	3.6	32.9	4.3

See footnotes at end of table.

TRADE OF INDUSTRIAL WESTERN COUNTRIES WITH CENTRALLY PLANNED ECONOMIES, 1972-76—Continued

Country	1972		1973		1974		1975		1976	
	Amount	Per cent	Amount	Per cent	Amount	Per cent	Amount	Per cent	Amount	Per cent
IW Export trade shares to People's Republic of China, 1972-76 (amounts in thousands of dollars)										
Total.....	1,445,139	100.0	2,887,131	100.0	4,369,092	100.0	4,592,526	100.0	3,422,510	100.0
Canada.....	261,174	18.1	287,778	10.0	445,090	10.2	370,864	8.1	199,157	5.8
United States.....	63,537	4.4	689,104	23.9	806,936	18.5	303,636	6.6	135,388	4.0
Japan.....	608,921	42.1	1,041,499	36.1	1,989,210	45.5	2,256,037	49.1	1,662,568	48.6
Belgium/Luxembourg.....	12,331	.9	30,641	1.1	34,716	.8	48,006	1.0	40,476	1.2
France.....	59,596	4.1	89,924	3.1	160,119	3.7	377,349	8.2	349,519	10.2
Federal Republic of Germany.....	165,202	11.4	309,920	10.7	420,728	9.6	522,861	11.4	622,560	18.2
Italy.....	76,928	5.3	76,300	2.6	104,859	2.4	146,354	3.2	124,702	3.6
Netherlands.....	15,233	1.1	32,268	1.1	62,028	1.4	133,016	2.9	39,644	1.2
Austria.....	13,938	1.0	17,593	.6	6,794	.2	29,525	.6	15,011	.4
Norway.....	25,862	1.8	24,216	.8	65,814	1.5	108,095	2.4	18,642	.5
Sweden.....	41,006	2.8	50,803	1.8	60,533	1.4	41,046	.9	30,815	.9
Switzerland.....	19,555	1.4	42,196	1.5	55,052	1.3	56,306	1.2	52,141	1.5
United Kingdom.....	73,161	5.1	191,080	6.6	143,024	3.3	177,322	3.9	122,441	3.6
Denmark.....	8,695	.6	3,809	.1	14,189	.3	22,109	.5	9,446	.3
IW Import trade shares from People's Republic of China, 1972-76 (amounts in thousands of dollars)										
Total.....	1,085,199	100.0	1,828,604	100.0	2,400,721	100.0	2,647,741	100.0	2,720,634	100.0
Canada.....	48,858	4.5	52,902	2.9	62,255	2.6	55,361	2.1	89,665	3.3
United States.....	32,379	3.0	63,952	3.5	114,680	4.8	158,340	6.0	201,854	7.4
Japan.....	491,116	45.3	971,274	53.1	1,307,308	54.5	1,532,449	57.9	1,370,915	50.4
Belgium/Luxembourg.....	23,258	2.1	39,144	2.1	46,134	1.9	44,599	1.7	52,627	1.9
France.....	104,901	9.7	147,326	8.1	182,242	7.6	173,099	6.5	194,030	7.1
Federal Republic of Germany.....	106,157	9.8	150,007	8.2	192,791	8.0	224,341	8.5	270,848	10.0
Italy.....	84,450	7.8	128,045	7.0	116,687	4.9	128,808	4.9	154,916	5.7
Netherlands.....	45,920	4.2	65,755	3.6	97,225	4.0	80,660	3.0	89,317	3.3
Austria.....	8,404	.8	12,371	.7	16,722	.7	13,315	.5	18,521	.7
Norway.....	5,185	.5	6,874	.4	9,531	.4	8,232	.3	8,281	.3
Sweden.....	20,975	1.9	28,547	1.6	39,517	1.6	47,131	1.8	50,621	1.9
Switzerland.....	19,720	1.8	28,784	1.6	36,082	1.5	30,980	1.2	36,369	1.3
United Kingdom.....	82,637	7.6	113,421	6.2	150,084	6.3	128,790	4.9	156,032	5.7
Denmark.....	11,239	1.0	20,202	1.1	29,463	1.2	21,636	.8	26,638	1.0
IW Export trade shares to Poland, 1972-76 (amounts in thousands of dollars)										
Total.....	1,555,424	100.0	2,985,716	100.0	4,342,830	100.0	5,189,098	100.0	5,178,677	100.0
Canada.....	31,135	2.0	45,157	1.5	87,275	2.0	112,744	2.2	126,973	2.4
United States.....	113,389	7.3	349,317	11.7	394,588	9.1	580,090	11.2	621,035	12.0
Japan.....	88,750	5.7	130,198	4.4	220,453	5.1	257,036	5.0	253,747	4.9
Belgium/Luxembourg.....	56,483	3.6	122,851	4.1	208,852	4.8	217,118	4.2	205,331	4.0
France.....	151,903	9.8	266,613	8.9	373,925	8.6	626,605	12.1	749,461	14.5
Federal Republic of Germany.....	450,546	29.0	1,004,825	33.7	1,402,662	32.3	1,302,294	25.1	1,279,574	24.7
Italy.....	127,344	8.2	187,668	6.3	330,389	7.6	402,543	7.8	327,681	6.3
Netherlands.....	71,499	4.6	113,259	3.8	159,530	3.7	187,286	3.6	160,876	3.1
Austria.....	78,961	5.1	129,127	4.3	233,350	5.4	332,261	6.4	375,049	7.2
Norway.....	27,841	1.8	48,652	1.6	53,296	1.2	63,105	1.2	109,175	2.1
Sweden.....	85,497	5.5	177,133	5.9	295,207	6.8	408,960	7.9	364,973	7.0
Switzerland.....	54,622	3.5	89,502	3.0	142,114	3.3	177,621	3.4	178,296	3.4
United Kingdom.....	175,746	11.3	260,999	8.7	322,699	7.4	390,577	7.5	340,084	6.6
Denmark.....	41,708	2.7	60,415	2.0	118,490	2.7	130,858	2.5	86,602	1.7
IW Import trade shares from Poland, 1972-76 (amounts in thousands of dollars)										
Total.....	1,363,341	100.0	1,907,384	100.0	2,490,824	100.0	2,760,655	100.0	3,236,794	100.0
Canada.....	21,707	1.6	29,625	1.6	44,890	1.8	40,121	1.5	45,716	1.4
United States.....	139,172	10.2	181,904	9.5	265,931	10.7	243,079	8.8	318,760	9.8
Japan.....	39,920	2.9	48,959	2.6	79,443	3.2	79,867	2.9	77,045	2.4
Belgium/Luxembourg.....	46,012	3.4	80,035	4.2	122,729	4.9	122,698	4.4	122,828	3.6
France.....	117,964	8.7	166,800	8.7	262,403	10.5	352,652	12.8	430,214	13.3
Federal Republic of Germany.....	306,463	22.5	463,287	24.3	653,264	26.2	581,797	21.1	766,988	23.4
Italy.....	207,596	15.2	271,198	14.2	279,155	11.2	306,439	11.1	336,787	10.7
Netherlands.....	47,617	3.5	76,069	4.0	97,475	3.9	143,138	5.2	130,165	4.0
Austria.....	68,600	5.0	88,326	4.6	128,036	5.1	146,922	5.3	152,391	4.7
Norway.....	51,572	3.8	62,440	3.3	52,348	2.1	70,076	2.5	164,605	5.1
Sweden.....	69,794	5.1	107,206	5.6	165,632	6.6	196,842	7.1	260,224	8.0
Switzerland.....	20,815	1.5	28,809	1.5	36,269	1.5	39,825	1.4	35,294	1.1
United Kingdom.....	174,911	12.8	231,829	12.2	255,628	10.3	153,994	5.2	276,467	8.5
Denmark.....	51,198	3.8	70,897	3.7	147,621	5.9	183,205	6.6	169,307	5.2

See footnotes at end of table.

TRADE OF INDUSTRIAL WESTERN COUNTRIES WITH CENTRALLY PLANNED ECONOMIES, 1972-76—Continued

Country	1972		1973		1974		1975		1976	
	Amount	Per-cent	Amount	Per-cent	Amount	Per-cent	Amount	Per-cent	Amount	Per-cent
IW Export trade shares to Romania, 1972-76 (amounts in thousands of dollars)										
Total	931,629	100.0	1,286,522	100.0	1,961,499	100.0	1,893,258	100.0	1,863,076	100.0
Canada	13,242	1.4	12,862	1.0	5,106	.3	61,095	3.2	39,352	2.1
United States	69,051	7.4	116,528	9.1	277,136	14.1	189,300	10.0	249,034	13.4
Japan	48,009	5.2	71,428	5.6	166,281	8.5	135,433	7.2	133,732	7.2
Belgium/Luxembourg	22,563	2.4	40,990	3.2	61,685	3.1	58,913	3.1	80,119	4.3
France	135,248	14.5	169,369	13.2	183,579	9.4	202,400	10.7	258,935	13.9
Federal Republic of Germany	296,714	31.8	444,035	34.5	713,302	36.4	662,047	35.0	520,279	27.9
Italy	162,252	17.4	129,862	10.1	192,237	9.8	213,593	11.3	191,116	10.3
Netherlands	23,571	2.5	43,570	3.4	68,068	3.5	59,975	3.2	66,497	3.6
Austria	51,486	5.5	63,883	5.0	84,113	4.3	87,492	4.6	93,092	5.0
Norway	2,773	.3	9,355	.7	10,879	.6	11,413	.6	18,174	1.0
Sweden	27,635	3.0	38,779	3.0	52,709	2.7	49,559	2.6	45,523	2.4
Switzerland	35,865	4.0	52,389	4.1	59,624	3.0	65,955	3.5	65,632	3.5
United Kingdom	91,003	9.8	79,739	6.2	72,756	.7	87,135	4.6	88,260	4.7
Denmark	11,217	1.2	13,733	1.1	13,964	.7	8,948	.5	13,331	.7
IW Import trade shares from Romania, 1972-76 (amounts in thousands of dollars)										
Total	725,551	100.0	1,009,621	100.0	1,352,936	100.0	1,436,579	100.0	1,703,459	100.0
Canada	11,189	1.6	14,992	1.5	26,330	1.9	18,913	1.3	24,609	1.4
United States	31,487	4.3	55,704	5.5	130,516	9.6	132,956	9.3	198,745	11.7
Japan	11,221	1.5	27,791	2.8	65,772	4.9	45,604	3.2	46,496	2.7
Belgium/Luxembourg	11,260	1.6	13,443	1.3	26,187	1.9	27,345	1.9	32,070	1.9
France	88,618	12.2	123,532	12.2	159,442	11.8	174,285	12.1	205,506	12.1
Federal Republic of Germany	249,512	34.4	326,239	32.3	374,345	27.7	403,657	28.1	476,831	28.0
Italy	162,330	22.4	207,260	20.5	242,314	17.9	244,063	17.0	236,382	13.9
Netherlands	28,161	3.9	48,406	4.8	76,490	5.7	108,186	7.5	156,216	9.2
Austria	32,323	4.5	52,386	5.2	65,550	4.8	64,447	4.5	69,846	4.1
Norway	2,007	.3	1,973	.2	15,109	1.1	6,446	.4	5,974	.4
Sweden	17,257	2.4	30,617	3.0	43,298	3.2	66,593	4.6	99,306	5.8
Switzerland	12,564	1.7	20,762	2.1	24,568	1.8	32,930	2.3	44,725	2.6
United Kingdom	61,045	8.4	76,892	7.6	79,740	5.9	78,907	5.5	88,806	5.2
Denmark	5,870	.8	9,624	1.0	23,275	1.7	32,247	2.2	17,947	1.1
IW Exports—country shares^a in manufactured goods^a trade with Romania, 1972-76 (Amounts in millions of dollars)										
Total	793.2	100.0	1,067.5	100.0	1,601.3	100.0	1,559.3	100.0	1,416.5	100.0
Canada	.3	0.0	.6	0.0	3.0	.2	1.8	.1	1.8	.1
United States	18.8	2.3	31.7	2.9	109.2	6.8	57.6	3.7	49.3	3.5
Japan	46.8	5.9	70.8	6.6	157.6	9.8	130.7	8.4	131.6	9.3
Belgium/Luxembourg	20.0	2.5	30.6	2.8	51.3	3.2	47.0	3.0	63.0	4.4
France	126.0	15.8	155.7	14.5	169.0	10.6	195.3	12.5	206.7	14.6
Federal Republic of Germany	278.5	35.1	408.6	38.2	640.0	40.0	615.8	39.5	470.8	33.2
Italy	87.4	11.0	117.3	10.9	168.4	10.5	176.5	11.3	150.1	10.6
Netherlands	20.0	2.5	25.5	2.3	40.1	2.5	52.7	3.4	54.0	3.8
Austria	44.8	5.6	56.9	5.3	74.3	4.6	80.7	5.2	78.4	5.5
Norway	2.0	.2	9.3	.8	8.2	.5	8.3	.5	17.2	1.2
Sweden	23.9	3.0	33.2	3.1	49.1	3.1	45.1	2.9	39.5	2.8
Switzerland	36.6	4.6	52.2	4.9	58.7	3.7	65.4	4.2	65.0	4.6
United Kingdom	80.9	10.2	66.1	6.2	65.6	4.1	76.7	4.9	77.1	5.4
Denmark	6.9	.8	8.4	.7	7.6	.5	5.7	.4	11.8	.8
IW Imports—Country shares^a in manufactured goods^a trade with Romania, 1972-76										
Total	342.5	100.0	476.9	100.0	625.1	100.0	692.5	100.0	875.9	100.0
Canada	11.2	3.2	13.7	2.8	18.0	2.9	18.2	2.6	22.4	2.6
United States	16.6	4.8	30.8	6.4	37.5	6.0	35.4	5.2	95.2	10.9
Japan	7.1	2.0	21.2	4.4	36.1	5.8	29.9	4.3	29.3	3.3
Belgium/Luxembourg	6.3	1.8	9.5	2.0	18.3	2.9	18.3	2.6	20.2	2.3
France	52.2	15.2	78.8	16.5	102.1	16.3	115.1	16.6	130.9	14.9
Federal Republic of Germany	137.6	40.1	175.6	36.8	180.1	28.8	211.9	30.6	264.5	30.2
Italy	29.9	8.7	35.0	7.3	70.6	11.3	78.5	11.3	100.6	11.5
Netherlands	16.2	4.7	24.3	5.1	44.3	7.1	46.0	6.6	65.3	7.5
Austria	8.9	2.6	8.4	1.7	13.7	2.2	18.1	2.6	24.1	2.8
Norway	1.9	.5	1.7	.3	12.7	2.0	3.5	.5	3.8	.4
Sweden	8.9	2.6	14.3	3.0	23.5	3.8	24.0	3.5	26.9	3.1
Switzerland	4.9	1.4	7.9	1.6	10.5	1.7	16.1	2.3	13.5	1.5
United Kingdom	36.1	10.5	48.4	10.1	48.3	7.7	59.4	8.7	64.7	7.4
Denmark	4.0	1.1	6.7	1.4	9.1	1.5	18.1	2.6	14.5	1.7

See footnotes at end of table.

TRADE OF INDUSTRIAL WESTERN COUNTRIES WITH CENTRALLY PLANNED ECONOMIES, 1972-76—Continued

Country	1972		1973		1974		1975		1976	
	Amount	Per cent	Amount	Per cent	Amount	Per cent	Amount	Per cent	Amount	Per cent
IW Export trade shares to U.S.S.R., 1972-76 (amounts in thousands of dollars)										
Total	3,317,222	100.0	4,957,331	100.0	6,250,003	100.0	6,714,778	100.0	6,653,042	100.0
Canada	285,526	8.6	292,213	5.9	30,181	.5	402,359	3.8	542,940	4.7
United States	542,085	16.3	1,187,639	24.0	607,856	9.7	1,834,141	17.1	2,305,955	19.8
Japan	504,180	15.2	484,587	9.8	1,101,697	17.6	1,624,429	15.2	2,251,894	19.3
Belgium/Luxembourg	91,122	2.7	211,989	4.3	368,481	5.9	349,683	3.3	296,689	2.5
France	340,461	10.3	573,862	11.6	656,091	10.5	1,146,940	10.7	1,118,096	9.6
Federal Republic of Germany	712,208	21.5	1,182,643	23.9	1,856,084	29.7	2,824,386	26.4	2,684,725	23.0
Italy	263,603	8.1	351,388	7.1	617,666	9.9	1,019,666	9.5	981,423	8.4
Netherlands	63,846	1.9	78,508	1.6	169,833	2.7	207,000	1.9	175,142	1.5
Austria	94,223	2.8	92,066	1.9	188,592	3.0	216,102	2.0	237,374	2.0
Norway	19,712	.6	22,110	.4	39,800	.6	94,773	.9	76,671	.7
Sweden	83,420	2.5	118,665	2.4	179,223	2.9	292,545	2.7	280,315	2.4
Switzerland	63,387	2.1	97,003	2.0	142,226	2.3	182,356	1.7	202,057	1.7
United Kingdom	215,646	6.5	230,217	4.6	256,941	4.1	458,934	4.3	431,531	3.7
Denmark	26,803	.8	34,441	.7	35,332	.6	61,475	.6	68,230	.6
IW Import trade shares from U.S.S.R., 1972-76 (amounts in thousands of dollars)										
Total	2,570,344	100.0	4,121,594	100.0	6,341,515	100.0	6,750,446	100.0	8,773,153	100.0
Canada	15,351	.6	22,984	.6	20,916	.3	25,060	.4	47,921	.5
United States	95,536	3.7	213,961	5.2	350,223	5.5	254,528	3.8	220,901	2.5
Japan	593,906	23.1	1,076,229	26.1	1,418,893	22.4	1,168,123	17.3	1,166,211	13.3
Belgium/Luxembourg	105,333	4.1	178,623	4.3	271,081	4.3	299,546	4.4	300,638	3.4
France	294,856	11.5	434,026	10.5	590,575	9.3	771,170	11.4	913,695	10.4
Federal Republic of Germany	420,674	16.4	713,005	17.3	1,222,662	19.3	1,294,953	19.2	1,701,544	19.4
Italy	325,060	12.6	441,356	10.7	802,863	12.7	879,133	13.0	1,364,075	15.5
Netherlands	79,876	3.1	128,534	3.1	235,971	3.7	303,857	4.5	387,449	4.4
Austria	113,415	4.4	136,910	3.3	237,189	3.7	318,700	4.7	421,207	4.8
Norway	28,603	1.1	46,601	1.1	69,355	1.1	86,183	1.3	86,039	1.0
Sweden	159,411	6.2	207,610	5.0	400,575	6.3	528,883	7.8	476,256	5.4
Switzerland	30,303	1.2	64,083	1.6	121,026	1.9	121,094	1.8	258,253	2.9
United Kingdom	271,283	10.6	363,749	8.8	476,200	7.5	527,189	7.8	1,196,212	13.6
Denmark	36,962	1.4	94,334	2.3	124,383	2.0	172,408	2.6	232,752	2.7

¹ Industrial West.

² Numbers may not add to totals due to rounding.

³ SITC's 5, 6, 7, 8.

Source: U.N. Trade Data; Fachserie F, Gross- und Einzelhand Gastgewerbe, Reihe 6, Warenverkehr mit der Deutschen Demokratischen Republic und Berlin (Ost) 1972-1976; Prepared by International Trade Analysis Staff, U.S. Department of Commerce.

STATUS OF U.S. COMMERCIAL RELATIONS WITH COMMUNIST COUNTRIES

	Albania	Bulgaria	Czechoslovakia	German Democratic Republic	Hungary	Poland	Romania	U.S.S.R.	People's Republic of China
Diplomatic Recognition	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MFN Tariff Treatment	No	No	No	No	Yes ¹	Yes	Yes ¹	(?)	No.
Eximbank Facilities	No	No	No	No	Yes	Yes	Yes ¹	(?)	No.
OPIIC ⁴	No	No	No	No	No	No	Yes ¹	No	No.
Maritime Agreement ⁵	No	No	No	No	No	No	Yes	Yes	No.
Double Taxation Treaty ⁶	No	No	No	No	(?)	Yes	Yes	Yes	No.
Consular Convention ⁷	No	Yes	(?)	(?)	Yes	Yes	Yes	Yes	No.
Civil Aviation Agreement ¹⁰	No	No	Yes	No	Yes	Yes	Yes	Yes	No.
Default Bonds Outstanding	No	(?)	Yes	Yes	No	No	No	Yes	No.
Financial Claims Outstanding	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes.
Johnson Act Applicability ¹¹	No	No	Yes	(12)	No	Yes	No	Yes	Yes.
Fisheries Agreement ¹³	No	Yes	No	Yes	No	Yes	Yes	Yes	No.
Science, Technology Agreement ¹⁴	No	(?)	(?)	No	(?)	Yes	Yes	Yes	No.
Joint Commercial Commission ¹⁵	No	No	No	No	No	Yes	Yes	Yes	No.
Joint Trade Council (Private)	No	(16)	(16)	Yes	(16)	(16)	(16)	Yes	(17).
Trade Agreement	No	No	No	No	Yes	No	Yes	(?)	No.
Long-Term Economic Cooperation Agreement. ¹⁸	No	No	No	No	No	No	Yes	Yes	No.
Foreign Business Representation Offices Permitted.	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No.
Foreign Equity Investment with Local Partner Permitted.	No	No	No	No	Yes	Yes	Yes	No	No.

¹ Subject to terms of the Trade Act of 1974.

² Trade Agreement extending MFN signed in October 1972 but not in force because of lack of U.S. legislative authority for "unconditional" MFN treatment, as provided for in the Agreement. Certain other provisions are being implemented by both sides.

³ Credits available from October 1972 to January 1975. Pursuant to Export-Import Bank legislation and Title IV of the Trade Act of 1974, Bank facilities are no longer available, but limited facilities could be restored if accord is reached on certain provisions of the Trade Act.

⁴ Overseas Private Investment Corporation insures U.S. private investments against certain political risks in certain countries and finances the investment and/or development of eligible projects of U.S. investors in these countries.

⁵ These agreements provide for a decreased notification time necessary for visits of each nation's vessels to the other's ports.

⁶ Designed to avoid the double taxation of business income, personal service income, and investment income.

⁷ Under negotiation.

⁸ Provides for access by U.S. Embassy personnel to U.S. nationals who might be detained in a foreign country.

⁹ Negotiated. Ratification by Eastern European country pending.

¹⁰ Permits and establishes civil aviation between countries.

¹¹ Johnson Act prohibits certain financial transactions by private persons in the United States involving foreign governments which are in default in the payment of their obligations to the United States. The Attorney General has ruled that the act does not prohibit extensions of credit for export financing within "the range of those encountered in commercial sales." For more definitive legal interpretations of the issues raised by the act, involved businessmen should seek legal counsel.

¹² Subject to legal interpretation.

¹³ Allows for catch allocations within U.S. territorial waters.

¹⁴ Such agreements facilitate scientific information exchange and cooperation.

¹⁵ Government-to-government bodies established to discuss and negotiate outstanding trade issues.

¹⁶ Under auspices of U.S. Chamber of Commerce.

¹⁷ The National Council for United States-China Trade is a private organization of U.S. firms. While it is not a Joint Council since it has no People's Republic of China participants, it does have a close working relationship with its People's Republic of China counterpart, the China Council for Promotion of International Trade.

¹⁸ Such agreements are aimed at facilitating long-term business and economic cooperation.

Source: U.S. Department of Commerce, East-West Trade Update: A Commercial Fact Sheet for U.S. Business, Overseas Business Reports, OBR 77-68, December 1977.

MEMBERSHIP OF COMMUNIST COUNTRIES IN INTERNATIONAL ECONOMIC-COMMERCIAL ORGANIZATIONS

	Albania	Bulgaria	Czechoslovakia	German Democratic Republic	Hungary	Poland	Romania	U.S.S.R.	Peoples Republic of China
GATT.....	No.....	Observer.....	Yes.....	No.....	Yes.....	Yes.....	Yes.....	No.....	No.....
IMF.....	No.....	No.....	No.....	No.....	No.....	No.....	Yes.....	No.....	No.....
IBRD.....	No.....	No.....	No.....	No.....	No.....	No.....	Yes.....	No.....	No.....
Berne Convention ³ (Copyright protection).....	No.....	Yes.....	Yes.....	Yes.....	Yes.....	Yes.....	Yes.....	No.....	No.....
Paris Union ³	No.....	Yes.....	Yes.....	Yes.....	Yes.....	Yes.....	Yes.....	Yes.....	No.....
International Chamber of Commerce.....	No.....	(1).....	(1).....	(1).....	(1).....	(1).....	(1).....	(1).....	No.....
U.C.C. ⁴ Copyright Protection.....	No.....	Yes.....	Yes.....	Yes.....	Yes.....	No.....	No.....	Yes.....	No.....

¹ Member of liaison committee.

² Although the United States is not a member of this Convention, a U.S. author can receive automatic copyright protection for his work in the member countries by publishing it in any other member country simultaneously with its first publication in the United States.

³ U.S. nationals are entitled to receive the same treatment under a member country's patent and trademark laws as that country extends to its own nationals. U.S. citizens are also entitled to a "right of priority" for patent and trademark applications. Under this procedure, a U.S. national, after first filing a U.S. patent application in the United States, has 1 yr in which to file a corresponding patent

application in a member country and receive on this application the date that appeared on the 1st-filed U.S. application. The period is 6 mo for trademarks.

⁴ Universal Copyright Convention. Under this convention U.S. authors are entitled to automatic protection of their U.S. copyrighted works in that country by inserting on such works their name, year of publication and symbol "c" in a circle.

Source: U.S. Department of Commerce, East-West Trade Update: A Commercial Fact Sheet for U.S. Business, Overseas Business Reports, OBR 77-68, December 1977.