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# COMPARISONS OF THE UNITED STATES AND SOVIET ECONOMIES

## HEARINGS

BEFORE THE

## JOINT ECONOMIC COMMITTEE

## CONGRESS OF THE UNITED STATES

EIGHTY-SIXTH CONGRESS

FIRST SESSION

PURSUANT TO

**Sec. 5 (a) of Public Law 304**

**(79TH CONGRESS)**

NOVEMBER 13, 16, 17, 18, 19, AND 20, 1959

Printed for the use of the Joint Economic Committee

UNITED STATES
GOVERNMENT PRINTING OFFICE
48448 WASHINGTON : 1960

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington 25, D.C. - Price 70 cents

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# COMPARISONS OF THE UNITED STATES AND SOVIET ECONOMIES

FRIDAY, NOVEMBER 13, 1959

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMICS STATISTICS OF THE
JOINT ECONOMIC COMMITTEE,
*Washington, D.C.*

The subcommittee met at 2 p.m., pursuant to recess, in the old Supreme Court Chamber, the Capitol, Hon. Richard Bolling (chairman of the subcommittee) presiding.

Present: Representative Bolling, Senator Javits, and Representative Curtis.

Representative BOLLING. The subcommittee will be in order.

Mr. Director, we are pleased indeed that you have accepted the subcommittee's invitation to open this series of hearings on comparisons of the United States and Soviet economies. As you know, our objective is to provide the American people and Congress with the best available information for making such comparisons—and to explain the limitations and significance of such data.

We know of your deep personal interest in clarifying the problems and issues which are involved in our current study. Your agency's thoroughgoing analytical work can add much to the factual basis we are attempting to lay in these hearings.

I am sure I speak for all of my colleagues when I say that we consider it an especial privilege to welcome you in your first public appearance at a congressional hearing. Will you please feel free to proceed in your own way.

## STATEMENT OF ALLEN W. DULLES, DIRECTOR OF CENTRAL INTELLIGENCE; ACCOMPANIED BY ROBERT AMORY, JR., DEPUTY DIRECTOR (INTELLIGENCE); EDWARD L. ALLEN, CHIEF, ECONOMIC RESEARCH AREA, OFFICE OF RESEARCH AND REPORTS; RUSH V. GREENSLADE, CHIEF, ANALYSIS DIVISION, OFFICE OF RESEARCH AND REPORTS; AND LAWRENCE R. HOUSTON, GENERAL COUNSEL

Mr. DULLES. Mr. Chairman, it is a great pleasure to be here today, and I appreciate the kind remarks that you have made about the Agency and its work.

With your permission, I will read a prepared statement, and then I will be available for any questions that you may wish to present to me.

I am accompanied here today by Mr. Robert Amory, Jr., Deputy Director of Intelligence, on my right; Dr. Edward L. Allen, Chief, Economic Research Area, Office of Research and Reports; Dr. Rush V. Greenslade, Chief, Analysis Division, Office of Research and Reports; and Mr. Lawrence R. Houston, General Counsel.

Representative BOLLING. We are glad to welcome these gentlemen, too, Mr. Dulles.

Mr. DULLES. Mr. Chairman, there are few subjects that arouse more heated controversy than that which your committee is studying; namely, the comparison of the economies of the United States and the Soviet Union.

There are proponents of the view that the Soviet Union is relatively backward. There are others who picture it as a galloping giant which exceeds us not only in its present speed but in staying power.

In the Central Inteligence Agency we devote a major effort to the analysis of this problem. We gather together the best technicians available, in and out of government, to advise us on the various aspects of the Soviet economy—from agriculture on the one hand to the most sophisticated technical and military items on the other. We have a great mass of evidence to weigh. We try to do it without prejudice.

We have also carefully reviewed the papers which your committee has already received and published. We feel you are to be congratulated on the general excellence of these studies.

There are many reasons for the divergence of views among experts. A great deal depends upon the particular sector of the Soviet economy that is under study.

The Soviet Union is extremely proficient in certain areas, especially in the scientific and technological fields related to its military effort. In other areas which up to the present time the Soviets have considered secondary, their performance ranges from fair to mediocre.

In some important areas, particularly agriculture, their efforts have been hampered by the tendency to impose on the tillers of the soil some of the precepts of Marx through the system of collective farms and rigid state control. Such ideological considerations, in recent years at least, have not hampered their progress in the field of science and technology.

Returning American experts after visiting the U.S.S.R. reflect the contrasts I have mentioned. Those experts who have concentrated their study on Soviet achievements in the fields of steel production, heat resistant metals, electronics, aeronautics and space technology, atomic energy, machine tools, and the like, come back with the general findings that the U.S.S.R. is highly competent.

On the other hand those who have studied what the Soviets are doing in agriculture, roadbuilding, housing, retail trade, and in the consumer goods field, including textiles, find them lagging far behind us. Some recent returning visitors to the Soviet Union remarked with surprise that they can send a lunik to the moon, but don't bother to make the plumbing work.

This is a crude comparison but does help to illustrate where Soviet priorities lie.

The lag I have mentioned does not reflect Soviet inability to do these particular things. It does evidence a definite decision to defer

them to the higher priority objectives of industrial and military power and also an unwillingness, at this time, to devote the funds and manpower necessary to the modernization of production equipment in the consumer goods field.

At first blush, one might conclude that the U.S.S.R. was a country of contrasts, but this is only superficially true. It is a country of concentration—concentration on those aspects of production and of economic development which the Soviet leaders feel will enhance their power position in the world. Theirs is a materialistic society. They assign a low priority to those endeavors which would lead to a fuller life for their people.

The attitude they take toward automobiles is a good illustration of this policy. Mr. Khrushchev was undoubtedly impressed by the view he gained of our overall economic strength. He was by no means persuaded that he should emulate us in the automotive field. In an address he made at Vladivostok about a month ago, he said that it was—

> not at all our aim to compete with the Americans in the producing of a large number of cars * * * We shall produce many cars but not at the moment. We want to set up a different system for the use of cars than the one in capitalistic countries * * *. Cars will be used in our country more rationally than it is done by the Americans. Common taxicab parks will be widely developed in our country, where people will take cars for essential purposes.

He did not add, but it does cross one's mind, that his system also gives the regime a better chance to maintain its control over the people.

In effect Khrushchev is also implying that he does not propose to divert to car production resources which could contribute to build up heavy industry and military strength.

Another illustration of the Soviet ability to concentrate and allocate resources for the greater power of the state is in the use made of highly skilled manpower, including scientists and technologists.

Once they have determined upon a high priority project—and they have fewer echelons of decisions to surmount than we before the final go-ahead is given—they are able to divert to this project the needed complement of the ablest technicians in the U.S.S.R. which the particular task demands. They can also quickly allocate the necessary laboratory or factory space and manpower required. Today, although their overall resources are far less than ours, they can allocate what is necessary if the priority is high enough.

They cannot do everything at once, and they do not work on as many competing designs as we. But in many of the technical and military fields the leadtime from the drawing board to the finished product is less with them than with us. This seems to be true despite the fact that, generally speaking, the technical competence of our labor, man for man, exceeds theirs.

Furthermore, our military production program is in competition as respects brains in the planning, and brawn in the production, with the requirements for the manufacture of consumer goods. In the Soviet Union this type of competition now at least can be suppressed.

I will take up later whether this can continue or not.

The Soviets are also quick to review industrial and military programs when they find them inconsistent with their overall goals or too costly in terms of money or manpower. In 1956 they advertised

widely a program in the field of nuclear power for industrial and peaceful purposes, of 2,500 megawatts to be achieved in 1960. Gradually they have screened this down to a point less than 30 percent of their initial goal. Apparently they found it too costly for what they were achieving, whether in terms of electric power or in terms of its propaganda value.

While they keep as secret as they can the details of their military programs and progress, Mr. Khrushchev did tell us that heavy bombers should be consigned to museums and that he is generally turning from bombers to missiles. The evidence tends to bear out a change in policy here, as indicated, as well as in naval construction where the building of cruisers has apparently been halted.

While we know a great deal more about their overall military programs than the Soviet tells us, their screen of secrecy makes it difficult to estimate with precision the exact percentage of the Soviet GNP that it—that is, the military sector—absorbs. We estimate, however, that with a gross national product (GNP) of about 45 percent of ours—computed on the same basis as we compute our own—their military effort, in terms of value, is roughly comparable to our own—a little less in terms of hardware produced but substantially more in terms of manpower under arms. Military hardware comes out of the most efficient sector of their economy.

With respect to the productivity of Soviet labor generally, the comparative picture is very different. Today they have on the farms over 45 million men and women, or nearly one-half of their total labor contingent. With us the number of workers in agriculture is only about 10 percent of our total labor force and with this force we produce about one-third more than does Soviet agriculture. In the industrial sector they have 20 percent more labor than we to produce the equivalent of about 40 percent of our total production.

It is the task of this subcommittee, I understand, to reach some conclusions regarding the present strength of the Soviet economy, its past rates of progress, and its prospects for future growth. With these introductory remarks on the general background of the Soviet economy and its overall objectives, I will turn to the particular subjects of your inquiry.

The year 1913 is taken as the base for many Soviet studies and claims. The Soviets try to picture prerevolutionary Russia as the economic counterpart of Black Africa today. The official myth about the relative backwardness of Imperial Russia has been deliberately created so that Communist economic achievements will appear to be even greater than in fact they have been. The Soviet party line would have you believe that Russian industrial output was less than 7 percent of that of the United States in 1913.

However, recently the dean of Soviet economists, Academician Strumilin, published a pamphlet which deflated official Communist claims. He calculated Soviet 1913 output at between 11 and 12 percent of that of the United States. Having passed his 80th birthday, Strumilin undoubtedly felt it was time to write objectively.

The weight of evidence, as I see it, would place prerevolutionary Russia as the sixth or seventh largest industrial power of its time, though it is true it was relatively backward by then existing Western European standards of per capita output.

Further, Russia had in hand many of the keys for rapid economic development which were, of course, taken over by the Communists after 1917. For example, its agricultural output in 1913 was not only able to provide an adequate diet for its people, but also to generate an export surplus. There was no pressure of population against food resources.

The country also was richly endowed with coal, iron ore, petroleum deposits, and other essential industrial materials. For example, Russia accounted for about half the world's production of petroleum in the early 1900's. After the subsequent major discoveries in the United States, Russia's relative position declined, but in 1913 she was still a major world oil producer. Even in 1913 Russia had a modest but growing machine-building industry, a well-developed rail transport net, a supply of technical talent and a tradition of excellence in pure science and mathematics.

So much for what existed prior to the Communist takeover in 1917. The first major problems that faced the revolutionists were political and military—to get Russia out of the war with Germany, to bring the internal civil war to a successful conclusion, and later to resolve the battle for control within the Communist Party itself which followed the death of Lenin. This took the better part of a decade. By 1928, three important developments had taken place:

First, Stalin had emerged as the absolute victor in the internal power struggle;

Second, the economy had then been restored to its 1913 level of output; and

Third, out of the murky materialistic dogma of Marxism and Leninism, the surviving Communist leadership had molded a program of economic action which remains in force today.

The central theme of this program is forced draft industrialization.

Having determined on this objective, the Communist leadership proceeded to implement their decision through the mechanism of detailed plans, rigid allocation of resources, and the use of force where necessary.

In the short space of 30 years, from 1928, despite the ravages of 4 war years and several years of reconstruction between 1941 and 1950, the Soviet Union has become second among the world's industrial powers. There is no dispute among experts on this point.

Furthermore, in reviewing the various studies of Western scholars, I have been struck by the substantial agreement on the rate of industrial growth achieved by the Soviet Union over the period since 1950. The range of estimates is from 9 to 10.5 percent a year.

The findings of a study given you by the National Bureau of Economic Research, appear on the surface to be an exception. This exception, in my opinion, is more apparent than real. The NBER study covers civilian production only, whose annual growth is placed at 7.7 percent for the period 1950–55.

The most important difference between the National Bureau's figure of 7.7 percent and our estimate of about 10 percent is due to our inclusion of military production which looms large in the overall production figures. The addition of military equipment to the National Bureau's index would tend to raise it into the range I have indicated.

Virtually all Western measurements point to this conclusion—that Soviet industrial production has been growing at a rate at least twice as rapidly as that of the United States since 1950.

In reaching this and other comparative figures of industrial production, we have adjusted Soviet data to make them comparable to our own, and have included in industrial production the output of all manufacturing and mining industries, as well as public utilities.

Turning from industrial production to a more comprehensive, but in many ways less significant, measure of economic growth; namely, gross national product, we find similar parallels between the estimates which we make in CIA and independent private studies of the Soviet economy.

We estimate the growth of Soviet GNP during the present decade, or a little short of a decade, 1950–58, to have been at an annual average rate of about 7 percent measured in constant prices. Estimates by others for similar time periods range from a low of 6 percent to a high of 9 percent. The degree of agreement is perhaps even closer than this range would indicate since these other estimates I have mentioned have varying initial and terminal dates within the decade. The conclusion, then, is that Soviet GNP has also been growing twice as rapidly as that of the United States over the past 8 years.

Some observers have noted that, in the past, the United States experienced long-term rates of growth comparable to the Soviet achievement from 1913 to the present. Such rough statistical equality would be true, for example, if the four decades of U.S. growth ending with our entry into World War I were selected for comparison. Those who would play down Soviet achievements leap from this statistical springboard to the conclusion that there is nothing unique about Soviet industrial progress. Indeed, they say, we did it ourselves at a "comparable stage of development in the United States."

However, such conclusions omit mention of the uniquely favorable conditions that stimulated our growth prior to World War I. Such factors include the massive immigration of European workers, the influx of investment funds to make possible our rapid rate of industrialization, and the very low level of defense expenditures. The point is not only that these factors no longer exist in the United States, but also that they never existed for long in the Soviet Union.

Let me illustrate this interpretation of history with another case. The National Bureau's study to which I have referred before estimates Soviet annual industrial growth from 1913 to 1955 at 3.9 percent. We have not felt that the years from 1913 to 1928 were helpful in forecasting the future, and I have alluded to that earlier in my testimony. These years for the U.S.S.R. were marked by wars, internal and external, by political upheaval, mass imprisonment, and chaos. By 1928 they were about back to the 1913 level. For example, Soviet steel production in the U.S.S.R. in 1913 was a little over 4 million tons; by 1928 it was still just a little over 4 million tons.

If the first 15 years are eliminated, as we believe they should be, and growth is measured from 1928 through 1958, the conclusion is inescapable that Soviet economy has surged forward very rapidly indeed. The rate was faster than for American industry over these years, despite the effects of World War II, which stimulated industrial growth in the United States but was a disaster for the U.S.S.R.

But on the other side, let us not forget that the West did the pioneering. Soviet industrial development was built upon, and profited from, the technology already developed by the West from the days of the industrial revolution.

The statement, frequently made, that much of postwar Soviet growth came from looting plants in Manchuria and East Germany, does not stand up if closely examined. The early rehabilitation of war-damaged Soviet manufacturing plants was, it is true, aided by these forced imports; the total benefit, however, was small compared with wartime losses.

Espionage and the reliance on outside technical experts, particularly German, is also alleged to have been of crucial importance to Soviet industrial successes since World War II. In a few key industries of military significance, most particularly in atomic energy and in the field of ballistic missiles, this had some importance in the very early stages of Soviet postwar development, but looked at in the perspective of Soviet industrial military growth as a whole, and their present competence in both the ballistic and nuclear fields, these factors played a relatively minor role. They have gained much more in the overall industrial field from the acquisition and copying of advanced Western models of specialized equipment.

Turning from the past to the future, we have not attempted to distill a best estimate of future Soviet prospects for economic growth out of the vagaries of 30 or 40 years of Soviet history.

Instead, we have asked ourselves three questions:

First, what have the Soviet shown a capacity to do under present prevailing conditions?

Second, what do the Soviet leaders intend to do; and

Third, what are the Soviet's prospects for the achievement of their goals, assuming there are no intervening catastrophes, such as war, famine, and the like.

As to the first point, Soviet performance on past plans, particularly postwar, has been relatively good. The fourth 5-year plan (1946–50) was fulfilled well ahead of schedule. The goals of the fifth 5-year plan were more than met.

The sixth 5-year plan was abandoned early in its life. It soon was apparent that it was too ambitious. In contrast, the 7-year plan (1959–65) was more carefully drawn and is a reasonable blueprint of attainable growth. Experience teaches us that Soviet industrial plans should be taken seriously.

With respect to their intentions, the Soviet leaders have left no room for doubt. The obsession with overtaking the U.S. economy in the shortest possible historical time was the dominant theme of the 21st Party Congress held last February. It continues to be so. Mr. Khrushchev's words to the Congress were:

> The Soviet Union intends to outstrip the United States economically * * * To surpass the level of production in the United States means to exceed the highest indexes of capitalism.

Visitors to the Soviet Union report the slogan, "Even America must be surpassed," painted on the cowbarns throughout the country.

The U.S.S.R. is now in the opening stages of the 7-year plan, which blueprints industrial developments through 1965. This plan establishes the formidable task of increasing industrial output by 80 per-

cent over 7 years. The achievement of this goal will narrow the present gap between Soviet and U.S. industrial output. This would be particularly true in the basic raw materials and producers goods fields.

In our judgment, these goals can be met, with certain exceptions.

Past Soviet economic growth has rested largely on the plowing back of every possible ruble into heavy industry, into the means of production. It is the use of steel to make steel capacity greater, rather than to use it up by manufacturing automobiles, for example.

The magnitude of the investment program in the 7-year plan, the plan that runs through 1965, is impressive in by any standards of comparison. Capital investment in Soviet industry for the year 1959, the initial year of the plan, when measured in dollars, will be approximately equal to industrial investment in the United States, this year. The Soviets plan proportionately larger investment outlays for the succeeding years through 1965. These absolute amounts of investment are being fed into an industrial system whose output in 1958 was only about 40 percent of the United States. Under such forced-draft feeding the Soviet industrial plant should grow at a rapid rate.

On the other hand, we see no prospect that the agricultural goals of the 7-year plan will be approached. The dramatic increase of 7 percent per annum achieved over the 1953–58 period was the result of a 6-year effort to raise agriculture out of the trough in which Stalin had left it. A variety of factors including increased inputs of resources, more efficient use of resources, and at least two unusually good weather years contributed to this record growth.

We estimate, however, that these resource and efficiency gains will not be repeated in the present plan period. Given average weather, net agricultural output will probably not increase under the 7-year plan more than 18 to 20 percent by 1965. Such a modest growth is well below the implied growth of 55 to 60 percent.

Of course, the regime may be stimulated to undertake drastic new programs or new resource commitments not presently planned. Because the agricultural sector of the Soviet economy in the past has been its least efficient component, we do not reject the possibility of more improvement than we presently forecast.

Apart from the problem of agricultural growth, the Soviet under the present 7-year plan will be forced to cope with certain foreseeable difficulties, in addition to the unpredictable—such as acts of God and the uncertainties which might attend possible policy changes incident to any new management in the Kremlin. I don't think they are going to change management right away, but in time it will come. While these foreseeable problems are significant, we believe their impact is more likely to place a ceiling on the Kremlin's ambitions for overfulfillment rather than to threaten the success of the plan itself.

Among these foreseeable hurdles to their general economic growth are the following:

First, due to the lower birthrate during the war years, there is an obvious gap between the 1958–65 increase in the number of persons in the working age group (15 to 69) and the labor-force increment necessary to meet the planned goals. The regime in the Kremlin has recognized this problem and is taking steps to fill the gap. The

men under arms, the surplus of people on the farms to which I have alluded, that is, if more efficient techniques are introduced into agriculture, and students found unqualified for advanced education, are possible sources of additional manpower for industry. If a student does not do well in his classes, he is not allowed to go ahead and take advanced degrees, and this provides quite a pool that they can draw on for industrial and agricultural purposes.

Second, the metallurgical raw material and the energy industries, which were slighted in the rapid expansion of the 1950–56 period, must now be brought into balance with the rest of the economy. These former stepchildren will be receiving about half of all industrial investment under the 7-year plan. This pattern of concentration of investment means that other industries which contributed much to growth in the recent past will no longer make the same relative contribution.

A third limiting factor on the 7-year plan goals will be the need for a vastly increased housing program and the claim on construction resources for this purpose. It must compete with higher priority material-strength requirements in the industrial construction sector. It will call for improvement over past performance in completing construction of industrial projects with the time and funds allotted.

Fourth, the regime faces a complexity of problems in its attempt to increase its automation and mechanization programs.

Finally, a point that I have already stressed a number of times, the Soviet leadership will have difficult decisions to reach in dealing with the popular demand for more consumer goods. We believe that they now estimate that they can get away with a slight gradual improvement which will be highly publicized, and probably exaggerated. This happened in the case of the decree of a few days ago promising some additional consumer goods. If, however, the popular demand should greatly increase and the Soviet leaders made very substantial concessions in this field, that is, in the consumer field, it would affect the 7-year plan goals. Those are the limiting factors on achievement of their program.

Primarily because agricultural growth will be slower than in the recent past, we project a moderate slowdown in the rate of total Soviet output, or gross national product, over the next 7 years, compared to the past 7 years. However, even so, the U.S.S.R. will achieve significant gains by 1965 in its self-appointed task of catching up with the United States, particularly in industrial production and should substantially meet the industrial goals of the 7-year plan.

Thus, we estimate that Soviet GNP will grow at the rate of 6 percent a year though 1965, and even assuming that the U.S. gross national product for the years 1956 through 1965 can be increased to an annual growth rate of from 3.5 to 4 percent, our best postwar growth rate, then Soviet GNP will be slightly more than 50 percent of ours by 1965, and about 55 percent by 1970. I would emphasize, however, that we must increase our recent rate of growth, which has been less than 3 percent over the last 6 or 7 years, to hold the Soviets to such limited relative gains.

In the industrial sector the race will be closer. We believe it likely that the Soviets will continue to grow industrially by 8 or 9 percent a year. If they do so, they could attain by 1970 about 60 percent of our

industrial production, provided our industrial growth rate averages 4½ percent per annum. Any decrease in this rate would, of course, narrow the gap. For example, if our rate were to average the 2 percent which Khrushchev believes is the best we have in us, by 1970 the Soviets' industrial production would be more than 80 percent of ours, if they maintain the rate of growth forecast.

At the same time as we take note of Soviet progress, there in no reason to accept Soviet exaggerations of their prospects in the economic race.

In the propaganda surrounding the launching of the 7-year plan, Khrushchev made a number of statements about Soviet economic power which were nothing more than wishful thinking. Specifically, he stated that—

> after the completion of the 7-year plan, we will probably need about 5 more years to catch up with and outstrip the United States in industrial output.

Thus—

he added—

> by that time (1970), or perhaps even sooner, the Soviet Union will advance to first place in the world both in absolute volume of production and in per capita production.

From other evidence before us we do not believe that Mr. Khrushchev left the United States with any such illusion.

First of all, to reach such improbable conclusions, the Kremlin leaders overstate their present comparative position. They claim U.S.S.R. industrial output to be 50 percent of that of the United States. It is in fact nearer 40 percent. Also, as I have mentioned, this is predicated on Khrushchev's forecast that our growth will be only 2 percent a year, which is wholly unrealistic.

Another of Khrushchev's promises to his people is that they will have the world's highest standard of living by 1970. This is a gross exaggeration. It is as though the shrimp had learned to whistle, to use one of Mr. Khrushchev's own rather colorful comments.

Although year by year since 1953 the Soviets have been continually raising the level of production of consumers goods, their consuming public still fares very badly in comparison with ours. This is true not only in the quality and quantity of their consumer goods, but particularly in the hours of labor needed to purchase comparable products. Last year, for example, Soviet citizens had available barely one-third the total goods and services available to Americans. Indeed, the per capita living standard in the Soviet Union today is about one-fourth that being enjoyed by our own people.

The Soviet Government last month, as I have indicated, announced the program for increasing the production of certain durable consumers goods which I alluded to above. The decree did not mention automobiles but included refrigerators, sewing machines, vacuum cleaners, and the like.

Actually, this new program covers only about 5 percent of Soviet industrial production, and even in this narrow area raises goals but modestly above previous plans. The decree is one of a series introduced to provide a trickle of further benefits to the consumer at relatively small cost to the state. This does not mean that Soviet industrial investment or military programs need be reduced.

There is another economic area where the world has been treated to propaganda statements by Khrushchev. For example, last Febru-

ary he claimed and has since repeated many times, that the Socialist camp "now accounts for over one-third of the world's industrial output" and "will produce over half of the total world industrial output by 1965."

Actually, total industrial production of the Socialist camp—the U.S.S.R., the European satellites and Red China—is only about 25 percent of total world output. By 1965, it will be a few percentage points higher, but free world production will still account for over 70 percent of the total

And now, Mr. Chairman, to summarize and conclude this rather long statement:

(1) The Communists are not about to inherit the world economically. But while we debunk the distortions of their propaganda, we should frankly face up to the very sobering implications of the Soviet economic program and the striking progress they have made over the last decade.

(2) The fulfillment of the present Soviet 7-year plan is a major goal of Soviet policy. Khrushchev and the Kremlin leaders are committed to it and will allocate every available resource to fulfill it. The present indications are that Khrushchev desires a period of "coexistence" in which to reach the objectives of this plan.

(3) Future economic gains will also provide the goods and the services needed to further expand Soviet military power, if they choose so to use it, and to carry forward the penetration of the uncommitted and the underdeveloped nations of the free world These gains will also permit the Soviet to further assist in the rapid economic growth of the Kremlin's eastern ally, Communist China, if Soviet policy considerations dictate such a course.

(4) If the Soviet industrial growth rate persists at 8 or 9 percent per annum over the next decade, as is forecast, the gap between our two economies by 1970 will be dangerously narrowed unless our own industrial growth rate is substantially increased from the present pace.

(5) The major thrust of Soviet economic development and its high technological skills and resources are directed toward specialized industrial, military, and national power goals. A major thrust of our economy is directed into the production of the consumer-type goods and services which add little to the sinews of our national strength. Hence, neither the size of our respective gross national products nor of our respective industrial productions is a true yardstick of our relative national power positions.

The uses to which economic resources are directed largely determine the measure of national power.

Thank you very much, Mr. Chairman.

Representative BOLLING. Thank you, Mr. Dulles, for a most excellent and comprehensive statement.

Mr. Curtis, do you have some questions?

Representative CURTIS. I want to join the chairman, Mr. Dulles, in thanking you for appearing, and likewise for this very fine statement to start off our hearings.

I would like to point up—and I know you are aware of it—that this is the Subcommittee on Economic Statistics, and I think it is very fitting that it was this subcommittee that moved into this area,

because our emphasis is upon what tools we have and what information we can obtain upon which we can rely.

I also want to make this comment, that I think you very well bring out the course that we must steer between two dangers (1) the danger of complacency, and (2) the danger that by using Russia as a bogeyman and spurring ourselves into improvement—and we certainly can stand improvement—we would be assisting them in their propaganda campaign, particularly in relation to the uncommitted nations. And for this reason this committee has felt that it was very important that we do what we could to get together what factual information there was, and also to point out the limitation of our abilities to compare these two economies.

There is one question, or line of questions, that I would like to direct, and that is whether this business of comparing growth rates is really the meat of this matter. The full committee has just finished hearings, which began last January, on the subject of our own economic growth, price stability, and employment; and by and large, our economists tell us that rate of growth, though a factor and something to consider, is not, in their judgment, the important thing, which really is a matter of getting into the quality of that growth. And this is adding my own thoughts. I would think that would become even more important when a society reaches a certain base. And, of course, in the Russian society—one reason their rate is rapid, I would say, is that they are starting from a much smaller base, and therefore the rate can be more rapid.

I wonder if you would comment on that observation.

Mr. DULLES. I think that latter point is quite true. In fact, I did have it at one time in this paper. It was dropped out.

I have tried in this paper also to stress that looking at it from the point of view of national power, it depends a good deal more on what you are doing than how much you are doing, really. The Soviets are concentrating, now, for very clearly understandable reasons, from their viewpoint, on those things that build up national power. The military sector is the most important. The investment sector is very important, of course, because that builds up their power. And they are able, because of their control over their people, to resist, so far, the pressure to divert their very much smaller economy from these definite goals into, say, the consumer field, and into the automotive industry, and various other industries that add so much to our own life.

Would you add to this, Dr. Allen?

Dr. ALLEN. A point I would like to make, sir, is that when we speak of quality with respect to the Soviets, we must distinguish between where quality is very high, that is, in the case of military industries generally, in their space programs, in the field of technical research, and the place where it is very low, as Mr. Dulles brought out, in the field of consumer goods. It is not all uniform in quality.

Representative CURTIS. I know I used the wrong word to get my thought across when I used the word "quality." I was thinking of it more in the sense that we had to examine into the areas where the growth was. For instance, in our economy, I dare say we would not see much more, though we see some, advancement in the steel industry increasing productive capacity. But in a society where there is no

steel industry, or it is very small—that is not true of Russia, of course, but this is for comparison—the growth rate would not be more rapid. In fact, I think your paper implies that probably they have shifted from this area of development or growth now into other areas which have been neglected. But as a society becomes more balanced, I would think it almost axiomatic that the growth rate would tend to be lower. And so I raise this question simply because there has been so much emphasis recently, in our speeches and comments, on this rate of growth. And I am afraid that that is not the really meaningful figure. And I wanted to see if you would agree with that statement.

Mr. DULLES. We do think it will level off, as I have indicated, slightly. But still, with the program they have, we see no reason for Soviet economic growth levelling off or going down very much.

Would you like to say a word to that, Mr. Amory?

Mr. AMORY. Certainly, sir.

Mr. Chairman, the industrial rate we feel very strongly, will, because of the purposeful direction of their economy, continue at approximately 8 or 9 percent. The reduction we forecast is the failure to have the same kind of an answer in agriculture to the one they have in industry.

Representative CURTIS. May I interrupt just to see if I can follow this?

For example, because they are quite far behind in power in relation to the United States, there will be in fact need to increase their power. I presume they are going to do something in transportation, because I frankly cannot understand how they have been able to do what they have with the transportation system they have. In fact, so much so that I even question some of the conclusions as to what they have done. It just does not seem to jibe. But I presume that there would be another area where we would see they were concentrating their growth.

But again getting back to the point, we would have to take a look to see where that growth is.

There is one other thing that I would like to interject here. In evaluating the two economies, from the standpoint of potential, war, or economic war, or whatever, it is not so much, then, a question of what the GNP in a particular year is as much as what is the plant, the available plant. Now, the United States, before World War II, became the arsenal of democracy, and then converted a great deal of the civilian plant to military use. And I presume that our plant is still sufficiently flexible that a great deal could be directed.

So in evaluating the two countries, I think the potential becomes quite important, too, entirely apart from what the gross national product might be of the particular country.

Mr. DULLES. And their intention, the goal they are looking toward. Their plans, as you know, are very detailed. They give us a pretty good blueprint of what they plan to do. And as we have indicated, as you have suggested, they are shifting the emphasis in this new 7-year plan.

Representative CURTIS. Now, you made one remark that once they have determined upon a high priority project, then they are able to divert to this project the needed complement of the ablest technicians which the particular task demands. And yet I think in Khrushchev's

speeches, agriculture is regarded as one of the real priorities; and from the papers we have it does not look like they are doing too well, even though I guess they are diverting as best they can the ablest managers into the field of their collective farms or state farms. I am not so sure that they are as capable of switching, but I would like to have your observation; or directing to a certain area.

Mr. DULLES. Maybe it should have been brought out more clearly. We were talking about the industrial field.

Representative CURTIS. The industrial field, switching from, say, steel to power or whatever.

Mr. DULLES. And we have watched them in certain of the military fields. The time element, say, to produce a bomber, from the drawing board to the completion of the bomber, and certain other types of military equipment that one has been able to follow pretty closely. I was talking with a returning expert in the atomic field, who was quite impressed with the speed with which certain things were done as compared to our own speed.

This is the most effective sector of their economy, these fields that I am referring to. And they are able to turn to scientist A, B, C, or D, and say, "You work on this." There is no question of his saying, "No, I would rather work on something else." They pick out all the ablest scientists they need for a particular project, and they go ahead and make their plan. They do not have to go for appropriations, and they do not go through all of the rather difficult and sometimes time-consuming machinery that is absolutely essential in a democracy. There are many weaknesses in a dictatorship, but they have certain advantages of decision which we do not have as far as speed is concerned.

Representative CURTIS. Theoretically, our Military Establishment is set up on a sort of a dictatorship principle, and I should think we would be able to make some quick decisions. Maybe we have not been; but maybe we might look at the structure of that, which I have often thought we should.

One point on this rapid growth from 1950 to the present: We have seen a very similar rapid growth in some of the Western European countries. And I am not at all sure but that a great deal of that is not a result of the recovery from World War II. Surely, you had the transition of some 4 years, or 5 years, but apparently the real impact of an economy of recovery from war devastation seems to be a little more delayed. And I am wondering if that is not a factor in this rapid rate, inasmuch as we see a very similar situation in Germany, France, and England.

Mr. DULLES. It is quite true that the recovery of industrial production in Europe, taking what we call the OEEC countries, that is NATO plus Austria, Sweden, and Switzerland has been about 6 percent per annum, between 1950 and 1958.

Representative CURTIS. I have forgotten what it is, except that I remember that we had the figures, and they seem to be comparable. And incidentally, since 1950, this was after really Europe had some chance to recover.

Mr. DULLES. And the Marshall plan has had great effect.

Representative CURTIS. Oh, yes. The real growth has been really in the past 3 or 4 years, I presume. And I thought that was a factor.

Mr. DULLES. Something of the factor that Toynbee refers to as challenge and response. Take, for example, what has been done in

Germany. There has been in Germany a very extraordinary response to a very devastating situation and a very great challenge they had to meet as a result of the war.

Representative CURTIS. A few years ago Russia changed her educational system, dropping out 2 years, apparently to do something about the manpower shortage.

Mr. DULLES. Oh, yes. I did not go into education. It is such a tremendous subject in itself. But what they are doing in the educational field is quite dramatic. Of course, they are specializing very largely in the scientific fields.

Representative CURTIS. The only reason I mentioned it is because of a seeming downgrading of education, cutting out 2 years of study, to meet this apparently acute manpower shortage problem that they have.

One final general question, if I may.

From some of the papers that we have—and they are in considerable detail, as I think you know—there seems to be a real indication that Russia is not just copying some of our machinery and equipment but many of the capitalistic methods. I wonder whether if they can do this, they may become a capitalistic country. I wonder if you would comment.

Mr. DULLES. I am not sure that we have adopted the incentive system. Have we? They have done so. No question about that.

Representative CURTIS. I think the question was whether they have not used or are not using some of the techniques that we have found in the private enterprise system, the capitalistic system, are productive, and whether or not they are not actually changing their fundamental ideology in solving these economic problems.

Mr. DULLES. I do not know about ideology, but they certainly do use advanced techniques in their factories. They have studied us very carefully, and they have effective management, in our opinion, in the high priority factories, the factories that produce high priority goods.

Would you like to add anything to that, Mr. Amory?

Mr. AMORY. My only comment to add to that is that incentive pay or rewarding people in accordance with their contribution has always been part of their doctrine of building socialism.

Representative CURTIS. Since 1928?

Mr. AMORY. Since 1928. It is only when they reach this theoretical never-never land of communism that there will be equal awards for all, and they are deferring that day really indefinitely, as they go to higher and higher levels of production. They keep saying, "You have to have a completely full and rich economy before you can ever establish communism."

Representative CURTIS. Maybe capitalism is already beating them. That is all.

Representative BOLLING. Senator Javits?

Senator JAVITS. Mr. Dulles, I share the gratification of my colleagues at having you here today. It seems to me that one thing you have done is priceless for the American people: That is the number of myths you have exploded in this paper.

I would like to go over those with you, because I think it is critically important that our citizens have a clear understanding of how mythical some of these things are.

The first one, as I see it, relates to the fact that the Soviet economy has surged very rapidly forward, because it started from such a very low base.

You point out that Russia was an appreciable industrial country, and that besides this whole march forward is over 30 years, not 4 or 5. I am correct in that, am I not? Would you consider that an important myth that many people have been laboring under?

Mr. DULLES. I do. It is one they have been trying to perpetuate, as I have indicated.

Senator JAVITS. And then the other one I think you have laid at rest is the idea that this looting of plants in Manchuria and East Germany was the basis for the very strong Soviet industrial recovery after World War II. You say that is small compared to what they lost in the war.

Then this is a very important one: the idea that they learned everything they put to use by espionage, from outside technical experts. You point out that it may have helped them a little in atomic energy and the field of ballistic missiles, but, you say, it played a relatively minor role.

It seems to me that these are extremely important things which the American people can gain from as considered and highly authoritative a judgment as yours, and I wanted to emphasize it. I gather that you have certainly joined me in the feeling that this is good for our people to understand.

Mr. DULLES. They ought to get, certainly, a balanced picture.

Senator JAVITS. Then there is the other thing I would like to ask you about. This is the main burden of my questioning. It is this. We are trying to assess in practical effect our equipment for waging this struggle for freedom and their equipment for waging the struggle for communism. Now, do you evaluate, in answer to that question, their industrial and economic power with ours? And should we not more surely than they place in the balance the economic power of our allies, which is far more dependable for us than the economic power of their allies is for them?

And therefore I ask you: Would you be prepared to undertake a reassessment of this paper, in the light of your intelligence estimate, as to the dependability of our alliances to us, as contrasted with the dependability of their alliances to them and what each would add to the other?

Mr. DULLES. I think you have touched on a very important point, there. I did not go into it in this paper because the terms of reference, I felt, should be limited to our two countries.

There is no doubt that the industrial growth in Western Europe, the OEEC countries, NATO and these other countries I have mentioned, has been very extraordinary, and nearly comparable to the rate of growth in the Soviet Union.

Senator JAVITS. Would that not include Japan, for example?

Mr. DULLES. It would include Japan, also.

Senator JAVITS. Would it include Australia which has had a very remarkable rate of industrial growth?

Mr. DULLES. In one part of my paper, there, I tried to debunk Khrushchev's boast as to where the whole Soviet bloc would stand, as compared with the free world. And I said that even by 1965

they would have 30 percent industrial production, as against 70 percent in the free world. That includes, of course, all the countries that you have mentioned. And that is very important.

As to alliances, I regret to say that at the present time the two major countries of the Communist world are fairly well knit. I do not overlook the great possibilities of friction that might lie in the situation as between Soviet Russia and Communist China. And I would believe, as I said in this paper, that while Soviet industrial growth would permit them to contribute, contribute considerably to the growth of Communist China, I raise a question mark as to how much the Soviet would really want to do that.

Senator JAVITS. Mr. Dulles, we are not dealing at arm's length, here. We are all on the same side. And hence I would appreciate it very much, rather than requiring an answer to my question, which I think would be unfair, if you would take under consideration, if the Chair would allow me to put it that way, the possibility of some corollary to this analysis, which would endeavor to add to it the evaluation of what is added by alliances on both sides.

I say that for this reason. I think it is one thing to give us the incentive to austerity, which I think we have to undertake to some extent, and changing our techniques, and stepping up our productivity, and certainly the prod against complacency which is represented by these two sets of figures. At the same time, we do not want to be unrealistic about it to the extent that people say, "What is the use? They have just got us." They have not got us, and we know that. And one of the main reasons they have not got us is because we are not just playing this game alone. And so I submit this to you only for your consideration, because I think it is a very important point, and the basic point that we are all trying to make, including yourself.

Mr. DULLES. I would be very glad to do that. I would like to do that in close consultation with the Department of State. I think the Congress is always anxious to have us avoid duplication. And in the allocation of work, the Central Intelligence Agency has the primary responsibility in the field of what we call the bloc countries. And the Department of State has the primary responsibility in the field of the economies of the free countries. So that while I think this study might be very profitable, I think it should be certainly a joint study between ourselves and the Department of State, which we might be able to submit to the committee if the committee desired.

Senator JAVITS. Now may I also put before you just one other possibility? That is that you would tell us, give us a more accurate estimate, of what you think the Russians gain or lose in their own alliances. That would certainly be your job. And, seems to me, again, that is a very important point.

For example, next week the NATO parliamentarians are meeting here. The meeting opens on Sunday. Now, from the point of view of the integration of the free world, which I happen to think is the No. 1 issue before the United States today, this becomes supremely important, to have some estimation of what they are able to do and what they are willing to do in terms of the struggle in which we are commonly engaged.

Mr. DULLES. We will be very glad to undertake that, in consultation with the State Department.

Senator JAVITS. The other question I would like to ask you is this: I notice that a considerable point is made here, of course, of the lack of concentration in the Soviet Union on consumer goods, and all of the implications which that has. It is found in your paper.

Could you give us what you consider to be the ways in which we could make them, by our own policy, divert more of their resources to consumer goods? Or is there no way in which we can do it?

Mr. DULLES. I think we have made some progress in that direction by promoting the exchange of visits between the two countries. For the first time, a reasonably large number of Russians have been able to travel around our country and to see what we can do, to see what our standard of living is. And that is having an important effect.

Now, one of the big problems, however, is to break down more this barrier of communications between the two countries. If they have freedom to read about the United States and hear about the United States the way we have that freedom, that would make, or might make, quite a difference. And I think very likely it is being held down because the Soviet is apprehensive about the effect that such free exchange of information between the two countries might have in possibly forcing them into going much further than they do to meet the consumer desires and the consumer needs.

Senator JAVITS. So that this idea of opening travel and communications is not just "hands across the sea," in your opinion. It is really hardpan stuff of exposing the Russians to the way the people live in other countries, notably the United States, and that is an important instrument in this economic struggle, as likely to prod the Russian masters into giving their people more consumer goods.

Mr. DULLES. I agree entirely.

Senator JAVITS. Now let me ask you another question. Is not our aid to the less developed areas even more effective in that regard if we can help them to make any measurable increase in their standards of living, on the grounds that the Russian considers them far more analogous to the Soviet Union than he does the powerful United States?

Mr. DULLES. I think that is very important.

Senator JAVITS. Could you tell us of your views on that?

Mr. DULLES. Well, I think that the Soviet Union has been trying, and with some success, to influence the less developed—I do not like to say underdeveloped, but less developed—countries of the world by exaggerating the speed and effectiveness of their own economic development. That has had an impact. And I think that whatever we can do to show them more about our own development—and also to try to bring to them, as we are doing, through ICA and other ways, from our economy, more that helps them—is going to have a great influence.

The Soviets, particularly in great parts of Africa, southeast Asia, and other parts of the world, are trying to say, "Well, turn to us. We, the Soviet Union, were very backward 30 years ago. We can lift you up very quickly." And they are influencing them by that. Many countries have found that that was a bit of a mirage. And I think there is a tendency now to turn to us more and more, rather than to Soviet Union. But the danger of Soviet penetration is by no means over or the danger of their turning to the Soviet Union for their economic aid.

Senator JAVITS. The third point, in terms of influencing more consumer goods production in the Soviet Union, would be the revival in Western Europe.

Mr. DULLES. That is a very important point. And we do believe that now with the great recovery in Western Europe, Western Europe together with us can work in these less developed areas; and that we should not assume the entire burden, but that burden should be shared by these countries which have made such extraordinary recovery from war, as is the case in Western Europe and in Japan and in other countries.

Senator JAVITS. Mr. Chairman, I do not want to intrude on my time.

So that we can sum it up now as follows. There are at least three ways in which we can put some pressure on the Russian masters to increase consumer goods production in the Soviet Union—travel and communication, what we do in the less developed areas, and the show area, which is Western Europe, including West Berlin.

Mr. DULLES. I agree with you.

Senator JAVITS. And you have traced for us the exact connection between that and this balance of power, which counts dangerously, to wit, the industrial power which can be devoted to military use.

Mr. DULLES. I concur.

Senator JAVITS. I have just one other line I would like to ask you about. I think every American will read with a sense of solemnity the conclusions which you arrived at, that the Russians are marching forward in production at a rate about twice our own, and the following, which I would like to repeat, because I think it is so critically important, your conclusion No. 4:

> If the Soviet industrial growth rate persists at 8 or 9 percent per annum over the next decade, as is forecast—

and that includes your forecast, as I understand it—

> the gap between our two economies by 1970 will be dangerously narrowed unless our own industrial growth rate is substantially increased from the present pace.

Now, would you care to—and again, Mr. Dulles, we are not proceeding at arm's length, and please feel free to say no, and I will understand perfectly. But would you care to define for us, can you define for us, legitimately, within security considerations, what you mean by the word "dangerously"? It seems to me this is a very portentious word for the American people. "Dangerously narrow"?

Mr. DULLES. I said "dangerously" there, because if our growth rate were that which Khrushchev predicts for us, 2 percent, and they reach by 1970 80 percent of our industrial production, the amount of industrial production which they would then have available for military ends would be so great as to force us to put a great deal more even than we are today into the military sector, in order to keep up an adequate defensive shield in that situation. And that is why I used the word "dangerously" in that particular paragraph.

Senator JAVITS. And under those circumstances, would the Soviet Union's example by compelling? You say today you think it is not as compelling as it was as a magnet to the less developed peoples of the world to follow their scheme instead of ours?

Mr. DULLES. They are watching what the Soviet Union is doing very closely. They are watching what the Soviet Union has done in the

space area, which has been quite dramatic. They are watching their development in the field of ballistic missiles. And there is no doubt that if they were able to get substantially ahead of us in that latter field, that would have its impact on the other nations of the world.

Senator JAVITS. So the use of the word "dangerously" is an advised word, do I understand correctly, in terms of the national security of the United States?

Mr. DULLES. It is, sir.

Senator JAVITS. And, Mr. Dulles, if you were speaking now not as Allen Dulles, head of this Agency, but as Allen Dulles, the New York lawyer, who has been my friend for years, would you not agree with me as a citizen that this calls for a special application of concentration, of austerity, of resources, of combination with our allies in the world now, not tomorrow, not yesterday, if we could have done it? Your analysis as you lay it before us?

Mr. DULLES. It is not for us in the CIA to direct policy or even to recommend policy. We keep out of that. But I could not differ, I think, from your general conclusion on this point.

Senator JAVITS. Mr. Chairman, I thank you for your patience.

Representative BOLLING. Thank you, Senator.

Mr. Dulles, you say:

**But in many of the technical and military fields the leadtime from the drawing board to the finished product is less with them than with us.**

I would like to start off by stating that in the case of every question that I ask, if you do not care to answer for any reason, you should just say so.

I heard somewhere, and it certainly was not from a classified source, that during World War II in the production of military hardware we had a leadtime of something in the order of 2 to 3 years. That today our leadtime is something in the order of 5 to 6 years; that in effect the Soviets have reversed the situation as far as they were concerned and have their leadtime about half of ours in certain highly important fields. I merely wish to ask if you would comment on that, if you care to.

Mr. DULLES. I cannot confirm exactly those figures, but those are the general conclusions that we have reached, watching them operate in the most efficient sector of their economy. This is not true overall. A lot of their work is quite shabby—the building trades, and so forth. But when they feel that there is a particular military objective, whether it be in the field of aircraft, in the field of missiles, or wherever it may be, that is crucial, as in the atomic race, they have certainly been able to concentrate a tremendous amount of resource and talent and technological skill on that particular problem. And I think that they have been able very effectively to single out those elements which would lead to greater national strength and try to put their great energies on those, neglecting other areas of life that we consider very important. We want to live as full a life as we can. That is natural. They have forgone that for the time being. And that is one of the critical points that I have tried to bring out in this paper.

Representative BOLLING. That leads directly to my next line of questioning. This is about the business of the ability of the Russian citizen to put pressure on the Communist apparatus or party of government for a larger share of the product in consumer goods as a

result of various contacts and awarenesses developed by exchange of persons and so forth. One hears from some people who have spent some time in the field that a great many Russians, especially the party members, are rather proud of the progress that they have made; and they feel they are really doing rather well, and while of course they would like other things, too, they do have the attitude of a man who has a litle more than he had. Would this be accurate?

Mr. DULLES. Oh, entirely accurate. They are building up—they will not admit it, but they are building up a bourgeoisie, and they are building up a class that is getting used to and likes the luxuries of life. It is relatively small so far, but that is growing.

I do believe, however, that under Stalin the people were not able effectively to make their needs and wants known, now to some extent that is possible, despite the tight dictatorship that still remains.

I do not believe that Khrushchev can entirely disregard or feel he can safely disregard views that are strongly felt by a great many people. They have no way of exercising that through the ballot or by electing their representatives or anything of that kind, but there are certain other ways where that can be brought to have some influence on the direction of the Soviet economy.

Representative BOLLING. That is a point I would like to pursue a little bit.

Mr. DULLES. Housing, for example.

Excuse me for interrupting.

Representative BOLLING. Certainly.

Mr. DULLES. They were able for some time to leave housing in a secondary role. They realize now that they have to do more in this field. As they put a greater proportion of their production into housing, they have to take it from somewhere else.

And there are other pressures. Some of the pressures they resist pretty well. There is very little roadbuilding, relatively speaking, in the Soviet Union compared to the nets of roads that we have built. I do not think they are anxious for their people to travel around and have that freedom, because that might be a way they could exert still more pressure on the Government. But in the field of housing, particularly, they are going to have to exert more energy and put more of their resources into that field than they have in the past.

Representative BOLLING. So while in essence it is clear that the people can exert some pressure, which may modify the policy somewhat, this is not a kind of pressure that would cause a massive change in policy.

Mr. DULLES. Not quick, I do not believe; not quick. We have seen, though, over the years, since Stalin's death—since 1953, that is; about 6½ years—a growing tendency in this direction, to where the popular needs have had to be taken into account more by the Government than they were in the regime of Stalin and the years before 1953.

Representative BOLLING. The point that I was interested in getting was the one where you say "quick," because there are some people who say this is something that is going to cause a large and sudden change.

Mr. DULLES. I wish I could think that, but I do not think our estimate would go in that direction. I think, however, the hope of

the future does lie in an evolution rather than revolution in Soviet society.

Representative BOLLING. This would be, then, a change over decades and not years?

Mr. DULLES. That would be my view, sir.

Representative BOLLING. There is another point which you have mentioned I would like to explore a little more fully. There are other people in the United States who have a feeling, perhaps correctly, that the potential of friction between the U.S.S.R. and China may cause a rather—to use the same word again—quick change in the situation. I would like to get your comments, if this is an appropriate question, as to whether such a change is something that falls in the area of probability or of possibility or of distant possibility. Is there any evidence today that the Soviet has lessened its support of the People's Republic in helping them to industrialize, and so on?

Mr. DULLES. They have tended to put more of their aid to Communist China on a cash or barter basis than was true some time ago. That is, there are not great open credits extended. They have a barter system, credits and then repayment through the trade channels. So there has been that change since about 1954, the last 5 years. That change has been quite marked.

Representative BOLLING. Now, in quantitative terms, if it is possible to use quantitative terms, has this changed the amount of actual aid received? Is there a trend in the direction of less, regardless of the method by which it is received?

Mr. DULLES. Well, it is not aid from the point of view from which we refer to aid.

Representative BOLLING. I understand that, sir.

Mr. DULLES. It is really an exchange of goods.

Mr. AMORY. And the quantity has remained up.

Mr. DULLES. The quantity has remained pretty well up, but the basis is different.

Representative BOLLING. The basis is different, but the total input is roughly the same?

Mr. DULLES. Roughly.

Representative BOLLING. And that, then, would indicate that while there is a possibility, it has not yet become something that is observable, at least in this field, of the amount of aid given by the Soviet?

Mr. DULLES. Yes. That is substantially correct. We would feel at the moment that there were probably more elements that kept these two together than keep them apart. But there are potential areas of friction, and with the great mass of population in Communist China and the great open spaces in Siberia and the West, I think that the Soviet Union is watching with great care, and maybe with a background of some apprehension, certain developments in China, Communist China.

Representative BOLLING. Thank you, sir.

Mr. Curtis?

Representative CURTIS. Mr. Dulles, you say:

Indeed, the per capita living standard in the Soviet Union is about one-fourth that being enjoyed by our own people.

And I was just interested in rates in regard to that. How does the rate of increase in per capita consumption in the Soviet compare

with that in the United States? Has this been coming up? And what are the projections, if you have any?

Mr. DULLES. I would like to have Mr. Allen answer that.

Dr. ALLEN. Sir, the rate of increase in standard of living in the Soviet Union today is higher than in the United States. It is about 5 percent a year total, which means on a per capita basis about 3½ percent a year.

Representative CURTIS. And how long has that been going on?

Dr. ALLEN. This has been since the death of Stalin.

Representative CURTIS. Since the death of Stalin we have seen that. So we can probably anticipate more diversion to consumer goods as they are projecting. Would that be an indication of what that is?

Dr. ALLEN. Well, sir, this is not really a diversion, because what this means is that living standards do not increase as rapidly as does total production.

Representative CURTIS. Yes.

Dr. ALLEN. So that more of the total product each year goes into investment. This is why we predict such high rates of growth for the future.

Representative CURTIS. Yes. I was going to comment that you get into that. You say capital investment in Soviet industry for the year will be approximately equal to industrial investment in the United States. Well, if theirs is equal, and their industry is only 40 percent of ours, that would mean their investment rate would be about two and a half to three times as great as ours.

Now just one final thing, just to get back to it again. As I say, we have just completed studies in this committee on this problem of economic growth in relation to the other goals of price stability and unemployment, or full employment. And I have been impressed by the emphasis—this is not entirely true of all of them; however, some of the economists paid more attention to growth; but I think as a general statement, they were alerting this committee to the fact that it is not just growth—in fact, it is not growth—that is the meaningful thing, as much as it is where you are going, or to what end the movement is. And I get this impression from these papers and also from the manner in which we discuss it, that we have not been digging enough into the details of where growth occurs. I am not just sure where this country should grow

Let me illustrate this in one field, agriculture. We have had such rapid technological growth there that it amounts to a revolution. It has created vast political problems, which people, I regret to say, do no recognize as fundamentally economic problems, of this frictional unemployment that that growth has caused. There is no need for more rapid growth, certainly, in the agricultural sector of this economy than we have had. There is an indication that it would be very good if it were not as rapid. That illustrates what I mean by getting into the details of where it occurs.

Now, if we dissected the Soviet economy, as some of these papers do, and looked to the areas where if they are going to sustain some of this growth they are going to have to move—and I am sure the Soviet planners are trying to do that—it would seem to me that we could come up, probably, with some different answers than these absolute figures give us.

For example, I refer to transportation, because from the transportation studies here and others, I could not understand, frankly, how there could be the gross national product that they claim. And yet these papers indicate that is so. A terrific percentage, more than 90 percent, of their transportation is rails. And there is just a constant usage of it, so much so that the shippers subject themselves, and have to be subjected to, the needs of the railroads. I can just imagine the difficulties that creates in warehousing and for the production end of the industry. In farming, one of the points raised was that they have no farm-to-market roads to speak of. And all of the detailed planning that has been described in these papers—so much of it has gone awry because of economic mistakes. And this system that may produce out of a plan a finished product quicker, because they have got this dictatorship control, can also produce some massive mistakes.

Mr. DULLES. Oh, they have done that. They have made a lot of mistakes.

Representative CURTIS. They surely have. And it just strikes me that this system of theirs is going to be making more mistakes of that nature. And yet in our measurement, getting back to economic statistics, one thing that has disturbed me in our other hearings on economic growth is that we try to measure it in terms of GNP, essentially. And yet gross national product can include all of these economic mistakes. And yet we do not seem to have any way of measuring where it is what I would term sound economic growth, economic growth where the mistakes were not made.

I wonder if there is any way of putting a deflater into both our system and theirs to get down to what we might call sound economic growth. Surely, it could end up in plant, where if they wanted to divert to military they could, or we could. But what would the net product of economic growth be? Can you imagine a deflater? I know you must use one for your own rule of thumb.

Mr. DULLES. In our paper, here, we have suggested that the industrial production was a truer index than gross national product.

Representative CURTIS. Yes. And so to that extent you confine it to that area. Yet that would not include such a thing as transportation, would it? It would for rolling stock, and possibly for rails?

Mr. DULLES. The manufacturing of cars, rolling stock, and so forth, would be included, but not the work on building a railway, putting down a railroad track.

Representative CURTIS. But in this activity, when they switched from hydroelectric power to steamplants, as a result of their appraisal, the fact is that they have been making some gross economic errors—how would that be measured? They have got those plants. And yet some of the hydroelectric plants are relatively inefficient.

Mr. DULLES. I would like to have Mr. Allen answer that. I am not an economist, you know. There are economists around me here.

Representative CURTIS. I am not, either, Mr. Dulles. I have been listening to them for so long that I probably garble what they say, but at least I have listened.

Dr. ALLEN. Sir, I think in the instance you cite, investing heavily in hydroplants, and realizing this took a great deal of money in relation to the volume of output that they have received, is not really an error in the sense that this subtracts something from what they

are presently producing. It means that they have put out more money than they needed to, to get a specific level of output.

Representative CURTIS. One of the big ones I think they abandoned right in midproduction. So that, of course, is a waste.

Dr. ALLEN. That has gone back in, now.

Representative CURTIS. Have they put that back into production?

Dr. ALLEN. The major point about this, I regret to say, is that we see not more rigidities coming into this economy, more mistakes, but in contrast we see greater flexibility, the use of what might be regarded as more sensible and more practicable planning tools than they had in the past. In fact, many of these rigidities and mistakes are really inheritances of the old Stalin era rather than a reflection of the policies of the present regime.

Representative CURTIS. So your evaluation, then, is that though there will be some more, there are less of these than in the past, due to this flux?

Dr. ALLEN. Yes.

Senator JAVITS. I just had two points I would like to clear up, Mr. Dulles. One was this. I would like to pinpoint this question of industrial growth as against gross national product growth. It is a fact that the rate of Soviet industrial growth reflected on page 10 of your paper for the last 8 years gives a range of estimates of 9 to 10½ percent a year. That is contrasted with what rate for the United States in the same period for industrial growth?

Mr. DULLES. Our figure, contrasted to their 9 percent, was around 4 percent.

Senator JAVITS. For the United States. Now, coming to gross national product, you go on, on the same page, or rather the next page, and you have 7 percent for the Soviet Union. And what figure is that contrasted with for us?

Mr. DULLES. About 3½.

Senator JAVITS. About 3½ percent. Now, it is a fact, however, that in industrial production they are taking up a far greater share of their production than we are. That is correct, is it not?

Mr. DULLES. I did not quite hear that.

Senator JAVITS. Industrial production represents a far greater percentage of their production than with us?

Mr. DULLES. Mr. Allen, the expert, here, says it is just the opposite. But I would like to have him explain that.

Dr. ALLEN. What I had in mind, sir, is that their total agricultural production is much closer to ours, so that in looking to these as proportions of gross national product, we find their industrial production is a smaller percentage of the total than ours.

Senator JAVITS. Would you say, therefore, that under those circumstances our industrial production was more likely to be expansible than theirs? Or does that not figure in that particular consideration?

Mr. DULLES. They have a great vacuum to fill. That is a weakness, and yet it is an advantage. In certain areas, I suppose it is not fair to say the saturation point has been reached, but we come closer to it.

Take the automobile business. They have not even gone into that to any great extent. And they recognize that.

Senator JAVITS. I was really heading up to this question. Mr. Dulles. This may be, again, beyond the competence of this study.

But what kind of a diversion of resources would it take from the United States, or in the United States, from your view, to come abreast of these rates of increase of the Soviet Union? Is it a big thing? Or is it a relatively small thing? Do we have to push ourselves up a lot of notches, or just one or two? Have your people made any estimate of that?

Mr. DULLES. No, we have not, because that gets us out of our field. That is a field for others who are working in the domestic area. We do not really consider ourselves competent in that field.

Senator JAVITS. Whether competent or not, have your people come to any appraisal?

Mr. DULLES. We try to stick to our last, in the Central Intelligence Agency. We have a broad enough field to cover as it is. And we keep out of trying to make suggestions or to make forecasts in the domestic field.

Senator JAVITS. I see. In other words, whether or not you have come to any such conclusions in the course of your study, you feel that orderly governmental procedure would require you to leave that to the people charged with it?

Mr. DULLES. I did not quite catch that, Senator.

Senator JAVITS. I say as I understand it, when I said competent, I misspoke myself, in that I meant to imply that even if your people in the course of their work had some ideas about that, you feel it is not particularly your job and it would not be wise in terms of the general governmental position for you to be the author of any estimate on that particular subject.

Mr. DULLES. That is correct.

Senator JAVITS. We will pursue it with someone else. Thank you.

Representative BOLLING. I gather that the burden of your statement is, Mr. Dulles, and correct me if I am wrong, that the Soviet in past years has had an increasing capability to pursue a policy of its own choosing, and that in the last several years that capability based on economic strength has not only been increasing, but also increasing relative to our own.

Mr. DULLES. I think that is a fair statement, yes.

Representative BOLLING. And without getting into the field of the how, that this in effect implies an improvement in our performance; otherwise, we could come to a dangerous situation.

Mr. DULLES. Yes. Of course, if one goes back, looking back 10 years, we had practically an atomic monopoly. And the fact that that atomic monopoly has been broken has changed the relative positions of the two countries, obviously.

Representative BOLLING. I meant in terms of the economic capacity that supports policies of various kinds, military, foreign aid, et cetera; that within this area their capability has been an increasing one, and it has been an increasing one, relatively, to ours, and if this kind of a trend were to continue for X number of years, we could find ourselves in a more dangerous situation.

Mr. DULLES. Well, it is certainly something we should not overlook, that possibility.

Representative BOLLING. I think on that general note we might conclude.

Mr. Dulles, we are very grateful to you and to your associates for being with us.

Our hearings next week have to be shifted from this room to 1304 in the New House Office Building. That is the House Public Works Committee room. The hearings will continue all week in that room.

The subcommittee stands adjourned.

(Whereupon, at 3:45 p.m., the subcommittee was adjourned.)

# COMPARISONS OF THE UNITED STATES AND SOVIET ECONOMIES

MONDAY, NOVEMBER 16, 1959

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMIC STATISTICS OF THE
JOINT ECONOMIC COMMITTEE,
*Washington, D.C.*

The subcommittee met at 10:00 a.m., pursuant to recess in room 1304, New House Office Building, Hon. Richard Bolling (chairman of the subcommittee) presiding.

Present: Representative Bolling.

Present also: John W. Lehman, economist.

Representative BOLLING. The subcommittee will be in order.

We begin today the first of 10 panel discussions by technical experts who have examined individual aspects of the United States and Soviet economies. This Subcommittee on Economic Statistics felt that it was essential in any such series of discussions to first get clearly in mind the problems involved in attempting to make statistical comparisons between economies with different national objectives, at different stages of development, and with widely differing availability of adequate statistical measures.

We are delighted to have Mr. Hans Heymann of the Rand Corp. and Prof. Robert Campbell of the University of Southern California to discuss these problems. We have read with great interest your prepared paper and found them excellent indeed. Since the full papers have been made available to the panelists and the public, we will ask each of you to give a brief summary of your views without interruption and then proceed with the general discussion.

Mr. Heymann, will you lead off please.

## STATEMENT OF HANS HEYMANN, JR., ECONOMICS DIVISION, THE RAND CORP., WASHINGTON, D.C.

Mr. HEYMANN. Thank you, Mr. Chairman.

In opening this morning's discussion of the problems of United States-Soviet comparison, I should like to say at the outset that I have been greatly impressed, in reading the 30-odd papers that have been submitted to this committee, by the level of sophistication, the standards of scholarship, and the degree of circumspection with which the authors have handled their hazardous tasks of comparison, and by the care they have taken to avoid both the statistical and the emotional traps. In discussing the difficulties and pitfalls of these comparisons, therefore, I am in no sense implying any inadequacy in the cautions



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and caveats which the authors themselves have so responsibly observed in their studies.

In preparing my own paper on the problems of comparison, I felt somewhat handicapped by the necessity to examine these problems in a vacuum, divorced from the comparisons themselves. Now, however, having studied the actual comparisons undertaken by the other panelists, I am much encouraged by the fact that the problems and issues touched upon in my paper are taken up and dealt with interestingly and effectively by many of these authors, providing vivid illustrations of points I could only discuss abstractly and provocative answers to questions I could only raise suggestively.

In my paper, I have considered three kinds of comparison problems:

(1) The limitations on our comparisons imposed by inadequate data and imperfect tools of measurement;

(2) Problems of comparability arising from differences over time and space in the structure of the two economies; and

(3) Some of the larger questions concerning the perspective and meaning of the comparisons.

Let me try to summarize briefly my main points under each of these headings.

### (1) THE LIMITATIONS OF DATA AND TOOLS

(*i*) In the last 3 years the Soviet authorities have released more statistical information about their own economy than they have in the preceding 20. The new data fill some gaping voids, afford us greater opportunities for checking internal consistency, and provide a somewhat more rounded picture of Soviet economic development. But the new data are still a long way, indeed, from meeting what would be considered in the Western World minimum acceptable standards of statistical adequacy. Thus, despite its recent easing, the restrictive and propagandistic Soviet information policy continues to impose on us a heavy burden of statistical compilation, interpretation, and verification, and seriously impedes our ability to reconstruct a reliable, balanced, and undistorted statistical image of Soviet progress. An excellent illustration of these data limitations as they affect the field of agriculture is contained in the Johnson-Kahan paper. (See pp. 201–203 of the compendium of papers.)

(*ii*) A different kind of problem arises from the inherent limitations of the economist's tools of measurement; for we have not discovered a satisfactory solution to the problem of aggregation, such as when we attempt to combine various different products or services into a single generalized product or service in order to measure, say, total industrial output or some similar comprehensive concept. In such cases we must decide what relative importance, what "weights," we should assign to the individual components of our generalized measure of "index" when combining them. But there are a number of possible weighting systems that might be appropriate and several mathematical formulas that might be used in constructing the index, each yielding quite different but "correct" answers to the same question. There is no real way of resolving these ambiguities; it is possible only to reduce their impact by measuring in a number of ways, by constructing different index forms, and by using a variety of systems of weights. Professor Bornstein's excellent paper provides

us with a particularly striking example of the divergent answers that can result from alternative weighting systems when he presents his comparisons of national product in both ruble and dollar prices. (See p. 385 of the compendium of papers).

(2) DIFFERENCES OVER TIME AND SPACE

(*i*) Almost all of the panelists have commented on the special character of Soviet economic growth, on the great unevenness of its economic development, and they have noted that broad general indexes of output, consequently, conceal from us these important structural disparities. The uneven record of Soviet growth, the radical changes over time in the composition of output, and the enormous shifts that have occurred in the structure of consumption tend to warp our statistical yardsticks and to make any overall judgment of trends hazardous.

These difficulties, however, are merely troublesome. They do not constitute an insuperable obstacle to useful comparisons, as Professor Turgeon's paper convincingly demonstrates. In this most treacherous of fields, namely that of relative levels of consumption, his multidimensional comparisons go a long way to clarify what has always been a particularly murky subject. (See p. 318 of the compendium of papers and following.)

(*ii*) Another problem of comparison over time and space is the absence, in Soviet economic history, of anything that might be called a moderately long period of undisturbed, uninterrupted development. The only period in modern Soviet growth that was not in some important sense abnormal has been the years from 1950 to the present; but this is a very brief and recent span of history which provides insufficient perspective to establish any meaningful long-term trend. Soviet economic history has been too erratic, too calamitous to afford us the long-term perspective needed for an historically based judgment of its growth-generating capacity, or for meaningful long-term comparisons with the United States. This regrettable fact of life, however, is ignored by Professor Nutter who, in his paper on industrial growth, continues to pursue the phantom of a longrun Soviet growth trend. His growth rates for the shorter subperiods of Soviet development seem to me much more revealing than any synthetic creation of a secular trend. (See p. 120 of the compendium of papers.)

(*iii*) Another impediment to our comparisons over time and space is the difference in the level of economic maturity attained by the two economies. The Soviet economy is still today in an earlier phase of economic development than that of the United States. But in trying to draw abreast of the mature industrial societies of the West, it is favored by an infinitely more advanced level of technology and a quite different social and political setting than was available to the West in an earlier period of history. The historical precedent of the West, therefore, may provide us with no reliable guide to the Soviet development course, and it is difficult for us, indeed, to gage the prospects for future Soviet growth or retardation on the basis of what has gone on before. Professor Rostow, in his summary paper, addresses himself most interestingly to this question. (See p. 592 of the compendium of papers and following.)

(3) PERSPECTIVE AND MEANING OF THE COMPARISONS

Finally, we must ask ourselves whether our comparisons are focused on the right questions. Our comparisons are concerned primarily with matters of relative output and relative rates of growth. To what extent does a gain in Soviet output represent an improvement in the Soviet power position relative to our own? What is the relationship between the expansion of a nation's total output and the facts of international relations? The answer to this question, which lies at the heart of our comparisons, is not a simple one.

(*i*) As an end in itself, economic growth surely represents a potential power asset. A steadily growing volume of production enables a nation to divert an ever larger quantity of goods to uses that will enhance its national power and that will be worrisome to its opponents. Similarly, the achievement of rapid economic progress would exercise fascination and appeal in the vast parts of the world where speedy economic development has become a prerequisite to political survival. But aside from these indirect effects, a nation's rate of growth as such does not seem to offer a meaningful standard for practical power calculations.

(*ii*) If we seek insights into these larger national policy issues, we must look beyond relative levels of output and rates of growth, to the question of how effectively the output is enlisted to serve the national interest. National power, clearly, does not rest on total output, but on the efficiency and consistency with which a nation is able to use its output to advance its policy objectives. In a comparison of a national power, what counts is not parity of output but parity of performance, since even a nation with a much smaller production capacity can outperform another if it is willing to divert a larger proportion of its resources steadily and imaginatively to its national aims. It is most encouraging to me that at least four of your panelists have hammered away vigorously at this theme. (Peterson, p. 523; Colm, p. 542; Thorp, p. 584; Rastow, p. 603; compendium 2 papers.)

Representative BOLLING. Thank you, Mr. Heymann.

Mr. Campbell.

## STATEMENT OF ROBERT W. CAMPBELL, UNIVERSITY OF SOUTHERN CALIFORNIA

Mr. CAMPBELL. Mr. Chairman, as I have interpreted my assignment here, it is to provide a preface to the effort of comparing the United States and Soviet economies—a roadmap of some of the pitfalls and obstacles that hinder such comparisons. When economies diverge as greatly as the Soviet and American economies in respect of stage of development, organization, and objectives, economic comparisons present difficulties—difficulties which should be outlined in advance to structure our expectations of what is possible, and to show what cautions must always be observed in interpreting the results.

In this outline I do not pretend to instruct the producers of the comparisons to follow. Perusal of the panelists' papers shows acute awareness on their part of these obstacles; indeed, immersion in the effort of relative statistical comparison leads one to almost an obsession with the problems of comparability and interpretation. Rather,

my outline is intended as a guide to the initiators and consumers of all such comparisons, aimed at making them more sympathetic to the difficulties of working out answers to the seemingly simple questions they ask, but making them at the same time more sternly sophisticated in evaluating the answers they get.

The problems of comparing the performance of the two economies may be said to comprise three distinct orders of obstacles. The first of these is a data problem. Differences in organizational forms, in concepts and definitions, and in the procedures of statistical reporting mean that numbers denominated by identical rubrics in both countries have very different substances. This is true of indicators from the most complex—such as gross national product, or rates of growth—down to such apparently simple concepts as the volume of milk output. The statistics of any nation have their parochial distinctiveness, but those of the Soviet Union are particularly difficult to compare with those of other countries. Because they are used to glorify as much as to illuminate, the numbers released by the Russians tend to be ambiguously defined and subject to change in meaning over time. Obscurities in meaning might be clarified, were there an abundance of data, because of the many interrelationships existing in any fabric of statistical economic description. But the statistical raw materials for the Russian side of comparisons are unfortunately sparse as well as ambiguous.

The second order of obstacles embraces a number of variants of the index number problem. Comparisons of the two economies inevitably involve us in comparing economic aggregates—such as total industrial output, gross national product, military expenditures, or consumption—within each country over time, or between the countries at a given time. All the indexes resorted to in making these comparisons—indexes of output, price indexes, international conversion ratios—must at some point employ weighting systems based on prices. Because price relationships differ over time, and between countries, one faces essentially insoluble choices among alternative weighting systems, and hence a range of indeterminacy in the answers.

Finally, if the comparison of large aggregates is made difficult by the index number problem, comparison of narrowly defined magnitudes, or overly specific indicators at the other extreme, is made misleading by differences in organization, technology, and resource availabilities. Because of these differences in the framework within which economic choices must be made, the significance of a given economic indicator often varies between the two countries.

For example, we are prone to interpret the low productivity of labor in the Soviet economy as a measure of its inefficiency, but labor productivity is more a reflection of the abundance of labor and the scarity of capital in the Soviet economy than it is a direct indicator of inefficiency.

Consideration of the obstacles alone suggests two important implications which should structure our approach to United States-Soviet comparisons. The first concerns how long we should dwell on measurement alone. The statistical basis of our judgments about relative performance is subject to improvement, and we should make the effort to improve the statistical basis. Nevertheless, to some degree the obstacles mentioned above are insurmountable, and we should avoid

getting stuck in controversies about measurement. The questions we need to ask go much beyond this, as some of the contributors have clearly shown. The second implication is that the measurement problems involve enough uncertainty so that there is always room to bolster the poorest possible preconception of Soviet performance with some kind of statistics, and thereby deceive ourselves.

The Russians, for their part, certainly turn all the ambiguities of comparison to account in order to present their achievements in the best possible light, though the result is often that they mislead themselves rather than us. In whatever other aspects of Russian competition we decide to accept the Russian challenge, we would be false to our own advantages to vie with them in this kind of statistical self-deception. With the sophistication in these matters that comes from free discussion and lack of a narrow ideological commitment, we should be able to avoid the temptation of self-deception which the statistical difficulties of comparison hold out, and face realistically the challenge offered by Soviet economic growth.

Representative BOLLING. Thank you very much.

I would now like to call on the economist of the subcommittee, Mr. Lehman, to ask any questions he may have.

Mr. LEHMAN. Thank you, Mr. Chairman.

First, may I commend the members of this panel for their contribution and particularly for the way in which they have taken notice of the kind of problems other persons who are appearing during this set of hearings discuss in their papers.

I think one question which it might be interesting to examine is this question of the use of price weights and price information in a production index. How can you make any use of price information in an economy such as the Soviet has?

Mr. HEYMANN. I will pick this one up and try to grapple with it.

It has often been said that Soviet prices are arbitrary, meaningless, and totally unindicative of any useful economic magnitudes and therefore cannot be used for problems of analysis or measurement.

I think this is a gross overstatement, and the economists who have worked with Soviet prices and with Soviet value aggregates over the years have found that there is a semblance of meaning in even these manipulated prices. Their major deficiency lies in their lack of responsiveness to the demand side of the equation.

From the supply side of the equation, they constitute a reasonably rough but still meaningful measure of the resources devoted to production, and to a significant extent, the scarcity relationships that exist within the economy.

Without going into great technical detail on this, it seems to me important to recognize that the prices are not totally meaningless, but also to recognize that they must be accepted with a good deal of caution, and that the rules that we have accepted in the orthodox capitalist world on the relevance of prices do not apply fully to the Soviet side.

So, from this point of view, it seems to me that Soviet prices can be used as indicators of relative importance, of the relative value that the planners place upon the various goods and services in their economy. And within limits, therefore, they represent a significant, though not always easily interpreted measure of relative importance,

of comparative weight of the different elements that enter into an index.

In other words, my point is that they can be used, though they must be used with great caution, as indicators of relative importance in an index.

Mr. LEHMAN. Professor Campbell, do you agree with this?

Mr. CAMPBELL. Yes, I certainly agree with Mr. Heymann's general position, particularly the statement that Soviet prices in general provide some reflection, and, I would add, a tolerable acceptable reflection of scarcity relationships. The real difficulties of comparison come from the fact that these scarcity relationships change over time. The difficulties arise not from the immediate one-point-in-time irrelevance of Soviet prices. Rather the difficulty is one of comparing magnitudes measured in them with magnitudes measured in American prices or in Soviet prices of a different period, which reflect the scarcity relationships of a different period.

Mr. LEHMAN. I think both of you have mentioned the fact that there is a question of time involved. Is there a question of the availability of statistical information over time? Does that compound the difficulty here? For example, Mr. Heymann said that in the last 3 years the Soviets have released more statistics than in the previous 20. But we have to make comparisons that go back much further than 3 years. Is this an important difficulty?

Mr. HEYMANN. Again, I think all of the panel that have submitted papers have commented on the unavailability of statistical definitions of comparability over time on the Soviet side. I hasten to add that problems of statistical comparability over time are not a unique problem with the Soviet Union. This exists in every country. But in the Soviet case the imperatives of military security, exaggeratedly defined, and of propaganda, combine to add additional fuel to this consuming fire of statistical discontinuity. A concept will appear in one year and vanish the next, without any signalization that the concept has changed. So there are real problems in defining—in identifying—the precise meaning of the statistics over time. This, of course, goes much beyond the pure index number problem.

Going back to your first question, on prices—the relative unavailability of price data, too, is, of course, a major handicap. It is not easy to have access to sufficient price data and to have this comparable and continuous over time, to permit the sort of weighting that we try to engage in. So definitely the problem of continuity over time is a serious one.

Mr. CAMPBELL. I would like to add, on this, that I think the technicians who make these measurements and who work with Soviet data perhaps bewail their problem a bit too much. People often ask me, when I mention to them that I study the Soviet economy, "How can you get information?" They are unaware of the vast amount of information that is available in Soviet periodicals and in Soviet statistical handbooks. The American mind is still often bound by the conception that the Soviet economic system still represents a great secret, still an enigma unilluminated by actual information.

As far as this availability of information over time is concerned, many of the recent revelations have included data for previous years. So what were formerly gaps in time series have been filled in. More-

over, I think there is still a great deal of information of all kinds, economic statistics, prices, et cetera, which is still not adequately utilized.

There is more information on almost any of these subjects than has yet been really exhausted, put to the task of answering of the questions that have been asked.

Mr. LEHMAN. Now I have a question that I think is pretty far out in the realm of conjecture. Why have the Soviets found it necessary, as apparently they have, to improve the quantity, and apparently to some extent the quality, of the output of their statistics?

Mr. HEYMANN. Let me start out with two reasons that occur to me immediately. The principal requirement for statistics in the Soviet economy is, of course, for control, technical control. The absence of adequate data on their own economy can be and I think in the Soviet case has been a hindrance on the proper exercise of control by literally millions of people who are involved in this hierarchy of the control process. I believe the Soviet Government recognized this deficiency and tried to correct it, at least insofar as the matter of publishing much more technical data on magnitudes, on indicators, and suchlike, is concerned.

And, incidentally it is important to remember that their principal objective in publishing these vast numbers of statistics is not to provide more scope for analysis as such, but to provide the instrument of control and decisionmaking and ability to compare at the level of the plant, the project, the ministry, and so on.

Therefore, when we are dissatisfied with the quality of the statistics, we often fail to understand that they are not necessarily designed to undercut us, but that the statistics are intended for very specific purposes of the economy.

The second reason for expanding the publication of statistics is, I believe, a combination of propagandistic and pride considerations. The Soviet economy has achieved remarkable successes in recent years, and there is no reason to conceal these successes. On the contrary, there is an incentive to publicize them. And so, the ability to show success is an incentive in this regard.

There is another consideration that applies to the future, it seems to me. The publication of these papers by your committee seems to me an additional incentive for the Soviet Government to increase both the quantity and the quality of their own publication. It is surely degrading to them to see that the most authoritative and carefully done analyses of Soviet development come from the United States, rather than from the U.S.S.R. Central Statistical Administration.

Well, these are just some thoughts.

Mr. CAMPBELL. I would like to underline what Mr. Heymann has said about the purpose of publishing these statistics. One of the startling things about all of these statistical handbooks, of course, is the large section dealing with agriculture—endless information on sown areas by crops, the distribution of livestock by kind among very tiny economic subregions, and so on.

Clearly, the reason for publishing this data is that agriculture is an area of the economy where for a long time information on which sound policy could be based was simply not available. And they have

now gone completely in the other direction, of providing this information, so that people in the center can make good decisions, but also so that people in lower positions in the general hierarchy can compare their performance with others. Publication of this data becomes partly a hortatory device to stimulate competition as well as to facilitate strictly economic decisionmaking.

Mr. LEHMAN. Mr. Chairman, I have some other rather general questions.

These questions come out of the fact that Mr. Hermann and Mr. Campbell have now had a chance to look at the other panelist' papers, and go to the point of their impressions about some of the conclusions that might be drawn.

The Soviet authorities like to speak of the U.S.S.R. as a young country. But is it your impression that they are willing to accept the proposition that theirs is a young country, in the sense that the economy is growing at a rate characteristic for the early movement toward maturity, such as we might have had a good many years ago? In other words, are they really facing up to the inevitability of a slowdown? Or are they sort of counting on eternal youth?

Mr. HEYMANN. This is a very large and difficult question to deal with. It seems to me that the Soviet Union has, time and again, claimed that it began industrializing some 50 years later than we did. This is a frequently reiterated thesis in Soviet literature and in discussions with Soviet economists. But they mean by this not that they will inevitably encounter a slowdown by some inherent law of nature, but mean rather that they have only reached a level of output and levels of consumption which are characteristic of relatively young, not fully mature, economies, and that they still have a long way to go, and that they will reach their goals more rapidly than we.

So it is quite true to say that the Soviet Union is and acknowledges itself to be at an earlier stage of economic maturity, but it is drawing abreast of us in a very different context. It has at its disposal a much larger, much more advanced level of technology, and it operates in an entirely different social and political context from the one through which the now mature Western countries have passed. And, therefore, I don't think we really have a sound basis for judging that the Soviet economy must necessarily pass through the same experience as Western economies. I believe slowdown tendencies are in evidence in Soviet economic growth over the last few years, but I would not call these an inevitable development resulting from some predetermined trend line superimposed on the Soviet economy by Western experience.

Mr. CAMPBELL. I am certain that the Russians would deny the relevance of Western experience to their particular problem and prospect. The Russians would really consider it a libel on their economy for us to say that it must slow down because of its approach to maturity. In somewhat the same way as economists recognize that the law of diminishing returns should be taken with a grain of salt since technological progress can always ameliorate it the Russians apply this kind of generalization to their whole economy.

I think every once in a while they show an awareness that as their economy grows, their problems become somewhat different. For instance, in discussing the growth of the metallurgical base, they have taken care, in recent years, to state that a percentage increase

of so-and-so much represents a much larger absolute addition to output than it did in previous years, and, therefore, the amount of capital investment involved, the size of the one base necessary, and so on, is much greater than previously. They don't go on and say, "Therefore, you must expect us to slow down." Rather, they take the other tack and say, "These are greater problems, but ones that we can deal with."

Now I am certain that they are deceiving themselves to some degree about these problems. But in general, the answer that there are ways around obstacles, is a valid one and one that they are concentrating on.

Mr. LEHMAN. For my final question, I have a somewhat related query.

The Soviet leaders are still in the main in the process of building plant capacity for the production of industrial goods. Do we know whether they are approaching the stage where they may consider the overall size of the plant adequate? And how would this be reflected in the economic indicators?

Mr. HEYMANN. Well, I think it would be quite misleading to think of the Soviet economy as in some sense having reached a point of satiation in plant capacity. I don't really know what this concept means in general. In the Soviet economy it seems completely inappropriate, since they have tried very hard in the past to achieve maximum output with a strictly limited amount of capital investment; and now, more than ever, the requirements for additional capital, for expansion of plant and modernization of machinery, of automation, are pressing on them very hard. And I think the Soviet planners would be very happy if we could demonstrate to them that they did not have to worry about additional capital.

I think one point that is quite apparent in the current Soviet situation is that they are experiencing what you might call diminishing returns in capital investment to some extent, particularly in the fields of mining and extraction, where the richest and most readily accessible ores and reserves have been "creamed" and they must now go farther afield and dig deeper; and where the concentration on a relatively limited range of basic materials has now made it apparent that they must expand into a greater diversity of products.

For example, the emphasis has been overwhelmingly on steel and ferrous metals. Nonferrous metals and the chemical industry had long been neglected. Now there is a tremendous drive toward diversifying the economy, and in a sense making it more like ours, going from solid fuels to liquid fuels, going from steel to aluminum and the lighter metals. These are tremendous revolutions that are occurring in the Soviet economy, requiring very large additional capital outlays.

Mr. CAMPBELL. I have one point of divergence from what Mr. Heymann has said.

The Russians, I think, are facing a problem of diminishing returns in some areas. This is going to be inevitable. Their answer to this, however, is that in other areas this need not be true, and in fact in other areas they may face decreases in capital intensity, capital saving innovations, that will free investment funds to handle the problems in other areas.

This is one of the great preoccupations in the flood of articles that have been written about the 7-year plan. Writers on the fuel industry, for instance, say that by changing the fuel balance, they can make the investment per B.t.u. much less than it has been in the past. Investment in pipelines is supposed to save capital relative to alternative forms of transportation—capital which can be devoted to other uses. Likewise, in the case of the petrochemical industry, the use of these chemicals as the basic building blocks for synthetic chemical production is supposed to save capital resources on a vast scale, as well as labor resources. It is out of these savings that they hope to meet the needs for additional capital investment in diminishing return areas.

Representative BOLLING. There have been in the past a great many persons, and there are still a number today, in this country, who seem to take pleasure in saying that actually what the Soviet has been doing is what we did earlier, in terms of economic growth and expansion. You have covered a great many of the problems of difficulty in comparability. Now I wonder if either of you would care to get out of time and space and get into circumstances, the conditions under which we made our growth, perhaps with a quick review of the time in which our growth was greatest, as compared with the difficulties in the circumstances in which they made their growth.

Mr. HEYMANN. On this matter of the parallel historic circumstances under which growth took place in the two economies, that is just a very dangerous problem to deal with. Quite apart from the measurement issues, which are not irrevocably serious, the problem of finding a comparable period or a comparable historic situation, it seems to me, defies the human imagination. Efforts, of course, have been made and continue to be made. Professor Nutter's paper is one such example. Professor Nutter tries very hard to use what he calls "the Soviet experience," the years from 1913 to 1955, as somehow being a relevant period for comparison with an earlier period in U.S. history. I think he has probably identified parallel stages of economic growth fairly successfully with our period of, say, the 1880's to the 1920's, roughly.

But aside from this, one wonders whether the divergent experiences of the two countries have any relevance for purposes of comparision. The U.S. benefited immensely from immigration, from a frontier, from a relatively undisturbed period of development, at a very different period in technological possibilities. The period for the Soviet Union, the period from 1913 to 1955, is a period of almost incessant crises and calamities. It began with World War I, which was a disaster for Russia, ended in the revolution and the civil war, which reduced output to incredibly low levels, which were only recovered about 1928, when Soviet planned economic development as such actually took off. But even the period 1928 to 1955 is a difficult one to compare with anything in U.S. history. The period from 1928 to 1937, you might say, was a period of violent takeoff. This was the heroic period in Soviet development, when the successes achieved were enormous and the mistakes made equally grandiose.

That short, hectic period came to an end in about 1936, when Soviet economic policy began to mobilize for World War II, and, therefore, diverted its resources from investment to defense.

World War II was an enormous calamity for the Soviet economy, from which it really did not fully recover until about 1950.

The only reasonably normal period by any standards in Soviet history is that from 1950 to the present. And, of course, this is a very short period and is not enough for an historic perspective.

In these short subperiods of Soviet growth, these relatively normal periods, we do encounter exceedingly high growth rates. They are not unique in the sense that no other country in the world ever achieved them. I believe there are Western European countries, and there is Japan, and there is South Africa, which also achieved comparable rates of growth for short periods of their history.

But the remarkable thing about the Soviet achievement is that it was done concurrently with a very large rate of expenditure on military defense. In other words, it is not merely the rate of investment, but the combined rate of resource diversion from consumption into investment and defense together which makes their record so notable.

Mr. CAMPBELL. I have nothing to add on this except to emphasize one implication in what has been said here, that the Soviet growth rate, taking the whole period, calamities and all—is especially impressive just because of the obstacles. As has been mentioned in some of the papers, the conditions under which our rapid growth and industrialization took place in the United States were extremely advantageous. All of the resources required for industrialization, were available in great quantity, or were supplemented by importations from Europe. These advantages made our growth relatively easy.

Representative BOLLING. I would like to tie that down a bit. Do you mean importations of capital, immigration, and so on?

Mr. CAMPBELL. Yes, and technology, as well. This is an advantage which accelerated our growth in the same way it has aided the Russians.

Representative BOLLING. By comparison, in the Soviet, they did not have these advantages; they, in effect, had the reverse?

Mr. CAMPBELL. That is correct. In terms of population, they didn't have immigration.

Representative BOLLING. And they had the fantastic losses in World War II, both with death and birth deficit, and the capital construction of World War II, plus the commitments. So there is no comfort, really, in this approach, that we had a rate of growth that was comparable sometime in the past.

Mr. CAMPBELL. Even if we narrowed our estimate of the differential in the rate of growth between ourselves and the Soviets, we must recognize the circumstances that made ours easy and theirs difficult.

Representative BOLLING. I have a question that refers to a statement made by the Director of the CIA, Mr. Dulles, when he appeared before us on Friday. He said:

> Furthermore, in reviewing the various studies of Western scholars, I have been struck by the substantial agreement on the rate of industrial growth achieved by the Soviet Union over the period since 1950. The range of estimates is from 9 to 10.5 percent a year.

Would there be any disagreement with that statement?

Mr. HEYMANN. No; I think that includes the major estimates, with perhaps the exception of Professor Nutter's. But Mr. Dulles explains this in terms of the exclusion of military products from Mr. Nutter's index.

Representative BOLLING. Now, this is a speculative question, and there may be a speculative answer, but it is appropriate because you gentlemen have many contacts in this field and because of your expertness in it.

Would you agree that today, perhaps not for the first time, but in the last few months, we have a consensus of expert opinion on this subject?

Mr. HEYMANN. I think it is rather remarkable that we weren't aware of it until you published your papers—the degree of this consensus. I am really struck by the degree of unanimity expressed on these basic issues of the rate of growth in the period since 1950, not only in industrial output but also in GNP, gross national product. Decidedly there is now a very reassuring consensus on this score, which did not exist before.

Mr. CAMPBELL. I would like to add, also, that I do not think this concensus grows out of diminished argumentativeness or out of collusion on the part of the various experts. Rather many of the statistical problems that complicate measurement of growth in early period have lost their force to some degree, are no longer so applicable to the measurement of growth since 1950.

Representative BOLLING. Actually, the consensus comes out of the argumentation, to various and sundry degrees; does it not?

Mr. CAMPBELL. That is right.

Representative BOLLING. Now, both of you, either by implication or directly, made it clear that the mere measurement of growth, the mere fact of growth, is not in itself a key point. It needs to be recognized in order to recognize the kind of problem that exists; but the recognition is not in itself a solution to the problem. And the fact that there is a consensus would lead me to the hope that now that we have such a consensus, some consideration can be given toward solutions to the problem.

It also seems clear to me that this is a unique problem. As far as I know history there has not been quite this kind of a competitive situation. Perhaps then, the great virtue of the work that all of you have been doing and that this subcommittee or the Joint Economic Committee in one fashion or another has been doing, has been that we have finally cleared the brush so that we can concede the problem and can get to work on solutions. Would there be agreement on that?

Mr. CAMPBELL. Yes; I think that is right. I think people are now ready. I see among the students in my classes or in groups to which I give talks; people seem now better prepared to accept this picture of the Soviet challenge and accept realistically what must be done about it. You no longer have this common phenomenon of the scoffer who says, "It is all very well to talk about rapid Russian growth, but you haven't convinced me, and so what, really, do we have to worry about?"

I think that attitude is becoming much rarer. That is a kind of reaction that is very uncommon now in any kind of group I might talk to.

Mr. HEYMANN. Of course, the real issue that seems to face us still is a slight area of disagreement, as to the implications of Soviet economic growth for the United States. Should we, in turn, concentrate one economic growth as such, as an objective, or should we direct our major resources and effort to the question of the allocation, the

use, to which the national product and our annual increment in this national product is put. This seems to me a key question, on which there are still some divergencies of opinion.

What is the relevance of economic growth to U.S. policy, the relevance of Soviet growth to U.S. growth? And I have tried to face up to this very difficult question. There are obviously some direct ways in which a rapidly growing economy benefits, in the sense of improving its national power position.

One of these benefits is simply the fact that a rapidly growing economy has at its disposal annually a large quantity of additional resources which it can allocate to uses beneficial to the national interest—whether these be in the field of social welfare or in the field of national defense or in the field of foreign economic policy. These resources are available and therefore offer a potential asset to a country.

So in this sense, definitely, economic growth itself is of value to a nation, to its national policy and objectives.

But beyond this, it seems to me more important to worry about how this increment is used. Is it to be used for high-mass consumption, to use Professor Rostow's phrase, for the individual to expend on luxuries and on greater satisfactions of personal desires? Or is it to be at the disposal of the Nation as a whole for its national policy purposes? It seems to me this is a real key issue for the United States to face, as to how to seize this annual increment and make the best use of it for national security and national welfare purposes.

Representative BOLLING. In essence, then, it might be said that there are two areas which are still very highly argumentative. One is that nobody says they are against growth, but some people say that you cannot achieve, in this particular society, a higher rate of growth without a greater, and perhaps bad, from their point of view, intrusion by the Government, to bring about this rate of growth. Others say that this can be done, without any change in our way of life. And when you reach a consensus on that, you then bring the argument to the question of how you use the product of this growth, whether in public policy, various aids to health and education, or private consumption.

Is that a summary of the situation?

Mr. HEYMANN. Yes; exactly. It seems to me, though, that some of this argument about whether we should attack economic growth as such, or whether we should attack the problems that face us and ignore the issue of growth is a spurious one.

In terms of political realities, it seems to me no one in a democratic society ever sets out to aim at a high rate of growth merely as an objective in itself. They aim at specific objectives that are more concrete and meaningful to voters and to individuals. And it seems to me that it is an artificial distinction, to talk about one or the other.

Once you make up your mind that it is a matter of the utmost importance that the Nation face up to the challenges, the real challenges, that confront it, in the field of welfare, of national defense, and foreign policy—once it faces these issues, then it is just obvious to me that growth will follow automatically, and enthusiastically, without anyone doing anything directly about it.

Mr. CAMPBELL. I think there is a large area of controversy, and before we get any great deal of action on any attempt to match Soviet

achievement, and to read the implications of the Russian challenge for ourselves, people will have to ask themselves: What, really, do we want?

I think a lot of people do not yet realize that what we need is not necessarily more cars but a more civilized way of life. A mere attempt to increase the rate of growth is not going to solve the basic problems we face. And so there is still a long problem of clarifying in American minds what it is we want to accomplish, before we get any really serious action, before people will be even prepared to vote on a question, a proposed program of that kind.

Representative BOLLING. Of course, you well know that this problem of getting to the real issue involves a tremendous amount of brush clearing.

Do either of you have additional comments?

Gentlemen, we are very grateful to you for your very real contribution to this study.

The subcommittee will stand adjourned until this afternoon at 2 o'clock, when we will hear from Mr. Kantner of the Bureau of the Census and Warren W. Eason of Princeton University.

(Whereupon, at 11 a.m., the subcommittee recessed, to reconvene at 2 p.m., the same day.)

AFTERNOON SESSION

Representative BOLLING. The subcommittee will be in order.

Having this morning laid the background for statistical comparison generally, we turn now to the statistics themselves and start with population and labor force.

The panelists have each taken one subject: Mr. John F. Kantner of the Foreign Manpower Research Office, Bureau of the Census, has concentrated on overall population comparisons and Prof. Warren Eason of Princeton University will examine problems of labor force. After the presentation of your opening statements, gentlemen, we will want you both to feel free to reply on any question during the discussion period.

We will begin with Mr. Kantner.

## STATEMENT OF JOHN F. KANTNER, FOREIGN RESEARCH OFFICE, U.S. BUREAU OF THE CENSUS

Mr. KANTNER. Mr. Chairman, we have been warned of the difficulties of making comparisons between the economies of the U.S.S.R. and the United States. Similar hazards are encountered in comparisons of the population of the two countries, although it might seem on first thought that populations or manpower would be equatable in some meaningful sense. The fact is, however, that the meaning which any population statistic has will depend upon the characteristic of its elements, upon the levels of technology and system of organization with which it is combined, upon the direction of Government policy, and even upon the culture in which it is embedded.

But whether we approve or not, the world, at least much of it, regards the United States and the U.S.S.R. as contenders in the main bout of our era. In strict terms of the size and composition of the two populations, this is not a grossly uneven match. The harsh experiences of the Soviet people in World War II have considerably reduced

the differences between the population of the U.S.S.R. and the United States. The population of the Soviet Union, which is now 209 million, exceeds that of the United States by 18 percent, whereas before the war the margin was 46 percent. The number of children of elementary and secondary school age, the group which will provide the coming generation of scientists and technicians, is nearly the same in the two countries at the present time. The number of Soviet men of military age (18 to 34) will remain relatively stationary over the next 15 years. The numerical superiority of men of military age, which the U.S.S.R. now has relative to the United States, will decline in the next 15 years from about 11 million to about 3.5 million. During the period of the Soviet 7-year plan (1959–65), the population of working age (15 to 59) will increase by less than 7 million in the U.S.S.R. and by more than 10 million in the United States. These comparisons should dispel any notions that the U.S.S.R. is a demographic colossus relative to the United States. The differences in population between the two countries, when considered in the light of differences in technology and economic organization, recede almost into insignificance.

The challenging posture struck by the Soviet Union is due in large measure to the impressive pace of its past economic development and to its clamorous claims to future parity with the United States. Whether this pace is continued will depend upon how successful the impending manpower shortage in the Soviet Union is solved and upon the ability of the Soviet regime to dampen the demands of a maturing urban society for standards of living higher than those currently contemplated.

The shortage of manpower will reach its severest proportions within the next several years, when annual net additions to the labor force will drop below 100,000. The population of working age will increase by less than 6 million during the period of the current 7-year plan. The number called for in the plan, making generous allowances for increased labor productivity, is 11.5 million. Proposals for meeting this deficit include the transfer of labor from collectivized agriculture to state employment; the employment of persons now engaged in household activity or in the private economy; and the greater use of the labor of school-age children.

The Soviet labor shortage is a result of the low birth rates during the war. It differs from the situation in the United States qualitatively as well as quantitatively in that the Soviet need is not in the main for highly trained labor, but for replacements for a labor force in which only one-third of industrial workers have completed more than 7 years of education. As the shortage becomes more critical, there is increasing concern shown over the problem of labor turnover which the Soviet Government has been unable to control. Evident also is the very unsatisfactory nature of the Soviet machinery for labor recruitment. It would not be surprising nor without precedent if the solutions to the present manpower shortage also were to include some downward revision of economic goals.

As time passes, the manpower shortage will be alleviated. By 1965, net additions to the working age population will be nearly as large as the number expected this year. But demographic changes do not occur one at a time and independently. The growth of the

Soviet Union, which allowing for immigration, is at about the same rate as the United States, is acompanied by an extensive redistribution of population which is both an expansion of the areas of settlement and a process of urbanization. The U.S.S.R. is still in a phase of active frontier development with frontier populations supplied largely from the areas of old European Russia. Over half the population and about 60 percent of Soviet families live in rural areas. The great disparities which still exist between rural and urban ways of live in the Soviet Union are strikingly illustrated by the fact that in the Russian Republic (RSFSR) only about 45 percent of rural children continue education beyond the seventh grade, whereas in urban areas more than 85 percent do so. Every year the urban population increases in the Soviet Union. Approximately 25 million persons moved from rural to urban areas in the U.S.S.R. between 1939 and 1959. The total urban increase amounted to 39 million. As these trends continue and as Soviet cities become less hospitable to traditional ways of life, we may see changes in the general behavior of the Soviet citizen and his government which even Kremlin strategists cannot foresee.

Representative BOLLING. Thank you, Mr. Kantner.

Mr. Eason.

## STATEMENT OF WARREN W. EASON, PRINCETON UNIVERSITY, PRINCETON, N.J.

Mr. EASON. Mr. Chairman, by way of a summary of my paper on the Soviet labor force, I should like to consider two subjects which are also discussed in other papers presented to this committee.

First, I should like to consider the sense in which we are justified in seeing an overall "shortage" of labor in the Soviet Union at the present time, particularly with respect to the fulfillment of plans to increase the number of wage and salary workers over the present 7-year plan by some 12 million, so as to reach a level of 66 million by 1965.

Both Mr. Kantner and I have indicated the extent to which the Soviets willl experience through about 1965 a substantially lowered rate of increase of the population of working ages and of the labor force. If the 1965 goals in terms of wage and salary workers are to be reached, therefore the Soviets will be forced to draw more heavily on the agricultural and other sectors of the existing labor force than they have in the past. Although the present demographic developments serve to dramatize this problem, and even to give it a sense of urgency, my own reaction is one of some interest and surprise that it has not appeared before, if only more gradually.

It is of interest, to be specific, that over the entire period from 1928 to 1955 the increase in the number of wage and salary workers—for males and females considered separately, as well as for both sexes together—was almost exactly equal to the increase in the labor force implied by the increase in the population of working ages—that is, allowing for the fact that virtually all males of working ages (16–59) probably entered the labor force during this period, while the proportion of females of working ages in the labor force probably declined to some 60–70 percent. In other words, for the first 30 years of rapid

industrialization under conditions of national economic planning, and in spite of the staggering losses of World War II, the requirements in wage and salary workers—more or less synonymous with the industrial labor force—have been met without reducing the absolute number of persons of working ages in all other branches of the labor force taken together.

To date, therefore, abundant numbers of persons relative to capital and arable land have permitted the Soviets the "luxury" of remaining something less than in deadly earnest about raising the "efficiency" of the work force, although the question has been discussed and certain progress has been made since the beginning of the plans. The cost of not taking this very seriously has suddenly risen: this is the implication of the present turn of demographic events.

The planned increase in the number of wage and salary workers, as Kantner and I have shown, will still be met partly through the increase of the population of working ages and of the population aged 60 and over. The rather substantial remainder, however, must come primarily (1) from drawing into the wage and salary sector the family members of rural and urban workers, now in intermittent, partial and part-time private economic activity; and (2) by a net reduction in other sectors such as collective farming and possibly the military, and conceivably by a further reduction in forced labor from that already apparently accomplished. For myself, I would see a greater possibility in the drawing in of the intermittent and other fringe elements, because I think the number available here is considerably larger than generally assumed. If the Soviets are accordingly successful in drawing these highly inefficient labor force members into State and cooperative employment, this would leave a correspondingly smaller remainder to be supplied by the net reduction of the collective farm labor force. This would make the achievement of wage and salary worker goals depend less on the admittedly difficult task of raising collective farm labor productivity substantially that Mr. Kantner suggests must be done, and more on the possibility of drawing labor from the fringe elements of the labor force.

Looking beyond 1965, the growth of the population of working ages will recover to something below earlier "normal" rates, and will support the major share of continued growth in the number of wage and salary workers at past rates, placing relatively modest demands on the net reduction in other branches of the labor force. Because the expansion of the industrial labor force in the immediate future would appear as in large measure the problem of absorbing the fringe elements; and because the years after 1965 will see the return of the growth of the population to rates not substantially below those up to the 1950's, I see no overriding critical shortages of manpower in the aggregate, entailing substantial net reductions in agricultural labor, if past rates of growth of industrial labor are to be maintained. However, even with a constant or only moderately declining agricultural labor force, there is the need to increase agricultural productivity to keep pace with population increases. But this is something less than a radical departure from past trends, and incidentally would be only moderately aggravated by the hypothesis advanced in table 1 of my paper, namely, that the proportion of the female population and of the young and old of both sexes will decline somewhat over the next few decades.

In any event, there is increasing pressure from these trends in the quantitative dimensions of labor supply, toward raising the "efficiency" of Soviet labor. From this point of view, not to mention others, certain developments in labor policy—notably the reorganization of the wage structure and the enhancement of the role of the several "workers' organizations" in state enterprises—command our attention and evaluation. Mr. Jay Lovestone in his paper in part III describes these policy changes in some detail and evaluates them, primarily, however, from a "moral" or "ethical" point of view, centered around the degree to which they fail to represent an extension of "industrial democracy" as we understand the term. His view is embodied in five criteria listed as a basis for judging the Soviet system in the field of labor: (1) rising living standards; (2) reduction in the hours of work; (3) decent conditions of work; (4) a voice in the economic process; and (5) respect for human dignity.

Mr. Lovestone concludes that the first three of these have not come to pass and show very little signs of doing so as a result of recent policy changes. Without time in this summary to support my views, I would nevertheless venture the opinion that he has overstated and to a certain extent incorrectly stated his case with respect to these three criteria. He ignores the evident though modest increases in Soviet living standards of recent years, and the future possibilities set forth in Mr. Turgeon's paper; he says that the Soviet worker will have to justify the present plans for reducing hours of work by working proportionately harder under conditions of a "speedup," when the available evidence and discussion is in terms of achieving the reduction primarily through the introduction of more modern machinery and improved rationalization of the production process; and he fails to draw conclusions in terms of improving coonditions of work from his own summary of the changing role of the "workers' organizations" in the enterprise.

Even if what I say is correct, however, it does not reduce the importance of his fourth and fifth criteria in any final evaluation of the position of labor in the Soviet system. At the same time, neither can we afford to understate the real possibilities for achievement in the first three criteria. The evidence is only beginning to appear, and it must be evaluated from a fresh and critical point of view. The labor policy changes represent a certain departure from the past; they are being introduced with respect to a work force which is qualitatively very different from the peasant work force of the 1930's; the economy is different from that which operated in the shadows of World War II; and the need to have a more efficient work force is of an order of priority different from what it was in the past.

These considerations, of course, do not guarantee success to these policy changes, and many of the peculiarities of the Soviet system noted by Mr. Loverstone may rise to dilute the results with respect to the individual worker, in the future as in the past. But it behooves us to entertain quite seriously the possibility that this will not happen in the future, in other words, that there will be measurable success in the indicated directions and that rising levels of worker efficiency and corresponding rewards will appear. To do otherwise is to run the risk that achievements in the field of labor's material welfare will take us as much by surprise—with obvious implications in a very important field—as achievements in the physical sciences and rocketry.

Representative BOLLING. Thank you.

Mr. Kantner, in your statement, you say:

**These comparisons should dispel any nation that the U.S.S.R. is a demographic colossus relative to the United States.**

I take it that sentence is aimed not only at the statistical facts but at the fact also that a great many people have based at least certain parts of their policy decisions in the military as well as in other fields—I am not talking about people necessarily in the administration, but people discussing the problem theoretically—on the point that it was impossible for us to compete with the Soviet, because of their enormous manpower advantage. Would that be a correct assumption?

Mr. KANTNER. You are right. This is an attempt to read the popular attitude toward the Soviet Union. I thought there was such a conception in the air, and I am speaking against it, in a sense.

Representative BOLLING. Well, the indications are that if a national decision were to be made that involved very substantial use of manpower in the military field, we would have the human resources to compete quite effectively on a just plain, raw, man-to-man basis, if we needed to?

Mr. KANTNER. If it were a raw man-to-man basis, they still have a slight edge on us there. As I indicated, this difference would reduce to about 3½ million men in the military age group by 1975.

Representative BOLLING. It is a slight edge, but not overwhelming.

Mr. KANTNER. It is a slight edge, and I think these differences are more than made up by the difference in technology, industrial capacity, military and economic organization, which make a man-to-man conception unrealistic.

Representative BOLLING. This would tend to explode the thesis held by some that the only kind of weapons in the military field that our particular society is suited for are weapons of mass destruction, and we could not compete at all on a conventional warfare basis.

Mr. KANTNER. I think it is consistent with that argument; yes.

Representative BOLLING. Now, Mr. Eason, I would like you to pursue in a little more detail the points that start on the bottom of page 2, and take the time that you did not have, and correctly so, in the summary, to go into that whole array of points in as much detail as you wish.

Mr. EASON. This will probably require reference to certain parts of the paper that Mr. Lovestone wrote.

Representative BOLLING. I think this is important, and I would like to explore it at considerable length, whatever length is necessary to clarify it.

Mr. EASON. Not necessarily in order of priority in importance, let me take first what he refers to on page 566 of part III, under the heading of "Another Unfilled Promise."

He is referring here, if I can summarize it correctly without reading it over again, to the fact that the Soviets have always talked in terms of reducing hours of work as a longrun objective, and that indeed they did reduce hours during the 1930's, only to increase them again in 1940. He says that the reduction in hours of work presently being carried out should be reviewed in the light of a high likelihood that they may very well take it away again, just as they did in 1940; and,

secondly, that this reduction in hours of work is a spurious one, because, in his words—

in order to have a shorter workday, the workers would have to work much harder to receive the pay they received before. This is confirmed by the U.S.S.R. State Planning Committee's Economics Research Institute, which recently declared that—

"Three-fourths of the total increment of industrial output in the next 7 years will be obtained from increased labor productivity."

Mr. Lovestone seems to interpret this quotation to mean that the increased labor productivity (to which the reduction in hours is related) is to come mostly, if not entirely, from increased efforts on the part of the workers. As a matter of fact, however, according to the plan itself and supporting discussion, increased labor productivity is to come from the introduction of new machinery and new processes, long overdue in Soviet industry, and from the effects of increased rationalization of the work process in individual enterprises.

Certainly the "rationalization" of the work process, implying increased labor "efficiency," brings with it the possibility that, whatever the other sources of increased efficiency, labor will wind up working "harder." But in order to have a clear and justifiable picture of the forces at work, a necessary step is to isolate the "increased efforts" factor, as well as each of the other factors, and to show their relative influence in raising labor productivity and "permitting" thereby reduced hours of work. In the course of such an approach, it would be necessary to examine carefully the wage scales that are issued in the course of the reduction in hours. Short of such an analysis, and considering the potential influence of the other factors listed, it does not seem justifiable to equate the reduction in hours purely and simply with "working harder."

The fact that Soviet leaders increased the workday again in 1940 can be attributable in good measure to the special conditions of the impending war. Mr. Lovestone apparently sees a high likelihood that the reduction in hours will be taken again saying that the "promise for a 7-hour, 5-day week—the shortest in the world—should be judged in the light of similar promises for a shorter workweek made in the past."

It may very well be that the Soviets will find themselves in a box for one reason or another—say a marked increase in world tensions—and decide to increase hours of work once more. On the other hand, present conditions, including an apparent desire to consolidate and widen economic gains of a peacetime nature, suggest to me less of a likelihood that hours will be increased than in the 1930's.

The living standards section is, if I can find it——

Representative BOLLING. That is in the section immediately following, I think.

Mr. EASON. Yes. Now, again, if I remember this without stopping to read it in detail, he concentrates his argument on the fact that for all of the increases in production and productivity that have taken place in recent years, practially none of these benefits—I am now quoting him—

has been passed on to the consumer public in the form of lowered prices. From all of this, it is clear that with all its "reforms" and promises, the Communist economy is based on increasing exploitation of the workers.

Mr. Lovestone refers only to the fact that prices have decreased relatively little, but he ignores the other aspects of increasing living standards that Prof. Lynn Turgeon outlines in some detail in his paper—namely, the fact that the communal consumption share of the total product is going up, the fact that money wages of certain sectors of the population, notably those of the lower echelon groups, have been going up, and so forth. Finally, there is the general fact, accepted by most observers, that the standard of living of the Soviet worker is rising, however modestly, and that if the present plans are fulfilled, it will continue to rise; and, most important, that the Soviet worker seems to feel that things are better than they were a number of years ago.

Finally, the matter of the widened role of workers' organizations in Soviet enterprises (pp. 562, 563). His conclusion is apparently that whatever these developments may imply in terms of modest gains for the participation of the workers in the decisionmaking process of the enterprise, they effectively come to naught because they represent no extension of real industrial democracy; in other words, no extension of the power of the worker independently to challenge management (or the state).

It is perfectly true that there is not industrial democracy in the Soviet Union—not to mention general economic and political freedoms, as we understand the terms. Furthermore, there seems to me to be little likelihood that developments in Soviet labor policy in the forseeable future will involve the introduction of such industrial democracy. It is a basic proposition of the Soviet economic system that economic activity (including that of labor) must ultimately be subject to control at the center, however, indirectly this control is administered.

As I suggested in my opening remarks this afternoon, the failure of the Soviet system to provide basic economic and political freedoms may very well find this system wanting in the final analysis, regardless of their accomplishments in terms of the national product or in terms of the standard of living itself.

But if one should not use accomplishments in production to justify exceptional sacrifices and denials in human terms, neither, it seems to me, can one afford to ignore these accomplishments simply because they involve exceptional sacrifices.

One goal of Soviet economic activity avowedly is to raise living standards, a goal whose achievement has been seriously undermined in the rush to industrialize and in the achievement of other goals. One possibility is that rising living standards will continue to command a lesser priority when Soviet leaders come to grips with the alternatives offered them in the future. But there is also the possibility that living standards will increase from present levels, a possibility which becomes theoretically more feasible and which involves less of a sacrifice of given alternatives as the productive capacity of the country grows.

In terms of the material well-being (higher living standards, shorter hours, and better working conditions) that the American worker is trying to obtain through his unions in the context of a dynamic, free enterprise economy, the situation of the Soviet worker may also possibly improve, in the context of a Socialist economy. This possibility cannot be ignored, and its implications for a number of policy considerations must be examined.

Representative BOLLING. Despite these improvements in these three categories that you observed, and in the possible future expecting a substantial improvement, there would still be no comparison between the living standards or the hours of work, the decent conditions of work, of the Soviet worker, as compared to the American worker, as of today.

Mr. EASON. The hours of work are being reduced, and presumably, if present plans continue, will be not too different from those in the United States. The living standards are clearly quite different. All that I am asking for here is to give due recognition to the evidence that the living standards are increasing.

Representative BOLLING. I merely said what I did to provide a frame of reference to go on with the point that you are really making, as I understand it, and that is the point that you make in your last sentence: To pretend that they make no improvements in these categories, although perhaps their improvements do not make up anything like that for our own workers, is to set up another surprise when, as you say, they would have very obvious implications in a very important field. I would like you to expand on that a little bit—what the obvious implications are in the very important field.

Mr. EASON. The implications are that if something as intangible and impersonal as a rocket hundreds of miles out in space can shake the attitudes and reactions of the American public to its very foundations, not to mention the attitudes of people in other countries of the world, I would expect that the Soviets' ability to raise living standards even to some modest level would have a similar effect, certainly in the eyes of the then still underdeveloped countries of the world.

Representative BOLLING. And you are quite properly suggesting that it would be a good idea to be forewarned and forearmed.

Mr. EASON. I am trying to suggest that this be given its proper perspective and proper share of attention. We may reasonably say, for example, that in the final analysis the ability to send a rocket around the moon comes to naught because it took place in the absence of industrial democracy; but we still have to deal with the implications of the rocket, not only for space travel and related military matters, but also for the development of industrial power and general economic potential. If it turns out that in spite of the absence of industrial democracy and freedoms as we know them, the Soviet worker over the years becomes more efficient than he has in the past and receives greater material rewards for his work, this will be a fact, and we simply must recognize it. It may not justify the absence of trade unions, but neither can we ignore it for that reason.

Representative BOLLING. I want to make it clear that I heartily agree with your point. It is very important to participate and not take the attitude that we have in so many other areas, that obviously they could not do anything right, which is ridiculous.

Do you have any questions, Mr. Lehman?

Mr. LEHMAN. I would like to, if I may, Mr. Chairman, come back to Mr. Kantner's full paper in which he has indicated that the U.S.S.R. has evolved to a point in terms of population growth where it is pretty much like a western country, a western industrialized nation. I have two questions on that.

What have been the reasons for the drastic decline in the crude birth rate since 1897 in the Soviet, and do you see any reasons why

this trend should change in the direction of a more typically rural birth rate?

Mr. KANTNER. I wish you would ask me about more recent developments than this long period you have specified. The Soviet birth rate has fluctuated greatly during the present century in response to various conditions: military mobilization, collectivization, anti-abortion legislation and so on. But the drop in the Soviet birth rate, to a level which is about the same as ours at this time, but which is actually lower in terms of the fertility of specific age groups in the population, is a phenomenon that is common to most countries undergoing rapid industrialization and urbanization. We really cannot detail the course of this change in the Soviet Union, because we do not have the kind of information that would be necessary for that sort of an analysis.

I do not think that it is particularly surprising that the Soviet birth rate has reached this low level, in view of the fact that so many people have moved into urban areas, where the housing situation is difficult, where their aspirations for themselves and their children are different, where the total valuation of the child is a different matter than it is in rural areas. And I do not see the prospect of anything like a rural birth rate—if by that you mean that they would have large numbers of children for the traditional reasons. An increase in the birth rate could come about through an increase in the number of couples with small families. The postdepression revival of fertility in the United States was due for the most part to earlier marriage, some increase in the proportion marrying and a shortening of the interval between marriage and the birth of the first child. Similar changes could occur in the U.S.S.R., but we know very little about this at the moment. In my opinion, such factors will be outweighed within the foreseeable future by the continued spread of urban patterns of fertility implemented by a growing interest, private and official, in contraception. At the same time, pressure against the household economy—notably the uncertain future of the private plot and the attempt to recruit household members into the labor force—will speed the erosion of the large family pattern with its value on the labor of family members.

Despite the fact that, among persons of the age eligible to have children, fertility is lower in the U.S.S.R. than here and may drop even lower, the annual number of births is larger relative to the size of the population in the U.S.S.R. than here. The probable reason for this is that Soviet women of childbearing age constitute one-fourth of the population whereas in the United States the proportion is one-fifth. This situation is changing however and by 1966 the number of Soviet women in the most fertile age groups (18–34) will be 3 million less than at present. The trend for U.S. women in this age group is in the opposite direction with an increase of nearly this many expected by 1965.

I assume that your question is aimed not so much at the pattern of family formation, be it rural or urban, but at whether we may expect the annual addition to the Soviet population to reach a level of around 40 per thousand of the population—a level comparable to that of Russia in the preindustrial period. I can see no prospect for a development of this kind. In this connection it ought to be noted, that population growth is a matter of the balance of births and deaths. The

U.S.S.R. is growing more rapidly now than it did prior to the revolution when the birth rate was nearly twice as high as it is now.

Mr. LEHMAN. What do we know about the population picture in regard to the newly opened regions of Siberia being populated by a sustainable population? Are they going to have to continue to ask for volunteers to mine the industrial and mining installations, or draft volunteers, as apparently is sometimes done? Or will there be an adequate stable population in those newly opened regions? What do we know about that?

Mr. KANTNER. We know at the present time that there is a great deal of turnover in these areas; that you can get people to go there, but making them stay is another matter. There does seem to be, as Mr. Eason has noted, a decided effort to make movements of this kind more voluntary, more free, in the Soviet Union. This is, I think, in part due to the fact that the more coercive methods of recruiting labor just have not worked satisfactorily.

If stable populations are to be created in the new areas, family resettlement and voluntary movement will have to replace the drafting of labor and the provision of good living conditions will probably replace wage differentials as an inducement to voluntary migration. Khrushchev has said as much recently.

Nevertheless for the short run, while the tight labor supply situation lasts, considerable use will no doubt be made of less voluntary measures especially for the allocation of inexperienced labor. While the organized draft seems to have fallen into disrepute, the labor reserve system and the recruitment of assigned quotas by the Komsomol continues in full operation. To meet its goal of 5.5 million additional workers during the 7-year plan, the Russian republic plans to enroll over 4.5 million persons in its labor reserves schools. Graduates of these schools are required to serve in assigned jobs for 4 years. Graduates of technical schools and other institution of higher education are required, in most cases, to serve 3 years at an assigned job. Nominally enrollment in labor reserve schools is voluntary and the Komsomal call is always for "volunteers." This is not a completely cynical situation, but for many Soviet young people there seem to be few alternatives.

To give a summary answer to your question, I would say that in the future the newly opened areas of Siberia and other areas in the U.S.S.R. will be required to import population. For the period ahead they will do this by a combination of voluntary and quasi-voluntary recruitment measures. For the longer run, I would expect greater reliance upon voluntary, state-supported measures for labor allocation since the inefficiency and waste of nonvoluntary schemes seems to be fully appreciated by Soviet policymakers.

Mr. LEHMAN. Professor Eason, did you wish to make a comment?

Mr. EASON. No; I do not think so, directly, although there is a related question that comes to my mind. It has to do with the general problem of labor turnover, which is intimately related to the question of the mobility of labor and its actual movement, both as a matter of labor policy and manpower utilization.

There is one statement in Mr. Kantner's paper that attracted my attention. On page 3, he said: "As the shortage becomes more critical, there is increasing concern shown over the problem of labor turnover, which the Soviet Government has been unable to control."

We do not have too much evidence along these lines. The Soviet Government should want to control labor turnover, up to a point, but there is a certain amount of labor turnover that can exist and still be thought of as "under control."

A certain amount of labor movement is quite acceptable and even necessary in a dynamic, expanding society. The impression that I get, in traveling in the Soviet Union and talking to plant managers and so on, is that labor turnover is less now, considerably less now, than it was during the 1930's. It is from the 1930's that most of our statistics derive. At the same time, in the newly developing areas there is a still a good deal of "excess" labor turnover, a rapid movement in and out of factories. People who go out to these areas, young people, especially, become quite dissatisfied with living conditions and move from one position to another or come back to the older areas in a short period of time.

All that I would like to do is register my opinion and to get Mr. Kantner's opinion on the view that at the present time labor turnover is not a major problem, except perhaps in specific outlying areas, not the overall problem that it was during the 1930's, and that a certain amount of this turnover is quite acceptable in a dynamic society.

Mr. KANTNER. My impressions are that in certain areas, such as coal mining, the amount of turnover is not acceptable in their terms. But what amount shall be regarded as normal or desirable turnover, I am not certain.

You have a proper point to make there.

Mr. EASON. I was just reacting to this one phrase, that to control it they might have to stop it all together, which would be hardly the thing to do in maintaining an efficient working force.

Mr. KANTNER. My impression from the literature is that there is a widespread concern with the effect on productivity of turnover. Every time a new laborer comes in, he has to be registered, he has to be examined by the physicians, he has to be read into his job, and the result upon productivity, of course, is obvious.

It is not a matter of stopping labor turnover but of holding it to a level compatible with very ambitious plans to raise labor productivity. At machine builder's plants in the Urals, for example, accession and separation rates do not appear to be greatly different from those found in comparable U.S. establishments. There is a real question whether a country which is bent on increasing labor productivity by 6 percent a year and which has an industrial system requiring roughly twice as much labor as we do for comparable operations, can afford our rate of labor turnover. I suspect also that in the Soviet case more real turnover is involved; that is, the phenomenon of laying off and rehiring is less significant. Whatever the facts may be, the Soviet gave the impression that the problem is of serious concern to them.

It is also a problem, now that movement is more voluntary, to get people into the right places. There is a tendency for migrant populations to move to the more comfortable older cities of the Soviet Union, where living conditions are just a little nicer, even though these are not the areas necessarily of the most intensive investment and where they would like to have new labor moving.

Mr. LEHMAN. I would like to ask Professor Eason about white collar workers. Is there any evidence that the Soviet industrial labor

force is increasing its proportion of white collar workers? Do the Soviets have some attitude that perhaps that would be an unhealthy phenomenon if the proportion of white collar workers was increasing?

Mr. EASON. The evidence is that they are trying to decrease or hold within bounds the proportion of white collar workers, that is, higher level technical and administrative and managerial manpower, in the total labor force. As a matter of fact, the recent reform of the educational system, which Mr. Kantner described in some detail, and to which I referred in my paper, may be thought of in large measure as restoring or maintaining a relationship between higher level manpower and the ordinary worker, which is in the direction of keeping higher level manpower in relatively small numbers and the lower levels of the labor force at sufficiently high numbers. One reason for this, I think, is that the structure of the Soviet economy still reflects a level of economic development rather behind ours, with attendant implications for the structure of the labor force.

In the United States we are experiencing right now and have since the war a rather substantial increase in the share of higher level technical and managerial manpower in the labor force. The Soviets are still at an earlier level of development; they continue to emphasize mass production techniques; and they produce a relatively small variety of goods and standardized items. This means that they still have need for a relatively large number of ordinary production-line workers.

In the future, perhaps, this proportion may follow that shown more recently by the United States. At present, however, the Soviets are interested in keeping higher level manpower to relatively smaller numbers.

This is in part, I should add finally, a reaction against the period of the 1930's, when the bureaucratic overhead, largely because it was one of the things they could not control too well, simply got out of hand.

Mr. LEHMAN. This leads, then, to my final question.

What, in your opinion, is the outlook for attaining the planned annual increase in labor productivity that would be required by the 7-year plan? We have heard about the fact that the labor numbers are not going to be as large as might be needed, and you earlier made some comments on productivity. How does all of this now wrap up in terms of whether or not they can meet the planned annual increase in labor productivity?

Mr. EASON. This is a difficult question for me to answer, and I think I am going to wind up by really not answering it, because it involves some knowledge of the technological and organizational problems faced by specific industries, on which I have no special knowledge; nor have I examined the productivity figures carefully and tried to make a quantitative evaluation of the possibility of achieving them.

The main question that I raised in my paper and summary remarks is this: Given the rate of increase planned for wage and salary workers, and also past rates of increase—in other words, having some sense of the rate at which they have been trying to increase the number of persons in state enterprises—what are the implications for achievement? What are the implications with respect to getting labor from

other sectors, and so on and what are the further implications with respect to increasing productivity in these other sections to release labor? My general conclusion is that the possibilities for drawing persons into wage and salary work from other sectors plus raising the "efficiency" of the existing labor force may make a significant contribution to the achievement of overall productivity goals.

Mr. LEHMAN. Mr. Kantner, did you have an observation?

Mr. KANTNER. Just one; that the plan calls for an increase in productivity of 40 to 45 percent by the end of the 7-year period. This is a pretty good clip compared with the gains we have racked up in this country in various periods. It is not one that we have not achieved at certain times, but it is a very rapid rate and calls for a sustained high level of productivity increase during this period.

Representative BOLLING. Do either of you gentlemen have any additional comments you would like to make?

Mr. EASON. I think that the reduction in work hours that is presently underway, to take place at each enterprise when and if that enterprise can reduce hours without reducing per man productivity, is one strong weapon in the hands of the planners to get each and every enterprise to institute reforms in its plant organization, to introduce machinery, as I mentioned before and to make basic changes along lines that are long overdue in the Soviet economy.

For the vast number of enterprises, they are still operating, as many of the other papers indicate, at very low levels of productivity, and I think the reduction of hours under the conditions mentioned is one attempt to get these enterprises off dead center—specifically to get the managers themselves to assume responsibility for bringing this off in their own enterprises.

Representative BOLLING. Thank you very much, gentlemen, both for your papers and for your presence this afternoon.

With that, the subcommittee will stand adjourned until tomorrow morning at 10 a.m. in this room, when the subject will be "Industry."

Thank you very much.

(Whereupon, at 3:30 p.m., the hearing was adjourned, to reconvene at 10 a.m., Tuesday, November 17, 1959.)

# COMPARISONS OF THE UNITED STATES AND SOVIET ECONOMIES

**TUESDAY, NOVEMBER 17, 1959**

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMIC STATISTICS OF THE
JOINT ECONOMIC COMMITTEE,
*Washington, D.C.*

The subcommittee met at 10 a.m., pursuant to recess, in room 1304, New House Office Building, Hon. Richard Bolling (chairman of the subcommittee) presiding.

Present: Representatives Bolling and Curtis.

Present also: John W. Lehman, economist.

Representative BOLLING. The subcommittee will be in order.

This morning we have a somewhat larger panel than usual in order to cover several important aspects of a comparison between United States and Soviet industry. Professors Blackman and Nutter will take up structure and rates of growth; Mr. Hardt, investment; and Professor Levine, management.

Professor Granick, who also prepared a paper on management, is spending this year at the University of Glasgow in Scotland and, hence, is unable to participate in the discussion this afternoon. Professor Blackman was prevented by illness from completing his paper in time for publication before the hearings. We are pleased that he can be with us today.

I will now ask Professor Blackman to begin the panel discussion and we will follow without interruption with the summaries of the other members of the panel before proceeding to a general discussion in which I hope you will all feel free to join.

Before Professor Blackman starts, however, may I express the thanks of the subcommittee for the excellent series of papers you have prepared.

Professor Blackman.

## STATEMENT OF JAMES H. BLACKMAN, UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL, N.C.

Mr. BLACKMAN. I propose in the brief time allotted to me this morning to focus attention chiefly on the industrial outlook of the Soviet Union over the decade just ahead. Secondarily and only superficially the corresponding prospects of the United States are alluded to.

Although my main concern is with aggregative measures, let me state my strong impression at the outset that the most meaningful questions regarding the pace and nature of economic development can only be answered by going "inside" the aggregates. Production indexes at

best constitute rough expedients for summarizing and rating a nation's economic performance. They cannot elucidate the mainsprings of action nor reveal the mileage, military, and other, that given production volumes or increments afford.

It would be futile to search for or to expect to find a single valid answer to the query "How fast?" when confronting the extraordinarily drastic structural changes wrought in the Soviet process of industrialization. Substantial doubts regarding the proper measure of Soviet industrial growth also derive from the conscious policy of the central government and will remain as long as the latter seeks to conceal or misrepresent important economic facts. Necessarily as a result we can only characterize Soviet growth in round figures, preferably in terms of ranges delimiting the effects of alternative weighting systems and incorporating allowances for possible margins of error.

Time does not permit a full enumeration, much less an assessment of the many conflicting and essentially incomparable estimates which independent observers have offered in place of the badly distorted official measures of industrial production. I shall perforce merely cite certain ranges suggested by the adjustments of these independent studies, stressing the particular periods most appropriate for the purpose at hand; namely, for the extrapolation of Soviet output trends to 1965 and somewhat beyond.

Other things equal, it might be supposed that longer periods of reference provide better bases for projection than do shorter ones, especially if the future horizons are distant and the projection mechanistic. On this supposition the entire 41 years of Soviet rule should be used to gage prospective longrun average tempos. Presumably, still better results would be obtained by calculating average percentage rates of growth as far back into the czarist period as industrial records and minimum accuracy requirements permit.

But other things most definitely are not equal as the problem is phrased in the present inquiry. In the first place, I have adopted a rather short horizon, 15 years at most, bounded and enlightened by the Soviet perspective plan of that duration. Second, the Soviet period viewed as a whole is conspicuously lacking in continuity. Two destructive world wars, revolution, civil war, and the disastrous upheaval of collectivization have punctuated and adversely affected the overall average performance of the Soviet economy. With the possible exception of the struggle with the peasantry, I would hold that these strife-torn years are not recurring phenomena and should not therefore be permitted to exert an influence in trending future outputs. By the same token, the extraordinary years of rapid restoration and recovery which followed the above disasters should also be eliminated from consideration. This leaves very few normal years from which to infer the sustaining qualities of Soviet (and Russian) economic growth. Accordingly, longer projections, I conclude, should be most cautiously approached, if not altogether ignored.

But there are other (nonstatistical) reasons for centering our gaze on the near rather than the distant future; namely, the compelling policy issues which our own Government has under review. Moreover, the chances of estimation accuracy for the short-run span are considerably better on several scores. First, there are the announced 7- and 15-year plans which furnish invaluable target data with which

to approach and perhaps modify the trended results of the past. And second, these plans have been preceded by one of the longer stretches of Soviet normalcy, dating roughly from 1950 to 1959. Thus, it seems to me that the most fruitful insights regarding Soviet tempos of industrial growth in the coming decade are to be read in the history of the recent past, adjudged in the light of the aforementioned plans and the changing configuration of causal influences.

According to official Soviet sources, the average annual rate of growth of industrial output for the fifth 5-year plan which was just concluded in 1955 amounted to 13.1 percent. This figure, universally regarded as inflated in the West, compares with various independent estimates ranging from Professor Nutter's low 8 percent to an upper limit of 10.5 percent separately arrived at by Messrs. Jasny, Seton, and Shimkin. The estimate made by the staff of this Joint Economic Committee in the preceding study in this series was 9.9 percent.

Without proliferating percentages, let it be noted that both the official and independent calculations reflect some retardation in the postwar period. This relative slowing up in the tempo of the Soviet industrial expansion becomes more apparent still if reference is made to the pace established in the early prewar plans.

The evidence of retardation also carries forward into the future as seen in the contrast of the announced Government goals and realized rates of growth in the preceding years. The 7-year plan, for example, calls for an 8.6 percent yearly increase in industrial output as compared with an 11.4 percent annual rate for the foregoing 7 years. The sixth 5-year plan (1956–60), which was scrapped because of severe imbalances and unduly optimistic targets, originally scheduled at 10.5 percent annual increase in industrial production.

The main factors which are responsible, I feel, for the observed and projected slowing of the rate of Soviet industrial expansion may be succinctly put as follows:

(1) The shift of labor from low-productivity areas (chiefly, from agriculture) to relatively high productivity industry no longer is a substantial boosting element. In fact, the reverse flow toward the farms has been noted in certain recent years, aided and abetted by a narrowing of the rural-urban income differential.

(2) The possibility of borrowing techniques from the stored knowledge of advanced capitalist nations has been to a considerable extent exploited—a fact which leaves the economy more dependent on native innovational impetus.

(3) While the priority on heavy industry continues as a cardinal theme of the Soviet regime, the competing demands for finite investment allocations have grown considerably in the postwar period and most notably since Stalin's day. The present complex economy of the U.S.S.R. has inherited a legacy of disproportions which it must now begin to repair if growth rates and in this connection also, civilian morale, are not to languish further. Substantial resources now must be reserved for once bypassed areas which typically are nonproductive, as is the case of housing or in low-growth-producing social overhead sectors such as the railroads and communications. Thus, the dampening effect, both apparent and anticipated, may be traced to changes in the direction of investment, away, that is, from the growth-compounding sectors. The demands of the Soviet consumer have not

as yet made inroads on the total resource share going to capital formation, though this, too, looms as a possibly depressing force.

(4) There is a widening gap between net and gross investment which means, in briefest terms, that the Soviet economy now has to work longer to replace its capital stocks as their average age has grown.

(5) A worsening resource and transportation-input situation has emerged in several heavy industrial fields, coal and iron ore being the most important, the consequence of which is to slow the rate of growth by imposing higher costs of extraction, delivery, and use.

(6) Finally, there is operative the arithmetic effect which makes it increasingly difficult to maintain high percentage rates of growth as the base against which they are measured is substantially enlarged.

These forces or trends do not seem to me to be reversible for the short time horizon in which we are interested (the latter so-called arithmetic effect, of course, is undirectional). On the other hand, they do not seem likely to induce a swift deceleration in growth since there are many buoyant forces still operative. Among these stimulative influences I would stress the following:

(1) First in order of importance are a number of organizational, planning, and pricing reforms which promise to enhance the efficiency of resource use. On the organizational front alone, very considerable economies of scale may be expected and currently are being realized through the increasing introduction of flow methods and the standardization of parts manufacture in specialized enterprises.

(2) The still low (average) level of labor productivity, less than 40 percent of current U.S. levels, need not be construed wholly in a negative light—indeed it constitutes a vast potential reserve for expansion. Much of the early growth of the U.S.S.R. may be attributed to the educating and equipping of raw peasant labor with industrial skills and modern machines. This process admittedly has slowed, but it may be reinstituted in various formerly neglected areas of the economy or otherwise sparked by innovations. The possibilities of a wider application of technologies currently existing in the U.S.S.R. are many and in some ways analogous to the drawing on the backlog of advanced foreign technique as the Soviets formerly did. How much of an offset to decline will be provided by the broadening of Soviet capital is, however, problematical.

(3) I would list, too, as a positive factor the regime's continuing dedication to the maximal growth objective—without this the Socialist economy might waste in bureaucratic lethargy, but instead dynamism is still the hallmark of its leaders and its philosophy. This, incidentally, was the deepest impression which I formed in my visit to the Soviet Union in 1957.

(4) Increasing reliance on incentives as opposed to force and terror must be reckoned among the growth-contributing factors of contemporary Soviet society. On the other hand, insofar as incentives take the form of more consumer goods and increasing demands for better living standards, the growth push formerly received through concentration on heavy industry must be lessened.

What are the implications for the United States of the several developments which we have been considering? Khrushchev has noisily proclaimed that the 7-year plan will enable the Soviets to pull

abreast of the United States in the absolute volume of industrial production and only a few additional years (that is, about to 1970) will be required, he says, to surpass the United States in per capita levels of production.

These prophecies must be set down as greatly exaggerated, though this is not to discount the very great absolute and relative strides that the Soviets appear likely to make vis-a-vis the United States in the next decade. The principal sources of exaggeration are three:

(1) A too low rate of expansion for U.S. industry has been assumed by Khrushchev; that is, approximately 2 percent per year as compared with a realizable, and what seems to me more likely, U.S. rate in excess of 3 percent per annum.

(2) The assumed Soviet rate (8.6 percent to 1965), while feasible, is somewhat above their likely attainments for the longer run, certainly, which I would put at from 7 to 8 percent.

(3) Khrushchev's value calculations greatly exaggerate the current ratio of the Soviet industrial product to that of the United States. Clearly, it is not now over 50 percent, as Mr. Khrushchev contends, but something well below that figure, perhaps from 35 to 40 percent. In other words, the current gap separating the two economies is much bigger than he admits, and we seem likely to run faster than he gives us credit for.

On the other hand, we may, ourselves, be disappointed. Khrushchev has extrapolated our extremely modest growth rate of 1.6 percent achieved during the partly depressed periods of 1952 to 1958, and this state of affairs, of course, may continue. Other rates which give us somewhat more comfort and which I think are more close to future possibilities come from the long past as, for example, 5.3 percent per year attained from 1885 to 1912, and 3.7 percent from 1913 to 1955; more recently, i.e, from 1950 to 1955, we were growing at an annual rate of 4.5 percent.

Whatever the proper estimate of our future average growth rate, I think the moral as far as U.S. policy is concerned is abundantly clear: We need not and should not run the Soviet kind of industrial race, attempting to match its performance in its own chosen priority areas; nor need we emulate their economic methods (rather, probably the reverse should be true). What we can and must do, however, is to assure ourselves of a continuing high level of employment, free of the evils of inflation and directed essentially toward ends which the consumer deems of value. To this I would add the qualifying proviso that the share of the communal product should be expanded somewhat over present levels to enable, among other things, broadened health and education programs and, further, that the Government guard sufficiently against the great augmentation of Soviet power that the years ahead will bring—this by keeping its military establishment strong and balanced and our friends prosperous and numerous in the allied and neutral parts of the globe.

I was very honored and pleased to be able to appear before the committee to make these observations.

(See also Mr. Blackman's prepared paper, p. 272.)

Representative BOLLING. Thank you very much, Professor Blackman.

Professor Nutter, you may proceed, as you wish.

48448—60——5

## STATEMENT OF G. WARREN NUTTER, UNIVERSITY OF VIRGINIA, CHARLOTTESVILLE, VA.

Mr. NUTTER. Thank you very much, Chairman Bolling.

Mr, Chairman and Congressman Curtis, it is an honor to be invited to testify before this distinguished committee on the matter of Soviet economic developments, one of the more significant issues of our time. But the honor carries with it the heavy responsibility of giving reliable and useful evidence, and anybody who has studied the Soviet economy appreciates how difficult it is to do this. I therefore ask the privilege of opening my remarks with a disclaimer: I do not pretend to lay before you today, or in the paper already submitted to your attention, a conclusive picture of Soviet industrial developments as they compare with our own. I offer only my appraisal of those developments as it has been formed by study of imperfect, inaccurate, and often misleading materials.

My subject is industry, and in Soviet statistics this economic area covers manufacturing, mining, fishing, logging, and generating of electric power. As far as possible, a similar coverage has been given to U.S. industry in my earlier paper. Detailed comparisons are given in that paper, and there is no need to repeat them. Let me, instead, briefly restate some broad conclusions.

If we leave aside the question of how much the effort has cost, what kinds of products have been produced, and how the products have been put to use, Soviet industrial achievements have been impressive. We in the United States have become accustomed to having our economic system viewed, for good cause, as the most effective generator of industrial growth of all time. We should now recognize that the Soviet system has so far proved itself to be more or less our peer in this narrow respect. It remains to be seen whether this will continue to be so, and what significance it may have in either event. The fact stands that the sheer pace of Soviet industrial growth has been impressive.

Industrial output has been growing more rapidly in recent years in the Soviet Union than in the United States, and it will almost surely continue to do so over the immediate future. Soviet industrial output rose from about a seventh of the American level in 1913 to about a quarter in 1955. The outlook for Soviet industrial growth in the longer run is much less certain. In my opinion, there is no definitive evidence that the Soviet economic system has, under comparable circumstances, been able to generate more rapid industrial growth over the long run than the traditional private enterprise system of the West.

Whatever may be said about the pace of Soviet industrial growth, it has not been as rapid as stated in official Soviet claims. Production indexes constructed by usual Western methods and based on official Soviet statistics of physical output for individual products indicate that Soviet industrial production multiplied five to six times between 1913 and 1955. The official Soviet index states that it multiplied 27 times.

We also need to remind ourselves that, in a very real sense, Soviet industrial achievements cannot be compared at all with those of the West. In the Soviet Union the primary objective has been to enhance

the power of the state. The man in the street has been viewed as a residual claimant to the productive achievements of the economy. Military and heavy industry has been emphasized at the expense of consumer goods; the growth of industry, at the expense of other important economic sectors, such as agriculture, construction, and personal services. The human cost has been staggering in other respects as well, with periods of deliberate starvation and large-scale use of forced labor. Leisure has shown little tendency to grow. There are signs that the bleak life of the common Soviet man is being slowly improved, but as this happens we may also expect a change in the tempo and character of industrial development.

As so many contributors to the present discussion have already stressed, we must be aware of the limited meaning to be attached to simple aggregative comparisons of the relative size or the relative growth of Soviet and American industry. In particular, broad aggregative measures of industrial output tell us little about capacities for specific tasks, such as waging war or promoting consumer welfare. Nevertheless, we should not move to the extreme of supposing the broad aggregates tell us nothing of importance. When properly interpreted, they do inform us of the limiting capabilities of an economy to serve the welfare of its citizenry, the economic goal we consider most important.

For more than a generation Soviet leaders have proclaimed their goal to be the overthrow of our free social order. Were it not for this, there would be no point to these hearings, whose implicit purpose is to evaluate the relation between Soviet economic achievements and the Soviet threat to our freedom. The first job is to get the factual record straight; and, in deciding which facts are important to bring to the surface, we should keep in mind that the struggle forced upon us by the Soviet crusade encompasses men's minds as well as arms.

I thank you for the honor and privilege of making these remarks.

Representative BOLLING. Thank you, Professor Nutter.

Mr. Hardt.

## STATEMENT OF JOHN P. HARDT, CORPORATION FOR ECONOMIC & INDUSTRIAL RESEARCH, INC.

Mr. HARDT. Thank you Chairman Bolling, Mr. Curtis.

Two questions have received my primary attention in response to the invitation of this committee to participate in these hearings on "Comparisons of the United States and Soviet Economies":

(1) How has the high Soviet rate of industrial growth been maintained in the past?

(2) Can Soviet industry continue to expand at as high a rate in the future?

In this summary, I shall very briefly sketch the line of argument pursued in my paper for explaining the past rate of industrial growth. Permit me, however, to dwell a bit more on the second question relating to the prospects of future growth in Soviet industry. In this summary the Stalinist time period is generally taken to represent the past and the Khrushchev era—the present and future.

### PAST INUSTRIAL GROWTH IN THE U.S.S.R.

The effectiveness of Soviet investment policy in maintaining a high rate of industrial growth during the Stalinist period may be credited both to the high rate and the pattern of investment outlays. At the same time, I direct your attention especially to the pattern of investment, or, more accurately, the Stalinist formula for attainment of maximum yield from given investment outlays.

The Stalinist investment formula may be summarized by the following policies of directives of the top leadership:

(1) Emphasize leading sectors in setting the pattern of investment outlays for expanding the industrial base.

(2) Choose processes among alternatives needed to establish the industrial outlays which minimize capital outlays relative to current factor inputs; that is, labor, fuel, and so forth.

(3) Set up project lists for attaining construction goals which reflect optimal results from previously established patterns of outlays. This optimal tautness in investment planning implied minimum factor requirements and gestation periods for construction projects and maximum output per unit of new capacity.

(4) Organize administration of investment to enforce a maximum incentive system on construction trusts to complete projects as planned.

In the fulfillment of the above directives, as in all Soviet economic policies, it should be noted that there is a central overriding aim: industrial growth must be expanded at a maximum attainable rate to provide the bases for current and future political-military power. This single set of value criteria largely motivated Soviet economic development under Stalin.

This committee has been conducting hearings on the state of the U.S. economy in recent weeks. The multiple values or criteria employed by those testifying in these hearings on U.S. economic policy prescriptions have included the attainment of maximum production, employment, and purchasing power. Providing optimal answers to questions involving our multiple criteria is a taxing and often controversial subject as this committee is well aware. The single value system of Soviet economic development made the formulation of economic policy far simpler under Stalin.

### FUTURE INDUSTRIAL GROWTH IN THE U.S.S.R.

Now, what of the future? Will the rate of Soviet industrial growth be maintained in the current 7-year plan (1958–65)? It is really not possible to make precise predictions. Predictions, which must be based largely on past performance, are particularly tenuous now as important elements to Soviet economic policy are in flux under the leadership of Nikita Khrushchev.

Before considering elements of change in Soviet economic planning, let us acknowledge the possibility of both the maintenance of high industrial growth rates and the attainment of parity with important U.S. production levels in the proximate future. This overtaking of certain U.S. industrial production levels probably could result if Soviet top leadership chose to resolutely project the single-value Stalinist system into the indefinite future.

Whether Soviet industry is likely to attain parity with U.S. industry in some significant fashion is quite another matter. Soviet economic policies are currently in transition. Important changes appear to be serously considered by Mr. Khrushchev and his colleagues. The policy revisions considered bear importantly on our estimates of future industrial growth. Let me single out two of the major revisions currently considered in the Soviet Union to which we should direct our serious attention.

(1) A shift in the overall Soviet production process to provide significantly more consumer goods.

(2) Greater attention to economic efficiency or rationality, especially related to the more productive use of raw materials and labor.

The basic question arising from the consideration of these new policy points herein is: Are they likely to contribute to a material future retardation in the rate of Soviet industrial growth? It would be hazardous for us to assume that a slowing down in Soviet industrial growth rate is imminent. On the one hand, a material, sustained increase in consumer goods production could retard the rate of industrial growth. But I, for one, am very skeptical of the continuing significance of a consumer orientation in the Soviet economy.

On the other hand, although efficiency in fuel utilization and labor productivity seem to be threatening the primacy of capital as a scarce factor in Soviet industrialization, the net effect of increased attention to economic efficiency may well be a facilitation rather than a retardation of a continued high rate of growth in Soviet industry.

My skepticism on the long-run implications of the new Soviet consumer goods program results from my conclusion that a significant reorientation of Soviet industry to consumer goods production would be at considerable cost to the Soviet regime and the returns would be questionable. The cost to the Soviet regime and the returns would be questionable. The cost to the regime in the tautly planned Soviet economy is largely in alternative projects related to industrial growth, as illustrated in the table at the conclusion of my statement.

The ambitious urban housing programs and the increments in the production of consumer durables must be balanced against projects involving industrial growth. If the automobile were to play a really important role in the new consumer goods program—this is clearly implied by recent statements of Soviet leaders—the additional sacrifices in industrial growth would be even more material.

What are the chances of a continued and expanded consumer orientation in the Soviet economy? Not too good. The Soviet leaders surely continue to value industrial growth highly. And what would the regime gain from more consumer orientation? Is it not as likely that the populace would respond to increases in consumer goods with a greater dissatisfaction in their low standard of living?

But we can see that ambitious consumer durable goods and urban housing construction programs are underway. You might, therefore, query if once initiated a consumer oriented program proves costly and of questionable benefit to the regime, could the Soviet leadership abandon it? My answer is, "Yes, they could." The consumer has little leverage in Soviet society—no vote, little chance for protest, and we should not overlook the possibility that such a basic change in the

system as is embodied in a consumer orientation of the Soviet economy may be beyond the capability of the top leadership. Those who have a vested interest in Stalin-type industrial growth, unlike the Soviet consumer, do have leverage. As was possibly the case in the question of colleagial leadership over one-man rule in the U.S.S.R., Mr. Khrushchev might be able to dominate the system but not to fundamentally change it.

Still at this time we must reserve judgment and accept the possibility that serious attention is not only being devoted to economic efficiency but to consumer satisfaction. Actually, more is involved in the current fluidity in the economic thinking of Mr. Khrushchev and his group. For changes to result in the areas discussed above the basic criteria on which Soviet economic policy has been judged in the past must be reexamined. This calls for an abandoning of single-value economic policy for a multiple-criteria basis.

This fundamental change could, in turn, provide some meaningful bases for comparing economic accomplishments of our two economies, which is the difficult task assigned to us in these hearings.

Moreover, if the Soviet reexamination of the bases for their economic policymaking were to include the criteria of economic efficiency and consumer satisfaction, we might then welcome Premier Khrushchev's invitation for economic competition.

Welcome this econnomic competition not just because we would do well in comparisons based on measures of consumer satisfaction and economic efficiency, although I am fully convinced we would; but, more importantly, because on this multiple criteria for economic policymaking the human standard of value which motivates our economic policymaking would find a place in Soviet policy formerly dominated primarily by political-military power considerations.

Thank you very much, Mr. Chairman.

Representative BOLLING. Without objection, the addenda to your statement will be included in the record.

(The addenda to Mr. Hardt's statement is as follows:)

TRADE OFF IN INDUSTRIAL GROWTH FOR NEW STANDARD OF LIVING PROJECTS [1]

| STANDARD OF LIVING PROJECTS | INDUSTRIAL GROWTH PROJECTS |
|---|---|
| I. Urban housing: 20 million square meters of additional urban housing construction for 1 year (1960 over 1959 level). | Hydroelectric capacity equivalents: 20 million kilowatts of installed capacity or about 8 Kuibyshev hydroelectric stations. |
| II. Passenger autos: 1 million additional auto production in entire 7-year period (1958–65). | Iron and steel complex equivalents: 1 million tons of steelmaking capacity. |
| III. Other consumer durables: Increments in production planned for 3-year period (1958–61) in refrigerators, television sets, washing machines, sewing machines, etc. | Metal-forming equipment equivalents: 3,000 forge-press machines. |

[1] The industrial project equivalents do not indicate actual projects foregone, but approximate as closely as possible the type of projects that Soviet leaders must cope with in the addition of standard of living projects. Moreover, this approach is thought to represent the type of analysis employed by the top Soviet leadership in deciding on new projects. A detailed discussion of the basis of the calculation of equivalents follows.

NOTES FOR TABLE

*I. Urban housing*

A. Kosygin, chairman of Gosplan, indicated housing construction was to increase from a rate of 80 million square meters of floor space in 1959 to 101 million in 1960, or an addition of 21 million square meters per annum. (See Pravda, Oct. 28, 1959.)

The cost per square meter is planned to be about 1,000 rubles, with physical inputs of about 140 kilograms of cement. (See Stroitel'nye materialy, No. 1, 1959, pp. 6 ff.)

*Hydroelectric capacity equivalents.*—Average investment cost per kilowatt taken to be about 1,000 rubles although the range is wide. (See Planovoe khoziaistvo, No. 9, 1959, pp. 20 f., and the report of E. Vennard in the Joint Economic Committee hearings on comparisons of Soviet and U.S. economies, group report, p. 481.)

*II. Passenger autos*

Output levels to rise from 117,500 to 158,000 from 1958 to 1965 which presumably means an addition over the 7-year period of about 1 million cars. (See Avtomobil'naya promyshlennost', No. 1, 1959, pp. 1 f.)

The cost and inputs of steel per car are put conservatively at 2,000 rubles and 1 metric ton. (For auto prices see B. Schwalberg, Manpower Utilization in the Soviet Automobile Industry, Washington, D.C., Bureau of Census, 1959, p. 100, and the report of L. Turgeon in the Joint Economic Committee hearings on comparisons of Soviet and U.S. economies, group report, p. 336.)

*Iron and steel complexes.*—Cost of a ton of pig iron producing capacity reported as from 1,975 to 2,374 rubles (the former at Magnitogorsk, the latter Karaganda), Metallurg, No. 6, 1959. (Also see M.G. Clark (editor), Steel in the Soviet Union, delegation report of American Iron and Steel Institute, 1958, p. 94.)

An estimate of 1 ton of steel for the entire verticle process from the mine to steelmaking capacity seems tenable. In the United States, for steelmaking capacity alone, 0.225 ton has been required per ton of steel. (See Backman, Basch, Fabricant, Gainsbrugh & Stein, War and Defense Economics, New York, Rinehart & Co., Inc., 1952, p. 81.)

*III. Other consumer durables*

By decree of the party plenum new consumer goods production called for (as reported in Pravda, Oct. 16, 1959), included the following:

| | 1958 | 1961 |
|---|---|---|
| Refrigerators | 359,600 | 796,000 |
| Television sets | 979,300 | 1,928,000 |
| Washing machines | 463,000 | 1,215,000 |
| Sewing machines | 2,685,000 | 3,470,000 |

Aggregation and comparative cost estimates are especially difficult herein. The cost of the total increase as estimated from the party decree as at least 31.5 billion rubles, representing increases of 12.4 and 19.1 in "enterprise prices" for 1960 and 1961, respectively, from the 45.5 billion of 1958.

The average input in metal for each of the major consumer durables probably ranges from 0.005 to 0.02 metric tons per unit.

*Metal-forming equipment equivalents.*—The forge-press units are assumed to cost roughly 10 million rubles and require about 10 metric tons of metal. This is a very rough approximation but thought to be useful because of the apparent shortage of this type of equipment in Soviet industry. For example, a strong case was made to raise the production of forge-press machines for 1965 from 36,200 to 50,000 even at the expense of machine tools, if necessary. See A. Bundin, Promyshlennoekonomicheskaya gazeta, January 11, 1959. This increased production was decided against.

Representative BOLLING. Professor Levine?

## STATEMENT OF HERBERT S. LEVINE, RUSSIAN RESEARCH CENTER, HARVARD UNIVERSITY, AND THE UNIVERSITY OF PENNSYLVANIA

Mr. LEVINE. Mr. Chairman and members of the committee, my statement, here, and the paper I have contributed to this committee study are not concerned directly with the measurement of growth, but rather with Soviet organizational and planning methodology.

The industrial sector of an economy does not merely produce goods which are consumed by other economic sectors; it also produces goods which are used within the industrial sector itself. It is this web of industrial interrelationships, of flows of industrial materials from producing firms to consuming firms which is the subject of the paper I have written for this study.

Superficially, Soviet industrial supply methods do not appear to be much different from our own. A firm "buys" the input materials it requires, in most cases directly from the producer. Payment is made by transfers in bank accounts. Terms of sale are stipulated in commercial contracts, and both buyer and seller are protected by the courts against violations of these contracts. But in a fundamental sense, the two systems are worlds apart, for ours is a decentralized market system while the Russians' is a centrally planned and controlled one.

In my paper I have concentrated on this fundamental difference. I have tried to describe and analyze how the Soviets plan their industrial supply, especially how they try to work out balances between the supplies and demands for the key materials used by Soviet industry. In our system this function is performed by the market through means of prices and profits. In the Soviet system, in the absence of a free market, this has to be done by the planners. If a certain output of machines is planned, then the output of enough steel to produce the machines must also be planned, and in turn enough coal output to produce the steel. In other words, the planners must assure the internal consistency of the industrial output plan. Also, Soviet planners, in a fairly centralized way, plan the actual distribution of the major industrial materials, i.e., which producing units should ship which materials to which consuming units.

In my paper, I discuss the planning of industrial supply under the following heads: (1) The organizations involved in supply planning; (2) construction of the annual supply plan; (3) weaknesses of supply planning; and (4) a glance ahead, including the possible future use by Soviet planners of modern mathematical techniques and high-speed electronic computers.

Before the 1957 reorganization of industrial administration, the planning hierarchy ran along vertical branch lines. At the top stood Gosplan, the state planning committee. Below Gosplan were the individual industrial ministries, such as the Ministry of Ferrous Metallurgy, or of coal. Each ministry had a supply board and a sales board, which handled the planning of supply. Under the ministry there were normally a number of branch administrations and at the bottom, the individual enterprises. The reorganization has changed industrial administration from branch lines to geographic lines. The

planning hierarchy is now: at the top, still, Gosplan; below it, the planning commissions of the 15 union republics; below them the national economic councils which administer individual economic regions within the republics, and, at the bottom, the individual enterprises.

The process of plan construction is roughly one wherein general instructions flow down the planning hierarchy followed by a counterflow of fill-in information, lists of material requirements and suggestions from the bottom. This is followed by coordination and balancing at the top and the issuance of a fairly detailed plan. In the final stage, the plan flows down again and is put into the thorough detail necessary for operational purposes.

The focal element of the supply planning process is the attempt to work out a balance between the supply and demand for each of the major industrial materials. For this purpose the Russians use a planning device called a material balance. This is a balance sheet of the planned sources and uses of each of these major materials. Separate departments of Gosplan work on individual material balances and in the course of a restricted time period try to balance both sides of each material balance, that is, if, for example, at first the planned demands for rolled steel exceed the planned supply, then the Gosplan department in charge of the rolled steel material balance must seek out ways of closing the balance by either increasing the planned supply of rolled steel or decreasing the planned demands of other sectors for rolled steel, or both. The fact that the number of material balances has been extremely large (it has varied since the war between 750 and 1,600) and the fact that there are a multitude of direct and indirect interconnections among these material balances, make their balancing task an awesome one indeed. I have argued, in my paper, that Gosplan has been forced to rely heavily on balancing methods which do not necessitate the tracing of a change in one material balance through all its direct and indirect effects on other material balances. These methods involve the further tightening of input norms, that is, the decrease of the planned amounts of input material per unit of output. Thus not only is there a tightening of the plan, an elimination of slack, as the plan comes up the levels of the planning hierarchy from the firm to Gosplan, but there is also an additional tightening of the plan which results from the very methodology used by Gosplan to hammer out the balances in the final draft of the plan.

Is the Soviet supply system efficient? Both Russian and American writings—see especially the studies contributed to this committee by Professors Granick and Berliner—speak often of the defects in the operation of the Soviet supply system, of its frequent inability to satisfy the basic commandments of a supply system; namely, to get materials to consuming enterprises in the required quantity, quality, and time, and in the cheapest way possible. And these writings discuss what Soviet firms have had to do to counteract these deficiencies: padded orders, excess inventories, staffs of "expediters," "pushers," vertical integration of firms so as to assure sources of supply and so on. The deficiencies in the operation of the supply system are caused by the interactions among three factors: deficient supply planning, inefficient operation of the supply bureaucracy, and the prevalence of overall tight planning which leads to the chronic condition of sellers'

markets and materials shortages. In my paper I discuss in some detail only the first of these causes—the deficiencies of supply planning. One major planning defect is that at times the actual balances worked out by Gosplan are not true balances, they are unrealistic. That is, they assume output levels of certain commodities which are greater than can be expected from the amount of input materials allocated to the production of these commodities. A second major planning problem is that the annual supply plan is frequently late. There are repeated reports of yearly plans not reaching the enterprise until February, or March, or even later.

A third effect is the lack of coordination which often occurs between the supply plan of an enterprise and its output and financial plans. A fourth defect concerns a number of very serious weaknesses in the handling of the final stage of plan construction, the bringing of the plan down to the level of the enterprise in the detail necessary for operational purposes and the establishment of actual interfirm buyer-seller relationships.

How significant are these supply deficiencies in the overall operation of Soviet industry? How much of a drag are they on Soviet industrial growth? It is difficult to say. But some indication that they were not insignificant was given at the 20th Communist Party Congress in 1956, where it was claimed that the eradication of supply deficiencies would alone lead to a 10 to 15 percent increase in industrial output.

This may be an exaggeration, yet the impact of supply deficiencies might have been even greater if not for the presence of one of the most important operating criteria in the Soviet economy—the priority principle. A large part of the possible negative effects of the deficiencies of supply planning on industrial growth were lessened because there were low priority buffer sectors (mainly the consumer oriented sectors) to absorb the shocks of these deficiencies.

In summary, the picture of Soviet supply planning which emerges is not characterized by finely calculated balances, but rather by a combination of rough balances, pressure and priority. Its aim, though hampered by serious deficiencies, is to concentrate efforts on the achieving of a high level of economic growth.

Before closing, a few words about what the future may hold. One is tempted to argue that Russia's supply problems will grow worse. For as an economy develops the number of interrelationships within it becomes larger, thus intensifying the difficulties of supply planning. But there are two important factors which may counteract these difficulties and may make supply less of a problem and less of a drag on growth in the future. One is the possible use by Soviet planners of modern mathematical tools and high speed electronic computers to set up, and solve rapidly, huge sets of equations which will assure the construction of a balanced plan. In my paper, I discuss in some detail what the Russians are saying and doing about the adaptation of mathematical economics, especially input-output techniques, to the problems of supply planning, and what significant benefits they may very well reap from these advanced methods. They are only in an early stage of research and experimentation (as one Soviet economist told me in Moscow last spring: "The people working on rockets are already using computers; we economists are a little behind"), but

those involved in the development of computer techniques are filled with enthusiasm and are confident that in the near future the effectiveness of these methods will be demonstrated.

A second factor which may also be significant in counteracting supply planning deficiencies is the fact that as an economy develops, in addition to the number of interrelationships increasing, the radical changes in the structure of the economy decrease. As a result, supply relationships become more stable, thus greatly easing the problems of supply planning.

My discussion has concentrated on centralized supply planning methods. It is, of course, at least theoretically possible for the Soviets to employ more decentralized methods, ones that would embody certain principles of Western market type economies, that would give lower level units more freedom to make their own economic decisions. However, the efficacy of any meaningful decentralization would depend upon the significant improvement of the Soviet price system—a price system which up to now has been incapable of playing an effective role in Soviet industrial supply.

Thank you.

Representative BOLLING. Thank you.

Mr. Curtis?

Representative CURTIS. Thank you, Mr. Chairman.

Each time I feel that I want to make this statement, to compliment the witnesses on the fine papers they have prepared and the testimony they have given. It has certainly been outstanding. Everyone who has commented to me about the caliber of the papers that have gone into these hearings has remarked that they are outstanding and constitute a most unusual collection.

I wonder if I could ask the panel this general question, excluding your own paper: What is your opinion of this collection? I assume that you all have had a chance to read the other papers, too. Do you think that, overall, this committee has collected together some meaningful data and information?

I wonder if I could ask each one, starting, possibly, with Mr. Blackman.

Mr. BLACKMAN. I would be very happy to acquiesce your opinion in this regard. I feel the same way. I spoke with Mr. Lehman over the phone about midway through the publication of the second volume, expressing my feeling it was tremendously helpful and impressive, and I think that appraisal has been put into the summary statements of several critics in the third issue.

I find the hearing papers of great prospective use in the academic field and teaching, and also certainly I think they should prove a fine source of policy guides for you to deliberate on.

Representative CURTIS. Incidentally, I am not asking this to get any accolades for the committee. It is for one reason. I feel this technique is so good, of having papers printed ahead of time, so that people will have an opportunity of evaluating them, and it does make a difference to this committee if we have a pretty good caliber of response.

Mr. Nutter?

Mr. NUTTER. I can only second these remarks. I believe this is a very good and very useful compendium of opinions on Soviet eco-

nomic growth, the Soviet economy, and its relation with the United States. And, as a matter of fact, I think it is more complete, and covers more ground, than any other such publication I know of.

Mr. HARDT. I certainly agree with these comments. I would like to stress the timeliness of the effort being placed by both the committee and most of the panelists on this subject at this time. At this time, as was pointed out by Mr. Dulles on Friday, we must more seriously consider the dangerous implications of Soviet industrial and economic growth vis-a-vis the United States. But at the same time, we should also be aware of the new flexibility in the Soviet development. There is hope for a change in the future. There are many things that are going on in the U.S.S.R. which we must watch very carefully. So this is an unusually good time for a group of us to prepare papers, to get together in a forum, and to grapple with the meaning of current developments, so that we can evaluate the two elements of the timeliness: One, the danger; and the other, the hope.

Representative CURTIS. Thank you.

Dr. Levine?

Mr. LEVINE. At the danger of perhaps making this sound a bit like a Russian Congress, I will make the motion unanimous.

I do feel that the committee has performed an extremely valuable service, not only to the profession working in Soviet studies, but to the community at large, in that the committee has brought together a significant part of the independent efforts that have been going on in the universities and the independent research institutions in the country, and has concentrated the current results of these efforts in an extremely valuable compendium of papers.

Representative CURTIS. Thank you very much.

One bit of constructive criticism that I have received has been that the committee might have gone into the economies of the satellites and the so-called allies in the Western World. My comment was that we could not do everything at once, but it seems to me that that would be a meaningful further study. I am wondering if the panel would agree that that has been somewhat of a limitation in what we have been doing, and whether or not that further field might be helpful.

I would assume that it is, but is there any objection or any comment?

Mr. NUTTER. I have nothing in particular to say, except that I think it is a very good idea. Perhaps that is something to do next year.

Representative CURTIS. Now, if I may get into some of the meat of this: One point on this question of growth in absolute terms it seems to me your papers pointed out, but I wanted to be sure. Growth, as we do measure it in gross national product, or attempt to measure it, shows up more in the heavy industry sector than in other sectors, and possibly that is one explanation for a rapid rate in the Soviet right now vis-a-vis the United States. Is that a fair conclusion, or is there an exception to that?

Mr. HARDT. It certainly is a fair conclusion.

Representative CURTIS. Next, this question: It seems to me that when a society first begins to build its plant, you have a greater incidence of growth that shows up in our methods of measuring growth; and as a society is more mature and has already built considerably of its plant, is that generally true? And would that relate to the

Soviet picture? In other words, I am seeking for understanding, in economic terms, of one possible reason that we see this higher incidence of growth as we measure it vis-a-vis Russia. If there are other reasons, I am interested in those, of course, but it seems to me these are two very basic factors.

Mr. HARDT. That is certainly true. But I think the point that should definitely be kept in mind is the single-value concept, that these projects which are oriented toward military and other power considerations receive primary emphasis. With only one set of masters to serve, expansion to meet their needs has been far simpler. This, I think, has been a very important factor in past Soviet growth.

Now, in terms of expanding industrial capacity from a small base, of course, it is true that this is a factor in the rapid Soviet industrial expansion, but it should not be exaggerated.

Representative CURTIS. The way we measure growth, as to gross national product.

Mr. BLACKMAN. I would not take exception to your remarks, but I would comment in this regard: You get to some extent a fictitious measure or impression of the rapidity of growth at an early stage of economic development from several sources, one of them being the fact that more of the goods transactions enter the market or exchange relation and are counted. The coverage of your production index increases secularly, and this in statistical language imparts an upward bias to the index on this account. You do not include or capture, in your statistical net, household and artisan and small-scale activities at the outset of industrialization. Then these get either put through the market in private firms or go into state enterprises, in the Soviet Union, and they appear as apparent increments to production, whereas they may be in part substitutions or transfers.

Representative CURTIS. On that point that Mr. Hardt makes, the deliberate concentration through the political government in that sector would tend to—well, it would mean a concentration in that area and an impoverishment in other areas.

Mr. BLACKMAN. The attempt is to try to find—this is basically an insoluble task—but to try to find a comparable period in our own history back in time which would reflect a similar influence.

Representative CURTIS. I wonder if we can have, because it is this forced draft to a degree through the political government to do something which other societies have developed not through a forced draft but through a gradual and probably a more balanced way. But that kind of development would not show up. It would not show up in the peculiar manner in which we have had to measure what we call economic growth. We are using gross national product, essentially, which is, I guess, the most meaningful way. And yet I think all economists seem to agree that at best that is a limited measuring stick.

Now, one other thing that bears right on this question: I am wondering whether or not a great deal of this rapid economic growth as it is measured in this set of statistics of gross national product—and it relates to this business of concentrating on building a production plant—is not the result of a recovery from World War II, where there was a considerable decimation of the Soviet plant, what they had. Likewise, in Western Europe, and likewise in Japan, because the rate of growth, measured as we have been measuring it in those countries, is quite

comparable to that in Soviet Russia. And I am wondering whether that is not a factor that is being overlooked considerably.

One reason, perhaps, the growth did not occur immediately at the end of the war is that apparently there are economic forces at play that give a lag to that.

Would anyone comment on that? I am relating it to the fact that I think must be regarded as significant, that there has been a similar rapid rate of growth in Western Europe, measured by whatever we are talking about, which is likewise in the countries that rebuilt their destroyed plants.

Mr. Nutter?

Mr. NUTTER. Yes, sir; I think that is correct, that the rate of industrial development in the Soviet Union, as I would measure it, since, say, 1948 or 1950 has not been appreciably more rapid than in Western Germany, France, Japan, and a few other countries in the West that are growing very rapidly at the moment.

I think this is connected partly with recovery from the war and partly with other things. That is to say, we simply have a period of very rapid economic development in France, for instance, that is not directly the result of war damage or anything of that sort. It is just one of those mysterious things that happen.

We also have a very rapid period of growth in West Germany. There are a number of reasons one might give for that. I will not go into them, but they are not all directly associated with war.

You raise the question whether this rapid postwar growth may not have been overlooked because it started later in these Western countries than in the Soviet Union. Of course, it did, and in the case of Japan and West Germany because they were our former enemies and hence were militarily occupied for several years, the economies being kept in check and prevented from growing.

Mr. BLACKMAN. I wonder if I might address a question to Professor Nutter.

Representative CURTIS. That is a good technique, and the panel should realize it is proper and sometimes it is most helpful.

Mr. BLACKMAN. The question is this: We do see, in the Soviet Union, a rapid increase in industrial production in the early postwar years. This presumably is in good part connected with the war damage itself. How long would you give to the strictly war influence in expansion which we have seen since?

Mr. NUTTER I did not intend to suggest that I thought the war and recovery from the war were the sole direct causes of this rapid development we have observed in certain Western countries.

In the case of Russia, it seems pretty clear from most of the statistics that the level of industrial production had reached its prewar peak once again by sometime around 1949 or 1950, so that from that point of view the growth since has not been a recovery in levels of production. There are, of course, other very complicated factors involved. For instance, there was a good deal more plant still to be replaced, and a good deal was replaced after 1950. And there were a number of complex relations with the satellites and with war reparations—with countries from which war reparations were taken—that would influence the whole picture. But I would say, just in simple terms, that the recovery of production had occurred probably by 1950, so that

the growth since then could not be attributed simply to recovery in industrial production.

Representative CURTIS. I had suggested there was a lag, and the reason I suggested it was: Has not this rapid rate of growth been more or less confined to countries that had some industrialization and had had their plant heavily damaged in World War II? Is that true? Are not those rapid rates of growth limited to those countries?

Mr. HARDT. I would not consider the stimulous of recovery from war as primary explanation for industrial growth. I would caution rather that periods of time where postwar recovery is necessary are somewhat atypical for comparisons with what may be called normal periods.

The argument as to the advantages of wartime recovery—and certainly there are great disadvantages from wartime damage—is that the replacement capital is largely in new plant and equipment that make the industry more competitive than other industries without material war damage. And this, moreover, is a stimulus to industrial growth in various countries. This line of argument is not automatically true, and it certainly has not been a necessary drive to instill a felt need for industrial expansion in the Soviet Union.

Representative CURTIS. I would think if the phenomenon is true—maybe my premise is wrong, but if it is a phenomenon that the countries or societies that have shown this most unusual rate of growth as we measure it are those very societies that were to a degree industrialized, and who had had their plants destroyed to some degree, some considerable degree, in World War II, it would seem to me that if that is a fact, there is something hidden in there that may be a coincidence, but it seems to me it is much more than a coincidence. And maybe we just did not realize the lag that occurs immediately after a war. And it takes time for this to show up. I do not know that this is so. I am simply posing it. But I think my premise is correct, that these countries are the only ones that show this tremendous rate of growth.

Mr. NUTTER. If I may, sir, I think that I would say this: that your statement is undoubtedly correct, that the countries you mention are growing more rapidly than others in the West—aside from some countries classified as underdeveloped—and they happen to be countries that suffered war damage, that were involved in the war, and so on. I am not sure that, if I were to venture an opinion as to why this condition exists, I would attribute it simply to recovery from physical war damage. I believe that in each of these countries there has been a very real revolution, if I may use that term without implying anything about violence. There has ben a very real social revolution, political revolution, and so on, which in part was sparked by the war and the difficulties that were encountered in different ways in these countries. And I think that perhaps has had as much to do with the changes since then as the simple impetus of having a job to do, having a plant to rebuild, and getting down and rolling up your sleeves and getting it done. I think that is important, and I think it explains why one has short spurts of growth, but I am not sure that it will explain the whole phenomenon.

If I might just add a word there, it is not even so much the question of replacing plant or bringing in new plant as it is of learning so many things that one does learn in a war period, and these come out

to learning new techniques. You get closer together with people who are your allies. You do not get together with those fighting against you, but the conflict inspires you to try to do things that you ordinarily would not do. There is a learning process involved to contribute to a sudden change in rates of developement.

Representative CURTIS. And vis-a-vis the United States, which was the arsenal of democracy, as it was called, at least it expanded its basic industries considerably, steel and so forth, during World War II, right before and during. I think the compasion there is interesting in relation to this way we happen to measure economic growth.

Did you have a comment?

Mr. BLACKMAN. I was just going to say I appreciate Professor Nutter's additional insights in this problem. I think still another point to consider is the impact of our own foreign aid programs. They may have been, at the outset, largely directed, as was UNRRA, to war damage restoration, but they had a continuing and spill-over effect, perhaps even a multiplier action, later, in the development of these former war-torn economies. And this aid has been a buoying factor pushing up the rates of growth of at least several of the nations you have mentioned, and beyond the simple recovery aspects.

Representative CURTIS Now, if I may get into another area: We were talking about the rate of growth as we happen to measure it, which I think is a very limited way to measure it. And what I think all of the papers in this particular set bring out is an analysis of the structure of growth, which seems to pinpoint these questions, the quality, but where the growth is seems to be more meaningful. I was going to say that in that context, one of the later summation papers, which relates growth to the maturing of a society in its industrial area, was quite helpful.

Now, in breaking down this structure, where growth occurs, the thing that does not bother me, but raises a question is that I cannot imagine why the United States at this particular time would want to expand agricultural production. I would question whether the United States would want to expand steel production within its capabilities. And pinpointing certain areas, I think that it would be a question, even if we could have a wand, whether we would want to have expansion in the United States in certain areas.

Yet, then, examining Russia's economy, you can certainly see areas where there really has to be expansion, like in agriculture. I do not know that they will be able to solve their agricultural problem, but certainly there is that tremendous need.

In analyzing Russia and in relation to these papers, too, or any economy, transportation is certainly one way of indicating how well an economy is going and how well it can continue to go, and power is another. In fact, one of the papers I think brings it out.

I would add a third, that has not been mentioned, communications. In all our papers there has been very little comment on the limited communications system in Russia compared to the United States.

I would add another thing, too—the productivity of the individual. We keep talking about consumer satisfaction from a standpoint of, I assume, ultimate values. But disregarding the ultimate values

which we might have in a society, does not consumer satisfaction have a very direct bearing on the productivity of labor? And have we not in this country concluded that the standard of living of the laboring man has a great deal to do with his productivity? And if so, just purely from economics, a shortage of housing or cramped quarters, as is described here, and other limited living standards, are going to be a deterrent to economic growth. I think that is a fourth factor in this thing.

I wonder if the panel would comment on the four that I have named.

For an economy to continue to grow, would they not have to expand their transportation system? Would they not have to expand their power facilities? Would they not have to expand communications? And do they not have to, particularly Russia, as the papers indicate—if they are going to go ahead in productivity, they have a real population problem, and the papers seem to indicate they are going to have to make their gains through the increased productivity of the labor force, and do not living standards have a great deal of bearing on whether they are going to be able to do that?

Does anyone want to take a crack at that?

Mr. BLACKMAN. I will start off.

You raise a number of complex and very interesting questions.

I intended to suggest in my summary statement this morning that Khrushchev's Russia is perhaps caught in a bit of a dilemma. In order to achieve a viable economy today and promote growth, I do think that, as you suggest, it is necessary to provide some incentives in the way of consumer goods to the long-suffering Russian man in the street, simply from the productivity standpoint.

However, as this man gets a few good things in life, he may be more vocal and, contrary to Dr. Hardt, he may exert certain pressures on the government to devote more and more resources to his satisfaction; in which event, although this was necessary at the outset, to prop up growth rates, the diversion of resources to consumer goods over a number of years will detract from capital formation, and there will be a retarding growth effect. Now, there are many other points you raise. I will bow out here and let others take over.

Mr. LEVINE. I wonder if in addressing myself to your last question I could also address myself to one of the early questions that you asked.

Representative CURTIS. Certainly.

Mr. LEVINE. That was concerning the measurement of growth when you are talking about an economy that is just beginning.

This is, of course, a factor to take into consideration. And Professor Blackman's stressing of the growing statistical coverage of economic output is also a very significant factor here.

But I feel that perhaps we tend to overstress the arithmetic of measuring growth in early periods as opposed to later periods.

It is true that as you grow, each percentage increase means a greater and greater absolute increase. But it also means that your productive capacity is more capable of producing this greater and greater absolute increase.

As an economy develops, it does run into physical supply problems, that the economist calls diminishing returns. This is a limit on continued growth ad infinitum at high levels.

But also I have the feeling that the important factors contributing to diminishing rates of growth in Western type economies are to be found not only on the supply side, but also on the demand side. As Western economies developed, we ran into demand problems. We ran into problems of insufficient effective demand if not of real existing demands. And this, as important as anything else, was one of the factors contributing to a slowing down in the rate of growth.

In the Soviet economy, this factor is fundamentally different. The construction, the formation, of demand, in the Soviet economy, is fundamentally different. This is the point that I think Dr. Hardt was stressing. When you have this one value aspect to your growth, the slowing down factor which comes from the demand side is not nearly as important as it was in Western economies.

For example, you have neither the problems of demand insufficiency nor the growth in the effective demand for consumer goods. More specifically, you do not have the growth in the effective demand for services. And services are one of the slowest growing, just from the aspect of growth—one of the slowest growing elements of our production. You do not have this in the Soviet system.

So it is dangerous to draw analogies from the West as to future rates of growth in Russia—strict analogies. None of the panelists here have drawn the strict analogies, and I by no means intend to criticize the analyses presented by the panelists; but some people do draw these strict analogies, and I do not think that they are strictly pertinent.

In relation to the question that is currently on the table, it is true, of course, that all these sectors, do, at various times, appear to be bottlenecks. One of the great powers, if you will, of the Stalinist period, was that he was able to concentrate on the other aspects of growth and kept getting more and more out of the existing plant, say, in transportation, as Professor Hunter has clearly pointed out in his paper.

Maybe this debt has now become due. But also you have an economy which is much more capable of paying off this debt at the present time. The productive capacity of the economy is much greater presently than it was in the 1930's.

I think it is important when we talk about incentives and consumers' goods to realize that it is not so much a question of the absolute level of the standard of living, as far as productivity is concerned, as long as this absolute level is above some bare minimum, where the people are physically capable of working. Once the standard of living is above this level—and it certainly appears that presently it is above this level, in the Soviet Union—then the important thing, as far as incentives are concerned, is the rate of growth of these things, and not just the absolute level, say, compared with Western levels of standard of living. And the Soviet economy is now capable of raising the standard of living of its people, without really seriously drawing funds away from the investment sector.

This is not to say that they will never increase consumers' goods relatively to producers' goods. But if you compare the statements made by the Soviet leaders, and the actual plans, there is as yet, as far as I understand, no indication that there is to be an increase in the relative importance of consumers' goods at the expense of producers'

goods. Consumers' goods still, in the latest plan, are to grow at about 6 or 7 percent, whereas producers' goods are to grow at about 9 percent a year. But 6 or 7 percent every year means a significant increase in consumers' goods and standard of living.

Representative CURTIS. I was not approaching it from the standard of living end of the thing, but I was really more interested in the physical things. One reason our workmen have increased productivity, in my judgment—and this is based on some rather subjective observations—is that they can take home some of their work and do studying at home. I am talking about plant men, men who have to deal with blueprints and so on. And there is ample room where they can do that. Now, if the average space per Soviet worker is what it is, I do not know how in the name of heaven they could do much homework on anything, for that matter.

Furthermore, the limitation on consumer electricity, and so on, is such that maybe they can read by oil lamps, or maybe they do not do any of that. But my observation is that the American workman does quite a bit of self-improvement, which is done outside of his working hours.

But at any rate, just on theory, the limitation on the living standards, it seems to me, in a physical way—the incentive is probably more important, but just in a physical way—I think eliminates worker productivity. And whether they like it or not, they are going to have to put money into housing. And I suspect that it may be one reason they are.

I wanted to raise that point, at any rate.

Did you want to comment?

Mr. HARDT. May I comment on your final point, the one you were just speaking on?

Representative CURTIS. Yes.

Mr. HARDT. This question of labor productivity and labor incentives: I might suggest that we put it, for useful purposes, in the broader context of economic efficiency, and consider it also from several standpoints: Firstly, related to the worker productivity resulting from equipment in the plant; secondly, related to his incentives from the standpoint of what he consumes, which minimally might be considered, productive consumption; and, thirdly, or beyond this productive consumption, something related to his role as a citizen, his consent to be governed, and his satisfaction with what he gets from the economic process.

I suggested using economic efficiency rather than labor productivity, because over the period of the Stalinist rule, there has been a tendency to consider capital as scarce and labor and raw materials, the current factors, as relatively abundant. In this spectrum, I would suggest that from the strictly economic standpoint, and not considering the human values, they have squandered more importantly in the area of raw materials, especially fuels. Moreover, they have a greater problem of deficiencies and a greater urgency for conservation in terms of their own known aims in increasing thermal efficiency, or the efficiency in the use of fuel.

Now, the point I am leading to is that this increased economic efficiency cannot result without alternative costs to them. The reason I put a table indicating tradeoffs in my statement is that I wished to

illustrate that when they do undertake a large-scale housing program, which they are engaged in, which, by the way, will still leave them far below what is considered a sanitary norm, they do this at considerable cost elsewhere; and they do not do this without a strongly felt need.

In terms of providing more satisfaction, going beyond incentives, it would seem to be necessary for a rather basic change in the bases on which they make their economic decisions, in order to be more attentive to things like human needs, human valuations, whether the people are happy, whether they can study at home, whether they have social motivation, and so on.

Representative CURTIS. If I may, there is one area I would like to open up. I was very much impressed, in reading Professor Volin's paper, at the almost exact comparison, I would say, between the Soviet system and the U.S. military system of supply and distribution, procurement, and so on, right on down. I might even include the higher percentage of college graduates among the managers, which one of the other papers points out exists in the Soviet system. It certainly exists in our military, too. And certainly full employment exists in our military sector, and hidden absenteeism is there, but also there is the lack of cost accounting and vast surpluses in certain areas and amazing shortages in other areas, scarcity, the downgrading of the middleman's function in the economic picture, the accumulation of waste. This year the military announced that they are now declaring 26.5 billions of dollars excess properties that they are now going to dispose of. They have been disposing of around $5 and $6 billion a year for the past few years at an annual rate, which goes back to that economic system.

Now, it just strikes me that we can learn a great deal about the problems and the difficulties of the Soviet economy by studying our military's struggles with the same thing, because as nearly as I can learn from your paper, Professor Levine, they use exactly the same techniques.

I wonder if you would care to comment.

Mr. LEVINE. It is remarkable—I think that comes out not only from my study but from many other studies in this committee compendium—the similarity between methods which are used by various economies when they are faced with similar problems. This is so with the American military. It was even more so with the American materials control problems during the war. A study of the methods worked out by the War Production Board, starting in 1943, when the controlled materials plan was actually adopted reveals that these methods were quite similar to the type of supply control methods that the Soviets use.

One of the important differences, of course, is that even during the war we controlled only a minute sector of all the materials supplies that go into industry; and the Soviets are faced with controlling a vastly larger sector. When you just compare the numbers of materials, when you compare 1,000 with the basic three materials or even the approximately 50 subcategories that we were controlling during the war, you see the vastly greater complexity of the Soviet problem.

But it is also interesting if you study the Nazi Germany economy before and during the Second World War, to note the extreme simi-

larity to Soviet methods in the methods that were independently derived by the Germans; and also, I may say, independently, again, by the Americans during the Second World War. All these independent solutions really have a great deal of similarity.

Representative CURTIS. I thank you for your observation.

Incidentally, in World War II, I was in the sector on maintenance of materiel in the U.S. Navy and had some firsthand experience with it, and my first real assignment when I came to the Congress was on the Bonner subcommittee, where we were investigating military procurement and supply. It just struck me that there were so many ares of the military we got into; for example, coffee roasting, the whole business of going down to Brazil and buying the coffee bean and roasting it and distributing it, and so forth. And based on my observations of these techniques of management, and production, and distribtuion, I am quite relaxed when it comes to the future of the private enterprise system in relation to any system of that sort.

The danger, as I think the papers do point out, is that it is true that you can concentrate for a period of time in a specific area through this military type of setup, and the disruption could come because of that. But I think for any long-range economic growth of a society, I just for the life of me cannot see how a system like this can go very far.

If I remembered a little more of my biology, I could give this illustration a little better. But I remember in studying insects that build their shell outside, they structurally just could not advance any further, and that is why the vertebrates finally took over, because the structure was there.

And I find a great similarity in this kind of structure, economic structure, that the Soviet societies adopted, and others, and that we have in the military sector. It might be good for an immediate objective, if you know what you are doing, but from the standpoint of going on into the unknown, and advancing, it certainly does not have the attributes necessary to do that.

Mr. BLACKMAN. I certainly am impressed, as you are, with the similarities between the military-type organization and Russian supply and planning techniques. Of course, there are many distinctions, also. One of these that perhaps should be borne in mind is the fact that they do introduce certain financial or budgetary incentives to efficiency.

Representative CURTIS. They do that in our military, too.

Mr. BLACKMAN. And I have suspected the Army of borrowing from the Russians in this respect when they tried to take certain of their procurement bureaus and give them a kind of market test, and if they could show economies on their costs, they might get a better performance rating.

The system in Russia is kind of economic calculus, where premiums to the firm managers are based on whether they have done better than their planned cost-price relation.

Representative CURTIS. That is one of the similarities that struck me the most, the way they get their money for these various segments of the society in the Soviet industrial organization. It is exactly like one of the military sections gets its, through puffing up its budget, as it were, and passing it on through, and hoping some bureaucracy at

the very top—in this instance, Congress—will give them what they want.

Mr. BLACKMAN. Despite your $26 billion, or whatever that ghastly figure was, of Government or military surplus sales, a good part of our military activity is not involved with sales or markets, and sales and markets do characterize the Russian plant's or firm's life. They get their money from sales.

Representative CURTIS. But this is surplus over what they actually needed through their planning, because the military theoretically have a planned economy. And this is what they overbought. It is not so much obsolescence in tanks and airplanes; a lot of it is in machine tools and things of that nature, the production end of the military. So it is an indication of what I would say are errors in judgment on the planning.

Now, in the Soviet society, that was one question I did not go into, but it is suggested by one of your papers. That is this element of waste. I have always been disturbed that in all our estimates of gross national product and all that sort of thing, we have not got a measure, or maybe there is no way of doing it, but there is such a thing as economic waste. And you can make a tremendous economic error, and it will show up in the gross national product, but nowhere is there an indication that there has been such waste. And I suspect the Soviets with this system have had a similar type of economic waste to that of our military, not from obsolescent equipment but just from overbuying, underbuying, miscalculations, and so forth.

Mr. LEVINE. I think it is important, though, by way of a brief statement, that as to your last remarks about growth and the possibility of functioning, your biological analyogy, there is no doubt that at the present moment the supply system is one of the serious problems in Soviet planning and control. And they realize this. There has been a growing literature and there have been increased discussions on how to improve the supply system.

Representative CURTIS. Do you not think they are going to have to get down to the fundamentals of supply, communications, and transportation, and do something about their basic systems?

Mr. LEVINE. This is one of the problems from the operating side of it. The other problem is from the planning side, when you have these growing interrelationships. And I would just suggest, as I have tried to point out in my statement and in my paper, that they have great hopes for these modern computer techniques that we use to a great extent in modern American businesses. The increased efficiency, the ability to handle great masses of data, which are given to us now through the development of large-size, high-speed electronic computers, may prove to them to be something of great advantage in getting better control of these extremely complicated data problems and better planning of their supply system.

Representative CURTIS. Thank you, Mr. Chairman.

Representative BOLLING. Mr. Lehman, do you have any questions?

Mr. LEHMAN. Thank you, Mr. Chairman.

I have only one question. I would like to open an area that has not been discussed very much this morning, and perhaps Professor Blackman would be the person to whom I might address this question first.

What is the importance of technological innovation in this whole process? What is the outlook for continued technological innovation, and what is the relationship of that outlook to the point which has sometimes been made that the Soviets have borrowed from the Western economies and may now be running out of things to borrow?

Mr. BLACKMAN. I made a brief reference to this general field in the statement this morning. I do not feel, as apparently Professor Thorp does, that the Soviets will fail to generate considerable technological momentum on their own. I feel they have a great capability here, and it seemed to me in his paper he rather discounted this, or minimized it.

Now, everyone is fairly well agreed that the borrowing which they did at a great rate at the outset of their industrialization, taking from advanced Western nations and profiting by the whole previous industrial development, will not go on, not at that rapid rate. But they have the possibility, as I suggested, of much wider application of things they have already borrowed, if they spread them over the economy as a whole.

Beyond this, it is my impression, in our own country, and the Western World, that the rate of technological innovation and scientific discovery, which is the foundation for these applications, has been very appreciable in the postwar period, and most of these, outside the strictly military bailiwick, are continuing to be usable or available to the Soviet borrowing or imitation.

This is an age of rapid technological change and discovery, and the Soviets avail themselves still of the current crop of inventions in foreign nations. And in addition, through their large and growing scientific cadre and application to this field, they are generating very important efficiency improvements in their industrial machine on their own.

Related to technological innovation, it seems to me, and this is the source of buoyancy or stimulus to growth that I meant to stress, is the organizational change, that is very important in the present day Soviet society. They are getting in more and more to the assembly line production of a U.S. sort, and even beyond this they have at least some pretensions to automation and more fully mechanized operations.

These will at least save on their increasingly scarce labor, although perhaps capital shortages may reappear as there very intensive developments are pursued.

So I think I come out on this question feeling that the Soviets have a great reservoir still of advance in their application of known and existing technologies. Moreover, they are continuing to profit by the high rate of technological advance everywhere, to which they themselves are also contributing.

Mr. LEHMAN. Are there other comments?

Mr. HARDT. Yes. On technological innovations or technological progress, it should be pointed out initially that it is very difficult to define. Any changes in output related to any given inputs of capital and current factors are technological progress.

Thus, any improvements in this residual, these packages of things that lead to improvement, are usually called technological changes. So technology represents many things. Specifically, however, we are quite interested in changes which involve the improvements that di-

rectly lead to greater capital efficiency and greater labor productivity. With that general definition in mind, I might suggest that there have been three phases in the Soviet development relative to these kinds of technological change.

The initial stage was one of becoming an industrial country, laying an industrial base. In that period considerable borrowing took place and standardization was made in the middle or late 1930's on the basis of the "best" prototypes.

But then, in the second period, there was a relative technological plateau in which there was largely a proliferation of existing processes. There is a general tendency, apropos of this, to think of Soviet rate of industrial growth as being stimulated by borrowed technology from the West. Actually this is quite overstated.

Now, the third stage apparently is here today. The Soviets are beginning to take more advantage of technological developments again. This was well pointed out by previous papers elsewhere, by Professors Seton and Berliner. Now there is a great opportunity for increased growth based upon technological improvement and this is a factor inveighing against retardation.

The reason for this technological improvement is to increase economic efficiency. The Soviets want, for example, to reduce the inputs of steel per unit of output; therefore, they will improve their metal forming equipment. Or again, they want to reduce the inputs of fuel measured in calories of heating capacity, so they are going to improve the operating characteristics of their equipment.

There is available to Soviet industry a great reservoir of technology. This fact is related to another general question, and that is: will there be retardation in Soviet industrial growth? If they do take advantage of the possibilities for technological improvements, which involve gains in economic efficiency, in the land run there may be great gain for them in stimulating industrial growth. As long as they are operating below the world level of technology, they can continue to borrow, and they have a great reservoir to call on in that regard.

Further on the question of future retardation in the rate of Soviet industrial growth; we should be careful not to assume that it will of necessity occur, especially in the near future.

Firstly, there are identifiable factors which may contribute to acceleration to be balanced against those conducive to retardation. On balance it is possible to conclude that their rate of industrial growth will actually speed up.

Secondly, even were we to assume that factors leading to retardation tend to gain force in any industrialization, we need additional evidence to support an assumption that these forces will effectively slow down Soviet industrial growth in the next 5 to 10 years.

Thirdly, there is good reason to question the assumption that retardation is a normal part of industrialization or economic development even in the Western countries. The findings of Dr. Raymond Goldsmith as presented to this committee last spring suggest a reasonable stability in long-term growth in the United States. Dr. Goldsmith's findings refer to the trend in real gross national product per head, 1839–1959.

Mr. LEHMAN. I think Professor Nutter had a comment.

Mr. NUTTER. These are, of course, just offhand remarks, but I would start, I think, by stressing what has more or less been said so far: that

technology is essentially applied knowledge, and the problem of applying knowledge is simpler if the knowledge is already available and needs only to be applied, than if the knowledge has to be found out. That seems to me rather clear and obvious. And this is what we usually mean by borrowing technology. A country that can tie itself to the coattails of other economies that are developing new ways of doing things and new things to be done obviously has an easier job of developing its technology that one that has to find those things. And in the past, the Soviet Union has been in a position of being able to attach itself to coattails.

Now, I think all that one can say is that the test is yet to be met as to whether the Soviet economy, as we know it, will be able to generate the knowledge as well as to apply it. The problem, it seems to me, is deeper than just finding better ways of producing existing things. That is not such a difficult problem as finding new things.

And here is the one point at which it would seem to me the centralized planning system is likely to be most at a disadvantage. It seems to me almost impossible to plan an invention. I cannot conceive of how one does this, decides that he is going to find something, when he does not know what it is.

One can plan research, and one can put funds into research, and one can have a lot of education, and so on. But the real problem is how that is to be mobilized in the discovery of new things. For this task, I do not believe that the electronic machines are going to be of much use. They are obviously of some use. They make the job of research simpler, and the application of some of the things that are discovered. But there is a test yet, it seems to me, that we will have to be met.

A lot depends on what happens internally in the Soviet system itself, where the signs are pretty strong that the older system of highly centralized planning is gradually—well, if I can use their phrase, "gradually withering away." Something else is beginning to take its place. And this may make a great difference in the future as to what happens.

If I may just finish here on this subject, I would like to refer back to what Congressman Curtis was saying about the difficulty in understanding how such a command economy can continue to grow rapidly. I think there are many economists, including myself, who are surprised that it has gotten where it has gotten. That is, they are like the man who first sees the elephant and says it doesn't exist because it can't; that it is impossible. Well, it does. And it has done things. There are ways to explain what it has done. Whether it can continue is, I think, still to be seen.

Mr. LEVINE. I would just like to make a brief comment seconding Professor Nutter's I think quite pertinent observation and open-mindedness to what the future may hold as far as innovation in the Soviet Union is concerned. You can stack factors on both sides. You can stack a great social and economic allocation of resources to research and development on the side of the possibility of the Soviets developing new innovation, and on the other side you can stack some institutional deterrents. I think these were very clearly stated in Professor Berliner's paper, about the resistance of Soviet managers to innovation in that it upsets the plant. And this was also stated

by Professor Nutter. There are thus some obstacles to the inculcation of innovation.

So I think the best thing that can be said is that the future will demonstrate whether their economy can generate effective innovation of its own.

Mr. HARDT. Mr. Lehman, we have an interesting case study that has rather intrigued me along these lines. There are very ambitious hydroelectric programs underway in east Siberia. There is obviously not, currently, the industrial market for this increased electric power supply. Plans seem to call for transmission of much of that power over enormous distances back to the Urals and European Russia. How will this be done?

The technology for transmission that distance, the voltages that would be required, and perhaps with direct current, which is what they seem to be planning for, has not been developed. Here is a case where the Soviets are on the edge, beyond the edge, of world technology. They seem to be planning to make this technological progress.

And, as Mr. Levine points out quite well, we will just have to wait and see. But we can be skeptical.

Representative BOLLING. I think it is important to point out, in connection with this discussion, that it is probably accurate to say that certain technological fields—I presume certain weapons systems involve technology—apparently have made gambles of the same sort as the one on the hydrotransmission, and with rather remarkable success, particularly in rockets.

Gentlemen, we are very grateful to you for your contributions and your presence here today, and for this very interesting discussion.

With that, the subcommittee will stand adjourned until this afternoon at 2 p.m. in this room, when the subject will be transportation, and the witnesses will be Ernest W. Williams, Jr., of Columbia University, and Holland Hunter, of Haverford College.

(Whereupon, at 11:55 a.m., the committee recessed, to reconvene at 2 p.m. the same day.)

AFTERNOON SESSION

Representative BOLLING. The subcommittee will be in order.

This afternoon we take up the comparisons of the United States and Soviet transportation systems. Professor Williams will cover the structure and growth aspects, and Professor Hunter will discuss transportation policies.

As some of you may know, this subject has long been of special interest to my colleague, Mr. Curtis. We will ask Mr. Hunter and Mr. Williams to read their summaries, after which we will have some questions to ask of them.

Professor Williams.

## STATEMENT OF ERNEST W. WILLIAMS, JR., PROFESSOR OF TRANSPORTATION, GRADUATE SCHOOL OF BUSINESS, COLUMBIA UNIVERSITY

Mr. WILLIAMS. Thank you, Mr. Chairman.

As I noted in my earlier prepared remarks for the use of the committee, my acquaintance with the subject of Soviet transportation in

the last few years has been somewhat limited, and most of the analytical work which I did on the subject was completed some few years bask; to wit, in 1955–56. I have, however, with the benefit of Professor Hunter's good nature, had access to certain statistical materials which he has developed and which I have utilized in the comparisons that I want to present this afternoon.

In my prepared paper, already printed for the use of the committee, I pointed out that there are great differences between Soviet and United States transportation development. A presentation of freight traffic statistics showed that Soviet reliance in intercity freight movement is, in recent years, 89 percent upon their rail system, that intercity truck transportation is virtually nonexistent, in the sense in which we use the term, that the navigable waterways do not lend themselves to intensive development and that large-scale pipeline construction is a very recent phenomenon. Railways also handle the great bulk of all long-distance and suburban passenger transportation, although the volume by air appears to have been increasing rapidly. By contrast the railways of the United States now handle less than 40 percent of our intercity freight traffic and approximately one-third of commercial intercity passenger traffic.

Soviet traffic growth has been both rapid and sustained. The prewar level was surpassed by 1948 and from 1950 to 1957 the volume of freight transportation doubled. The rate of growth has been sufficient to result in a gain in freight ton-miles performed in comparison with the United States. Thus, U.S. freight transportation was 2.7 times as great as that of the Soviet Union in 1940. By 1957 it was only 1.9 times the Soviet performance and Soviet traffic growth does not show the effect of recessions which have characterized the American experience. Growth since the reestablishment of the prewar level has been far faster than that in the United States. Thus, Soviet freight traffic was, in 1957, 2.7 times the 1948 level.

In the same year, U.S. freight traffic stood at 1.25 times the 1948 level. A comparison of 1956 with 1947 for the United States would show a slightly better result, but there can be no doubt that the Soviet traffic growth has been considerably more rapid and that no important setback has occurred. Soviet railways nearly equaled U.S. railways in freight ton-miles in 1954 and, in each subsequent year have exceeded their U.S. counterparts by an increasing margin. In 1958 Soviet railway ton-miles were almost 50 percent above those of U.S. railways. Of course, 1958 was a depressed year for U.S. rail traffic, but the present year will also witness a poor result with a probable increase in the disparity.

Soviet reliance upon the railroad is understandable in the light of the existence of a considerable network of well located main lines at the beginning of the Soviet period which were capable of intensified development, the absence of a network of long-distance improved highways and the difficulties with water transport already referred to. Moreover, the Soviet economy in its present state of development does not require the flexible service of highway carriers for the movement of relatively small consignments and for the servicing of dispersed industry. The philosophy of Soviet economic planning calls for minimizing the use of resources in transportation in order that more resources may be made available to high priority heavy industry.

Finally, quite apart from the heavy investment in improved highways which would be required to permit its development, freight transportation by truck is far more expensive both in the Soviet Union and in the United States than is transportation by rail except for very short distances. Soviet planners usually calculate breaking point at about 25 miles. And this is true whether we refer to money costs or to inputs of materials, fuel, and labor.

While Soviet rail plant and equipment has been technologically obsolescent by comparison with that of the United States, a sizable program of reconstruction and reequipment is now underway. And a significant increase in efficiency is recorded both in the operating statistics of recent years and in the financial returns. Certain data developed and supplied by Professor Hunter indicate that between 1950 and 1958 the number of small two-axle cars was cut in half while the large four-axle cars were more than doubled in number, thus permitting an improvement in the relationship of revenue freight to the tare weight of cars, reducing the burden of yard work in assembling the small cars on the rear of trains, and reducing maintenance expenses in view of the relative youth of a considerable portion of the car inventory. A gross addition 2,500 locomotives has characterized the same period and has undoubtedly contributed largely to the improvement in train speed and load. Meanwhile the mileage equipped with automatic block signaling has more than doubled and other improvements in signaling and train control have worked to favor the more intense use of the rail system.

The most distinctive characteristic of Soviet rail practice is the intensity with which plant and equipment are utilized. A vast traffic expansion has occurred with only modest addition to line mileage. Table 1 below compares freight traffic density on the rail systems of the United States and the U.S.S.R. in net ton-miles performed over each mile of road per day. It will be observed that Soviet density in 1950 was not quite twice that of the U.S. system—that by 1955 it was 2.8 times the U.S. figure and that in 1958 Soviet density was four times that of the United States.

As table 2 will show, this very high density of freight transportation is accomplished by an even higher density of train operation, for Soviet freight trains remain substantially lighter on the average than U.S. trains. Gross ton-miles per freight-train-hour is generally considered to be the best single index of the road performance of freight trains. This datum for 1958 on the Soviet railroads was approximately equal to the same datum for the United States in 1932. Nevertheless, as will be noted from the table, the Soviet railroads have been gaining in relation to the U.S. performance, albeit slowly. The rapid extension of electrified and dieselized services over the next few years should have a significant effect upon this index; for the shift in power will tend to bring up both train weight and train speed which, taken together, determine this index.

Of all the elements of rail plant, freight cars are perhaps most intensively used by comparison with the U.S. practice. The proportion of empty to total car mileage is lower, the average load in comparison with capacity higher. But the largest difference is in the car turnaround between loads. This has been below 6 days in recent years for the U.S.S.R. compared with some 15 days in the United States.

Comparison of the elements of car turnaround makes clear that most of the difference is accounted for by the very much lower detention of cars by shippers and receivers for loading and unloading. This is, perhaps, the sharpest single indication of the different relationship between shippers and carriers which prevails in the Soviet Union.

The tables which are attached, Mr. Chairman, are self-explanatory and have been referred to in the text.

Representative BOLLING. They may be included in the record.

(The tables referred to are as follows:)

TABLE 1.—*Freight traffic density*

| | U.S. net ton-miles per mile of road per day | U.S.S.R. ton kilometers per kilometer of road per day |
|---|---|---|
| 1950 | 7,569 | 14,116 |
| 1955 | 7,964 | 22,038 |
| 1957 | 7,886 | 26,790 |
| 1958 | [1] 6,900 | 28,840 |

[1] Approximately.

TABLE 2.—*Freight train performance*

| | Gross ton-miles per freight-train-hour | | Net tons per train | | Freight-train speed miles per hour | |
|---|---|---|---|---|---|---|
| | United States | U.S.S.R. | United States | U.S.S.R. | United States | U.S.S.R. |
| 1950 | 44,352 | 17,819 | 1,224 | 815 | 16.8 | 12.5 |
| 1951 | 46,407 | 20,162 | 1,300 | 839 | 17.0 | 13.6 |
| 1952 | 49,113 | 20,973 | 1,296 | 859 | 17.6 | 14.4 |
| 1953 | 51,750 | 23,008 | 1,301 | 894 | 18.2 | 14.6 |
| 1954 | 53,897 | 23,566 | 1,287 | 936 | 18.7 | 14.2 |
| 1955 | 55,770 | 26,920 | 1,374 | 1,002 | 18.6 | 15.3 |
| 1956 | 57,071 | 28,154 | 1,422 | 1,052 | 18.6 | 15.4 |
| 1957 | 59.186 | 29,841 | 1,439 | | 18.8 | 15.9 |
| 1958 | 60,695 | 32,376 | | | | |

Representative BOLLING. Professor Hunter.

## STATEMENT OF HOLLAND HUNTER, HAVERFORD COLLEGE, HAVERFORD, PA.

Mr. HUNTER. Mr. Chairman and members of the committee, my name is Holland Hunter. I teach economics at Haverford College, Haverford, Pa., which, as you know, is a Quaker institution. I shall try very briefly to add to the weighty remarks of my friend Ernest Williams, and draw on my paper to highlight two policy observations.

The first is that the passenger automobile creates exceedingly complex problems for a modern industrial civilization, and that one small aspect of Soviet-American competition concerns the character of our answers to these problems. The second is that differences in geography and history must qualify any conclusions for the United States drawn from the Soviet record, or vice versa.

I take as my text on the passenger car problem, the exchange between Chairman Khrushchev and Mayor Christopher of San Francisco, as they rode from the Mark Hopkins to the airport on the freeway. This was early in the morning. Khrushchev saw car after car

with a single person in it, on his—or her—way to work, and said: "We do not need such extravagance." Apparently Mayor Christopher politely conceded that there was some extravagance here. When you consider the problems our great cities have been wrestling with—in steadily mounting traffic congestion, traffic injuries and fatalities, smog, lack of parking space—you can see a real dilemma.

The American consumer has voluntarily been choosing to commute individually in a large car. Sometimes he may have no alternative. His wife shops in similar fashion, and the family car is also used for billions of miles of intercity travel. These large cars are used, moreover, to establish the owner's standing in society. But since we all try to use cars in this manner, we get in each other's way, and we find that many other aspects of our lives suffer damage. Our problem is to balance the individual's desire for pleasant surroundings and efficient living arrangements with that same person's desires for individualized transportation which expresses his personality and gives him inexpensive mobility. We have not found any simple and automatic answer.

In the U.S.S.R. to date, as my paper indicates, the individual passenger automobile has been pretty well suppressed. Last June, when a Government planning institute published an analysis of the campaign to catch up with the United States, the report said:

> It is not planned in the next few years to overtake the United States in numbers of automobiles—

and added:

> To reach the American level of private automobile production in the next 15 years would require the diversion of material resources in extraordinary amounts. At the present stage this would be manifestly irrational.

On the other hand, at least one major academician has called for greatly increased passenger car production, observing that mobility is an important element of a high standard of living. There have also been signs of a view that a great nation has not really arrived until it has serious traffic jams in its capital.

You may recall in this connection that when Chairman Khrushchev got back from his American and Chinese trips, he made a remark in Vladivostok that was quoted last Friday by Mr. Dulles:

> We will make more rational use of automobiles than the Americans do. We will develop public taxi pools on an ever broader scale; people will get cars from them for necessary trips.

My guess is that such a policy would be associated with widespread use of large aircraft for intercity passenger travel. But will the Soviet citizen be satisfied with taxi pools in cities, and plane or train travel between cities? Won't he feel that his rising living standard should include a car of his own? If he does, would the Soviet Government be using resources sensibly in following the American example? Perhaps the U.S.S.R. will be forced to provide a car for every family, whether it is sensible or not. As the U.S.S.R. moves toward our stage of development, we are likely to see a lot of vigorous argument about these matters.

The second point concerns implications that might be drawn from United States-U.S.S.R. comparisons in the transportation field. The point is simply that there may not be much carryover from one situation to the other. The U.S.S.R. has a more northerly location and a

more continental climate than we do. It is less well favored with conveniently located lakes and river systems. The Soviet regime did not inherit as lavish a railroad system as we had at the end of World War I. Consequently their choice of carriers has been different from ours and the best answer for them would not be identical with our best answer. Similarly, while we can benefit from studying Soviet transportation practice, you gentlemen can rightfully be skeptical if American spokesmen for one carrier or another seek to draw conclusions for our policy from material in the Soviet record. We must find our own answers ourselves.

I took the liberty of taking some figures from the latest Soviet statistical handbook, which add to or modify some of the tables in the paper I submitted last summer, and these are appended.

Representative BOLLING. They will be included in the record.

(The figures referred to are as follows:)

ADDENDUM. REVISED OR SUPPLEMENTARY TRANSPORTATION DATA, U.S.S.R., BY CARRIER AND YEAR, 1957–58

(See tables 1–10, pp. 195–199, Pt. I: Comparisons)

| | Railroad | Sea | River | Road | Pipeline | Total |
|---|---|---|---|---|---|---|
| 1958 ton-kilometers | | | | 76.8 | | 1,604.5 |
| 1958 tons originated | 1,616.9 | 70.8 | | 6,474.4 | 94.9 | |
| 1958 average haul | 805.0 | 1,501.0 | | 11.9 | | |
| 1958 passenger-kilometers | | 1.4 | 4.0 | 42.6 | | 211.7 |

NOTE.—1958 road operated: Steam, 102,200 kilometers; total, 122,800 kilometers.

*Freight-train performance*

| | Gross ton-kilometers per freight-train hour | Average weight | | Average speed | |
|---|---|---|---|---|---|
| | | Gross | Net | Excluding stops | Including stops |
| 1957 | 48,310 | 1,887 | 1,089 | | |
| 1958 | 52,460 | 1,972 | 1,126 | 38.5 | |

*1958 railroad freight traffic, by major commodity group*

| | Billion ton-kilometers | ALH | Million tons originally |
|---|---|---|---|
| Coal and coke | 348.9 | 729 | 478.8 |
| Timber | 178.4 | 1,469 | 121.5 |
| Petroleum and products | 154.0 | 1,369 | 112.5 |
| Mineral building materials | 113.9 | 352 | 324.2 |
| Iron and steel | 90.6 | 1,026 | 88.3 |
| Grain and milled products | 80.8 | 1,129 | 71.5 |
| Ores | 59.9 | 554 | 108.1 |
| Other freight | 275.5 | 883 | 312.0 |

Source: TsSU, "Narodnoe Khoziaistvo SSSR v 1958 godu," pp. 539, 541, 544–551, 555, 557, 561, 572–573.

Representative BOLLING. Mr. Curtis?

Representative CURTIS. Mr. Chairman, I want to compliment the gentlemen on their papers. They have certainly added a great deal to our knowledge of this problem.

I was just looking to see if one of the papers did not have figures showing the amount of rail mileage in czarist Russia compared to what they have today; because I think one of the other papers made the remark that this was an area where to a large degree the Soviet economy was using what had been banked by prerevolutionary Russia.

Is that accurate, or how much have they added to what they did have?

Mr. HUNTER. When the Soviet Government began effective operations in the middle 1920's, the total mileage that they inherited was 74,000 kilometers, and the figure for the end of 1958 is 123,000. So it has gone from 74 to 123, which is less than a doubling.

Representative CURTIS. And in that period of time, certainly not much growth. But would that include double tracking? I guess they did do some of that; did they not?

Mr. HUNTER. Those figures are for their first main track. Double tracking has increased proportionately, and as Professor Williams would be able to explain better than I, the capacity of main lines has been greatly improved, through double tracking and other things; so that the failure of first main track to triple or quadruple does not show any lack of a sensible policy just for dealing with heavy industry.

Representative CURTIS. How about heavier rails? Have they replaced their rails with heavier rails, like in this country? I think we have largely replaced ours since World War II.

Mr. WILLIAMS. We have continually added, and our standard sections today are customarily heavier than those we installed prewar, although since dieselization, the tendency has been to settle on a relatively moderate section of 132 pounds or less. The Soviet railways have certainly followed a similar practice, but not with the same standards that we normally apply here. They have confined their motive power to relatively light axle loadings, normally of the order of 42,000 pounds, whereas with our steam power we attained axle loadings running 60,000 to as high as 72,000 and in some few cases more than that. Hence, they have not required the same heavy section of rail and their heavy main line standard has generally been of the order of 98 pounds, which is lighter than ours, but no doubt adequate, given the character of the axle loadings taken care of.

Representative CURTIS. In the suggestion that they may go to heavier loadings and greater speed, would that require, in your judgment, replacement of their present trackage, or could their present trackage handle that?

Mr. WILLIAMS. I think as a matter of fact that one of the important arguments for transition to diesel power is the fact that heavier train loading and train speed both can be achieved without a very heavy investment in permanent way. That follows from the fact that, just as we have discovered, diesel axle loadings can be much lighter than axle loadings with heavy steam power, the weight of the unit can be spread over a larger number of axles advantageously, and certain other characteristics of diesel power make the requirements for heavy rail virtually disappear.

You can use quite satisfactory diesel units on very light rail section, and we are accustomed to using diesel road switches of considerable capacity on rail sections as light as 65 pounds. So I think one

reason for that is that by a conversion to diesel power they are saved the necessity of raising their bridge loadings materially, probably by replacement of a great many structures, and also relaying track, which would be necessary to accommodate a heavier class of steam power.

Representative CURTIS. On their freight cars, do they have a variety of types, or is there a predominance of—they have oil cars, for example.

Mr. WILLIAMS. Oh, yes. They have a variety. They have not so far as I can make out gone to anything like the degree of specialization that we have in this country, but they necessarily have tank cars in a number of designs for not only petroleum but other bulk liquid movements, refrigerator cars of several types, and on the whole they have avoided some of the specialization that we have made, for instance, in the fittings of cars to deal with automotive parts and things of that sort, which we adjust to particular requirements, and they have relied on standard box and gondola cars to a considerably greater degree.

Representative CURTIS. I was not sure I heard you. You say they have gone into refrigerator cars more?

Mr. WILLIAMS. Well, they have to the extent that perishable movements appear to require it.

I have not seen any specific figures that I recall at the moment setting forth what proportion the refrigerator cars are of their total fleet, but I suspect it is smaller than our own.

Representative CURTIS. Now, one question, on these specialized cars, going to this question of turnaround. Do we find a differential in turnaround average? Is it more for common use than the specialized?

Mr. WILLIAMS. Yes; that is very often true. One of our longest car turnarounds is on the petroleum tank car, and we have fairly long turnarounds on other types of specialized equipment, some of them running above our average. The speed of turnaround in specific service, though, depends a good deal upon the character of that service, the amount of empty mileage that is involved, and the nature of the shipping and receiving industries and their ability to handle cars promptly.

Representative CURTIS. I am not too familiar, on this particular point, with rail, but in barges they actually to a degree use the barge itself as a type of storage. Is that at all true in any of our specialized cars? Would that at all account for this long turnaround?

Mr. WILLIAMS. Well, I would be inclined to think that it may be less true of the specialized than of some of the nonspecialized, primarily because specialized cars tend to be in relatively short supply. We are always a little bit behind the requirements, there, and perhaps to a greater degree than in the car supply generally, so that there is pressure to move them.

Yet; it is true, certainly, that industrial enterprises will occasionally use cars for storage, even of a specialized type.

Representative CURTIS. The pertinency of all this I think is clear. Of course, I honestly, in spite of all the help of your papers, and they have been very helpful, and other papers I have read, I for the life of me cannot understand how the Russian industrial system has de-

veloped on such a limited transportation system, particularly when you get into the details.

I note in Mr. Hunter's paper you have made the remark that they have done it, and I guess I must accept that, although again, getting into some of these details, it is hard to reconcile the needs of transportation by shippers with what is available. Particularly when we come to a transportation system which requires that the shippers conform to its problems, rather than vice versa.

I was just thinking of the inventory problems created, as well as warehousing and maintaining production lines. It just would seem to me that the problems in that area for production are made so difficult that it just is incomprehensible, to be very honest.

Mr. HUNTER. Part of the difficulty in getting historical perspective may be that what we consider normal involves really quite a lavish volume of plant and equipment; so that we are surprised when a country that does not have that much capital finds it can make do with a smaller stock. We can, if we need to, get a great deal more out of our railroad system than we ordinarily do. I forget the precise figures now, but at one point in my book I hunted them up; and our stock of freight cars during World War II was smaller than it had been in 1932. The length of road operated was similarly smaller. And yet the output of our equipment during the war—you could say probably that during, say, 1943 and 1944, for the first time, we were beginning to approach some kind of reasonably full use of our plant and equipment. Since then we have slid back to a pattern of underutilization.

Representative CURTIS. I was going to comment on that. In fact, this, I think, might be taken as somewhat critical of our own system, where you point out I think 40 percent of our freight is carried by rail. Is that about what the figure is?

Mr. WILLIAMS. Yes.

Representative CURTIS. As to whether we really are being as efficient as we might in this great transportation area. From reading some of the analyses of the use of the rails in this country during World War II, certainly the saving of manpower—that was one thing that impressed me greatly, the greater use of manpower by trucks, for example—was considerable. And I am not at all sure but what a 40-percent figure for rails is a good economic figure. It seems to me maybe we have gotten the mix too rich.

Mr. WILLIAMS. I think that is certainly an appropriate question to ask, and particularly in the light of the fact that we have, as you say, in railroad transportation, a method that is remarkably economical of inputs of labor and of fuel and of maintenance materials, as long as you are dealing with a haul of some length, which enables you to get the economy that is inherent in the railway method of operation.

The contrast, however, between the Soviet performance and the performance which we achieved during the war is by no means as great as might appear from a comparison of present figures. Our car turnaround, for instance, was in the order of 10.8 days at the best performance of the war, and moreover the Soviet figure requires some adjustment to be strictly comparable. The evidence suggests (1) that they understate the car stock from which the car turnaround is

computed; (2) that their concept of active cars from which the turnaround is derived is different than ours; so that when you make all allowances, in all likelihood, their performance has not been on a comparable basis, better than something of the order of 7½ or 8 days, compared with 10.8, which we achieved during the war.

The comparison of these statistics, I might add, is a very difficult thing, because the concepts are not the same, and in Soviet statistics they have a way of shifting from year to year, sometimes, without notice.

Representative CURTIS. The use of the piggyback with the truck on the flatcar, or whatever device used, I would imagine has cut down turnaround considerably. Am I correct in that?

Mr. WILLIAMS. Well, it has not cut down the average turnaround for the average car stock very much, because it is still a small part of the whole. But cars that are operating in the piggyback service make remarkable results, so that against, say, 40 to 43 miles per car day, which is common for the car stock as a whole, we may in some piggyback services accomplish as much as 400 or 500 miles per car day. The turnaround, of course, in terminals is very rapid, and there is a tendency to move them in the fastest and most satisfactory train service.

Representative CURTIS. The piggyback is increasing quite rapidly, is it not?

Mr. WILLIAMS. Very rapidly; yes.

Representative CURTIS. And does there seem to be any leveling off period yet that is foreseeable?

Mr. WILLIAMS. No; we are still in the process of extending it to parts of the country where it has not hitherto been used, and it seems to catch on in an increasing variety of services as time passes. I do not see any evidence that it is likely to level off in the near future, at least not for economic reasons.

Representative CURTIS. That brings me to a question of Dr. Hunter in the beginning.

You made this remark:

> It is clear the failure to provide an elaborate latticework of feeder lines like those of the West has not interfered with the growth of Soviet heavy industries.

And I presume that there is this lack of feeder lines in the Soviet, and there is not the roadway, road network. What is the answer to that? Is everything concentrated right on the main lines?

Mr. HUNTER. Heavy industry is concentrated in five or six major districts, and there are good trunk lines joining them together. And in a place like the Eastern Ukraine, which has been industrial since the 1870's, there is a reasonably good local network of feeders. But by comparison with what we have in the eastern part of the United States, or what you would find in Western Europe, it is a very lightly developed grid system. And yet every big factory will be located on a rail line or spur.

Representative CURTIS. I do not want to interject this note. I do not want it to be misconstrued. But I notice our military are always worried about the problem of the United States under attack. It would seem to me from a military standpoint this would be an exceedingly vulnerable position to be in.

That leads up to another observation, which is this, and I question it just to get your comment. The statement is made:

**It was also made clear in World War II that the relatively sparse Soviet railroad network was not a decisive barrier to effective military operations.**

It was not decisive to the extent that the Soviets were able to eventually win, but it seems to me, at least from what I have read, on the problems that the Soviets were faced with, that this was probably decisive in creating their vast difficulties, even though they may have been able to overcome it in other ways.

Mr. HUNTER. Well, this requires technical and engineering judgment that I do not have. There is in Soviet writings on the subject a good deal of discussion about how during World War I the Germans had quite an elaborate network on their side of the eastern front and used it to shift troops from one part of the front to another; and the Russian armies were hindered then, through not having lateral connections. You had to go way back in and then come out on some other major route.

But apparently now armies move a good deal more in military vehicles rather than by rail.

Representative CURTIS. I was thinking not so much of the mobility of armies as I was, again, thinking of the base of production upon which modern military operations are based. And in World War II, of course, the Strategic Bombing Command was directed to economic targets, as it were. And transportation, of course, was probably the key target. And if this is true, I think it should be explored from the standpoint of trying to judge whether or not Soviet Russia really intends to be a military threat to countries abroad; because if this is true, I frankly do not think that they are too vulnerable themselves to be such a military threat. And maybe what they are saying, that they are not, should be taken a little more seriously.

This is a very delicate subject to explore here, but I bring it out only because it relates to the economics of this. It relates to the economics in another sense, of whether or not, granted Russia has reached the point of development it may have in developing its heavy production—and we have seen this rapid economic growth—such a transportation system can bear the normal industrial growth, such as other societies have had, when it goes into the other and possibly more difficult areas of development?

Mr. HUNTER. Well, Russian writers themselves have been debating this, and there is a school of people who see a need for a really substantial building program for new railroad lines, especially in western Siberia.

Somehow or other, over the last 30 years, although each of the 5-year plans has put on the docket a good many thousands of kilometers of new line, the railroads have not gotten the materials to build them, and the railroads still have found it possible to move even more freight than the plans said they would have to. And so I visualize a sort of hardbitten bureau of the budget organization somewhere that doles out, from quarter to quarter and year to year, the building materials, and so on, who have been holding out on the railroads, in such a way that the railroads have just been able to manage. And maybe they will continue to do that.

Representative CURTIS. What if they do this job they anticipate in the agricultural section? Transportation on feeder lines, whether rail or truck, farm-to-market roads, or whatever, become exceedingly important in handling any increased agricultural products and projecting their 7-year plan in agricultural products on to this system of transportation and the projections in the 7-year plan of transportation.

Is it your judgment that the two make sense? Do you think that they could go in the agricultural sector that way, with only the increase in transportation they have projected?

Mr. HUNTER. There is current emphasis on the building of storage capacity, grain elevators, and so on; so that the seasonal peak can be spread out over several months; and that in itself, of course, takes some of the pressure off the transportation system. Then there has been doubt expressed at these hearings, I believe, about whether the agricultural targets will in fact be achieved.

Representative CURTIS. Yes, that is very true. It does seem to me in many respects you can use certain key things, like transportation, and I add communications, and I have added a couple of others, incidentally, to test whether or not a well balanced economy, one that they might be projecting, or even a lopsided economy that they project, is possible. And those things become even more important, it seems to me, in estimating an economy where we do not believe their figures in any area.

Now, you have concluded that with the use—the efficient use of the rail system they have—it is important to have accomplished this economic growth in the more industrial areas of an economy. I guess that GNP is adjusted down to what we think or other economists have said is reasonable. But applying the standard of the transportation system to it, I wonder if it is realistic.

Mr. HUNTER. I remember once hearing a visitor to this country twitting us about our attitude toward the rest of the world. He said, "The trouble with Americans is that you object to the rest of the world because it is so un-American."

The Soviet transportation system, like the whole Soviet economy, is un-American in the sense that, based on what we are familiar with, it is distorted. It is stripped down. It makes do without many of the things that we have come to feel are necessary or desirable.

Representative CURTIS. I am trying to strip it down to its fundamental economic work, disregarding the human beings that are running it, as to whether physically this amount of equipment and so forth, raw materials and so on, actually can flow back and forth. And looking at it from the standpoint of the transportation problems that our country has in, say, the same sector, some of the things have been very well brought out in the paper—the explanations of some ways in which this has been done. But I still come back to wondering whether the boasts of the Soviets as to their actual production have been adjusted downward sufficiently, in light of not just this transportation system, but the communication system and other essential systems in any economy.

Mr. HUNTER. There might be some indication that orders of magnitude are correct. If their GNP is 40 to 45 percent of ours, and if

their freight ton-miles by all carriers are half of ours, those two are in the same ballpark.

Representative CURTIS. Would you have an additional comment?

Mr. WILLIAMS. I think there is a consistency between the GNP estimates and the reported freight traffic data. Some aspects of your questions, though, I think go to some other matters.

I find, in looking at the relatively limited mileage of the Soviet railroad system, a strong implication which seems to be borne out by studies of the industrial sector that there is highly centralized heavy industry that is necessary with a transportation network of this kind.

I find more difficulty in understanding how the agricultural product has moved. And it does not reflect itself in that incipient stage when it gets somehow from the farm on to the commercial transportation system in the statistics that I have been exposed to. But particularly in the areas of newer agriculture development, there is not any sort of a collecting network by rail, so that quite clearly the rail system has got to be fed by other forms of transportation on which, I think, primarily because of the way in which the statistics are reported, we do not get very satisfactory evidence. But there must be feeder movement by truck, as well as by water, to the extent that that is available, since the railroads in many of these areas clearly do not perform the gathering function from the source of the farm product. In the older developed areas, where the network is more adequate, they undoubtedly do.

I would think that the ability of the present system to sustain traffic growth is very considerable, provided that the economy stays within the present territorial bounds—that is to say that over this rail network, particularly as electrification and dieselization progress, considerably more ton-miles can be put. But unless the system is expanded, of course, the location of additional industrial expansion is fixed by the nature of the network and will have to go into areas where it is already established.

Representative CURTIS. That may be the answer to one of the problems posed in one of the other papers, where the Soviets apparently were trying to encourage eastward movement and also into new areas, as opposed to the old metropolitan areas. Possibly this liquidity that you mentioned lies behind the difficulty they have experienced in bringing about those movements.

Mr. WILLIAMS. Of course, their policy has been the opposite of our own. We have always used transportation as a method by which to induce the opening of new territory, the developing of new industry, and the like. One gets a distinct impression here that the planning of industrial growth proceeds from other considerations, largely, and that transportation is supplied only when, as, and if it is shown to be required in connection with it.

In other words, they have stood the developmental cycle, so far as we have known it, so far as the role of transportation is concerned, pretty much on its head.

Representative CURTIS. I think maybe you have put your finger on a mental block in my own thinking. It does stem from that basic concept that you mention. And we in this country have opened up areas by opening up transportation; and now, divorcing it from that,

from an economic standpoint, it is hard for me to conceive of how you do it differently, because transportation is so necessary.

Mr. WILLIAMS. I think you can do it differently in concept. Although, clearly, you cannot found an industry in an area which is devoid of transportation, you can proceed differently than we did in development of our railroad network, for instance, in which particularly in the West we pushed railroads out and occupied territory before there was any population and before there was any clear evidence as to the nature of the traffic that would be developed. We ran that process into a considerable overexpansion, which is a part of the difficulty that our railroad system has been in for a number of years.

If, however, you plan an expansion and expect particular locations to be developed, then certainly you can pinpoint your transportation development much more directly to the industry or agriculture, or whatever that it is going to serve.

Thus, transportation would not be serving an inducing purpose at all, and you would not expect, as we did, that economic activity would follow transportation. Here the two would be closely meshed and presumably would go forward as nearly together in time as possible.

Representative CURTIS. This is the last point.

One thing that has not been mentioned a great deal: What about coastal shipping in Russia? I guess there is not too much of that.

Mr. WILLIAMS. Well, there are great difficulties. Of course, there are some rather significant operations in the Sea of Azov and some in the Black Sea, as well as some in the Baltic, but the difficulty is that long distance coastal transport is virtually impossible. You can hardly conceive of dealing with a transportation movement on an economic basis from ports on the Baltic to ports on the Black, or by the same token, from ports on the Black to ports in the Far East. So the internal lines of movement, I think, tend to be more important, because there is not a connected coastline in the sense that we know it.

Representative BOLLING. Mr. Lehman.

Mr. LEHMAN. When we were dicussing the manpower situation, it was indicated that the 7-year plan would achieve fulfillment only if manpower resources could be found within existing sectors of the community, not depending upon natural increase. Are the central authorities looking for any release of surplus labor from the transportation network?

Mr. HUNTER. The railroads have been on short rations, I think, as far as labor force goes for quite a long while. And there is visible in the 1965 targets not a fall in the labor force on railroads but a very small increase. So perhaps their contribution is intended to take that form.

Mr. LEHMAN. Would this, then, also go over into some of the other aspects of transportation development? Did the Soviet plant managers in this field have economic leverage enough to obtain improvements from the higher economic authorities. Or are they going to have to continue to struggle along?

Mr. HUNTER. Are you visualizing a plant manager who might want to have additional transportation capacity that he could use?

Mr. LEHMAN. Yes. I am talking about a plant manager who might want a better rail service.

Mr. HUNTER. Well, the focus for this sort of thing now would be in the Sovnarkhoz, you know, rather than in a ministry. And it is hard

to guess how that would work out. It would be out in the field more than it used to be.

Mr. LEHMAN. You do not have any particular evidence one way or the other on that?

Mr. HUNTER. No.

Representative CURTIS. Just one question, on the skills, the labor skills, needed in operating a railroad: Is there any long leadtime as far as training men for that is concerned? Would the Soviets be confronted with such a problem at all if they wanted to expand rapidly, so far as the limitations of skills is concerned?

Mr. WILLIAMS. There certainly is a training problem. They seem to have experienced such a problem almost from the beginning of their railway development and have accommodated in a different way than is customary here. Generally speaking, we have relied, in the railway service, on what might be called an apprentice system of training, in which exposure on the job is the process by which experience and command of the job is gained.

They, on the contrary, have developed a very wide range of technical schools for all manner of railroad skills, both operating and maintenance; the presumable reason for it being the necessity for training personnel on a shorter cycle than the apprentice system would permit.

On the whole, I think they must now face a considerable training problem, because one of the more difficult things in the transition from diesel power to steampower is in the maintenance skills. The operating skills are not such a serious matter, but the maintenance skills may present some difficulty.

However, I would not imagine that the problems of training would impose any very serious obstacle to a comparatively rapid expansion. This is not really a long leadtime thing, as certain kinds of advance technical education would, I think, pose the problem.

Mr. HUNTER. This is a prestige industry in the U.S.S.R., a prestige occupation, and the people in it are typically young, certainly by comparison with American railroad personnel. So I do not think it would be accurate to visualize a slender base on which to build.

Representative CURTIS. That is a very interesting thing. I had not realized that. The personnel are relatively young.

Do they use women in that? They do quite a bit, do they not?

Mr. HUNTER. Yes.

Representative BOLLING. Do I gather that the conclusion is, then, that in terms of the next plan, transportation as such will not be a bottleneck?

Mr. HUNTER. That is the way it looks, especially since, having been burned once, in the early 1930's, the authorities would move rapidly, I think, during the next year or so if a real strain were to develop.

Representative BOLLING. Theirs is an austerity form of transportation; ours is a luxury form of transportation, even in the industrial sector. To this you both agree?

Mr. HUNTER. Yes.

Mr. WILLIAMS. Yes.

Representative BOLLING. Do you also agree with Mr. Hunter's answer to the previous question, Mr. Williams?

Mr. WILLIAMS. Yes. I see no indication that any serious limitations ought to develop. I think perhaps in the long run, and particularly if the Soviet Union is able greatly to expand their production of consumer goods and to move into a much larger variety of consumer goods, they may well run into some of the problems of distribution that are very commonly known and understood in this country, and which among other things call for a transportation less mass in its character and more flexible in its capabilities. But until that time comes, it seems to me that the present course of development is quite capable of being adequate.

Representative BOLLING. You used the term "able to expand." I would like to add to that "should the Soviet Union choose and be able to expand."

Gentlemen, we are very grateful to you for your contributions and papers and for your presence here, and for this discussion.

And with that, unless either of you have a further comment you wish to make, the subcommittee will stand in adjournment until tomorrow morning at 10 a.m. in this room, when the subject will be "Agriculture," and the witnesses, D. Gale Johnson and Arcadius Kahan, of the University of Chicago, Nancy Nimitz, of the Rand Corp., and Lazar Volin, Foreign Agriculture Service, USDA.

(Whereupon, at 3:30 p.m., the hearing was adjourned, to reconvene at 10 a.m., Wednesday, November 18, 1959.)

# COMPARISONS OF THE UNITED STATES AND SOVIET ECONOMIES

WEDNESDAY, NOVEMBER 18, 1959

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMIC STATISTICS OF THE
JOINT ECONOMIC COMMITTEE,
*Washington, D.C.*

The subcommittee met at 10 a.m., pursuant to recess, in room 1304, New House Office Building, Hon. Richard Bolling (chairman of the subcommittee) presiding.

Present: Representative Bolling, Senator Javits, and Representative Curtis.

Present also: John W. Lehman, economist for the subcommittee.

Representative BOLLING. The subcommittee will be in order.

This morning, we examine the area of agriculture. The subject has been divided in three parts: "Structure and Growth," which is being covered by D. Gale Johnson and Arcadius Kahan; "Costs and Prices," by Miss Nancy Nimitz; and "Agricultural Policies," by Lazar Volin. We will proceed in the usual manner with summaries by the panelists without interruption, followed by a general discussion in which all are invited to participate.

Mr. Johnson.

## STATEMENT OF D. GALE JOHNSON, UNIVERSITY OF CHICAGO, CHICAGO, ILL.

Mr. JOHNSON. Since 1953 Soviet agricultural output has increased by approximately 50 percent. The factors responsible for so rapid a rate of increase include the new lands program, the corn program, higher prices paid for agricultural products, reduction in the feed required to produce a unit of livestock products (particularly important in the case of milk), and increased mechanization that has resulted in some improvement in the timeliness of crop operations. In addition, I believe that weather conditions have been relatively favorable, especially in 1956 and 1958.

The large increases in output called for by the 1965 plan are most unlikely to be met. According to the goals the official index of gross agricultural output is to increase by 70 percent between 1958 and 1965. This would require an annual compound rate of increase of almost 8 percent, starting from a year when climatic and other conditions were extremely favorable. Since it is unlikely that there will be a marked expansion in sown area, the increased output can be achieved only through higher yields per unit of land. There exist

numerous possibilities of increasing yields—all crops in the nonblack soil areas—this is the area mainly north of the Ukraine and west of the Urals—silage and hay crops everywhere and possibly a small increase in grain yields in the major grain regions. But such increases will not come easily or quickly and, on the whole, do not seem to approximate the large increases required to meet the goals.

Since our paper was published in the compendium, a new Soviet statistical handbook has become available. It includes far more data on agricultural output than has been previously available. For the first time in more than two decades an index of gross agricultural output has been presented. Mr. Kahan and I find ourselves in the somewhat embarrassing position of having presented an index of gross agricultural output in a paper in the compendium that indicates a greater increase in output than is claimed by the Soviet statisticians. Not only is our situation an embarrassing one; it is also unique. This is the first instance, to our knowledge, in which an index of output constructed by research workers outside the Soviet bloc has shown a more rapid rate of growth than has been officially claimed.

The tabulation accompanying my paper presents three estimates of gross agricultural output for the Soviet Union. The official index has been converted from a 1913 base to a 1928 base. The other two indexes were the indexes published in our paper. It will be noted that there exists rather close correspondence between our and the official indexes between 1926 and 1938, except for the year 1930. Otherwise the differences are in the order of a few percentage points.

The estimates for 1930 differ significantly but this is probably due to the inclusion of livestock inventory change (there was a substantial decline in livestock herds in that year) in the official index. The agreement after 1938 is less close.

The Soviet index of gross agricultural output indicates that the increase in output between 1928 and 1958 was 79 percent; our indexes indicated an increase 90 to 95 percent. Since our index of gross agricultural output was based on official output data for individual commodity groups, where available, the differences in the indexes for several years raised a number of serious and difficult questions. We constructed new indexes based entirely on published Soviet data for the 11 commodity groups that we used previously. We also checked various official Soviet estimates of gross agricultural production for the period from 1913 through 1935.

Our tentative conclusions may be stated as follows. First, the increase in agricultural production between 1913 and 1928 has been substantially exaggerated in the official index. The earlier indexes indicated an increase between 1913 and 1928 of about 6 percent instead of the 24 percent claimed in the new index. Part of the higher increase in the new index is due to revisions in the estimates of gross output of individual commodity groups, that is, the revisions downward of 1913 data, but not all of the excess can be accounted for in this way.

Second, the new index seems to provide consistent estimates of output change within the following periods, but not necessarily between them—1913 through 1921, 1926 through 1938 or 1939, and 1950 through 1958, except possibly for 1957. Third, the indexes for 1913 through 1921 and for 1950 through 1958 seem to be generally consistent with

what one would expect, if one accepts the officially published data for the output of the commodity groups and does not adjust for the change in territory. Fourth, the output indexes for 1926 through 1938 or 1939 are quite definitely exaggerated relative to the indexes for the fifties.

Consequently the official index underestimates the change in agricultural output between the late twenties and the fifties. The degree of underestimation is about 10 to 15 percent.

Except for the reservations that we have for the accuracy of recent data on grain and milk production, we believe that our indexes provide a more accurate reflection of the growth of Soviet agricultural output since 1928 than do the official indexes.

Our measures are a reasonable approximation of the changes in the amounts of farm products available for consumption or other nonfarm uses. Our indexes of net agricultural output, in which we made some adjustments for comparability of the grain and milk output series over time, indicated approximately the same increase in output as our gross agricultural output index. Thus we would urge caution in the use of the official indexes of agricultural output until we know more about the methods used in constructing them.

Thank you.

Representative BOLLING. Thank you.

The table of indexes attached to your summary will be placed in the record.

(The table referred to is as follows:)

*Indexes of gross agricultural output, Soviet Union, 1913–58*

[1928=100]

| Year | Official index [1] | Index, 1926–27 weights [2] | Index, 1958 weights [2] | Year | Official index [1] | Index, 1926–27 weights [2] | Index, 1958 weights [2] |
|---|---|---|---|---|---|---|---|
| 1913 | 81 | | | 1939 | 98 | | |
| 1917 | 71 | | | 1940 | 114 | 120 | 118 |
| 1920 | 54 | | | 1945 | 69 | | |
| 1921 | 48 | | | 1946 | 77 | | |
| 1926 | 95 | 97 | | 1947 | 98 | | |
| 1927 | 98 | 95 | | 1948 | 110 | | |
| 1928 | 100 | 100 | 100 | 1949 | 113 | | |
| 1929 | 98 | 101 | | 1950 | 113 | 124 | 119 |
| 1930 | 94 | 104 | | 1951 | 105 | 113 | |
| 1931 | 92 | 92 | | 1952 | 115 | 129 | |
| 1932 | 86 | 82 | 79 | 1953 | 118 | 129 | 126 |
| 1933 | 81 | 85 | | 1954 | 123 | 134 | 131 |
| 1934 | 85 | 85 | | 1955 | 137 | 152 | 148 |
| 1935 | 96 | 96 | | 1956 | 156 | 175 | 169 |
| 1936 | 88 | 90 | | 1957 | 159 | 167 | 167 |
| 1937 | 108 | 113 | 105 | 1958 | 174 | 192 | |
| 1938 | 97 | 98 | | | | | |

[1] TsSU: Narodnoe Khoziaistvo SSSR v 1958 godu Statisticheskii Ezhegodnik. Moscow, 1958, p. 350.
[2] In D. Gale Johnson and Arcadius Kahan, "Soviet Agriculture: Structure and Growth," in Joint Economic Committee, "Comparisons of the United States and Soviet Economies," part I, Washington, 1959, p. 204.

Representative BOLLING. Mr. Kahan.

## STATEMENT OF ARCADIUS KAHAN, UNIVERSITY OF CHICAGO

Mr. KAHAN. In our presentation of general trends in the changes of the structure and estimates of growth of Soviet agriculture, we wished to include some tentative general conclusions with respect to

the changes of income of the agricultural producers in the Soviet Union. They were, however, omitted in our original paper in view of the absence of research results at that time, but have since become available.

Changes in the income of agricultural producers are difficult to measure even under conditions more favorable than the ones which exist for the study of Soviet agriculture. Soviet authorities have exhibited extreme inhibitions with respect to the reporting, and sensitivity with respect to the discussing of income changes. Consequently, for years the reports have constituted a conglomeration of conflicting, inconsistent, inconclusive data and statements which have more obscured than advanced our knowledge or understanding of this subject.

The results at which we have arrived, measuring income by the volume of consumption of farm products (in state retail prices) plus the purchasing power of money income after taxes available for consumption and savings for the period 1928–56, indicate an interesting relationship between the output and income changes. During the period of output decrease of the 1930's, income has decreased more sharply than output. The results point to the years 1937 and 1940, the peak years of income during the 1930's, as being at a level of approximately three-fourths of the 1928 per capita income.

During the subsequent period we find a lag in income recovery until 1953, after which the rate of income rise approaches the rate of output increase.

The general movement of the particular index used in measuring income exhibits wide fluctuations, a result both in output and Government policy. The fluctuations took place for most of the investigated period at an income level below 1928, which was not exceeded until 1955 and 1956.

For the period 1928–56 our index points to an increase of about 10 to 15 percent of per capita income, while the increase during 1950–56 was (with some fluctuations) from about 80 to 113 of the 1928 level. For this recent period two general conclusions appear to be warranted. First, after the period of relative stagnation in Soviet agriculture during 1950–53, which was brought about by low prices paid by the state for the marketed farm output, high taxes, and the drastic amalgamation of the collective farms, a period of growth in output as well as in income of the agricultural producers followed. The continuous increase in income at a rate approaching the rate of output rise constituted a serious departure from previous policies. Second, the decrease of the share of farm home consumption in the total net income of the agricultural producers expressed certain changes in Soviet economic policies.

The recent increase in incomes of the agricultural producers had a number of effects upon the Soviet economy, the incentive factor being one of them. This effect is strengthened by the prevalence of over 25 years of extremely low agricultural incomes. It should speak in favor of not underestimating the recent income increases despite the minuteness of the overall 1928–56 income gains.

For the United States the measure of per capita net income of the farm population from agricultural sources, which we used for a comparison with the index for the Soviet Union (on the assumption that

the rate of taxes paid by American farmers has not increased over the period), indicates an increase of over 50 percent for the period 1928–56. And although the variations in income were also significant in our own experience, after 1940 they have all occurred at a level substantially above the 1928 one. Therefore, there should be no doubt that over the whole period the gains in income of the American farm population have by far exceeded the ones made by the peasants in the Soviet Union. At this point, of course, I would like to emphasize that the nonagricultural incomes of the American farmers have increased more than the nonagricultural incomes of the peasants in the Soviet Union.

Furthermore, it would be erroneous to assume that the increase in income of the agricultural producers in the Soviet Union, if real at all, was equally distributed. An equal distribution would at least imply some income gain by the lower earning group in comparison with 1928. Instead, the evidence points to the existence of a strata of higher income receivers in Soviet agriculture, which comprises about 15 percent of the total farm population. The income differential between this group and the vast majority of the farm population could be estimated (for most of the period) at approximately 250 to 300 percent in relation to the income of the remaining 85 percent. The size of the differential indicates a high premium on skill, managerial talent, and political-administrative services.

When confronted with the income stratification of the 1920's, we are led to believe that the majority of the agricultural producers in the Soviet Union find themselves now at about the same income level they were during the beginning of the period which we have investigated.

Representative Bolling. Thank you.

Miss Nimitz?

## STATEMENT OF NANCY NIMITZ, THE RAND CORP.

Miss Nimitz. As other members of the panel have shown, Soviet agricultural output increased notably in recent years, so that this area of the economy can no longer be regarded as stagnant. My aim is to explain how price policy has contributed to agricultural progress.

Between 1953 and 1958 the Soviet Government accomplished a radical reform of agricultural prices, bringing them more in line with costs of production on collective farms. The resulting improvement in incentives, and associated institutional changes, much increased Soviet agricultural potential.

Before reform, the tax involved in below-cost procurement prices was the main tax on agriculture. Such a tax had the advantages of being more or less hidden, and, insofar as deliveries to the state are compulsory, impossible to evade. But while price policy was successful in extracting resources from agriculture to finance industrialization, it also compromised efficiency in almost every area of collective farm production.

(1) Since low prices provided little inducement to deliver to the state, economic incentives were supplanted by direct controls. This led, on the one hand, to excessively minute central planning, and, on the other, to the degradation of machine-tractor stations (the local

instruments of control) into agencies concerned more with securing deliveries than with using machinery effectively.

(2) It was expedient to concentrate the tax on products which farmers themselves consumed and thus had a nonprice incentive to produce; hence the burden fell disproportionately on food products as against raw-material crops.

(3) The system of multiple-procurement prices (that is, a low price for compulsory deliveries and a somewhat higher price for above-quota deliveries) assured receipt of the total tax but distributed the burden inefficiently. Less productive farms, unable to make above-quota deliveries, paid a higher rate of tax. In other words, average price tended to vary inversely with cost, so that backwardness was perpetuated.

(4) The Government wished to prevent comparison of low prices with real costs; therefore, collective farms did not calculate their costs of production. This meant that central planning decisions involving regional specialization, the direction of agricultural investment, choices between alternative technologies, the structure of procurement prices, and so on, were made without benefit of cost criteria. Similarly, the only costs guiding management at the level of the individual farm were outlays on materials; labor did not have a fixed price and machine operations were inflexibly allocated from above.

(5) Finally, the burden of low procurement prices fell more heavily upon collective than upon individual farming. Hence the farmer's income from his private plot exceeded his earnings from the collective, which meant that the structure of incentives was at odds with the ideological aim of strengthening socialized as opposed to private agriculture.

The results of price reform may be summarized as follows:

(1) Average procurement prices received by collective farms increased very substantially. Prices in 1958 were 232 or 396 percent of prices in 1950 (depending on whether 1950 or 1956 weights are used). The structure of relative prices changed in favor of food products, in which price increases were concentrated; depending again on the weights used, food prices in 1958 were 658 or 689 percent of 1950, while the comparable index numbers for raw material prices were 130 or 172.

Average prices of crop products and wool now exceed average collective farm costs (including labor valued at state farm wage rates); meat and milk prices cover three-fourths or more of average costs. Multiple prices have been replaced by a system of single, though regionally differentiated, prices, with provisions for moderate adjustments up in abnormally bad years and down in good years. In other words, for the first time prices will tend to vary directly with costs instead of inversely.

(2) The cash income of collective farms increased threefold between 1952 and 1958, largely as a result of the price changes. The lion's share of this increment went to payments for the labor of collective farmers, which increased fourfold and improved in stability. Within 2 or 3 years, most farms will pay labor entirely in cash at guaranteed rates, a form of payment which favors intensification of effort by farmers and conservation of labor inputs by farm managers.

(3) Rehabilitation of economic incentives made it possible to reduce direct controls: operational planning has been decentralized and machinery transferred from machine-tractor stations to farms.

(4) Calculation of costs of production is now routine on collective farms. This gives farm managers, for the first time, an objective criterion of efficiency. By making it possible to determine net income, knowledge of costs also opens the way to rational taxation of collective farms, and thus to solution of a basic problem of Soviet agriculture, posed by the need to cultivate land of very unequal quality. If the Government chooses to equalize rates of profit after taxes, it can at last provide less favorably located farms with the means of paying reasonable wages and improving their land.

Representative BOLLING. Thank you, Miss Nimitz.

Mr. Volin?

## STATEMENT OF LAZAR VOLIN, FOREIGN AGRICULTURE SERVICE, U.S. DEPARTMENT OF AGRICULTURE

Mr. VOLIN. Mr. Chairman, members of the committee:

1. Agricultural policy has long been in the foreground as a vital national issue in Soviet as in czarist Russia. In one form or another it has emerged at very critical juncture in the history of the country. The recent transition from the Stalin to the Khrushchev regime has been no exception; and this despite the fact that the Soviet Union is no longer a predominantly agrarian country. Yet, it should be borne in mind that close to a half of its population depends upon agriculture for a livelihood and that there is a huge sown area of more than 480 million acres. Agriculture, therefore, continues to be a more important sector of national economy in the Soviet Union than it is in the more industrialized countries of the West.

2. The crucial problem which has confronted Soviet agricultural policy has been agricultural underproduction; that is, the failure of agriculture to meet increasing food and fiber requirements of a growing population which is becoming more and more urbanized. Therefore, the central objective of the Soviet Government has been expansion of agricultural production, but expansion carried out on a collectivist pattern. The statistical picture of the agricultural situation under Stalin was obscured by exaggerated, so-called "biological" estimates of unharvested crops which did not take into account the large harvesting losses. These estimates are now acknowledged by the Soviet Government as having been greatly inflated. A sharp upsurge in agricultural output has become, for political and psychological reasons, especially urgent for the post-Stalin regime.

3. This preoccupation of the Soviet Government with increased agricultural production on a collectivist basis sharply contrasts with the concern of the United States with farm surpluses and farm relief. For in the United States, unlike the Soviet Union, agricultural policy aims primarily at protecting the independent, predominantly family farm enterprise, which is based on private ownership of land and capital, from the adverse effects of depressions and other economic maladjustments. In the process the Government has to grapple with farm surpluses resulting from a rapid technological development,

which the whole socioeconomic environment of American agriculture (including Government policy) encourages. But, however disconcerting in the short run is the surplus phenomenon, it is nevertheless indicative of the great capacity for growth of American agriculture.

4. Climate is more of a limiting factor in agricultural production in the Soviet Union than in the United States because of the short growing season and dryness of an extensive area. Even more important, however, have been the obstacles to the growth of agricultural production arising from ideological preconceptions and objectives of the Soviet Government and the resulting institutional developments. Foremost among these has been the all-embracing state control of agriculture as an end in itself. This led to the forced collectivization in the 1930's of small peasant farming, the horrors of which are only too well known.

In the collectivization process the economic welfare of the Soviet farm population was sacrificed and subordinated to the ideological and economic objectives of the ruling Communist Party. Among these, a rapid and lopsided industrialization with an overriding emphasis on heavy industry acquired the highest priority. Accordingly, agriculture was forced to make a heavy contribution of farm products to the state, little being given in return by the Government to the collectivized peasantry. This naturally had an adverse effect on the incentives and efficiency of farmers with unfavorable repercussions on production.

5. Confronted with a critical or difficult agricultural situation, the Soviet Government usually has a remedy in reserve; namely, increased economic incentives. In fact, the model of the Soviet policy toward peasants may be said to consist of a combination of force, indoctrination, and economic incentives but with varying proportions from time to time.

Under Stalin, force greatly predominated. After Stalin, in order to remedy the weakness on the agricultural front, limited concessions were made to peasants, providing for increased economic incentives. I shall return to this subject in a moment. Now I would like to emphasize the fact that during the post-Stalin era there have been adjustments but no deviations from the basic principles of agrarian collectivism; there has been no decollectivization in the Soviet Union such as took place, for instance, in Yugoslavia and Poland.

In fact, the grip of state and party rule over collective agriculture has been tightened. It is true that a shift of authority from Moscow to the republics and some decentralization of the rigid, highly centralized planning of Stalin's days have taken place.

However, decentralization is not permitted to interfere with national goals or programs which are deemed of critical importance. Among such outstanding recent programs are: Expansion of corn growing to bolster the lagging feed supply needed to increase significantly livestock production; the expansion of the crop acreage, mainly spring wheat, on the virgin lands east of the Volga and the Urals; and the campaign to overtake the United States in per capita production of dairy products and meat.

6. The Soviet control over agriculture has been enhanced by a widespread merger of collectives, and more recently, by conversion of collectives into state farms, owned and operated by the Government

outright with hired labor. A considerable enlargement of the size of collective farms and a reduction in their number followed, with a parallel increase in the gap between the management and the rank-and-file membership. The number of collective farms decreased from more than 250,000 at the beginning of 1950 to about 60,000 in mid-1959. A collective farm in 1958 had on the average nearly 4,650 acres sown to crops, or 3.8 times as much as before the war. Close to 30 percent of collectives in 1957 had more than 4,900 acres of sown area. When it is also considered that the 6,000 State farms averaged in 1958 more than 21,00 acres of sown area per farm, the tendency toward giantism is clearly discernible.

7. Collective farming has been strengthened organizationally by the liquidation of separate state machine-tractor stations in 1958 and sale to collectives of tractors and other machinery owned by these stations. This most important reform of the institutional structure of Soviet agriculture was stanchly opposed by Stalin during his lifetime. It was carried out by the Khrushchev administration primarily to eliminate what was virtually duel management of collective farm operations or, as Khrushchev put it, the existence of "two bosses on the land." But the ability of collectives at present to pay for the machinery out of their increased incomes and the desirability from the Soviet point of view of doing so, was no doubt also a motivating factor in the reform.

8. With a considerable expansion of the state farming sector, the question is beginning to be seriously posed of the eventual takeover of collectives by state farms. Collective farms still predominate, accounting in 1958 for two-thirds of the crop acreage. But state farms, as we saw, had already absorbed many collectives and ideologically they have always been considered a superior type of economic organization, though this is at present officially minimized. How long the coexistence of the two organizational types of Soviet agriculture will continue may depend to a considerable extent upon whether the Soviet Government is willing to extend to all farms the regular wage system now prevailing on state farms, a system which is similar to that in Soviet factories.

It should be noted that the peasants on collective farms are residual sharers in the income after the state secures its share and current production expenses and capital outlays are met; thus bearing all the risks of production without exercising practically any control over management. Parenthetically, the commune type of farm collectives, such as were recently organized in Communist China and existed in the 1920's in the Soviet Union, are taboo as far as the Kremlin is concerned. This was reaffirmed by Khrushchev in a speech to Polish farmers in the summer of 1959.

9. Even more uncertain is the fate of the small private allotment holdings of the peasant families in collectives and of some workers' families and their privately owned livestock. Until recently this small "acre and a cow" farming was highly important in supplementing the often meager earnings of peasants from work in collectives, which frequently made the difference between starvation and subsistence. This type of farming also made an impressive contribution to the national food supply through the limited private market. Because such farming competed with the collective farming economy for

the labor and loyalty of the peasants, as well as for ideological reasons, the Stalin regime came to look upon it with a jaundiced eye and behaved accordingly.

The attitude of Stalin's successors was at first one of encouragement of the small allotment farming and specifically of substantial tax relief as part of the program to increase economic incentives and improve the peasant morale. But in recent years, with the improved situation in the collective sector, the Kremlin's attitude has tended to become more restrictive.

10. From the standpoint of increasing economic incentives to farmers, the most important step taken by the post-Stalin regime was the substantial increase of the very low prices it paid for the farm products which the collective had to deliver. The whole system of deliveries was reorganized, simplified, and made more equitable. Larger incomes of collectives as a result of higher prices and greater output, permitted increased and often more regular distribution to peasants. But the stimulating effect of increased agricultural prices is offset to the extent that there is only a limited supply of high-priced manufactured goods available for farmers to buy because of the imbalance in Soviet industrialization. For the underemphasis on production of consumers' goods has not been sufficiently redressed.

11. The lagging capital investment in agriculture and inputs of agricultural machinery, commercial fertilizers, and construction materials have been on the increase as a result of the post-Stalin policy. But capital equipment is still inadequate to make possible an effective use of labor and land. Measures were also taken to increase or retain skilled labor on farms and to bring agricultural specialists nearer to grassroots. However, the problem of finding suitable managers for the greatly enlarged collective farms apparently has not been solved to the satisfaction of the Government despite the large numbers trained and graduated from the agricultural colleges and vocational schools. Low labor productivity in agriculture has been given considerable concern to the Government which is increasingly stressing cost reduction, economy of operation, and greater incentive for individual effort in both work performance and management.

12. To sum up: Changes and readjustments in agricultural policy which have taken place during the post-Stalin period have had, for the most part, a beneficial effect on Soviet agriculture, as far as this is possible within the framework of the collective system. Certainly, one cannot speak any more of an agricultural crisis. Yet some phases of the new policy appear to be questionable. Among these are the persistent predilection for farm giantism; the excessive emphasis on corn as a means of improving the feed supply; and the still restricted scope of public discussion and criticism of policy measures which often results in costly mistakes, magnified by the system of central planning. In the long run, even the program of expansion on the new lands in the eastern regions, which has been one of the most impressive recent agricultural achievements of the regime, may prove unsound under climatic conditions prevailing in those semiarid regions.

During recent years, however, acreage expansion has been a highly important, if not the most important factor next to the weather, in the rapid expansion of Soviet agricultural production.

The current Soviet emphasis on improvement of yields per acre rather than on acreage expansion as a principal means of increasing production may lead to a slower growth of production under the climatic and institutional conditions prevailing in Soviet agriculture. However, if the large wheat acreage is maintained, the Soviet Union may become a much more important exporter of wheat, competing with U.S. grain.

Representative BOLLING. Thank you, Mr. Volin.

Mr. Curtis?

Representative CURTIS. Thank you, Mr. Chairman.

Prerevolutionary Russian apparently was an exporter of agricultural products. Was it just wheat that they exported? Or did they export cotton in those days?

Mr. VOLIN. They exported all small grains. Wheat, of course, was a very important product. Barley was another important product. To a lesser extent, oats and rye. They did not export cotton. They were importers of cotton. They imported cotton from the United States in fairly large quantities.

Representative CURTIS. From the United States.

I think one of the papers pointed out, possibly yours, that in 1958, I think it was, they attained their prerevolutionary export quantities in wheat. What was their market?

Mr. VOLIN. Mainly the satellite countries.

Representative CURTIS. That was true in prerevolutionary days?

Mr. VOLIN. No; before the first world war, exports went mainly to Western European countries. Germany was an important market, also the United Kingdom, Italy, and the Netherlands.

Representative CURTIS. Do their plans seem to be to try to become an exporter of agricultural products again?

Mr. VOLIN. There were no important official pronouncements or plans in this respect, but I think that if they are going to maintain their present large wheat acreage, it is certainly a possibility that the exports to nonbloc countries may increase substantially, especially in good crop years.

Representative CURTIS. It will be mainly in wheat, though?

Mr. VOLIN. Mainly in wheat; yes.

Representative CURTIS. Now, yesterday, in going into the problems of Russian transportation, there was some question raised about just how the agricultural crops were collected and brought to the railheads and transported. I wonder if more light could be thrown on that, if anyone knows. Apparently there are no real farm-to-market roads. The experts on transportation state that there are no feeder lines to speak of in the rails. And just how have they been collecting what produce they have? Does anyone know?

Miss NIMITZ. I believe that most transport of grain to procurement centers is by truck, and the procurement centers are either on rail lines or at river ports. Certainly the deficiencies of transport are a very grave handicap when it comes to the marketing of perishables. One of the developments in the new 7-year plan which is of some interest is an increased emphasis on primary processing by collective farms themselves, in order to enable them to move products to urban centers without the pressure of avoiding spoilage——

Representative CURTIS. If they use trucks, there must be some system of farm-to-market roads, then.

Miss NIMITZ. They are extremely primitive roads. By all accounts, they are several inches deep in dust in the summer, they may be several inches deep in mud in the spring thaw, and they become muddy again when the rains start in the fall.

Representative CURTIS. I notice in one of the papers, I think in Mr. Volin's paper, a great deal is mentioned about this transportation inefficiency and the problems there. It just strikes me that in any planned expansion of agriculture it is surprising that some attention is not being devoted to this transportation problem; or is it?

Miss NIMITZ. Improvement is to be largely a bootstrap operation, I think. Reliance is on intercollective farm organizations to accomplish construction of various kinds—roadbuilding as well as the building of barns and other productive facilities. It is a decentralized effort, but one which is going to engage increasingly the attention of these intercollective farm construction organizations.

Representative CURTIS. I see; and the storage, of course, would be part of this; would it not?

Miss NIMITZ. Yes; again, the Soviet Union is apparently very deficient in storage facilities, though Khrushchev recently belittled the necessity of a government building program, saying that, after all, the food was to be eaten, and the stomachs of consumers were pretty good storage.

Representative CURTIS. That is good, if you can get it there.

You mentioned that there is some preliminary processing plan now on farms. Up to date, they have not done much of that? Is that correct?

Miss NIMITZ. Well, it has been very primitive, because done on a small scale by each individual farm. Pickling, drying, that sort of thing. The plan now is to build interfarm canneries, and then to market stuff in an imperishable form which places a smaller burden upon the very inadequate transport system.

Representative CURTIS. And at the present time, apparently, there is not much canning and that preliminary processing is done on the farms; is that right?

Miss NIMITZ. My impression is that it is yet relatively undeveloped.

Representative CURTIS. Our transportation people said yesterday that there is some evidence of the development of some refrigeration cars, which they thought were probably being used in the agricultural sector. Could anyone comment on that? What is that for? What kind of produce?

Miss NIMITZ. Fruits and grapes, and so forth, from the south, to send up to the central markets in northern Russia.

Mr. VOLIN. Also butter and meat. As a matter of fact, among pre-World War I agricultural exports, one important export product was butter, Siberian butter was exported. And the problem of refrigeration is important for butter and meat.

Representative CURTIS. Now, in their milk production, they really do not have a fluid milk industry, as I gather. Or do they? How could they have, without refrigeration and some of these other modern methods of transport? Do they have any fluid milk production and distribution?

Miss NIMITZ. I think fluid milk probably accounts for not more than 25 percent of the total milk produced. The rest of it reaches consumers in the form of cheeses, butter, various sour-milk products.

Representative CURTIS. Do they go to pasteurization? Do they do any pasteurization in the milk industry, or any other processing of that nature? I am talking now of fluid milk.

Miss NIMITZ. I think this must be so.

Mr VOLIN. In the cities they certainly do.

Representative CURTIS. That would just be from fairly adjacent farming areas around there. How about these one-cow farms that they talk about? Do they deliver any of that milk, or is that only for consumption by the families themselves?

Miss NIMITZ. Until recently, delivery of a certain number of kilograms of milk by each household that had a private plot was compulsory. These compulsory deliveries have been abolished. However, farmers continue to deliver milk to procurement centers because in some cases their right to purchase manufactured consumer goods is dependent upon the sale to consumer cooperatives of certain quantities of produce.

Representative CURTIS. And in those I guess there is pasteurization and other treatment.

Miss NIMITZ. Yes. Farmers may also take milk to collective farm markets, where they sell directly to the population. I am not sure whether this milk is pasteurized, but it does pass through milk control points, where it is inspected for spoilage and things like that.

Representative CURTIS. There is no real rural electrification, is there?

Miss NIMITZ. It is very lagging, and this is what accounts in part for the backwardness of on-farm mechanization as opposed to field operations, which in the case of some crops are very highly mechanized. The lack of power supply sufficiently reliable and large enough in capacity to run motors of a certain size is what accounts for the fact that mechanization on livestock farms barely exists; water is toted in a bucket, and feed is prepared in a very laborious manner.

Representative CURTIS. It is still animal power, I guess, and internal combustion engines. Not much electrical power.

With the transportation system they have, I have often wondered about the use of tractors and other mechanized equipment which depends on oil utilization. Is there any bottleneck there in some of these big collective farms, or, rather, state farms, where they have sizable tractor operations, et cetera? Do they have adequate fuel deliveries?

Miss NIMITZ. They do; I think. This has never been a problem. I think the big problem in machine operation is maintenance, that is, getting an adequate supply of a proper assortment of spare parts. Fuel is not a problem.

Representative CURTIS. I am frankly fascinated by this transportation system that the Russians seem to have and how they are able to do what they seem to be doing under it. And that is why I am examining things that seem to us, at any rate, like matter of fact problems, like getting the gasoline and the oil that the machinery needs on the farm. But with a transportation setup such as they seem to have, I am just curious as to how they get over the hump on that particular problem, too.

Now, I judged, again relying on the testimony of transportation experts, where my conception of how Russia was set up was apparently quite out of line, that there is a great deal more concentration of industry than I had ever thought right along the main lines, because they say there are no feeder lines. I judge from that there has not been any development of rural factories such as has occurred in this country; and also I happen to have seen them in northern Italy, where they have put factories out in farm areas, so that they could combine the use of labor in the agricultural season, with factory work. Is there any development of rural factories of that nature?

Miss NIMITZ. That is what is contemplated in the 7-year plan. It is to be an intercollective farm enterprise, not a state enterprise.

Representative CURTIS. Intercollective farm?

Mr. VOLIN. It is mainly for the use of the collective farms, factories, and shops, such as brick factories which would serve the collective farms themselves.

Going back to this question of transportation, I would say, having seen how it functions on those primitive roads, it is surprising what the Soviets are able to do with what we would call no roads at all.

Representative CURTIS. There is certainly a lot of time consumed in that progress. Even though they may be able to accomplish it, certainly a great many man-hours go into that.

One of the papers mentioned this problem in the use of fertilizer, which seemed to center around the business of getting it distributed. Is that going to be a problem in their projected 7-year plan? So much seems to be dependent upon increased use of fertilizer; again the problem of transportation and storage and then distribution in the fields. What about that? Which paper was it that commented on that?

Mr. KAHAN. I would like to comment, Mr. Curtis.

A few days ago there was published an article by a Soviet geneticist and biologist, Mr. T. Lysenko, known for a number of his schemes, which touched particularly upon the problem of distribution of fertilizer and manure in the fields, in order to increase the yields as projected in the 7-year plan. He raised the question of the lack of availability of trucks to do it, and eventually the costs which are involved in it.

Apparently what is done by the use of horses and trucks, which are in existence now, they feel, is inadequate. And the article among others, calls for increased investment in this area.

I would like to make just a few comments on the general problems of transportation. As for the problem whether the supply of oil products creates a bottleneck in connection with the use of tractors for many other purposes except plowing and harvesting, the real problem is the inappropriate size of the Soviet tractors, which are very heavy and are not very suitable, or at least they are much more costly for the use of other operations on the farm than are the tractors which we have. So the size of the tractors in some sense was the cause of certain bottlenecks. It seems to me also that the Soviet officials in their anouncements and pronouncements have not acknowledged sufficiently the use which they have made of horses, oxen, and other types of transportation. It is probably because of the impact of the official view, which implies the superiority of mechanical power over animal power——

Representative CURTIS. You say possibly the animal power is greater than they have said?

Mr. KAHAN. No; not that it is greater, but its actual utilization and the use which they have got out of it is probably much greater than officially admitted. And with the further decrease in animal power, which started in the 1930's, efficient agricultural production will be possible only through the increased output of the smaller size type of tractors.

Representative CURTIS. Do you know what their horse population is now in relation to what it was?

Mr. KAHAN. Yes. It was between 10 and 12 million during the last few years, compared with about 30 million before collectivization.

Representative CURTIS. Certainly compared to the United States today, our horse population, it is very sizable. Do they have mules, by the way?

Mr. KAHAN. I would not think so. They have camels and donkeys, but not mules.

Representative CURTIS. Camels?

Mr. KAHAN. That is right. In central Asia.

Representative CURTIS. I wonder: How efficient a beast is a camel on agricultural work?

Mr. KAHAN. I would not be able to comment.

Representative CURTIS. I once wrote a treatise on an attempt to use camels down in Arizona and New Mexico, and there are still some wild ones running around there, some people say; it did not work out.

Mr. KAHAN. Apparently the camel was acclimatized much more over there than in Arizona.

Representative CURTIS. But donkeys they do use; is that right?

Mr. KAHAN. That is right.

Representative CURTIS. Now, in research and development, is that done on the state farms, or is that centralized, say, in Moscow or through the state? Do they have a process of experimental farms such as we do, and is that done on the state farms? What is the system there?

various academies of agriculture, in the various republics and in centralized and decentralized research. The centralized research is of the type of research carried out around agricultural colleges, around the various academies of agriculture, in the various republics and in central institutions, which have experimental type farms attached. The next in line would be a network of experimental stations, primarily depending upon the nature of the crop, in particular regions, on a regional basis, and then they have experimental fields in collective and state farms, where some of the results at which they have arrived in their experiment stations are tested, so to speak, in the farm environment.

Representative CURTIS. Is their system of education in agriculture somewhat comparable to ours? We have, of course, a lot of aggie schools. In fact, most States do have them. Do they have a system of higher education in agriculture, similar to ours?

Mr. KAHAN. Yes. They certainly do. Of course, the problem of the quality of education is something that Mr. Johnson would be able to say more on than I. But certainly as a more general comment, I could say that there are disproportions existing in their education or

training for agriculture, with much more emphasis on the training and the acquisition of technical skills on the lower level, which, the way it seems to me, involves not only training specifically for agriculture.

For example, the number of tractor drivers trained each year is twice as much as is actually used. So this is in some sense acquisition of skill, which is of value for the economy as a whole. It is carried out in the agricultural sector. And it helps, in some sense, to close the gap between an underdeveloped country, with a population not endowed, so to speak, with technical skills as we understand this in the case of the United States, and the more developed countries.

Representative CURTIS. Take, for example, the technicians that Russia has sent abroad, a sizable number. We have a lot of agricultural technicians. Do they have those people in their foreign aid program? I think some of the papers point out we have about 4,500 technicians abroad. I was wondering what proportion of those might be in the agricultural field.

Mr. VOLIN. The answer is "Yes," though not on quite as large a scale as in the case of the U.S. foreign aid programs.

Representative CURTIS. Have we had an opportunity to compare their skills, for example, with those of our agricultural technicians? I am thinking now of quality. I am curious about the quality of the agricultural education received.

Mr. VOLIN. The general consensus among our scientists and technicians who came in contact with the Soviet technicians is that the level of competence is fairly high. They have very large networks of agricultural colleges and experiment stations. I suppose that there is also the same difference that we find between colleges in this country. Some are outstanding in one field and others are outstanding in another field. The Timinyazev Agricultural Academy in Moscow, which was founded probably a hundred years or so ago, is one of the outstanding institutions of its kind. It has a large library, a number of distinguished scientists. There are certain objective difficulties, political difficulties, if you want to put it that way, whch hinder agricultural research, because of the influence of some politically minded individuals, who gained power and had certain scientific conceptions—I would not call them scientific but rather pseudoscientific conceptions—which were different from those of scientists everywhere else. But apart from that, there is no question that the level of scientific research, where there is no political interference, is rather high.

One institution, for instance, which attracted the attention of our scientists was the institute for oil seed crops in Krasnodar, where they have done really remarkable things with the development of sunflower seed varieties, the sunflower being a very important oil seed crop in the Soviet Union, the most important, in fact. They developed sunflower strains resistant to diseases and that had a much higher oil content. This is just one example.

Representative CURTIS. Now, if I may direct attention to the field of general education, the education in the rural areas, I like to think of the problems that we have in rural education, where transportation is one of them. What sort of rural education system do they have?

First of all, as I understand it, they tend to live in the old traditional farm community, rather than out on individual farms. But even so,

they would have a problem, certainly, of high schools, that could not be in those little communities, so there would have to be a transportation problem. Possibly they could have the elementary schools in these villages. But what system do they have, if any, of rural education?

Mr. KAHAN. The prevailing system, for the agricultural population, has been of a 4-year elementary school in the rural areas.

Representative CURTIS. And they are more or less in these little villages; is that right?

Mr. KAHAN. That is right.

Representative CURTIS. With quite small classes. How about teachers? What quality do they get?

Mr. KAHAN. Well, as far as the teachers are concerned, we know only about the number of the teachers, but not about their quality.

In general, I would not underestimate the quality of their teachers, especially during the later period. During the first period, during the 1920's and the 1930's, most probably, when the training of teachers was of short duration, and they tried to cover the countryside with a network of schools, the quality of teachers was probably rather low. It has most probably improved. The quality has most probably improved while the years went by. Now they are talking in terms of 7-year school attendance for the rural areas and 10 years of school for the urban areas.

Representative CURTIS. The compulsory limit right now is 4 years in the rural areas?

Mr. KAHAN. That is right.

Representative CURTIS. And then how would the brighter student get to go on? Where would he go if he wanted to get in more than 4 years? I ask this because over 50 percent of their population is in the rural areas.

Mr. KAHAN. It seems to me that in terms of opportunities, the opportunities for urban people to get a secondary or higher education are certainly much greater compared to those that exist for people in the rural areas, because of the more limited availability of 7-year schools there.

Representative CURTIS. But what do they do? You see, we have a lot of statements made in this country about the tremendous educational system in Russia. As I dig into the details of it, in context with the problems we have in setting up an educational system, I frankly find that it falls flat. When you have 50 percent of a population in the rural areas and you give 4 years' education, which they hope to get up to 7 years, and knowing the problems that we have in secondary school education in the rural areas, and we are now talking about 12 years—8 and 4—I want to examine this to find out what the truth is in Russia.

Mr. KAHAN. The amalgamation of the farms could facilitate in some sense, and the concentration, upon the problem of housing construction, if it will take place in the rural areas, would facilitate the setting up of 7-year schools.

Representative CURTIS. They would have a real construction problem, would they not?

Mr. KAHAN. The school construction program is placed as a burden now upon the collective farms themselves.

Representative CURTIS. You see, this Congress is being beset right now on this inadequacy—and I happen to think that it is inadequate by our standards and certainly by our standards of self-criticism, but I doubt very much if Russia as a bogeyman in this area is really an honest incentive for us to do much. I think we need to do it, but not on the grounds of comparison with Russia, because I suspect they have a school construction problem—I do not know how they could cope with that. It must have to be projected over many years, if they are going to switch from 4 to 7 years, would you not say?

Let me ask you another thing about rural mail delivery. Is there a system of rural delivery? Do they have a system for getting mail and literature out in these rural communities? If so, what is it?

Miss NIMITZ. Certainly individual collective farms get mail, and I think they appoint postmen to tote stuff around to the farm households.

Representative CURTIS. Does it include packages?

Miss NIMITZ. Packages, books, everything.

Representative CURTIS. Does it seem to work reasonably well?

Miss NIMITZ. I have never seen any evidence of dissatisfaction on this score.

Representative CURTIS. I do not know whether they would be dissatisfied if they have never seen anything different. I wonder how it is as compared to our rural population, where we have an excellent rural free delivery and have had for years. And it is a subsidy, incidentally, and I would just as soon have it be known as a subsidy and a good one. But I just wondered whether there was conscious concentration on getting adequate dissemination of mail and literature and so forth in these rural commuities. In this country, that has been one of the hallmarks of our policy, to make living on the farm more reasonable and to provide basic education, because this is a part of education.

Is that a conscious policy? What was it prerevolution? Practically nothing, I guess. Does anyone know?

Mr. KAHAN. I would here make some distinction, not in terms of what it was in the prerevolutionary period and how it changed during the Soviet period; but I would make here the distinction that the problem of communication is to some extent a political problem in the Soviet Union and is tackled or is paid attention to from this point of view, rather than from the aspect of the satisfaction of the recipients of mail, the consumers. There were some complaints here and there about inaccurate deliveries, about packages being retained, and so on. But I do not think that they should be taken too seriously.

The problem of setting up a system of communication, either radio or mail or the special mailing of books and newspapers in the Soviet Union, should be looked at from the point of view of the overall political goals, and communication lines, which have to be maintained between the Government and the population.

Representative CURTIS. Yes. I am very much interested in communications, and I regret that that is one area that we did not have papers on, because, again, I think, in any modern society or society that wants to become modern, transportation and communications are vital; and a great deal can be learned about what actually has been obtained through studying those two areas.

Do they have any system of rural libraries, does anyone know? And how is that done?

Miss NIMITZ. Every collective farm, I am sure, has a collection of books, including technical literature, political tracts, Russian classics, and so forth.

Representative CURTIS. The state farms would, too, would they not?

Miss NIMITZ. Yes. Books are an item which I think the Russians have always taken a good deal of pride in supplying to workers and peasants so that they might be "cultured." It is to their advantage to provide such a service, and I am sure they are not lagging in that respect.

Representative CURTIS. I have heard that they have these incentives, and I am testing it out, to find out how much is talk and how much is reality. And that is one way I can find of being able to do it. Talk is pretty cheap, particularly where we are confronted with a society such as Russia.

Incidentally, how about radio? Is there a wider dissemination of radios in the rural areas, and are there radio stations that broadcast? I am thinking of rural areas, rural living.

Miss NIMITZ. I would say most collective farm households possess a radio. It may not be a type where you have much station selection; that is, it may be a sort of speaker connected by wire to a central receiver that gets programs from the cities. But I remember seeing a statement on the number of collective farm households that had some sort of radio, and it was a very high proportion. And this was 3 or 4 years ago.

Representative CURTIS. Do they have many sections there like our Missouri Ozarks, for example, that are referred to as backwoods, where there is not very much of all this going on, in Russia? Is a good segment of their rural area like this? In other words, the collective farms and state farms—do they blanket Russia? Or are there areas, sizable areas, which we could refer to as backwoods?

Well, I just pose the question.

Mr. KAHAN. In which sense, sir? In the economic sense? Or in the sense of communication?

Representative CURTIS. Communication, transportation, and economics, too, because the things all seem to tend to go together.

Mr. KAHAN. The likelihood of having forgotten areas should be rather excluded, in the sense that each collective farm has to deliver a large proportion of its output. So the system of communication certainly exists, at least in this area.

Representative CURTIS. In order to tax; the tax collector usually does get around.

Mr. KAHAN. But from the point of view of economic development, from the point of view of income, of course, there are very marked regional differences, in the Soviet Union. The countryside is not uniform in any sense. It has not been in prerevolutionary Russia and is not by any means now.

It would seem to me they have succeeded in raising the level of income in a number of areas for various reasons.

If one takes central Asia as an example, there could be on the one hand the importance of cotton. On the other hand, the demonstra-

tion effect which these areas have, with respect to some of their neighbors, outside of the Soviet Union, like Iran, Afghanistan, India, Pakistan, and so on—so the motives were not, certainly, of any uniform nature.

There are, of course, marked differences within Russia, as for example, between the black-soil region and the non-black-soil region, depending upon the output-mix, the relative prices, relative incomes, types of soil climate, and so on and so forth. So there is no uniformity in the pace or the rate of development of the various regions within the Soviet Union.

Representative CURTIS. You see what I am trying to do, in getting an understanding and a comparison of the two economies, I want to apply the standards that I see applied to our society. And the standards applied can be seen in regard to the legislation proposed, that Congress adopted, in order to correct some of the things in our system. And I am seeking to apply those same standards in a way to this Russian picture, in order to understand a little more about it. It is a very interesting exercise.

Mr. VOLIN. May I add to what Mr. Kahan said?

The nearness to a large city, or to a city in general, is, of course, an important factor in both the cultural development and the economic position of a collective farm. If the collective farm is near a city like Kiev, in the first place, there are opportunities for the sale of its products on the private market, which in the past, especially, was an important source of income for the farms.

Representative CURTIS. That they are seeking to phase out, though, are they not?

Mr. VOLIN. Yes. But certainly I would not entirely overlook it, even now. And the same thing goes for the cultural development. Naturally, there are greater opportunities for communication, better opportunities for trading, for purchasing of goods that the farmers may need. Instead of relying on the village stores, which as a rule are inferior to the urban stores, they may go to the city to do their purchasing. If the collective farm is near a railroad, that would greatly help in improving its economic position and cultural development.

Representative CURTIS. The final question I had is in relation to the opening up of the new areas. And I think it would be interesting to know just how they go about opening up a new area. What do they do, in regard to transportation and communication and education, housing, and so on? Is that all a planned setup, where they just move a big population? Or is this a gradual thing moving out from already established centers?

I gather it is almost a moving into a new area, which would include having to get your housing and so forth.

Yes, sir?

Mr. JOHNSON. In the new lands program in Siberia, beginning 5 years ago, a very large part of that was as you say. They moved into areas and created villages where there had been no villages before.

And in general, from both observation and from what one reads, the pattern of development was perhaps from their viewpoint in appropriate order. The first order of business was to get the land plowed, with very primitive facilities for the people involved.

For one thing, many of the people who went were young, unmarried, particularly in the state farms, so that education was not as crucial a problem as you might think at the very beginning.

Representative CURTIS. There was not much family formation?

Mr. JOHNSON. In some cases there was and in some cases not. But I would say the early movement into them was bringing in either young people or people who did not bring their families. And then, over time, they did build such things as reasonably satisfactory housing, and eventually, or still later, schools, houses of culture, recreational places, stores, and things of this sort.

Representative CURTIS. Sort of pioneering, comparable to this country.

Mr. JOHNSON. In many ways comparable to the settling of Kansas and Nebraska at the turn of the century.

Representative CURTIS. Surely they were concerned about getting the produce back. But originally, I guess, the immediate produce just was subsistence for the population that moved there.

Mr. JOHNSON. No. I do not think this was ever true of this new lands area. That was not their design. They wanted the production for the economy as a whole. And in terms of out shipments, a larger proportion leaves this area than of any other farm area.

Representative CURTIS. They surely must have some transportation plans.

Mr. JOHNSON. There was railroad building, narrow gage railroads.

Representative CURTIS. They moved to narrow gage rails in those areas?

Mr. JOHNSON. Some of this was done. I have forgotten how large that was. But of course, if you can move it at the right times of the year, this land is relatively flat, and so on, and you would have essentially only trails out across the countryside. There was no problem as to hills and so on.

Representative CURTIS. Has that population solidification gone on? In other words, when they went out, they stayed?

Mr. JOHNSON. The large proportion stayed. Much of this was settled as a result of a huge propaganda pressure campaign. It was claimed that it was voluntary, and I think in one sense much of it was voluntary. It probably was not voluntary in the sense that many people who went if they had been put in a secret booth and asked, "Will you go?" might not have written "Yes."

Representative CURTIS. May I seek for understandable comparisons? What has been going on in Alaska, in some of the valleys up there, in our development—would that be a comparable problem to what the Soviets face in opening up new lands? I notice it is in about the same location as far as the growing season and so on is concerned.

Mr. JOHNSON. I am not very well acquainted with the nature of the topography and so on in the Alaskan case. I would suspect in one sense that the Soviet situation was probably less difficult, because they did plow up level lands, for example, that were together in large blocks. I mean, where you could plow fields of thousands of acres, if you wanted to, as a part of a single field. The topography is very much like the flatter parts of Kansas and Nebraska; whereas I suspect that the problem of land preparation is much more difficult in the Alaskan case.

Representative CURTIS. Of course, the valleys themselves are flat, and the soil is very rich in Alaska. I do not know how big the tracts are. And I know we have a public lands program going on up there, and we have had a population moving up there. It might be interesting to develop that.

Mr. JOHNSON. But I think the more comparable settlement, however, is our settlement of the Great Plains and the Canadian Provinces.

Representative CURTIS. Thank you.

Representative BOLLING. Mr. Lehman?

Mr. LEHMAN. I have only one question, Mr. Chairman. I think it probably should be directed to Mr. Johnson or Mr. Kahan.

Is it likely that Soviet agriculture wil improve its position from its present rate as far as the release of manpower for industry?

Mr. JOHNSON. I suppose this is perhaps the biggest and most important single question about the prospective performance of Soviet agriculture, now that the level of output has reached at least a tolerable point, from their standpoint. Not that they do not want it to be higher, but it is at a tolerable level and does seem to have some further capacity to grow.

A western observer looking at Soviet agriculture would be strongly tempted to answer this question in the affirmative, that they could release vast quantities of labor from their agriculture. In any comparison with the United States or Western Europe, they seem to be using labor very, very inefficiently.

Part of this apparent inefficiency in the use of labor, and thus the possibility of reducing it, turns, I think, on the nature of their investment. That is, there are just a lot of laborsaving activities or possibilities in terms of investment that they have not adopted, such as fencing, elevators for handling the crop immediately after it is harvested, and things of this sort. Vast amounts of labor are required for herding livestock and for handling grain with a shovel after you have had a 50 horsepower tractor pulling a combine and then have 20 to 30 people handle the grain harvested by that combine.

And I think also the Soviets are conscious of this huge discrepancy in their use of labor compared to that of the United States. This is one thing they have the greatest difficulty in believing about our agriculture, the small amount of labor that we do use.

The fact is that in the very intensive compaign they have had in the last 4 or 5 years they have probably increased the amount of labor they have used, rather than decreased it, despite the downtrend for the previous 20 years, implies that they simply have not as yet been able to organize themselves, as of 1959, to release large quantities of labor.

Mr. LEHMAN. Might it also imply, however, a decision to meet the cost in terms of labor rather than taking investment away from other programs?

Mr. JOHNSON. Yes. I think this is very true. Though here, again, it seems to me that even with the investment they have made in agriculture, they could have done better. But also there needs to be pointed out the point that Mr. Kahan made, that although the huge tractor in itself you think of as laborsaving, because one man rides around on a 50 horsepower tractor, and he has a lot of horsepower under him,

yet he also has a machine that is very inflexible. And the trend in recent years is to build smaller tractors with equipment which did not need to be ridden or handled by a second or third or fourth person.

This trend may well result in the release of labor in the handling of things like corn, potatoes, and so on. But the really huge use of labor, where they have not made much progress yet, is in the handling of livestock. Here, because of lack of electrification and other things, plus the fact that they have placed such a heavy emphasis on getting the last bit of output, without really taking into account its cost—for example, we were told that cows were milked three times a day, instead of two times, on the grounds that they got something like 2 or 3 percent more milk, which increased their labor cost by perhaps 15 or 20 percent. They were willing to pay that much. So since the visit of the agricultural delegation to the United States, there has been a tendency to cut down on the milking. But this was the rationale applied before that. They got some more milk, but in our case we would not have considered it worth the effort by a long ways.

This does not answer your question, because I think it is one of those imponderables. But, technically, it seems to me if the investments are made in the right direction, there could be a substantial reduction in labor. The nature of their agriculture is very nearly the same as ours in terms of the products produced. Whether in terms of management and ideas and the types of investment they plan, that can be achieved, I do not know.

I think perhaps a fair amount may be.

Mr. LEHMAN. Mr. Kahan?

Mr. KAHAN. I am fully in agreement with what Professor Johnson said. I would like to call your attention to the fact that the Soviet officials themselves are rather unclear as to the possibilities of shifting labor from agriculture to industry. If I am not mistaken, the plan for 1959 called for an increase of the labor force of approximately 1,300,000, and reported that they have succeeded in increasing the number of workers and employees in the nonagricultural sector. But it is also indicative that the head of the State Planning Committee, Kosygin, in his presentation of the plan for 1960, has not mentioned any total figure, except for the school graduates, for the increase in the industrial labor force.

On one hand they are probably cautious, since a more radical shift of labor from agriculture could result in some decrease of agricultural output. On the other hand, the demands of industry, we believe, on the basis of what Soviet policies have been in the past, have priority over agriculture. So it is very difficult to make any accurate prediction in this field, as Professor Johnson has said. It depends upon organizational changes in agriculture and volume of investment. And, of course, upon the alternative weights which will be given to industrial versus agricultural output.

Mr. LEHMAN. Miss Nimitz, do you have any comments?

Miss NIMITZ. I would like to mention that conservation of agricultural labor was not an objective of Soviet policy until the last 2 or 3 years, when they became concerned with real costs and discovered how high labor costs were. Until 1957 they never even kept account in chronological terms of labor inputs into collective agriculture. They measured labor only in "labor-days," a complex unit of effort,

the main purpose of which was to divide up a collapsible product at the end of the year, so that each of the farm members got his share in proportion to the amount of labor he had contributed. They were not interested in how much collective labor went into the production of a centner of wheat, and they did not try to reduce these labor inputs. Given a labor surplus, the temptation to use labor freely was very strong.

Thus it is only recently that they have become at all concerned about agricultural labor productivity and recognized that there are vast areas of agricultural production which are essentially unmechanized, and that increasing labor productivty will require not only inputs of machines to decrease labor inputs per hectare or per animal, but also massive chemical inputs to increase yields per hectare, as well as organizational changes which will force farm managers to use labor more economically and which will provide some incentive to farm labor to work more intensively.

So it seems to me that the possibilities of reducing labor inputs are, as Mr. Johnson says, very large.

Mr. VOLIN. I agree with my colleagues that there are large possibilities, and especially when you compare the situation in the Soviet Union with that in the United States and other Western countries.

One fact, however, which ought to be borne in mind in speaking about the labor supply in agriculture is that a large proportion of it, something like 60 percent, if I am not mistaken, on collective farms, consists of women. And here you have much of your surplus, which is there anyway.

I think that the change, if it should take place, on a larger scale, from collective to state farms, where wages are paid, just as they are paid in industry, may be a factor in inducing still greater attention to labor costs and a decrease of the labor supply, which is used by Soviet agriculture. So I would say there are both technical and organizational possibilities for a release of manpower from agriculture, but there are also factors on the other side of the balance sheet.

Representative CURTIS. How about child labor, or what we call child labor?

Incidentally, they start at a later age, as I recall it, 7 or 8. But they must be using quite a bit of labor under 16, possibly 12 to 16. Is that so?

Miss NIMITZ. Yes.

Representative CURTIS. Now, if they were to go 7 years, they would certainly be cutting down on that labor source, would they not?

Mr. KAHAN. Yes; this would certainly be true, except for the fact that the school year could be adjusted to the demands of the agricultural season.

Representative CURTIS. To a degree.

Mr. KAHAN. To some extent.

Representative CURTIS. I was interested in our getting away from the agrarian system. Now some of our schools are going all four quarters, which is going to utilize our educational system more efficiently.

Incidentally, do they pay wages on the state farms to children? Do they use them?

...

Mr. KAHAN. To my knowledge, the earnings of the children in the collective farms show up on the accounts of their parents, or of the family unit.

Representative CURTIS. Is it a phenomenon in Russia that the rural families have more children than the urban, as it is here? Is that true, or not?

Mr. KAHAN. As a general proposition, it would seem to me that it is still true, although the size of the rural family has decreased from the earlier period, certainly from prerevolutionary times and even from the period of the 1920's.

Representative CURTIS. Oh, it has? It is still larger, though, I imagine, than the urban family.

Mr. KAHAN. That is correct; somewhat larger.

Representative BOLLING. Mr. Johnson, I would like to pursue this business of the new Soviet indexes and try to understand what might be behind it.

First, to refresh my memory, will you give me the breakdowns that you would use as to the different periods in Soviet agriculture? Let us say, starting in 1913, with what the level was and what kinds of periods they went through, as well as this can be done, briefly.

Mr. JOHNSON. The kinds of periods with respect to the index? Or what actually happened to them?

Representative BOLLING. What happened. I want to understand in the end why they came out with this particular batch of figures. I want to see if I can figure out what the political purpose is.

Mr. JOHNSON. Well, from 1913 into the early part of the 1920's, there is no question that output fell drastically, for quite good reasons. I mean, you had World War I, and then you had the revolution, and then you had adverse weather conditions in the 1920's, the early 1920's.

Now, the official index only gives a few years in that period. But it seems to be a reasonably accurate reflection of what happened. The output may have fallen 40 percent or something of that sort, to the worst year, and the famine period that followed World War I. And, as I say, this downturn they seem to have reflected reasonably well.

Then from the mid-1920's on to the later part of the 1930's, there was first of all a period of stability, and then a drastic decline, due to the collectivization.

Representative BOLLING. What were the actual dates of the collectivization?

Mr. JOHNSON. Well, one could say 1929, and the big push really came in 1930 and 1931. You had the slaughter of the livestock occurring in these years, 1930–31, you had the droughts in 1932, and with output falling by about a fifth, I would say, which again seems to be reasonably well reflected by their data, you then had some recovery into the late 1930's, with the exceptional year of 1937, where crop yields were as high as they had ever been, if not higher, and then again the decline through the last 2 years of the 1930's.

Then you had the change in territory in 1939 and 1940, with a substantial decline in output again, of course, during World War II. The territory was reduced by the occupation, and machinery was lost, manpower was lost, and output fell again by about the same magnitude as it did following World War I.

Then you had a very steady progress, increases, with the period of stagnation from 1949 to 1952, and then increases since then.

In a rough way, their new index reflects this, and within certain periods it seems to reflect rather accurately what happened. The major distortion that we believe exists is for the period from 1926 through 1938 or 1939, relative to all the other years, with the possible exception of 1940. And they have just raised the level of that period, compared to both before and after. Why they would do it relative to an earlier period I think we might understand, but why they do it relative to recent years is something on which I can find no reasonable rationalization.

Representative BOLLING. What is the reason for the one that you do understand?

Mr. JOHNSON. Well, I can understand why they might want to make the 1920's look good relative to the prerevolutionary period, because the general line of the Communist Party has always been to degrade everything that was true of Russia before the revolution. For example, they degrade the industrial situation. From their talk, you would assume there was hardly a factory in the whole of Russia prior to 1925 or thereabouts, even though it was one of the ranking industrial nations of the world at that time.

And the same thing is generally true of agriculture. They will say there were no tractors in agriculture in 1913. Well, there were few tractors anywhere in the world in 1913. And there are things of this sort. I can see why they would want to make the 1920's look good relative to before the revolution.

Representative BOLLING. But that is not something than then carries over?

Mr. JOHNSON. No. The kind of thing you might expect to happen is that they linked the indexes in some way so that if the 1920's were out of line all the rest of the indexes would be out of line. But we do not think that this has happened, that is, if you accept the underlying production data. We do not want to accept quite all of it, but I think as a general order of magnitude it is not too far off.

It may just be bad statistics. I do not know.

Representative BOLLING. Actually, the official index, and the index of 1926 or 1927 weights, go along fairly nicely together until—what? Until 1940?

Mr. JOHNSON. Until 1940, and one might even say until 1950. There is some discrepancy in 1940, but it starts increasing after that.

Representative BOLLING. That is an interesting problem.

Mr. Volin, in your summary paper you state:

> Among these are: the persistent predilection for farm giantism; the excessive emphasis on corn as a means of improving the feed supply; and the still restricted scope—

and so forth and so on.

The points I am interested in are the "giantism" and the corn business. What is their explanation, if any for the giantism approach on this basis?

Mr. VOLIN. The official explanation is increasing efficiency as a result of their increasing the scale of operations. Apparently there is no conception at all of an optimum size. It may interest you that when the delegation of agricultural economists from the Department of

Agriculture was in the Soviet Union in 1958, this question was raised with our Soviet colleagues. We asked them if studies were made on the economic effect of the size of farms. They said that they knew that the large size was more advantageous, but no specific studies of this sort were made.

It is an old interpretation of Marxian dogma that large-scale production is advantageous not only in industry but in agriculture, without the concept of an optimum size, without the idea that there is such a thing as diminishing returns.

Representative BOLLING. Now, in this connection, is there any indication that the reason for the farm giantism may be based on factors which go beyond the question of the simple idea of an optimum size for an operation? May not it have some relationship to the problems of transportation, of education?

Mr. VOLIN. Not the problem of transportation, because the fact that you have a large unit does not solve your transportation problem, especially when this farm unit may include several farm communities. I think it is a problem of control, administrative control. It is difficult to get reliable farm managers as it is, and the larger the number of farm units, the more difficult it is to get politically reliable as well as competent farm managers, who are especially important when you have a certain amount of decentralization of control, as you do now.

Representative BOLLING. Then there can be no reasonable argument made for the approach on the grounds of other economic factors, other economic and social factors?

Mr. VOLIN. That does not seem so.

Representative BOLLING. Would everyone agree with that, or not?

Miss NIMITZ. I think one good reason for the program of amalgamations in the early 1950's, as well as the amalgamation which has occurred since the transfer of machinery to collective farms from tractor stations, is that the level of development among collective farms is very uneven. But since collective property nominally belongs to its members, the state cannot transfer profits from a highly efficient farm with a large profit margin to a less efficient farm which is too poor to invest adequately. (Incidentally, the possibility of redistributing profits is one of the advantages of the state farm system.) I think amalgamation was in part an effort to get around his problem by combining the weak with the strong, so that investment resources or scarce managerial talent could be spread around.

Representative BOLLING. I will pursue this just a little further. I know very little about agriculture. But I have the impression that in certain crops and in certain aspects of agriculture, we have had enormous aggregates of acreage in certain parts of the country, which have been run very efficiently. Is this correct? As for some of the wheat farms, how would they compare in size to the average? Are not some of our wheat farms fantastically large?

Mr. VOLIN. My impression is—Professor Johnson would be more competent to discuss this—but my impression is that this is not the case. Relatively few of our commercial farms outside of ranching are anywhere near the size of the Soviet farms.

Representative BOLLING. You except ranches?

Mr. VOLIN. Yes.

Mr. JOHNSON. In the case of wheat, we do have one or two farms, maybe three or four, that may exceed in size the average acreage of the state farms. There is one huge one in Montana, which I think several of the Soviet delegation have visited, just in order to get a farm of roughly the same size that they themselves operate. And then, of course, you have the King Ranch and others, that are comparable in scale, if not larger, than even the larger Soviet farms. But these are definitely the exception rather than the rule in the United States, and particularly in the Midwest, the number of large scale farms which were organized on a corporate basis, and so on, in the 1920's, actually went through the wringer in the 1930's, and when they reemerged, they reemerged as smaller farm units.

And while the size of the farm is growing in the United States, as you well know, it is growing in a fairly standard pattern, in the sense that most commercial farms are growing at about the same proportion. And while there do seem to be under some circumstances possibilities of organizing these very large farms, there does not seem to be any significantly greater efficiency than on well equipped family sized farms. And I think you have to look upon them as being the unique thing in the United States.

Representative BOLLING. What has happened in citrus, fruits, and vegetables, and things of that sort, in this country? I read sort of casually about frozen food operations which have their own farm backup. What happens in such a case?

Mr. JOHNSON. Certainly some of the major firms do have this, though I think the more common aspect is what you might call the establishment of contracts, where they enter into an arrangement with the man who actually operates the farm, take all of his crop at prices fixed in advance. This is a much more common way of handling it, where the production is handled by the farm, though a lot of management advice may be offered by the producer or freezer.

Mr. VOLIN. May I supplement the answer to your question about farms in the United States?

Representative BOLLING. Certainly.

Mr. VOLIN. Only slightly over 2 percent of the commercial farms, not all farms, but commercial farms in 1954, had 500 acres or more of crop land harvested. The others had much less. This shows the disparity with the Soviet Union.

Representative CURTIS. What page are you reading on? Because I think the same thing gives the size of some of these collective farms as 30,000 acres. Am I wrong?

Mr. JOHNSON. 30,000 acres of crop. There are some of those. There are some with 50,000 acres, 20,000 hectares.

Representative BOLLING. The point I was getting at is I think clearly obvious, the question of whether inevitably their giantism is going to be inefficient. Our tendency, it seems to me, not necessarily in the field of agriculture but in many other fields, has been to underestimate their ability to perform as they say they are going to. And while I am by no means convinced that they can handle the problems that they have in agriculture in the manner in which they are trying to, I was trying to explore the possibility that this might be an area in which we would get a surprise at some point.

Mr. JOHNSON. I would just like to comment on this: That while it may well be true that their farms are too big, and I would certainly agree with this, this element of inefficiency as it relates to the use of labor is probably much less important than other aspects of their forms of operation. I mean the way they have invested their money, the kinds of controls they exercise, and so on.

And one further comment on even the comparisons with our limited number of huge wheat operations: The large collective farms we may be speaking about, that have 20,000 acres, in the Soviet Union, may have as many as 1,000 to 2,000 workers, whereas I would guess, that if we had a wheat farm with 20,000 acres, it would probably be operating with 25 to 40 workers. So that the organizational problem in the United States with respect to handling workers, assigning them to their tasks, and so on, would be a minute problem in comparison to the handling of labor in the Soviet Union with 30 to 40 times as many workers.

Representative BOLLING. I would like to get back to corn. They just love corn?

Mr. JOHNSON. Khrushchev does.

Representative BOLLING. I am aware of Mr. Khrushchev's affection for corn as the queen of the fields. Is this a highly personalized thing, or is there something more behind it?

Mr. VOLIN. Both. I would say both. There is something substantial behind it. It is a question of the need to increase the lagging feed supply in order to attain their livestock production goals. Professor Johnson and Mr. Kahan had a very good section in their report on that subject.

But my feeling is that there is far too much emphasis on corn, too much concentration on corn even in areas to which corn is climatically unsuitable, where it is either too dry or too cold. Probably better results would have been achieved if the feed program was diversified—perhaps some expansion of the corn acreage in those areas to which it is most suitable; expansion of sorghum in the dry areas and in others, potatoes, barley, and other feed crops. The fact of the matter is that in no European country, where climatic conditions are more favorable, is there so much emphasis or concentration on corn, even though they have a feed program of some size and substance.

Representative BOLLING. Now, my last question for all of you: On Friday Mr. Allen Dulles made the statement:

> On the other hand, we see no prospect that the agricultural goals of the 7-year plan will be approached. The dramatic increase of 7 percent per annum achieved over the 1953–58 period was the result of a 6-year effort to raise agriculture out of the trough in which Stalin had left it. A variety of factors including increased inputs of resources, more efficient use of resources, and at least two unusually good weather years contributed to this record growth.
>
> We estimate, however, that these resource and efficiency gains will not be repeated in the present plan period. Given average weather, net agricultural output will probably not increase under the 7-year plan more than 18 to 20 percent by 1965. Such a modest growth is well below the implied growth of 55 to 60 percent.

I will break down my question.

> We see no prospect that the agricultural goals of the 7-year plan will be approached.

Do you all agree on that?

Mr. JOHNSON. If one is speaking of a reasonably reliable index of output in the total, I would certainly agree. It seems to me there is a possibility that some of the goals can be achieved. That is, if they want to put the resources in, I see no reason why they cannot produce the relatively huge amount of sugar beets, for example, that they have implied. I am not sure why they would want to do so, but this is a product that takes relatively little land. They have quite a lot of land that is adapted to the production of sugar beets and commodities of this kind.

So that some of the goals, if they put the emphasis on it, could be achieved; but I think Mr. Dulles was undoubtedly speaking of the overall.

Representative BOLLING. He was.

Mr. JOHNSON. But in saying that, we should not rule out the possibility that they may not either actually achieve or come very close to one, two, or three of the goals.

Representative BOLLING. Do you all agree with this, more or less?

Mr. VOLIN. Without trying to quantify their possible achievements, I would only like to stress again the fact that the means by which the new Soviet 7-year plan is attempting to achieve these goals is primarily by an increase of yields per acre, rather than by an increase in the sown area. And past experience in the Soviet Union indicates that it is more difficult to do that than to increase production by the traditional method of expanding area. The increase in yields would involve a great deal of achievement in development and introduction of new varieties, improvement in farm practices, and so forth, which are more difficult than just planting additional acreage.

Representative BOLLING. This is one area where apparently they have a tremendous reservoir of technological know-how to borrow from other sources.

Mr. VOLIN. That is correct.

Mr. JOHNSON. You mean in yield increases? Well, I might comment that to a considerable extent and for certain areas in the Soviet Union I would agree with that; but there is a serious climatic problem that they face, which Mr. Volin mentioned in his comments here earlier. There are large areas that are either on the dry margin or on the cold margin. Now, on the whole, in the United States and Canada, we have not been very effective in increasing our yields, where we are confronted with a dry margin.

That is, the yields in the Great Plains and in the Canadian prairie provinces, particularly of spring wheat, have not increased significantly over the past 35 or 40 years, if you exclude the effects of weather. This has not been the case in winter wheat. We have been able to increase the yields of winter wheat, primarily through making more effective use of the moisture and by some improvements in varieties.

But if you compare the areas in the United States and Canada that are most comparable to the Soviet Union, we have not been particularly successful in increasing yields.

However, there is this large non-black-soil area, which is being very poorly farmed at the present time, with much lower yields than in the countries that surround them, like Finland and Germany. Here I would say the possibilities of increasing yields are tremendous. But this is not a large share of their present cultivated area.

Now, for sugar beets, where you might irrigate, or for cotton, where you have the water problem under control, they already are doing rather well in terms of yields, I would say. And although they will undoubtedly improve in these areas, this does not help them with the crops that use the big amount of land, namely, the wheat and the rye and the oats and the barley.

Representative BOLLING. Mr. Dulles indicated that experiences were that they would fall short of achieving the planned growth of 55 to 60 percent by about two-thirds. This projects 18 to 20 percent by 1965 as opposed to 55 to 60. Would this seem reasonable to you?

Mr. JOHNSON. Well, obviously, predictions in any of these areas are very, very difficult, particularly in the case of agriculture. But I would agree that this is roughly the right order of magnitude.

But you see, as Mr. Kahan and I pointed out in our papers, if you look at the sixth 5-year plan, even with the great successes that they have enjoyed in recent years, their annual rates of increase have ranged from, oh, roughly, 20 percent as much as they need to be, with a grouping around 40 percent, except in the case of sugar beets, where they are achieving and in fact have gone ahead of the plan. But otherwise, they are falling behind by orders of magnitude that are not terribly different from what Mr. Dulles has pointed out for the next 7-year plan.

Representative BOLLING. This leads me to perhaps the impossible question.

My impression has been that in many areas outside of agriculture the Soviets have done a pretty good job of coming up with what they planned. Of course, the sixth plan blew completely, and they backed away from it and came up with this new seventh. In the others they have been reasonably successful, in the industrial field, but they have consistently failed in the agricultural field. And it occurs to me that these agricultural yields may be a variety of propaganda.

Mr. JOHNSON. I think it is a form of propaganda. Certainly to overtake the United States in meat and milk was a propaganda drive that received a great deal of attention, and despite the fact that Khrushchev a year ago, or last December, had to take some time to explain why the new 7-year goals did not catch up with the United States in meat—they were still about a third of the way short of achieving this.

I think it has been true throughout the whole plan period that they have set their agricultural goals on a different basis than they have their nonagricultural goals. In the case of nonagriculture, they did seem to have figured out "What resources do we have?" Or "What can we produce during this period?" And "How will that relate to the amount of steel we produce, and machinery and so on?" But the agricultural goals have frequently been set in terms of what they think are nutritional needs: how much should they have to feed the population the way it should be fed, rather than, apparently, a careful working through of how much labor they have and how much land and how much fertilizer they are going to have, and things of this sort. And there seems to be a break in their planning progress.

Representative BOLLING. We hear a good deal about the possibility of the Russian as consumer having some effect on his Government and forcing the Government into production of more consumer goods. It

would seem to me that perhaps the consumer goods that people were after first was an improved quality of food supply. And this is why it appears to me that this may very well have been a very ingenious form of internal propaganda.

Is there violent objection to that conclusion?

Miss NIMITZ. I would like to confirm the suggestion that the agricultural output goals have been of an entirely different nature from the industrial output goals. If you want an analog to the industrial output goals, I think you should take procurement rather than output. This is the part of agricultural output that has to articulate with the rest of the economy. Here they have, by and large, gotten what they planned. On the other hand, in the case of the fourth and fifth 5-year plans, and I strongly suspect in the case of the sixth 5-year plan as well, some of the output targets were plainly propaganda. The targets for raw materials, most of which are delivered to the state were, I think, fairly realistic. In the case of food products, a large proportion of which remain on-farm, they were not. The explanation for this may be that when planned increases in procurement are very large, it is embarrassing to plan smaller increases in output because this would imply a decline in farm comsumption.

Representative BOLLING. Do any of you have any further comments?

We are very grateful to all of you for your contributions and for your presence here in this highly interesting and useful discussion.

With that, the subcommittee will stand adjourned until this afternoon at 2 o'clock in the same room, when the subject will be "Levels of Living and Incentives in the Soviet and United States Economies." The witnesses are Lynn Turgeon, Benjamin Javits, and Joseph S. Berliner.

(Whereupon, at 12:15 p.m., the hearing was recessed, to reconvene at 2 p.m., the same day.)

AFTERNOON SESSION

Representative BOLLING. The subcommittee will be in order.

This afternoon we are to go into the fascinating subject of the comparative levels of living and incentive in the Soviet and United States economies. Professor Lynn Turgeon will discuss living standards, wages, and prices; Mr. Benjamin Javits, incentives; and Professor Joseph Berliner, managerial decisions.

We are delighted to have all of you with us. I wish to speak a special word of welcome to Mr. Javits, well known in his own right as an attorney and authority on comparative economic systems, but who is most familiar to us as the brother of a distinguished member of this subcommittee.

We will begin with Professor Turgeon and hear the summary statements without interruption, after which there will be a general discussion in which you are all asked to participate.

Mr. Turgeon.

## STATEMENT OF LYNN TURGEON, HOFSTRA COLLEGE

Mr. TURGEON. The measurement and evaluation of international levels of living is a complex and difficult task, particularly when the consumption patterns of the nations involved differ significantly.

In many respects, we are dealing with two different worlds when we compare levels of living in the economies of the major coexisting powers. Furthermore, it seems clear that recent and projected developments in the Soviet economy tend to accentuate rather than to reduce these methodological difficulties.

Generally speaking, the Russians provide a considerably larger area of collective or communal consumption—principally the free health and education services, as well as the partially subsidized housing consumption. Furthermore, this area seems to be expanding at a faster rate than the sector producing goods and services with price tags, which have the effect of more or less effectively rationing their supply. In addition, direct taxes are being reduced and transfer payments (pensions and grants) are being liberalized.

Consequently, customary measures of real wage changes, which take into account only the movements in price and money wage levels, tend to understate the real improvement in Soviet levels of living.

Therefore, to the extent that similar developments are not forthcoming in the United States, comparisons of price and wage levels in the two countries are also tilted in our favor. In an attempt to circumvent some of these difficulties, the major portion of my report consists of an exercise designed to give greater meaning to Soviet consumer goods prices.

As matters now stand, we are more and more becoming accustomed to the use of the 10:1 tourist rate of exchange in conversions of Russian retail prices. But surely, even though the Russian retail prices thus obtained are still generally higher than our own after this conversion, this practice presents too favorable a picture of the Russian price level.

However, neither is this problem solved by making an additional similar conversion of the average Russian wage. For although the converted average wage becomes $80 per month, this meagre income is incomprehensible to Americans other than retired pensioners. Fortunately for the Russians, such things as free medical and dental services, inexpensive rent and transportation, more wage earners per family, and lower direct taxes mean that Soviet families have a considerably higher percentage of their earnings available for food, clothing, and durable consumer goods expenditures than we do.

My calculations focus on the relationship between disposable income and price levels rather than between wage and price levels in the two countries. For my purposes I have calculated a ruble-dollar ratio for family disposable income available for the purchase of food, clothing, durable consumer goods, personal care and recreation. In other words, I believe that the meaningfulness of relative prices for Soviet and U.S. consumer goods and services can best be ascertained in terms of the rubles and dollars available for these household budgetary expenditures in the two economies.

In my judgment, American families have already disposed of about 50 percent of their initial money earnings after paying their direct taxes, rent, medical and dental expenses, transportation costs, and insurance premiums. Soviet families, on the other hand, after covering these items still have about 80 percent of their initial earnings remaining for food, clothing, durable consumer goods, personal care, and recreation.

My findings indicate that for every dollar the average U.S. family has available for these outlays, the Soviet counterpart has 6.2 rubles. Dollar-equivalent prices for average families are thus calculated by dividing current Soviet ruble prices for food, clothing, durable consumer goods, personal care, and recreation by 6.2.

For families subsisting at the poverty level in the two countries a similar computation was made. Here it was found that the poor Russian family has only 4.5 rubles for these purchases compared with every dollar the poor American family has.

In other words, within the Soviet Union there would seem to be greater inequality with respect to the consumption of food, clothing, durable consumer goods, personal care, and recreation than within the United States. On the other hand, the consumption of housing, medical and dental services, and transportation is probably more egalitarian in the Soviet Union.

At the average family income level, Soviet citizens are faced with a set of food prices which most Americans would consider high but within reason. At this income level, only the prices of pork, butter, sugar, fresh fruits and vegetables, and imported products appear to be outlandish by our standards. By a process of substituting beef or fish for pork, margarine for butter, and cabbage, carrots, and potatoes for other vegetables, the average Soviet family probably eats reasonably well by our standards.

Clothing is relatively much more expensive than food. Furthermore, the workmanship and styling are poor by our standards. Consumer durables on the other hand, are not as expensive as might be imagined. Since in most cases the established prices ration a fairly limited supply, it seems obvious that not a great deal of family disposable income remains after purchases of the more essential food and clothing.

It is somewhat easier to gage the meaningfulness of retail prices in the Soviet Union than it is to estimate Soviet consumption relative to our own. As a rough estimate, we might assume that the industrial labor forces engaged in food processing and light industries generally are of roughly the same magnitude. Output per worker is perhaps twice as high in our consumer goods sector as it is in the Soviet Union.

As a very rough approximation, I should suppose that food consumption per capita might be a little over half of our own, while clothing consumption is probably something less than half of ours. Since other panelists have suggested that Soviet per capita consumption generally is only a quarter of our own, the implication is that items other than food and clothing lag far behind the United States.

In terms of food and clothing, the Soviets stand the best chance of overtaking our per capita consumption. As consumers we tend to have reached a plateau with respect to our per capita consumption of food. As our incomes have risen, we have also tended to increase our purchases of consumer durables and services generally, rather than clothing. Whether the Russians are able to close the gap with respect to food and clothing will therefore depend primarily on their ability to augment the labor force employed in these branches, together with their success in increasing labor productivity in these sectors.

In 1958 there was a noticeable slowing down of the additions to the labor force employed in Soviet food processing and light industries.

The number of workers in light industries rose by a little over 2 percent; those engaged in food processing increased by a little less than 1 percent. At the same time, labor productivity rose in both sectors by only 4 percent, implying a growth in output of between 5 and 6 percent in these consumer goods branches.

The lag in the net increase in the labor force employed in these sectors will probably continue until 1964 at least. As far as increasing labor productivity is concerned, there seems to be no increase in the relative planned investments in light and food processing industries during the coming 6 years, although the absolute amounts invested will approximately double.

In the coming year, it is planned to step up capital investments in these sectors by 13.6 percent as compared with 1959. The year 1960 will undoubtedly be crucial with respect to increases in consumer goods since the labor inputs must be cut as a result of the changeover to a 42-hour workweek in these sectors. Conceivably there may be a temporary stepping up of consumer goods imports to facilitate this transition.

For the period after 1965, there are a number of important variables which could potentially affect any closing of the gap in levels of living, making predictions at this point especially hazardous. Nevertheless, we might mention a number of factors which may or may not affect the achievement by the Soviets of something approaching our level of living, at least with respect to the basic necessities.

By the latter half of the sixties, the normal yearly influx of new, young workers into the Soviet labor force should be resumed. Presumably at least a small share of this manpower would be available for the consumer goods sectors.

If there should be any shift in the pattern of investment favoring light and food processing industries after 1965, the growth in the labor force employed in these sectors might even be greater than the gains for industry as a whole. Any increase in the proportion of total capital investment allocated to consumer goods industries would also presumably show up in a more rapid increase in labor productivity in these sectors. Both of these possible developments would, of course, tend to slow down the overall rate of growth in the Soviet Union.

Any reduction or elimination of Soviet occupation forces in Eastern Germany, Poland, and Hungary would also release additional labor, part of which would possibly find its way into the consumer goods sectors. Reduction in domestic defense expenditures might also have a beneficial impact on levels of living in the U.S.S.R.

On the other hand, any extension of the Soviet sphere of influence or program of economic assistance to the underdeveloped areas of the world would tend to retard the closing of the gap between Soviet and American levels of living.

In this connection, it has also been made clear by Premier Khrushchev that all members of the Soviet bloc will approach their somber version of the "affluent society"—in other words, communism—at approximately the same time.

As a result, the rise in levels of living in Czechoslovakia and the Soviet Union will be retarded to the extent that workers in these

countries are required to assist underdeveloped areas in the Soviet bloc in their industrialization and development programs.

It also seems reasonably clear that lack of effective demand should never be a factor retarding the raising of Soviet levels of living, as it sometimes is in our own economy.

Up until the present, the principal problem of Soviet planners has been one of restraining effective demand. Overplanning has resulted in a permanent seller's market, a fact which has been referred to by a number of panelists.

Furthermore, the Soviet Government, through its control over prices and the relationship between prices and costs, can virtually guarantee a continuation of these operating conditions if it so chooses.

I have also included a revised table I, in which I take into account a number of data released in the new 1960 annual plan, as well as the 1958 Handbook.

Representative BOLLING. Thank you. The table and additional material will be included in the report.

(The table referred to is as follows:)

TABLE I (revised).—*Series reflecting changes in levels of living in the U.S.S.R., 1955–65* [1]

| Series | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 annual plan | 1960 plan VI target [2] | 1965 plan [3] |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| 1. Labor productivity (as percent of previous or indicated year): | | | | | | | | |
| (a) All industry | 108 | 107 | [5] 106 | 106 | 108 | 105.8 | 150 | 145–150 |
| (b) Light industry | [4] 106 | [5] 105 | [5] 103 | [5] 104 | 105 | (6) | [7] 135 | (6) |
| (c) Food processing | [4] 105 | [5] 105 | [5] 105 | [5] 104 | 111 | (6) | (6) | (6) |
| 2. Labor force: | | | | | | | | |
| (a) Workers and employees in industrial labor force by end of year (millions) | 47.9 | 50.0 | [5] 52.7 | [5] 54.3 | 55.3 | (6) | 55.0 | 66.5 |
| (b) As percent of previous or indicated year | 102.4 | 104.4 | 105.4 | 103.0 | 101.9 | (6) | 114.8 | 122.5 |
| (c) Workers in light industry (millions) | (6) | [8] 2.349 | [8] 2.425 | [5] 2.475 | (6) | (6) | (6) | (6) |
| (d) As percent of previous year | (6) | (6) | 103.2 | 102.1 | (6) | (6) | 117.0 | (6) |
| (e) Workers in food processing (millions) | (6) | [8] 1.563 | [8] 1.641 | [5] 1.643 | (6) | (6) | (6) | (6) |
| (f) As percent of previous year | (6) | (6) | [5] 1.629 105.0 | 100.9 | (6) | (6) | (6) | (6) |
| 3. Savings: | | | | | | | | |
| (a) Total savings bank deposits (billion rubles) | [9] 53.7 | 63.7 | 80.6 | [5] 87.2 | 97.6 | 106.0 | (6) | (6) |
| (b) Increase in bank deposits (billion rubles) | 5 | 10 | 16.8 | 6.6 | 10.4 | 8.4 | (6) | (6) |
| 4. Transfer payments and communal consumption: | | | | | | | | |
| (a) Pensions (billion rubles) | [10] 30.1 | 36.5 | 57.9 | [11] 62.9 | [11] 67.5 | 70.0 | (6) | (6) |
| (b) Total transfer payments and communal consumption (billion rubles) | [12] 154 | 169 | [12] 202 | [12] 215 | 232.2 | 247.4 | 210.0 | 360.0 |
| (c) As percent of previous or indicated year | 105 | 110 | 119 | 106 | 108 | 106 | 136 | 167 |
| 5. Average workweek (hours) | [13] 47.2 | [13] 47 | [13] 45 | [13] 44 | (6) | [13] 42 | (6) | −40 |
| 6. Money wages (as percent of previous or indicated year) | [14] 101.2 | 103 | [14] 104 | [14] 104 | (6) | (6) | (6) | 126 |
| 7. Real income (as percent of previous or indicated year) | [14] 103 | [14] 103.6 | 107 | 105 | (6) | 105 | 130 | 140 |

See footnotes at end of table.

TABLE I (revised).—*Series reflecting changes in levels of living in the U.S.S.R., 1955–65* [1]—Continued

| Series | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 annual plan | 1960 plan VI target [2] | 1965 plan [3] |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| 8. State and cooperative trade: | | | | | | | | |
| (a) Total sales (billion rubles) | 502 | 547 | [5] 625.4 | [5] 677 | 715 | 765 | 750 | 1,030 |
| (b) As percent of previous or indicated year | 104 | 109 | 114 | 108 | 106 | 107 | 149 | 157–162 |
| 9. Housing: | | | | | | | | |
| (a) Total construction excluding collective farm housing (million square meters) | 35 | 36 | 48 | 68 | 80 | 101 | 205 | 650–660 |
| (b) As percent of previous year | 108 | 103 | 133 | 142 | 118 | 115 | ------- | ------- |

[1] Unless otherwise indicated, the data for the following years are obtained from the sources listed below:
1955: Pravda, Jan. 31, 1956.
1956: Pravda, Jan. 31, 1957.
1957: Pravda, Jan. 28, 1958.
1958: Pravda, Jan. 16, 1959.
1959: Pravda, July 14, 1959. Data are estimated on basis of achievement in first 6 months of the year compared with the first 6 months of 1958.
1960: Pravda, Oct. 28, 1959. Data are annual plan goals.
1960: Direktivy XX S"ezda KPSS po shestomu piatiletnemu planu razvitiia narodnogo khoziaistva S.S.S.R. na 1956–60 gody (Directives of the 20th Congress of the Communist Party of the Soviet Union on the 6th 5-year plan for the development of the national economy of the U.S.S.R. from 1956 to 1960), Izdatel'stvo Pravda, Moscow, 1956.
1965: "Control Figures for the Economic Development of the U.S.S.R. 1959–65, Foreign Languages Publishing House, Moscow, 1958.

[2] 1955=100.

[3] 1958=100.

[4] Tsentral'noe statisticheskoe upravlenie pri sovete ministrov S.S.S.R., Promyshlennost' S.S.S.R.—statisticheskii sbornik (Industry of the U.S.S.R.—Statistical Handbook), Gosstatizdat, Moscow, 1957, p. 27.

[5] Tsentral'noe statisticheskoe upravlenie pri sovete ministrov S.S.S.R., Narodnoe khoziaistvo S.S.S.R. v 1958 godu—statisticheskii ezhegodnik (National Economy of the U.S.S.R. in 1958—Statistical Yearbook), Gosstatizdat, Moscow, 1959, pp. 101, 103, 108, 132, 154, 915.

[6] Not available.

[7] Editorial, "Proizvoditel' nost' truda v shestoi piatiletke" ("Labor Productivity in Plan VI"), Legkaia promyshlennost', No. 7, 1956, p. 1. The increase in the labor force is estimated from the planned increase in output and in labor productivity.

[8] Tsentral'noe statisticheskoe upravlenie pri sovete ministrov S.S.S.R., S.S.S.R. v tsifrakh—statisticheskii sbornik (The U.S.S.R. in Figures—Statistical Handbook), Gosstatizdat, Moscow, 1958, p. 59.

[9] Tsentral'noe statisticheskoe upravlenie pri sovete ministrov S.S.S.R., Narodnoe khoziaistvo S.S.S.R. v 1956 godu—statisticheskii ezhegodnik (National Economy of the U.S.S.R. in 1956—Statistical Yearbook), Gosstatizdat, Moscow, 1957, p. 282.

[10] V. Lavrov, "The Soviet Budget," Foreign Languages Publishing House, Moscow, 1959, p. 47.

[11] Pravda, Dec. 23, 1958, p. 3.

[12] Vestnik Statistiki: No. 5, 1959, p. 90.

[13] United Nations, "World Economic Survey, 1957," New York, 1958, p. 129; Economic Survey of Europe in 1958, Geneva, 1959, ch. I, pp. 6, 11. Although the increases for 1955, 1957, and 1958 are presented as increases in real wages, they are believed to refer to increases in real income.

[14] S. Figurnov, "Formy povysneniia real'noi zarabotnoi platy v S.S.S.R." (Forms of Real Wage Increases in the U.S.S.R.), Sotsialisticheskii Trud, No. 5, 1959, p. 52.

Representative BOLLING. Mr. Javits.

## STATEMENT OF BENJAMIN A. JAVITS, PRESIDENT, UNITED SHAREHOLDERS OF AMERICA, INC.

Mr. JAVITS. The statement I have filed with this committee says very little about managerial incentives, but a good deal is implied in my paper and a great deal more is said in some other papers presented to this committee.

I appreciate the invitation to present an additional statement, and I want to raise some important questions concerning incentives generally, vis-a-vis Russia, and to suggest several answers that the com-

mittee may wish to explore in its recommendations to Congress and the American people.

In the first place, we are at a constant disadvantage vis-a-vis Russia since we are merely playing a game of tick-tack-toe, without ever getting to toe. We are simply countering each move Russia makes, which is all interim, and not conclusive. The result is that we are constantly up in the air and on the defensive. This raises the question, To what goal are the incentives of our system directed?

We know the ultimate aim of the incentives of the Soviet Union, which is the state supreme and a Mr. Big as the state. Where are we going? What are our targets? Beyond the freedom of the individual, beyond an urge to thrive and grow in a system of personal welfare and dignity or a continuing rise in the standard of living, what is our great goal and aim which can give us the fervor to meet the challenge of this age and to dedicate ourselves to victory?

It seems to me that the incentive for us must be (1) recognition that we are the chosen people of this earth satellite and therefore not just a nation dedicated to getting along as best it can, and (2) that as a chosen people it is up to us to lead all the peoples of the world into the new world of atoms and space which faces us now.

And since no human being up to now has ever been faced with this new world, we must find new answers to these new challenges. The old answers will not do for very long, although we are employing them as a holding action and not by way of getting on the offensive. What are we trying to win? I believe it is peace and prosperity for all, in a framework of security. The fact is that we cannot do it alone, nor for ourselves. We cannot depend upon others doing it for us.

The apathy in this country is appalling. But it is chargeable to the fact that although there is an affirmative philosophy which can give us the zeal and fervor we require, it has not been documented or organized, nor is there leadership organized to sell it. We should not resign and we cannot resign what destiny has forced upon us.

Therefore, if we fail for ourselves we fail for the entire world. A great deal of the Russian fervor is generated because it is a pioneering country. It has risen from a very low level, and there is a certain amount of fervor generated by that very fact.

On the other hand, our people do not know that we are moving into a consumer's capitalism from a producer's capitalism, and that monopoly capitalism itself is really dead. Our people do not understand that as a "paper," "debt," or "credit" civilization, we are the hope, not the hazard, of this new civilization. Our people do not understand, nor do our leaders, that the hope of the world lies with the industrial, financial, and scientific leaders, and not with the political or military ones who are presently dominant.

We have no organized propaganda or educational machine using propaganda in the broadest sense, to do the job so necessary to keep our people educated, fervored, and enthused to be and act as the chosen people until the rest of the world joins us.

For instance, J. Walter Thompson, an advertising agency in New York, one of the largest, put out a small pamphlet called "The ABC of Capitalism." There should be thousands of these kinds of publi-

cations available to our people in all walks of life to clarify our objectives.

We use words like "inflation," "balanced budgets," "national debt," "installment buying," "balance of payments," "gold," et cetera, without realizing that the world has changed and that the meaning of these words has also changed. We must understand that our economy is based upon "paper." Behind this paper lies the ability of the issuer to produce specific needs of the community. But we seem to be frozen by copybook economic doctrines which are slowly becoming ancient. There are those who are worrying today about losing gold, and there are those who call on us to curtail our foreign operations. Incidentally, I question and sometimes object to the word "foreign" as often used.

Is the accumulation or retention of gold vital to us and the world? Is this the basis upon which we are to fix our goal? In 1940 the ratio of gold certificate reserves to deposit and Federal Reserve note liabilities was 90 percent. Today it is 40 percent and even that 40 percent has claims against it. When were we better off—then or now? Gold should be left to the assayers and soothsayers.

I hazard the opinion that gold as the international standard has lost its meaning, just as its meaning has been lost within this country. The ruble, for instance, has been unbelievably inflated, but that has not stopped the Russians from developing and expanding internally, and also abroad. The future progress, which we must lead in, is going to accelerate not because of the productive power of our people or of peoples, but because of their consuming power. This should be our incentive. This brings the human element into play, and being human today is the best kind of business policy.

In his recent visit to the United States, Mr. Khrushchev laid down the gauntlet to us—his economics versus ours. Practically every productive facility in this country, and in fact in every country of the world, is far under what it should be even now. We must scrap our archaic notions of economic theories. Let demand regulate supply, and let all agencies, attributes, and instrumentalities of our economy be influenced by that dominant force. Financing consumption is the order of the new day.

If every person in China would buy one shirt a year, there are not enough looms in the world to satisfy that demand within 50 percent. Let us give India with its 380 million people long-term credits to begin to satisfy some of their needs. Let us do the same with South America, Africa, and other parts of Asia. Incidentally, I believe a large part of these credits should go to the private sectors of their economies. Credits must be spent here. That means production and jobs and dollars. We should not look upon world credits as we do upon personal credits.

We should unite with England in a virtual common economy, and the resultant productive capacity in every field would give the West, led by the United States, a leadership which nobody could deny, and which nobody could match, and this would be done not alone for the West, but ultimately for the East as well. The Chinese and the Russians are not stupid people. When they find they cannot lick up, they will join us, in their attempt to imitate our economic system. The world is now an economic unit. The symbols of political division are

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bound to disappear. That is the path we must follow, inspired by the ethical concepts of the world's civilized religions.

Incentives must go beyond the material. We need a recognition of the type of the French Legion of Honor, the Russian Order of Lenin, or the British Knighthood. A Congressional Medal of Honor should be the reward for those who help achieve a peacetime victory.

The American worker, and workers of the world, should have a far greater personal stake in the businesses in which they are employed than they now have. They should have the benefits of bonuses, stock options, profit sharing, and good pensions, paralleling those of management. Every labor union should strive to become a stockholders' union. I hope that our financial, industrial, and scientific leaders, with the help of Congress, will inspire our people with the fervor of developing our system as it should be, and that they will direct the minds of Americans to new approaches to our new problems, in order to give security, freedom, and prosperity to all, since none can enjoy it alone, or sectionally. That is the incentive needed above all others.

Representative BOLLING. Thank you, Mr. Javits.

Mr. Berliner?

## STATEMENT OF JOSEPH S. BERLINER, SYRACUSE UNIVERSITY, SYRACUSE, N.Y.

Mr. BERLINER. In my formal paper, the discussion is confined to the assigned topic of management in the two nations. I should like to devote this oral presentation to some remarks on the broader question underlying these hearings.

Our problem springs from the fact that the fellow next door has been building up his muscles. While you and I have enjoyed a sensible combination of food and exercise, he has foregone the food and devoted himself fantically to the bar bells. Now we are healthy enough for our own tastes—although we perhaps smoke too much—but we are growing worried over the accumulation of muscles on the fellow next door. I take the central question to be: "Is there anything to be worried about, and if so, what ought we do about it?"

If it were simply a matter of different views of the good life, we should have no concern at all. Let him have his muscles; we'll take the food. The fact that we are concerned reveals our fear that his muscle building entails some danger to us. There are two possible sources of danger: first, he may use his growing strength to force his will on us and our neighbors; and second, our weaker and hungrier neighbors may be so dazzled by the example of his leap in prowess, that they may be seduced into trying his stern regime rather than the more gracious way of life that we espouse.

There is, then, something to be worried about. What should we do about it? The more impulsive of us argue that obviously we must change our pattern of life in such way as to keep our musculature growing at least as rapidly as his. In other words, dropping the cumbrous metaphor, we must at all costs stay ahead of the Soviets in GNP, or at least in the heavy industry sector. I think this is not the best approach to the solution of our problem, and wish to endorse the position taken in the paper submitted by Howard C. Petersen of the CED. I would like to argue that if we take effective

action in three critical areas, we need have no fear of Soviet muscle building, regardless of relative rates of growth; and if we fail to act effectively in all three areas, then even a higher rate of growth will not avail us.

The first area is our domestic economy. The repeated waste of idle men and machines in cyclical recessions weakens our ability to devote the resources necessary for national policy. The "creeping protectionism" of industry, labor, and agriculture drains our economy further and embarrasses our foreign policy. And the tendency of our economy to respond more vigorously to our private consumption needs than to such social needs as science and education, saps the social vigor of our system. If we succeed in eliminating these and other gross sources of inefficiency in our economy, we would probably still not attain Soviet forced-draft rates of growth, but we will make it considerably easier for ourselves to do what we need to do in the other two areas.

The second area is national defense. We must certainly take every possible measure to maintain our ability to defend ourselves and our friends against Communist aggression. No one questions this; the question is rather whether the best way to do this is to stay ahead of the Soviet Union in GNP or in industrial production.

Fifteen years ago, when we could still think of wars in terms of more steel and more planes and more bombs, there may indeed have been a direct connection between industrial prowess and military strength. But I suggest that the advent of nuclear warfare requires a drastic change in the ways we think about military defense. It is likely that both sides today possess enough H-bombs to blow not only each other but our whole sinful planet to bits. Yet more H-bombs can't do more than that. I make no pretense to professional competence in military matters, but it does seem to me that our ability to defend our world will depend primarily on what we do about the state of science and education and not primarily on our total GNP or even our total industrial production.

To be sure, modern weapon and delivery systems are expensive, and it is vital that we maintain our Nation's capacity to produce adequate quantities of the electronic, metallurgical, and other components of modern instruments of war. But this selective approach to military competition with the U.S.S.R. is vastly different from that which focuses upon some index number such as GNP or industrial production.

The third and final area is economic assistance to the poorer countries of the world. We cannot hope to dispel the allure of communism to those lands simply by demonstrating that we Americans can always and in every way outproduce the Soviet Union. Our task is rather to assist them in raising their living standards to such levels that they can, if they will, choose freedom without having to pay the price of hunger.

We have now more than enough resources to do all we can to eliminate misery in those lands. If we lack anything it is the will and perhaps the wit, to do the job, but not the resources with which to do it. Staying ahead of the Soviets in GNP will not give us the will tomorrow if we don't have it today. If we throw ourselves wholly into the task and succeed in wiping out poverty, our job is well done. If

men anywhere nevertheless choose communism not out of hunger but of their own free will, we ought not feel that we have lost. It is they who have lost.

In summary, the answer to the frantic muscle building of our neighbor is not to adopt his weird set of standards. It is rather to set our own economic house in better order, to see to our defenses, and to face squarely the things we ought to be doing to forge the kind of world we would like our children to live in. If we do these things, we can lament the sacrifices forced on the Soviet people by their obsessed leaders, but we need not ape them.

Representative BOLLING. Thank you, Mr. Berliner.

Senator Javits, would you care to ask some questions?

Senator JAVITS. I first would like to note with pardonable pride that the three members of the panel who are testifying here today are all from New York. I point out that Dr. Turgeon is from Hofstra College, My brother, of course, is a native born New Yorker who has practiced law there and learned and taught there, and Mr. Berliner is from Syracuse University.

Representative BOLLING. I might add, Senator, that if I remember correctly this particular subject was added to the agenda of these hearings by another New Yorker, yourself.

Senator JAVITS. Mr. Chairman, taking a lesson from the TV quizzes, I would not want it fixed quite that completely.

First I would like to compliment all three gentlemen upon their papers, which are stimulating, interesting, and, extraordinarily enough, stick to the particular subjects which were assigned to each. And I regard these papers with considerable approval.

I might say, too, that I think that the first of the papers has put into perspective what I consider to be the historic testimony of Allen Dulles here the other day, which we all heard, and which I think was so important to bring home to the American people individually. I hope very much in the days ahead the people of America will consider what he considered to be the danger into which we are heading.

Now, we have in this set of papers a refinement showing us just how we can go ahead to meet that danger, without flexing muscles, which is unnecessary for us, while having at the same time a mounting of strength, which we must have.

I would like to ask just one or two questions, if I may.

Dr. Turgeon, would you comment for us on the proposition we developed with Allen Dulles, whether you can see from your studies any major drive by the masses of the Soviet Union to improve living standards for their people? Do you feel that the situation has developed so that they are under a major requirement if they are to keep public opinion with them—and they do have public opinion, just like we have—to materially improve standards of living; and, from your study of the situation, if they had to do more than they are doing on it, would it seriously change the balance between the amount they are able to throw into the industrial and indeed the military potential production and what they have to do for their own people?

Mr. TURGEON. I suspect that they have not really diverted any resources to consumption, since their pile or GNP is growing at such a rapid rate they really do not have to.

In order to get increases in consumption year after year, they can pretty much keep this initial division of the product between investment goods and consumer goods and still get rather substantial increases in consumption.

Now there is one exception to this, I think. In the course of the sixth 5-year plan they were forced to scrap this plan, and I suspect that the housing shortage may have had something to do with this. If you will look at my figures in the table, you will notice that housing is one of the targets that was grossly exceeded, as far as the initial goals of the sixth 5-year plan are concerned. In other words, it is about 50 percent over what the initial target was.

I suspect this had a great deal to do with the scrapping of the plan. If you are building houses and apartments, you are not building factories, and this seems to me an important consideration.

Housing construction, in particular, does tend to cut down the rate of increase in GNP, I would say.

Senator JAVITS. Now, do you feel that this proportion would change markedly if we succeeded in accelerating the development of the less-developed areas so that the incentive, the relationship, between what is happening, let us say, in India and other areas of the world, with respect to what has happened in Soviet Russia, should suddenly change adversely to the Russians? Suppose India had a tremendous rush forward. Do you think that would have more drive on the Russian leaders to increase their own standard of living?

Mr. TURGEON. I think the Soviet standard of living is considerably higher than that of India. I do not see any sharp rise in the Indian level at the present time, or even in the next 10 years. So I do not think this is a particular problem. I do think that if the Soviet Union commits itself to more capital investment, say, in India, if they have to build more steel plants or something like this, this undoubtedly will tend to slow down the increase in levels of living within the Soviet Union, not only the increase in GNP but also the increase in levels of living. It will not necessarily cut into the existing level, and they can still get increases, because their economy is growing at such a rapid rate. However, I would say that it tends to cut down on the increase in the level of living.

Senator JAVITS. Is it a fair summary of your general views to say that as far as you can see it right now, there is not too much that we can do to change what is going on in the Soviet Union, in respect of the standard of living on which they are able to give their opinion and what they are likely to be able to do as they go along, and that our best bet is to do our major job within the free world, in improving that whole situation, rather than in trying so hard to affect what they have to do?

Mr. TURGEON. I suppose conceivably if we embarked on a greater program of foreign assistance and sort of challenged the Russians to match us, this would tend to cut down on their improvement in their domestic level of living. This is a possibility.

Senator JAVITS. But that, of course, is nothing too direct, is it? Would you regard that as a significant proposition?

Mr. TURGEON. I think it has potentialities.

Senator JAVITS. But other than that, you cannot see any other way we could directly affect their progress or lack of it in terms of standards of living?

Mr. TURGEON. Of course, if we accelerated our defense program, this also would have the same effect. In other words, defense cuts into their possibility for improving the level of living.

Senator JAVITS. But that would mean in a sense cutting off our nose to spite our face.

Mr. TURGEON. If the defense were only used for this purpose, I would say so.

Senator JAVITS. I think that is tremendously illuminating, and I congratulate you.

I should like to turn for a minute to Mr. Berliner and to my brother. I think these two presentations, very interestingly, tie together, Mr. Berliner. I agree with you very thoroughly about the fact that we should not play the other fellow's game, but our own, and you have specified the major aspects of what is Western strength.

I think implicit in this is the coordination of the trade and aid programs and policies of the free world, as well as their new political means for obtaining a rule of law instead of the rule of force.

I did want to ask you this. The main problem we have is domestic credit. The reason why we do not pass a Federal aid to education bill and improve our housing programs and give more foreign aid, both directly and through international lending agencies, and accept the Draper Committee's report for $500 million more for foreign military assistance, and accept the recommendations of the Air Force for beefing up the defense effort, is because we say we have not got the money unless we have inflation. This is the central core of it. We are no longer arguing now about whether it is desirable or undesirable; we are arguing about whether or not we can afford it.

Now, my brother, Benjamin Javits, says that we are restricting ourselves in being unable to afford it; that we have ourselves established a narrow credit base, whether it is tied to the gold that is buried at Fort Knox, or whether it is tied to current savings, or whether it is tied to the Federal Reserve, the basis of our reserve against currency. But we have tied ourselves with all of these cords that are self-restricting. Now do you agree with that?

Mr. BERLINGER. I agree with what Mr. Javits said with respect to gold. I think hte outflow of gold has been built into a bogey, and to the extent that it handicaps our foreign policy, by what I consider to be the disastrous pronouncements with respect to "buy American" strings attached to our foreign aid program, I think that we have been taken in, as Mr. Javits has well said, by the bogey of long-dead economic ideologies.

With respect to the financing of the public expenditures which you state we all agree ought to be made, but which I fear is a statement that the American population as a whole would not share, I do not know whether I could answer directly your question with respect to the financing of these programs by credit expansion, as contrasted with taxation. I do think we are a dreadfully undertaxed nation, in view of the responsibilities that face us, and I was a little worried by the emphasis upon consumption in Mr. Javits' presentation. I think we are too fat. I think we consume too much, in view of the other things that ought to be done to maintain the quality of our lives, if this is to be distinguished from the quantity of consumption in our lives.

Now, how can we restrain consumption, in order to devote the resources to social purposes, such as education and slum clearance? We could try preachment, but this would not work. People will not voluntarily restrain their consumption. I bought a new car last year, and I did not need that car. I could have gotten along without it. The only way you could have gotten me not to buy that car would be to have taxed me more. And I for one would have voted for you. Maybe a lot of other people would not. But I think the responsibility for curtailing consumption lies right in this committee and in the larger Congress of the United States. I think the greatest responsibility is upon our political leaders for taking bold positions, even in the face of popular opposition. And I have seen the strength of popular opposition in our own State.

Senator JAVITS. Mr. Berlinger, I think I did not make myself clear. I am not naive. I am under no illusions that all American people or even the great majority of them agree upon that kind of Federal aid to higher and elementary education which you would favor, perhaps. What I had in mind was that the argument is no longer made on that basis too sharply. It is now so easy to say, "We can't afford it. We haven't got the money in the Treasury. We have got to cut down." And that has been the fulcrum of all these arguments. That is what I had in mind.

Now, I agree with you that if we are to do the jobs that are to be done in the world, a greater degree of austerity has to be practiced in this country. And I would tell you that notwithstanding what you may think about the popular feeling, I believe that any politician who can explain to the people precisely why he has voted for something and then voted for the means to pay for it, will not suffer at the people's hands, and if he does, than I am disappointed. It may very well happen; but I believe that our people are eminently reasonable about that, and if you satisfy them that you voted for something that they ought to have and they really are convinced should be done, they will back you in the honesty of a proposition that you must then vote the means to pay for it. I have done it time and again. I believe you happen to be facing some colleagues who I think have at least as much spirit in that regard as I do. And I really think that your words are falling upon very fruitful ground.

Now, I would like to turn to my brother, if I may, and ask him this question, which ties in with the one I asked you.

Would you be good enough to comment specifically upon this question of whether or not your ideas on the relaxation of credit are only a way to pull ourselves up by our own bootstraps, which cannot be done; that you really have to face the hard alternative of more taxes and reduced consumption? Or what is the relationship between your idea of a different basis for credit which would make more credit available, and the hard realities of the aggregate amount of production and how that production is shared as between what the Government takes, because it is spending it for the purposes which are testified to, and what the individual can enjoy as a consumer?

Mr. JAVITS. Well, you have heard my views privately. You can now hear them publicly.

I think these so-called postulates of credit expansion or credit extension are for the most part dead, and they were proven dead in

modern times in World War I and in World War II. And the war is now just as vicious as it was in the middle of 1943 and the middle of 1918, even though no great amount of blood is shed. And therefore to meet the exigencies which my friend on my right has broken into three main headings, with courage on the part of the American legislature, you can issue credit in the form of American securities or American open credits to the extent of hundreds of billions of dollars, that you would do now if there was a Russian hydrogen bomb suspended in midair here and you knew that that bomb was not going to drop for 2 years or for 18 months. Do you think you would hesitate to appropriate $100, $200, $500 billion in the American Congress to meet that danger? You would not. And this danger is just as real.

Now what would you use as a base for issuing those notes or issuing those bonds? What would you do? All you have to do is forget all these fancy economic notions and economic names. All you have got to do is to take your balance sheet. You could not replace the United States for $10,000 billion. You have an income of $500 billion. Your total debt, as between Federal, State, and private industry, is $800 billion.

In my opinion, you have got a credit base—of course, it sounds foolish—of hundreds of billions of dollars which you can presently develop. And as you develop that, you will also develop your income. Look how your income jumped from 1940 to 1959. I have got a few figures here that might be of interest to you.

In 1939, the manufacturing average weekly earnings of a factory worker was $23.86. In 1958, $83. What happened? Was it because of the war? It was not. It was because of the credit generated by the war. And what do you think is keeping this economy going? It is the $75 to $100 billion which is credit spent by the various Government agencies.

To that extent, you have got a certain amount of inflation, maybe $30 or $40 billion a year. But that is generated largely by Government expenditures, which you are not keeping pace with in the development of your industrial economy; so that you would not have to increase taxes. You might be able to reduce them if you issued enough credit to develop your economy to the point where you had, for instance, 8 million cars production a year, or 9 million, which we could do, and 2 million homes a year, instead of a million one, or two, or three—just in those two areas alone.

The average spendable weekly earnings in 1939 were $23 a week. In 1958, $68, three times as much. This is with no dependents. With three dependents, you have $23 against $75. Consumer price index, 59.4; 1959, 123. So you have really gained. You have gained at least 50 percent.

Now let us see what else I have got here. Since 1939 to 1958, the manufacturers' sales increased five times. The money supply increased four times. The bank loans increased four times. The consumer credit, six times. In my opinion, it ought to be 8 times, or 10, or 12. The net public and private debt increased four times. But you are in a geometric progression when you are dealing with a capitalist economy. When you, for instance, develop earnings in a capitalistic economy of a hundred dollars, you can borrow up to $2,000. The stock market is telling you now you can borrow up to $4,000.

In other words, securities are selling on the basis of 20, 30, 40, and 50 times earnings if they have a future. I think the United States has a great future. If I could buy common stock in the United States, I think you could capitalize yourself for $10,000 billion. Right now you are not capitalized within a small percentage of that. So that you have everything to do it with.

Now nobody expects the United States to go out tomorrow and solve all its problems. But it can lead the world to do it. And it has enough to begin with, to start in doing the job. They do not give people as much bread or clothing or shelter as they give them hope. And people will live more on hope than they will on anything else.

Senator JAVITS. I hope one of my colleagues will develop the proposition that during wartime we did impose rather strict controls on wages, prices, conditions, allocated production, et cetera.

I just was wondering whether we might, if we release so large a volume of credit, at least in the first instance, undertake something like that as a concomitant.

Mr. JAVITS. May I make an observation on that? I would be glad to if you want me to.

Senator JAVITS. Yes; please.

Mr. JAVITS. Of course when I use these figures or when I make this broad general statement, I know that you cannot be wild about this thing. It has got to make some sense. But I will give you just one example of what I mean by making sense.

For instance, the United States, which is supposed to be a free economy, does not trust its own operators of the free economy.

I quite agree that there should be restriction upon credit for the purposes of buying stock in the stock market, because that is blowing up bubbles, to some extent. But there should not be any restriction for building a factory that can provide more cement if there are enough people who are buying houses that need it. In other words, balance your productivity with your consumption.

For instance, there is a demand, a real demand, in this country, for at least 2 million homes a year. As I read the figures here—I guess I have not read them in 2 years—the figures that I read showed that if you wanted to at least bring up the housing to some modicum of modernity, you have to build at least 10 million new homes in this country. So that we are 10 million new homes behind.

Now, it is perfectly true that we should trust our bankers, not what the Federal Reserve is doing today, not trusting the people in the banking business to make loans or to advance moneys to help industry. If there is a demand, and that can be easily measured, then the credit should be available. And therefore the people themselves should have a lot more leeway than they have got now, even in this free enterprise system, to develop the economy and to do the things that have got to be done.

Nobody can tell me, for instance, that when Mr. Von Braun says that we need a billion and a half to meet the threat of Russia, that billion and a half is not available in our economy. We have hundreds of billions of unused credit available to us without inflation danger.

Senator JAVITS. Thank you, Mr. Chairman.

Representative BOLLING. Mr. Curtis?

Representative CURTIS. I think that the papers have been very good in pointing up the problems of incentive and how levels of living

relate to incentive. And certainly I appreciate the criticism directed against our own system. I am hopeful that it will be that kind of self-criticism of our own system that will bring about the changes in it, rather than any threat of Russia. I frankly do not think you operate well in changing for the better under threats. I think better is a system of self-criticism, such as we are hearing now.

Our committee has just completed studies, although we still have papers coming in, on our own system of economic growth and price stability and full employment, and much of what has been said here, of course, will relate to that in context.

I was interested, Mr. Berliner, in your statement that we are not taxing ourselves enough. Right now, the Ways and Means Committee, of which I am a member, is a two-ring circus as far as I am concerned. They are downstairs holding hearings on changing our tax structure. I frankly doubt if we could impose more taxes through the medium of our present tax structure, which I already think is impeding economic growth in a very dangerous fashion, although I might agree that under a good tax structure we might impose more taxes. But I would hate to use it as a method of transferring economic decision in the private sector of the economy to the Government, because I am not convinced that the Government can intelligently spend more.

As I view the private enterprise system, it is essentially an economics of trial and error in these areas of sociology and so forth, and I think we derive our best advancement through the marketplace and through this system of trial and error. But that is my reasoning, I might say, for not being in favor of necessarily transferring any more purchasing power to the Federal Government on the grounds that we are too fat in the private sector.

I would prefer to have our study of where we spend money at the Federal sector through Federal capital formation on the basis——

Mr. BERLINER. I am sorry. I did not hear that last.

Representative CURTIS. On the basis of Federal capital formation, spending money, on the basis of each item we decide we might want to spend money for. I somewhat disagree with my colleague, Senator Javits, although not basically, I do not believe, in his statement in regard to these areas of housing, education, and defense, that the cutbacks are a cause of Federal expenditure and inflationary effect, although I think I regard that as a very serious aspect.

But—and here is where I part company with many of my colleagues in the economy bloc—I will spend money in many of these areas if I think that is the best way to get results. But I doubt very much whether we will get better housing and the kind of housing we want through Federal capital formation and Federal expenditures. I think we need to examine into our institutions and our structures a little more to see how we are to get it. I am convinced in the field of education it is a very dangerous procedure.

I might call attention to two things that just came to my attention, the manner in which Federal expenditures can really in certain ways cause damage. Through the recent defense education program, high schools, some of them, have been able to buy these recording machine devices and set up classrooms for teaching languages. And I went through one. It was very beautiful, and I am sure the people

that sold the equipment were very pleased about it. I also found out that very few of the people who install them know how to maintain them or anything else. It is that kind of expenditure that just worries me.

Secondly, in school construction, the Ford Foundation came out in one of their recent studies and pointed out that a great deal of our most recent school construction is probably obsolete with the advent of TV teaching methods, because there is so much glass. And I have been around a lot of those buildings and have seen the methods that have had to be improvised in order to make those buildings suitable for teaching.

I just did not want to leave this particular sector without some guarded comments and to say that I am convinced that when we talk about economic growth we had better start thinking in terms of quality rather than this absolute quantity, and where we really want to go. I just want that in the record for my own statement.

Now, on the question of the Russian level of living and incentive, there is one thing I would like to ask about the papers. I have been impressed with the two different societies in Russia, one which is called rural and the other urban. Of course, there is a great deal of differences in any society, I believe, between the urban and the rural sectors. It is particularly important in Russia, where still over 50 percent of the people live in the rural sector, and certainly the child population, the student population, in the larger families, is a bit more than that 50 percent.

Now, how about these standards of living that we have been discussing, that were discussed in the papers? Urban standards apparently are higher than the rural, am I correct in that?

Mr. TURGEON. That is correct.

Representative CURTIS. Is it a marked difference?

Mr. TURGESON. Well, it is very difficult to measure rural levels of living. In my paper, I very conveniently excluded rural levels of living. The difference has to be rather substantial, I would say, in order to effect a transition from the agricultural to the industrial sector.

Representative CURTIS. To create the incentives?

Mr. TURGEON. In other words, no one is going to leave the farm if it is so good back down there. One of the difficulties, I assume, the Russians are going to run into fairly shortly is due to the fact that since 1953 they have given most of the benefits to the rural population. There have been some reports that actually people who left the collective farms are now petitioning to get back into the farms. Things have gotten so good back on at least some of the more prosperous farms that they are now reapplying to get back in.

Representative CURTIS. I imagine one thing in rural living that would be superior would be housing, possibly.

Mr. TURGEON. In the rural areas, housing space is much more adequate; yes.

Representative CURTIS. But then this morning I was asking about education, and apparently there is only 4 years of compulsory education out in the rural sectors, and they are contemplating going to a 7 year compulsory education program. In that category, their standard would be regarded as considerably less.

I was interested to learn that they have well over 50 percent of the children out in that sector. How do they go about getting education beyond that 4 years, I wonder. Is most of the education of Russian children going to children in the urban areas?

Mr. TURGEON. Certainly the schools are much better in the urban areas. However, I think it is a mistake to just measure the number of years that you are in school. I suspect that in 4 years the Russian schoolchild, even in a rural area, may get about as much as we get in 8 years.

In other words, I cite the experience of an engineer who lived in the Soviet Union and brought his child back to this country. I think this child was in the fourth grade over there. Well, when she got back to this country, she was put immediately into the eighth grade. This, of course, is a comparison probably of urban schools. But I suspect that 4 years is much more important than we would think it would be.

Repreentative CURTIS. It could be, because I also understand they start at 7 and 8, instead of 5 and 6; so it is concentrated.

Now, another basic question: Of course, this is so general that I just call for any comments any of you might like to make.

In this country, have we not more or less gone on the premise that labor productivity is increased as the standard of living of the labor is increased? I am talking now solely of his ability to produce and produce intelligently and efficiently. Do we relate those two?

Mr. JAVITS. Oh, there is definite improvement. There is definite improvement in the standard of living, and it bears a direct relationship—I have not got the exact figures, but it certainly bears a direct relationship—to his productivity.

Representative CURTIS. We have this great differential between the productivity of the American worker and the Soviet worker. And in their 7-year plan, they seem to be relying heavily, particularly in the agricultural sector, on increasing that productivity, in order to attain their goal.

Mr. JAVITS. Did you say in the agricultural sector?

Representative CURTIS. Yes; in the agricultural sector.

Mr. JAVITS. Well, are you aware of the fact that the agricultural industry in Russia is almost completely out of the Communist operation?

Representative CURTIS. No; I was not; because I thought it was. As a matter of fact, it is going more toward—or the testimony we have received in the papers indicates that it seems to be going more toward—the state and the collective farm, with an elimination of the 1-cow farm.

Mr. JAVITS. The collective farm is practically an independent economy within the Communist framework.

Representative CURTIS. Only dictated to from central planning as to how many tractors they get?

Mr. JAVITS. No; they tell you what they want. They cut it out, because they were not getting the production. The had to cut it out.

Representative CURTIS. I know they were not getting the production. But to get back to this, I am simply concerned at this point with this subject, levels of living and incentives, and trying to relate that to productivity, because I think levels of living bear on incentive, too.

We are now really concerned about whether a man who is well fed, well housed, with proper recreation, et cetera, et cetera, is not a more

productive worker. And if he is, and to that degree, then these things that we look upon as living standards—entirely apart from the ultimate objectives of any society, which might be the good living conditions of its people entirely apart from that, entirely in the economic section, of being able to produce—have a real bearing. Is that hypothesis accepted by economists

Mr. BERLINER. I agree with the general sense of your argument, Mr. Curtis, but I would rather put it in this framework.

Representative CURTIS. Go ahead.

Mr. BERLINER. As levels of living rise, to some extent the increased consumption is competitive with capital investment and therefore with economic growth. So one might argue that as living standards go up, or as more investment goes into the direction of consumer goods, there will be less left over for steel and machines.

Your point is the qualification of this statement to say that there is a compensating factor, and the increase in living standards does tend to increase productivity, so that the loss on the one hand is partly offset by a gain on the other. But I do not think I would emphasize the magnitude of this gain. I think what accounts for increases in labor productivity in the large is caiptal. Give a worker an extra hundred horsepower, and he will put out more, more than if you gave him an extra few rubles and more income.

Mr. JAVITS. I think it might be interesting to you to hear this. I am just a lone observer, and I do not have any figures to back it up, neither our own nor the Russians. But I was in Russia last September, and the standard of living seems to be a sort of a relative thing there, because most of the people in the street that you see—of course, those that you see in the country, and I was out in the country a little bit, are very poorly dressed, very poorly clothed. Their choice of food is very simple and confined to a comparatively few items. You go into a restaurant, for instance, and they have one menu for the Russians, which they can have as a sort of table d'hote thing, and the tourist has an a la carte thing. They do not have, it seems to me, too much choice.

As far as housing is concerned, you see these huge buildings that are going up in Moscow and in Leningrad, and they are very standardized, and every person is entitled to 9 square meters. That is, if you have a family of three, you are entitled to 27 square meters of space. They do not have cars. Television goes to some of the higher-ups.

Yes; they do have radios, but, as you know, they are controlled. The radios are not too good—at least they do not look too good.

And when you go on the streets, in these kiosks, these little push-cars, or even in the stores, you see most of the people carrying their money, their paper money, in one hand like this [indicating], anxious to get rid of it. They do not get much for their money, because it is awfully expensive. So that the standard of living there—I cannot compare it to anything, but it does not seem to me it is going too far up.

The bread is good. The butter is good. Whatever meats they get are reasonably good. They are not too good, because I tasted a good many of them, and some are pretty tough.

So that I do not know how you can figure out the standard of living there to have it really mean much. Most of them looked as if they had had the same suit or dress on for a year or two or three.

I am just bringing that to your attention, not to give you any actual figures but to give you a little picture of life as I saw it.

Representative CURTIS. Many of our arguments in this country for improving labor conditions and the standard of people is the productivity argument, which I think I agree with. Certainly, in regard to health facilities, I think you can see a direct relationship on cutting down absenteeism. Are there any figures on absenteeism, from health, in the Russian economy that are available, and whether they have improved on absenteeism?

Mr. TURGEON. I have never seen any figures.

Mr. BERLINER. No. I think we might find some data in the work of Mark Field on the medical profession in the Soviet Union, which deals with doctor-patient relationships and absenteeism from the work situation.

Representative CURTIS. Of course, that is standard of living, too. In the rural area, I wonder what the number of hospitals in these areas is, the number of beds.

Mr. TURGEON. One thing we could probably say on this is that since so many people are on piecework, if they do stay home, they lose wages.

Representative CURTIS. There is that much of an incentive situation. Yes; I can see that. But if they were working while they were sick or semisick, of course, their efficiency goes down.

I think it is important that we dwell more on this differential between the productivity of the Russian worker and the U.S. worker, because I am convinced there is a great deal more to this argument that living standards increase productivity, although it is a very difficult thing to measure. I think you can measure it in things such as health, or as a direct relationship, but I suspect it goes on in other areas.

I wonder about another thing, and this has to do with living standards. I wonder how much self-education—correspondence courses at home—exist, because their living conditions, the lack of electricity in their rural areas would cut that down. Is there much adult education and self-education, correspondence courses, or that kind of education, going on in Russia to any great degree, does anyone know?

Mr. TURGEON. I would say it is very extensive. And as they have more leisure, undoubtedly it will increase.

Representative CURTIS. Yes; leisure. There is the other factor that comes right in on that, the leisure time. Do they have over there what we call "moonlighting" over here?

Mr. TURGEON. As far as I know, "moonlighting" has not hit the Soviet Union.

Representative CURTIS. In other words, as they cut down the number of hours they work, they do not take on another job. Of course, there is this shortage of manpower, apparently, that is going to confront them, and I cannot quite figure how they are going to cut down if they are projecting their planning on the workweek, unless, as I say, it were projected through increased productivity of the individual laborer.

Then we turn to this field of investment, which to me is very interesting, and particularly inasmuch as there is a difference—our investment is 20 percent of our gross national product; theirs is 25

percent—in the rate of investment. And, of course, investment in the proper capital equipment will or, theoretically, should, give increased productivity.

In one of the papers there was mention of the fact that they now have life insurance. Did you mention that?

Mr. TURGEON. I think I mentioned that.

Representative CURTIS. How does that fit in with their system? That was such an anomaly, almost.

Mr. TURGEON. I think Mr. Javits has given a hint. He says that everybody has lots of rubles. And this is particularly true in the upper income groups. And I assume this absorbs some of the excess rubles.

In other words, they have a problem of not enough savings. Life insurance is a form of saving. And hence this is something that is desirable from their standpoint.

Representative CURTIS. Is the contract with the state? Is it the Russian Government?

Mr. TURGEON. Everything is run by the state.

Representative CURTIS. This is not a private group, or the collective farms or state farms have not set up pension programs that would include an added incentive through life insurance?

Mr. TURGEON. Some of the agricultural institutions have gone into new fields recently. I am not sure whether they have gone into life insurance. They have their own pension programs, and they may possibly have gone into life insurance. I am not aware of it.

Representative CURTIS. What would the incentive be for someone with extra rubles? To put it there, because they cannot put it somewhere else?

Mr. TURGEON. Well, inheritance is a well-established institution in the Soviet Union.

Representative CURTIS. That is an area I would like to explore.

Mr. TURGEON. They do have a legal fee, but outside of this legal fee, of roughly 10 percent, you can pass on anything you want to your descendants. So, obviously, there is some incentive to have life insurance.

Representative CURTIS. Oh. And I guess as to these private firms that still exist, the land can be transferred through inheritance.

Mr. JAVITS. Only the land you use for your own purposes. They have a little dacha, a country house. That you can pass on. But that is only if you occupy it, and that is your own, more or less.

Representative CURTIS. If you happened to be pretty well off and had an automobile, you could pass that on?

Mr. JAVITS. You could pass that on too, but it does not go much above that. And life insurance, money, and personal property.

Representative CURTIS. Do they have savings accounts?

Mr. JAVITS. Oh, yes. They have been twice expropriated, if you recall.

Representative CURTIS. That is what worries me, or rather is my concern, in this area—the incentive. Of course, that would cut down on incentive to do it. But on the other hand, if there is this ability to pass on to the children—incidentally, is inheritance limited to children?

Mr. TURGEON. I think blood relatives.

Representative CURTIS. That is a factor I did not realize about the Russian setup.

Now, on the subject of incentives, as I read the papers on that I could not help but be struck by the fact that so many of these are similar to the incentives that we have in the capitalistic system and are contrary to the basic teachings, at any rate, of communism. Is that not an anomaly? Is it true that what they are doing is utilizing capitalistic methods and still calling themselves Communist? Are they getting to that point?

Mr. TURGEON. It depends. If you read the "Critique of the Gotha Program," you will find that the inequalities you find under Socialism eventually disappear when you achieve Communism.

Representative CURTIS. So that the pure Communist in Russia regards this as a transition period, and when they do get through it, they will eliminate all these incentives. And yet in the meantime they are willing to increase the incentive system.

Mr. JAVITS. You see, nobody sat down to invent capitalism. It is a form of society—as a matter of fact, that is one of the reasons I met Mr. Bolling the first time. Nobody sat down to invent it. The development of it requires certain things. And those requirements—it does not make any difference whether you are a Chinaman or a Catholic or a Jew or a Russian or an American. Those requirements are requirements. In order to make the machine go, your best bet is to have a piece worker, who can make more money if he does a better job. They have tried. They have stifled as much as they could the use or employment of attributes of so-called capitalism. But you cannot stop it. These are involved in the very process which you are trying to develop.

Representative CURTIS. You think maybe capitalism will bury them, then?

Mr. JAVITS. I think it has buried them already.

Representative CURTIS. I wonder if it has not, myself, in certain respects.

Mr. BERLINER. Mr. Curtis, it is certainly true, and I agree with the gentleman on my left, that the Soviets have increasingly adopted some of the economic techniques that we traditionally associate with capitalism. But capitalism really has no more claim to incentive payments than any other system you can have it under. In the communism Marx talked about, everybody gets the same. But what really characterizes capitalism and distinguishes our system from the Russian system is profit, really. It is property income.

Now, to be sure, the Russian worker works on piece work. The Russian manager works on a bonus system. But nobody derives income from property. This is the key to the thing. So I think we would be in error if we flattered ourselves that the Russians are getting capitalistic because they use piece rate systems.

Representative CURTIS. Let me ask this in regard to savings. There is no interest paid on those savings, then?

Mr. BERLINER. Oh, yes. You can earn a money interest on savings from your own labor, but you canot employ labor, and you cannot own means of production. But this is distinctly different from the way we operate.

Representative CURTIS. But it appears that if they get into paying interest on savings, no one knows where the savings go, and it will

undoubtedly be invested in machinery. I do not see how you could stop it. Is that not a breakdown of their theory?

Mr. BERLINER. No, it is not. There would be a breakdown in their theory if Khrushchev said, "Anyone who has put together a little bundle can go out and buy a machine and start hiring labor." This would be a breakdown in their theory. But the fact that they now include interest charges, a calculation of the rate of interest, in deciding where their resources are to be allocated, does not constitute a breakdown of their theory.

Representative CURTIS. As a part of cost accounting?

Mr. BERLINER. Exactly. But this does not make them capitalistic. It just makes good economists of them.

Representative CURTIS. I suspect, though, that what they have actually is resulting in a form of the capitalistic system, which means there is a return for savings. That is the incentive. Otherwise, I do not see how you could evaluate what you are going to put savings into, without such a system of cost accounting to figure out a return. And then when you get into savings in a bank or wherever it is, the next step to proliferating savings in the bond, stock, and equity issues, of course—that is just a relatively minor step, once you have agreed that savings are to receive a return. It does sound to me like they have abandoned communism, or apparently have not waked up to it yet, particularly when I related to Mr. Turgeon's paper, and if I misinterpret please correct me, where the managerial system seems so similar to that of our big corporations, at any rate. Certainly I recognize in our military establishment there is a similarity in many details.

Mr. JAVITS. One thing I would like to call to your attention as long as you are talking about capitalism and communism and Socialism, et cetera.

Capitalism got its name because it is a system that creates capital. From that standpoint, the Communist system is a much more capitalistic system than ours is, because proportionately, they take more capital out of the dollar of production than any capitalist in this country ever dreamed of doing. The very first thing they do is mark down their so-called profit. Before they talk about wage or anything else, for instance, they figure their coal costs. They figure how much they want to make first, how much capital they want to accumulate. And there is a good reason for doing it, because it is only by the massive and quicker accumulation of capital that they can try to beat us or get anywhere near beating us.

So from the standpoint of being a capital producing country, they are the worst damned capitalists you ever saw in your life.

Representative CURTIS. It looks like the difference is not an economic system, but a political system, as to who makes the decisions. Ours is the trial and error system that I described, an open and intelligent one, based on market decisions to see what does work. Theirs is a state planning where a group of bureaucrats, and I do not use that as an epithet, but merely descriptively, decide what to do and how to do it. And from then on, our two systems seem to be becoming more nearly the same.

Is that a fair observation?

Mr. TURGEON. I think there is a difference between investment in the two systems. In other words, their system will invest, regardless of the rate of profit, whereas our system will not invest unless the rate of profit is adequate.

Representative CURTIS. Because of market decision, yes.

Mr. TURGEON. Yes. In other words, they do not have to make a 6-percent rate of profit. They are going to invest regardless of the rate of profit. The operation of our system I would say is very significantly determined by whether or not an adequate profit rate is forthcoming. If it is not forthcoming, we have a tendency for investment to be inadequate and for unemployment to develop.

Representative CURTIS. In essence, I think what I was saying is that it is the difference between a marketplace decision as opposed to a decision of a bureaucracy, a group of men who might decide to invest in spite of any marketplace consideration. And it would seem to me in the long run there would be more economic errors committed in a bureaucracy system, state planning, than in a trial and error system, such as we have adopted.

Mr. TURGEON. Certainly errors are important in their system, but it is possible that under our system we have a chronic error of not investing enough. This is also a waste.

In other words, if we have 6 percent of our labor force unemployed, this is a very bad mistake, particularly if we have it chronically, as we seem to have at the present time.

Representative CURTIS. I made a note of this in discussing this unemployment. You do not regard frictional unemployment as economic waste, do you?

Mr. TURGEON. No, any system has frictional unemployment.

Representative CURTIS. And should have. And the more rapidly you advance technology, the greater the incidence of frictional unemployment. It would seem to me that that follows.

I have one final question. What system do they use to encourage research and development, other than just a bureaucratic decision, to invest in research and development? Of course, we have the patent device as an encouragement to it. Do they have anything other than just the state fiat through a budgetary system that so much money shall be spent there? Is there any incentive system that goes in there? Does the inventor get any return because he has invented?

Mr. TURGEON. Certainly.

Representative CURTIS. They have extended incentives to that?

Mr. TURGEON. I would say they have extended it even further than we have. In other words, they have what we might call "grassroots innovation." The average worker looks for easier, cheaper ways of doing things. Anything that will increase his productivity and produce a cost saving, he is rewarded for. It is sort of like a factory suggestion box that is used in this country, but I would say is not used as extensively.

Representative CURTIS. We get returns on other people's labor to the extent that they employ his inventions.

Mr. TURGEON. Yes, to the extent that the factory economizes, he is rewarded in bonuses.

Mr. JAVITS. But he cannot capitalize on it. He is dependent on the other fellow.

Representative CURTIS. What is that, other than capitalizing it? We are bogging down in semantics, now.

Mr. JAVITS. What I mean to say is: Suppose he was free to go into business himself. Suppose he was free to go into business for himself and make a glass cheaper or better. He cannot do it.

Representative CURTIS. He cannot be a manager—that is what you are saying—and run it that way. If he were a manager, he gets the benefit of, as I understand under the incentive system, running a better show, a more efficient show, in production and so forth, which is another way of saying that you are capitalizing.

Mr. JAVITS. He is subject to what he gets as an award. You see, if the award is 250 rubles or 500 rubles, that is what he is bound to. But whereas in this country, if I was in the glass factory and wanted to go and start another glass business, myself, my reward is unlimited, you see.

Representative CURTIS. You are limited by the marketplace.

Mr. JAVITS. There is a certain standard.

Representative CURTIS. They put a floor under his existence, unless they kick him out as a manager.

Mr. JAVITS. I asked them when I was over there: "Suppose you invent a new gadget or something new, completely. What do you do?" He says, "Well, I go to the Gosplan or the agent for the Gosplan, which is the general planning, and I tell them my idea, and I hope maybe I'll get the Order of Lenin or maybe I'll get the Order of Stalin or maybe I'll get some extra money, you see."

Representative CURTIS. Which does he put first, the Order of Stalin or the extra money?

Mr. JAVITS. I do not know, but he gets some material benefit. But of course nothing like he would here, if he had some real idea of his own.

Representative CURTIS. But he also runs the risk of going broke.

Representative BOLLING. I would like to point out something I have just learned: that in the preliminary announcement of the 72d annual meeting of the American Economic Association, which takes place in Washington, December 28 to 30, there is a panel on this same subject, and one of our discussants today is one of the discussants there, Mr. Berliner. The program is scheduled for Tuesday, December 29, at 9:30 a.m., "Incentives to Economic Growth, Changing Roles of Public Policy." And they have papers on incentives in the United States and incentives in the Soviet Union which are very interesting.

Gentlemen, we are very grateful to you all for your contribution and for your presence here today. It has been a most interesting discussion.

If there are no further comments, with that the subcommittee will stand adjourned until tomorrow at 10 o'clock, when our subject will be, "National Income and Product: A Comparison of Economic Structures, Trends, and Prospects," and our witnesses, Morris Bornstein and Frank Boddy.

(Whereupon, at 3:35 p.m., the hearing was adjourned, to reconvene at 10 a.m., Thursday, November 19, 1959.)

# COMPARISONS OF THE UNITED STATES AND SOVIET ECONOMIES

THURSDAY, NOVEMBER 19, 1959

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMIC STATISTICS OF THE
JOINT ECONOMIC COMMITTEE,
*Washington, D.C.*

The subcommittee met at 10 a.m., pursuant to recess, in room 1304, New House Office Building, Hon. Richard Bolling (chairman of the subcommittee) presiding.

Present: Representatives Bolling and Curtis.

Present also: John W. Lehman, economist for the subcommittee; Otto Eckstein, technical director, study of employment growth and price levels; and Leon Herman, senior specialist, legislative reference service.

Representative BOLLING. The subcommittee will be in order.

Having covered a number of the individual sectors, we return this morning to a general discussion of national income and product. Professor Morris Bornstein of the University of Michigan and Professor Frank Boddy of the University of Minnesota are sharing this assignment.

We will start with Professor Bornstein and hear both of the opening statements without interruption, after which I hope you will both feel free to ask questions during the general discussion.

Professor Bornstein.

## STATEMENT OF MORRIS BORNSTEIN, DEPARTMENT OF ECONOMICS, UNIVERSITY OF MICHIGAN

Mr. BORNSTEIN. This is my prepared statement.

Of all the respects in which the United States and Soviet economies may be compared, national product comparisons probably provide the most comprehensive view, because they embrace the output of all goods and services produced. The national product data not only provide summary measures of total output but also furnish much information regarding the structure of the economy and the pattern of resource allocation. These data make possible comparisons of the structure of national product in the two countries, the relative size of their national products, and the rates of growth of their respective products. All of these comparisons are important, because United States and Soviet national products differ markedly in their composition, relative size, and rates of growth. At the same time, it should be recognized that national product comparisons do

not provide the best measure for many economic, military, scientific, and political questions. For example, comparisons of the relative size of the defense components of national product do not provide an adequate index of the military potentials of the two countries. For such an appraisal, other comparisons—of manpower, training, equipment, weapons technology, et cetera—are indispensable.

Like other comparisons of the United States and Soviet economies, national product comparisons face a number of conceptual and statistical problems, arising from differences between the two countries in economic and political organization and from the difficulties of obtaining and interpreting Soviet statistical data. As Professor Campbell has stressed in his paper for the committee, the index number problem is especially important in such aggregate comparisons as those of national product; it exists both in comparisons of relative size of national product and its components and in comparisons of the growth of national product over time. Although these problems are serious and limit the precision which can be attributed to the results obtained, I believe that it is nevertheless possible to obtain an adequate and reliable indication of the relationships and orders of magnitude involved.

A comparison of resource allocation patterns in the two countries, in terms of the shares of national product devoted to the several major end-use categories, indicates that in 1955 the U.S.S.R., in comparison with the United States, devoted a significantly greater share of its resources to investment (25 versus 20 percent) and defense (13 versus 10 percent) and a significantly smaller share to consumption (59 versus 66 percent). About the same share of total resources, 3 percent, went for general government administration in both countries.

In regard to relative size, an average of alternative calculations in ruble and dollar prices indicates that in 1955 the U.S.S.R. had a national product about 38 percent that of the United States. The relationship between the two economies differs, however, in regard to the several components of national product. Soviet defense outlays were approximately equal to those of the United States, while Soviet investment outlays were about three-fifths those of the United States. In contrast, Soviet consumption was about 30 percent of the U.S. level on an aggregate basis and about 25 percent on a per capita basis. These varying relationships reflect the desire of the Soviet regime for a strong and advanced military posture and a rapid rate of growth, and its willingness to pursue these objectives at the expense of the consumption level of the population.

In the period since 1950, Soviet national product has been growing at approximately twice the U.S. rate—at an average annual rate of about 7 percent as compared with a rate of about 3 percent for the United States. As a result, Soviet national product has been increasing in size relative to U.S. national product, from about one-third the U.S. level in 1950 to a little less than half of the U.S. level in 1958. The 1958 comparison is especially favorable to the U.S.S.R. because last year Soviet national product was exceptionally high because of an extraordinary harvest, while U.S. national product showed the effects of the recent recession but not the subsequent recovery from it. However, the increase in the size of Soviet national product relative to U.S. national product over this period basically reflects the more rapid growth of the Soviet economy.

The reasons for the rapid growth of the Soviet economy since 1950 include the high rate of investment and its orientation primarily toward heavy industry rather than toward consumers' goods industry, housing, and consumers' services; the rapid growth of the nonagricultural labor force; continuing technological progress; and the increase in agricultural output result from the programs undertaken by Stalin's successors. To pursue their objectives of a rapid rate of economic growth and a strong military posture, the Soviet leaders have used fully (though perhaps not always most efficiently) the resources at their disposal, maintaining a very high and steady rate of utilization of capital and labor, without the interruptions to production which occur in a market economy such as the United States as a result of business recessions and labor disputes.

Although it is difficult to estimate with precision what future trends in Soviet national product will be, some idea of the probable trend, at least during the next 5 or 10 years, may be obtained by examining various factors which would tend to depress the rate of growth of national product and, on the other hand, some factors which would tend to maintain or perhaps even accelerate it. Among the retarding factors are a modification of the investment program in favor of housing and consumers' goods, the increase in the share of replacement investment in total investment as the capital stock ages, and the higher investment requirements associated with the exploitation of lower-grade or less accessible raw materials.

In addition, increments to the labor force will drop sharply in the next 5 years, when the effects of the low birth rates during World War II are felt. Moreover, at the same time that annual increments to the labor force are declining, the Soviet regime promises to reduce the workweek. Among the factors tending, on the other hand, to sustain or accelerate the rate of growth are the continued concern of the Soviet regime with economic growth, epitomized in the objective of overtaking the United States in aggregate and per capita output, which implies a continued high rate of investment, oriented toward heavy industry; Soviet emphasis on technological progress; and Soviet efforts to improve the planning and administration of the economy, in order to secure greater output from the available resources.

On balance, it appears to me that there may be some decline in the average annual rate of growth of Soviet national product, say from 7 percent in the 1950–58 period to 6 or 6.5 percent in the next 5 or 10 years. Even with such a decline, however, the rate of Soviet economic growth would remain high, substantially exceeding a probable United States rate of perhaps 4 percent. One consequence of the higher Soviet rate, of course, would be an increase in the size of Soviet national product relative to that of the United States. For example, if it is assumed that Soviet national product grows at an average annual rate of 6 percent and U.S. national product at an average annual rate of 4 percent, Soviet national product would increase from about 46 percent of the U.S. level in 1958 to about 53 percent in 1965.

However, more important than this narrowing of the relative size gap is the significance of a rapid rate of economic growth for the world position of the U.S.S.R. A larger, and rapidly growing, national product will provide the U.S.S.R. a greater economic base for

a strong military posture, for further scientific technical progress, for greater foreign trade and foreign aid, and for an improvement in the living conditions of the Soviet population. In all of these ways, a high rate of growth will strengthen the economic, military, and political position of the U.S.S.R.

Representative BOLLING. Thank you, Professor Bornstein.

Professor Boddy.

## STATEMENT OF FRANCIS M. BODDY, UNIVERSITY OF MINNESOTA

Mr. BODDY. This is my prepared statement, sir.

I was asked to submit a paper on comparisons of the national income and product of the United States and of the U.S.S.R. as a member of this panel. I felt that the most useful thing I could do was to pull together from regularly issued reports of the Soviet Government the claimed rates of growth in national income and other related measures of the Soviet economy in the recent past, and compare them with (1) the Hoeffding-Nimitz estimates of Soviet national income and product for 1949–55, (2) the Soviet state budget totals for 1949–59, and (3) the growth of national income and product of the United States for 1949–58.

My personal conclusions are that the claimed rates of growth in the Soviet national income from 1950 to 1956 are probably substantially above the rates of growth that research scholars in the United States will agree are reasonably correct estimates (as more data becomes available) of the growth during this period.

The rates of claimed growth in 1957 and 1958 (6 and 9 percent) and the forecast rates of growth for 1959 (8 percent) (report on the 1959 budget, by Finance Minister Zverev, Pravda, Dec. 23, 1958; Current Digest of the Soviet Press, Feb. 4, 1959) and 1960 (9 percent) ("Soviet Increases Budgets for Science and Industry," New York Times, Oct. 28, 1959) are relatively modest when compared to the growth rates claimed for the 1950–56 period. Yet such rates of growth would meet the target of the 7 year plan of the Soviets for 1959–65 of an increase of 62–65 percent in the national income of the U.S.S.R. over the period. Whether or not there is still some exaggeration in these Soviet claims of past growth, however, I would not underrate the ability of the Soviet economy to meet the demands placed on it to meet the 1965 planned growth.

Turning now to the growth rates in the gross national product of the U.S. economy from 1949–58, in constant dollars, we find the rates of increase in percent for each year over the preceding year to be: 1950, 9; 1951, 7; 1952, 3; 1953, 4; 1954, −2; 1955, 8; 1956, 2; 1957, 2; and 1958, −2. While the last, 1958, was unusually low and 1951 perhaps somewhat high, and therefore the 17-percent growth of GNP over the most recent 7-year period somewhat on the low side, nevertheless the comparative rates of growth of the two economies over the recent past do not, in my opinion, justify dismissing the Soviet intentions of catching up with the United States as an unlikely possibility over the near future. If the Soviet projected growth rate of 60 percent over the 7-year plan is maintained, and if our past 7-year growth of 17 percent is not raised, then (assuming the present Soviet GNP to be about 40 percent of that of the United States) the Soviet GNP

would be about two-thirds of ours at the end of a second 7-year period (1972) and would surpass ours before the end of the third 7-year period (1979).

These distant dates when the Soviet economy may "surpass that of the United States" are not, in my opinion, of overriding importance in considering what policy problems may be posed by the comparisons of the economies of the United States and the U.S.S.R.

In the first place, I believe that the gross national product or national income measurements by the methods developed for use in economics which are largely consumer oriented and largely controlled by a system of free markets, raise grave problems of the meaning of the results when applied to an economy that is nonconsumer oriented, and does not use or permit free-market pricing to exist as a controlling force in economic decisions.

Secondly, where a controlled, planned economy diretcs the provision of basic consumer demands by what might be called the utility grades of products or services (standardized large scale urban housing units; or the provision of effective mass transportation systems in the urban centers, instead of private automobiles), the difference in "real" national product when compared with an economy where consumer demands for high quality or extra frills leads to a large degree of "de luxe" provision of the same basic wants may not appear to many thoughtful people to be as great as the numerical indexes would imply.

Thirdly, where third party costs and benefits intrude on a large scale in the results of individual economic actions or transactions, the GNP is in some degree an inappropriate index of the desired result.

Fourthly, while "surpassing the United States" in national income might be considered an important goal of the Soviets for its persuasive effects on the uncommitted and underdeveloped areas of the world, I believe the demonstration of continuing and substantial rates of growth will be, and is, strongly persuasive well before that point.

Fifthly, the ability of the U.S.S.R. to divert to various foreign policy objectives such substantial amounts of its national product as to pose real threats to our ability to meet such moves will come far earlier than the date at which they match our GNP.

Finally, the rate of growth of the economy of the United States is a problem of great importance to the country which needs continued study and support, independently of the current status of the economic race of the two countries.

Representative BOLLING. Thank you, Professor Boddy.

Mr. Lehman?

Mr. LEHMAN. I would like to pick up from Professor Boddy's the "in the first place" paragraph, which discusses the inappropriateness or the dangers in using GNP as a measure of this Soviet economy in some respects, and ask this question: Is it conceivable that as a result of the Khrushchev reforms in attempting to raise the per capita supply of consumer goods a high level of growth in GNP could conceal the fact that the economy will perhaps have less capacity for turning out capital goods?

Mr. BODDY. What I am suggesting is that the basic assumption of the construction of GNP is that you can add together the dollar values of all the various kinds of goods and services into some meaningful kind of total; and that when you have an economy that is consumer

oriented and controlled, and decisions are effectively controlled, of both consumer and producer, by a system of free market prices, there is a very strong case to be made for the fact that the dollar is a common denominator in a very real sense. But when you have an economy where prices are used, but not used as a controlling element, and where the impact of the decision making in such a large section of the economy is not brought into balance by overriding considerations of the price and profit kind of criteria, then it seems to me that the use of the common denominator of ruble value is perhaps much less appropriate, than is the dollar in the U.S. economy. I do not suggest that there is a better index. I merely point out that there is no perfect index, and it seems to me that for the Soviet economy the ruble value is a somewhat less appropriate common denominator for Russia than is the dollar-common denominator we use in the construction of the gross national product of the United States, or, similarly, in the European countries as a whole.

I do think that if the Soviet economy does move more in the direction of consumer orientation, perhaps to some degree this will be a little relieved; although again, since the price system is not going to be free to react to consumer decisions, it will still not be a parallel to the American system, which gives us this rather good common denominator of value.

Mr. LEHMAN. You would agree, then, I am sure, with Professor Blackman's remark yesterday, that we must look inside the aggregates, too.

Mr. BODDY. Yes, indeed.

Mr. LEHMAN. There is another aspect of this that we might bring out. I will direct this question to Professor Bornstein.

We often hear it said that investment goods are priced arbitrarily in the U.S.S.R., that is, as a rule below cost of production. I think this point comes out to some extent in your paper. Hence, the body of resources set aside for the expansion actually represents a larger share in the national product than is indicated in their official value. Do you think this is a correct interpretation?

Mr. BORNSTEIN. Although it is hard to measure the extent to which it is true, this arrangement seems to prevail. To the extent, for example, to which subsidies are granted to industries producing investment goods, the stated prices do not measure the full cost of the resources as they are valued in the Soviet Union. So I think that in this respect the statement is valid. Perhaps the defense end use is an even better example.

There is a related problem here: These end-use distributions attempt to reflect the share of total resources devoted to various purposes, but it is possible that the resources are more productive in one use than in another. For example, if 1 percent of resources were devoted to investment and another 1 percent were devoted to defense, the given 1 percent might produce more output in the defense industries as a result of such factors as superior technology and a more reliable flow of raw materials. This contrast would be much sharper between defense and consumption than it would between defense and investment.

I would also like to say that I quite agree with Professor Boddy's remarks about the ruble being a less satisfactory common denominator

than the dollar, which I think is another aspect of the question that you just raised. Whereas prices in the United States are determined more or less on a uniform basis, whether they pertain to consumer goods, investment goods, or defense goods, in the Soviet Union prices are set by state decrees and not necessarily on a uniform basis. So the common-denominator feature is more applicable to the U.S. dollar and less applicable to the Soviet ruble.

But I also agree with the statement that while we are not completely satisfied with this measure, we feel it is the best aggregate measure.

I would advocate supplementing this aggregate money measure with some other comparisons. For example, labor-force distributions give some checks on the importance of various sectors and various uses—a more physical check, that does not encounter all of the problems involved in making the money comparisons.

Mr. LEHMAN. Yes. I think one of the points that came out yesterday was that despite the fact that the Soviet Union now has an extraordinarily large proportion of their people devoting their efforts to producing agricultural products, and that although their record is not very good for progress in that area, nevertheless there is always the possibility that there could be a breakthrough in terms of improvements in mechanization, with a very modest amount of investment diverted to agriculture—plus improvements in methods and techniques. While this would not necessarily permit them to make their goals in agriculture, it might permit some release of manpower. This is a potential. No one felt that it was too likely to occur, but I think everyone on the panel yesterday felt that it was there; probably because they could not explain why the Soviet Union has not done better in agriculture vis-a-vis some of their other activities.

Mr. BORNSTEIN. Presumably there is some attempt to do this in an effort to get labor released from agriculture in order to secure the desired increase in the nonagricultural labor force during a period when natural increments to the labor force—population numbers reaching the age of 16 or 17—will drop off because of the effects of World War II on the birth rate.

My impression is that there are pressures and reasons, but past performance does not make it very likely that these pressures will produce the anticipated results.

Mr. BODDY. If I could comment on that, I was in the Soviet Union a little over a year ago and spent most of my time interviewing people in the economic control side of the economy. And two or three people who are very knowledgeable and quite frank, I believe, in their answers, when questioned, admitted that they felt there was a tremendous reserve of what might be called underemployed manpower in agriculture. But they seemed to think that its release did not depend upon a very large increase in the application of capital to agriculture. It was partly the lack of housing in the cities. That was one of the factors that was keeping them from bringing as many of these additional people into the cities. Both are obviously of importance, but they both take, of course, some capital investment.

Mr. LEHMAN. On that score, then, do you think that the Soviet will find it easier, or not, to maintain roughly the present ratio between capital and consumer goods?

Mr. BODDY. Every indication seems to me to be that they are pressing forward on both fronts in about the customary proportion, which

is a very heavy emphasis on the heavy industry side. I view the rather substantial increase in the availability of consumer goods that we saw a year ago—and it was even more visible this last year—as not being a change in emphasis but merely an index of the rather rapid growth of the Soviet economy as a whole.

Mr. BORNSTEIN. In this connection, I think you have to distinguish the components of investment. The construction of housing counts as investment, just as the construction of a factory counts as investment. Factory construction will make possible expanded output in the future. The construction of housing will not. But in any particular year, they both show up as investment.

Similarly, if you produce agricultural machinery, this has a different effect on future industrial output than using the same metal and production capacity to turn out machine tools. Although in a given year some of these "consumer" programs will appear in the investment figures, they do not provide facilities that will expand future output to the same degree.

Therefore, in interpreting the investment versus consumption figures, it is necessary to go beneath the aggregates and inquire about the composition.

Representative BOLLING. If I may interject at this point, I would think there would have to be some qualification on that. I do not know whether this would happen. But assume for a moment that there were an industry which worked generally on two shifts but had a potential of three, and the bottleneck was lack of housing. Then you would have to put a double interpretation on the significance of the housing investment in terms of productivity.

Mr. BORNSTEIN. Yes. There the housing investment would really be as effective, because it would make possible more intensive use of the existing capital stock.

Representative BOLLING. And I would think, if I understand the nature of the planning and decisionmaking processes that this kind of thing would be thought through very carefully by the regime.

Mr. BORNSTEIN. I think this a sound observation. Many people, in talking about consumer goods industries or housing construction, consider that the Soviet leaders regard these in a way as costs of production. The construction of housing may be justified by them, or justified in their eyes, not so much as a means of improving living standards but as a means of making possible increased output, by bringing some of the rural population into the cities, as Professor Boddy pointed out, and, in connection with this, by making possible the more intensive use of existing facilities.

Representative BOLLING. I would like to pursue a number of points. I think I will use as my takeoff five or six points that Mr. Boddy discusses on page 2.

**In the first place, I believe that the gross national product or national income measurements by the methods developed for use in economics which are largely consumer oriented and largely controlled by a system of free markets, raise grave problems of the meaning of the results when applied to an economy that is nonconsumer oriented, and does not use or permit free-market pricing to exist as a controlling force in economic decisions.**

I would like to have you expand on that.

Mr. BODDY. I suppose the basic point I had in mind was the comment I made a little earlier about it, and that is that I think the ruble

in the Soviet economy is a much less appropriate common denominator for the adding together of this conglomerate mass of goods and services, which, when we add them together, we call the gross national product.

In the United States, and in economies where the free market controls the large percentage of the ultimate decisions with respect to the use of economic resources, the market prices are the same to everybody, generally speaking. Obviously, transport and area differences come in, but generally speaking everybody faces the same prices. That is, all producers face the same kinds of costs for the various raw materials. All kinds of consumers face the same kinds of costs for a particular product.

Each of these decisionmakers adjusts his own operations in such a way as to balance what he views as the real usefulness of these items to him with their market prices.

In other words, to talk in somewhat more technical economic jargon, they balance their operational uses of these things with the prices at the market.

Now in the Russian economy, while there is a pricing system used, and consumers are very widely free to spend their incomes as they see fit, nevertheless the effects of their demand on the price is very much restricted. Instead of having prices rise, as consumers demand more articles, there just appear to be shortages. As a matter of fact, there is a sort of general shortage in the consumer goods area in the Soviet Union.

Similarly on the production side: The costing of raw materials into the production processes creates a situation in which various producers would like to have all sorts of different quantities of these products. But they cannot adjust their use of these materials into balance with these prices, because the differing supply and demand situations are not permitted to affect the price, and because their material use is controlled by the plan.

And so what I am really saying is that because no user of these articles, either as a consumer or a producer, is able to approach, to nearly the extent that it is true in a free economy, this nice balancing of the internal valuation of these goods in consumption and use with their market prices, in the Soviet economy, it makes the market prices an inappropriate measure of the value of these things in a real sense.

Representative BOLLING. I have heard—and this may be an illustration of what you are describing—for example, that to take a certain consumer item that the regime was anxious for the consumers to spend their money on, they would price it actually below cost, thus in effect directing where consumer expenditure would go, and that another item they were not interested in consumers buying in large quantities they would place above cost.

An example is the matter of shoes versus television sets. In the one case I understand they were anxious to have television out, for obvious reasons. It is a means of communication, propaganda, education, whatever you want to call it. And shoes they were less concerned about, because they thought one pair of shoes was adequate to the situation.

Mr. BODDY. Another example of that which is extremely noticeable in the Soviet Union is the publication of books. The one thing which

impresses every American visitor to the Soviet Union is that while other articles even at 10 to 1, rubles to dollars, are not much of a bargain, books appear to be real bargains. It appears that these are substantially subsidized.

As another example, it was possible to buy a longplay record of Lenin's speeches for 16 cents in Moscow, which would compare in quality, perhaps, with our usual $3 to $4.98 type of record. This, I think, again was obvious subsidization.

Representative BOLLING. In other words, there is a totally different pricing, where price is a result of the policy of the regime, whereas ours is a result of independent decisions by a great many people.

Mr. BODDY. In agriculture, where they have introduced pricing very much more than in any other area of the economy, it is still a controlled type of use. That is, they have set up area prices, for example, for the various agricultural commodities, and they match these area prices in such a way as to create the right kind of incentives for each area to produce those crops, and hence achieve the desired emphasis—in spite of the fact that these prices are quite different in their relationships than they would be in the United States, where difference in area pricing is essentially a matter of transport cost.

Representative BOLLING. Now I would like to pursue the second point, this business about the utility versus the de luxe.

As I recall, you mainly spoke about this in terms of consumers. Is it not a fact that in most of their military hardware, tanks and more conventional weapons, they have been less de luxe, you might say, than ours?

Mr. BODDY. I just cannot speak from any practical experience or visual impressions on that, although it is a widespread impression, I agree, that generally speaking they put the emphasis only where it is absoltuely necessary for some real military quality that is desired.

Mr. BORNSTEIN. There is some evidence in regard to the manpower component of defense, where it is clear that the Soviet soldier lives much less well than his American counterpart. The Soviet private gets an ample diet, but he certainly has inferior clothing and inferior housing, in comparison with his American counterpart, and I am sure he does not have the same recreational facilities. But once again the utility level of subsistence may be quite sufficient. He may be able to fight just as well as an American soldier maintained at a much higher standard of living.

Of course, this corresponds to differences in consumption levels in the two countries.

Representative BOLLING. Has there been any work done on trying to break this down, either in the consumer field or in the military field? The difference in the amount of power that you get with a utility type approach as opposed to a de luxe approach?

Mr. BORNSTEIN. I imagine that such studies have been done in the military field by our Defense Department, but it is the sort of thing that really cannot be done by an academic researcher. You need sources of information and techniques of analysis that would be found only in that kind of organization. Surely the Defense Department would do this.

Representative BOLLING. I do not understand the third point. I am not enough of a technical economist. I need to have that explained to me.

Mr. BODDY. This is perhaps a relatively minor point, and it applies to all of the economies. It is a question of the appropriateness, again, to some degree, of this pricing measure. But in an economy that is controlled by free market prices and individual decisions, people are encouraged to carry out any particular purchase of services or goods to the point where the cost to them just balances the usefulness of the last item to them. But if this consumption or use by one person also creates benefits to other people that are very high, this is not taken into account.

The usual example given in such discussions in the United States, for example, is education. Particularly at the elementary and secondary levels, where it is worth something to society in addition to what it is worth to the individual being educated, it is of much value to the country as a whole that more education be provided than would be provided if each man paid only what he could afford for his own benefit.

Where this kind of thing comes in, what I am suggesting is that you may have, in your concept of gross national product, an implication that when this GNP is very large you have achieved in some sense a maximum welfare position. But another economy, whose gross national product may not be as large, but has taken full account of the secondary benefits, may have in fact accomplished more of the ultimate objective than their GNP would appear to show.

I would not want to emphasize this point very much, because I do not think this is a matter of real importance in judging the size of gross national products of the two countries. It is just another element that makes me unwilling to place great reliance on the precision of comparisons of gross national product.

Representative BOLLING. Your fourth, fifth, and sixth points are very well taken, and I am delighted they were brought out so strongly, because it seems to me very clear that some people could misinterpret the significance of this particular variety of race and fail to recognize that what has actually been happening has been that by their rapid rate of growth as compared to ours they on an annual basis almost have increased their capability to support whatever policy they choose, and the impact of this clearly takes place well in advance of a theoretical surpassing. I am delighted that this has been brought out so clearly, because it seems to me imperative that this be part of the consideration given to this kind of a study.

One final broad question, which may even be unfair to its broadness: Mr. Dulles in his testimony indicated that he had been struck by the substantial agreement that existed among scholars both in the question of the relative rates of industrial growth and the relative rates of overall growth in GNP terms.

I would like you both to comment on whether you agree or disagree that there is such a consensus among American scholars and students on this set of problems.

Mr. BORNSTEIN. Well, we have to determine what we mean by consensus here. There is not unanimity. I think most scholars have estimates which cluster around figures for industrial production and national product which is lower than the official Soviet claim, but substantially higher than the corresponding rates of growth for the United States.

Now, there is not unanimity. These estimates vary. But they would cluster around a range which would meet these two conditions I specified, of being well below the official Soviet figures and above the corresponding figures for the United States.

I am aware that there are some distinguished economists who depart from this consensus, but consensus does not require unanimity.

Representative BOLLING. Actually, Mr. Dulles said, "substantial agreement on the rate of industrial growth." So I think his language is more precise than mine.

Mr. BODDY. I would agree with that. I think there are distinguished people whose ranges are quite outside, perhaps, the kind of ranges that have been referred to here. But certainly in the last few years it seems to me that the people who previously had seemed to be arguing at quite wide ranges apart, as a result of further studies are now talking in terms of a narrower range of estimate with respect to the Soviet economic growth.

Representative BOLLING. And it is particularly true—if there is substantial agreement over the period from 1950 forward—that I guess the people who were in essence, at least, in my opinion, downgrading the achievements of the Soviet, are the people that used the longer periods.

Mr. BORNSTEIN. Yes, I think that is true; there has been more difference of opinion about the earlier periods. One of the differences is over which are the meaningful periods. Many people argue that going back to 1913 or any period before 1928 is not appropriate, inasmuch as the characteristics of the Soviet economy that we are likely to encounter in the future date from 1928.

I would agree with your statement that the extent of difference of opinion diminishes when we deal with the period since 1950.

Representative BOLLING. I think I will explore another thing. Again, this may be too broad, but I am concerned about it.

There are people who tend to say that this quite remarkable Russian growth rate is really a question of time; that we had remarkable growth rates at earlier periods in our history; and at least once before with the panel I tried to examine into the problem of adding circumstance to time. Several papers have brought out the fact that in our periods of greatest growth we were in very advantageous circumstances. We not only had a tremendous amount of unexploited resources, but we had, through a variety of means, a great deal of capital availability. Some of the Western European countries invested pretty heavily in our development. We had the advantage of a great deal of labor coming in, in the tremendous waves of immigration. And I suppose we had certain other advantages and presumably we had some disadvantages. But as compared to the situation that the Soviet has faced, during the periods of their highest rate of growth, they did not have these advantages and had certain disadvantages that came as a result of war and the tremendous expenditures that they were making for defense, which we did not have in those periods of our earlier and great growth.

Having opened the subject, I would like to get your comments on whether this is a sound approach, a significant factor, and so on.

Mr. BODDY. Perhaps I could comment in very general terms on this.

I think this is the kind of a question on which it is very hard to agree on the numerical indexes of these various things, and it is very hard to agree even on what are the hard facts of the situation. I think it is true that the U.S. economy's period of growth, as Mr. Nutter's studies have indicated, was a much earlier period than the parallel growth in the Soviet Union, and had these two advantages, the impact of capital from abroad and the waves of immigration that came into this country.

As we explore the third factor, the exploitation of a frontier, I think Russia is still at that stage. At least if you go over into Siberia, you have the feeling you are in the American frontier of a century ago.

In the current economic growth and in the recent growth, of course, they have had the advantage of Western technology. In other words, they can step into a frontier situation, that we faced with a rather limited technology, with all the advanced technology. And they have exploited this by encouraging people to use it, with a very high emphasis on technical training, and they have also advanced in developing new technologies, so on the technological side it seems to me the Russians have an advantage in the recent past and current period that we did not have during the parallel earlier period of our growth.

Representative BOLLING. That is a very important point. I suppose it would be completely impossible to qualify this in terms of the first two advantages versus the other advantage.

Mr. BORNSTEIN. In regard to the technological aspect, I would also mention that in addition to their training programs, they have a very ambitious publicity and publications program, whereby they collect information on foreign technological developments and publicize it widely and very promptly in the Soviet Union through an impressive technical abstracts series.

Some people would assert that as the Soviet Union becomes more developed and its level of technology approaches that of Western countries, the gains to be obtained from borrowing will be less and less in the future, and the Soviet Union will have to rely more and more on making its own contributions to technology. Yet there is, of course, still a gap where some borrowing is possible.

Another point I would make in this connection is that they have some features which we did not have during the corresponding period of our development, for example, an authoritarian regime dedicated to a high rate of growth and in a position to suppress the wishes of the population for an improvement of living standards. I am certainly not arguing for that in the case of the United States, but it is a different and important characteristic.

In terms of labor, of course, they have benefited, until very recently, from the ability to draw on a large pool of underused labor in agriculture, which perhaps provides some parallel to our ability to rely on foreign immigration during the corresponding period.

I would agree with Professor Boddy that to try to quantify these seems impossible.

Mr. LEHMAN. Is it not true, however, that the one area in which they apparently have not exploited fully the technical knowledge of the West is in this very area of agriculture, where, if that exploitation

took place at an increasingly rapid rate, they might therefore free some additional labor?

Mr. BORNSTEIN. Yes. I think there are several elements. One of these is the question of their knowledge of technical methods and their willingness to invest in agriculture to provide machines which incorporate these methods. Thus there is an investment problem, in order to implement the adoption of the technology.

Certainly this is one of the areas where the gap seems more striking than in other fields.

Representative BOLLING. It is already in the record, but let us quantify that. What, roughly, is the proportion of their manpower that is involved in agricultural production?

Mr. BORNSTEIN. Offhand, I do not know the answer to that, but I could look it up.

Representative BOLLING. Is it not something in the order of 43 to 45 percent, as compared to—what? Nine in this country.

If they did concentrate more investment and more effort, then, if they were successful, there would be no question but that they would have a tremendous potential reservoir from agricultural labor.

Mr. BORNSTEIN. Yes. Certainly visitors to the Soviet Union are struck by the number of men it takes to produce a given output on a Soviet collective farm, compared to the number needed to produce the same output on an American farm. Soviet visitors have, in turn, been extremely impressed by what an Iowa farm family can produce. Agriculture certainly is a very big potential source of labor. It is a question of the regime's willingness to undertake the very ambitious mechanization program that would be needed.

Mr. LEHMAN. I think this is perhaps more of an invitation than a question; but now that you have had the advantages of seeing the papers from the panel covering individual subject areas, are there any modifications or warnings that you would want to add to your own summary papers?

Mr. BORNSTEIN. Well, I was pleased to discover on reading the other papers that I did not feel inclined to change substantially anything that I had said in my paper.

I would endorse various observations in a number of the other papers. I thought that the discussions of the problems of Soviet statistics by Messrs. Heymann and Campbell were very important and a very desirable introduction to the rest of the collection. Also the discussion of the labor force provides a very important supplement to the kind of aggregate value figures that we deal with in national product comparisons—some sort of "real" check against these aggregate value figures.

Various people commented that perhaps the most significant questions were not these gross measures of relative size, but how the Soviet Union uses its admittedly smaller total output. If the Soviet Union, with a total output half as big as ours, disposes of it in such a way that it has a military effort equal to ours, clearly that military relationship is more important from the standpoint of economic-political-military position than the 50 percent approximate relationship for national product as a whole.

Also, I would endorse Professor Boddy's and your statement, Congressman Bolling, about the dubious significance of an arithmetic

crossover point in the future. One can, by making certain assumptions, easily extrapolate to determine when this would come—20, 30, or 40 years hence. But this is really quite an arbitrary point in the future, and many things of great consequence could happen long before then, or even after then. So it is really more significant, in my opinion, to think about the growth of the Soviet economy and what the Soviet economy is doing with its resources at the present time and will be doing in the future, than to feel complacent that this crossover will not come until, say, 30 years from now.

Representative BOLLING. Yes. That is the reason I raised that point. It suddenly occurred to me that while I would consider it not very sane, it was possible that some people would take comfort from the fact that this crossover point was probably somewhere in the relatively not too distant but still distant future. And I suddenly realized that instead of clearing the brush in this operation, we might be piling it up, unless we approached that point very directly.

Do you have a further comment?

Mr. BODDY. I would say much the same thing, with respect to my reactions from having read the other papers. Again, while some of my comments are perhaps more optimistic from a Soviet point of view than some of the stricter comments of the people who work more narrowly in this field, I still believe that I would not change my comments on the basis of what I saw.

The thing that impressed me as I read through the papers was again this feeling of consensus, that would not have appeared, I think, at such hearing in, say, 1949, at such a meeting:

The second thing that seemed to me to be quite clear is the shift in attitude. There is a growing body of opinion that it is important to inform our people that the Russians are technologically competent, that they have learned to operate a planned system rather effectively, that this is not something that we can just dismiss because it is not our system.

Representative BOLLING. I can testify from personal experience that you do not have to go back to 1949 for this. I can remember that when we started our first comparative study, which was done by the Legislative Reference Service, even then, in 1953 and 1955, a great many people said, "Well, you are a little crazy. This is entirely unimportant. There is no need to do this." And I am very much gratified by the fact that it is very clear in the papers that there is substantial agreement, at the least, probably even a consensus, and in addition to that, there is, one might say, an increased popular concern, which I think is a very valuable fact.

Gentlemen, we are very grateful to you, both for your contribution to our compendiums and for your presence here.

And unless there is further comment, the subcommittee will adjourn until this afternoon at 2 p.m., when the subject will be "Foreign Economic Activities," and the witnesses will be Robert Loring Allen, on "East-West Trade"; Franklin D. Holzman, "Financial Arrangements"; and Henry G. Aubrey, "Underdeveloped Countries."

(Whereupon, at 11 a.m., the hearing was recessed, to reconvene at 2 p.m., the same day.)

AFTERNOON SESSION

Representative BOLLING. The subcommittee will be in order.

We now turn to some of the broader ramifications of economic policy in the Soviet and in the United States with a comparison of foreign economic activities. Professor Allen will discuss East-West trade; Professor Holzman, financial arrangements; and Mr. Aubrey, underdeveloped countries. We will begin with Professor Allen and hear all of the opening statements before proceeding with the general discussion.

When Professor Allen agreed to prepare a paper for this panel, he was a member of the faculty of the University of Virginia. He is now a member of the faculty of the University of Oregon.

Professor Allen.

## STATEMENT OF ROBERT LORING ALLEN, UNIVERSITY OF OREGON

Mr. ALLEN. Thank you.

Between 1950 and 1958 the value of Soviet and East European exports has increased nearly 2½ times—an average of more than 25 percent per year. Reports on the first half of 1959 indicate that Soviet exports are up 20 percent over the first half of 1958.

The 1960 Soviet budget calls for a 25-percent increase in that year. Soviet exports to the free world have increased somewhat faster than total exports. On the other hand, United States as well as free world exports have gone up only by about three-fourths between 1950 and 1958. In 1958 the Soviet bloc exported $10.2 billion (more than $12 billion if China is included) and the free world exported about $98 billion. If the 1950–58 trends prevail in the future, Soviet-East European exports in 1975 will be almost one-fourth of free world exports and substantially more than United States exports at that time.

There are many reasons to believe, however, that recent trends represent an upper limit. Bloc trade in 1950 was still abnormally low. In addition, much of the bloc trade is among the bloc members. In 1958, 73 percent of Soviet exports went to bloc countries and 75 percent of Soviet imports came from the bloc. Trade of all bloc countries is similarly oriented inward. This large intrabloc trade reduces the impact of bloc trade expansion on free world markets. Furthermore, intrabloc trade is planned to increase at rates substantially lower than during the past decade. Between 1958 and 1965, intrabloc trade is planned for an average annual increase of 8.5 percent. This evidence of slowing down in the rate of increase of intrabloc trade may portend similar rate declines in trade with the free world.

Trends of the past decade imply a tripling of the import-domestic product ratio by 1975. Such a development would indicate a very significant relaxation of the autarky policy. While in recent years this policy has been interpreted more flexibly, there is no indication in the nature of trade, in Soviet policy statements, or in internal plans that the Soviet Union will depend upon foreign markets. Indeed, plans call for a continuation of efforts to achieve self-sufficiency, even in products in which trade has expanded. Cotton production is scheduled for substantial increases, despite large imports from

Egypt in recent years. Furthermore, when the vast size and varied resources of the bloc are considered, it is apparent that this area, with an ideological predisposition toward toward autarky, will probably not increase its import ratio significantly.

Some of the recent increases in Soviet bloc trade has been with underdeveloped countries. In the past little or no trade existed with these countries and it is evident that political motives have often been paramount. There may well be, however, a limit to such expansion. These trading partners need capital goods, but the bloc needs these same goods for its own growth. In addition, the bloc is a major primary producer, cannot absorb large quantities of these products, and in many instances competes with underdeveloped countries. Thus, limited complementarity may place an economic ceiling on trade expansion with many countries. Politics, however, could and frequently does override economics in bloc trade.

To a considerable extent bloc trade increases have been based upon a weakening of commodity markets and the need for capital inflows on long-term credit. Some countries have turned to the bloc only in desperation. If, however, primary product markets are healthy and stabilized at adequate prices, and if sufficient credit is available from Western and international agencies, then many of the opportunities for bloc trade expansion disappear. Incongruously, the prosperity of bloc trade is an inverse function of prosperity in primary product markets and in free world commerce generally.

It is not certain that even if bloc trade should continue to expand rapidly that it would necessarily be detrimental to the free world. Already the bloc has begun to retreat from bilateralism, as trading partners find other markets and suppliers in the enlarging convertible currency area. International agreement on trade practices with state trading nations could force the bloc to compete on economic grounds in free international markets. The bloc's lower productivity, poor trade performance, and limited range of exports make it unlikely that the bloc could maintain present rates of expansion in competitive markets without incurring significant costs.

Even if the bloc does not maintain present trends in trade, it will nonetheless represent an increasingly formidable force in world exports, potentially a serious challenge to the leading traders. With a rate of expansion much lower than the 1950–58 rate, the bloc could conceivably become the dominant trading partner of every underdeveloped country in the world by 1975. By concentrating on selected imports and exports, the bloc could exercise a complete economic stranglehold over Asia, Africa, and the Middle East in 1975.

The greatest danger from bloc trade expansion is in selected exports and in particular vulnerable primary producing countries. An increasing list of countries count the bloc among their most important trading partners, in total trade and in specific products. In petroleum, for example, Soviet exports increased 2.3 times between 1955 and 1958. The Soviet petroleum industry is expanding rapidly and is scheduled to triple its production, to 350 million tons, by 1965. Potentially, the Soviet Union could export five to eight times its present level by 1965. Aluminum exports more than doubled between 1955 and 1957; tin exports increased nearly sixfold in 1957 (based on imports from China); lumber exports went up 57 percent in 1957.

In these and many other products the Soviet Union could capture selected markets, drying up these markets for free world goods and creating in the trading partners a hazardous and inextricable dependence upon the Soviet Union.

In order to maintain and strengthen its competitive position, the United States must extend its policy thinking in several directions. For example, since the Soviet Union decries and inveighs against the strategic embargo, perhaps the United States and other free world countries should consider eliminating this discrimination, if the state trading nations will agree to abide by an acceptable set of standards for the conduct of international trade. Since the major threat of bloc trade expansion is the possibility of unearned economic and political benefits, it is imperative that an assault be made upon this problem.

Since the welfare of primary producing countries depends upon exports to industrial countries and the availability of credit, the United States must display its leadership in relaxing import curbs, devising new ways to provide finance capital, and assisting countries in effective use of development funds. And above all else, U.S. domestic economic policy must be increasingly oriented toward stable economic growth, to provide prosperity and progress for American citizens and enlarged opportunities for economic development in other nations.

Representative BOLLING. Thank you.

The tables attached to your summary statement will be included in the record.

(The tables referred to are as follows:)

TABLE 1.—*Soviet and East European trade, 1957–58*

| | Exports | | Imports | |
|---|---|---|---|---|
| | 1957 | 1958 | 1957 | 1958 |
| Soviet Union | 4,375 | 4,300 | 4,350 | 3,950 |
| Bulgaria | 370 | 370 | 332 | 357 |
| Czechoslovakia | 1,358 | 1,513 | 1,387 | 1,357 |
| East Germany | 1,811 | 1,880 | 1,616 | 1,680 |
| Hungary | 488 | 680 | 683 | 630 |
| Poland | 975 | 1,059 | 1,250 | 1,227 |
| Rumania | 390 | 430 | 415 | 415 |
| Total | 9,767 | 10,232 | 10,033 | 9,616 |

Source: Vneshniaia Torgovlia, No. 7, 1959, p. 14; and Economic Bulletin for Europe, vol. 11, No. 1, 1959, p. 40.

TABLE 2.—*Selected Soviet exports, 1955–58*

| | 1955 | 1956 | 1957 | 1958 |
|---|---|---|---|---|
| Aluminum, thousand tons | 41.6 | 59.9 | 85.4 | ---- |
| Asbestos, do | 67.1 | 89.5 | 103.4 | 118.0 |
| Coal, million tons | 4.3 | 5.7 | 8.8 | 9.9 |
| Copper, thousand tons | 36.7 | 52.4 | 60.6 | 44.0 |
| Crude oil, million tons | 2.9 | 4.0 | 5.9 | 9.1 |
| Iron ore, do | 8.8 | 9.1 | 10.8 | 11.9 |
| Lead, thousand tons | 26.2 | 40.5 | 54.9 | 62.0 |
| Lumber, million cubic meters | 2.34 | 2.21 | 3.47 | 3.60 |
| Machinery and equipment, billion rubles | 2.40 | 2.50 | 2.61 | 3.18 |
| Petroleum products, million tons | 5.0 | 6.2 | 7.8 | 9.0 |
| Timber, million cubic meters | 1.64 | 1.62 | 2.37 | ---- |
| Tin, thousand tons | 2.1 | 3.3 | 18.3 | ---- |
| Zinc, do | 35.5 | 50.9 | 72.2 | 66.0 |

Source: "Vneshniaia Torgovlia SSSR za 1956 god," Moscow, 1958; "Vneshniaia Torgovlia SSSR za 1957 god," Moscow, 1958; "Vneshniaia Torgovlia," No. 7, 1959.

Representative BOLLING. Mr. Holzman.

## STATEMENT OF FRANKLYN D. HOLZMAN, UNIVERSITY OF WASHINGTON AND RUSSIAN RESEARCH CENTER, HARVARD UNIVERSITY

Mr. HOLZMAN. I will attempt to summarize briefly the paper on "Financial Aspects of Soviet Foreign Trade" which was prepared at the request of the Joint Economic Committee.

First, I think it is important to note that financial factors play a much less important role in the Soviet economy, including the foreign trade sector, than they do in the economies of Western nations. This is because the Soviet planners place very little reliance upon money flows and the price mechanism in the allocation of nonlabor resources and in the determination of the level of aggregate economic activity. The allocation of nonlabor resources and the level of economic activity are implemented by the planners largely through the use of direct controls. Nevertheless, financial factors do have some significance for the operation of the Soviet economy because the labor and consumers' goods markets are both relatively free markets. Soviet foreign trade, however, is thoroughly controlled and administered by state organizations—there are no free markets here—the importance of money flows and prices is minimal.

The ruble does have an exchange rate—it has been quoted officially since 1950 as having a gold content of 0.222168 grams, which is equivalent to having a value of 25 cents. Like the exchange rates of the pound, the dollar and many other Western currencies, the ruble rate is maintained "fixed" by the Soviet Government. Unlike the exchange rates of currencies of other nations, however, the ruble rate has almost no significance for Soviet foreign trade. The ruble has always been a very much overvalued currency. In 1929, the ruble was officially valued at $0.5146. In terms of purchasing power it was worth only about 20 cents. In 1937, the ruble was officially valued at only 19 cents (as a result of a substantial devaluation in 1936) but because of the Soviet inflation of the 1930's, its value in terms of purchasing power had dropped to about 10 cents. At present, the ruble is officially valued at 25 cents, but in purchasing power terms it is still worth only 10 to 15 cents.

A Western nation with such an overvalued exchange rate would find its exports falling and imports rising; eventually it would be forced either to devalue or to use controls to restrict imports to the declining level of exports. The Soviets do not face these alternatives. An overvalued exchange rate does not lead to a declining volume of trade. The Soviet state trading monopoly maintains exports at the desired level by selling at below cost and then simply subsidizing losses on exports out of profits on imports. Exporting at below cost prices is not "dumping" in the usual sense of the term. From the point of view of the Soviet state trading monopoly, exporting and importing are two sides of the same transaction—and on the total transaction they make a profit.

Despite the fact that a ruble exchange rate is quoted, the ruble is not an international currency which can be bought and sold in foreign exchange markets. Even if the Soviets allowed rubles to be held outside

of the U.S.S.R., and they do not, no one would want them at the present overvalued exchange rate. In fact, the Soviets try to balance their trade with most nations, thereby obviating the need for currency flows. Where bilateral balancing is not feasible, accounts are settled in dollars, pounds, or gold. The impossibility of exact bilateral balancing and the consequent need for foreign-exchange reserves probably explains, in part, the large scale on which gold mining is undertaken in the Soviet Union. It is generally believed that the Soviets are, after South Africa, the largest gold producer in the world. No official figures on either gold stocks or gold production have been published for over 20 years. Some estimates place current Soviet gold production at 10 million ounces annually (about $350 million) and gold stocks at about 200 million ounces or $7 billion. But these are speculations. The only facts on hand are sales of gold to the West, and these have amounted to about $850 million over the 5-year period, 1953–58. There is some evidence to suggest that Soviet gold production is very high cost and that more foreign exchange could be earned by shifting workers out of gold mining and into industries which produce exportable goods. The Soviets have put themselves on record as favoring an increase in the price of gold.

If the ruble does not serve as a medium of exchange in international transactions, and the exchange rate between the ruble and other foreign currencies and gold plays no role in determining the level or character of Soviet trade, why is the ruble even assigned an international value? Aside from questions of prestige, the ruble has to have an exchange value for internal accounting purposes. That is to say, the ruble serves as a unit of account, if not as a medium of exchange, in Soviet foreign trade. The Soviets conduct their trade mainly in terms of world prices. In order to convert their foreign trade transactions into rubles for (1) constructing a balance of payments and (2) keeping internal accounts in the state organizations which handle exports and imports, it is necessary to have a rate of exchange between the ruble and other foreign currencies. Because the ruble is overvalued, it serves very poorly its function as a unit of account. The balance of payments estimates are not calculated in the same prices as other items in the national accounts, and Soviet trade organizations almost always have to be given subsidies to finance exports, no matter how cheaply the exports are produced, and almost always receive very large profits on imports, no matter how high the cost of the imports in terms of world prices. While these difficulties may some day motivate the Soviets to legislate a realistic ruble exchange rate, they should not be overestimated. The overvalued ruble-exchange rate is just one irrational element in a price system which contains many more serious flaws.

Representative BOLLING. Thank you.

The corrections to your paper, "Some Financial Aspects of Soviet Foreign Trade," will be included in the record.

(The corrections referred to are as follows:)

CORRECTIONS TO "SOME FINANCIAL ASPECTS OF SOVIET FOREIGN TRADE"

Dr. Oleg Hoeffding of Rand Corp. has pointed out to me some errors in my original paper which I would like to have inserted into the record:

(1) On pages 433–434, I attempted to compare the export subsidy to foreign trade combines (deduced from my measure of the degree of overvaluation of the

ruble) with the budgeted subsidy figure. My deduced figure was based on the mistaken assumption that foreign trade combines receive subsidies for all exports; and return directly to the budget, profits on all imports. Actually, where the same combine is engaged in both import and export operations, and most combines are engaged in both, probably only the net profit or subsidy is recorded by the budget. Taking this factor into account reduces, if it doesn't eliminate, the discrepancy noted in my paper, between the estimate based on the degree of ruble-overvaluation and the budgeted subsidy figure.

(2) On page 431 I estimated, on the basis of world trends, that Soviet export prices had risen by about 20 percent between 1950–56. From information contained in the 1958 Soviet foreign trade returns it is possible to deduce that export prices probably rose over this period by only 8 percent.

(3) On page 439 it is stated that Soviet foreign trade in consumers' goods is probably less than 3 percent of the value of consumers' goods sold domestically. A Soviet source points out that, in 1957 imported consumers' goods represented more than 10 percent of domestic sales.

(4) On page 434, footnote 8, I expressed ignorance as to how the Soviets account for interest and repayments on foreign loans (extended by them). These are included in the budget in the revenue item "fees and miscellaneous nontax revenues."

Representative BOLLING. Mr. Aubrey.

## STATEMENT OF HENRY G. AUBREY, NATIONAL PLANNING ASSOCIATION

Mr. AUBREY. According to table 1 in my paper in the volume of panelists' contributions, assistance granted by the Sino-Soviet bloc to 20 countries in fiscal 1954–59 totalled about $2.7 billion. Including four recent items listed at the end of this statement, the total has now reached $3.2 billion, of which nearly $2.5 billion are economic assistance. One of the additional items is particularly interesting as an example of Soviet flexibility: a loan commitment of nearly $400 million for India's third 5-year plan due to begin only in 1961. The U.S.S.R. has, in fact, committed itself for 2 to 7 years in advance at no current cost, a feat which the United States could not duplicate under present procedures.

Four of the recipient countries received only small amounts (less than $10 million each) while about 90 percent of the total was concentrated in nine countries receiving more than $100 million each. In the same 5 years the United States gave these 20 countries about $5.3 billion of economic assistance, more than 2½ times the Communist economic contribution. If aid to the other countries absent from the Soviet list were included, the American assistance amount would be doubled. Total non-Communist bilateral and multilateral assistance is being given at an annual rate of close to $3 billion. If private foreign investment were included, the total yearly flow of capital from non-Communist sources to the less developed areas probably exceeded $5 billion, at least 15 times the actual annual bloc expenditures for foreign assistance.

While this ratio appears comforting, it is questionable whether quantities count for so much. For if they did, why should one be worried about Communist aid that is relatively so small? Actually the impact of aid is not necessarily proportional to the amount, and it is desirable to distinguish between two very different impact effects.

The first is the direct economic and social impact, a slow change induced over time, often unspectacular, sometimes intangible. The second is the impression aid makes upon the recipient's mind. It is

subjective and conditioned by sentiment and prejudice; its impact is direct, immediate, and politically potent. The United States development aid programs have been fashioned with the first impact effect in mind. The Communists have shown themselves much more finely attuned to the second.

Due to the second impact effect, it matters at least as much how capital is provided as how much. For one instance, in many underdeveloped countries private foreign investment included in the above totals is frequently not accorded the same reception as loans. A plant built by the Russians and left behind when they go home may be more welcome than one remaining under foreign control indefinitely. No matter whether right or wrong, the recipient's attitudes shape the political impact, and the Communists have cleverly used the latent suspicion of Western business that rests on anticolonial and nationalistic sentiments. Therefore a nagging insistence on linking assistance to private business tends to support the Communists' taunts that Western aid is a pretext for profits whilst theirs, as they maintain, is disinterested and free of strings.

"Strings" are a psychological and political element, not determined so much by the donor's real intent as by the image in the recipient's mind. There must be conditions to foreign aid, but those that are congenial to the recipient's aspirations are not viewed as strings, while others are considered as interference. Therefore the Communist bloc has catered to the sensitive ego of new nations in both the substance of aid agreements and the pomp and circumstance surrounding the negotiations.

Communist assistance terms strike the observer as being made to appear as different as possible from Western practice. Loans are usually repayable in local products, or in local currency for which local products are to be acquired later. This relieves the recipients of the problem how to muster enough foreign exchange to transfer investment profits, interest and repayments that burden them in connection with Western capital. It also makes them feel secure in the belief that Communist loans are self-liquidating and that development assistance from the bloc can be paid for with the fruits of development itself. Interest on bloc loans is much lower than the West's. This bolsters suspicions of exploitation that are rife in formerly colonial areas where imperialism and exploitation are considered inseparable even by many non-Communists.

Identification of public enterprise with "socialistic" tendencies also tends to play into the hands of the Communists. Even in the free enterprise economies of the West, governmental initiative has been far broader in early stages of economic development than now. And today the economic structure of countries like India or Burma differs much less from many European countries than the term "Socialist" they like to apply to themselves seems to indicate. It would be tragic if a mere antagonism toward words, or a variance of social imagery, were to block the Western understanding of the prevalent aspirations for economic and social betterment which the Communists would dearly like to monopolize.

The number of Soviet technicians, an estimated 4,700 working abroad for more than a month in the first half of 1959, is not too far below the number of American Government technicians abroad. If

all Western countries and international agencies and privately employed technicians were included, the West would, of course, be far ahead of the bloc. But, again, numbers may not be a true measure of impact. The choice of projects for Soviet capital and technical assistance gives evidence of a desire to be identified with the recipient's aspirations. Sino-Soviet technical assistance is usually linked to large projects, such as mineral development or industry that are close to the heart of developing countries. Moreover, the bloc technicians' own background in recently still underdeveloped countries gives eloquent testimony for the feasibility of rapid growth which the new nations also crave.

Communist aid is always closely linked to trade, but trade alone is also made to impress less developed primary producers with the extent of complementarity between them and the bloc. Government monopolies can conclude large transactions quickly, in contrast to the atomistic and uncoordinated trading decisions characteristic of the Western system. Most importantly, the bloc has displaced a superb sense of timing, by appearing as a buyer of last resort when primary producers could not sell their output in Western markets at remunerative prices.

In return, the bloc is able to supply the kind of things the primary producers need, including capital goods for development. The value received was sometimes disappointing to the uncommitted countries, and the lesson has been learned by some that cash is better than bilateral trade whenever it can be obtained. But a continuation or recurrence of surpluses will give the bloc similar opportunities whenever non-Communist markets cannot, or are unwilling, to absorb all output. Hence the bloc's opportunities to capitalize on other countries' embarrassments will be a function of the West's neglect in looking after the health and smooth functioning of the world's free markets.

This is also the answer to the question whether the bloc could attain political control through its power over the trade of smaller nations. The bloc holds a quarter or more of some countries' trade. Where the danger point is depends on many factors, but no government need yield to excessive pressure if it knows that alternative opportunities will again become available, through a turn of the market or through deliberate Western policy. No instance of subservience through trade with the bloc has yet arisen and the West has the capability, if it has also the will, to develop policies that will deny the bloc the use of its bargaining position for obtaining strangleholds.

Such policies include maximizing the imports of the industrial countries and collaborating in attempts to stabilize the markets for commodities which the less advanced primary producers have to sell, in order to pay for imports of necessities and of development goods. These are really policies the West should want to pursue even in the absence of the Communist threat, for the viability of the world's free markets are the West's very own concern. But, of course, with the Communist bloc waiting to capitalize on the West's mistakes, the penalty for neglect is so high that aloofness is no longer feasible and concerted action indispensable. The United States, the world's largest trading nation, would do well to recognize the trend and to lead rather than lag on the road to better Western economic collaboration with the less developed areas.

Representative BOLLING. Thank you.

The addendum at the end of your summary will be included in the record.

(The addendum is as follows:)

Addendum to table 1, Communist bloc and U.S. Government assistance to selected underdeveloped countries, July 1, 1954, to June 30, 1959:

India: $378 million for third 5-year plan beginning in 1961.
India: $25 million for Barauni refinery (probably not included in above item).
Guinea: $35 million.
Indonesia: $10 to $11 million.

Representative BOLLING. At this point I would like unanimous consent that the various addenda, not only in the papers today, but in other papers which I may have neglected to get permission for, be included in the record. In other words, those sections not read by participants will be included in the record in full.

Representative CURTIS. Mr. Chairman, may I ask: How long will the record be open to receive material?

Mr. LEHMAN. The hearings are to be printed promptly.

Representative CURTIS. I thought you could let us know what would be the deadline.

Representative BOLLING. I actually was only talking about the things that were in the statements that were presented to us here. I do not want to throw the record open to everything under the sun.

Representative CURTIS. No. But I know I have requested further information in some instances and I thought we ought to set the deadline for material.

Mr. LEHMAN. Could it be 2 days after the receipt of the last transcript, which would make it about the middle of next week?

Representative BOLLING. The middle of next week will be the date unless there is objection.

Representative CURTIS. I notice in one of the papers that the estimate today is that Russia is in about sixth place as an exporter and eighth place as an importer. What was their position in prerevolutionary days? Does anyone know?

Mr. AUBREY. I am afraid I do not.

Representative CURTIS. There was quite a bit of trade in prerevolutionary Russia, was there not? Possibly they did more percentagewise than they are doing now.

Mr. HERMAN. The percentage is about the same as today, 4 percent.

Representative CURTIS. Do you know what that would be in comparison with other nations? Today they are in sixth place as an exporter and eighth place as an importer.

Mr. HERMAN. Roughly the same.

Representative CURTIS. I notice in some specific areas, for example, wheat, where they were quite an exporter in prerevolutionary days, 1958 was the only year they obtained the bulk amount of the export of wheat. I wonder how it would be in other commodities. I am just trying to look at their growth in this area of trade.

There was not much oil trade anyway, in prerevolutionary days. In gold were they an exporter?

Mr. HOLZMAN. They exported some gold in the 1930's.

Representative CURTIS. But in prerevolutionary days, it was not an item of export?

Mr. HOLZMAN. I do not know.

Representative CURTIS. Then, too, we are more or less dealing with percentages and comparisons, but I was wondering what it might be in terms of absolute figures, too.

I would like to ask one question. This is a judgment question, I suppose. Would you say today Russia's foreign trade is primarily economic or primarily political?

Mr. ALLEN. Economic and political motives are coordinate.

Representative CURTIS. It is a mixture, in other words, of course.

Mr. ALLEN. The fundamental motive for the trade is economic. That is, they are exchanging goods for goods and they are doing it for the traditional comparative cost reasons, for the most part. The manner in which they trade, the countries with whom they trade, and their conduct of trade reflect political considerations to a greater or lesser extent, depending on with whom they are doing business.

Representative CURTIS. Now, for example, let us break it down into three of the instances mentioned. Take cotton, with Sudan and Egypt. They did not need to import cotton. Or did they?

Mr. ALLEN. I cannot see cotton as an item that they need to import for the support of their own economy. They have reexported it.

Representative CURTIS. That is what I would then regard, just to apply a test, as a political reason rather than an economic. Now, fish from Iceland looks like a political motive, too.

Mr. ALLEN. They could absorb all of Iceland's output without making much of a dent in Soviet consumption of fish. But the acquisition of fish from Iceland in particular, I think, is related to the presence of an airbase, a large Communist Party in Iceland, and economic troubles in Iceland.

Burma was the same sort of situation.

Representative CURTIS. I was interested in their importation, because Iceland, having a traditional market for their fish in Great Britain, was freezing their fish. And as I understand it, Russia has no method of handling, to any advantage, frozen fish. And there was actually, to a large degree, an economic waste factor in their taking over a great deal of that fish production. I do not know, but that would look like it was political.

How about the other side, the exportation of aluminum which they recently indulged in? Do they have need for their own production or does this look like it was political? I think it makes a big difference whether or not they really are trying to develop a trade on the basis of economics, that is, that which will benefit their own production, or whether it is in the nature of a subsidy which they are doing for political reasons, which is an economic cost to them rather than a benefit.

Mr. ALLEN. I do not know about aluminum.

Do you, Henry?

Mr. AUBREY. Yes. I would like to say something about that, if I may.

I believe the question that you last mentioned, sir, is a very important one. When they buy goods, is there an economic cost or not? We will never be quite sure about the motivation because they will not tell us, but we can tell what it does to their economy.

Now, on the cotton, I believe, was not the situation so that they could have done without it, but they could very well use it, because their factories were only running one shift? And they are making

very strenuous efforts to increase their cotton output. I believe the clue is in the timing when the buying arises.

Most of the things they bought, my impression is, are things they did not absolutely have to have but which they could very well use once they had them and absorb them without much cost.

Now, as to the sale of aluminum, we can only infer from their behavior. There has been much talk whether the purpose of their incursion was to disrupt the aluminum market, and there have been some people who felt very strongly that this was the case. But what happened was that they underbid by a not-too-large margin, about 4 to 12 percent, got into the market, and then when they were threatened with an antidumping action in England, where most of their aluminum went, they drew back and voluntarily agreed to reduce their exports in the current year by, I believe, about one-third.

Now, as far as the inference from that goes, it seems to me that someone whose intent is to disrupt the market will not make such an agreement. He will go ahead and disrupt; while the way these people have acted is rather similar, it seems to me, to the way some capitalistic countries act if they want to break into a market.

I would say the same thing applies to tin, because there, also, they have drawn back and committed themselves to smaller exports in the following year.

If I may offer one additional thought with regard to American policy, perhaps the best way to proceed in our own thinking on this question is not to be tied down, not to be committed to a definite assumption, whether their intent is political or economic, or in which extent they may be mixed. It is rather to abstract from the motivation and look at their economic potential, and the symptoms, and ask ourselves the question: If at any time in the future, irrespective of the political or economic reasons, they would want to start any large scale action, are we prepared for it, and do we have an answer if and when it would occur?

Representative CURTIS. Of course, I think this is one thing we well could be looking to, too: If it is really a development of trade, which is economic, then I think that can be regarded as probably a good thing. I am thinking now of looking forward to eventual world peace, because if Russia does become dependent upon receiving commodities from a certain area, or exporting into a certain area, they become committed; but if they are proceeding on an isolationist policy of self-sufficiency, then it is an entirely different context. And I think it would be particularly wise if we would examine as carefully as we can into each one of these things to try to see what the motive is.

In other words, if they are going to become somewhat dependent on Egypt and Sudan for cotton, that could be probably or possibly a healthy thing. On the other hand, if they are not, then I think, too, it is important for us to know, so that in our discussions with Egypt and the Sudan we can expose to them what we think are the real facts, because if it is a political move rather than a basic economic move, there is no permanency to such a move.

Mr. HOLZMAN. I agree with Mr. Aubrey's statement on the aluminum and would like to add to it information regarding Soviet motivation in attempting to crack the aluminum market in 1957. It is well known that they were very short of sterling, and they need sterling

to pay for imports of all kinds of commodities, such as wool and tin and rubber, and so on, from British Commonwealth countries. It is my opinion that Soviet attempts to sell aluminum to the United Kingdom in 1957 represented an attempt to earn some sterling.

Representative CURTIS. I see. Then in your comments on gold, they did not have enough gold?

Mr. HOLZMAN. I would not say that, but I think that gold is a currency of last resort to them; that they like to keep a good large stock because it is the most flexible of all currencies to use in international trade.

Representative CURTIS. In other words, this was an intermediate step they could take.

Mr. HOLZMAN. You see, they had been selling large amounts of gold on the world markets. I do not remember how much they sold in 1957, but it was probably close to $200 million worth. They probably do not produce much more than this in a year, and I think they are probably reluctant to dip into their reserves any further than necessary. My guess is that they make other efforts to finance their imports before allowing gold reserves to be substantially reduced.

Mr. ALLEN. I want to support the notion that tin sales were fundamentally a move to acquire sterling, and this was the effect that they had. Something like $40 million in sterling were acquired in the process of selling the tin in the London market.

I want to comment on the proposition about autarky. There is no evidence in Soviet plans, there is no indication anywhere, that the Soviet Union proposes to abandon an isolationist policy. If they were going to look to trade as Western Powers look to trade, as an important element of their economy, designed to be conducted in such a way as to maximize the total income of the Soviet Union, they would not continue to produce a number of commodities which they still do.

Representative CURTIS. Which you think they produce uneconomically vis-a-vis trade?

Mr. ALLEN. I think so.

Naturally, in any land area the size of the Soviet Union—and when you include China and Eastern Europe—it is clear that average imports per gross national product will not be terribly large. There is no reason to believe that Soviet trade could not be very substantially larger if they were prepared to rely on trade in the same way that Great Britain, the United States, Canada, and the European countries rely on trade.

Representative CURTIS. I wonder if you would agree with my observation that one way we could determine whether the Soviets were really moving toward peace as a firm desire would be watching whether they did try to develop foreign trade. Would that not be a pretty good indication that they were sincere, if they abandoned what could be properly called an isolationist policy or a policy to remain economically self-sufficient?

Mr. ALLEN. I am not sure that the volume of exports or the volume of imports is really the crucial element. It is the manner in which they conduct the trade and what they hope to get out of it. They hope to get not only the standard comparative advantage gains from trade——

Representative CURTIS. What is the point of self-sufficiency if it is not from the standpoint of being militarily——

Mr. ALLEN. They want to be riding several horses simultaneously. They want to be sufficiently self-sufficient that they are not really dependent upon foreign markets, and yet they want to achieve some gains for trade, for things which are of very high cost domestically.

Simultaneously, their practices in foreign trade indicates that they look to trade for important political and bargaining influence that they can get in no other way. It seems to me one of the crucial questions is if we can strip away the possibility of their getting unearned benefits, then I would be perfectly delighted if Soviet trade were 10 times what it is today.

Representative CURTIS. I would, too, as a matter of fact, if it were on an economic basis. And what I am seeking not only in this area but in other areas is axioms that reveal intentions, as opposed to words, because the actions will be meaningful. And if there were any indication at all that Russia were trying to expand trade on an economic basis, rather than a political basis, I think it would be a very encouraging sign and might give some credence to the words they utter about their interest in peaceful existence.

Mr. HOLZMAN. To answer your question in another way, I think you could say that if the Soviets allowed themselves to become completely dependent on western nations for a large number of important imports, then you could infer that they were peacefully inclined; but if they do not allow themselves to become dependent, I do not think it can be inferred that they are necessarily warmongering. They are just maintaining a certain amount of security.

Representative CURTIS. I think I agree with that. It was really the context you put it in, that if they did do that, you could pretty well conclude that they were peaceful, but the fact that they did not would not necessarily prove the reverse.

Mr. HOLZMAN. The bulk of Soviet trade is with other bloc nations. I think that most of this trade is economically motivated. I also think that most Soviet trade with the United States and with Western Europe is also economically motivated. For example, the Soviets came here and tried to buy stainless steel, oil pipes, and so on. I cannot believe that these attempted purchases were politically motivated. I think that instances of politically motivated trade can be found probably more often in Soviet trade with the underdeveloped areas than anywhere else. But even in the case of the underdeveloped areas, I think that the political aspects show up more in the long run than short run. I doubt that the Soviets suffer many economic losses and probably make economic gains in most of their trade with the underdeveloped countries. But the longrun effect of building up trade with these nations is to tie the participating economies together to some extent. And where the economies of two nations are closely tied together, then economic and then political pressures become a possibility. But I think if you look at Soviet trade, transaction by transaction, that is from a shortrun point of view, it will usually be found to be economically motivated. However, I do not doubt that the longrun political implications of shortrun trade ties are recognized by the Soviets.

Representative CURTIS. But the three particular areas mentioned, fish and cotton and aluminum, certainly look to me more political.

Incidentally, too, it is a very minor item, but the exportation on their part of elaborate equipment into the United States looked to me like a very good propaganda move.

Do you know anything about that particular item?

Mr. HOLZMAN. Well, I know they sold most of this equipment at roughly one-tenth of domestic cost. One would expect it to be sold below domestic cost because the ruble is so overvalued. However, this equipment seemed to be priced further below cost than most items, so perhaps in some "real" sense they were selling at a loss. It is possible, of course, that in this particular case they misgaged the market. I do not know how well their commercial agents reconnoiter foreign markets and find out, "How high shall we price this stuff?" If the sales were designed for propaganda purposes, prices may have been set low on purpose. If on the other hand they were interested in simply selling the equipment to earn dollars, then they misgaged the market.

Representative CURTIS. I noticed in one of the papers, possibly yours, the comment that the Russians vis-a-vis Western European countries had never developed the art of trading in the way they had. That point seems to have been made. I suppose there is some merit to that. That is one reason I was interested in how much they were involved in trading in prerevolutionary days.

If I may ask a couple of questions on this intrabloc trade, I think one of the papers pointed out, or what I gathered in effect, was that it was a milking of the satellites. If that is so, that may be a good economic deal for Russia, but where does that fit into taking a look at what is going on? That is not building the satellites, and I wonder what the political reasons could be behind such a milking process.

Mr. ALLEN. First, we should not be too convinced that it is a fact. It probably is a fact, based upon some rather mild complaints from Eastern Europe, and they are in a position to make only mild complaints, and based upon the work of Dr. Horst Menderhausen of Rand Corp., who made a very difficult and intricate statistical study of the Soviet handbooks on trade, indicating that, compared to Western Europe, Eastern Europe was paying more for Soviet exports and was getting less for their own exports. I have forgotten the percentages, now, but they were significant, and there was a fairly broad range of commodities involved.

As to why it is done, a part of it may well be that the Soviet Union is not fully conscious of the strength of its own bargaining power. And it can be, particularly in the state trading context, that opposite numbers will give in not necessarily because of the strictly trading power of the man on the other side of the table, but simply because he represents the Soviet Union and you represent little Rumania. In that sort of a situation it is very easy, or could be very easy, for the Soviet negotiators to drive harder bargains really than they intend to drive.

Presumably, this trade is based upon world market prices, with certain adjustments. The fact that this is comparison of Eastern European-Soviet trade with Western European-Soviet trade, may also reflect harder bargaining by Western Europe, rather than any necessary

weakness or taking advantage of Eastern Europe. Western Europe has been in the trading business for a long time, and they know how to deal with the Soviet Union. And they are pretty hard bargainers. So the fact that they are a little bit better off in this may just simply be a result of their own astuteness in this context.

Representative CURTIS. Let me ask this: Does there seem to be any indication in the pattern of trading between Russia and their satellites in Europe that indicates a policy to try to put them in the position of being producers of raw materials, as opposed to manufactured products? Is there anything like that? Or does there seem to be any policy to develop certain things in the satellites and downgrade other things?

Mr. ALLEN. There is a policy of trying to rationalize the planning systems and the production structures of the economies of Eastern Europe in such a way that they will complement the Soviet Union. I am not sure that this means in every instance the subjugation of an East European country to Soviet decisions. The Council of Mutual Economic Assistance is in part designed to assist in making decisions which concern the area as a whole, concentrating certain kinds of production in certain countries.

There have been instances where they tried to get Hungary to manufacture only one product and another country to manufacture only another product, and it worked for about 3 months, and they were both back making both products.

It really is not a very feasible thing, to enforce a rigid regional distribution of production, because these are nations and still have a national sentiment, a national aspiration, and it has, I think, been increasingly felt in the Soviet Union that they are dealing with countries.

Representative CURTIS. Would there be any indication that they are trying to make these nations economically dependent upon Russia? Take, for example, the Balkans, Hungary, Bulgaria. Hungary-Bulgaria used to be an economic unit, and I dare say from a physical standpoint, they are more logically an economic unit with Austria and the Danube Basin proposition. But does there seem to be any plan designed to break that national tie to make those countries dependent, let us say, on Soviet economic production?

Mr. ALLEN. Yes. All of this happened quite a long while ago, though, when Eastern Europe became a Communist entity.

Representative CURTIS. That is right. And I am trying to find out what has happened since then and what has been the success, and where are we now?

Mr. ALLEN. Since that time there has been a slight relaxation, I think, of this togetherness of the Communist bloc, in the direction of permitting—perhaps "permitting" is not the right word—Eastern Europe to trade to a greater extent with her former trading partners, let us say, in the Middle East, with Asia, and with West European countries. But this has not really altered this fundamental decision that was taken back in 1945 to 1949. The cleavage that disrupted and tore Eastern Europe away from its traditional trading partners has not been repaired, and I cannot see any way it could be repaired short of a defection of the whole area. It seems to be fairly well tied—perhaps it is too strong to say permanently tied, but very firmly attached

commercially—to the Soviet Union. And now, of course, it is proceeding in China.

Is this a fair statement?

Mr. AUBREY. I would say so; yes.

Representative CURTIS. I believe that is all.

Mr. AUBREY. I would like to chime in, reverting to your earlier question of what should be read into the trade as a symptom for the entire attitude. It is basic Soviet dogma and has remained basic Soviet dogma that they are surrounded by a hostile world. Now, perhaps, just perhaps, they might be on the way of reaching the point of not interpreting this exclusively in military terms. So if any kind of settlement on disarmement were achieved, I would feel that they would still feel themselves surrounded by a capitalist world, which they identify as a hostile world.

Now, anyone who feels that way will not want to be dependent upon this world to any decisive extent—not necessarily for military reasons, but because he would feel that he might be open to pressures, economic or political pressures, that fall far short of military pressures. And for that reason alone, if there were not others as well, I cannot see that they might go to the point of relinquishing their autarchy. And this presumably is the reason why we have seen no indication that they do that.

And again, perhaps a practical example is that same cotton, of which we have talked before. They have a very large program of increasing their cotton production, which means very costly irrigation programs in the central Asian regions. If there were anything like a concept of comparative advantage, that they would want to go beyond mere marginal trade, surely one would see symptoms there. But it works the other way. They are planning to increase their output of cotton fiber more than their output of cotton textiles, which means that, if anything, they will have less capacity to import it some years from now than now. So if the purchase of cotton were for them a weapon to tie, let us say, Egypt to them on a permanent basis, their economic planning certainly gives no indication of it.

Would you agree with that?

Mr. ALLEN. I think that they are prepared to accept certain costs if they think they can get a sufficient offsetting political gain. They imported a lot of cotton from Egypt that wound up in France, at a loss to them.

Well, how can you be sure it is a loss? In some sort of money terms it represented a loss. But at any rate, at the time that they were importing, and still are, large quantities of cotton, Eastern Europe and the Soviet Union were not able to absorb all of it, and they disposed of it at below the world market price in Western Europe, which made no one very happy, especially the Egyptians.

In so many instances we run across the contradictions of their trying to please Egypt, and then suddenly they do something to slap Egypt's face. They are trying to, we think, build up some sort of a dependency between the Soviet Union and Eastern Europe and Egypt, and simultaneously they are creating a situation by expansion of domestic production where this dependency cannot exist except at an exhorbitant cost.

I think we have to reconcile ourselves to a lot of conflicts in a very messy subject. We cannot say anything very pat and very definitive.

Representative CURTIS. Let me take another product, because I was not aware of the fact that they imported wool, and one of you mentioned that they were importing considerable wool from the British Empire. They have got quite a bit of domestic wool production, I believe. Are they expanding that—which would indicate that they are trying to become less dependent on British imports?

Mr. ALLEN. I have forgotten how the plan reads, but it is my recollection that they plan self-sufficiency by 1965.

Representative CURTIS. In wool?

Mr. ALLEN. In wool. And not only do they import it from Great Britain, but more importantly, they import it from Uruguay. In 1958, 16 to 17 percent of Uruguayan exports went to the Soviet Union.

Representative CURTIS. What do they send back? Do you know?

Mr. ALLEN. Automobiles, some equipment. Perhaps the most important single item would be petroleum.

Representative CURTIS. That looks like real economic trade, does it not?

Mr. ALLEN. Well, I would be much happier about it if I did not have to think about the Embassy in Montevideo.

Representative BOLLING. Mr. Lehman?

Mr. LEHMAN. These next several questions probably do not permit a very precise kind of answer, but do we know whether the Soviet Union plans its level of output in industry with a view to foreign trade? Or are their exports largely in the nature of a net diversion from domestic consumption? How does this fit into their overall planning? Do we know that?

Mr. HOLZMAN. This is an area characterized by very little information, and I do not really know the answer. Commonsensibly it must be that when plans are formulated, imports are taken into account. As for exports, there are a certain number of traditional exports, and these they do not have to worry about. They have certain traditional exports, and these are plugged into the plan each year. Then they look around for additional exports to finance, let us say, the increment to imports.

I think, for example, and this is just a guess on my part, that when they were short of sterling in 1957 and were looking around for something to export in order to earn the sterling, they picked aluminum at that time because they had a temporary surplus (or at least aluminum was not as short as other commodities) as a result of switching over from planes to missiles.

I was in Russia in that year and was amazed by the huge numbers of toys made of aluminum.

Now, I am sure it is not a longrun surplus, because the increase in aluminum production that is projected for 1965 is very great. But there probably was a temporary surplus due to a change in the structure of military production.

Mr. LEHMAN. Do you think their economic trade overall is profitable? We have talked about individual commodities. Do they have any kind of a balance-of-trade position that they talk about?

Mr. HOLZMAN. I think trade is overall economically profitable, or else they wouldn't trade. I think they must have some idea as to relative costs of exports versus imports.

I have made some calculations which are so preliminary that I hate to state them, but I have measured the divergence between export prices (on the average) and domestic costs and import prices (on the average) and domestic costs. And there is a bigger divergence between domestic cost and import price than there is between domestic cost and export price. Perhaps I should point out that because their exchange rate is overvalued, both exports and imports are traded at below-cost prices.

Let me give you an example. Let us say the Soviets produce something for a thousand rubles, and export it for 500 rubles. Typically they can take 400 of those rubles, or the foreign exchange equivalent, and buy something which costs a thousand rubles to produce. This leaves them with a hundred rubles of exchange left over to buy something else.

Well, this is essentially what my figures show for 1956. Not those magnitudes, but a larger gap between imports and domestic costs than exports and domestic costs.

Mr. LEHMAN. Can foreign trading in any way ease their shortrun manpower problem, say in a way that would permit them to meet some of their goals for consumer goods? Is there any evidence that they are concerned with that?

Mr. HOLZMAN. I think they are attacking their manpower problems more directly.

I think the major way they are attempting to meet the labor shortage by changing the whole schooling system setup and by partial demobilization of the army.

Mr. LEHMAN. We have had suggestions in the other panels as to how the labor shortage might be effected. I was wondering if foreign trade had any bearing on it at all.

Mr. HOLZMAN. Foreign trade amounts to only 2 or 3 percent of the national product. If there were a saving of labor from trade, it could only be very marginal; I doubt that it could amount to more than one-tenth of 1 percent of the labor force.

Representative BOLLING. Mr. Eckstein?

Mr. ECKSTEIN. The concern of our study has been more with our American domestic economy, and I wonder if I could ask the panel whether they feel that the irregularities of Soviet trade, the sudden changes and so on, do pose a serious problem either for our own economy or for the world market in certain commodities in which we have a heavy stake.

Mr. AUBREY. It would seem to me it cannot mean very much for our economy, because foreign trade in our economy is a small part, and foreign trade with the Russian bloc is a very small part of that. It might be a very serious question for others, because if a fairly small country confronts the very large Soviet bloc—the order of magnitudes already indicates that—and if you then consider that most of these less developed countries are dependent upon a very small number of export products, of course any fluctuation on their part would mean a great deal to them.

It might also mean something for us when the case to which allusion has been made would arise, when the specific commodities would become so large as to make an impact on us in this specific commodity. I was rather intrigued by the statement, and I have

been trying to review what those commodities might be where this might arise. One where the quantities in the foreseeable future might be very large might be petroleum. It is a commodity where nothing much has happened yet, not like aluminum or tin, though there have been a few rumblings. The question is whether they would have a large surplus of crude oil, because evidently their crude production is proceeding much faster than their refining capacity.

Again the question is, How large is large? I have seen a study made by a British petroleum expert, which, after considering many facts, comes up with the result that by 1965 the very much increasing export surplus of the Soviet bloc might amount to something like 2 percent of world oil consumption. Well, there you have it. It will be a very large figure. It will be a very large percentage increase. It does not necessarily mean that it is very large in world terms.

Now, again, in terms not of world consumption, but of world trade in petroleum, if I remember the figure accurately, that might be something like 4 or 5 percent, again large, but not very large.

But then, if you think of what such quantities could do, not in terms of total world trade or consumption, but if it were concentrated on a specific market, then again you begin to think that such a local impact might be a very big one.

Now, there are a lot of questions involved in this which I am not sure should at all be raised. Offhand, from an economic point of view, one might say: "Well, we have read in the papers that the Brazilians are sending a trade delegation to Moscow, obviously with the purpose to see whether they could get rid of some more coffee." In purely economic terms, one would think that if some of this coffee, which obviously no one can use beyond all that is being consumed already, would go to someone who finds he can use more of it, it would be a good thing. The Russians are not coffee drinkers, but some of the satellite countries are, and I am quite sure they would be quite happy to receive some more of it if they were allowed to get it.

My hunch would be that where we might begin to feel unhappy about it is about what might be sent in and what might be returned. And there is a good chance that what would be sent in return, or a good part of it, would be, among other things, petroleum and petroleum-producing equipment. And this petroleum-producing equipment would go to the Brazilian petroleum monopoly, that has long been in vain groping for additional capital to buy equipment with, and of course for equipment, too, to increase its output and to reduce the enormous dependence of Brazil on foreign oil.

Now, it has been long-established American policy that Government assistance funds would not be made available for foreign oil monopolies, Government monopolies, that is, because this business, we have felt, should be left to the development by private companies, as it has been done elsewhere.

My hunch is, and I am perhaps somewhat ahead of the times, that the real problem that will arise will be in the fact that this equipment, which the Brazilian petroleum monopoly would thereby be getting from Russia, and has not been getting from the United States, may become a political factor that has little to do with economics.

There have been reports, also, that such an offer has been made to Bolivia, where the situation is not quite the same. There is a Government oil company, but there are also private companies operating.

So, in short, I believe the real impact, whatever it is going to be, will not be economic, mostly, in the sense that it will be such quantities that they would be missed in our national income or even in our balance of payments. It is more likely that what will be provided by the Soviet bloc and the friction that arises from this opportunity—wanting this equipment and not having been able to get it from the United States—that may be a political factor much more than the economic effect.

Representative BOLLING. Mr. Willard Thorp in his paper, in part III of the compendium, says, under the heading "U.S. Policy":

> Neither trade nor aid activities for either the U.S.S.R. or the United States are related in any close degree to our rates of economic growth. They are matters of international policy which are determined on other grounds. If the U.S. growth rate were higher and the U.S.S.R. growth rate were lower, it is doubtful that this would affect in any way the volume of trade and aid in either country.

Would you agree with that? Or would you disagree with it?

Mr. ALLEN. He is right with respect to aid, but I am not sure with respect to trade.

Representative BOLLING. Let us hear about it.

Mr. ALLEN. Well, to the extent that the United States can grow at rates faster than it has in the past, we become a substantially larger market, especially for primary products. This could conceivably mean, by indirection, that we would have to provide less aid. I am not sure whether in fact it would mean that. But if these countries can earn economic development funds through exporting to the United States, because of our higher rate of economic activity, then they would not look to us for more funds.

This is being wildly optimistic. I think they would continue to look to us for funds under any circumstances.

Certainly much lower rates of growth in the United States can have severe repercussions on the level of U.S. trade.

Representative BOLLING. Does anyone else wish to comment? Is there general agreement with Mr. Allen's position?

Mr. HOLZMAN. I would say within the limits in which growth rates might change, let us say from 7 to 6 percent, one would not expect any impact on aid programs. But if growth fell to 2 percent, aid would undoubtedly decline because it would then involve much more of a strain on the economy.

At present, the national income increases by something like, let us say, $10 billion a year, give or take three. The deliveries on aid probably amount to $300 or $400 million a year at the most. This is a very small fraction, about 3 or 4 percent of the $10 billion. In other words, the aid in each year amounts to only 3 or 4 percent of the increment to national income, and of course to a much smaller percent of total national income. But if the Soviet economy were not growing at 7 percent a year, but only at 2 percent a year, then the loans and the aid would be a fairly large percentage of the increment to national income. It would mean the Soviets would have to forgo other things in the aid.

Are my figures wrong?

Representative BOLLING. What is the effect, in the opinion of the panel, of taking what are really the easier and the more quickly available ways, such as tied loans or tied gifts, to the problem of the $3.4 billion net deficit in 1958 in our import-export balance? Is it a good

thing to do, a bad thing to do? Are there better solutions than the kind of approach we apparently are taking in this country by tied loans? Would someone like to comment on that?

Mr. Aubrey?

Mr. AUBREY. If we look at it from the point of view of the competitive coexistence problem, one thing that comes to mind is the fact that the Russians have been always trying to tell the underdeveloped countries that American aid was not really given to help them at all; it was only to provide profits for American business.

Now, if they can point to the fact that the loans were previously, at least in part, expended, not in any form from which American business can directly profit, and now it is being tied to American exports, it would be that much easier for them to try to make this point.

Now, this, if you wish, is a propaganda point. But wherever there may have been suspicions, this may be quite important.

There is another more remote connection which also comes to mind, which perhaps in the long run may be a more important one.

It is part of American policy that economic development should proceed as quickly as possible. Now, any measure which would not obtain maximum value for the development dollar, let us say, would diminish the amount of development this dollar would buy.

If anywhere—and this does not go just for the United States; it is true anywhere any time—a country would have to buy in one place when conceivably it could buy more cheaply elsewhere, development would be diminished to that extent.

And thirdly, I would think the matter of principle, in connection with competitive coexistence, but also for our own autonomous reasons, is very important. The United States has always been propounding the principle that trade should be free from any fetters whatsoever; that multilateral trade is more beneficial for everyone concerned than bilateral trade.

Now, tie loans and the trade that follows is by definition, bilateral.

Of course, one might answer with certainty that the Russians do nothing else. They would never dream of untying loans. But, then, this is not their principle. It is ours. They have no stake in the world market like we have. Maximization or optimization of world resources is not their interest, but it is very much a goal of American foreign policy.

So, from these various angles, I would think a certain conflict of policy inevitably arises in this direction, as it often does—a desire to achieve something in one specific sector, in this case the balance of payments, and possibly adverse effects that might arise in many other sectors in which American foreign policy is very interested, but the effect is not so immediately visible.

Representative BOLLING. Mr. Allen, I gather that you feel in essence that strategic trade controls are not particularly effective or meaningful in economic terms; that whatever effect they may have is so small that the disadvantages they have from a propaganda and other point of view is overriding. I am not trying to put words in your mouth.

Mr. ALLEN. Yes. That is a fair statement.

From a strictly economic point of view, what we have in essence done, as a result of our strategic trade controls, is to prepare the Soviet

Union for a total embargo, when in fact a total embargo never came. The result is that now they have developed substitutes at some cost. We have penalized them in this process, but they have developed those substitutes which are necessary to make them completely self-sufficient if it ever comes to that point, for instance, in the case of war.

At the same time, we have handed them a very useful propaganda tool, in the sense that they can point to this rather obvious discrimination and say that the United States is not really interested in fostering world trade.

"Look, they won't even sell us copper." Or, "They won't sell us pipe or stainless steel," and this, that, and the other thing.

And it has another effect. Our allies, who have a considerably greater stake in trade with the Soviet Union and Eastern Europe, are more disturbed by the restrictions than we are. We are not really depriving ourselves of very much. We may well be depriving some of our allies of quite a good deal, or at least they think they are being deprived of a good deal.

There may well be overriding political considerations that make a strategic embargo desirable for domestic reasons.

Representative BOLLING. Domestic political reasons?

Mr. ALLEN. Yes, domestic political reasons; the idea of trading with the enemy. We tend to identify the Soviet Union as the enemy or a potential enemy. But from the point of view of economic analysis, I do not believe they could be supported.

Representative BOLLING. In other words, what we have done is encourage their tendency toward autarchy. It is not a tendency; it is a policy.

Mr. ALLEN. We have reenforced their policy of autarchy. We have behaved just exactly the way they said we were going to behave; that we were going to be hostile. And, lo and behold, we were hostile.

Representative BOLLING. Are there any further comments or questions?

Representative CURTIS. Just on that last point: That was not until the result of the Iron Curtain being rung down first; am I right?

Mr. ALLEN. The immediate influence in my recollection was the Korean war.

Representative CURTIS. Yes. And they became more than just a theoretical enemy.

Mr. ALLEN. Put in these terms, a strategic trade embargo, imposed in anticipation of war, makes a considerable amount of sense. That is, if you impose an embargo, a partial embargo, or a strategic embargo of some kind in 1951, and force a country to become self-sufficient which heretofore had not been, it will, in the succeeding quarters, be in a very strenuous process of trying to develop substitutes.

Then, say, four quarters later, or a year and a half later, war comes. Then you add the burden of mobilization for war onto the absorption of costs for finding substitutes or making do with what they have, and you have put a rather severe burden on them. This is fundamentally the theory of the strategic embargo.

But when war does not come, it begins to break down around the edges. War did not come in 1951 or 1952 or 1953. And now we are in 1959, and still war has not come.

Representative CURTIS. I think I agree with that. I was just raising the point on this business of their autarchy, as to whether or not we contributed to that.

I mean, you made the remark that they said that we were going to do that, and we did. I would say, quite the other way around: Once it became clear that they were ringing down the Iron Curtain, as the description has been, that was when this was done. And I doubt very much whether our action, which may tend to be uneconomic and I certainly agree it is—it certainly did not contribute to the political picture.

Mr. ALLEN. They decided we were their enemy long before we were afraid that they were our enemy. They decided that we were their enemy back in 1917, and they became firmly convinced of it, in some cases for good reason, within the next few years. And they have held firmly to this view since that time.

Representative CURTIS. Yes, in spite of World War II.

Mr. ALLEN. In spite of World War II, in spite of various efforts at cooperation during the 1930's and 1940's and even into the 1950's.

Representative CURTIS. Thank you.

Representative BOLLING. Do any of you wish to make any additional comments?

If not, gentlemen, we are grateful to all of you for your papers and for your presence here in this useful and helpful discussion.

The subcommittee will stand adjourned until tomorrow morning in this same room.

(Whereupon, at 3:30 p.m., the hearing was adjourned, to reconvene at 10 a.m., Friday, November 20, 1959.)

# COMPARISONS OF THE UNITED STATES AND SOVIET ECONOMIES

FRIDAY, NOVEMBER 20, 1959

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMIC STATISTICS OF THE
JOINT ECONOMIC COMMITTEE,
*Washington, D.C.*

The subcommittee met at 10 a.m., pursuant to recess, in room 1304, New House Office Building, Hon. Richard Bolling (chairman of the subcommittee) presiding.

Present: Representatives Bolling and Curtis.

Present also: John W. Lehman, economist, Joint Economic Committee.

Representative BOLLING. The subcommittee will be in order.

For the last 4 days we have heard from research experts who have examined particular aspects of the comparative United States and Soviet economic growth. This morning, we turn to representatives of private policymakers for an evaluation of the Russian economic threat as they see it. We will start with Mr. Vennard and hear all of the summary statements without interruption, before proceeding to the discussion period when I hope all of you will feel free to join in at any point. We will identify each of the participants as we call upon them. First, then, Mr. Edward Vennard of the Edison Electric Institute.

Mr. Vennard, you may proceed as you wish.

## STATEMENT OF EDWARD VENNARD, EDISON ELECTRIC INSTITUTE, NEW YORK, N.Y.

Mr. VENNARD. Representatives of the electric power industry in the United States of America made two visits to the Soviet Union to inspect its electric power facilities and its plants for the manufacture of electrical equiment. These covered about 5 weeks and some 16,000 miles in European Russia, the Urals, Siberia, and Armenia. The Russians were cordial and hospitable. They have good engineers and scientists. Their equipment is good.

Russia has a total of 53 million kilowatts of capacity as compared to 160 million kilowatts in the United States. Eighty percent of Russia's capacity is in steam plants and 20 percent in hydroplants, about the same ratio as in America.

In steam power development Russia is operating in high temperatures and pressures, although not quite as high as in America. Russia's largest units are 200,000 kilowatts as compared to some 335,000 kilowatts here. Three machines of 500,000 kilowatts and one of

600,000 kilowatts are currently being built for American power suppliers.

Russia has a large potential of hydroelectric capacity and has built and is building a number of large hydroelectric plants. However, Russia has found, as America has found, that, with notable exceptions, electric power can be made more economically from steam. Consequently, Russia's future plan calls for 85 percent steam and 15 percent hydro. America has approximately three times the hydroelectric capacity of Russia.

About 80 percent of Russia's electric power is used for industrial purposes as compared to 48 percent in this country. The average Russian home uses about 400 kilowatt-hours per year as compared to 3,400 kilowatt-hours in the United States.

In 1958 the Russians produced 1,115 kilowatt-hours per capita as compared with 4,159 kilowatt-hours per capita in the United States.

Russia has built and is building five atomic power plants of a total capacity of 465,000 kilowatts. In America, the electric power companies are participating in some 16 projects with a total capacity of 1,400,000 kilowatts. The American program of research and development appears to be much broader than that of the U.S.S.R. In both Russia and America the cost of making energy from atomic fuels is greater than the cost from conventional fuels. In both countries atomic power is in the research and development stage. Russia plans no large scale atomic power development until atomic power can be made more economically.

Russia has about 62,000 miles of transmission lines of 35,000 volts and above. This compares to 240,000 miles in the United States.

On the average the wages in terms of purchasing power of the Russian workers are about one-third of those of American workers. The average Russian family has about one-third the housing space of the American family.

### FORECASTS

The Russian goal calls for power capacity of 110 to 112 million kilowatts by 1965. The forecast for America for that year is 245 million kilowatts.

In kilowatt-hours the Russian goal calls for about 2,170 kilowatt-hours per capita in 1965. This compares to a forecast of approximately 6,410 kilowatt-hours per capita for that year in the United States. The kilowatt-hour use per capita is a good indicator of total productive capacity and national well-being.

### RUSSIAN ECONOMIC THREAT

The Russian system is one of complete Government ownership and operation of all means of production. All workers work for the Government. Russia has been adopting some of the principles of America including incentive pay. We saw nothing which would lead us to believe that Russia will reach the electric power production of America at any time in the foreseeable future, unless of course the Russians adopt our system of individual enterprise and non-Government operation of the means of production and unless we abandon those principles here.

Representative BOLLING. Thank you, Mr. Vennard.

Next, Mr. W. E. Hamilton, director of research, American Farm Bureau Federation.

Mr. Hamilton?

## STATEMENT OF W. E. HAMILTON, DIRECTOR OF RESEARCH, AMERICAN FARM BUREAU FEDERATION

Mr. HAMILTON. Thank you, Mr. Chairman. I am very sorry that our president, Mr. Shuman, could not be here today. I am sure, however, that the committee will understand that November is an unusually busy month for farm bureau officers, as it is the month in which most State farm bureau annual meetings are held.

Marxism-Leninism, as practiced in the Soviet Union, is a collectivist, totalitarian, Socialist police state, officially based on the following concepts:

(1) Atheism promoted by Government with religion and ethics being treated as something to be destroyed as "the opium of the people."

(2) Government ownership and control of virtually all of the primary means of distribution and all means of production, including all property, homes, and land.

(3) Centralization in Government of all power and authority over every aspect of life, which vests in a small group, or individual, the determination of all policy and transmits policy to the people through the single "political party" permitted to function.

(4) Morality consists of promoting communism.

(5) Communist concepts are to be extended by every feasible means to other peoples in all countries.

In addition, the leaders of communism have specifically stated that it is a conspiracy to impose its will on the rest of the world by subversion; violence; deceit; legal and illegal means.

The conflict with communism is a conflict of opposing ideologies; consequently, it is a struggle for men's minds. In such a struggle the continued existence of either ideology is an actual or potential threat to the continued existence of the other. In such a struggle we could lose our freedom by unwittingly copying the Communist program bit by bit.

The problem of combating communism here at home is made exceedingly difficult by the fact that Socialists, as well as Communists, advocate the elimination of both the private ownership of property and the impersonal distribution of goods and services by free choice in the market. Of course, the Socialist advocates the transfer of control of private property to the Government by gradual legal means, while the Communist advocates the same thing through violent revolution.

In view of the nature of communism, the announced desire of the Communists for world domination; the clear record of Communist duplicity; and the irreconcilable nature of the conflict between communism and a philosophy that stresses freedom and the worth of the individual, U.S. policymakers should regard the U.S.S.R. as an enemy which is waging a form of total war against us and all free people of the world. The record is clear that Communist promises cannot be relied upon. Under the Soviet system every transaction is subject

to Government policy. The Soviets are not interested in developing trade or other relations with other countries on a normal basis, but only a basis that will advance Communist objectives.

This does not mean that we should seek to avoid all contacts with the Soviets, but it does mean that we should constantly be on the alert to safeguard our own interests. We must know the mainsprings of our own strength—improve and guard them—through our schools, churches, public institutions. To drop our guard would be fatal. Trying to do business with Hitler enslaved Germans, betrayed others who tried to appease him, and ended in the most devastating war in history. Trying to appease the Communists would also lead to disaster.

The outstanding difference between American and Soviet agriculture is the fact that our agriculture is characterized by independent, family-type units operating under a private, competitive enterprise system, while Soviet agriculture is characterized by collectives and state farms operating under a centralized system of bureaucratic planning.

The major problem of Soviet agriculture is to increase production to provide a better diet for an expanding population and a surplus that can be exported to acquire needed foreign products and exchange. In the United States we are plagued with surpluses because agricultural production has been expanding more rapidly than effective domestic and foreign demand. While our present agricultural surpluses are largely a result of governmental policies that have stimulated the flow of capital into agriculture and have retarded needed adjustments, they are nonetheless an indication, not only of the present productive ability of American agriculture, but also of our capacity to expand agricultural production.

Both the United States and the U.S.S.R. have great natural agricultural resources; however, we have some definite advantages in this area.

Adverse climatic conditions are a serious natural handicap for Soviet agriculture. This reflects the northern location of the U.S.S.R. and other geographical factors. Much of the expansion that has taken place in recent years in the area seeded to crops in the Soviet Union has been in the so-called new lands in central Asia and western Siberia. These lands are subject to wide variations in rainfall, and it remains to be seen whether they can be kept in production over an extended period of time.

The Soviet diet has leaned heavily on cereals, potatoes, and other vegetables. Soviet leaders have announced ambitious plans for the expansion of meat production; however, their agricultural resources are better adapted to the production of food grains than the feed grains that are essential for meat production. Steps can be taken to expand feed production, but this may require considerable time. In the meantime population growth will increase the production needed to maintain present diets.

At the present time the United States is far ahead of the U.S.S.R. in agricultural technology.

It has been estimated that 43 percent of the Soviet population is engaged in agriculture.

The large percentage of the Soviet work force which is now engaged in agriculture means that the Soviets have a very great potential for strengthening their economy by improving efficiency in agriculture and, thereby, releasing labor for other activities.

From a long-run standpoint, our greatest advantage over the Soviets in agriculture, as well as in other fields, is not to be found in natural resources or technology, but in the fact that we have an incentive system, while the Soviets have a planned economy.

Centralized planning can produce spectacular results in individual undertakings, but it cannot mobilize the total energies and abilities of individual citizens as effectively as an incentive system. In a market system the mistakes of individuals tend to cancel out with little effect on overall progress of the economy; but when the planners make a mistake in a planned economy, the result may be nationwide and disastrous.

Despite the limitations of a planned economy, the Soviets have a great potential for increasing the productivity of their agricultural workers. If we are to maintain the margin of advantage which the United States now has over the U.S.S.R. by reason of the greater productivity of our agricultural workers, we must avoid hamstringing the further growth and development of American agriculture. This means we must avoid policies that substitute Government planning for the operation of an incentive system and also policies that attempt to freeze farming in a rigid historical mold, or otherwise prevent needed adjustments in the resources (including human resources) devoted to agriculture.

The present and potential productivity of Soviet agriculture suggests that Soviets can meet their basic needs for agricultural products even with an expanding population, but that they will have great difficulty in providing their people with a diet of the quality that is now available to American consumers in the foreseeable future.

Self-sufficiency in agriculture has ben an advantage to warring countries in the past when prolonged hostilities have sometimes shut off outside supplies. The importance of self-sufficiency in agriculture in case of an atomic war, which might result in great devastation in a short time, is open to question. Assuming that it is the intention of the Soviets to continue the cold war without provoking a full-scale shooting war, the future progress of their agriculture is of concern to us primarily from the standpoint of its potential impact (1) on the Soviet economy, which has already been discussed, and (2) on international trade in farm products.

During the last few years the Soviet Union has moved into a leading position as an exporter of grains, principally wheat. Here is one example of what has been happening:

In 1957 the U.S.S.R. moved about 2,000 metric tons of wheat to the Netherlands. In 1958, the total increased to 5,000 tons. On the basis of the record for the first 6 months of 1959, the Farm Bureau foreign trade office estimates that the U.S.S.R. may move as much as 300,000 metric tons of wheat to the Netherlands this year along with a substantial amount of feed grains.

These sales represent lost markets for American farmers and also for our competitors in such countries as Canada and Argentina.

The U.S.S.R. is increasing wheat production. A substantial part of the increase that has already taken place in Soviet wheat exports has gone to satellite countries, where requirements may decrease rather than increase. We should be prepared for a substantial rise in Soviet wheat exports to the free world. However, Soviet policy with respect to the emphasis to be put on the expansion of feed production to make possible an enlarged livestock industry, could be an important limitation on future wheat production and exports.

Soviet trade policy in farm commodities is tied to an extent with the export policies of Communist China. European oil crusher contacts reveal that soybeans from the Manchuria area are becoming increasingly popular in Western Europe. It is believed also that the Chinese Communists have serious future export intentions for other oilseeds and tobacco. They also have made small trial shipments of frozen poultry to Western Europe.

During the coming years competition from the Soviet Union, satellite countries, and Communist China will be extremely keen in certain agricultural export markets. The United States cannot and should not rely upon political friendships to guarantee markets for farm products. We must compete on tough commercial terms with quality products.

From an overall standpoint, it should be emphasized that at the present time the Soviet economic offensive is still in the nature of a "threat" rather than an actuality.

The United States has an important advantage in the field of international trade because it is a tremendously important international market. It is elementary that trade is a two-way street; that if we wish to hold our export markets, we must allow our customer nations access to the U.S. market. It is through the inducement of offering other countries the opportunity to expand trade with us that the United States can best thwart the U.S.S.R.'s so-called trade offensive.

Representing 1,600,000 farm families engaged in an American industry which produced 22 percent of U.S. exports in 1958, Farm Bureau believes that the United States can meet and defeat any Soviet trade offensive as long as it adheres to, and vigorously implements, the principles of private, competitive enterprise that have contributed so much to the development of our Nation.

Thank you.

Representative BOLLING. Thank you, Mr. Hamilton.

Next, Mr. John Raber of the Indiana Farmers Union.

## STATEMENT OF JOHN RABER, INDIANA FARMERS UNION, INDIANAPOLIS, IND.

Mr. RABER. Mr. Chairman, as an Indiana farmer traveling in Russia in July of 1958, I had an opportunity to talk with Russian farmers to see and evaluate their system of agriculture as it compares to our own. Since our itinerary was pretty well made for us and our time limited, we were not able to see enough of Russia to make our experience as comprehensive as I feel would be necessary to determine solid concepts about their system, but even under these circumstances, we could see that all collective farms were not equally managed and that production varied widely.

I felt that Russian state farms had not settled on a procedure or even a standard approach to agriculture. Instead there was evidence that collective farms were duplicating what we in this country might call an experimental farm pattern.

The farms we visited were exceptionally clean. Even hog and cattle barns were decorated with flower pots and white paint. The people who worked these experimental stations were proud of their progress and spoke warmly of their Government. They had a deep sense of dedication and accomplishment.

In comparing the American system and the Russian I found that the Russians had nothing new in equipment and farmer know-how. The Russian equipment was lacking in mechanical perfection and Russia was still behind us in our professional approach to production. However, the state of mind of the Russians should give us concern. The Russian farmer feels he is needed and wanted. Each of his successes is met with government praise and reward. He feels Russia has the better system and he is pledged to outstrip us in production and quality.

For example, I asked a wheat farmer what Russia would do when they learned how to produce a surplus. His reply, "Then we will make friends for Russia."

The American farmer, on the other hand, feels rejected. He is dedicated to individual ownership of American farms and he fears there are forces in the land that want to drive him off the farm. He feels our present farm program is a failure, that local taxes are unfair, that the Government does not care about his future.

In comparing the Russian farm economy with our system I have concluded that the American farmer and his equipment are superior to the Russian's; but the attitude of the American farmer today is lacking in enthusiasm and purpose and his will to succeed is dying.

The Russian, on the other hand, accepts and is dedicated to his task. He has confidence and he is living for the future.

It was William James who said, "You can measure everything about a man except his will to win."

We in America must recognize that limited attitude of American agriculture as compared to the will to win of the Russian, and we must plan our future accordingly.

Representative BOLLING. Thank you, Mr. Raber.

Next, Mr. W. W. Eshelman, of the National Education Association.

## STATEMENT OF W. W. ESHELMAN, NATIONAL EDUCATION ASSOCIATION, WASHINGTON, D.C.

Mr. ESHELMAN. Mr. Chairman and members of the committee, it is a privilege to appear before this committee in behalf of the National Education Association. I have followed with interest the work of this committee, and the association I represent wishes to take this opportunity to thank this committee for the vital probing that it is undertaking in this critical area. The work of this committee represents democracy at its best—a forum where differing viewpoints are presented and argued for one purpose, and that is to decide what is best for the future of our great Nation.

Before giving my statement, I would like to correct one word in the title as it is printed on part II on page 511. It mentions the comparisons of the "economical" commitment to education. Of course, this is correct if one talks about the U.S. commitment to education, which is, indeed, economical, but this is not especially the case with Soviet education, where economic commitment would be more appropriate than economical commitment. Since this paper concerns the commitment to education as it affects the survival of our way of life, it would be considerably more appropriate to forgo economical for economic.

The travel division of the National Education Association recently sponsored two tours to Russia of American school administrators. The groups spent 22 days in an intensive visit of Soviet schools, traveling in groups of 35. This marked the first time a group of practicing and successful school administrators have looked into the problems of finance, organization, and administration of Soviet education. Their final report, which is in process, should help us better understand this important phase which we know all too little about at the present time.

In general, the conclusions of the two groups reinforce the observations in this presentation. The groups found that Soviet education is geared to the purposes of the state; it is lean and trim and purposeful; it is grimly serious; and it is quite effective within the context of its ends. Their system also is pragmatic and almost always in a state of flux, constantly moving to meet the rapidly changing needs of a growing industrial society. Both groups came away unanimous in the belief that we are not doing enough for education in the United States; that we have developed a remarkable educational system which must undergo change constantly in order to somewhat parallel the changing times that have been characteristic of this continent for the past 100 years; and they came away with deeper convictions about our way of life and the importance of working harder than ever before for what we believe.

Caution on comparative analyses of the Soviet and the American systems is urged in the paper I have submitted. Realizing the problems and difficulties involved in the comparison, nevertheless comparisons will be made and need to be made; therefore the problem becomes one of finding the most reliable basis upon which the comparisons can be made. (This topic is pursued more fully in the paper that has been submitted.)

The Soviet emphasis on education is based partly upon the Marxist principle that all cultures reflect their economic environment and upon Lenin's practical opinion that "you cannot build a Communist state with an illiterate people." To expand these points somewhat: Soviet leaders long have considered education as an essential part of the Communist scheme. They believe in the validity of scientific materialism, which, simply stated, refers to a view of the world which believes entirely in the ability of knowledge to conquer all obstacles, given time. Education, therefore, is the key to all doors. Education can eliminate superstitions and backward beliefs; education can promote the culture and language arts; education can be used to mold minds into desired ideological grooves; and education can provide

the skill to build machines. A recent visitor to East Germany noted an interesting parody upon the Lenin theme. The sign read: "Study, study, and, once again, study."

Turning for a moment to teachers and teachers' salaries: I am not happy to report that the Soviet society seems to treat its teachers better, financially and prestigewise, than we do. In his statement before the National Press Club, the U.S. Commissioner of Education noted about his mission's trip to the Soviet Union:

> We saw no evidence of any teacher shortage. Teacher workloads and other working conditions are advantageous. Teacher prestige is high; only the best are chosen to teach—one out of six who apply for training. Salaries are at the levels of those of doctors and engineers; in fact, a fully trained doctor and nurse are regular members of each school staff.

And commenting upon salaries of American teachers, the Rockefeller report on "The Pursuit of Excellence" states forcefully the American problem in this manner:

> The root problem of the teaching profession remains financial. More perhaps than any other profession, teaching needs dedicated men and women to whom pay is not an overriding consideration; but until we pay teachers at least as well as middle echelon of executives, we cannot expect the profession to attract its full share of the available range of talents. Salaries must be raised immediately and substantially.

Before turning to some general conclusions, I would like to spend a few minutes on the financing of American education. Generally, expenditures for American education are computed by adding up to total cost for public and private elementary, secondary, and higher education plus a small miscellaneous category and dividing this total by the gross national product. This is one way of doing it and it is statistically proper to do so. It overlooks, however, the larger societal commitment that we have made to education. Today, we really have four systems of education. A recently completed and, as yet, unpublished study by an educational economist—Prof. Harold Clark—discusses American education in terms of these four systems, which are: the regular school system, business and industrial courses, organized group study, and systematic self-study.

I think American education, viewed in this broader context, makes more sense for the purpose of this paper because it tells something about our society as a whole, and the Soviet challenge must be met by the whole society. The amount of education that can be provided by a society depends upon its overall efficiency as well as the efficiency of the educational system itself.

In William Benton's provocative book on the Soviet challenge, he mentions that public school education has traditionally depended on the general property tax. This tax is inflexible and does not respond to rising income or inflation. It now contributes about one-eighth of all revenues. Its importance has steadily declined and relative to other taxes it provides but 25 percent as much revenue as it did 25 years ago.

State and local debts have trebled. Further, putting increased burdens on State and local governments tends to strike most heavily against low-income groups; whereas 80 percent of Federal taxes are on income, less than 10 percent of the State and local taxes are on

income, and more than 90 percent are on property and consumption taxes that weigh heavily on low-income groups.

The inadequate fiscal capacity of State and local government, the unequal capacities of States, and the urgent requirements of national defense are among the reasons for Federal support of schools. (The distinction between Federal support and Federal aid is important.) Poor States try harder but they are necessarily bound to lower standards, as the system works today.

Thus in relation to income, Mississippi spends twice as much for school aid as New York. Yet in 1953–54, expenditures per pupil averaged $110 for Alabama and Mississippi and $341 for New York State.

In a recent year, 12 richer States had fewer than 5 percent of their registrants failing the selective service education test; but from 13 poorer States 20 to 49 percent failed.

Carrying Benton's point on Federal support one step farther, the recent Rockefeller report on "The Pursuit of Excellence," a pursuit fully realized in the report, it goes directly to the heart of the matter when it points out that:

> Excessive dependence upon State and local revenues—particularly the latter—upon the real property tax * * * more than anything else * * * gives rise to current proposals for increased Federal support of education. For those who wish to resist or postpone the resort to Federal funds and at the same time not constrict educational service there seems to be only one alternative: a thorough, painful, politically courageous overhaul of State and local tax systems.

Even allowing for considerably greater efficiency in the use of educational funds, it is likely that 10 years hence our schools and colleges will require at least double their present level of financial support to handle our growing student population. In other words, by 1967 the entire educational effort is likely to call for expenditures on the order of $30 billion, measured in today's prices. Since the gross national product by 1967 has been estimated to be around $600 billion, educational expenditures would absorb about 5 percent of gross national product in contrast with the current 3.6 percent level.

Our total expenditures for all regular school education is roughly the same as that of the Soviet Union—about $16 billion per year, but our educational expenditures in the gross national product is about 3.7 percent, as compared with 6.5 percent for the Soviet Union.

In conclusion, one can say that the Soviet Union is quite totally committed to communism as a way of organizing people, and to education as a tool or instrument to that end; the United States is quite committed to democracy as a way of organizing society but somehow our commitment to education has lagged pathetically behind our commitment to tobacco, beer, and pleasures in general.

Within the context of their system and their objectives, the Soviets may well be achieving more progress toward their ends than we are toward ours. Our decentralized and diversified society has done remarkably well in educating the people and our free, public school education is unique in history serving our Nation very well. Yet, as we enter the second half of the 20th Century, we are faced with internal and external problems that will force us to do a better job of education than we have done at any time in our history. In this con-

text, I would like to close with a short paragraph from the "Rockefeller Report":

> The Nation's need for good education is immediate; and good education is expensive. That is a fact which the American people have never been quite prepared to face. At stake is nothing less than our national greatness and our aspirations for the dignity of the individual. If the public is not prepared for this, then responsible educators, business leaders, unions, and civic organizations must join in a national campaign to prepare them.

Thank you.

Representative BOLLING. Thank you, Mr. Eshelman.

Next, Mr. Howard C. Petersen, Committee for Economic Development.

## STATEMENT OF HOWARD C. PETERSEN, PRESIDENT, FIDELITY-PHILADELPHIA TRUST CO., VICE CHAIRMAN, COMMITTEE FOR ECONOMIC DEVELOPMENT

Mr. PETERSEN. Mr. Chairman, I am happy to participate in the discussion here today and I do it in a kind of spirit of participating in an exploratory discussion. I am not an expert on Soviet economy or on the intentions of the Soviet leaders. Neither is the Committee for Economic Development, on whose behalf I respond to the invitation of the Joint Economic Committee to present testimony. The views I am expressing here are my own responsibility. However, the Research and Policy Committee of CED, in a number of statements on national policy, has encountered the fact of the growing Soviet economy. We have had to form some judgments, based on information we could readily obtain, about the significance of the Soviet economy for our policy. I am here summarizing, in skeleton form only, a paper previously submitted to this committee. That paper and this summary reflect the judgments we have formed in CED, and present additional views of my own.

Certainly the rapid growth of the Soviet economy is one of the leading facts of our lifetime. Our reaction to it is a chief determinant of the future.

### GENERAL ECONOMIC ASSUMPTIONS

The assumptions underlying this testimony are: Russia's total gross national product is now about two-fifths the size of ours. In the past decade Russian growth may have been 6 or 7 percent a year, compared with our long-term growth trend of about 3 percent. I also assume, and I would like to stress this point, that we cannot extrapolate to the distant future the difference between United States and Russian growth rates, because the exceptional height of the Russian rate depends upon the following five factors:

1. The very large proportion of her total output Russia has been devoting to investment;
2. The very stringent control of Russian demand patterns;
3. A large shift from farm to industrial employment;
4. Large gains from introduction of general, basic education, and from the initial training of an expanding work force;

5. Probably most important, the borrowing of techniques from abroad and spread of technology in the advanced sectors of the Soviet economy.

Russia can conceivably continue to restrict demand to the ends her leadership most desires. But the other four advantages she has been enjoying are essentially transitional. If we compare growth in the European Communist bloc as a whole to growth in the NATO alliance as a whole, the comparison is more favorable to us because some of the Western European countries have been growing about as fast as Russia. Total economic potential of our NATO allies is, of course, above that of Russia's European satellites.

### HOW DOES THIS SOVIET ECONOMIC EXPANSION AFFECT US?

The principal points of impact are: ability to support defense burdens; aid and trade with the underdeveloped world; Soviet ability to take the economic offensive and our ability to retaliate; attitudes of the uncommitted countries, the people of the United States, of our allies, and of the Soviet satellites; and effects upon Russia's internal and external policies.

The prospect of faster economic growth in the Soviet Union than in the United States does not seem to me likely to be the decisive factor in any of these cases, although it is adverse to us. What is more decisive is our choices: how wisely we use the growth we have and the growth we seem likely to continue to get. Our reaction should not be one of amazement or despair in the face of Soviet economic growth, nor should it be imitative. We should do what is good for us to do, and we should not try to match Soviet growth simply because it is higher than ours. Those who suggest doing this have not, in my opinion, even begun to explore the implications or costs.

### IMPLICATIONS FOR U.S. POLICY

In my previously submitted paper I gave results of the exploratory efforts of the CED staff to determine very roughly the costs of efforts to raise our growth rate, as a trend, in the four ways that would seem appropriate to such an effort: minimizing the depth and duration of recessions; increasing the effectiveness of our system by such things as making it more competitive and more mobile and by removing inhibitions arising from trade and tax policies; increasing total man-hours of work done in our society, and devoting more of our output to uses that promote growth.

The first two of these things are desirable, that to minimize the depth and duration of recessions and to make our society more competitive and more mobile, but these would give us one-time gains only. In the remaining fields we need constant increases to maintain our historic rate of growth. To increase that rate, we would have to increase the rate of increase. Here, we are up against a number of unknowns. We don't know what our future growth will be if we go on without major changes in our society, but suppose it will be 3 percent a year, which has been the trend. Crude calculations suggest that to raise our growth trend by 2 percentage points—say from 3 to 5 per-

cent, which would still not match Russia's—we must think about devoting not $3 billion or $5 billion or $10 billion a year more to investment, research and education, but something like $75 billion more a year. This is about what we now spend. That is, we would have to think about doubling our present outlays in these areas aimed at increasing the productivity of our economic system if we aimed at raising our growth rate by 2 percentage points.

This could be done, even supposing that these crude calculations are somewhere near being correct. I place no great burden on their accuracy. My interest is in pointing out that these calculations indicate that elevating our growth trend is a formidable undertaking. What seems to be involved is a degree of governmental intervention in our economic life that would change the very character of our free economy.

The implication I draw from all of this is that the United States should promote its economic growth by all reasonable means, not by all means. We are engaged in a competition of systems, not of growth rates. Our strategy should be to make our own system work as well as we can, in terms of its own very considerable values. We should use the resources we have—and these are now, and will continue for the foreseeable future to be, greater than Russia's—to make sure of an adequate defense, to provide much more economic development assistance to underdeveloped nations, to reduce international trade barriers, and to manage our domestic affairs in the light of our own criteria of success.

Of course, economic growth decidedly continues to be one of the central objectives of our domestic policy. It contributes to the success of our system. But it is not identical with its success, nor the sufficient means of success. It would be inconsistent with our own values for us to force economic growth by an expansion of the role of Government curtailing the freedom of families to choose between consumption and saving and between work and leisure. Nor would this make our system more appealing to others. Our success in the struggle against Communist imperialism depends more centrally upon our faith, determination, willingness to sacrifice, intelligence, and ingenuity in the handling of our resources than upon a change in the rate at which we are increasing those resources.

Thank you.

Representative BOLLING. Thank you, Mr. Petersen.

Next we have two gentlemen from the National Planning Association, Mr. Gerhard Colm and Mr. Joel Darmstadter.

It is our understanding that Mr. Colm will make the presentation, and Mr. Darmstadter will be available during the discussion period.

## STATEMENT OF GERHARD COLM, ACCOMPANIED BY JOEL DARMSTADTER, NATIONAL PLANNING ASSOCIATION, WASHINGTON, D.C.

Mr. COLM. Mr. Chairman, I have a brief summary of the paper submitted to the committee and published by the committee, which I would like to offer for the record, but in order to preserve time for the committee, I would like to summarize my summary.

Representative BOLLING. The full summary will be printed in the record.

(The summary follows:)

EVALUATION OF THE SOVIET ECONOMIC THREAT

Statement before the Joint Economic Committee Subcommittee on Economic Statistics by Gerhard Colm, assisted by Joel Darmstadter, National Planning Association[1]

SUMMARY AND CONCLUSIONS

A statistical "thaw," following Stalin's death, has provided increased knowledge about the Soviet economy. While some statistical exaggerations and distortions persist, Soviet claims must not be shrugged off, but carefully evaluated. Tangible Soviet achievements in science, education, and weapons technology bear this out.

Soviet economic growth is a threat to the extent that it serves as an instrument of military buildup and militant foreign policy. The comparison between Soviet and United States economic strength indicates that the United States can, for decades, still have the greater economic capacity. What is decisive, however, is not only potential economic capacity but also the extent to which the potential is realized and the allocation which is made to purposes of defense and foreign economic policy.

In recent years, Soviet output—both total and per capita—has grown at rates considerably in excess of those in the United States. With proper measures by Government, business, and labor it should be possible to increase the annual rate of growth in the United States to 4–5 percent. At the same time there are grounds for believing that Soviet growth rates will diminish somewhat, say to 6 percent. With these rates, aggregate Soviet production would have moved from about one-third the U.S. level in 1950 and over two-fifths now to about one-half by 1970. At least 50 years would pass before the Soviet Union could hope to reach the U.S. gross national product level, and more than 60 to reach it on a per capita basis. Moreover, the assumption that Soviet GNP is presently about equal to more than two-fifths of our own needs to be qualified. There are responsible Western analysts who argue that a Soviet-United States comparison should take account of the U.S. "product mix." One should make allowances, for example, for the marked diversity and efficiency of production of U.S. consumer goods and housing relative to the Soviet. Because of such difficulties in making ruble-dollar comparisons, an estimate of Soviet GNP, in terms of our own, may have a considerable margin of error.

It would be hard in any case to justify Soviet boasts of equaling U.S. output by about 1970. Such a claim appears to be based on a Soviet growth rate of over 7 percent annually and a U.S. rate of somewhat less than 2 percent per year.

Nonetheless, the difference in annual increments must be expected to decline substantially. Both in Russia and the United States, the increase in production makes it economically possible to increase substantially national security and foreign economic activities and at the same time add to productive capacity and improve the standard of living. Political determination appears to be more important than the economic potential.

The highly publicized Communist economic-aid activities of the past several years have been far below comparable U.S. or Western efforts. Yet, the Communists seem to have achieved a relatively large measure of success. They have the capacity to combine aid with trade, particularly bulk purchases of products. Also they have tried to exploit latent fears and suspicions rooted in the colonial heritage of many underdeveloped nations. In addition to foreign assistance and bulk purchases the Communists have engaged in some prac-

[1] This paper is based largely on the monographs which have been published by, or prepared for, the National Planning Association's research project on the Economics of Competitive Coexistence. Use has been made also of several chapters of the final volume which the research director of that project, Dr. Henry G. Aubrey, has in preparation. Nevertheless, the views expressed in this paper are our own and do not necessarily reflect those of the NPA or of Dr. Aubrey.

tices—for example, sales of tin and aluminum on Western markets—which may not have been primarily politically motivated in the past but which constitute tools for disrupting the free world economy, and which are available for possible use.

In evaluating the potential economic threat in years to come, one must reckon with the continuing importance of Marxist dogma in Communist policies. Capitalism is still pictured as driven to imperialism and wars as "solutions" for the problem of overproduction. And, militant Marxism still believes that the Soviet-Chinese "avant-garde" has the mission of supporting the Communist struggle everywhere in the world, by whatever means are available and whenever it is promising.

In the underdeveloped countries, the Soviets have been at least partly successful posing in the role of the advocates and supporters of rapid economic growth and independence in contrast to the West, which is pictured as advocating "go-slow" policies and using these countries as a "dumping ground" for surplus products.

The analysis of the Soviet economic threat raises a number of policy questions:

1. Without engaging in a gross national product race, what can the U.S. Government, business, and labor do to support a rate of growth adequate to meet the urgent requirements in defense and nondefense areas, both domestic and international?
2. What defense posture is needed to convince the Soviets that every aggressive move at the center or the periphery will be met by force?
3. What foreign programs are best suited to support effectively economic development in underdeveloped countries in a manner which convinces these countries that they will remain masters of their own destinies?
4. How can we make the world understand that we are developing an economic system suitable to meet the material and nonmaterial requirements of our age and still recognize that other countries may need institutions and policies different from our own?

Mr. COLM. With your permission, I would like to make three points: one very briefly on the facts; second, on the evaluation; and, third, certain policy questions which are derived from that.

As far as the facts and the evaluations are concerned, what I am saying is based on a project which we have had at NPA on the economics of competitive coexistence, which has been conducted under the direction of Henry Aubrey with the assistance of Joel Darmstadter. The conclusions are my own.

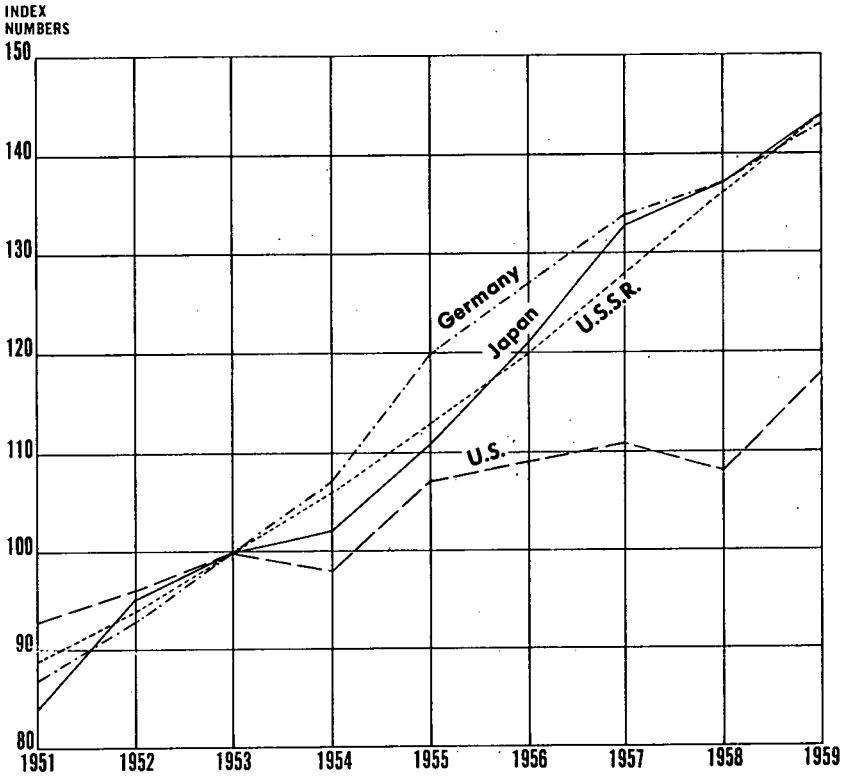
I would like to present the facts to you in the form of two charts, Mr. Chairman. You have them before you in printed form.

The first chart shows the rate of growth in Soviet Russia as it has been estimated from 1951 to 1959. The Soviet growth is in contrast with the much slower rate of growth in the United States. The significant fact, however, brought out by this chart is that other countries, specifically Germany and Japan, with entirely different economic and social systems, had about the same growth rate as Soviet Russia, which suggests at least the possible conclusion that the growth rate is the function not only of the economic and social system but also of other facts.

Mr. Petersen also referred to the growth rate of other countries.

CHART I

## GROWTH OF REAL GNP: U.S.S.R., JAPAN, AND WEST GERMANY, 1951-59
## (index numbers 1953=100)

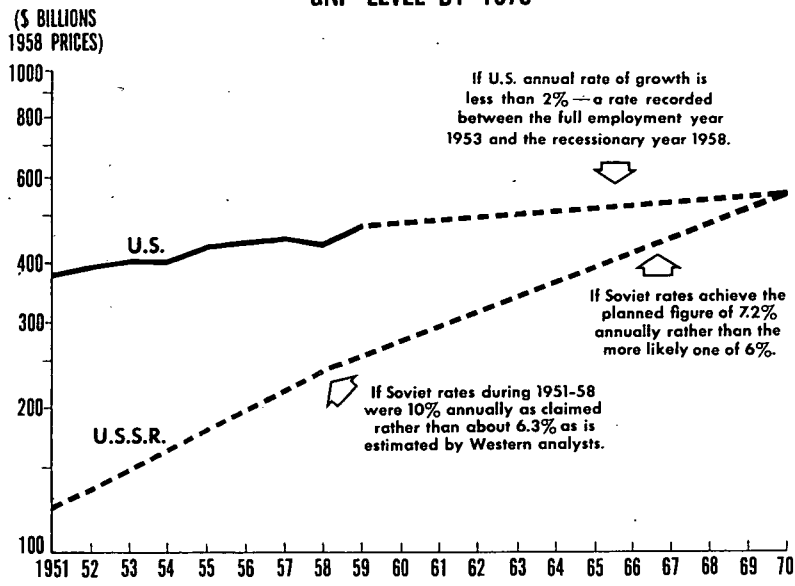



Sources: 1959—Roughly estimated on basis of preliminary information from various sources.
Other years—U.S.: Survey of Current Business, July, 1959.
U.S.S.R.: U.S. Department of State document, "Soviet Economic Growth in the Struggle for the Underdeveloped World," March, 1958.
Germany: Monthly Report of Deutsche Bundesbank, February, 1959.
Japan: 1958 figure is estimated. All other figures are derived from the U.N. Statistical Yearbook, 1958.

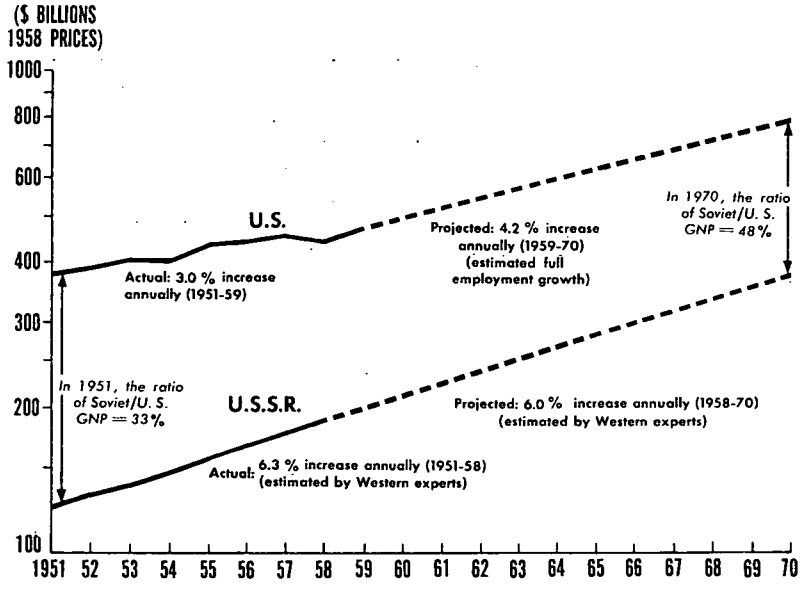
In chart II, Mr. Chairman, we have attempted in the upper panel to be of a little help to Chairman Khrushchev and chart a course of total production in the United States and Soviet Russia which would bring Soviet Russian production up to the United States level by 1970. That is what Mr. Khrushchev said was the prospect.

CHART II

## ASSUMPTIONS UNDER WHICH THE U.S.S.R. COULD REACH U.S. GNP LEVEL BY 1970




## U.S. AND SOVIET GNP COMPARED




Source: Data compiled by the National Planning Association

We did this in order to discover what assumptions are apparently made by the Soviet statisticians. The Soviet growth rate is based on the 7-year plan extended beyond the 7-year period to 1970 at the figure of 7.2 percent per year. The U.S. rate of growth is that based on the period from 1953 to 1958 of less than 2 percent and extrapolated into the future until 1970. With these assumptions, total Soviet production would indeed catch up to the total U.S. production about 1970.

There is also a question about the relationship between the two economies in the base year which plays a role. This is probably only a minor factor in the Soviet projective.

In the lower panel we give a set of gross national product figures for the United States and the Soviet Union which includes certain adjustments to these Soviet figures. For the United States we project a growth rate which we think can be achieved using, what Mr. Petersen called, reasonable means of policy. It is not a forced draft increase.

The differences between the upper and lower panel estimates are two: one, for the Soviet Union we did not use the 7.2 percent of the 7-year plan but rather a figure of 6 percent which was suggested in the study published by the National Planning Association about the Soviet economy by Alec Nove.

This 6 percent takes account particularly of the opinion that the growth rate in agriculture is grossly exaggerated in the 7-year plan or at least is more ambitious than is likely to be fulfilled. Still, the revision is not a very big one. We are assuming a 6-percent growth rate.

For the United States we assume a growth rate of 4.2 percent, which I said, in our opinion, could be obtained with reasonable means of policy but it is a rate of growth which will not be accomplished by itself and which does require appropriate policies by the Government and appropriate attitudes by business and by labor.

As a result, this gives us a relationship of total production in the Soviet economy of about 48 percent of that of the United States. That compares with about 40 percent at present and about 33 percent in 1951. It means a narrowing of the difference but it does not mean a catching up wtihin this 10-year period.

If one extrapolates these figures into the distant future—and here I agree with Mr. Petersen that we are very uncertain about the distant future, both with respect to the United States and the Soviet Union—one comes to a catching up in about 50 years, but I am giving that more as an arithmetic exercise than anything of real value.

Mr. Chairman, what follows from this factual outlook for an evaluation of the economic threat? First, let me say I agree with what has been said by Mr. Hamilton that the economic growth is more a potential threat than an actual threat. A growing national product in the Soviet Union by itself would be no reason for concern. It may be welcomed by us if the growth were devoted to an increase in the standard of living of the Russian people. It is a threat because we have to reckon with militant marxism which, by its own boasting, regards the Communist countries as the avant garde in the struggle for communism all over the world and pursues this objective with every means—military and economic—available.

An increase in total productive capacity means that the Military Establishment can be strengthened without further squeezing the standard of living.

The economic threat may mean that economic aid can be increased. So far economic aid has not been of a magnitude which, of itself, would be a reason for concern, but we should recognize that, because of the particular structure of the Soviet economy in comparison with our own, the Soviets are in a better position to combine econmic aid with trade, particularly with bulk purchases as has already been done in a few cases.

Also, the Soviets have been very skillful in a kind of ideological exploitation. What they have been doing appeals to the underdeveloped countries; that is, emphasizing the fact that they have accomplished economic development within a few decades, that they know better how to do it than the Americans who only emphasize free enterprise while, in these underdeveloped countries, the government has to play a role in economic development. They play on the fears of colonialism and other prejudices. So I think they have been perhaps more skillful than we have in making the best out of a relatively small foreign aid program.

Mr. Chairman, finally, what are the policy conclusions to be derived from this evaluation? I agree with what has been said before that it is senseless to engage in a kind of statistical GNP race with the Soviets. However, in order to do all the things which are required in the defense and nondefense area, both domestic and international, the rate of growth in the American economy must be stepped up from what it has been in recent years. Otherwise every additional effort must be pursued at the expense of consumption or another item in present production.

My first question is: How can we achieve that rate of growth by reasonable means, quoting Mr. Petersen, in order that we can meet these domestic and international requirements?

Two: What defense posture is needed to convince the Soviets that every aggressive move at the center or the periphery will be met by force?

Three: What foreign programs are best suited to support effectively economic development in underdeveloped countries in a manner which convinces these countries that they will remain masters of their own destinies?

Four: How can we make the world understand that we are developing an economic system suitable to meet the material and nonmaterial requirements of our age and still recognize that other countries may need institutions and policies different from our own?

Mr. Chairman, I suggest that competitive coexistence requires that first of all we present a good performance in our economy to the world.

Thank you very much.

Representative BOLLING. Thank you, Mr. Colm.

Next and last of the panelists in order of appearance is Mr. Jay Lovestone, director of International Publications, of the AFL–CIO.

## STATEMENT OF JAY LOVESTONE, DIRECTOR OF INTERNATIONAL PUBLICATIONS, AFL–CIO, WASHINGTON, D.C.

Mr. LOVESTONE. Mr. Chairman, the remarks that I will read are just supplementary and explanatory in respect to phases of the written report which we have presented.

The future of our society and economy depend primarily on our own attainments and on how we deal with our shortcomings. In stressing this, I do not minimize the urgency of our examining and evaluating the achievements, weaknesses, and threat of the totalitarian state economy of the Soviet dictatorship.

The threat which the Soviet economy presents to our country and the entire free world is far more political than economic.

The primary purpose of Communist production is not to provide the people with the material base for cultural enrichment, but to strengthen the Communist dictatorship and its capacity for oppression at home and aggression abroad. The Soviet economy is predatory and punitive. That explains the remark made by Khrushchev to a group of United States Congressmen 4 years ago when he said: "We value trade least for economic reasons and most for political reasons."

Here and there, Soviet economic competition may already be substantial. Tomorrow, it may become even more so in additional areas. Yet, the prospect of Moscow taking away our customers in the world market, constitutes a comparatively minor challenge. Our country could easily meet such a challenge by purely economic means—by increased efficiency, better trade organization, streamlining our transport facilities, and continuous modernization of our economy.

In my paper, I have pointed out that: It is the very nature and aims of the Soviet economy rather than its rate of growth or the size of its gross national product as such which constitutes the threat to our country. In general, industrial development elsewhere is not a threat but an opportunity for our country. Were India, Britain, Germany, France, or Japan to chalk up the achievements now claimed by or credited to the Soviet economy, some in our midst might be jealous, but our country would not be really disturbed. Were the Soviet economy geared to the production of consumer goods and higher living standards for the people of the U.S.S.R., were its nature and overriding basic international aim different, there would be no cause for fear anywhere over its rate of growth and gross output. It is the driving purpose behind the tempo of Soviet industrial growth that should make us sit up, think, and act.

Humanitarian reasons and a measure of enlightened self-interest motivate the earnest desire of American labor for the workers of all countries—and that includes the workers of the U.S.S.R.—to enjoy human freedom, higher wages, shorter hours, and the benefits of modern technology. Moreover, experience—especially during the last 42 years, those are the 42 years that Khrushchev speaks of, with the Communist, Fascist, Nazi, and Falangist types of totalitarian dictatorship—has taught American labor that only in those countries where the workers enjoy the fundamental democratic rights—like freedom of association and organization, the right to organize into free trade unions to bargain collectively and to strike if need be—can they receive their just share of the national product, fair pay, and decent conditions. The workers are denied such rights under the Soviet system and in its economy.

There are various aspects of the Soviet economic threat:

1. Soviet economic progress has enabled Moscow to build a formidable military machine for advancing its aggressive foreign policy, for keeping the satellites in its political orbit, intimidating free countries,

and that includes the United States, and backing Russian expansionist demands—as in the Berlin crisis.

2. Moscow uses the Soviet economy as a means of penetrating and subverting free countries, and that includes the United States. Through economic and technical help, the Kremlin seeks to penetrate, influence, and control the economically underdeveloped countries.

3. The ideological phase is no less significant than the military and foreign economy aspects of the Soviet economic challenge. Moscow has been propagating vigorously the notion that the Soviet economy is the model to be followed by all other peoples. In the industrially advanced countries, Kremlin propagandists would have us believe that the Soviet economy is far superior to capitalism. In the economically underdeveloped countries, the Soviet economy is presented as offering the shortest way to industrialization and social and cultural progress.

It is this three-pronged political nature of the threat which the Russian economy presents to us that makes the Soviet economic advance so dangerous to the free world. Our country can and must develop a comprehensive program for dealing with the three aspects of the Soviet economic challenge.

The first lesson to be learned is that we should do nothing to increase the threat. It would be suicidal for us to strengthen or help the Soviet economy overcome its weaknesses and shortcomings—for example, through lifting the present trade restrictions, extending credits to the Kremlin, providing it with the scientific, technological, and other means for developing automation and building an adequate modern chemical and plastics industry.

The domestic and foreign interests of our country urgently require a national policy for stepped-up economic growth. Our country has the human and material resources, the vital sense of moral purpose, and the basically sound international aims that are necessary for expanding considerably its economy. Only through expanded economic growth can our Nation meet effectively its defense, budgetary, inflation, population, tax, and unemployment problems.

As against the totalitarian Soviet Union, we, in our free society have show—and that is a very important point—that increased production and rising productivity need not come at the expense of the workers and consumers but can be combined with commensurately rising purchasing power of the great mass of the population. At its San Francisco convention in September 1959, the AFL–CIO proposed, toward this end, a number of specific antirecession measures, full employment policies, proposals for meeting the problems of automation, improving our educational system, and national health.

At this convention, we also came forward with concrete suggestions for meeting the military phase of the threat—for strengthening the defense capacities and readiness of our country and its allies to deter and, if need be, defeat Soviet aggression.

Our convention likewise dealt with the foreign economy aspect by proposing a foreign aid program, especially for the economically underdeveloped countries.

Toward meeting the ideological aspect of the Soviet economic threat, all voluntary bodies, separately and in cooperation with the Government, should strive to make our economic system ever better

and more attractive. This means not only high efficiency and increased output, but also and simultaneously better living and working conditions, better housing, an expanded social security system, elimination of racial discrimination, and abolition of punitive labor legislation.

We can and must prove that our system provides our people not only with greater material advantages but guarantees them also and, at the same time, freedom, human dignity, and greater cultural opportunities. All of this is important for counteracting Communist propaganda not only in the economically underdeveloped countries but also in countries like Italy and France where the Communists have considerable influence among the workers.

There is no better way of refuting the Khrushchev propaganda among the Soviet and satellite peoples about history being on his side and his burying us. Indeed, here is a most effective way of strengthening the aspiration of these oppressed peoples to rid themselves of the Soviet yoke and to enjoy human freedom.

We must increase and improve our efforts to enlighten the peoples of the economically underdeveloped countries about the true nature of the Soviet economic system, its intense exploitation and oppression of the workers and peasants, its extensive utilization of forced labor under various names. I think we have been very much on the defensive and unnecessarily so in this respect. We should bring home to these peoples that the Soviet economic achievements are not worth the enormous human sacrifices and sufferings they entailed and still demand.

The inefficiency, bureaucratism, waste, inertia, and chaos of the Soviet economy should be exposed. We can and should demonstrate to all peoples that our economic system is more sound and far less costly from the human and material viewpoint—much more modern and socially progressive.

Our country should take the lead in preparing a free world economic conference to work out a common program for promoting world prosperity in freedom. Such free world cooperation can strengthen greatly the economy of our country and that of every other free people.

In facing the Soviet challenge, we must shun both complacency and panic. We can meet the challenge and beat the threat. To do so, we must make full use of our resources, skills, and talents. We must display the determination and energy we have demonstrated in the past when our free way of life and democratic institutions were threatened.

Thank you, Mr. Chairman.

Representative BOLLING. Thank you, Mr. Lovestone.

Now, before we proceed to the questions, I would like to take care of a few little items of housekeeping.

It is obviously going to be impractical to shift that microphone around among eight people. We are placing it before Mr. Raber because we understand that he recently had a throat operation and we do not want to overstrain his throat and we think that the other members of the panel can raise their voices loud enough to be heard.

I want to give two of the panelists an opportunity to comment if they wish on comments made directly on their papers by other panel-

ists. The first gentleman I will call on is Mr. Petersen to see if he wants to say anything about the comments made by Mr. Schwartz in his paper in part III.

Mr. PETERSEN. Thank you, Mr. Chairman.

Mr. Schwartz' criticism of my statements are summed up, I think, in this sentence which you will find in the last page of part III of the committee print. He states that the view which I have expressed is too "static, even unimaginative, a view of our potentialities within the framework of our democratic and private enterprise institutions." I think if you were to read Mr. Schwartz' comment without reading the statement which was submitted by CED, you would reach the conclusion that we were content with the growth rate which we now have and that we felt that everything was splendid and that nothing could or should be done, which is far from the case.

It is the main objective of CED to conduct economic research and to formulate policy positions on major economic problems which will contribute to the growth and the stability of our American economy with higher living standards and greater opportunities for all Americans.

I think that what has been presented in this CED paper is a practical and realistic view. We suggest that we promote economic growth only by reasonable means, not by all means, but that the promotion of economic growth remain a central and important objective of our domestic policy.

We think a great deal more research is necessary to determine what the costs and institutional implications are of a greatly expanded growth rate. The research which has been done indicates that to achieve this magic five, and I am not speaking about the Treasury 5-percent notes, figure, will require a quite massive effort in terms of increased allocation of resources to education, to research, and to investment in capital plant; so massive in fact that it is impossible to see how this can be generated through the voluntary savings in our society.

The other alternative, then, to obtain it is that you must have public savings through taxation and a governmental allocation of these resources.

I think there has been a good deal too much pie in the sky about 5- to 6-percent growth rates without enough basic research as to how you get there and what it costs.

Mr. Schwartz talks about the gravity of our defeat in the economic war with the Soviets, that this would be as great a defeat as in a shooting war.

As far as the growth rate is concerned, this contest of GNP's is not in my judgment going to be decisive in any of the faces of Russia that are toward the world or toward us.

Russia was not at all curbed by a GNP two-fifths of ours in developing their sputnik. They certainly have a viable economy which is showing an excellent rate of growth. They can sustain a heavy burden of armaments. They can loan moneys or make grants to underdeveloped areas. They can engage in an economic offensive against us, all of this quite unaffected, as long as they keep their economy strong, by their rate of growth and by our rate of growth.

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I note that Mr. Schwartz concludes his paper by stressing, as I do, the allocation of our resources:

* * * what is important for survival is not only the size of total production, but also the composition of that production and what it is used for.

Representative BOLLING. We have furnished Mr. Jay Lovestone a copy of the transcript of the testimony of Prof. Warren W. Eason of Princeton in which he takes exception to at least a portion of Mr. Lovestone's views as stated in his original paper. I would like to give Mr. Lovestone the same opportunity we gave Mr. Petersen.

Mr. LOVESTONE. I am very glad that Mr. Eason made the critical remarks. His remarks show the weakness in approaching the Soviet economic challenge or threat only from a statistical viewpoint or only from the angle of stocking the shelves of our warehouses with merchandise.

I stated in my paper, and I plead guilty to the charge, that I presented also a sort of moral and ethical point of view. I do not think we are producing for the sake of production. I do not think we are in a race for the sake of showing better charts.

For example, I am very thankful to our friends of the Planning Association who indicated that the rate of growth in a statistical sense has been equalled by other countries with different economies and, therefore, there is nothing inherent in the Soviet system which accounts for its rate of growth. It can be equaled and exceeded by other economies,

I maintain that no economy is worth the human effort unless it insures certain human rights and benefits.

We do not raise lobsters for the sake of putting an apron on our chest. We raise lobsters because we have learned to enjoy them.

We produce tractors not because they are good looking, but because they serve society which means they serve humanity. There are standards for that.

The rulers of the Russian system boast that it is humane, that we are reactionary and backward. I say the reverse is the case and we can prove it by the consequences of their economy, by the means they have employed to increase their productivity.

The rulers of the Russian system boast that their society speaks in the name of labor. Yet, there is no country in the world where the worker has less rights in society as a whole and less to say about his role in the economy than under the totalitarian Communist system. In fact, it can be shown that, in some respects, he has less rights than even under Hitler and that is saying a lot. Under Hitler, there were some segments of private economy.

I want to say again to you that we cannot understand and, therefore, cannot meet the Soviet challenge unless we find out: Why is production being increased? What is the purpose of producing in its society? What is the human equation in the whole problem?

Now, I am charged with underestimating the modest gains the Russian workers have made. I say to you that, in some respects the housing of the Russian workers is worse than under the Czar. And this is confirmed by their own figures.

We have adopted a defensive psychosis in regard to the Russian economy. We have accepted uncritically their claims. We have swung from one extreme to another. Twenty-five years ago every

Russian was a muzhik. Now every Russian is 12 feet tall. But there is many a slip between the cup and the lip in Princeton University and in the Soviet Union as well.

Representative BOLLING. Mr. Curtis.

Representative CURTIS. I think the technique of the panel's commenting on each other's papers is excellent and I am glad we have had the criticism and the rebuttal and I hope these hearings will continue this debate and continue it in a public fashion because I think therein lies the main value of what we are trying to do here.

If I may, I would like to start backward on the order of these papers to some degree.

I must say that I just cannot refrain, Mr. Lovestone, from thanking you personally for expressing much better than I have ever been able to do my fundamental beliefs about this picture. I think you probably would share my open mind to be sure that we are not wrong in this and continue to watch this Russian thing and just see what it is; but I certainly agree with you on your fundamental approach.

As to your statement that "The inefficiency, bureaucratism, waste, inertia, and chaos of the Soviet economy should be exposed." I am convinced that that is a very important basic principle, too. The question is how much of that system which seems to me so lopsided can be set up to transmit power into a military machine which could be a threat and, secondly, how much of that power can be set up and transmitted through the machine of subversive devices.

We have talked in many of the papers about the foreign aid and foreign trade of Russia. I wonder from an economic standpoint how much are the costs of their system of foreign subversion? I am talking economics now.

It would be very difficult, of course, to evaluate that but it must be a cost to their economy and a factor that needs to be weighed. At least that is the area in which I see the danger, as to how much of what may be an inefficieint system can actually be transmitted into these two areas which could be the threat.

Nazi Germany's system in the long run could not prevail. Yet by channeling its efforts into a military force, it came very close to taking over systems that were better suited in the long run to prevail.

The result would have been disaster and I think that is the very point to watch out for.

I have one question. This is purely from the materialistic value standpoint. Does not the standard of living of the laboring man relate to his productivity? Has it not always been our theory that the American workingman's productivity to a large degree comes from the fact that his living standards have been raised and that, if we can raise them further, that we are going to be increasing his productivity? Is that not a fundamental theory of ours?

Mr. LOVESTONE. May I comment on what you said? I will begin with the very last one.

You are absolutely correct. The American trade union movement, unlike a number of European trade union movements has had a sound attitude to machinery. We have not been opposed to it. There are problems of adjustment and readjustment and we fight for our interests. We do not want to be neglected. We want a fair deal.

It is our opinion that our pressure for higher wages has been a very important factor leading the American economic system to look-

ing for constantly lower costs of production, for constantly better machinery, and we tie up productivity with higher standards of living and it is almost a subconscious attitude on our part.

We put them all together as one. We want higher productivity because we want higher living standards. We want higher living standards and we know they cannot be gotten for any length of time without higher productivity.

You have raised some very important questions of how much of that economic power which they have can be transmitted into a military machine. I say to you an unlimited amount. My friends, you have had to live under a totalitarian dictatorship to know what they can do to a people who are defenseless. They have no unions, no employees' associations, no church. There is nothing except total control which is beyond measure and which Khrushchev is tightening through extending the area of party control.

I want to warn that they can take much more than they have. In the areas of their subversive operations, they are doing it in entirely new ways. You mark my words: Under the influence of the so-called Spirit of Camp David, if you examine the speech of Marshal Malenovsky, you will find that even with that impact they are planning to be as close as they can to non-Communist and anti-Communist fields because those are the areas they have to poison through subversion.

Thirdly, the cost of their economy is a very serious problem for them. Nobody should underestimate it.

In the last resort people have to work to produce and when you use it up you have to make good for it. That is the primary reason why Mr. Khrushchev is dying to get $2 billion worth of credits from us to help him in the Soviet economy where it is much more backward than ours. If we give them the help and become victims of the "rift theory" which leads some to say: "We have to help the Russians against the Chinese," and leads others to say, "Help the Chinese against the Russians," but nobody says we have to help ourselves, if we give them trade credits, then we will enable them to continue what they are doing now and to overcome the difficulties you mentioned.

The worker in Russia is not so happy. There is proof aplenty of this despite all the censorship. Evidence of the discontent of the Soviet worker is to be found in the lack of quality of Soviet production. The worker is unorganized. He has no unions. The farmer is organized in a regimented sense but is really unorganized.

The lack of Soviet progress in agriculture will be examined by the new central committee meeting called for December 22. It is called to meet the agricultural difficulties. Of course, some of us have forgotten the word "difficulties" for Soviet Russia, since perhaps we are now trying to "catch up" with them. But agriculture continues to be a serious problem for the Russian rulers.

I hope we do not help them overcome it.

Representative CURTIS. I have one other detail, Mr. Lovestone. In your paper you point out the very great wage differential as a basic feature of the Soviet system, pointing out that it is 2.8 times higher for the first rate in the trade unions, and then some other data. I hate to be so ignorant but how does that compare with the American wage differentials? If it is 2.8 to 1 and varies that much, and I can see a considerable differential, how does that relate to the American?

Mr. LOVESTONE. We have wage differentials in our country also; and they are proper.

Representative CURTIS. Are they that much?

Mr. LOVESTONE. No, they are not that much. There are differences let us say, between a plumber and somebody who does only unskilled work in our country. There is a difference in their wage scales, without question. But in Russia they have so many differentials, such a lack of system in their wage payments which depend on so many factors other than the worker's own effort, that it is impossible to compare ours with theirs.

They have a way of arbitrarily increasing the norm of their production without even consulting the worker. Yes, he is consulted, so to say, through his "union." But his "union's" job is only to increase and assure the fulfillment of the newly set norm of production, to see that it is carried out. It is the very opposite of what we have in our trade-union organization. We watch that, every time there is an increase in the norm of production, we should get our share of the benefits of the increased productivity. In the U.S.S.R. it is just the opposite. There the many and marked wage differentials are one of the worst curses. The great wage differentials and the number of differentials in their wage scales also explain the fact that the Russian economy is now suffering from creeping manifestations of petty corruption and petty attempts to get a little income on the side to supplement their depressed standards.

Representative CURTIS. Thank you, sir.

In the electrical power field I have some questions I would like to ask of Mr. Vennard, if I may.

I noticed in another paper, and I am not sure it was just one, that the Soviets were spending quite a bit of time on trying to advance their technology in the transmission area. I am not too familiar with just what the technicalities are but they were carrying a much higher voltage over their lines and it seems to be very necessary in order to achieve their 7-year goal to get some breakthrough in this area.

Would you comment on that and also state whether we are advancing in this country in trying to develop more efficiency in transmission?

Mr. VENNARD. Yes, I will be glad to comment on that.

The Russians are doing some interesting work in the field of transmission. We found them operating lines now in the voltage of 500,000 volts. The transmission line between Kuibyshev, which is the big hydroelectric dam south of Moscow, into the Moscow area is now 500,000 volts.

While we were there it was then 400,000 volts and they were about to convert it.

We are operating lines in this country at about 350,000 volts. We are now experimenting with the higher voltage and expect to go there. Now, whether it is more economical for us to be there is the big question.

The Russians apparently believe in building large individual spectacular powerplants. Kuibyshev, for example, is 2.3 million kilowatts, a hydroplant. Russia transmits that power about 650 miles to Moscow.

Representative CURTIS. Is that not quite inefficient?

Mr. VENNARD. We would not do it that way, you understand.

I think that is a long distance to transmit more than a million kilowatts of capacity. In fact, we asked the Russian engineers why they

had not built steamplants in Moscow to serve the business of Moscow instead of going 600 miles south of there. Their answer was that in the future they plan to place less emphasis on hydro and more on steam. In other words, I think the Russians are finding, as we have found, that with notable exceptions by and large it is cheaper to build a steamplant at the point where you need the power instead of going out into the far country and building a big hydro and having that extra expense of transmission.

In our country, we have tried to weigh the economics of each individual installation and therefore we have more powerplants at load centers than Russia has.

I traveled out to Bratsk. Bratsk is this big hydro they are building in the middle of Siberia that will give 4½ million kilowatts of capacity.

I asked why they went way out there to build this and where would they use the power. They say they are going to move industry into Siberia.

I said, "People, too?"

"Yes, people, too?"

I said, "Suppose they do not want to come to Siberia?"

He said, "We will pay them a little more to move to Siberia but they will move to Siberia."

Representative CURTIS. Did they plan to build rail lines there, too?

Mr. VENNARD. Yes. Why Russia is doing that I do not know but the records show that Russia is growing industrially much more rapidly in Siberia than in European Russia.

Representative CURTIS. Do you think that technologically there is a possible breakthrough in this problem of transmission to gain more efficiency or have we pretty well exhausted the potentials there?

Mr. VENNARD. No. You understand that power companies have built their systems taking into account the total economics involved and therefore their transmission lines are built so as to be the most economical to serve that particular condition. We think that we are going to higher and higher transmission as we go to larger and larger plants and we get larger and larger loads and therefore we are experimenting with 700,000 volts for transmission now.

I think one measure of the total transmission capacity, you might say, is the total miles of lines of 35,000 volts and above where Russia has 62,000 miles and America has 240,000 miles of transmission.

Representative CURTIS. I noticed that.

Our transportation system studies seemed to reveal that most of their industry is along the main line because there is no feeder system. I was looking at your power grid maps and it looked as if that verifies that picture because it looked as if their transmission lines fed into rather concentrated areas.

Would you say that that is a fair observation or would you modify that?

Mr. VENNARD. Russia now has 52 different power systems. There are three principal power systems in European Russia. The engineers told us their long range plans are to ultimately interconnect those power systems. We were told no time schedule for making the interconnections.

I think their first move is going to be to interconnect the three main systems in European Russia and, as I visualize their power capacity

and the building into Siberia, I think their next step is going to be to build a high voltage system from European Russia across the Urals into Siberia and follow somewhat the line of the trans-Siberian railroad which they are electrifying now.

Representative CURTIS. We have the information that they are going to diesels. It is interesting.

Mr. VENNARD. They said that part of the power now being built at Bratsk would be used for the electrification of the trans-Siberian railroad.

Representative CURTIS. There has been no rural electrification apparently. Do you have any observation on that?

Mr. VENNARD. My observation was that there is little. You understand that the Russians have put almost total emphasis on getting electric power to industry and they have put no emphasis on giving it to homes. I gathered from the questions they asked us that they are concerned about that because their low use for homes is concerning them and they asked us what we did in America to make people use all the appliances that they are using.

We had to explain to them that in America you do not make people do things. You do it differently.

They wanted to know what do you do? I said, "You go house to house and show them it is good. You show them appliances. You show them how they can save labor by washing clothes with appliances and show how a refrigerator will save food."

They said, "Propaganda."

I said, "If that is the word you use to describe what I am saying, it is propaganda. We call it selling."

Representative CURTIS. The pertinency of this is that Russia seems to be concentrating their 7-year plan on increased agricultural produce and the only power they seem to have in the farm area now is gasoline and animal and human, of course, and unless they were going to start some program of rural electrification which apparently is not in the 7-year plan, it is hard, from my standpoint, to see how they might do it. That is the reason I raised the question.

You mentioned their abilities in the turbine and generator field. As I understand it, we evaluate these big bits of machinery from the standpoint of percentage of downtime. Am I right that any one of them, no matter how well built, has a certain amount of downtime? Am I correct in that observation?

Mr. VENNARD. Yes.

Representative CURTIS. How are they on downtime? Could they apparently do pretty well?

Mr. VENNARD. I think they do all right. We found nothing to indicate the Russians as being deficient in their ability as engineers and scientists. Their plants were not quite up to ours in temperatures and pressures and in efficiencies but there was not enough difference to make much difference in that category.

Representative CURTIS. If I may turn more to the farm sector, I notice that Mr. Hamilton and Mr. Shuman's paper refer to the fact that in order to move ahead in this farm field, a highly complex industrial system is also necessary to process, package, transport, store, and distribute farm products, and from the testimony we have received there seems to be very little advancement in that area in Russia.

Would you say that that conforms to what your studies show?

Mr. HAMILTON. That is certainly our impression. However, neither Mr. Shuman nor I have been to Russia and our impressions are based on the reports of various farm delegations, which have included some of our own members, as well as experts from the Department of Agriculture and State colleges.

Representative CURTIS. They seem to have no system of farm roads. What surprises me sometimes is our American observations about Soviet Russia in relation to the problems we, as Congressmen, see in our own society presented to us. They do not apply the same standards to Russia.

In other words, if Russia is going to do this in agriculture, are they not going to have to meet some of these problems that we have had to meet like rural electrification, like farm-to-market roads, like this business of processing and packaging and transportation, and all of that?

I do not think they can skip those things.

Are those things not pretty fundamental economics which must all be created?

Mr. HAMILTON. I think you are right, Mr. Curtis. Certainly farm-to-market roads have been important in the United States and rural electrification has been important. For example, we could not have adopted some of our new farm equipment—such as the bulk milk tanks—without farm-to-market roads and rural electrification.

Representative CURTIS. We could not have the small number of people producing our agricultural produce, could we, without these things?

Mr. HAMILTON. No, and furthermore, we could not make as full a utilization of our products.

Without farm-to-market roads, the Soviets apparently have a farm-separated cream dairy industry outside the milksheds around large cities. We are pretty much on a whole-milk basis. We have a little trouble with a dried skim milk surplus but the point still prevails that without farm-to-market roads and without electricity you cannot make the most efficient utilization of the production that is available.

Representative CURTIS. One thing I did not get into in the other papers which I did not think should be missed is the diet of the Russian people. They are pretty largely on a carbohydrate diet, as I understand, while we in this country are shifting more and more to protein. They do not seem to have much variety in their diet. I would think that would have some health implications.

One final question in this agricultural area that has not been gone into is the question of the use of farm products for alcohol, not just vodka, although that is important, too.

Have we any estimates of what has been done in that area? Do they use a great deal of alcohol from converting agricultural produce?

Mr. HAMILTON. Well, I do not have any specific information. I will just have to give you an impression. You refer to vodka and my impression is that a little grain will make quite a bit of drinking alcohol. I believe vodka is actually made out of potatoes, not grain. When you refer to the use of grain for alcohol I assume you really mean industrial alcohol and at the present time this is not economic

for us and I am sure it is not for the Soviets because, when you start using grain for industrial alcohol, you are really dealing with chemical elements. The quality of the grain, flavor, and sanitation, which are important for human or livestock food, are not important in chemical processes, and you can get the basic chemical elements much cheaper from waste products and petroleum.

Representative CURTIS. I thought we had sent some of our surpluses into that area.

Mr. HAMILTON. We used a great deal of grain alcohol for synthetic rubber during World War II, but this was an emergency in which cost was not the same factor that it is now.

Your problem then was to get enough alcohol to supply what were essentially new industries. Now petroleum is plentiful and industry is geared to using it as a raw material for industrial alcohol.

Representative CURTIS. Thank you.

If I could turn to education a bit, I mean this kindly Mr. Eshelman, it seemed to me your paper was more along the lines of what is wrong with the American educational system, and I wish you would apply the same standards to the Russian picture, because if we need to do many of these things in our educational system, and I certainly feel that we do need to improve vastly, let us apply the same standards or problems to the Russians; let me point this up for your comment: that over 50 percent of the Russian people live in the rural areas. The typical situation of the large family, a number of children, is predominant in the rural areas over the urban. You have probably 60 percent of the students or potential students in the rural areas. They have a system apparently of only 4 years compulsory education. They are apparently trying to move to 7 years.

Again we have the situation of no farm-to-market roads and I do not know what they would do about high schools and how they would collect the children and so forth.

How does that fit with this concept of this great Russian education system? We certainly would not be happy with that.

Mr. ESHELMAN. May I say that in the paper I tried to compare. It is so difficult to make comparisons, especially in the field of education.

What I tried to do is to make a comparison and commitment to show how Russia is really committed to their system of education to a greater degree than we are.

Representative CURTIS. That is a conclusion. I want to find out if that is true, and the way I find out if it is true is digging into the details and finding out what they are doing.

I have heard that generality and, to be honest with you, I do not believe it. I do want to find it and examine it to find out if I am wrong.

So I get into the details and find that these details just do not quite match, so that I pose the question.

Mr. ESHELMAN. Let me give a bit of background. You take the Russian system. As I pointed out in the summary this morning, in their system of education they know what they want.

Representative CURTIS. Which system, the urban or rural? Apparently there is not much of a rural system. With only 4 years of compulsory education, you must agree that there cannot be.

Mr. ESHELMAN. There is not much of a system of what we call mass education. Russia still does not have mass education. In America we are committed to a mass education system.

Representative CURTIS. May I interrupt a minute?

In order to get real quality education, you have to first get mass. Otherwise there is no way of sifting out those who are worthy of quality. That is why I ask this question on the rural problem. How are these bright young people selected to go on to high school? It is important to know. It seems that they may be missing up on this in the rural areas.

Mr. ESHELMAN. That is right.

Representative CURTIS. If that is it, we can confine ourselves to that. Certainly our system is way ahead, if we at least have done some good in this area of mass education.

Now, if they have not devoted any efforts to the bulk of their population in the rural areas to try to get a real system, then I question the general conclusion that they are dedicated, as it has been pointed out, to education.

Mr. ESHELMAN. They are dedicated to education from this point of view: Trying to get a certain number of people really informed or educated in furthering their particular system.

Representative CURTIS. That is the European system.

Mr. ESHELMAN. That is right. We have an entirely different philosophy. I think we should point out that in Russia people are used to enhance the state. In America we use the state, an institution, to enhance people, and the educational system, therefore, has an entirely different function in America than in a lot of European countries, and, therefore, it is so difficult to compare them.

In America we believe in mass education for this reason: We think it is as important to educate a person with a relative meager IQ as a person with a very high IQ due to the fact that at the ballot box the vote of the person with a meager IQ counts just as much.

Representative CURTIS. You might do it for economic reasons because a trained person is more economically useful.

Mr. ESHELMAN. I would like to make very emphatic that when I say "we," I say the schools of America, and I talk for them through the National Education Association, that we must strive to have every person have the opportunity and try to encourage them to be developed to their full potential from two points of view: First, as an individual, and secondly, as a member of the social group of the democratic society; and I agree so heartily with Mr. Lovestone when he said there is so much more in this country than economic growth. We do it for a purpose. We do it to enhance the life of the people.

Representative CURTIS. Do you not think that is a greater dedication of education than the other references?

Mr. ESHELMAN. I do.

Representative CURTIS. Then we are in agreement.

Mr. ESHELMAN. I know some people are going to contradict this but I would say definitely the schools of America down through the years have been dedicated and devoted to this principle that you build people and thereby you enhance a democratic state and our democracy goes forward to the extent that we have people who really believe in democracy, productivity, and so on. The standard of living and

everything else is in that and we must always safeguard this question we call freedom for the individual and, may I add, the respect for the dignity of the human personality. That is not even thought of in the Russian scheme.

Representative CURTIS. I agree with that but I want to confine it to economics solely, to the materialistic goal that Russia seeks, and suggest that this also is necessary to attain the materialistic goal; that there is this vast difference in productivity of the Russian workers vis-a-vis the American worker which they do not understand and are trying to decrease but not in the American system and I do not think they will gain the productivity they seek until they start following some of these things.

On page 513 this remark was made:

> Recent educational reforms in Russia will tie the schools even closer to industry thereby promoting even greater impromptu or nonauthorized support than ever before.

That, to me, was a strange way of wording it. I thought it was not an educational reform at all but a reform to get more manpower as a result of their manpower shortage and is bound to be inevitably at the expense of educational goals. In other words, they are cutting back 2 years. Those in the European sector have their education.

Do you not think that that really is what it is and that this is not an advancement in education but a retrogression by cutting back 2 years?

Mr. ESHELMAN. It is not an advancement in education as we think of education but as they think of education; but, as geared to productivity, it is.

Representative CURTIS. I am talking about our ideas of what we think is good education and again if there were the dedication to education that you have expressed, I do not think this would occur. Maybe the sacrifices would be made in other areas. In other words, I again say I am trying to get into the details to find out if this generality that is bandied about concerning their great interest in education is really true. I think their interest is in, just as you say, possibly getting more production so that they can attain other goals that are purely materialistic.

Mr. ESHELMAN. I think we can say this for the Russian system in education, however. They have realized one fundamental principle whereby you can go forward and get people interested in education.

Representative CURTIS. We have had vocational education programs for many, many decades and the Federal Government in that area, incidentally, helps.

Incidentally, while on an economy move, I tried to increase that each year.

Mr. ESHELMAN. I was thinking along this line. The Russian people recognize that people who are connected in schools and in education are carefully selected and they select keen minds in the educational system. They give them a great deal of prestige in their society. They give them a good living standard as far as finance, again interpreted in this society, to a greater degree than we do.

Representative CURTIS. That is what I wondered. Of course, we cannot explore that too far. You have made the statement that Russia treats its teachers better both financially and prestigewise. That

is again a generality that I would like to examine into to find out if it is true, if we had time to find out if it is true. I do not think it is true.

You state in your paper that the salaries are at the level of doctors and engineers.

Doctors are not in very good position in Russia from the evidence that has been presented to us. They are good in this society, yes, but when you relate it there and pin your argument on something that is not accurate, I begin to wonder about how much you really examined into the real situation of teachers financially and prestigewise.

That is very good to build Russia up as a bogeyman and maybe it is true and, if it is true I want to know it, but I do not want to know it on the basis of using that as a whip to get us to correct our system. I would rather see us correct our educational system, and believe me, I think it needs a lot, on the basis of good self-criticism according to our standards of what we think is good education, not this business of building Russia up as a bunch of 10-feet-tall men, which I think this is, unless you come up with the details.

Mr. ESHELMAN. I agree with you wholeheartedly, Mr. Curtis. I believe in the Derthick report from the Office of Education, they have summarized that the teachers are paid at a salary scale which is very high in the economy of Russia.

Representative CURTIS. Which teachers, grade schools?

Mr. ESHELMAN. Teachers in the public schools and colleges.

Representative CURTIS. When we criticize our own system we break it down into different groups and I have seen the figures from 1900 on our people in education. The person who suffered most in our system of education is not the primary school teacher; in fact, they have advanced considerably. The ones who have suffered most are the superintendents of schools, and so you break it down. Let us apply the same standard of criticism to Russia.

I wonder, is it the primary school teacher or is it the professor at the college who is upgraded, and I think probably it is more that in our society although I think we have had some very remarkable advancement in recent years, and I hope we continue in upgrading the financial and prestige position of our people in our higher institutions of learning.

Mr. ESHELMAN. I can, if you wish, file an addendum to the report pointing out very definitely the question of salaries.

(The information referred to is as follows:)

ADDENDUM TO DR. ESHELMAN'S REPORT TO THE JOINT ECONOMIC COMMITTEE, NOVEMBER 20, 1959

This addendum is in clarification of points raised by Congressman Curtis during the hearings. Mr. Curtis sought further information on two points. This information is enclosed.

Is the Soviet commitment to education greater than ours? The weight of evidence from visitors and scholars to the Soviet Union in the past 3 years decisively indicates that the Soviet overall commitment to education is greater than ours.

How does one arrive at such a conclusion?

It is based upon judgments of experts who have visited and studied the Soviet system of education. For example, in his book, The Challenge of Soviet Education, Prof. George Counts forcefully explains the rationale of this commitment, and in a more recent article Dr. Counts succinctly states this commitment:

"This record of achievement suggests that the business of organized education is regarded far more seriously in the Soviet Union than it is in the United States,

or perhaps in any free society. The highest authorities in the Soviet state give close and constant attention to the program of the schools and other educational agencies, from the length of recess periods in the primary school to the content of a textbook in history. Lenin and Stalin, and the members of the Central Committee of the Communist Party, have always regarded education as an indispensable instrument or weapon for the achievement of their purposes both at home and abroad. This conviction of the importance of education is expressed also in the emphasis which it receives in the press and other agencies of communication, as well as in the widespread practice of glorifying the work and the person of the teacher. Also, whatever the situation may have been in the 1920's, an unceasing effort is made to develop in the young a sense of the seriousness of their work in school which goes well beyond anything known in the whole history of American education. Practically every form of motivation is employed to this end. Rarely if ever have the members of an entire younger generation of any people been subjected to an equally severe regimen in the institutions of organized education. They are told over and over again that 'a person educated in the Soviet school must stand much higher in the scale of intellectual education than a person who has gone through a bourgeois school.' Whatever the results may be, this statement certainly expresses the intent of the Soviet leadership and probably applies with even greater force in the domain of education in Communist morality'."

An interesting index of the Soviet concern over education may be witnessed at the anniversary celebration of the Bolshevik revolution on November 7—the most important date on the Soviet calendar. For this event the central committee always prepares a long list of slogans to direct attention to the most important tasks confronting the country. Invariably several of these slogans are directed toward the schools. The following are taken from the 1955 lists.

Teachers: Raise the quality of the instruction and education of children. Cultivate in children the spirit of love and devotion to the Soviet motherland, of friendship among peoples. Prepare fully developed, cultured, and industrious citizens of socialist society, active builders of communism.

Young men and young women, our glorious Soviet youth. Participate more actively in economic and cultural construction, in the entire sociopolitical life of the country. Stubbornly master the achievements of progressive science and technology, master the knewledge of industrial and agricultural production. Be steadfast and brave in the struggle for victory of the great cause of communism in our land.

School children. Stubbornly and persistently master knowledge. Be industrious and disciplined, strive for success in your studies.[1]

The first official U.S. education mission to the Soviet Union spent 1 month in 1958 visiting 100 schools and other educational institutions. Led by the U.S. Commissioner of Education, Dr. L. G. Derthick, the 10-member team group was able to gather one of the most complete reports to date. The report opens with this statement:

The one fact that most impressed us in the U.S.S.R. was the extent to which the nation is committed to education as a means of national advancement. In the organization of a planned society in the Soviet Union, education is regarded as one of the chief resources and techniques for achieving social, economic, cultural, and scientific objectives in the national interest. Tremendous responsibilities are therefore placed on Soviet schools, and comprehensive support is provided for them by all segments and agencies of Soviet society.

One of the leading Soviet educators told us: "We believe in a planned society, you in individual initiative. Let time tell." They are convinced that time is on their side and that through education and hard work they can win their way to world acceptance of Communist ideology.

Everywhere we went in the U.S.S.R. we were struck by the zeal and enthusiasm which the people have for education. It is a kind of grand passion with them.

Wherever we turned we heard the slogan: "Reach and overreach America." And everywhere, the people seem to respond in the conviction that education, in addition to hard work and the postponement of many creature comforts, is the best means of winning world supremacy.

Education reaches far beyond school-age children and youth and is eagerly sought by hundreds of thousands of full-time workers who are also full-time

[1] Counts, George S., "The Challenge of Soviet Education," Social Education, 22: 181–186, April 1958.

students; hundreds of thousands of others take correspondence courses. Many of these correspondence students also hope to qualify for university entrance. They do this because being well educated is the key to advancement. We are sure that the Soviet people anticipate the day when their present sacrifice for knowledge will bring them many rewards, but right now, as we see it, they regard good schools and universities as the necessities in their race for world supremacy.

Down on the borders of China where only a half century ago the people were almost 100 percent illiterate, we saw thriving schools, an impressive scientific academy, and other institutions that have reduced illiteracy and advanced knowledge to an astonishing degree. From the shores of the Black Sea to remote Siberia we found the attitude summed up in the expression of a Soviet education official: "A child can be born healthy, but he can't be born educated."

Education has been and is recognized as the source of past accomplishments and as the way to the future. The developments in the organization and practices of education at all levels during the past half century have been impressive both for their speed and for their extent. Wherever we went our hosts described with pride the contrasts between the present conditions and those existing before the revolution. That we returned with our faith renewed in the superiority of the American system for our society does not discount the tremendous efforts the Soviets are exerting to advance their kind of education to strengthen the Communist system.

Few nations or people are today more passionately committed to education than the Soviet Union and the Soviet people are. The Soviets see what has already been accomplished and are confident of the future.[2]

The Soviet Union is committed to a greater amount of money, percentagewise, than the United States of America. Our total educational expenditures are about 3.7 percent of our gross national product as compared with 6.5 percent for the Soviets.[3] A nation's willingness to pay is an important criterion for judging its commitments. While the Soviet people do not have much to say about their commitment, from all reports they do not consider it unreasonable. As in most underdeveloped countries, the Soviet people look upon education as the open sesame to advancement. Parents are very eager that their children have the opportunities afforded through education.

Almost without exception, expert and nonexpert U.S. observers visiting the Soviet Union alike find the Soviet commitment to education is impressive, offering both a threat and a challenge.

The American commitment to education indeed has been one of the highest in the world. Going back to the Massachusetts laws of 1642 and 1648 for establishing schools, the American people have had a high regard for education. In our early frontier days the church and school were among the first buildings to be raised.

Today our diverse and mobile pattern of living with its shifting values and priorities considers education of first importance but not of extreme importance. The backlog of the depression and a World War II created serious shortages of both classrooms and teachers which has never been met. Today we need 140,000 classrooms and 135,000 teachers; a 1957–58 survey of urban elementary schools disclosed that about 25 percent of the elementary schoolchildren were attending overcrowded schools with double shifts, that is one group in the morning and another in the afternoon.

Last year one-quarter of the school bond issues submitted to the public were defeated.

During a recent year the American people spent $27 billion on automobiles and their upkeep, $13.8 billion on recreation, $15 billion on smoking and drinking, $10 billion on advertising, and $2.2 billion on parimutual betting. During the same period, crimes cost us $20 billion as compared with $15.5 billion spent for formal education at all levels, $0.6 billion for books, and $0.5 billion for basic research. Can any nation which spends considerably more on its pleasures than it does on its education be considered as seriously committed to education as it professes?

Other examples of our uncomfortably wide gap between the theory and the practice of our educational commitment could be mentioned. For example, we

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[2] "Soviet Commitment to Education" (report of the first official U.S. Education Mission to the U.S.S.R.). Bulletin 1959, No. 16; Washington, D.C.: Government Printing Office, 1959, pp. 1, 2, 3, 4.

[3] DeWitt, Nicholas, "Basic Comparative Data on Soviet and American Education," Comparative Education Review, 2: 9–11, June 1958

simply do not know enough about Soviet educational finance to make anything more than intelligent guesses about it. Dr. Nicholas DeWitt of Harvard's Russian Institute recently told a National Education Association staff member that he had six Soviet books and many journals waiting to be translated. We talked much about the serious nature of the Soviet threat but we have not provided sufficient means so that Soviet experts can have the working tools to help others understand and move to meet the challenge and threat.

Are the Soviet teachers better off than American teachers in terms of finance and prestige? In terms of finance Soviet teachers as a whole are better paid than American counterparts, as judged by the financial position of the teachers as compared with the rest of their respective society.

The salaries of American teachers generally are on par with skilled workers. According to a recent National Educational Association salary report, "although there has been improvement in relative status within the past 5 years no major shift in teachers' salaries away from the earning level of blue-collar workers and toward the earning level of professional groups is evident."[4]

An editorial in the Washington Post on November 19, 1959, indicated that the District of Columbia firemen begin at $4,800 and the District of Columbia teachers begin at $4,500. Life magazine brought the problem of teachers' salaries into vivid focus through the story of the California teacher who was forced to do odd jobs on the weekend and in the summer to provide his family with a reasonable standard of living.

Salaries are a major factor in determining choice of a career. Unless the American public can raise the salaries of teachers to a professional level, education will continue to lose talented and interested people to other fields. A recent report by the National Education Association Tax Education and School Finance Committee found that for teachers in public schools the average was $4,650 in 1957–58. The estimated average income in the 17 professions for the same period was $7,600, or 63 percent above the average teaching salary.

In the same publication a chart lists the beginning salaries offered 1958 college graduates:

| | |
|---|---|
| Men graduates, in industry: | |
| Engineering | $5,616 |
| Accounting | 4,992 |
| Sales | 4,944 |
| General business | 4,896 |
| Other fields | 5,148 |
| Average, all fields | 5,160 |
| Women graduates, in industry: | |
| Engineering | 5,412 |
| Chemistry | 5,052 |
| Scientific research | 5,040 |
| Accounting | 4,332 |
| Mathematics, statistics | 4,308 |
| Home economics | 4,260 |
| Business trainees | 3,924 |
| Secretarial | 3,744 |
| Other fields | 3,900 |
| Average, all fields | 4,356 |
| Men and women graduates, in classroom teaching | 3,650 |

Concerning salaries of Soviet teachers, the Office of Education report found that:

Salaries are based on units of work with 18 hours a week usual for teachers in secondary schools and 24 hours in elementary schools. We were told, in general terms, that a beginning elementary teacher receives 670 rubles a month for this minimum program. Any additional work a teachers does calls for additional pay. The beginning secondary schoolteacher receives 750 rubles a month for an 18-hour unit of work and, like all other teachers, is paid for teaching duties in excess of this minimum. The maximum salary for the elementary teacher is from 800 to 900 rubles a month and for the secondary teacher 1,200 rubles a month. A doctor begins at about the same rate, possibly less. A carpenter receives from 500 to 600 rubles a month; a waiter, 400 rubles [plus tips]; a store manager, 1,000 rubles and above; and a streetsweeper, 300 rubles.[5]

[4] NEA Research Report, "Economic Status of Teachers in 1958–59." Washington, D.C.: The Association, 1959. Foreward.

[5] "Soviet Commitment to Education," op. cit., p. 16.

Prof. George George Z. F. Bereday of Teachers College, Columbia University, has found that the pay of Soviet teachers is about equivalent to that of Soviet doctors and lawyers, and the pay of Soviet teachers is definitely superior to that of the Soviet workers.[6] Dr. Henry Chauncey, president of Princeton's Educational Testing Service, has arrived at essentially the same conclusion.[7]

Mr. Harrison Salisburg, of the New York Times, believed that Soviet primary teachers are paid on a scale that allows them to live in the Soviet Union about as well as American primary teachers who live in rural areas that have not been consolidated.[8]

While the difference between primary teachers in their respective countries is not great, some differences are evident at the secondary levels, and marked differences are evident at the technikum and university levels, giving the Soviet teacher, generally speaking, financial edge in terms of the Soviet society as compared to his American counterparts.

No direct comparison of the salaries of Soviet and American teachers can be made although a comparison can be made of teachers within their respective systems. A direct comparison is not possible for several reasons, the fluctuating rate of ruble exchange being one. Official exchange rate is 4 rubles to a dollar, the tourist rate is 10 rubles to a dollar, and black market rates may go to 40 rubles to a dollar. In addition, salary scales in the Soviet Union for teachers are next to impossible to determine. No basic pay scale exists for teachers; each teacher's salary is a computation of his personal situation—whether he teaches in country or city, elementary or secondary level, Russian language and mathematics, 18 hours a week or 24 hours a week, and so forth. Teachers can earn up to 25 percent above their base salary by correcting notebooks of students who take courses requiring notebooks, by homeroom assignments, by extra club activity, or by being awarded or recognized as an honored teacher. The base Soviet teaching load of about 18 hours per week, as compared with 24 hours for the American elementary and secondary school teacher, allows time for extra duties and extra pay.

In terms of prestige, the Soviet teacher, generally speaking, has greater respect at all levels than the American teacher enjoys in the United States of America. Admittedly, this is a difficult thing to judge because the line between respect and obedience is sometimes indistinguishable, yet the observations of American observers visiting the Soviet Union as well as comments of two Soviet youth groups visiting Washington, D.C., confirm this generalization. For example, on November 20, a young Soviet visitor asked in all seriousness: "Why do not your teachers have more respect from the pupils?" The need for greater respect for American teachers is particularly evident in metropolitan areas.

The element of prestige does not need much comment since it would follow consistently with the pattern of commitment and salary. In other words, if a nation is highly committed to education it will provide the means for good education, however it defines the term. From this will flow inevitably prestige and status.

In conclusion, a final paragraph of the original document is quoted: "Within the context of their system and their objectives, the Soviets may well be achieving more progress toward their ends than we are toward ours. Our decentralized and diversified society has done remarkably well in educating the people. Our free, public school education is unique in history. Our commitment to education has paid us back manyfold in our amazing agricultural and industrial growth. Yet, as we enter the second half of the 20th century, our Nation is faced with internal and external problems that will force us to do a better job of education than we have done at any time in our history."

Representative CURTIS. I would like to have you do that because it would be unfair not to give you that opportunity. In fact, I want that kind of information because I say my conclusions are merely tentative and, if there is information that would bear these things out, I am very anxious to get it.

If I may, speaking to the gross national product area, the thing that bothers me—and I think it has been brought out in both the CED

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[6] Personal conversation with Professor Bereday, Nov. 23, 1959.
[7] Chauncey, Henry, "Some Comparative Checkpoints Between American and Soviet Secondary Education," Comparative Education Review, 2:18–20, February 1959.
[8] Personal conversation with Harrison Salisbury, Nov. 24, 1959.

paper and other papers—about using gross national product as a measure of growth is that, while it is a meaningful figure and certainly gives us information in this field, are we not more concerned with our basic plant and facilities and potential for production? I am talking now about use for military purposes.

In other words, Russia's gross national product may be 40 percent of the United States; but, in attaining that, have they been using 100 percent of steel capacity while we are using 60 percent of steel capacity?

Are they using 100 percent of their transportation system, not shutting down for proper maintenance, while we are using ours at possibly a little over 50; because then the question is a question of mobilization.

We have a program of standby machinery, and there are, I guess, billions of dollars of machinery in standby condition. I know it is difficult to measure plant capacity, but is that not an important thing to weigh in this area and should we not be trying in our studies as we go further to get some evaluation of the potential?

In World War II, this country shifted from producing civilian goods to producing military and it was an amazing thing, and I guess our gross national product went up tremendously. Do we not need to get into this area instead of getting into what I regard as an interesting thing, to know what their gross national product is, when the meaningful thing really is our productive plant, including labor skills, I might say.

Mr. PETERSON. I think perhaps even more meaningful than that is the fact that the Russians have an ability to allocate their resources in a way that serves the ends of the State. Surely, it is important to measure what these resources are, but, if you are thinking in terms of what military effort they can make, what effort they can make in the foreign aid field, the fact that it is a State determination of how these resources be utilized, this becomes more important, in my judgment, than gaging the relative size of the economy.

Representative CURTIS. This relates to the basic question. If we are going to step up U.S. growth—to me that is meaningless. What is important is where do we need economic growth? If we increase as I think we should in the educational area, that is not going to fill up gross national product. We do not need to increase our agricultural production.

I doubt if we need to increase our transportation system to a great extent, or steel, or aluminum; if are are talking about increasing U.S. growth, is it not important to dig into it and find out where we think in our structure we need to increase and we can take a look at the Russian system as we have and we can point to many areas where they need to increase not 10 percent but need to increase a great deal more if they are going to really move ahead in any sort of balanced area. Therefore, I think it is very important that we break down this business of growth into the areas where we need it, the quality and the structure.

Mr. Colm?

Mr. COLM. Mr. Curtis, I would like to comment on your questions of capacity and on this question of economic growth and its measurement for our job of evaluating the Soviet threat.

First, I agree with you entirely that it would be highly desirable if we had good capacity figures. We have them only for some specific industries like energy, steel, and a few others. We have even not for the United States a good overall measurement of capacity because our wealth estimates are much less developed than our income and production estimates. This has been brought up before this very subcommittee some time ago in testimony on our system of national commitments.

I think that I agree with you that the gross national product is the best measurement we have. Even that is difficult because the Soviet statisticians do not know and do not use that concept. They are using another concept, national income, and we have to manipulate that measurement in order to make it comparable with our own concept.

Second, with respect to economic growth, I agree entirely with what has been said here that the total growth, whether it is 3 percent, 4 percent, 6 percent, or 8 percent is not what counts, but it is allocation to specific purposes, be they military purposes or the economic offensive.

Nevertheless, I believe that the rate of growth has a great significance for this very question. Assume we have a rapid rate of growth as result of our technological knowledge, our institutions and so on—let us say we think we can achieve 4 percent progress. This means we can have an increase in production of $15 billion or $20 billion, or whatever figure you use from one year to the next. Then the question of allocation is quite a different one compared with the case where we have a rate of growth which gives us only a $5 billion addition per year.

If you want to step up our national security expenditures in the situation of growth you can use that increase without being forced to curtail other production.

Representative CURTIS. You mean by a greater tax take?

Mr. COLM. That is one aspect of it.

In a stagnant economy any increase in any one line, any allocation more to military or more to investment or what have you, means taking it away from something else.

In a growing economy, you can allocate what you think reasonable requirements are without taking it away from somebody else. It means only for somebody else a lesser rate of increase than he otherwise would have.

The rate of growth is statistically a little less hazardous than some of our absolute measurements. In this connection I would like to repeat what has been pointed out, particularly in some of the papers in the first part of the committee publication and I think it is good to also have it repeated here that all ruble-dollar comparisons are of a most doubtful character.

I would like to illustrate that, Mr. Curtis, by one thing which has come to my attention recently. The Draper committee has estimated on the basis of careful studies that the Soviets are spending the equivalent in dollars, whatever that may mean, about the same for defense as we do.

I think Mr. Dulles, in this testimony before this committee, has also made a similar statement.

I have heard people who are experts say that they think the value of the Soviet defense programs, if you convert armed forces into hardware or some sort of common standard, might be even higher in real military terms.

On the other hand one of the national magazines in the United States gave out a figure about 10 days ago that, according to the real ruble-dollar comparison, the Soviets are spending $6 billion for defense.

Now, that is simply using a rate of exchange of 15 to 1 which, applied to defense, is fantastic.

I mention it only because we have these extremes. There is no question about the ruble amount. Some people estimate it is an equivalent amount in dollars at $40 billion where somebody else has estimated it at $6 billion.

I mention that for this reason: The rate of Soviet growth in Russian terms and the rate of U.S. growth in our terms is more comparable than any direct ruble-dollar comparison of production or capital which would be necessary if you want to make a comparison of capacity unless you take physical materials, so many tons of steel or kilowatts of energy.

Representative CURTIS. Thank you, Mr. Chairman.

Representative BOLLING. Mr. Eshelman, I'm not sure whether this will clarify or confuse the question further. Perhaps it is a mistake to describe the process of training in the Soviet Union as education. Education has certain connotations to us. Actually, I think the word derives from the Latin word, which means to lead out, and our purposes in an education system are to serve individuals to realize their fullest capacity and to enable them, having realized their full capacity, to make a contribution to a democratic system.

In the Soviet Union, apparently the purpose of what is called education is actually to train people to be useful to the state.

Perhaps this little semantic twist would make it easier for us to comprehend the differences. However, this is not my point.

My point is that in whatever this is, training or education or whatever it is properly called, there seems to be very little disagreement but what they are putting a larger percentage share of their resources into education than we are.

Mr. ESHELMAN. That is right.

Representative BOLLING. What are those figures?

Mr. ESHELMAN. I think at the present time 3.6 percent of our total national output as compared to in Russia 6.5 percent.

Representative BOLLING. On the detail of the rural versus the urban population, since this does not serve at all the same purpose as we do, if they have a certain effort they wish to make, it really does not make any difference to them whether they are giving the rural people the same opportunity as the urban people.

Mr. ESHELMAN. That is right. This is no concern of theirs. They want a certain number of people who will serve the state.

Representative BOLLING. This is another illustration of how their system is designed to serve the purposes of the state without regard to the individual.

Mr. ESHELMAN. That is why I think it is so dangerous to compare the Russian system of education with our system because the purposes are so different.

I believe with Mr. Curtis that what we should do is to try to analyze what our shortcomings are in our schools and try to correct those shortcomings and, as I oftentimes say, in speeches across the country, it seems to me we must go forward at full speed on this question of quality in education in order to stand where we are at the present time due to our very complex civilization and the very changing civilization in which we find ourselves.

Representative BOLLING. Do you have a comment you wished to make on agriculture, Mr. Raber?

Mr. RABER. I traveled some 1,800 miles by rail and bus while there, most of it in the Ukraine.

Your comments on the roads are very appropriate. The roads in Russia are about like Indiana roads were in 1915.

It is not as big a problem as it would be for us. Their collective farms run from 3,000 to 30,000 or 40,000 or 50,000 acres so that one road to one farm would be just like from village to village, so that the number of roads they need to build is insignificant in miles compared to what we would need to serve our rural America.

Next, on the subject of electricity, on every road and farm that we went, there was electricity. Where we went on the farm they were utilizing electricity, not nearly as much as I do on my farm but they were utilizing electricity.

I think we should look at the manpower situation in the field of agriculture because, both, in this country and in Russia, agriculture is and will remain the major industry for a long time. It is true that 50 percent or more of their population are on farms but my discovery, particularly with respect to this one farm, which was about duplicated every place, that there were some 15,000 acres. There were 560 collectivists; 440 of them were female and most of them were elderly. There were only 20 people on that farm that had the ability to run modern machinery. They had good machinery.

I saw going into the hayfields as good equipment apparently as we have, but 40 or 50 women going out with scythes to mow hay on the same farm.

I asked quite extensive questions of several people that I could converse with either by English or by interpreter. This is the idea they gave. The manager of the farm said that "we are now diverting 10 percent of our population to agriculture," and these older people, middle-aged and older in Russia, a very small percent can read and write and I know that you cannot take people that are in that state of education and make operators of modern farm machinery out of them.

He said that "every time 100 of these old women die we can replace all they do with one young trained person with machinery," which I recognized to be a possible fact.

Then he bragged that "within 15 years we will have our agriculture production done with 10 percent of our population just as you do."

I think that we should make a very careful study because they can shift about 40 percent of their growing population into industrial production in the next 15 years. That is a very serious observation, I think, with their production capacity.

Saying a little bit about their education, the elderly people on the farms of Russia are illiterate and they will never change their pro-

ductivity; nor will they possibly get any change for better living standards. The education on farms, of course, is a little hard to describe because they have what they call an educational center on each collective farm which is like our one-room school was in Indiana 30 years ago. From this they select the ones who will be eligible to go to bigger cities to school, those that will get vocational training as well as their technical education, so I think it is very wise for us in this country to evaluate the Russian economy in this light.

We are in a contest. We have to recognize that this is a contest in economic production. They may make some mistakes but we had better not live by the hopes that they will make mistakes. We had better build and train in our own camp to see that we take advantage of every possible opportunity to make our system work here so that it will be an example around the world, because I know that the world is watching and they are going to discover which one of these systems will do the most for people in the shortest time, and we cannot fail, we dare not fail.

Representative BOLLING. Mr. Raber, I do not mean to be facetious about this but it seems to me that it may be that in their agricultural programs they have sort of combined an agricultural and retirement program.

Mr. RABER. May I make a little facetious statement on it also? In this country we decided to chase the old people to the cities to stand in the bread lines and I am not appreciative of that attitude that many people have.

Representative BOLLING. I am afraid this is a valid point. In my own area we have aged people living on bare subsistence in urban areas and they have no resources other than public assistance and that is not adequate.

I have one further question. Does anyone else have anything to add? If not, I will ask my question.

Mr. Colm, your third chart is to me very interesting. It projects a 4.2 percent annual increment to the United States, 1959 to 1970, and projects a Soviet increment of about 6 percent. I gather that some experts anticipate that their increase will be a little bit more than 6, but the point that I would like to get at is the support for the attainability of the 4.2 by what has been described as reasonable methods. I would like your comment on what those factors are and meanwhile I would like Mr. Petersen to be thinking about the answer to this question as to whether he thinks that these are reasonable methods and whether 4.2 or roughly something like 4.2 is attainable.

Mr. COLM. Mr. Chairman, the 4.2 percent happened to come out of a major study. I would like to call it between 4 and 4½ percent. We do not want to be overaccurate but we took the figure as we got it.

Without anything like heroic measures which we should adopt if necessary but then we get into a 5 and 6 percent rate we can increase the rate of growth from the historical 3 percent or the recent 2 percent to something like 4 or 4½ percent for the following three major reasons:

First, we have a tremendous amount of technology accumulated through the defense effort. While in previous periods we had also defense technology which after a war then trickled through to the peacetime economy, we are spending now year by year what has been spent in previous periods, perhaps once every few decades.

Most of these technological advances for defense have a peacetime application. I visualize a much higher rate of obsolescence in industrial production and in consumption of goods and home equipment than we ever had in the past.

This technological potential is so utterly different from what we had over the last 50- or 60-year period that I think we cannot make any extrapolation of a historical rate. I see no reason that because we had 3 percent in the past we should have 3 percent in the future. I say that without reference to Mr. Petersen, he realizing that he has been misinterpreted in this respect.

Second, we are committed to a Government policy promoting steady economic growth. During the past 50 or 60 years we had periods of rapid economic growth alternating with periods of stagnation or even depression. With steady growth and only minor fluctuations, and I do not think they will be absent, we can have a greater average rate of growth than with periods of spurts alternating with periods of stagnation and depression.

Third, I think just because of the competitive existence situation we have become more growth conscious. When I say "we," I mean Government, business, and labor.

You heard from Mr. Lovestone that American labor is not hostile to technological advances and business certainly is not.

I am impressed by the difference in attitude between European and American businessmen. When you have a new president or director in a European business he makes it a point not to change anything for a number of years because he does not want to appear as the new broom and all this sort of thing. In America there would not be a new president who does not feel obliged to start something quite fresh. As a matter of fact, he may adopt gadgets as electronic computers a little earlier than needed and when he does not know what to do with them part of the time he may rent them out to the Government.

I think we have a more dynamic spirit in American business and labor. This spirit, I think, will have additional effectiveness if labor is assured that the Government is doing everything in its power to help in retraining those who are displaced by machines, living up to commitments under the Employment Act.

I do not say that we ought to have more technological advance and growth because of Soviet Russia, but I would like to put it this way: We are all becoming conscious of the fact that any deficiency, any lack of use of our potential, will be exploited by a rival system. That should make us do better what we should do for our own sake.

For all these reasons, I think it is reasonable to conclude that our institutional arrangements and our climate have so changed from what it has been during the last 50 or 60 years that there should be no mechanical extrapolation of the historical rate of growth into the future. Our specific estimates have shown that a rate of growth somewhere between 4 and 4½ percent can be achieved without heroic measure but it will not be achieved if we just sit complacently and do nothing.

Representative BOLLING. Before I call on Mr. Petersen, I gather Mr. Lovestone has something he would like to add.

Mr. LOVESTONE. Mr. Chairman, I want to say one thing. Let us not get into a war of percentages with the Russians. They are the best percentage experts in the world. We just cannot beat them in percentages.

I think we ought to approach it from the point of view of the history of our whole country and its development.

The history of our country is to develop wants and to reduce want. We have had our ups and downs.

In pursuit of this objective, I want to answer a question made by Mr. Curtis. I hope the committee, when it makes its final report and proposes some action by the Government to recommend to voluntary organizations, will keep this in mind. Our country has the best road system in the world. It is not good enough for the changing demands of the American people. We are way ahead of the Russians in this regard. That does not mean we should not build roads.

In housing I say to you that, although in our country houses do not live as long as in other countries, yet there are a lot of houses that are not livable.

On health we compare very favorable even with the 11½ feet Russians in health. I do not think any American can be too healthy and you know much better than I do because you have watched it from your point of vantage here that there is not enough of medical care for the people and very few of us can afford to be sick these days. That does not mean the State takes over. The Government can do a lot through cooperation and on its own to promote health and that a form of growth.

The same thing applies to electrification and I might say that there are still millions of Americans who must eat better, who must be clothed and housed better and must have higher standards of living. I am not singling out any sector of our Nation but there are sectors. I can take you to New England and take you to the South where we have un-American standards of living. You cannot pump statistics into them. You have to re-educate them.

You cannot say, "The Russians are finishing a plan in 7 years. We have to do it in 6 years."

We have to do it in our own way. Our own way is basically sound.

I want to raise the question of new industries. As has been said we are making enormous strides there. Particularly because of automation we ought to develop new industries. This is poppycock, that the Russians have a planned economy and not us. There is a lot of planned economy by industries in our country. You take agriculture, which is the most individualistic sector of our economy and between our most individualistic industry and there at least we are ahead. Any time agriculture passes out of the picture, the United States passes out of the picture.

Next we come to the reducing of the business cycle. That is a form of growth. We have already done a lot in this case but we have to do much more.

Lastly, we have learned from experience that the more countries that are industrialized, the higher the standards of living they have, the better the customers they are. It is the conscious duty of our country today as it was of Britain in the 19th century and the early 20th century to help industrialize nations and therefore help develop

a market for the goods we produce. We have a purpose which is not punitive. We want to create more wants so that we have less want. On that basis of growth, I think we can match the Russians at any time.

Representative BOLLING. Mr. Petersen.

Mr. PETERSEN. Certainly Mr. Colm's analysis of the factors which he sees in the economy and which he hopes will achieve this 4 to 4½ percent rate of growth I would term all extremely reasonable means indeed. I agree thoroughly with him that we want to achieve this advance which is highly desirable, in my judgment, because it makes perhaps the burden of taxes lighter, perhaps makes it easier to spend more on education where more money should be spent, all of it is regardless of where the growth occurs. If the economy grows in the aggregate, it gives you the advantage of allocating your resources in an expanding economy which is a good deal different than shifting resources from one sector of the economy to the other which is exceedingly difficult.

One of the things that has not been mentioned here is this: Mr. Lovestone and Mr. Colm both mentioned the curing of unemployment and trying to flatten out business cycles, which is important.

They mentioned technology which makes for new plants and intensification of research both public and private, which is one of the big factors in promoting growth.

Two things which have not been mentioned: That is the review of our tax programs to assure that to the maximum consonant with the needs of our Government bodies for the raising of the necessary revenues to cover expenditures that the tax system furnishes strong incentives for savings, so that we can enhance our investment in plant, and strong incentive to work.

Moreover, I think we ought to review subsidies in relation to growth, our whole system of Government subsidies. Take agriculture subsidies. Farm products show up in our GNP but a lot of it gets stored away. Its real value in comparison with the Russian GNP is somewhat doubtful.

There are other areas of subsidy which, in my judgment, should equally be investigated.

The other sector that I think we must push, and vigorously, is the whole international trade area.

To me, the future growth of this country depends in large part on how wisely we handle our relations in our commercial and trade policy with the rest of the world. You have a world two-thirds of which is impoverished, which is insisting on rising standards of living.

Mr. Lovestone says that, as England did in the 19th century, our challenge is to be, with the other great and well-developed countries of the Western World, a supplier of goods and services to the underdeveloped nations of this world which will permit them to gradually improve their standards of living, obtain an economic system which will itself start to generate savings and investment and takeoff on its own.

This, to me, is not only important from the standpoint of our economy at home and its future development, but more important to me, the kind of world in which we live will be determined by the economic growth and development in this impoverished part of the world.

Representative BOLLING. Thank you very much.

With that, gentlemen, unless somebody has a further comment, I will adjourn the subcommittee until this afternoon at 2 o'clock in this same room when we will have a panel of four on the summary of policy indications on these hearings.

The members of the panel will be: Willard Thorp, Harry Schwartz, Evsey Domar and Walter W. Rostow.

(Whereupon, at 12:40 p.m., the subcommittee adjourned until 2 p.m., this same day.)

AFTERNOON SESSION

Representative BOLLING. The subcommittee will be in order.

This afternoon we close this set of hearings with a series of papers which summarize and discuss the policy implications of the analyses which have gone before. This gives me the occasion again to say how pleased all of us are with the high quality of the papers which have been submitted.

We wish to commend the panelists who are here in person and all of those who have participated.

Let me also acknowledge the wise counsel and assistance which we have received in the planning phase and throughout these hearings from Mr. Leon Herman, senior specialist from the Legislative Reference Service of the Library of Congress.

Mr. Thorp, Mr. Rostow, and Mr. Schwartz have submitted papers, which have been published in part III.

Professor Domar, because of an extended trip to Europe, was unable to complete a formal paper in time for advance publication, but we are pleased he can share the discussion this afteroon. We will ask him to lead off the summary statements, and the other members of the panel will follow with their summaries without interruption, after which I hope you will all feel free to join in the general discussion.

Professor Domar.

## STATEMENT OF EVSEY D. DOMAR, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MASS.

Mr. DOMAR. Mr. Chairman, I should apologize to the committee for my failure to submit a prepared statement in advance. My recent trip to the Soviet Union prevented me from writing it.

On this last day of the hearings it is hardly necessary to review in detail the data presented in the several excellent papers. A brief summary will suffice.

1. The Soviet economy has performed fairly unsatisfactorily in agriculture and in consumer goods in general, and very badly in housing. Though a marked improvement has taken place in recent years, the American standard of living is still far away. The fact that consumers' well-being depends not only on current purchases but also on past accumulation of durable goods reinforces this point.

2. That country has made impressive progress in cultural activities, including education, and in public health. The number of Soviet physicians per 10,000 of population is claimed to be about 17 as compared with some 13 in the United States. It is interesting to note that about 75 percent of their physicians are women.

3. Industrial output, and particularly that of heavy industry, in the Soviet Union has grown rapidly. Professor Nutter's figures for 1928–40 and 1950–55 show rates of growth of civilian industrial production of 8.3 and 7.7 percent per year, respectively. (I do not see much significance in his 1913–55 figures; after all, the present regime came to power only in 1917, and then went through the civil war and World War II.) This is an impressive performance as compared with our own rate of some 2.3 percent in 1950–58.

4. The papers presented to the committee are of high quality and broad coverage, but the absence of a single paper on the development of science and technology in the Soviet Union is puzzling, to say the least. The National Science Foundation and a number of scientists and engineers in this country have a good deal of information which could and should be brought to the attention of this committee and the American public. In the long run, comparative progress in science and technology will be more important than in other more strictly economic fields.

Granted that Soviet industrial growth has been impressive in the past, is it likely to continue in the future? A decisive answer to this question I cannot give, but the following considerations may be mentioned, first against, and then for, the continuation of rapid growth.

Here are the arguments against:

1. The relative exhaustion of the large technological backlog which existed at the outset.

2. Smaller reserves of labor power, particularly in the near future due to low birth rates during the war.

3. Pressure by the population for improvement in the immediate standard of living at the expense of future growth.

4. Greater need for services, where productivity growth is usually moderate.

5. The pressure of military expenditures.

Among factors contributing to rapid growth, the following ones should be mentioned:

1. A vastly increased number of administrators, engineers, and scientists as compared with the past. They now claim 816,000 engineers to our 528,000, and they graduate many more than we do.

2. It takes a great deal of experience and skill to run an economy, particularly a planned one. Soviet mistakes are renowned. But the room for improvement is great, and it should result from greater experience, less dogmatism, and the use of electronic computers.

3. An economy with some 45 percent of its labor force in agriculture, as compared with 9 percent in the United States, possesses large reserves of labor power.

4. Soviet leaders are still able to devote a large fraction of national product to investment. If differential price movements are taken into account, the fraction of product invested is likely to exceed the 25 percent suggested by Morris Bornstein in his paper.

On the whole, it is much better to overstate than to understate Soviet rates of growth. I suggest that we continue to think in terms of some 8 to 9 percent of growth of industrial output, and some 6 to 7 percent for national product. If actual rates will turn out to be lower, we'll have a pleasant surprise.

Let me interject here that the Soviet performance has been understated and underestimated many times in the past. Not so long ago

it was commonly held that an economy where government owned all the means of production and where a well-developed market did not exist could not survive at all.

About 2 or 3 years ago the then Secretary of State, Mr. Dulles, told a congressional committee that the Soviet economy was on the verge of collapse. If that were the case, this committee would not need to hold the present hearings.

Should this rapid growth so far above our own worry us?

I think it should.

It is true that the military capability of a country depends not only on its national product and industrial production—take Germany and Japan in the last war—but also on their use.

Soviet use of its output makes that country a far more formidable opponent than a general economic comparison would suggest. To a lesser extent this holds true of peaceful competition as well. In general, the influence played by a country in world affairs is related to its economic size.

What will the situation be if and when Soviet output matches ours, and then exceeds it, say, by some 50 percent? By that time, their political and social system may have vastly improved and made them a pleasant neighbor, irrespective of size, but we cannot as yet count on that.

The scientific and technological competition is even more important than that between national products. Indeed, this field is likely to be decisive. It is clear that the Russians are not standing still.

Whatever Soviet rates or economic growth and of technical progress will turn out to be, they are not under our control. What is under our own control is our own performance in these fields, and it is this performance that has already received and should receive more of the committee's attention.

Our own growth over the last 4 years has been quite disappointing, with our so-called historical rate of 3 percent becoming merely historical, at least for the time being.

The appearance of Soviet sputniks 2 years ago gave us a jolt, but "business as usual" has completely taken over since. Neither in the field of education, nor of research, nor of capital formation has the Federal Government done anything really important, in spite of streams of studies and words.

For that matter, we have not yet managed to utilize our existing productive capacity fully, the recession of 1958 alone wasting a good $30 to $40 billion. And yet economic growth and technological and scientific progress are longrun processes: The school children of today are the scientists of tomorrow, and their research of tomorrow forms the basis of growth in years to come.

When will the Federal Government wake up to its responsibilities?

I would like to add here, if I may, just a couple additional comments which were prompted by Mr. Petersen's paper and by his statement this morning. His statement that it would take something like $75 billion a year to raise our rate of growth from 3 to 5 percent is, I think, at best misleading, because it is not based on any serious foundation.

We do not know enough about growth to judge whether it will take $10 billion a year, $20 billion a year, $75 billion, or $100 billion a year. Just multiplying 2 by 75 doesn't get you far.

I think the question is not whether we can afford measures to speed up our economic growth, but whether we can afford not to take them, whether we can afford to see the United States become a second-rate power in the present international situation.

Thank you.

Representative BOLLING. Thank you.

Mr. Thorp.

## STATEMENT OF WILLARD L. THORP, DIRECTOR, MERRILL CENTER FOR ECONOMICS, AND PROFESSOR OF ECONOMICS, AMHERST COLLEGE

Mr. THORP. Mr. Chairman, I have already submitted a longer paper to the committee and, therefore, will only present a few of the major points from that paper at this point.

All attempts to make international statistical comparisons should be viewed with great skepticism.

The Soviet slogan of catching up with and surpassing the United States is nonsense. It is a statistical contest invented by the Soviet Union with no agreed set of rules and no system of scoring.

From our point of view, we really do not care whether or not the Soviet Union or any other country produces more electricity or butter or eggs than we do. Unfortunately, we do have to be concerned with some of the ways in which they may use the products of their industrial capacity.

It seems fairly clear from the evidence presented at these hearings that the Soviet Union has expanded rapidly in basic industries such as electric power, metallurgy, machine building, and chemicals. Agricultural output has shown little expansion until the last few years. Investment in transport facilities seems to have ranked low, though higher than efforts to raise the level of living, including residential and commercial construction.

A number of elements have contributed to the high rate of industrial growth such as the restriction of consumption, the high rate of investment, a large expansion in the industrial labor force, the increase in land under cultivation, and the availability of tested and tried western technology. An evaluation of these forces seems to indicate that the present growth rates will become increasingly difficult to sustain, although there is no suggestion of a sudden or sharp change.

Economic growth means a greater control over the production of goods and services, a higher potential to use economic resources in any direction. A larger and rapidly growing national product will provide the Soviet Union with a greater economic base for military purposes, a possible improvement in the level of living of the Soviet population, resources for further scientific and technical progress, and a higher potential in foreign aid and trade. It would provide a demonstration of the practicality of communism as a way to economic development.

In what ways can this affect us?

As one examines each area of possible impact, it seems clear that both the United States and the Soviet Union are strong enough so that they can fully support such military requirements and foreign

economic policies as they require. The relative rates of economic growth are not the key elements in either of these areas.

It is not clear that the Soviet military effort is limited by the capacity of its economy. Everything points to its being given absolute priority, and other demands having to take a poor second place. But the other demands are there and undoubtedly growth does tend to ease the conflicts among claims on the budget.

Nevertheless, we probably should assume that the Soviet military threat, in terms of those things which an economy can provide, is already well serviced, and our policies must not assume that there are economic limitations on Soviet military planning. The direct military threat to us will not be greatly increased by further economic progress in the Soviet Union.

Likewise, neither trade nor aid activities for either the Soviet Union or the United States of America are related in any close degree to our rates of economic growth. They are matters of international policy which are determined on other grounds.

If the U.S. growth rate were higher and the Soviet Union's growth rate were lower, it is doubtful if this would affect in any way the volume of trade and aid in either country. What is important for U.S. policy is the shift in Soviet policy away from its autarchic orientation to make active participation in international transactions. This may be largely a strictly economic development, but it does open up the possibilities of economic warfare.

In the face of a potentially greater volume of bloc trade and credits, there seems to be no basic reason for any new directions in American foreign economic policy, except to give more consideration to the importance of market stabilization.

The policies of lowering trade barriers and of cooperating in economic development programs through loans and technical assistance are both basic to the strengthening of the free world and the limiting of dangerous dependence on the bloc.

These are programs which were developed in their own right and not as defense countermeasures. In fact, there is some danger of our becoming too preoccupied with Russian developments and forgetting that we are the leaders in these fields.

We should certainly wish our programs to be as efficient and effective as possible, and the Soviet challenge may serve to point up inadequacies which otherwise might not be uncovered. The fact that the Soviet bloc may devote more and more of its resources to trade and aid is no reason for us to become doubtful about our own programs. If we can find ways to strengthen them, we should do so in any event.

Clearly we can do a great deal better in our international relations. Our relations with the less developed countries are particularly important, for these are the "swing" areas. It is all complicated by many crosscurrents of history, prejudice, and the difficulty of adapting our own procedures to new problems. But if we decide that this is a really important matter for the future of the free world and ourselves, we should be able to make the objective of economic development a unifying force in the free world. In such case, the statistics would matter little if the purpose was clearly evident.

Representative BOLLING. Thank you, Mr. Thorp.

Mr. Rostow.

## STATEMENT OF WALT W. ROSTOW, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MASS.

Mr. ROSTOW. Despite all the complexities, the facts before us are, I believe, clear enough.

Soviet output is now less than half American output. It is expanding at about twice the rate if we assume that American growth resumes its upward trend. From its smaller base the Soviet Government is allocating to military affairs as much resources as we are, and it is allocating to foreign affairs, in all probability, a higher proportion of output than we are.

Roughly speaking, it tends to allocate to various uses fixed proportions of total GNP; and we can, therefore, expect the material basis for Soviet military and foreign policy regularly and quite swiftly to expand.

On the basis of this allocation system, Soviet policy, exploiting forces at work in the world arena, now threatens us in at least five ways:

(1) The threat of major war, aimed against our retaliatory capacity;

(2) The threat of limited war;

(3) The problem of diplomatic blackmail;

(4) The reality of political penetration in the underdeveloped areas; and

(5) The present danger of the fragmentation of the Atlantic alliance.

Soviet momentum, set against our sluggishness, tends to make persuasive the psychological image of an ardent competitor closing fast on a front runner who has lost the capacity to deal with his problems and prefers to go down in the style to which he has become accustomed rather than to make the effort required to maintain his status.

This is the image of America which Communist propaganda is cultivating, and we must face the fact that it is an image which, rightly or wrongly, is increasingly accepted as fact. It is an image that imperils our alliances and imperils our safety.

What, then, must we do to protect our interests and advance the cause of freedom?

By our military dispositions, we must continue to make either major or limited war an irrational undertaking for Communists. On this basis we must use our economic resources and our political and human insight to the full in doing what we can to insure that the nations of Asia, the Middle East, Africa, and Latin America remain independent and move through their difficult transitions to modernization in ways which keep open the possibility of a democratic evolution for their societies.

In order to execute these military and creative missions, we must form up a new set of partnership relationships with the resurgent nations of Western Europe and Japan, to replace those developed in the immediate postwar years. And from this solid free world base, we must maintain an endless diplomatic initiative and an endless sympathetic dialogue with the Soviet leadership, seeking to exploit every serious possibility for movement toward the effective international control of armaments.

There are four economic dimensions to such a policy.

The first and most basic is this: We must sharply increase the volume of public expenditure.

To be specific, but not necessarily inclusive, we need an increased volume of public expenditure to "harden" American bases and otherwise to insure our safety in the period of Soviet missile advantage; to provide a force adequate in size and mobility both for the deterrence of limited war and to provide a real basis, which we now lack, for the negotiation of international control of nuclear armaments, and to develop an American contribution to an international aid scheme for underdeveloped areas which would be adequate to the dimensions of the task.

In none of these directions do our present allocations appear adequate. We are now living within a budget ceiling arbitrarily determined by how we happened to react to the Korean war crisis. In the meanwhile, the challenges we face have expanded, and our dispositions have become progressively less effective.

Let me, Mr. Chairman, if I may, add something here.

I recalled, as I was coming down today, the dictum of the late Senator Taft on the Government budget. You may also recall it. It was stated, I believe, in a book he wrote just before the 1952 election.

He said that in circumstances short of an all-out war, we should not have a Federal budget larger than 25 percent of gross national product; and at that time, as the budget reached the level of about $72 billion, I think, he said $75 billion should be the ceiling with the then current level of GNP.

If we were to hold to Senator Taft's formula, we could now have a maximum Federal budget of $125 billion.

There is no virtue, evidently, in automatically having a budget of 25 percent of GNP; and, of course, as I tried to emphasize in my paper submitted to this committee, money is not the only element in an effective American military and foreign policy. However, I would call to your attention the contrast between the quite rational formula of Senator Taft which related an appropriate budget percentagewise to the level of GNP and what is, in my view, the quite irrational notion that whatever the threats we face, we must contain our level of Federal expenditures within the absolute limit set by how we happened to react to the last major crisis.

But the scale of public expenditures isn't the only problem.

The second economic task is to devise a policy to deal with inflation without suppressing the rate of American growth.

Third, we must devise a policy to accelerate the increase of American productivity along a broad front, a problem to which I think we will have to give much creative thought, given our world position.

Fourth, we must devise a policy for dealing with the problem of international reserves and with the pressure on the American balance of payments without damaging and, if possible, by strengthening the unity of the free world; and, fortunately, this objective appears attainable.

These economic tasks are a direct challenge to the vitality of the democratic process in the United States, and there are those, including

some, I believe, who made submissions to this subcommittee, who fear for the life of our institutions if we face them boldly.

I would recall that four of our worst mistakes in modern history arose from fear that our democracy could not deal with the problems it faced without losing its essence.

I refer to the belief of the Republican administration after 1929 that it could not deal with great depression without risking unacceptable damage to capitalism; to the belief of isolationists in both parties that we could not deal with Hitler and the Axis without permanently damaging basic qualities in our society; to the belief of the Democratic administration before June 1950 that our society could not afford a military budget of more than $15 billion; and, I would add, the similar belief of the present administration that its overriding mission has been to reduce the public budget it inherited, despite the accelerated challenge it has faced since 1953 in many dimensions.

The lesson of our recent history, as I read it, is that every time the men in authority decided that some problem was too tough for democracy to lick, and that they had to evade the problem in order to save democracy, we have gotten into a quite deep hole; and in all but the fourth case, where the bill is still to be reckoned, democracy was, in the end, much more searchingly and much more dangerously threatened than if the challenge had been accepted in the first place, at an early stage of the difficulty.

But in every case the basic assumption proved wrong. The undemocratic process, once put to work, proved stronger than either its friends or its enemies dared or cared to believe.

In dealing with the tasks before us, I believe democracy will come through again; but the lesson of your exercise, as I see it, gentlemen, is that we'd better get moving.

Representative BOLLING. Thank you, Mr. Rostow.

Mr. Schwartz.

## STATEMENT OF HARRY SCHWARTZ, THE NEW YORK TIMES, NEW YORK CITY

Mr. SCHWARTZ. Mr. Chairman, I must apologize for not having a prepared summary statement, but I shall be summarizing very largely the paper I presented to the committee earlier. I should like at this point also to note that I am expressing my own opinions and not those of the New York Times. It seems to me that in the debate before this committee, which I take to be largely a debate between those who are alarmed and those who are not terribly alarmed or who are not alarmed at all, the path of wisdom is to be alarmed.

I am alarmed. I am disturbed. I am disturbed because I have tried to make some very minimal assumptions of where the Soviet Union is likely to be in 1965 and 1970. These minimal assumptions assume that the Soviet Union will not do anywhere nearly as well as they hope to do, at least in terms of the new 7-year plan. Yet even on the basis of minimal assumptions, the economic resources which are likely to be available to the Soviet Union in 1965 and in 1970 are likely to give the Soviet Union far greater capability for waging its war against our kind of society than it has today. And yet today, with far more limited resources than it is likely to have in

1965 or 1970, the Soviet Union is obviously doing too well for our comfort. Nor is it only a problem of the Soviet Union alone. I agree with Dr. Domar that this committee should have had a presentation on the scientific aspect of the challenge, but let us remember that the Soviet Union is only one of about a dozen countries in the Communist bloc.

Communist China, Eastern Europe, and the other members of the Communist bloc are also growing rapidly, and a consideration of the total strength of the Communist bloc, not only the strength of the Soviet Union, is very germane to the problems we face and which the entire West faces. Essentially, however, for the near term it is clear that barring a disastrous depression here we will remain economically stronger than the Soviet Union in some general, and I am afraid meaningless, sense. That is, our gross national product will be greater, our production of steel will be greater, and the like, in the next few years. The essence of the problem, however, is what that production is used for. The harsh truth that we have to face, it seems to me, is that our production is not used nearly as efficiently or as wisely for the purpose of national survival as the Soviet Union uses its resources for the purpose of national and ideological aggrandisement.

It was Mr. Allen Dulles of the Central Intelligence Agency, I believe, who pointed out in his presentation to this committee last Friday what a very high percentage of our output goes for consumer goods and services which, pleasant as they are, add little or nothing to our national strength. In that difference in the utilization of resources, it seems to me, lies as much of the problem as in any mechanical comparison of gross national product data, or steel production, or the like. So that we must face the fact that when the Soviet Union will be producing 80 to 90 million tons of steel a year, as it almost certainly will be in 1965, it will be getting a great deal more mileage in terms of serving its national and ideological purposes than we are getting today when our production is in that same range.

It has been argued by one witness before this committee, Mr. Peterson of the Committee for Economic Development, that any serious effort to improve our performance must in some dark and mysterious way alter our established order. At least as I read his statement I gathered that he was holding in reserve the ominous threat of a Socialist America.

I frankly don't agree with him and I quite agree with Mr. Rostow. I believe that Mr. Peterson seriously underestimates the viability of our democratic and private enterprise institutions and seriously underestimates our ingenuity when we set our mind to doing a job. And we certainly have a job to do. I think also that, as Professor Domar has indicated, Mr. Peterson is simply not talking very wisely when he cites figures of $75 billion a year expenditures required to increase our rate of growth by 1 or 2 percentage points. I don't believe he has any rational basis for those statements and I think we would be best advised to disregard them.

I want to turn now to a few comments on Mr. Dulles' presentation. It seems to me that in a democracy, such as ours, even the Director of the Central Intelligence Agency must not be immune from criticism and from comment. On the whole, I believe Mr. Dulles presented a brilliant paper whose moral, explicit and implicit, we would do well

to make the basis for national policy. But far from feeling that he is too alarmist, as some comment has had it, I would argue he is not alarmist enough. After all, I think we have to face the fact that the implied lesson in Mr. Dulles' paper is that the present administration is wrong in many policies. And not just the present administration, but the President of the United States, who is the boss of Mr. Dulles. Mr. Dulles obviously is under at least some bureaucratic limitations in speaking his mind even to a congressional committee.

Having said that I think Mr. Dulles' paper is of high quality, I want to make one or two criticisms. In the first place, I object to the limited time horizon of his projections. What Mr. Dulles has essentially told us is that looking ahead to 1970 he thinks we will be OK, particularly if we do at least as good a job in the future as we have done in the past with respect to economic growth. But there is no reason to suppose that the world will end in 1970.

A government, even more than a large corporation, must plan ahead, must think ahead, for a long time. We have children who, we hope, will live beyond that date. The point I would like to suggest is this: That we had better start getting used to the fact that some time before the year 2000, if present trends continue relatively unchanged, the Soviet Union is going to be outproducing us. It is only by stopping at the year 1970 that we can get any kind of comforting statistics. If you make the same kind of calculations for 1980 or 1990, as have been made for 1970, we begin to see that sometime after 1970, even under the best likely conditions, the Soviet Union is going to be outproducing us. It is going to be outproducing us because it has more people, more territory, and more resources, to say nothing, of course, of the fact that it has the will to outproduce us, and we act at times very much like a front runner whose energies are spent.

Now, one of the problems that we have to face is what the political situation will be when the Soviet Union is outproducing us. Fortunately that time is still sufficiently far away so there may be some time for an appropriate national policy to be formulated and to take effect.

Finally, I would like to add a footnote on one point Mr. Dulles made: This was his assertion that Academician Strumilin has said that in 1913 the Soviet Russia produced 11 or 12 percent of our output rather than only 7 or 8 percent as the Russians have been saying recently. Since Mr. Dulles has praised Academician Strumilin's honestly I think we ought to have what Academician Strumilin said fully. Perhaps Mr. Dulles' experts didn't tell him all. At any rate, according to the Soviet magazine Novy Mir, No. 10, 1959, in Strumilin's book entitled "On the Road Toward Building Communism," Strumilin's latest estimates are that before the revolution Czarist Russia's industrial production was 10.8 percent of the United States, but that in 1957, and this is what Mr. Dulles didn't mention—he may not have known—Academician Strumilin's conclusion is that Soviet industrial production was already 71.8 percent of American industrial production.

Now, I don't see how we can praise Academician Strumilin as being an honest, reliable observer without judging both figures, not only one, and 71.8 percent is a lot bigger than the 45 percent Mr. Dulles gave us.

Let me conclude by saying I think there is reason for serious alarm and I think there is reason for national action. And I think that what

needs to be done can be done without destroying the democratic and private enterprise of America, which is the foundation of this wonderful land we all live in.

Thank you.

Representative BOLLING. Thank you, Mr. Schwartz.

As is our custom, I would like to clear something in the record. The staff has shown Mr. Thorp the discussion that took place yesterday in which I had asked a question which I will read:

> Mr. Willard Thorp in his paper, in part III of the compendium, says, "Under the heading 'U.S. Policy'"—and this is something that was also said today, "Neither trade nor aid activities for either the U.S.S.R. or the United States are related in any close degree to our rates of economic growth. They are matters of international policy which are determined on other grounds. If the U.S. growth rate were higher and the U.S.S.R. growth rate were lower, it is doubtful that this would affect in any way the volume of trade and aid in either country."

My question was: "Would you agree with that? Or would you disagree with it?"

Mr. Allen said: "He is right with respect to aid, but I am not sure with respect to trade," and then there is quite an extended discussion but I don't think there is any purpose for me to read it. I just want to give you the opportunity to comment on the discussion if you care to.

Mr. THORP. Yes, I would be very happy to. The basic point that I was trying to make was that in neither of these fields was the controlling limit whether or not there would be further economic growth. We would act identically in both of these fields, even if we both were going to have the same growth rate or even if the Soviet growth rate were less than ours, the point being that in trade and aid it can be decided as a matter of national policy. Just as in national defense where the Soviet Union has determined to devote a much higher proportion to that activity than we do.

They might make the same decision in the trade and defense fields. I think both economies are now rich enough so that the powers that be have some choices as to how to use their economic resources. The main point I wanted to make was that as far as aid and trade were concerned, these were matters which would be determined largely by international policies and posture rather than whether or not either economy grew substantially, at least in the short run. Of course it is true that an economy twice as big as ours would undoubtedly buy more abroad and it would sell more abroad. I didn't mean to say there was no connection between size and trade, but rather that the problem that we are concerned about, namely, whether or not the Soviet Union can disturb the international scene through trade and aid, is one in which it already has the power, and therefore it becomes a matter of choice of policy rather than the necessity of having adequate resources.

Representative BOLLING. Thank you. Mr. Curtis?

Mr. CURTIS. First, Mr. Chairman, I want to try to get this matter in context. Mr. Schwartz suggests that this is a committee exercise, one of debate. We haven't reached that point. Maybe it will eventually get there.

Mr. SCHWARTZ. I apologize if I used the wrong word, Congressman.

Mr. CURTIS. I hope we do get there because I think there is some real difference of opinion, but at the present point, at any rate, the committee is trying to get all the information it can and then will

try to evaluate that. That is certainly my object. If I am alarmed about anything, and I am alarmed, I am alarmed about the lack of information and the misuse, as I sometimes see it, of what little information we have in this area. I am alarmed about that. Then maybe after we complete these exercises and get some more information maybe we will be in the position of intelligently debating some of these problems. I certainly agree with the suggestion and thank Mr. Domar for the observation of the need to go into this scientific and technological area. I think we should.

I noted also that we didn't have anything in the area of communications, which I think is something we could do. Then, Mr. Schwartz, your suggestion of looking at the satellites I think is very important. We couldn't do everything he wants, and I think this committee has in mind the need of looking into the satellite question.

Incidentally, taking this rate of growth, I have been impressed with the reference to the Soviet rate of growth, which is no more unusual than that which we apparently see in Western Germany, and in Japan, and certain other Western European countries, which has led me to believe that there may be a great deal more relationship to the fact that these are all industrial societies that had a great deal of their plant destroyed in World War II, and possibly is related to that similarity, particularly as we measure economic growth in terms of gross national product, which I think most all economists have said has its limited features.

I would pause at that point, if there is anyone on the panel that would like to comment on that.

Mr. DOMAR. May I, Mr. Curtis?

According to our best information the Soviet war damage had been made good by, say, 1950.

Representative CURTIS. Yes, I know we say that, but I am wondering if we aren't lacking sufficient knowledge of economic processes, because I do point out that there is one similarity, and the only similarity I see, about Western Germany, Japan, and the Soviets, other than this remarkable rate of growth. There is not a similarity in the type of government they have, the people, their resources, but there is one similarity and that is that they were industrial and they had a good bit of their plant destroyed, so maybe we just do not know enough about how recovery and replacement of plant equipment measures up in this one area of gross national product.

I do not know, but I raise the point.

Mr. ROSTOW. Congressman Curtis, there is a similarity, I think; but it does not center in war damage.

Western Europe has had extraordinarily high momentum after it repaired its war damage because it has entered into a new phase of growth in which levels of consumption have been raised toward American standards. This process has remarkable playback effects on industrial output. Sheet steel, automobiles, plastics, oil refining, electric household gadgets, and the whole range of industries necessary to support modern consumption standards have come in with great vigor, similar to that we developed in the 1920's and in the first decade after the Second World War.

The Russians have also been catching up, but in a different way than Western Europe. They have enjoyed high momentum import, be-

cause they have been installing for the first time modern Western technology in which they are behind; but their indexes of growth also show high rates of increase because they have concentrated their investment in manufacturing sectors, many of them related to military output.

Our rate of growth, on the other hand, isn't as rapid because much of our investment is in services.

I think there is a similarity, but it stems not from war damage, but from certain structural features of the Western European and the Russian economies in the post-reconstruction phase, as compared with our own.

Representative CURTIS. Do you think that Japan has been similar to Western Europe in their production of consumer goods, too?

Mr. ROSTOW. Yes, sir; I do.

Representative CURTIS. One thing that I have obeserved, not just in this panel but in other discussions, is that it seems to me a failure, at any rate, to relate individual productivity. I am not talking about individual productivity when the individual laborer gets a better machine. I am talking simply about the labor management itself, relating individual productivity to the workingman's standard of living.

There is a constant reference to all of these services, and standard of living, and so forth as if it were luxury. It has been a concept in this country, I believe, and elsewhere that as the standard of living of a laboring man has increased and his education and so forth, his productivity increases.

If that is so, is this not a bottleneck that Russia is going to run into in trying to increase her productivity, and it seems to be in this area, particularly in agriculture, that they are counting on increasing the productivity in order to meet their 7-year goal; but the essential thing is, do we relate housing, and matters of care, and so forth, to the productivity of our workers that we shouldn't relate to the Russian worker?

Mr. SCHWARTZ. Mr. Curtis, I think the Russians are very well aware of the very valid point you just made, namely, that there is reciprocal interaction between productivity and standard of living. A higher productivity enables you to get a higher standard of living and in turn, a higher standard of living will spur a higher productivity. My observation at least is that the Russians understand this very well and that they are moving also to raise the standard of living.

They haven't raised it to any very high level by our standards, but the ordinary Soviet citizen does not compare his standard of living with that of the ordinary American citizen. He compares it with the very desperate standard of living he had as recently as a decade ago, in 1949 and 1950, or even worse, what he had during World War II.

The Soviet Union is today engaged in the most ambitious and largest housing construction program of its history. It is at the present time also reducing hours of work and attempting to make the carrot of fewer hours of work the means of extorting higher productivity from its workers.

The Soviet leaders are very, very bright people. They understand this point and they are using it.

The point I would like to emphasize is that they are able to do all of these things because each year they have a larger GNP. If you

will, they have a larger pie to hand out to the competing demands. Therefore, they can continue to raise the standard of living, be more able to wage economic, political, and perhaps even military warfare against us, and can keep on doing this, so far as I can see, indefinitely.

Representative CURTIS. That is what I am trying to get into, where these details are consistent and particularly the warnings that everyone has given us that we can't rely on statistics too much, so we can do a great deal by examining into it.

I will examine it in another area in a minute.

Mr. DOMAR. Mr. Curtis, I would like to add the following to what Mr. Schartz said.

I think you are perfectly right in comparing the productivity of a worker with his standard of living, but I don't know how far this relation goes. If the worker was underfed and he eats more now, of course his productivity will be higher. If his health was bad and is improving, his productivity will rise. If he was badly trained and is now better trained and educated, naturally his productivity will be higher. But by the time we satisfy the necessary minimum of public health, nutrition, and education, the relationship between the standard of living and productivity becomes not as close.

From what we gather, or at least have been able to learn about the Soviet Union, the public health situation is quite satisfactory. The nutrition is not as good as they would like, but it is sufficient, and the degree of training and education is improving all the time.

One area where they are very short is housing. That clearly interferes with productivity. People are irritated. People don't have enough room to live in and people are not sufficiently movable.

The second area where such a deficiency interferes with productivity is their services and retail trade. They have to spend a good deal of time shopping around which affects their productivity, but on the whole it does not follow that because their standard of living is lower, their productivity cannot rise fast or cannot become as high as ours long before their standard of living reaches our level.

Representative CURTIS. All I want to do is try to get the relationship.

Now, this very area that you mentioned is another area that we did not go into in this committee and I wish we had. I think it was your paper, or one of those, that gave us a figures of the ratio of doctors to population, which of course is one factor in evaluating this, but what about the number of hospital beds?

Mr. DOMAR. While you continue your interrogation of the other witnesses, I may get you some information.

Representative CURTIS. Yes.

Now, for example, there is where your communications come in. The individual doctor in this country through the use of automobiles, and adequate roadway system, and the telephone is capable of doing a great deal more in the field individually than a doctor over in an area where you do not have communications similar to that, and you do not have transportation, which comes into the relation of that area.

I would say another thing on health, too, and this is the way I try to evaluate what the truth is. We do a great deal of our care in homes, and if you have a housing problem, and we certainly relate the prob-

lem of public health to housing, and if you have inadequate housing, at least when people come to testify before us in regard to the inadequate housing, one of the great pleas they make to the Congress is that we need to improve housing in order to help health.

All I am pleading for is when we evaluate, if that is true, let's apply the same standard to Russia, unless they have solved some way of getting health without getting adequate housing; but if housing is related to health, then how can the statement be made that Russia, having this inadequae housing, can be on a par with the United States as far as health is concerned?

It does not make sense to me. Does it to you?

Mr. DOMAR. I imagine if the people live rather crowded they may be unhappy.

Representative CURTIS. No, no. Let's get right down to it.

Mr. DOMAR. About the state of health?

Representative CURTIS. I am talking now about the plea that is used in this country by people who urge that we have better housing, that one of the real reasons for it is to get better health, and I happen to agree with it. I think it is fundamentally a sound argument; but if that is a sound argument in the United States, what makes it unsound when it is taken over to Russia.

Mr. DOMAR. I don't disagree that better housing means better health.

The question is whether, from the Russian point of view, spending an extra billion rubles on housing will increase their productivity more than spending an extra billion rubles on something else.

Representative CURTIS. I am not talking about whether they said so. I am talking about whether it is so. Better health is a little more related to productivity, and, among other things, absenteeism and ability, so that maybe that cannot be regarded as a frill.

It seems to me there has been a tendency to take this business of standard of living as if it is something that has to do with luxury and just an end product and not related to the economic ability of the Soviet involved, and I think the two are very closely related.

One thing the papers seem to have brought out is the disparity between the productivity of the Russian worker, and the Russian agriculturist, too, even more so, to the American worker, and if the Soviet Union is going to correct that, and so much of the basis of their 7-year plan seems to be directed toward increasing that, then aren't they going to have to go in and spend more of their product on services and these things that have to do with increased standard of living?

If they do that, and the other papers have been pointing this up, they are going to be developing in an area where economic growth measured through this arbitrary thing of GNP does not show up as well.

These things are all interwoven and I think they have to be related. If there is a lag in an area, what does that lag mean in other areas?

If they have not got an adequate transportation system, what does that do to the productivity of the factory?

And if the factory man, as the testimony indicates, has to schedule his production to meet the needs of the transportation system, what is the net effect of that?

Those are the things I am trying to relate to get this picture, so I come back to the questions I have raised about health.

Your paper said, Mr. Domar, or one of them did, that in the field of health they were on a par, and so I relate health to housing, and I relate health to hospitalization, and I relate health to communications, knowing the importance of that to the doctors to be able to be more effective, and I relate it to transportation, and relating it that way I do not see how the statement can be true.

Mr. DOMAR. May I answer?

Representative CURTIS. Yes.

Mr. DOMAR. I did not say that they were on a par with the United States. I said their performance in the field of public health was impressive and satisfactory.

Representative CURTIS. I beg your pardon.

Mr. Rostow's paper says on page 592:

Medical services, public parks, similar to American standards.

That is what I do not understand, how they can be, if these other things are true, unless they have invented something that is new.

Mr. ROSTOW. What I had in mind, sir, was simply that they have brought their death rate down to a level which, at least on their figures, is below ours, given the age structure of their population.

Representative CURTIS. Let me stop there. That is their figure?

Mr. ROSTOW. Yes.

Representative CURTIS. That is why I want to know, are their figures accurate and can that be so in relation to these other things that we evaluate?

In light of what I have been shown, I would then say it looks pretty much like those figures are not accurate. That may be wrong, too, but at least that's the way I want to get into these studies to try and understand these things, and I must say that I think they have to be related.

If they can develop an economic system without basic transportation, a solid transportation system, without communications that are adequate, without rural electrification, I would like to know how they do it.

Mr. SCHWARTZ. Mr. Curtis, I think the points you raise are certainly very relevant and I have sometimes felt myself that some of the assumptions that were taken too easily about Soviet health, et cetera, had to be questioned as you have been questioning them. But I would like to say that there is also the danger of going to the other extreme.

On the health matter, first of all, the degree of ill health in a population depends in part upon the age structure of a population. The Soviet Union, because of the war losses of World War II, tends to have relatively fewer older people, the kind of people in whom you have heart attacks, cerebral attacks, cancer, and the other degenerative diseases of old age, than we do. Cancer has nothing to do, at least so far as we know now, with whether you live five in a room or you live five in a 10-room house.

Representative CURTIS. I thought that the loss of population was more in the area of 30——

Mr. SCHWARTZ. Yes, but that was 15 to 20 years ago. The man of 40 in 1945 is now almost 55.

Representative CURTIS. We have those figures and I thought it was in that area, the actual most usable manpower age bracket and womanpower, that there was a shortage in the population.

Mr. SCHWARTZ. I don't know.

Mr. THORP. I can explain that, I think.

You have the people who were old enough to have children at that time being killed and therefore you have a double hole in the age distribution, the people who were of military age and those who would be here if they had been alive to give them birth, so that we have a shortage of those just about entering the labor force and an excess of those in the very top brackets who were a little too old to be killed during the war.

Mr. SCHWARTZ. I think that is very good and very useful.

The second point I would like to make is that we must not exaggerate the impact of their relatively limited transportation and communications network. They do have adequate transportation and communications for the things that the government thinks are important.

There may be only one phone in a village, but if you have to call a doctor you can use that phone. In other words, let's put it this way: In this morning's New York Times, I think it is Julian Huxley who calls the Americans overprivileged people.

I think there is a great deal of error that can be made by assuming that one has to have our standards of abundance of housing, of transportation, and of communications in order to run a viable society.

Representative CURTIS. No, no, I do not want to exaggerate. Good Lord, that's the last thing I want to do.

Mr. SCHWARTZ. I know. We are trying to reach the truth here.

Representative Curtis. We know that as the phones increase, the doctor's productivity, using that word broadly, increases; as the road system when he has an automobile increases his productivity. There is a relation.

I am not saying that society cannot exist without those things, but I am saying in trying to analyze and evaluate the potentials of a society, it must move ahead in these areas. I am drawing conclusions at this point, but from what has been presented on the transportation system, for the life of me I cannot see how they could possibly achieve their goals in their 7-year plan unless they put more into transportation. Maybe they can, but at least it looks like the transportation system is too narrow to project their building. It isn't that they haven't got lots of ability to improvise here and there, but you are up against some physical facts in this thing when all is said and done.

Mr. SCHWARTZ. I think this subject requires further study but I would simply point out that they have done an awful lot with a limited transportation system and they are expanding their transportation system.

Representative CURTIS. I am willing to take the figures as a starting point for discussion, but then I want to go along also and start from another angle of knowing what they have physically and then trying to match it up. You start and assume that they have accomplished these things. Maybe they have, but I have a real question in my mind as to whether indeed they have accomplished all of these things in these various areas. I want to again say I don't want to underevaluate. I agree with everything that is said. I would much prefer to overevaluate than underevaluate, but when you seek the truth in

these things, you just try to match this thing up, and that is all I am trying to do.

Mr. SCHWARTZ. Congressman, I think we are all agreed on the objective. The point you raise on health I think probably comes down to this: With a younger population than ours and with the ability modern medicine has of controlling many of the infectious diseases which used to decimate populations, what they have apparently said is they are willing to take whatever percentage loss in the way of absenteeism and lower productivity that the effects of their deficiencies in the fields you have mentioned impose upon productivity. Nevertheless, they continue moving ahead. I point out that even in our territory there are parts of Alaska where I am told there are no roads, but if somebody gets sick you get a helicopter or a plane in there fast with a doctor. The same thing is apparently true in the Canadian Northwest and in Australia. In other words, with modern means of transportation you don't need roads always.

Representative CURTIS. Then I would ask the question, Do they have helicopters that they use for this purpose?

Mr. SCHWARTZ. There was a picture of a helicopter on the front page of Pravda within the last week or two. They have an aviation medical service for the areas of the far North. After all, it is only commonsense for them to try and take care of their people if only because a sick man doesn't produce anything.

Representative CURTIS. It is commonsense, that is exactly right, and so then I raise the question, "Do they use commonsense entirely?" I don't know. If they don't then I raise the next question. What is it that has prevented them from using what seems to be commonsense, because there must be some other reason that is involved in here. In evaluating this thing I want to try to get down to what we know. In fact, I think I am beginning to get, in my own mind at any rate, a satisfactory picture, which I might say doesn't leave me complacent, by any manner or means, but it certainly doesn't justify some of the seeming alarm in other areas. If we analyze this improperly, we can cope with it in the wrong way, using the alarm in the wrong fashion, but if we will calmly evaluate this thing and find out just what it is, as we evaluate it, I bet we could come up with a lot of things where we could benefit from the study of the Russian system. They are bound to have figured out some things that we did not or some way of doing something, but the way you do it, the way you find out those things, I think is digging into it. If they have found out a way of making their transportation work better, and they seem to use the railroad better in their turn-around, maybe there is some technique there that would be of value, but we won't get at them by just assuming that because this is commonsense they have so used it, so if they have developed a helicopter and small plane service for rural medicine I would like to know it. I don't know if they have. This is the first indication I have heard.

Mr. SCHWARTZ. May I say that having spent at least 15 years of my life trying to follow the Soviet Union, I can recall in general many instances of reading in the Soviet press of their use of small planes and other ancillary transportation mechanisms for reaching people who needed medical aid in areas where there was no land transportation.

Representative CURTIS. What have they done in hospitals? Were you able to get that?

Mr. DOMAR. I have some statistics here. One says the number of beds, evidently outside of maternity hospitals, has risen from about 149,000 in 1917 to 1,533,000 in 1958, a 10 times increase.

Representative CURTIS. I don't even know what our bed population is. Does anybody know?

Mr. DOMAR. I can probably tell you more about theirs than about ours.

Representative CURTIS. I was just trying to get a picture. I don't know what it is, but in relation to the question of how is their health, if they have 1,500,000 beds——

Mr. DOMAR. This is evidently outside of maternity wards. For maternity wards they have a separate number.

Representative CURTIS. We can supply that. That is a detail, but it did bear on this question which we did not go into in our papers on health, and incidentally, we didn't go into diet either, and our people in this field tell us that diet is very important in regard to health.

Mr. DOMAR. I wanted to call your attention to a table in Mr. Kantner's paper—I just had it and now I lost it—which gives some information about death rates for the Soviet Union compared with the United States. It is on pages 56 and 57 of the first volume of the reports. I am not a population expert and all I can do is just refer you to this statement, which shows a very substantial drop in Soviet death rates as compared to prewar.

Representative CURTIS. Yes; I remembered that. That is one reason I was interested to find out whether it is true, by trying to examine into these other areas.

Mr. DOMAR. Those are crude death rates and crude death rates are not very good.

Representative CURTIS. Also of course another thing that I am impressed by is the great bulk of their population being in the rural areas and to it relates a question of what are the rural standards in relation to urban, which could be considerably different.

Mr. SCHWARTZ. Mr. Curtis, may I interject?

Representative CURTIS. Yes.

Mr. SCHWARTZ. According to the last census, which was published just a few months ago, they are very close now to a 50-50 division between rural and urban. Therefore, the old notion which used to be true of most of Russia being rural is no longer true.

Representative CURTIS. I have been using in the discussions here around 50 percent.

Mr. SCHWARTZ. It is roughly that now, sir.

Representative CURTIS. In the education I have been using a little higher because of the figure which I was given, which is a national one, that rural families average more children, which sounds logical. I was trying to figure into some of the educational problems. One of the things that struck me that I might pass on is that in the rural areas they only have a 4-year compulsory educational system, which seems to me is worth thinking about when we talk about their educational system in relation to ours.

Mr. DOMAR. Could I suggest here that in every field that you mentioned in the last 10 minutes their deficiencies are great? I think you are perfectly right. What makes me worry so much about the future, is the fact that these deficiencies are being eliminated.

Representative CURTIS. That is what you say they are. I don't see how they can be unless they start hitting on some of these things that some people like to refer to under the heading of frills, increased transportation, rural electrification, and housing. One of the papers indicated that their housing to a large degree is what is left over from the prerevolutionary days. I don't know whether that is true.

Mr. DOMAR. Well, the average number of occupants per room in urban housing is something like 3.2, and that is a lot of people, and the housing space in urban areas per capita now is lower than it was in 1923. It is higher than it was right after the war.

Representative CURTIS. I relate housing to education, because a lot of our people who take correspondence courses and go out self-educating themselves bring work home. It doesn't sound to me as though it is too easy to do anything like that, or let's put it the other way: That housing limits the ability to do those things in a considerable fashion.

Mr. SCHWARTZ. May I make two comments, and I think they are really very interesting points. One is in all these matters you have to remember the Russian genius for making a little go a long way. We had a recent example of that in a speech by Mr. Khrushchev after he came back from the United States. He made a speech in which he said "We don't want to have all these cars that the Americans use to block up their roads and get into traffic jams with. Instead we will have a large fleet of taxis so whenever you want to call the taxi people you get a cab."

This is their approach to it. They still don't have the cabs, either, I might add, but it is still their approach to the matter.

Representative CURTIS. I know it and I know also that they abandoned the tractor pools which they had set up on that same philosophy on the farms, so I wonder how efficient those systems are.

Mr. SCHWARTZ. Sir, they abandoned the tractor stations only after they had made the average collective farm so large by merging anywhere from 3 to 10 or 15 smaller collective farms that in fact each collective farm is itself capable of using a large number of tractors. But to go back to the other point that you raised about how can these kids study with 3.2 people in the room. We know that our youngsters sometimes don't study even when they have their own rooms. The point is motivation. The Soviet youngster with any intelligence is highly motivated to learn and he learns despite very great difficulties. Too many of our youngsters having almost perfect conditions don't learn because they don't have the motivation, and we shouldn't forget that motivation factor.

Representative CURTIS. All right. You say that and I am willing to take that as your judgment. I raise the question how do we know that there is that motivation. I don't happen to believe that about the American kids. I have seen a lot of criticism of this present generation, but I don't go along with it. I have five youngsters myself.

Mr. SCHWARTZ. I have three.

Representative CURTIS. I worry about it, but by and large I will compare the education that I see they are getting with that which I got and I am very pleased with our people in education. I really am. When you get into these motivation things, that worries me a little bit. I don't think human beings vary that much. It is true that under situations a society will be motivated. I know that. Our society certainly was in World War II, and I do believe that there is a motivation in the Soviet society that is an important thing to evaluate, but when we got into this discussion a little bit on this education, our chairman helped me a little bit by saying maybe what they meant was training rather than education. I thought there was a lot to that. That has a lot of further important overtones to it.

Mr. THORP. Mr. Curtis, all these things you mention go into what an economy will produce, but starting where the Russians started, the greatest opportunities first to expand production came from using more capital and the better technologies, and that was naturally the first thing which they exploited and in order to use more capital they couldn't do very much in terms of the type of thing you are talking about. From the point of view of the absenteeism and things of that sort, I think there the whole social discipline is such that you get people showing up on the job, even if they have a little headache or something, in a rather different way than would be true in some other societies. What has happened quite obviously is that in moving ahead they have now reached the point where they can begin to afford, and think it is worth while affording, doing more with the individual worker and so you get this great expansion in education. I would expect that there would be much more emphasis on health from here on. This does, I think, represent one of the probable reasons why whatever the rate of economic growth has been in the past may slacken somewhat. This is only a matter of explaining why it may slacken a bit, but there are these diverse uses of revenues, each of which will yield something in terms of productivity. However, they won't equal the original opportunities that the Soviet had when it was so far behind.

Mr. DOMAR. If our experts gave you the impression that the Soviet economy is a smooth functioning and efficient system, I for one would disagree. The inefficiencies are so great you can read about them in the literature and a tourist can see them with the naked eye. There are plenty of things to be done there. To repeat what I said before, instead of being happy about it, I am worried about it because that indicates the great reserve of efficiency and of better utilization of manpower that is available.

Representative CURTIS. Like in agriculture, particularly?

Mr. DOMAR. In agriculture very much so. Take the examples which are given in literature and what a tourist being taken to a very good farm—I am underlining that, as tourists are not taken to poor farms, but are taken to very good farms—can see. He finds that on such a farm some 98 cows plus some calves are being taken care of by 19 people. On another farm one woman does nothing else but take care of a rather small number of sows and piglets and keeps them cleaner than, shall I say, my children usually are, and the thing that strikes you again and again is how greatly efficiency can be improved and how great the reserves still are.

Representative CURTIS. I go along with that point. In fact, I look at the system they have as being their greatest enemy and if they will adopt more of the capitalistic system, and they seem to be adopting it, I think they might achieve that, but then of course that is an unfortunate thing because capitalism will have buried them and maybe that is what is happening over there.

Mr. SCHWARTZ. Mr. Curtis, I think there are no pure systems. There is no pure communism, no pure socialism, and we don't even have pure capitalism. All systems are mixed. I would like to make two points with reference to the comments you two gentlemen just made. One, there is a great deal of inefficiency in the Soviet system and you have just to read the Soviet press to find out because they try to expose it mercilessly. But we ought to remember this principle of concentration. Where they think a thing is important they get it done, and they get it done, as Mr. Dulles indicated in his presentation to this committee, sometimes more rapidly than we do.

It is in the things they consider less important that they tolerate inefficiencies. But in matters such as making rockets to go to the moon, such projects have absolute top priority. They don't get held up by the kind of things which hold up, say, furniture production.

Representative CURTIS. Then they can make errors like putting so much into hydroelectric and not into steamplants.

Mr. SCHWARTZ. All societies make errors. The Ford Motor Co. announced yesterday it is going to stop making the Edsel car. All individuals make errors and all societies.

Representative CURTIS. Exactly, and this being the Subcommittee on Economic Statistics, I have long puzzled with whether or not we couldn't measure the economic errors that are made in every society, just as you say, and try to figure it out from that angle. I don't know who makes the most.

Mr. SCHWARTZ. There is a free enterprise even in the Soviet which does much to correct the harmful effects of the errors of the planners. The Soviet society, in my judgment, at least, would probably not work without a particular group of free enterprising individuals who are officially condemned, but who are really indispensable. They are the so-called tolkachi, the 5 percenters, if you will. When the plan goes haywire they get you what you need and enable production to continue.

Representative CURTIS. Their sales force.

Mr. SCHWARTZ. It is a group of purchasing agents. They can get it for you wholesale, so to speak.

Representative CURTIS. One final comment I would like to make. Of course, as to the question of where should this economic growth occur, I don't think just the growth for growth's sake is important at all, but I do believe it is important in certain areas. Our full committee has just finished studies in the problem of the three social goals of economic growth, price stability, and full employment, and I hope in that context we might come up with some answers as to where our economic growth might be. There is one thing, though. If we need to do more in the field, and I think we do, of education and research and development, I think we better recognize that it is not going to show up very forcefully in the gross national product, so I would hate to see us get into the numbers game on gross national

product when the kind of things I think we need to do the most are not going to show up there.

It is the quality evaluation that I think we need in our society, but that is for, as I say, the full committee to wrestle with.

Representative BOLLING. Gentlemen, the questions I have will be directed to each of you and for various reasons I am going to want an answer from each of you. What has been the history in fact of our assessment, both as policymakers and as people, of Soviet capabilities to accomplish stated objectives? Have we over-assessed their ability or under-assessed their ability? I will start and go from left to right if I may.

Mr. SCHWARTZ. Mr. Bolling, it seems to me that historically the record is pretty clear that in most cases, certainly in the most vital cases, we have consistently underestimated their capabilities. In the 1930's we never thought, or at least prevailing public opinion never thought, that they could create a viable industrial society such as they have in fact done today. In 1945, if memory serves me right, the debate used to be as to when Russia could make the atomic bomb. The optimists said they would never make it because they were much too ignorant and their system much too inefficient. The pessimists said never is a long time, but it would take them 20 to 40 years to make it. Ultimately of course the first recorded atomic explosion in the Soviet Union was in 1949.

On the hydrogen bomb, as late as July 1953, J. Robert Oppenheimer, who was then still with the Government, published an article in Foreign Affairs in which he hazarded the guess that Russians were at least 2 years behind us in the hydrogen bomb field. Actually, the Russians exploded their first hydrogen bomb in August 1953, the very next month. Certainly the whole history of space rockets, sputniks, and the like, shows that our national policy as reflected in what this country did seriously under-estimated the speed and effectiveness of the rocket research program, although I think there is some reason to suppose that our intelligence agencies had a better appreciation of their capabilities and were simply not listened to. In general, I can't see how one can look at the history of American expectation and Soviet performance without realizing that we have a great and, I am sorry to say, rather tragic history of consistently underestimating the Russians.

We don't like them, we don't like their system, and therefore we have let our wishes rather than our minds dictate our judgments. I would suggest it is time to stop that.

Representative BOLLING. Mr. Rostow.

Mr. ROSTOW. I would simply agree with Mr. Schwartz on this point.

Representative BOLLING. Mr. Thorp?

Mr. THORP. I think I would agree. I would like to add that we have always believed that the Communist system couldn't work in this country and therefore we carried over this notion and we had as much expectation that communism would carry its own destruction as they have that capitalism carries its own destruction.

Mr. DOMAR. I would like to continue what Dr. Thorp said. There is a great similarity between what we say about them and what they say about us. For a long time we did not believe that they could

function at all and many of them to this day don't believe that we can function. When 10 years ago one of their foremost economists, Varga, produced a book in which he didn't say that capitalism would function, but he didn't say it would collapse, either, he got hell for that. So far capitalism has survived. This similarly goes into other fields as well. As Mr. Schwartz remarked, they have an undercurrent of what we call private enterprise in Russia. You can point your finger to certain areas. You might ask them, "Don't you think a person can act on his own, particularly in agriculture, and retail trade, and small scale enterprise? Don't you think that the efficiency of the economy would be increased? And they might say "Yes," but they are so scared that that might mean encroachment of capitalism that they would rather suffer the inefficiency.

We take exactly the same position but on the opposite side: If something is done by private enterprise it is good, but if something is done by the government it probably isn't. If you and I spend an extra dollar we contribute to prosperity. But if the Federal Government spends an extra dollar it contributes to inflation.

Representative BOLLING. By next question is similar to the first and is addressed to all of you. In your opinion do we have enough information to assess the economic performance of the U.S.S.R. in the growth terms?

Mr. SCHWARTZ. My answer, Mr. Chairman, would be "Yes." We don't have enough information to make very precise judgments, but in overall terms it is an economy which is working, which is tolerable, if not the most pleasant in the world. And it is an economy which is constantly growing in strength and is a growing challenge to us. I think we have more than enough information.

Mr. ROSTOW. I agree. I believe the present level of Soviet statistics is sufficient for us to form a judgment in most of the categories where we want information; that is, we can make useful rough approximations. When I was briefly immersed in Soviet studies someone made an observation which exactly captured the impression I had formed in my mind. He said "there are secrets about Soviet life, the Soviet economy, and Soviet policy, but there are no mysteries."

Representative BOLLING. Mr. Thorp.

Mr. THORP. I would have to say that I don't think we know enough about any economy for our full answering of the necessary questions from the point of view of specific government policies. I think there are still some mysteries and secrets about the American economy which this committee has been trying to plug, and these are even greater in the Soviet economy. I, for example, feel the level of living in the Soviet Union is an area about which I have great difficulty in being able to decide, whether it is getting better, how much it is getting better, and so forth. It depends on the question you want to ask. I think we do know something about the overall rates of growth in industry and therefore something about the degree to which their capacity to produce things required to mount a military effort may be increasing.

This may be the only question that some people would be interested in, but if one really wants to evaluate the economy in a good many directions, just the kind of questions Mr. Curtis was asking today is the sort on which we don't have very much exact information.

Mr. DOMAR. I don't think we ever have enough information about anything. But we have to act and decide and formulate policy. We have some guesses, ideas, estimates, and whatnot. In the absence of more reliable information, the usual principle is, as statisticians put it, to minimize the maximum risk.

Representative BOLLING. Minimize the maximum risk. Of course, this is what I was getting to, because my next question is the obvious follow-up question. Does this performance presently give them a capability to support and to implement military and foreign policies to a degree great enough to represent presently a significant threat to the United States?

Mr. SCHWARTZ. That is a very complicated question, Mr. Chairman. I would suggest that in the military field my impression is, and I see nothing to contradict it, there is a military stalemate. We can destroy them, but they can destroy us, so that my answer to that would be definitely "Yes." In the area of foreign aid and foreign trade, the volume of their performance is still substantially below ours, but it is growing, and in some ways they use their more limited resources more skillfully than we use our greater resources. They get more propaganda value out of a $100 million loan to Indonesia than we may get out of a $500 million grant to some other country. Hence the answer to the second part would be that their resources are already great enough to cause us some discomfiture. Ask the people in the aluminum industry or tin industry about the discomfiture they suffered last year. Their resources are growing, and they are in many cases using their resources for foreign economic competition more skillfully than we use our resources.

Mr. ROSTOW. I think they are in a position, as I have tried to indicate in my paper, to mount a variety of challenges to the free world position; and they are in a position to expand the material basis for those challenges. My difficulty with your question is this, sir: Given the nature of military technology and given the ultimate nature of the problem in the underdeveloped areas where they are threatening us, I do not think the resource position of the Soviet Union as against that of the United States and the free world is decisive. We obviously have enough resources to deal with the threats of major war, minor war, and blackmail. In the case of blackmail what is involved is your nerve and your will, not your money.

In the underdeveloped areas I don't believe that the problem is the scale of foreign aid. The problems and objectives of the United States and the Soviet Union are quite different in the underdeveloped areas. If you examine how they have allocated their aid, you will see that they have allocated it in large blocks to a relatively few places; for a time, to Yugoslavia in the hope of getting them back in the bloc; they played Egypt and Syria at very considerable expense with a quite different purpose in mind—that is, to disrupt the Western position in the Middle East. They played the game in Indonesia for a while, when that looked promising for the local Communists. And the Russian objective in granting aid to India is somewhat different from each of the other cases I have mentioned.

It is a mistake, in my view, to try to look at our problem in the underdeveloped areas as directly related to Soviet objectives. Our

problem in the underdeveloped areas is to try to help these transitional governments and societies move through this awkward period into sustained growth and modernization in ways which keep their independence and which hold open the possibility of a democratic evolution. That is a positive and creative task. Our aid and trade policies play a part in executing that task. But what is required of us, if we are to achieve our objective, is a very different thing from what is required of them in trying to achieve their objective. Their objective, in Asia, the Middle East, and Africa, is to build up an image of themselves not only as a potential front runner on the world scene, but also as a friend to nationalist ambitions and to aspirations for economic growth. In the meanwhile, however, they are counting on the failure of the local non-Communists to make good these aspirations; and they are counting on the failure of the West to help these countries through. They are counting, in short, on some sort of a sequence like that which occurred in China between, let us say, 1927 and 1949. They are counting on a process of disintegration in which the Communists would emerge as residual legatees.

If you are playing that kind of game your use of resources is a very different thing than if you are trying to implement the kind of positive objective which I defined for the United States.

In other words, to come back to your question, looking ahead over the next 10 years, which is about as far ahead as I can look operationally, the Russians are capable of mounting a series of threats—including, if we don't hump, even the threat of a missile salvo—but there is nothing in their resources or their rate of growth which tells us that they will make good on those threats and achieve some major breakthrough in the balance of power. Whether they succeed or not doesn't depend on them at all. It depends on how the United States and the free world deal with a quite specific range of problems, for which the United States and the free world obviously have plenty of resources.

Mr. THORP. There is left very little for me to say. I think there is no doubt but what the resources are present in their hands and in our hands, and the issue is primarily one of the decision to use them and how to use them, and we do have to worry because there are these challenges and because we have developed certain habits about the use of our resources without regard to national security so that a large security budget somehow seems to us almost unbelievable and unacceptable.

In the same way we have developed notions of what we can afford which have no real economic connotation as to what we can afford. The basic issue is not the resources; it is the direction in which we use them and the way in which they use them, and the purpose and determination which is back of them.

Mr. DOMAR. You are comparing two large economies. Russia is a large economy and is going to be larger. We can not exceed them in every respect and they are bound to exceed us in some respects, and in some respects they are already ahead of us. For instance, they are producing more potatoes, felt boots, and probably leather boots in total and per capita than we do. They have more secret

policemen in total and per capita and they are welcome to them. About all these I would not worry. But when they start outproducing us in really important fields, then one should get worried. When their rocketry is ahead of ours there is something to worry about. When their output of machine tools is approaching ours, and according to Professor Mellman (who wrote his report in the New York Times), they are producing machine tools not worse than ours, but much cheaper, and they have a good chance of overtaking us there, that is something to worry about. Also, when their steel output is growing much faster than ours. Those are the things that we should worry about.

Representative BOLLING. Accepting the fact that this is really not a future problem, but a present problem, because each economy has the strength to pursue policies which serve its purpose, not merely to stay within a framework, it is really then a matter of our choice as to what the result is. It is not a matter of their choice, but it is a matter of our choice as to what the ultimate solution in the contest may be, still within this fairly narrow frame of reference, Mr. Dulles said in his concluding remarks to his statement:

> If the Soviet industrial growth rate persists at 8 or 9 percent per annum over the next decade, as is forecast, the gap between our two economies by 1970 will be dangerously narrowed unless our own industrial growth rate is substantially increased from the present pace.

I will put this negatively: Is there any disagreement with that?

Mr. SCHWARTZ. I would disagree, Mr. Chairman, because I think already they have reached a level of capability which alarms me. It comes down to the fact they use their resources much more efficiently for the purpose of national power than we use our resources. They don't have to get numerical equality or near equality of steel production or gross national product. They can be far inferior to us in total production, but by using their resources more efficiently, more wisely perhaps even, than we use our resources, they are giving us a great deal of trouble and that trouble is going to increase very, very rapidly. We don't have to wait until 1970.

Representative BOLLING. Gentlemen, we are very grateful. This then concludes the Subcommittee on Economic Statistics hearings on Comparisons of the United States and Soviet Economies." I believe we have succeeded beyond our hopes in bringing before the American public the nature and seriousness of the problems of economic coexistence. We have attempted to provide a thoroughgoing factual analysis with adequate warnings of statistical limitations in order to clear away the underbrush of myth and propaganda. We are most grateful to the panelists who assisted in this process and to Director Dulles who so clearly brought the matter before us in his statement which opened the hearings.

Having now "surrounded the problem," to borrow a word from the technicians, we look forward to the next step which is what to do about it. Fortunately, extensive work on this is well underway in the full committee's large scale study of employment, growth, and price levels. The summary and policy implications which have been prepared by the panel today and the materials and statements upon which

these papers were based will provide a valuable guide to the full committee as it seeks to develop policies that meet the objectives which we are charged by the employment act with achieving, namely, maximum production, employment, and purchasing power.

The subcommittee stands adjourned.

(Whereupon, at 3:45 p.m. the subcommittee was recessed subject to call of the Chair.)

(The following was later received for the record:)

## A COMPARATIVE STUDY OF INDUSTRIAL GROWTH IN THE SOVIET UNION AND THE UNITED STATES

(By James H. Blackman, Department of Economics, University of North Carolina)

### INTRODUCTION

#### OBJECTIVES OF STUDY

In the struggle between the Communist world and our own the factor of comparative economic power and, most particularly, industrial strength is of key importance. A modern nation's material well-being is grounded on its industrial base and the political viability of the state itself ultimately may turn on its success in improving living standards. Clearly, too, the sinews of heavy industry are indispensable from the military standpoint, shaping as they do the national capabilities for defense as well as the potential for aggression. In addition, the different rates and types of industrial growth generated by the two systems may influence appreciably the developmental course and perhaps the political allegiance of the so-called uncommitted nations.

The present paper seeks to summarize the principal "facts" on the industrial growth rates of the Soviet Union and the United States, paying special heed to the former, and to appraise the frequently divergent interpretations to which they have given rise. The analysis runs for the most part in global terms but attention is given also to the main structural features and developments as well as to their causes and implications. Finally, on the basis of this survey of selected periods in the past and with the aid of announced Soviet production targets, the outlook for the future is investigated. Here the aim is to highlight the principal conditioning forces and to suggest insofar as possible the pace and direction of industrial growth of the two nations to 1970 or thereabouts.

#### THE PROBLEM OF MEASUREMENT

Under the best of circumstances it is very difficult to develop accurate and comparable measures of industrial production. The basic time series data, in the first place, are subject to unavoidable limitations. No country's statistics of industrial output are fully comprehensive and the usual improvement (widening of coverage) that occurs with economic maturation imparts an upward bias to the resulting production measures. Both Soviet and United States output series display this effect which is most noticeable during the earlier stages of industrialization.

Then, too, the dimension of quality must always in part elude the statistician's estimates of production magnitudes. A conspicuous aspect of economic development in the United States has been the pronounced secular improvements registered in product quality and assortment. The inadequate reflection of these qualitative gains has had and continues to exert a downward biasing effect on U.S. indexes of physical output. In the Soviet Union, by contrast, the nature and sheer rapidity of industrial advance have meant frequently that product quality overall has retrogressed. The upward bias stemming from this source probably was most significant during, if not actually limited to, the prewar and wartime periods. Recent changes in the quality of Soviet industrial products would appear on balance to have been positive, though probably lagging concurrent U.S. gains in this respect and hence tending still to lead to an overstatement of Soviet industrial output relative to that of the United States.

But there are more fundamental obstacles to measurement. The relative valuations which are indispensable for aggregation, unfortunately, vary depending on the vantage point in space or time. As a consequence, equally valid though widely different estimates may be reached regarding comparative growth

rates. Forced-draft industrialization of the Soviet sort significantly accentuates this problem by reason of its radical transformation of the output-mix and the scarcity relations basic to weighting. Corresponding difficulties, moreover, beset comparisions of the growth of the Soviet and United States economies due to their sharp cleavage in tastes, technologies and factor endowments.

This is not to deny that certain weights or weighting schemes may be preferred for particular purposes. It is only to recall that statistical theory is incapable of providing one all-purpose method of averaging. The methodology and the specific weights which the Soviets actually have employed to estimate their industrial growth are open, as we shall see, to numerous objections, but it must be remembered that a single "correct" solution could not have been expected in any case.

### NATURE OF THE SOVIET DATA

The ubiquitous data problems, briefly referred to above, are much aggravated in the Soviet case by the deliberate design of the Government, at least as far as outsiders are concerned, and by the grave inadequacies of the price system for providing value weights. I do not propose to review here the very considerable literature regarding the meaning and reliability of Soviet statistics, but the issues are crucial for this inquiry and their conrtoversial nature requires at least a summary statement of my own views which inevitably shape and color the subsequent analysis.

There is implicit in this as well as in most other such studies the judgment that Soviet data, despite their grave and numerous deficiencies, can be made to yield meaningful results. The broad internal consistency which they exhibit is perhaps the chief factor that warrants putting them to cautious and selective use. The fact, also, that Soviet personnel, themselves, employ the same statistics which are available to foreigners may be cited as rough evidence of their credibility. Furthermore, the close correspondence between published State plans and certain confidential operating directives which have come to light testifies to the validity though not to the quality of Soviet materials.

There is no question, on the other hand, that Soviet data require manifold adjustments. Nor is there much doubt that even the most painstaking reappraisals fall short of the average level of accuracy of corresponding Western compilations. Especially is this true of the official indexes of industrial production and similar aggressive measures which, accordingly, are subjected below to a separate critique.

By far the biggest obstacle to an understanding of the Soviet economy is the longstanding policy of the Government to withhold economic data. The flow of information passed by the censor has increased somewhat in recent years but it is still terribly spotty and limited by Western standards.[1] As a result, it is possible to gage economic magnitudes and trends only in broad outline and subject often to needless margins of error.

Allied with the official policy of suppressing information is the pervasive effort of the Government to further its propaganda aims by editorial selection and, more crudely, by outright interpretative misrepresentation. This practice, while not identical with the keeping of double sets of books, may nonetheless effectively achieve the same ends as falsification.[2]

A particularly exasperating and common fault of Soviet statistical publications is the calculated absence of explanatory detail. Results tend thus to be obscured by ambiguities and inconsistencies of usage; far too often the reader is left to guess pertinent statistical definitions or to supply, by inference, the underlying procedural technique.

The intentional fuzziness or concealment of statistical tracks occurs in combination with a considerable volume of inadvertent errors. The latter reflect the low level of statistical sophistication with which the Soviets began their industrialization drive as well as the continuing and understandable growing pains of the overloaded central bureaucracy. The extent to which it was and is misled by inept reporting, inaccuracies, and outright dishonesty on the part

[1] A new statistical abstract which appears this month is the biggest such volume to be released in the Soviet Union since 1936 (comprising in all some 1,000 pages of tables). On the basis of second-hand reports it is apparent, however, that serious statistical lacunae and methodological sins remain.

[2] For example, the adoption of propitious statistical methodologies may obviate the need for calling a "2" a "4." The weighting of new products in times of inflation by their introductory-year prices has sometimes served the Soviets equally well in exaggerating their realized rates of growth.

of the lower administrative echelons cannot be known. I would presume, though, that the distortions on this account are appreciable and that, on balance, they probably exaggerate Soviet production achievements. Some observers also contend that a consistent upward bias is imparted to Soviet production statistics at the operating level of the firm but this is less certain. The supposition here is that Soviet firms inflate their output totals systematically in order to qualify for various incentive premiums and further that these premiums have so ramified and expanded over the Soviet period as to induce a progressive inflation of output reports.

At least a partial counter to the Soviet firm manager's propensity to exaggerate is to be found in the coordinate desire to moderate official pressures and to minimize, if not escape, the attendant risks. Thus, Soviet managers frequently attempt to slow down the annual rate of increase in production goals decreed at the center through underreporting certain output indicators and otherwise concealing production reserves. Moreover, there are indications that the Central Government itself regularly understates various military outputs and their supporting activities in the interest of national security.

Finally, though not in order of importance, one may cite the obscuring veil of money. The vagaries of the Soviet price system pose grave difficulties for any analysis which runs (even partially) in value terms. This is not just an aspect of the variability of the monetary unit, though secular inflation, as we shall observe, has served to distort seriously the official measures of growth. What I have reference to here are chiefly the encumbrances of Marxian value doctrine and the arbitrary pricing policies of the bureaucracy.

For certain "good years" Soviet prices can be adjusted to something approximating competitive supply prices (this is Professor Bergson's thesis)[3], but it is evident that many periods are not amenable to systematic corrections of the Bergsonian sort and even where it is possible to apply adjustments the meaning of the outcome is not always clear.

Other careful students (Grossman and Gershchenkron, for example) have been driven by the irrationalities of Soviet pricing to search for foreign analogs. They are well aware, however, that the substitution of foreign prices for those of native origin escapes old problems only at the expense of creating certain new ones. In fact, there would appear to be no completely satisfactory way either to get around the arbitrary ruble data or to restore order to them.

Before turning to an examination of official Soviet output claims, proper perspective demands a parallel recognition of the defects from which Western statistics suffer. The more general of these have already been touched on. We (in the West) are neither perfect in the theory nor the practice of constructing production indexes. As Siegel has noted, we usually avoid making indexes for machinery and other industries which manufacture a wide variety of products of changing specification.[4] Moreover, agreement simply is lacking on how to adjust a composite output index for the omission of products difficult to measure. Yet these omitted items or sectors may lie, as in the Soviet case, at the heart of the economic advance.

On a more empirical level it is plain, too, that our operating units are guilty of a number of statistical shortcomings. Our firms, for example, display a net reporting bias for tax purposes which leads to an understatement of national output magnitudes. Quite possibly, also, the relative error from this source has been growing as levels of business taxation have mounted.

In comparative terms, however, we still score much better than the Soviets as regards the comprehensiveness of reported data, their precision and detail of documentation. It can be said, to, that our editorial sins at the official level are less than the Soviets by a wide margin. The absence of an official (Soviet-type) censor and, more positively, the presence of competing statistical sources helps both to establish cross-checks for U.S. data and to promote statistical integrity; at the very least, circulating falsehoods tend in our society to prove self-canceling.

The vector of the enumerated sources of error and bias obviously cannot be ascertained with any accuracy. Freehand judgment strongly suggests, however, that U.S. industrial output volumes tend to be understated relative to the corresponding Soviet series and, further, that the degree of understatement probably has grown with the succession of Soviet 5-year plans since 1928.

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[3] Cf. Abram Bergson, "Soviet National Income and Product in 1937" (New York, Columbia University Press, 1954).

[4] Irving H. Siegel, "Soviet Labor Productivity" (Chevy Chase, Md., the John Hopkins University, June 1951), p. 29.

## Soviet Industrial Growth

### THE OFFICIAL CLAIMS

The Soviets have long asserted that their industry is more dynamic (i.e., much faster growing) than that of any capitalist economy, past or present. In support of this claim they offer the official index of gross industrial production which registers an unparalleled 27-fold expansion in the course of the 5-year plans (1928 to 1958). The crucial link in the argument, however, is omitted, namely, the validation of the official measuring rod.

Leaving this essential critique aside for a moment, it may be helpful to set forth the Government figures in somewhat greater detail, reflecting briefly, also, on the interpretative uses to which they are put. In table I, official Soviet data are reproduced which characterize the average annual rates of growth of industrial production in the U.S.S.R. and the United States for selected periods since World War I. Taken at face value the indicated percentage rates of growth give the Soviet Union a very substantial edge in all periods save for the war years, 1941–45. Tempos for the most recent period (1947–58), which are perhaps of greatest interest, show Soviet industry growing at over four times the average anual percentage rate of increase attained by the United States.[6]

If comparison periods are sought which are more homogeneous as regards the stage of economic development, the Soviet margin of superiority (in terms still of the official index) is appreciably cut. Strict comparability, of course, is precluded but it is possible to rate various historic periods in the development of different countries roughly according to their degree of similarity. Thus, the growth of the U.S. economy toward the close of the 19th century appears to have more in common with Soviet industrialization than does the contemporary (1918 to 1958) U.S. development. If we take the years from 1870 to 1913 as "comparable" to the Soviet period, we find that U.S. industry grew at an average rate of about 5 percent per annum. This is to be contrasted with the rate of 2.9 percent annually which the United States experienced during the actual years of Soviet power.

TABLE 1.—*Average annual rates of growth of industrial output, for selected periods, U.S.S.R. and United States, as reported in official Soviet sources* [1]

[In percent]

| Period | U.S.S.R., all industry | United States, all industry |
|---|---|---|
| 41 years: 1918–58 | 10.1 | 2.9 |
| 12 years: 1918–29 | 6.9 | 3.0 |
| 11 years: 1930–40 | 16.5 | 1.2 |
| 5 years: 1941–45 | −1.7 | 9.8 |
| 12 years: 1947–58 | 15.4 | 3.4 |
| 23 years: | | |
| 1930–40 | 16.0 | 2.3 |
| 1947–58 | 11.4 | 1.6 |
| 7 years: 1952–58 | | |

[1] Vestnik statistiki, 1959, No. 7, p. 94.

The Soviets, for the most part, prefer to focus attention on the comparative performance of the two economies over identical chronological spans. Not only does this cast their record in a more favorable light (and unduly so, as the foregoing paragraph suggests), but more important still, given the starting industrial levels, the concurrent rates of progress determine the speed of closure of the production gap. For Khrushchev, undoubtedly, the latter is the overriding concern.

On the official reckoning, the effect of the differential growth rates depicted in table 1 has been substantially to reduce the U.S. production lead. In 1928, at the outset of their industrialization push, the Soviet industrial product stood at less than one-tenth the corresponding U.S. volume; today (officially) it amounts to more than one-half the U.S. total.[7]

[6] For the 11-year period, 1947–57, the Soviet industrial growth rate, as they calculate it, exceeded the United States by approximately three times. This reduced spread testifies to the considerable impact for short-term calculations of the 1958 recession in the United States.

[7] Cf. Naum Jasny, "Intricacies of Russian National Income Indexes," Journal of Political Economy, vol. 55, August 1947, pp. 307ff; for the alleged current ratio (i.e., 53–55 percent), see "Mirovaia ekonomika mezhdunarodnye otnosheniia," 1959, No. 2, p. 11.

The Soviet literature of "catching up" frequently supplements such global comparisons and by implication sometimes replaces them, with selected commodity analyses. In general, the latter are rendered in fairly reliable, unambiguous physical terms and some items are clearly of major importance. It must be emphasized, however, that they are far from being coextensive with total industrial output and lacking evidence of covariation they cannot properly be taken to represent the movement of aggregate production either in the Soviet Union or the United States. It is well to recall, too, that the Soviet-selected items constitute a larger proportion of the Soviet output volume, where they usually hold top priorities, than they do of the analogous U.S. aggregate with its contrasting product-mix. The effect undoubtedly is to create an illusion of "catching up" which does not hold for all industry.

Table 2 collects a number of these showcase commodities which are used to "demonstrate" the narrowing production advantage of the United States. Consumer goods are conspicuous chiefly by reason of their absence; on the other hand, the products of metallurgy and associated sectors receive a disproportionate stress. Save for petroleum and electricity, the outputs of each of the chosen commodities by 1957 had reached 50 percent or more of the corresponding U.S. levels. The starting (1913) ratios for the commodities in question range from 6 to 33 percent.

TABLE 2.—*Total production and per capita output of selected industrial commodities in the U.S.S.R., expressed as percentages of U.S. output* [1]

| Commodity | 1913 output | | 1957 output | |
|---|---|---|---|---|
| | Total | Per capita | Total | Per capita |
| Pig iron | 13 | 8 | 51 | 43 |
| Steel | 14 | 8 | 50 | 42 |
| Iron ore | 15 | 10 | 78 | 64 |
| Coal | 6 | 3 | 85 | 71 |
| Petroleum | 30 | 18 | 28 | 23 |
| Electricity | 8 | 5 | 27 | 23 |
| Cement | 11 | 7 | 58 | 49 |
| Sawn lumber | 14 | 8 | 100 | 84 |
| Cotton cloth | 33 | 21 | 50 | 42 |

[1] "Tsentral'noe statisticheskoe upravlenie pri Sovete Ministrov, SSSR, SSSR v tsifrakh: statisticheskii sbornik" (Moscow, 1958), pp. 74, 77; Vestnik statistiki, 1959, No. 7, p. 95.

### THE SOVIET INDUSTRIAL PRODUCTION INDEX

While it is important to be cognizant of the official Soviet claims regarding the industrial growth of the U.S.S.R. (their large propaganda significance alone warrants this), Western scholars are virtually unanimous in disputing the reliability of the underlying index of Soviet industrial production. The general verdict is that the index errs markedly in an upward direction and the numerous shortcomings from which it suffers are held, in theory at least, to be correctable.[8] The nature of this criticism is by this time fairly well known and I shall therefore feel justified here in summarizing only the main themes.

The Soviet index of industrial production covers the components usually included in such indexes plus certain additional items of doubtful merit. The principal categories of the Soviet index are mining, manufacturing, and electric power generation and distribution. To this more or less traditional group (electric energy excepted) are added such activities as lumbering, fisheries, and the primary processing of produce on the farms.

Besides these commodity groups the index covers such peripheral items as internally manufactured additions or improvement to capital equipment, the value of painting and repairs, expenses incident to the mastering of production of new products, and even the costs of canceled orders. The value of changes in goods in process, likewise, generally is recorded, as are the nominal values of shoddy products including, at times, outright rejects.

The resulting ambiguous mixture of outputs with inputs serves to swell the claimed production volume and to "improve" the Soviet standing relative to other countries. It is not clear, however, whether various inadmissible procedures such as the inclusion of rejects are regularly spaced or if they follow a trend and so impart a bias to the time series of industrial outputs derived in this way.

[8] Given access, that is, to the raw data.

The use of gross weights further distinguishes the Soviet index from the value-added indexes customarily employed in the West, and in itself is a source of several harassing difficulties. The Soviets construct their index by means of summing the quantities of completed products at the firm level, each product being weighted by its full price net of indirect taxes. The prices which appear as weights represent those which obtained in some chosen weight-year or years, which in theory, at least, are held constant. The alternatives of expressing output growth explicitly in terms of current prices was precluded by reason of the chronic upward instability of the price level.

The double counting which is inherent in the weighting of each product by its full transfer price depends among other things on the organizational breakdown of industry and is sensitive to changes in this arbitrary factor. An increasingly verticalized structure, for example, serves to reduce the amount of double counting whereas administrative movements away from vertical integration will amplify it, assuming that the financial accounts of firms reflect these shifts. Intercountry as well as intertemporal comparisons, likewise, are obscured by double counting inasmuch as industrial and accounting classifications cannot be standardized to control the degree to which intermediate products are recognized.

The objections to Soviet-style gross-value indexes are enhanced by the difficulty of gaging the direction and the extent of the index bias resulting from organizational change. At times in the Soviet Union the pattern of structural change appears to have imparted a significant upward bias to the index; at other periods the reverse has held true and at still other times the organizational effect is presumed neutral. If it were possible to quantify the resulting bias with any accuracy its existence need not occasion much concern since proper offsets might be introduced. Actually, however, it is a difficult enough task to establish the direction of bias retrospectively much less to assign a quantitative dimension or to attempt extrapolations.

If the Soviets were to provide an otherwise comparable net-value index as a companion to the gross-value index, the magnifying or contracting effects on the latter of altered industrial structures might be roughly delimited. Thus far, however, they have not seen fit to do so and independent (foreign) efforts to substitute value-added weights perforce have introduced other complicating elements of change of which diversity of coverage is perhaps the most significant.

The difficulties just commented on are much in evidence in the present state of organizational flux in which the Soviet economy finds itself. On the one hand, the current drive to increase industrial and geographic specialization implies a rising degree of double counting and hence an increasing overstatement of production volume. On the other hand, there is also a parallel accent today on economies of scale, to be obtained in part through firm amalgamation, whence derives a statistical bias in the opposite direction (viz, understatement). Interestingly, the Soviets apparently fear that the latter effect will predominate, at least, in the near future, and the adoption of a value-added approach has received some support on this ground.[9]

Personally, I should expect the increase in specialiaztion during the present plan period and probably beyond (that is, post-1965) to exert the preponderant influence. Significant results in process specialization already are apparent in the crucial machine-building sector. Thus, for example, the casting and forging shops of numerous existing enterprises reportedly have been closed, permitting the establishment in their place of large specialized sources of supply. This means that the processed metals (castings and forgings) are counted twice under the new setup: in the intermediate stage of fabrication at the level of the forge-press and foundry enterprises and later as embodiments of the final product.

It seems to me reasonable to link this particular biasing effect in recent years with the appearance and policies of the new sovnarkhozy. This would date a renewal of the structurally induced upward impetus to the official production index roughly from 1958.

Some foreign observers, it may be noted, view 1950 as the more significant economic watershed in marking a newly injected and mounting upward bias.[10]

[9] See, for example, the views of V. Starovskii, influential chief of the Central Statistical Administration ("Novye zadachi sovetskoi statistiki," Kommunist, 1957, No. 14, p. 67). The Soviet desire to have the maximum statistical reflection of achieved rates of growth would seem to impose on them the necessity of varying their weight systems as other conditions (say, the organizational structure of industry) alters. The dilemma is reminiscent of the change of heart which labor unions or management experience with regard to escalator contracts when the movement of prices reverses its direction.

[10] See, for example, Francis Seton, "The Tempo of Soviet Industrial Expansion," Bulletin of the Oxford University Institute of Statistics, vol. 20, No. 1, February 1958, p. 5.

The evidence at our disposal does not suggest such a result from purely organizational developments but changes in the sphere of pricing during the fifth 5-year plan (1951–55) probably worked in the same direction as the subsequent structural changes which I have been stressing. Presumably, the practice of zonal pricing which became common in 1952 and the employment thereafter of zonal prices as weights has operated to boost the output index. This would be the case provided the higher prices prevailing in the developing frontier areas were allowed to exert an increasing influence. Similarly, the abandonment of f.o.b. factory pricing for many products after 1952 also must have worked to raise the output index by virtue of the inclusion of formerly omitted transport costs.

The difficulties with the gross-value approach to weighting do not end with the inevitable fluctuations in the extent of double counting. The fact that gross indexes stress material-intensive industries over factor-intensive industries may further impede definitive growth comparisons, particularly when reference is made to net-value series (the standard Federal Reserve index of industrial production, for example), where the reverse emphasis occurs. All that is necessary to render such comparisons invalid is for industries with proportionately high material costs to grow at different rates from those with high labor costs.

The lessons of economic history indicate that the process of industrialization tends to favor the material-intensive industries, at least in the early stages. Thus the products of the machine-building sector generally will grow more rapidly than mining, for instance, and other factor-intensive branches as a country industrializes. To the extent that this has been true of Soviet industrialization to date, the official index of industrial production with its gross-value weights must incorporate an upward bias relative to an alternative net-value series.

It has been pointed out (by Francis Seton among others) [11] that the use of gross-value weights to measure Soviet production not only emphasizes the high growth sectors of the economy such as the engineering branches but at the same time gives undue stress to other material-intensive industries in the consumer group (textiles and food processing) which have been traditional laggards in the Soviet growth process. Seton even suggests that the latter influence may well have predominated and that, under the circumstances, a value-added weight system would yield a more rapid overall industrial rate of growth.

The question must remain open but my own tentative impression is contrary to Seton's. Without disputing the consumer goods lag, I would call attention to the low planner priorities which have been responsible for this state of affairs and to the abnormally low price weights resulting for this class of products.[12]

Another charge unanimously lodged against the Soviet index relates to the inadequate and faulty handling of new commodities, the effect of which until 1950 must have been to impart a very substantial upward bias. Theoretically, through 1950 all products entered the index at their average wholesale prices of the fiscal year 1926–27. In actuality, however, the great numbers of goods which had no real 1926–27 price came to be valued at current year prices which reflected (or took advantage, if you like) of the very considerable intervening inflation. This upward thrust of the price level under forced draft industrialization more than offset the technologically fostered reductions in real costs with the result that new goods (i.e., post-1926–27) entered the production index not at constant but at variously inflated prices.

In addition to the impact of inflation, the customary use of initial year and at times even experimental period prices to value new products tended further to accentuate their statistical weights. This outcome reflects the typically low efficiency of what the Soviets call the "mastering period."

The fixing of (weight) prices to early in the production life of a product continues to mar the calculation of the official index but the recent resort by the Soviets to moving-weight indexes chained together at frequent intervals establishes at least a partial corrective. Wholesale prices of January 1952 are now applied as weights for the year 1951 through 1955, since which time price weights of July 1955 have been employed.[13]

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[11] Ibid., p. 4.

[12] Prices, it will be recalled, are net of turnover taxes for purposes of measuring growth.

[13] Under the new procedure, the years 1950 and 1955 serve as links. This means that two production estimates are calculated for each year based on the adjoining weight systems.

The bringing of the weight-years nearer to the present has conveyed real benefits but in certain respects it has served only "to lock the barn after the horse was stolen." That is to say, there has been no recalculation of the official index based on recent-year weights for any period prior to 1950 despite the inappropriateness of the 1926–27 weights for much of the time in which they were in use. Consequently, the large upward bias stemming from the new commodity influx and the monetary inflation of the early 5-year plans remains reflected in the present index levels.

It is perhaps obvious that the adoption of more recent weight-years, desirable though it may be, does not of itself serve to rationalize the price structure. The latter, essentially, constitutes an independent reform for which there is a continuing need and toward which only lately has there been a modicum of progress.

Similarly it is truistic to note that Soviet production indexes stand to be improved greatly through the institution of economically more valid prices. It may seem a bit puzzling, though, that recent-year prices, which are economically inferior to the prices of certain earlier years (1926–27, for example) should prove, nonetheless, to be superior for weighting purposes. The answer to this apparent riddle is that recent-year prices offer a fairly satisfactory solution to the "new commodity" problem, whereas early year prices fail in this respect, however meaningful they may be in their own context. In addition, an imperfect but current system of values may be preferred for certain purposes to an outdated though perfect-for-its-time set of scarcity indicators.

Continuing the catalog of Soviet index deficiencies, brief note must be taken of several other upward-biasing factors. I have reference particularly to the secular increases in index coverage occurring entirely apart from the measurement and inclusion of new products. For one thing the territorial scope of the index has differed over the 5-year plan period chiefly as a result of the World War II expansion of Soviet frontiers. The works of Jasny and Nutter suggest that the rate of growth computed from 1928 to 1955 may be exaggerated on the order of 0.4 percent per year owing to territorial acquisitions, or, what amounts to the same thing, a total boost to the 1955 output in excess of 10 percent.[14]

The second bit of evidence regarding the enlarging index scope indicates that the measurement of the products going "into" the index has become increasingly comprehensive over time. In some degree, quite likely appreciable, the output of the U.S.S.R. was understated in the preindustrial year of 1928 because portions of the then prominent artisan and domestic production inevitably escaped notice. As these small-scale activities were absorbed by state enterprise they found an increasing statistical reflection. The potential bias arising from this source has been nearly exhausted by this time but backward area development within the Soviet Union still may give it some current significance.

Before concluding this summary critique, mention must be made of certain implications of the use of early-year weights which I have not yet touched on. At the outset of the industrialization process, highly fabricated goods (engineering products, for example) tend to be scarce and dear relative to goods of low fabrication but this relationship is reversed as industrialization proceeds. In fact, the very essence of the process is for complex goods to grow more rapidly than the simpler items comprising the preindustrial product-mix. Put otherwise, the highly fabricated items enjoy relatively greater cost reductions and quantity increases than lowly fabricated goods in the course of industrialization. These changing scarcity relations if sufficiently pronounced can cause early-year weights to yield much higher measures of growth than late-year weights, other things equal. This is simply due to the fact that they accord the highest relative significance to the fastest growing components of the index.

The degree to which alternatively weighted indexes may diverge is dramatically illustrated by Professor Gershchenkron's study of the behavior of indexes of machinery output. Weighting comparable items of U.S. machinery first in prices of 1899 and then in prices of 1939 Gershchenkron reached the following amazingly disparate results: With early-year weights U.S. machinery output was shown to grow by more than 15 times from 1899 to 1939 whereas less than a twofold expansion was indicated using late-year weights.[15]

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[14] Cf., N. Jasny, "The Soviet Economy During the Plan Era" (Stanford, 1951), p. 22; and G. Warren Nutter, "Industrial Output in the Soviet Union" (draft of a forthcoming study to be published by the National Bureau of Economic Research, Inc., New York).

[15] A. Gershchenkron, "A Dollar Index of Soviet Machinery Output, 1927–28 to 1937" (the Rand Corp., 1951), p. 52.

The moral of these spectacular results as far as the present inquiry is concerned is that intercountry output comparisons should as nearly as possible be based on similar weight-systems, including the choice of early- or late-year weights. This will not eliminate but it should lessen the attendant ambiguities of interpretation.

### Independent Estimates of Soviet Industrial Production

An awareness of the shortcomings of the official Soviet index of production has prompted a number of observers to attempt an independent estimate of the industrial output series using more acceptable methodology. They have been greatly handicapped, however, for the lack of good data and on this account, largely, they have not always been successful in their efforts to substitute more satisfactory estimates of their own.

Frequently, the various non-Soviet indexes differ almost as much among themselves as they do from the official Soviet index and the question of their relative reliability remains more or less obscure. Nonetheless, in my judgment certain of the Western index formulations provide roughly adequate gages of the general movement of Soviet industrial output and are to be preferred to the badly distorted official series. There is no absolute standard, though, against which all entries can be compared.

A detailed analysis of the methodology, results and shortcomings of the major alternative recalculations of the Soviet production index is reserved for appendix treatment. In the compressed discussion which follows I limit myself to several comments on the Nutter-Hodgman formulations.[16]

The national bureau study under Nutter's direction is perhaps the most detailed and comprehensive of any independent analysis thus far attempted. The voluminous preliminary drafts which the bureau has circulated testify to its unparalleled scope as well as to its careful documentation and lucid methodological presentation. At the same time, the study's findings which Nutter has previewed on several occasions have stirred considerable controversy.

Part of the debate focuses on matters of interpretation in which the element of personal judgment figures prominently; part centers on methodological matters where subjective judgments, also to some degree, are unavoidable. The key procedural decision taken serves unnecessarily (so it seems to me) to understate the Soviet rate of growth, the decision, that is, to refrain insofar as possible from imputing index weights. The bureau indexes, accordingly, in their several variants are rather strictly limited to the production activities actually encompassed by the data and the results may be construed as applying to "all" industry only insofar as the behavior of the omitted items corresponded to the average of all the covered activities. The inferred understatement follows from the fact that the product omissions which unfortunately are numerous tend to cluster in the fields of most rapid growth, namely, civilian machinery and to a lesser extent military or defense-connected commodities. Depending on the index coverage and weighting system used Nutter measures the 5-year plan production increase (1928 to 1955) at from 5- to 6-fold, a tremendous scaledown from the 27-fold expansion claimed by the Soviets.

In regard to the interpretation of his indexes my major objection concerns his selection of the period 1913 to 1955 for growth rate calculations on which apparently he places considerable longrun significance. The effect of choosing this period, likewise, is to understate Soviet capabilities for sustained rapid growth since many of the years in question were disturbed by war or civil emergency. Nutter, of course, calculates and permits the use of other period averages (shorter and more normal spans for the most part) but his inclination is to stress the long period with the lowest growth rate of all as somehow indicative of the system's intrinsic performance.

Of the various competing calculations offered by other analysts, the trailblazing work of Donald Hodgman is closest to Nutter's methodologically and also, for the prewar period, in scope. Hodgman lacked many of the data which became available by the time of the Nutter study but my feeling is that for the early plans (1928 to 1937) his overall results are sounder. This I attribute to his use of indirect weights and independent adjustments to compensate for the omission of the obviously important rapid-growth items in the machine-building and munitions categories. As a result his index reading for 1937 is well above

[16] See summary account by A. Nove, "Communist Economic Strategy: Soviet Growth and Capabilities" (Washington, D.C., National Planning Association, October 1959), pp. 40 ff.

a typical Nutter finding, viz 371 as compared with 253 on a 1928 base equal to 100. The fact that Hodgman is working with large-scale industry during this period may account for some of the disparity, though not all certainly. If he errs it is on the high side by reason of his crediting too rapid growth to certain notably laggard sectors, among them, the repair industry, but he still may not be too far off the mark.

My own feeling is that the Soviet growth rates (allowing for different weighting systems) probably fall within the range described by the Nutter-Hodgman indexes and nearer to the Hodgman pole. The real differences in the construction and coverage of their indexes militates against the taking of an average of their results to form some synthetic series. What their painstaking studies do at best is to highlight the gross exaggeration of the official Soviet series and beyond this to offer useful guideposts which the reader can then interpret or modify himself according to his own understanding of Soviet development. We perhaps will never get a single definitive index, but the works in question along with certain others establish the extremely dynamic quality of the Soviet economy which has carried it to spurts of growth exceeding the peak performances of most other nations.

## The Outlook for Industrial Growth

### Problems of Projection

Output projections, whether long or short run, ordinarily reflect the uncertainties and imperfections of estimated historic rates of growth. This is so since they must in some degree assume continuity, the extension, that is, of past trends or their modification in accordance with an expected new alinement of forces. The foreseen changes are best perceived against a background of previous output levels and realized rates of change and they can scarcely be better than estimates of the latter. On the other hand, predictions can be less accurate than measures of past performance (this is the usual case) since any change in the complex of output-determining forces implies new assumptions and new (heightened) uncertainty.

The promulgation of output goals for varying future horizons has been, of course, a distinctive feature of Soviet planning, but the chronically spotty record of fulfillment in the aggregate and still more so in detail warns against substituting official blueprints for independent projections. At the same time, the designation by the Soviets of major economic goals and the desired paths for their attainment constitutes a most valuable supplement to the rough statistical measures of historical momentum.

No counterpart programing is available to aid in the extrapolations of U.S. output levels, though U.S. output data have compensating advantages for purposes of projection in their much longer and more accurate recorded span of "normal" operation. Given a sweep of 100 years, the regularities and trends relevant for the long-haul become both more apparent and assured. By contrast, the relatively short Soviet period, emergency ridden and variously upset, offers scant opportunity for the discernment of sustainable long-term rates of expansion. Extrapolations for the U.S.S.R. beyond the present 7-year and 15-year programs, accordingly, are of very doubtful value.

However an analyst chooses to read the future, the language of uncertainty must be employed and underscored. This implies the use of broad output ranges or perhaps alternative bands expressly contingent on diverse assumptions. As the list of assumptions is permitted to grow, estimates of future output levels cease to be forecasts and become in effect conditional statements of feasibility.[17] The projections considered in this study are meaningful, for example, only in the absence of large-scale hot war and major political upheaval. The likelihood of such occurrences is not investigated—they are simply assumed away.

### Soviet Industrial Prospects

Mr. Khrushchev would like very much to convince the non-Communist world as well as his own people that the Soviet Union is nearing victory in its drive to surpass the most advanced capitalist nations in per capita production. For this

[17] It is of interest that the Soviets recently have resumed the practices of fixing minimal and maximal output goals just as they did in the early days of the regime. This reflects a more conservative approaoch since planning presumably was a less effective forecasting (and controlling) instrument, say, in 1928 than it is today.

purpose, as we have seen, he is well fortified with tailormade statistics not to mention the comforting assurances of the Marxian dialectic. This self-proclaimed intersystem competition is not a new theme; it has been around as long as the revolution, but Khrushchev has played it more insistently and perhaps more adroitly than Stalin from positions, it must be admitted, of much enhanced Soviet strength. While the competition is conceived in larger terms than industrial output, the latter unquestionably occupies the leading role in Soviet developmental schemes both for its own sake and as a guarantee of all-round supremacy. As we shall note, it also has more substance and chance of success than other aspects of the total Soviet economic drive including Khrushchev's currently vaunted agricultural campaign.

In his celebrated speech to the 21st Party Congress early this year Khrushchev assured the faithful that they might expect to pull abreast of the United States in the absolute volume of industrial production by the end of 1965, the terminus, that is, of the 7-year plan which was ratified by the same Congress.[18] This prediction he rested on the twofold assumption (*a*) that Soviet industrial output is now more than half that of the United States and (*b*) that a growth rate differential of roughly 4 to 1 in favor of the Soviet Union will prevail (specifically, 8.6 percent per annum as compared with 2 percent). Since the present Soviet population is larger than the United States and (purportedly) is growing more rapidly, Khrushchev observed it would be somewhat longer before the U.S.S.R. could be expected to reach U.S. per capita output levels. His target date in this connection was about 1970 "or perhaps even sooner."

Analysis suggests that these global boasts of Khrushchev be treated with a healthy dose of skepticism; no doubt, he disbelieves them himself. It does not follow, however, that we can safely dismiss the impressive and detailed Soviet plans for industrial expansion or that an equal discount can be applied to individual production goals. Clearly the seriousness of their current and projected efforts warrants a thorough evaluation both of announced and implied output targets, though it is possible here only to survey and appraise selected highlights. It is to this task that attention now turns.

*The 7- and 15-year plans*

Gregory Grossman has remarked that the control figures of the 7-year plan "do not greatly improve on the standard of honesty established for such pronouncements in Stalin's day." They are, as he puts it, "full of strategems that draw false comparisons with America, depict retardation as acceleration, parade weaknesses as strengths, posit the fanciful along with the feasible."[19] All of which is true and yet Grossman is perhaps overly harsh for the plan is definitely more conservative, in a word, more realistic than many of its predecessors. Even such a stern critic as Naum Jasny concedes this much. "Beneath Khrushchev's hurrah shouting," Jasny observes, "there is concealed quite a healthy attitude toward the setting of targets. This healthy attitude is of a very recent date and is an additional reason why the plan targets should be treated with much more respect than is the case in the West."[20]

The present tendency toward greater realism in Soviet planning is traceable in large part to the difficulties engendered by the disproportionate and unduly optimistic sixth 5-year plan, originally set by the Soviets to run from 1956 through 1960. It is, of course, not unusual for Soviet plans to attempt to pull the economy up taut, stretching it to maximum performance. The ill-fated sixth 5-year plan, however, apparently went too far in the direction of overcommittment with the result that crucial stocks were rapidly drawn down and bottlenecks developed or threatened in many sectors. Hence, after only one trying year of operation the unprecedented decision was taken to scrap it for more modest goals. The revised annual plans for 1957 and 1958 appreciably scaled down the control figures of the discarded plan for those years and the subsequently announced goals for the new 7-year plan continued the downward adjustment for the period beginning with 1959. The effect of the latter was to reduce industrial production in the terminal year as much as 20 percent below the level implied by the output rates of the sixth 5-year plan. The so-called general plan, partially unveiled by Khrushchev in November 1957, projected still slower rates of expansion for various key commodities over the ensuing

[18] See text of Khrushchev's speech, Pravda, Jan. 28, 1959.
[19] Gregory Grossman, "Khrushchev's Seven Fatter Years," the Reporter, vol. 19, No. 11, 1958, p. 22.
[20] Naum Jasny, "The Soviet Seven-Year Plan: Is it Realistic," Bulletin, vol. VI, May 1959, No. 5, pp, 21–22.

15-year period. This relative conservatism of the new plans as compared with the old may be seen in the behavior of certain global indicators, pictured below in table 3 and in the projected annual rates of growth of selected industrial commodities, as shown in table 4.

TABLE 3.—*Comparison of targeted annual rates of growth, selected economic indicators, 6th 5-year plan and 7-year plan* [1]

[In percent]

| Indicator | Control figures 6th 5-year plan (1956–60) | Control figures 7-year plan (1959–65) |
|---|---|---|
| National income | 10.0 | 7.1–7.4 |
| Gross industrial production | 10.5 | 8.8 |
| Producer goods | 11.2 | 9.2–9.4 |
| Consumer goods | 10.7 | 7.2–7.4 |
| Gross farm output | 11.0 | 8.0 |
| Labor productivity: | | |
| Industry | 8.4 | 5.5–6.0 |
| Construction | 8.7 | 6.9–7.4 |
| Kolkhozes | 14.9 | 10.4 |
| Retail trade turnover | 8.4 | 6.7–7.1 |
| Railroad freight turnover | 7.3 | 4.9–5.5 |

[1] Naum Jasny, "The Soviet Seven-Year Plan: Is It Realistic," bulletin[vol. VI, May 1959, No. 5, p. 25.

TABLE 4.—*Comparison of targeted annual rates of growth, selected industrial commodities, 6th 5-year plan, 7-year plan, 15-year plan* [1]

[In percent]

| Commodity | 6th 5-year plan (1956–60) | 7-year plan (1959–65) | 15-year plan (1957–72) |
|---|---|---|---|
| Coal | 8.6 | 2.8– 3.2 | 2.8 |
| Petroleum | 13.6 | 10.7–11.4 | 9.4 |
| Gas | 31.0 | 25.4 | 19.6 |
| Electric power | 13.5 | 11.5–12.2 | 9.7 |
| Pig iron | 10.0 | 7.4– 8.5 | 5.3 |
| Steel | 8.5 | 6.6– 7.3 | 5.3 |
| Cement | 19.5 | 12.1–13.3 | 8.6 |
| Sugar | 14.0 | 8.7– 9.9 | 5.1 |
| Woolen fabrics | 7.7 | 7.6 | 5.2 |
| Leather footwear | [2] 8.7 | 5.5 | 4.9 |

[1] Naum Jasny, "The Soviet Seven-Year Plan: Is It Realistic", bulletin, vol. VI, May 1959, No. 5, p. 25.
[2] All footwear.

The indicated downward revision of planned rates of growth testified to the abatement of what Jasny has called the "hurrah approach" to planning. It remains, however, to establish the feasibility of the new targets. Have they, in other words, been improved enough?

The official record of overfulfilling the revised plans during the past several years suggests an affirmative answer to this query. Thus in 1957 a 10 percent increase in gross industrial output was reported as compared with the revised goal of 7.1 percent; the following year the story was much the same with a 10 percent increment being realized as against a targeted increase of 7.6 percent.[21] The 1959 annual plan, according to Kosygin, chairman of the U.S.S.R. State Planning Committee, is expected to be overfulfilled still more substantially. Whereas the plan calls for a 7.7 percent increase in industrial production, an actual gain is anticipated of from 11 to 12 percent, based on late October estimates.[22]

The precision of the "new" Soviet planning certainly is not attested to by the above disparities between goal and performance but the uniform direction of error creates a presumption that the overall plan goals are equally "soft" and

[21] Cf., Jasny, op. cit., p. 22.
[22] Pravda, Oct. 28, 1959, pp. 1–4.

hence susceptible of realization. Nevertheless, significant shortfalls appear likely in several important areas and the global output target itself can by no means be regarded as assured. Let us look for a moment at the principal factors on which the attainment of the plan depends. In this cursory review, unless otherwise indicated, I shall be referring to the 7-year plan which is just now entering its second year.

The difficulties which the Soviets face in accomplishing their manifold programs of expansion are best understood by focusing attention first on labor requirements and deriving from these the implications for capital inputs. Though truistic it is helpful to recall at the outset that industrial production, figured annually, depends on the number of workers times the output per man per year. In turn, the crucial questions become: How can the number of workers (or more strictly, aggregate work time) be increased and how can their average productivity be raised?

Soviet population, according to census reports, now is growing at the appreciable rate of 1.5 percent or about 3½ million people per year. However, the disastrous losses of World War II have greatly slowed down the rate of growth of the working population and will continue to do so for the plan period ahead. In addition, the flow of peasant labor which so successfully helped to supply the Nation's factories before the war has all but dried up and probably cannot be quickly or substantially renewed in volume without endangering other Soviet goals, among them the narrowing of the rural-urban income differential.

All of this means that the Soviet Union is facing the rare situation (for it) where the size of the available labor force acts as a significant limiting factor on the rate of growth. They have computed that they will need an additional 12 million workers and employees in order to achieve the output goals of the 7-year plan, assuming, that is, that the substantial projected gains in productivity are realized. They are extremely vague, though, concerning the specific ways in which the deficit in the natural increase in the active population, amounting perhaps to some 5 million, is to be made up.

The school reform, of course, is counted on to release several millions to the labor force but the skills and experience of these 14- to 15-year-old recruits must be regarded as low and the long range effects of the expedient quite possibly adverse. The Soviets also apparently look to an increase in the poroportion of the population in the labor force through the greater participation of women. The prospects for easing the labor supply problem in this manner are scarcely bright, however, since women already comprise 45 percent or more of those gainfully employed.

Most of the remaining alternatives which may be called on to augment the labor force likewise entail some sacrifice or modification of other plan goals. One such reserve is the scheduled reduction in the workweek from 46 to 40 hours by 1962 and as low as 30 hours on the average by 1968. This appreciable increase in leisure may simply be postponed or otherwise offset by unrecorded overtime and by voluntary labor of the "subbotnik" sort. Indeed, if the urgency requires, the work week can be generally stretched as in the wartime period.

The possibility exists also of stepping up the drain on the reservoir of military manpower. This might come about as a result of the continuing (unbudgeted) thaw in the cold war or perhaps simply through Khrushchev's increased reliance on missilry instead of soldiers. Most of the potential gains in this regard though, have already been realized in the several postwar demobilizations and the remaining manpower which might be tapped by industry at best probably falls well short of 1 million.

The new farm targets which, it may be noted, are the least realistic of any category in the 7-year plan, would have hardly any possibility of attainment if the present agricultural labor force were to be reduced in size in order to supply industry with peasant manpower. Indeed, the increasing weight of animal husbandry and other labor-intensive crops in Soviet agriculture indicate a likely need to enlarge the present farm labor force, not certainly to contract it.[23] On the other hand, should the agricultural product-mix be changed and/or farm output goals be substantially reduced, then additional supplies of rural labor might be rather quickly mobilized for industry. For the longer future the effects

[23] It is possible that the transfer of farm labor to industry envisioned in 7-year plan pronouncements, involves mainly a bookkeeping transaction rather than an actual shift in occupation. This might arise through the converting of collective farms to state farms with a consequent reclassification of farm labor to state "workers and employees." Unfortunately Soviet directives are not clear whether the planned 12 million increment in the industrial labor force takes this sort of change into account.

of continuing farm mechanization and electrification should once more facilitate a sizable and extended rural depopulation.

Whatever methods the Soviets adopt to raise the manpower intake of industry in the short run it is amply clear that the lion's share of the planned increment in industrial production depends on sweeping improvements in labor productivity. And the latter in turn rests essentially on the continuing technical progress of the economy (now for them ost part on its "own") and the widespread application of the new techniques through massive capital formation and investments in human skills. To a greater extent, also, than in the past, success in the production sphere will require better utilization as well as heightened intensity of labor since mere numbers can no longer make up the difference.[24]

A substantial raising of the level of mechanization and electrification in industry constitutes the main scheduled or foreseeable technical improvements for the horizon of the 7- and 15-year plans. Spearheading this advance is the metal-working sector and within it the vital machine-tool industry. Related changes of prime importance are the radical alterations which are planned in the fuel and energy balance of the Nation and in what is spoken of as the "chemization" of the economy.

TABLE 5.—*The annual consumption of electric power per worker in selected industries in the U.S.S.R., expressed as a percentage of the corresponding level in the United States*[1]

| Industry | U.S.S.R. (1956) percent of United States (1954) |
|---|---|
| Iron, steel, and rolled metal | 44.3 |
| Coke | 57.6 |
| Oil refining: light oil products | 33.1 |
| Metal-cutting machine tools | 66.7 |
| Pulp, paper, cardboard | 43.2 |
| Cotton fabrics | 28.5 |
| Woolen fabrics | 34.2 |
| Artificial fiber | 29.8 |
| Cement | 30.5 |
| Building bricks | 31.0 |
| Meat | 44.3 |

[1] "Sotsialisticheskiy trud," 1959, No. 1, p. 55.

TABLE 6.—*The structure of production of metal-cutting machine tools for selected years in the U.S.S.R.*[1]

| Machine-tool groups[2] | 1940 | | 1958 | | 1965 goals | |
|---|---|---|---|---|---|---|
| | Thousand units | Percent of total | Thousand units | Percent of total | Thousand units | Percent of total |
| Progressive | 16.7 | 28 | 48.3 | 35 | 98.4 | 50 |
| Less progressive | 29.8 | 51 | 66.7 | 48 | 74.0 | 37 |
| Other | 11.9 | 21 | 23.0 | 17 | 26.6 | 13 |
| Total | 58.4 | 100 | 138.0 | 100 | 200.0 | 100 |

[1] S. Pavlov, "Vazhnyi faktor povysheniia proizoditd'nosti truda," Voprosy ekonomiki, 1959, No. 1, p. 131.
[2] The progressive group includes such types as millers, grinders, turret lathes, automats and semiautomats; special, specialized and aggregate machine tools; the less progressive group includes ordinary lathes, drills, shapers, and planers.

As the architects of Soviet economic development see it, the chief reason for the lag in labor productivity behind America, optimistically estimated at about 50 percent, is the lower electric energy consumption per worker and consequently the lower technical equipment per worker. Accordingly, they contend that eliminating the productivity lag requires attention, first, to the expansion

[24] Compare the average annual increase of industrial labor projected by the 7-year plan, viz 1.7 million with the 1.9 million yearly total actually realized during the fifth 5-year plan and 2.3 million in the first postwar plan.

of the country's power-generating capacity and, second, to the technical re-equipment of a considerable proportion of the economy's industrial enterprises.[25]

The data of table 5 show the annual power consumption per worker in various industries in the U.S.S.R. as fractions of the corresponding U.S. levels. The indicated relationships, so the Soviet source maintains, reflects quite closely the existing productivity gap which separates the two nations.[26] The 123 percent increase in power output which the 7-year plan projects is represented as narrowing this gap substantially. Figures presented in table 6 record the planned concomitant increase in the production of metal-cutting machine tools and the changing composition of machine-tool production in the direction of the most advanced types.

It is difficult if not impossible to appraise accurately the productivity consequences of the broad and varied technological changes blueprinted by the 7-year plan. Likewise, the implementing capital outlays, though somewhat more susceptible to estimation, are themselves extremely problematical. The Soviets cannot know and still less can outsiders determine if the capital program projected by the 7-year plan is equal to its immense technological tasks. Despite its great size it may well prove to be too niggardly, at least in certain directions. At the same time, there appears to be a good likelihood that the planned investment rate in the aggregate will require inputs in excess of the country's available means.

The nature of the capital program reflecting the origins of the possible overcommitment of resources is briefly sketched below. In addition, some speculations are entertained regarding the most probable patterns of adjustment given investment shortfalls. The basic data at hand on the direction of capital outlays are summarized in table 7.

TABLE 7.—*State capital investments scheduled by 7-year plan, in billions of constant rubles* [1]

| Sector or industry | 1959–65 goals (billion rubles) | 7-year plan growth compared with 1952–58 | |
|---|---|---|---|
| | | Billion rubles | Percent |
| Total capital investments | 1,940–1,970 | 868–898 | 81–84 |
| Housing and civic construction | 375–380 | 167–172 | 80–83 |
| Construction of educational, cultural and public health structures | 80 | 37 | 74 |
| Construction of productive facilities | 1,485–1,510 | 664–688 | 81–84 |
| Iron and steel | 100 | 59 | 145 |
| Chemical | 100–105 | 80–85 | 402–428 |
| Oil and gas | 170–173 | 98–101 | 135–140 |
| Coal | 75–78 | 14–18 | 22–27 |
| Powerplants, power and steam lines | 125–129 | 50–54 | 66–72 |
| Lumber, paper, woodworking | 58–60 | 29–30 | 100 |
| Light industry and foodstuffs | 80–85 | 40–45 | 100–112 |
| Railway transportation | 110–115 | 49–54 | 79–82 |
| Construction industry | 110–112 | 49–51 | 80–83 |
| Machine building | 118 | 52 | 80 |

[1] N. Lagutin, V. Skuratov, "Natsional'nyi dokhod SSSR i ego ispol'zovanie v semiletnem plane," Voprosy ekonomiki, 1959, No. 2, p. 23; also "Semiletnii plan v tsifrakh i diagrammakh" (Moscow, 1959), p. 44.

According to the plan control figures the total volume of State capital investments is to grow 1.8 times from 1959 to 1965 as compared with the amount expended during the preceding 7-year period. In value terms the scheduled outlays of the central government amount to nearly 2 trillion rubles; if to this is added decentralized investments, the capital outlays of collective farms and the personal housing construction of the population, the total magnitude of capital formation approaches 3 trillion rubles, roughly the equivalent of the entire volume of capital investment during all the preceding years of Soviet power.

Essentially, as in previous years, the program concentrates on the rapid buildup of heavy industry, but some strong new claimants also make their appearance greatly mangnifying the draft on the nation's limited resources. Fore-

[25] Cf., "Sotsialisticheskiy trud," 1959, No. 1, pp. 42–55.
[26] Ibid.

most among the comparative newcomers is housing construction which is designated to receive roughly one-third of the central capital outlays. The emphasis on agriculture and the related provision of consumer goods also is considerably stepped up over past plans. Investments in agriculture, including both state and kolkhoz contributions, are slated to reach about 500 billion rubles or double the 1952–58 real expenditure volume. The growth in investments in the light and food industries is correspondingly large.

In heavy industry, too, there are some demanding new competitors for funds which tend, at least on paper, to swell the total quantity of capital outlays. This includes the fuel sector which is to be made over much in the image of the gas and liquid fuel economy of America. The concurrent deemphasis of coal constitutes only a partial savings offset to the capital-intensive developments in petroleum and in the gasification of the economy. Related and costly changes also are programed in transport, long an orphan for capital funds, including the rapid dieselization and electrification of the nation's railroads as well as the creation of a modern pipeline net. The belated resolution in the Soviet chemical industry is reflected in a new and husky capital budget, four times greater than was allotted during the foregoing 7 years. Meanwhile the favored oldtimers: ferrous metallurgy, machine building, and electric power still, apparently, are to have their voracious appetites satisfied.

Whether all of these and other sizable programs are simultaneously capable of fulfillment may be seriously doubted. However, some Soviet critics, most notably Academician Strumilin, have argued the insufficiency of the present capital projects to get the job done and in addition have pointed out or alleged the presence of hidden reserves. Strumlin, for example, maintains that the plan creates a misleading impression that its investments will be less effective than the investments of previous years. "Yet," he says, "all other indexes of new advances in technology in the very same plan permit us, rather, to expect higher effectiveness of investment in this new technology." [27]

Strumilin's particular pets, which he feels have been slighted, are electric power, machine building, and education. The lag in power output behind the United States he asserts ought to be made good before any other lags "for power output determines the level of labor productivity." In keeping with this view he questions whether the 1965 prospect of reaching only 73 percent of the 1957 American level in this sphere "is sufficient for 'the decisive stage' in the electrification of the entire country, if we intend to surpass by far the 1957 level in a number of less important indexes."

Strumilin also is very critical of the abandonment of the great hydroelectric projects, interestingly enough, one of the few areas where Khrushchev himself has taken a firm policy stand to husband scarce resources and save time in the race for output. "Why," Strumilin asks, "could we not economize on something else to obtain funds for the already started hydro projects?"

Passing to the field of consumption Strumilin observes that Soviet budget expenditures on social-cultural measures hitherto always have been greatly preponderant over all others in rate of growth. "Yet, despite very great tasks in cultural matters the new plan does not * * * increase culture's share of the total investment but reduces it. "I think," he concludes, "that substantial corrections will prove possible in this matter also."

Whether Strumilin's recommendations will win acceptance eventually is not yet clear, but based on experience we may be certain that the investment control figures will be revised frequently as the plan actually unfolds and unforeseen exigencies and opportunities arise. I would stress, though, that Soviet planners probably will experience declining degrees of freedom in making these adjustments. This is so chiefly because the farming and consumer goods sectors no longer offer the reserves they once did to accommodate heavy industry when rapid tempos fail to materialize in priority items. This is not to suggest that the fundamental orientation of the Soviet regime has shifted in the consumers' favor; it is simply a reflection of the fact that priorities are attached to an increasing number and variety of items. The economy has grown more complex with industrialization and the demands of industry for balance, likewise, have increased, both for economic and political reasons; moreover, the legacy of disproportions which have been inherited from the past cannot be extended indefinitely to nourish the needs or come to the rescue of a handful of favored industries. Consumer welfare most assuredly will not be

[27] Cf., Literaturnaia gazeta, Dec. 2, 1958, pp. 1–2. All other quotes from Strumilin in this section appear in this source.

allowed to stand in the way of any vital industrial or military project which shows signs of lagging (consumer housing or what-have-you will go by the boards for such a purpose, just as in Stalin's day). On the other hand, I have the impression that the Khrushchev regime is willing to, or feels it must, accept something of a growth stretchout in order to move along a broader economic front, not entirely neglectful of standard of living considerations as in the past.

*Retardation of Soviet growth*

Thus far in assessing Soviet growth prospects I have been concerned mainly with problems which are connected with though not necessarily peculiar to the 7-year plan: the incipient manpower shortages, for example; the attendant emphasis on labor productivity; the massive capital pressure, and so on. It is important also to form a more general view of the casual forces at work which helped to shape the plan and which currently condition its chances for success.

The dominant impression of the 7-year plan to this point may be that it is simply a watered-down version of the extravagant sixth 5-year plan—somewhat more consistent internally and with generally better chances for success. The missing element in the picture is the thread of historical continuity by which the 7-year plan may be seen as part of a continuing gentle retardation in the Soviet growth process. It is the purpose of this section briefly to enumerate the more persistent braking factors and to recognize any counterstimulative forces of consequence if such there be.

According to official Soviet sources the average annual rate of growth of industrial output for the 7-year period just ended in 1958 amounted to 11.4 percent. By contrast the average yearly rate of growth projected by the 7-year plan equals 8.6 percent. Somewhat earlier the fifth 5-year plan (terminus 1955) reportedly attained an average yearly growth rate of 13.1 percent. The succeeding, though ultimately discarded goal for the sixth 5-year plan scheduled a rise in industrial output of 10.5 per annum.

Without accepting the absolute values as given by the official Soviet indexes, we may ask why the growth rates in the post-Stalin years display such an uninterrupted decline—why, too, the official extrapolations some 15 years into the future continue the downward industrial output curve?

It may be noted at the outset that most of the currently retarding factors operated in exactly the reverse direction during the prewar plans to impart a high and accelerating rate of growth. We do not, in other words, have entirely different causal categories with which to explain the varying slopes of the Soviet growth curve but rather substantially the same influences only with different signs attached.

Initially, for instance, the Soviets had the advantage of being a latecomer on the developmental scene since they were enabled thereby to borrow techniques largely without cost from the stored knowledge and practices of the more advanced nations. The mere fact of its own industrial progress tended in time to cancel this edge with the result that the Soviet Union today finds itself more than ever dependent on native innovational impetus. As might be expected the work of developing technologies from scratch is slower, more uncertain and more expensive than imitating proven methods.

Another important reversal has already been discussed, namely the virtual drying up for the time of the rural manpower reservoir. Presumably with sufficient capital to further mechanize Soviet farms the rural-urban flow can be reactivated. It is doubtful, however, that the shift of labor from low productivity areas (chiefly from agriculture) to relatively high productivity industry will ever again exert so substantial a boosting effect as it did in the interwar period.

As the industrialization proces proceeds the gap between net investment and gross investment begins to widen and the Soviets are finding now that they are hardly immune to this effect. This means, in briefest terms, that they were able to get more mileage from their investment rubles in their youth than they can today or to put it differently the Soviet economy now has to work longer to replace its stock of capital as its volume and average age has grown.

Note also has been taken of the changing product priorities which characterize the post-Stalin economy, changes forced on the new rulers in large part by the lopsided structural developments of the past. The emphasis, as before, basically remains on heavy industry but the competing demands of the chronically undernuorished overhead sectors of the economy such as railroads and communications serve to divert resources from the high growth rate areas where formerly

investments were concentrated. The much overdue housing program, however, desirable, has the same dampening effect of directing capital away from the growth-compounding sectors which once absorbed virtually the whole investment pie.

In agriculture too the growth trends are negative, the effects of which spill over into industry directly in the food and fiber processing fields and indirectly in many other ways. Probably the last great and relatively easy jump in agricultural production occurred in the vast acreage extension of the so-called virgin lands. Few if any large tracts of arable land remain to be harnessed which means that subsequent gains in agriculture must be wrested via the slow intensive route.

A worsening resource and transportation-input situation also has emerged in several heavy industrial fields, coal and iron ore being the most important, the consequence of which is to slow up the industrial rate of growth by imposing higher costs of extraction, delivery and use.

Finally, there is operative the arithmetic effect which makes it increasingly difficult to maintain high percentage rates of growth as the base against which they are measured is substantially enlarged. To sustain constant relative growth the absolute increments to production must increase each year. This is not impossible, as the experience of the Soviet, the United States, and other economies demonstrates but this does not refute the presumption of increasing difficulty with time.

The likelihood that the above-enumerated trends or influences will persist for some time (say, several decades and for certain forces, longer still) seems to me considerable. There are, however, important stimulative forces continuing to operate in the economy which should suffice to prevent any swift deceleration in the rate of growth. These I would summarize as follows:

I would mention first the steps which have been taken in recent years in the direction of economic rationality. These continuing reforms include a number of organizational, planning and pricing improvements which make for greater efficiency of resource use and the speedier realization of output goals. Very significant economies of scale may be expected and many currently are being realized through the widespread adoption of flow (assembly-line) methods and by means of the standardization of parts manufacture in specialized enterprises. The possible stimulative effects of rational organization and pricing can only be fully appreciated against the historic background of arbitrary and chaotic rule. At the same time it must be admitted that the latter may prove to be the more enduring aspects of Soviet society, the reforms referred to, abortive and short lived. Similarly, the discernible trends toward economic specialization may be smothered by a reversion to localism and regional autarchy. The point is especially relevant in the present context that the victory of the reformers is by no means completely assured nor once achieved is it necessarily permanent.

Another semi-institutional factor which I would class as stimulative is the regime's continuing dedication to the objective of maximum growth. This philosophy, tenaciously held at the top, permeates and energizes much of Soviet society and from my limited observation on the scene, is most influential among the youth. Lacking this driving quality the top-heavy socialist economy might languish in bureaucratic lethargy. Instead, a wartime sense of urgency motivates the leaders and I should imagine too, a sizable proportion of the intelligentsia.

Increasing reliance on incentives as opposed to force and terror must be reckoned among the growth-contributing factors of contemporary Soviet society. If, however, the incentives prompt an increasing desire for leisure and consumer frills a perverse effect quite possibly may be noted as far as the growth rate is concerned.

The fact that cyclical unemployment is no problem to Soviet planners likewise, must be put down on the positive side of the growth ledger. Wastes of misallocation there are, but no crude involuntary idleness or concern over the adequacy of effective demand need arise. On the other hand, it remains true that a decision of the Government to improve and diversify the consumer goods and services it provides and to expand their volume might retard the nation's rate of growth just as surely as a depression, though not of course, with the same deleterious effects.

The role of science probably also should be mentioned in inducing growth through countering the impact of depleting natural resources. Partially this is a triumph of substitute and synthetic materials and now, too, of nuclear energy;

partly, also, it represents the conquering of space through the cumulative cheapening and speeding of transit and communication.

A final item on my list of bouyant forces may seem at first glance to be misplaced; I refer to the "asset" the Soviets possess in their still low level of labor productivity, by my calculations less than 40 percent of current U.S. average. Here is a vast potential reserve for output expansion. Much of the early growth of the U.S.S.R. may be attributed to the educating and equipping of raw peasant labor with industrial skills and modern machines, and it would, I think, be an error to assume that this process has reached its conclusion. Advanced technologies even of the interwar period still remain to be applied extensively in the U.S.S.R.; in the meantime, the new and manifold efficiencies of increased mechanization and automation are in prospect. True, the Soviets can no longer experience the burst of growth than comes of wholesale imitation of advanced societies but they stand to gain a very great deal by the simple broadening of their own capital, long since applied at certain key points in the economy.

### U.S. INDUSTRIAL PROSPECTS AND THE SOVIET-UNITED STATES "GAP"

It would be presumptuous of me to attempt an independent estimate of U.S. industrial growth rates and prospects, particularly in view of the wealth of expert testimony which this committee has adduced on the subject. Let me instead only cite certain freehand impressions largely for the purpose of comparison with the foregoing Soviet materials.

In recent years, as the Soviets gleefully note, our average annual rate of increase of industrial output has dipped below 2 percent (1.6 percent to be exact for the years 1952 through 1958). Over the very long term, through our economy has generated expansion at the rate of about 3 percent per year which would seem to be a safer figure for purposes of extrapolation. My own feeling is that the next several decades are sufficiently rich in opportunity to make improvements in the long-term expansion rate feasible up to 3½ percent and even 4 percent per annum. Several critical assumptions, however, underlies this qualified optimism, which had better be set out at once.

I asume first that the Government undertakes policies to insure high levels of employment with reasonable price stability. Forced draft attempts to maximize growth are not implied in this prescription. Second, the essential free-enterprise, consumer-oriented nature of the economy would be preserved with, however, an increasing role of the Government in certain crucial spheres. Chief among the latter apart from stabilization policy are defense, education, research and development, public health and international cooperation, including various kinds of aid.

The main import of the above assumptions for comparisons with Soviet output performance is that we will not permit depressions or inflations greatly to sidetrack or distort our economic progress. If this seems a bit too strenuous a premise on the record, the cautious prognosticator would be warranted fully in adopting the lower figure in the suggested growth range of from 3 to 4 percent.

Our real industrial output would double in 24 years (that is, by 1984), given an annual rate of growth of 3 percent; if 4 percent, then our production would double by 1975. Meanwhile, Soviet industrial production may well be growing at average annual rates of from 5 to 7 percent. This would mean, on any combination of rates, that they would not be able to overtake us in Khrushchev's time interval (roughly 1965 to 1970) but a substantiall closure of the absolute volume gap would be effected and this is perhaps the main point to be emphasized.

Khrushchev has clearly made an untenable propaganda boast as regards the approximate date when the Soivet Union will overtake us (both in per capita and in absolute terms) but the great absolute and relative augmentation of Soviet power resulting from a growth rate approximately double our own is the significant and anxious fact to reckon with.

Lest, however, we become over facinated with the "numbers game" and in particular with Khrushchev's chosen aggregates, it is well to recall the vital importance of industrial structure. It is not the total volume of production that is of most concern but rather how it is used; to what purposes. Unfortunately, considerations of product-mix can give us small comfort and none at all, in fact, in the crucial areas of national security. The Soviets manage through the dictatorial allocation of resources to turn out a military establishment as large as ours with an industrial capacity about one-third our size. It is

commonplace by now that the Soivets funnel the bulk of their burgeoning steel production to defense and to key industrial sectors whereas we squander our much larger total, if you like, on the products of Detroit. Under existing relationships, this means that the Soviets don't have to catch us in total output in order to surpass us in military might; they can do this at present, assuming we don't join heavily in the competition.

The other side of the coin in the matter of output composition does offer us at least a modicum of satisfaction. The Soviet consumer is the neglected residual claimant in national income, or at least so he has been for most the years of Soviet power. We, on the other hand, in our consumer sovereign land, are surfeited in relative if not absolute abundance. Even so, misgivings enter on several scores; perhaps we are neglecting our communal life, our education, our security; perhaps also our obligations to other nations in the world. Here is where my assumptions (preferences) enter for a widened responsibility of government leaving intact the large personal areas of consumer choice.

Let us return for one final look at Soviet-United States comparisons. By 1972 the Khrushchev goals for several key industrial items (e.g., steel, iron ore, cement, etc.) promise an approximate parity with current U.S. levels, though they should lag us appreciably still if we present anything other than a "sitting target." Moreover, as noted earlier, the Soviet showcase items overstate the ratio of total outputs, assuming the latter somehow to be commensurate.

The expansion of Soviet consumer goods is less likely to approximate U.S. levels in the ensuing decade than basic industrial commodities on which the 5-year plans have concentrated to date. The increase in consumer goods output does promise to provide, however, a very substantial improvement in the long-depressed Soviet living standards. Even granting shortfalls in Khrushchev's agricultural program, food and clothing should be available in comparative abundance by 1970 and in much greater variety than in the past. Most notable will be the movement away from the traditional low-income staples of grains and potatoes toward meats, vegetables and dairy products.

Except for radios, television sets, and watches, mass production of consumer durables U.S. style would appear to be a number of years distant. The currently stepped-up output of refrigerators, vacuum cleaners, and washing machines still only reaches a fraction of the people—perhaps the upper quarter in the present plan. Private automobiles are more restricted yet (only the elite can hope to purchase them) and even motorcycles continue to be scarce (approximately 1 per 50 families is slated for 1965). That leaves Soviet bicycles as the principal private means of travel.

Housing conditions, much improved by the ongoing construction programs, will nonetheless remain terribly drab and cramped by our standards. The average city dweller is now little better off in terms of living space than his father or grandfather was in Czarist times. That means he has on the average about 9 square yards of floor space and inhabits a room with at least two other people. By 1965, the program if successful will raise urban floorspace to an average of about 12 square yards per person and two people per room. The goal of one person per room appears much more remote. At the same time the various adjuncts to household living, consumer services of one sort or another (laundries, repair shops, and the like) continue to be almost nonexistent. Instead, sewing machines are massed produced, family-owned items, which is a further distinguishing feature from the American pattern.

Even when the Soviets catch up with us on the consumer goods output which we may have in common, as presumably they will someday, a considerably longer time must elapse before they can expect to attain our living standards which depend in no small measure on stocks of durables accumulated over many years.

## Conclusion

An essay of this length and diversity of subject matter does not readily lend itself to summary recapitulation. I shall in concluding, therefore, merely underline certain themes which I feel are especially deserving of attention.

The welter of detail and qualification in the body of the paper, particularly as relates to Soviet growth rates, may perhaps have obscured the very large degree of agreement which exists now among the experts on the prime orders of magnitude. Despite all the variation in individual index construction and results, it seems clearly established that Soviet industrial output has been growing at not less than twice the average U.S. rate over the past decade. This is a fact of major importance.

The analysis further indicates that despite the evidenced retardation in the rate of growth of Soviet industrial output, it appears likely to continue to outstrip corresponding normal U.S. rates on the order of 2 to 1. This presages an appreciable narrowing of the absolute output gap which has separated the two countries, a fact which seems to carry sufficient propaganda impact to divert attention from Khrushchev's premature schedules for overtaking the United States economically.

Finally, structural analysis is seen as an indispensable accompaniment to the aggregative measures in order to bring out the relative levels of national welfare, living standards and defense to mention only some of the items of major concern. In these disaggregated terms, the Soviet system looms more formidable (in the power sense) though much less desirable.

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