THE DEVELOPMENT OF THE SOVIET ECONOMY

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DR. CLEM: General Niblo, General Calhoun, our many distinguished guests, ladies and gentlemen: Our lecture this morning is the first in our economic potential series devoted to the economy of the Soviet Union, and it is fitting that this lecture be a survey of the overall development of the Soviet economy since 1917.

It is fitting also that our speaker be Dr. Harry Schwartz, of "The New York Times," who, in addition to his brilliant and penetrating newspaper articles on Soviet affairs, has given us that comprehensive and excellent study entitled "Russia's Soviet Economy," which the students have found on their reading shelf in the library.

Because of the nature of our course here at the Industrial College, Dr. Schwartz, it is seldom that a guest lecturer is invited to appear any more than once before any one class or in any one academic year. The fact that this is your second appearance before this group should be some indication of the high regard which we hold for you here at the Industrial College. It is a pleasure to welcome you again to this platform this morning and to present you to the class of 1955. Dr. Schwartz.

DR. SCHWARTZ: General Niblo, General Calhoun, distinguished guests, ladies, and gentlemen: It is a pleasure to be here today. But I must say that I had a somewhat different explanation for my being invited at the present time. I thought I had done such an excellent job of obfuscating the issues the first time that it needed a second go-around to hope to have an understanding of what I was talking about. I am glad, therefore, to have Dr. Clem's different explanation.

The general topic assigned to me today is the development of the Soviet economy over the years. How did it get that way? I think that our main purpose this morning will be to try to get a certain amount of perspective. I am told you will have other speakers later who will analyze the current state and perhaps future strengths and weaknesses. But those are outside my assignment this morning. So I am going to look at this experience of 38 years, from 1917 to 1955, and try to see how far the Russians have come and how they came that far.

Now, in the process I want to make it clear that I am going to have to say some very nice things about the Russians. Nobody can look at the record of the Soviet economic development since the Bolshevik revolution without being very impressed. This is one of the really phenomenal chapters in world economic history. There has never been anything quite like it. And if you measure things purely by results, you have to say, "Those boys did a terrific job."

On the other hand they got those results at a very high cost. You have to take that into account, too. But in speaking here to an audience of men who face the possibility that sometime in the future they may have to command troops or make war plans against the Soviet Union, I must stress that there has been a first-class economic achievement by the Soviet Union. We would not be so troubled about the big question of Soviet power or the possibility of war with the Soviet Union if it had not been that the Soviet Government has had a tremendous amount of economic success, particularly in the area of developing military-economic potential.

I say this because all too often in our public prints our popular writers tend to write things that coincide with their ideological prejudices. We would like to believe that communism doesn't work, that the Communist economic system is bad, that it is going to fall apart at the next 10-mile-an-hour wind, or something of the sort. All such views can be dangerous if they induce complacency. We are up against a first-class opponent, one who is worthy of our steel, and one that we certainly cannot afford to be complacent about.

Now, where did they start? Well, of course, the Bolshevik Revolution took place in 1917; and for several years thereafter, from 1917 to 1921, there was civil war. The civil war ended about 1920 or 1921.

When the civil war ended in Russia, when the Bolsheviks finally wiped out their armed domestic opposition, the Soviet economy was as close to zero as the economy of a large nation can get without everybody just simply dropping dead of starvation. I looked at the figures again the other day and I was amazed, because there was a point in 1920 or 1921 when the Soviet economy was actually producing less than the Chinese economy was in 1950. This was simply incredible.

Just to give you an idea of what a low point they had reached then, here are some figures: In 1920 or 1921 they produced all of 100,000 tons of steel; and about half a billion kilowatt-hours of electricity. I

think I can sum it up perhaps by saying that in 1920 or 1921 the output of Soviet industry was below the present level of output in the city of Pittsburgh; yet Russia was a nation of well over 160 million people, even though there was a very low state of industry.

Agriculture was in complete chaos, and famine was sweeping the land. As a matter of fact, there was so much famine that the United States was providing a great deal of famine relief. Under the leadership of Mr. Herbert Hoover, Americans were sending grain, meat, and other food products. They saved the lives of hundreds of thousands, even millions, of Russians. Anyone who 35 years ago had said that a little over a quarter of a century later the Soviet economy would be the second largest and the second strongest economy in the world might very well have been looked upon as a likely candidate for a psychiatric ward. And yet today the Soviet economy is the second strongest in the world; in certain respects it may even outdo our own economy. This is an economic "miracle" which has happened.

What are the proportions of this economic "miracle?" What stages did it go through? I am just going to indicate the main stages first, and then discuss some of the details of those stages.

From the end of the civil war in 1920 or 1921 to about 1927 or 1928, the Soviet Government concentrated primarily upon rebuilding its civil war- and World War I-shattered economy. That is, it had been far larger. The Russians had produced much more in 1913, before World War I, than they did in 1920 or 1921. So they had to try to rebuild or at least to get back to where they had started from, much as the Chinese Communists, once they had come to power on the mainland in 1949, had as their first task the rebuilding of whatever little economy China had before the civil war.

This period of 1920 or 1921 to about 1928 was the period of the NEP, or New Economic Policy. During these years Lenin retreated from his original extreme Communist ideas and injected a dose of free enterprise into the system. For a time the Soviet Government had a much more lenient policy toward the private farm and industrial elements in the country. This helped produce a very rapid recovery.

By 1927 or 1928 the Soviet economy had multiplied its production several times against the 1920 and 1921 low, and had roughly regained or exceeded the 1913 pre-World War I level.

This period was one of natural recuperation, natural recovery. The government's policy provided an incentive for the private enterprise of the country to do its best. And it permitted that private enterprise to make a profit.

In 1928, which is a very important watershed, the government reversed itself. One of the things involved in a dictatorship is that you can reverse yourself like that. In a democracy you can't do that. You have to argue in Congress and so on. In a dictatorship you can reverse much more easily. They embarked upon what they called a period of planned economic development. The First Five-Year Plan began at the end of 1928. The Second Five-Year Plan began in 1933. The Third Five-Year Plan began in 1938. The third was never completed, because the Germans invaded Russia in 1941.

Then came the period of World War II, in which the Germans marched across much of western Russia. They occupied and devastated an area containing perhaps 40 percent of the total industrial and agricultural capacity of the entire country. So in 1945, when World War II ended, the Soviet production was again much lower than it had formerly been. Where Soviet production had reached a peak in 1940, in 1945 it was well below the 1940 level.

But--and here is the important point--1940 production was far above that of 1913. Moreover, 1945 output was not nearly as much below 1940 as 1920 production had been below 1913. In other words, the losses to the Soviet economy in World War II on a relative basis were not nearly as great as the losses had been in World War I and the civil war which followed. There was a very strong nucleus, much stronger than originally, on which to rebuild.

The Soviet Union embarked upon the Fourth Five-Year Plan in 1946, and completed it in 1950. The Fifth Five-Year Plan was begun in 1951, and is scheduled to be completed this year. Moscow has already announced that next year the Soxth Five-Year Plan will begin. So we now have a period of somewhat more than a quarter of a century, from 1928 to 1955, of planned economic development, broken by this tremendous climactic event of World War II, which imposed great losses.

The first question we might ask is: What has been the payoff of this intensive effort to build up the country's economy? I will take 1928 as the starting point, because by 1928 the Russians had pretty much recovered from the prewar normal and had gone a little above it. Here

is about what they have done since 1928: I would like to cite a few figures just to give you a kind of impressionistic idea of what has been done.

In coal, for instance, in 1928 the Soviet Union produced roughly 36 million metric tons. Last year the Soviet Union produced about 350--not quite, but almost 350--million metric tons. So from 1928 to 1954, a period of just about a quarter of a century, they multiplied their coal production about 10 times.

Take iron--they went from 3.5 million metric tons to 30 million metric tons from 1928 to 1954. Again, that is almost a tenfold increase.

In steel they went from 4.3 million tons to 41 million tons, and in petroleum from 11.5 million tons to 60 million tons. The latter is not quite a sixfold increase. In electric power they produced about 5 billion kilowatt-hours in 1928, and 148 billion kilowatt-hours in 1954. That is about a thirtyfold increase.

These increases are very impressive things. What is impressive about them is that never before in economic history has there been such a rapid rate of growth over so long a period. You can take a look at the examples--the United States in the heyday of the late 19th century and the early 20th century, Germany in the late 19th century, Japan in the late 19th century. Those were very quick upsurges of economic potential and industrial productivity. But there has never been anything like this, even if you just take these figures.

One factor makes these feats even more impressive, and that is this: These tenfold increases, sixfold increases, and thirtyfold increases that I have mentioned here were accomplished despite the fact that for four years, 1941 to 1945, the Soviet Union was engaged in a major, a terribly destructive, war, which destroyed a great deal of the capital equipment of the country. There was great actual loss of capital.

Just for my own amusement, to try to understand this a little bit better, I have drawn up a little table of what the Soviet production might have been like in 1954 if there had been no World War II. In other words this is a kind of an intellectual experiment, to see what we might reasonably expect or guess that Russia would have produced in 1954 in the basic industries and materials assuming that there had

not been the economic losses of World War II, and instead, that in those years Russia had continued forging ahead as it had been. I don't want you to take these figures too seriously, but they cannot be ignored either.

If there had been no World War II, I think we might have been faced with something like this: The comparison might have been one between the 1928 production of coal of about 36 million tons and a 1954 production of about 500 million tons. In other words instead of a tenfold increase, it might have been probably a fifteenfold increase. I won't go through the whole list, but in steel they might have gone from 4.5 million tons to about 50 million tons. That is a twelvefold increase. In electric power they might well have gone from 5 billion kilowatt-hours up to about 200 billion kilowatt-hours, or a fortyfold increase. Just to kind of sum it all up, let us put it this way: The Soviet industrial economy in 1953 and 1954 might have produced appreciably over half of what the United States did.

We had World War II. If there had been no World War II, and everything else had remained the same, the Soviet economy might have been producing two-thirds, maybe even three-fourths, of what the American economy was. The Russians didn't lose just five years. They lost the increase that they didn't get in those years because of World War II. This is something to think about.

Well, how did they do it? Is it proof that communism is really the best system and we all ought to be Communists? This is the argument that is made all the time by the Communists. I don't think that really is an argument for communism, although it is something that has to be understood.

Basically, this was accomplished because the Soviet Union is governed by a dictatorship which is able to impose its will upon the people of that country, to govern their economic activities in the interest of the government rather than the interest of the people who compose the economy of the Soviet Union. In other words if Russia had been a free enterprise system, it could never have done it, because a free enterprise system by its nature is governed in the interest and desires of the consumers, the individual consumers.

Now, what the Soviet Government did was this--the thing really comes down to two stages, two facets: In the first place, it extracted a tremendous amount of capital out of the hides of the Soviet people;

and when I say "out of the hides of the Soviet people" I mean just that. Part of the price was a certain amount of starvation in the early thirties. Part of the price was the tremendous struggle over collectivization in the early thirties, in which about half the Soviet agricultural capital was destroyed. Many different things are involved. The Soviet Government forced its people to have a much lower rate of consumption, a much lower standard of living, than the Soviet people would have had if they had been able to determine what should happen in their economy. And, of course, the obverse situation to the low standard of living was the presence of a relatively large amount of capital to be used by the government.

What did the government do with this capital? It applied that capital primarily, overwhelmingly, to the development of heavy industry--to steel, chemicals, petroleum, electric power, machine tools, guns, planes, tanks, and more recently to atomic bombs and hydrogen bombs and guided missiles. Really the figures are fantastic. There has never been anything like it. Between 1929 and 1952, 64 percent, over two-thirds, of the total capital invested by the Soviet Union went into heavy industry. That is absolutely fabulous.

Compare that with any other country's economic history that you want to take. You just don't find anything beginning to approach it. Two out of every three dollars, two out of every three rubles, that were put into developing the economy was put to developing heavy industry, which doesn't produce anything that a person can eat or wear or live in or amuse himself with, but which does lead finally to the production of things that you can use to kill somebody else with.

Now, with 64 percent going into heavy industry, there wasn't very much left for the areas of the economy serving the consumer. So I have some other figures of interest. Only 7 percent went into consumer goods over this period of roughly from 1929 to 1952. And, since only 7 percent of the industrial capital went into consumer goods, the result was that consumer goods production rose very little. If you put that in terms of suits of clothes, number of television sets, or things like that, you will see that the Soviet consumers didn't have an increase even remotely resembling the increase that you find in heavy industry.

Then agriculture got only 9 percent. The result was the stored-up legacy of real trouble that is facing them today, where Khrushchev is very much worried about agriculture. Despite the "hoop-la" propaganda about all the tractors going to the farms, agriculture got only 9

percent of the total capital investment in the country; and yet agriculture occupied more than half the people of the Soviet Union during this period and is the basic source of food.

Food production increased very little. That is why you have Khrushchev running around like crazy trying to figure out how to raise more food. That is why he is even willing to send farmers to Iowa to find out how the Americans do these miracles.

One of the basic reasons for that situation in agriculture is that agriculture was relatively neglected in this period. You see, we are really talking about a two-sided coin. You can't talk about one side without talking about the other. We have to recognize that this is really a national security problem for us. Soviet industry has forged ahead of even the English. In 1928 Russia could barely build all the parts for a complete automobile, could not build an automobile factory, or even produce a pound of aluminum, but today is making hydrogen bombs, long-range guided missiles, and God knows what else.

So the Russians' heavy industry is just fabulous. But they paid a price for it. The price they paid for it is that every other branch of the economy--housing, consumer goods, food--had to get along with the crumbs off the table. And when anybody has to get along with crumbs off the table, and the table isn't too richly spread in the first place, he is likely to have a very lean and hungry look, which is the look of Soviet housing, food, transportation, and agriculture today.

So, if you ask me the secret of Soviet success, I think it is safe to say that the secret of Soviet success is also the secret of Soviet failure. It is a two-phased thing--to squeeze a lot of capital out of the people, and then use that capital primarily and overwhelmingly for heavy industry.

Of course, however, there are other facets of these things. You don't just build your economy by means of capital. After all, in the last analysis, an economy consists of the coordinated work of millions of human beings; and in the Soviet Union there are over 100 million people that work every day.

Well, one of the interesting facets of this thing is the human revolution that has taken place. Soviet cities have tripled or quadrupled their total population. Tens of millions of human beings, who were born on the farms, and who a hundred years ago would have expected

to live, and would have lived out their lives in ignorance as illiterate peasants, have been moved to the cities. They have become operators of machine tools, foremen in chemical plants, people who operate instrument panels regulating machine complexes run by electric power.

We have had a human revolution which again falls into several aspects. The first is the sheer relocation of from 30 to 40 million human beings moved from farms into the cities--a complete break from everything these people have done before. Just visualize the housing problem which has resulted. The worst facet of the Soviet economy at the moment is precisely this housing situation. Housing has never kept pace with the tremendous eruption of people into the big cities. Today a typical family of three, four or five people lives in one room in an apartment; and they share a kitchen with three or four other families who occupy the other rooms. Individual workers still live in moldy barracks. It is one aspect of the migration. There have been several other apsects.

Another aspect is the problem of education and training. The Russians always love to boast about how much of an educational job they have done in their country. If you are ready to believe it, 60 million people have been given the opportunity to go to school.

Let us not kid ourselves; they have done a tremendous educational job at all levels. They had to take millions of people, many of whom started illiterate or barely literate, and raise them to a level of competence so that they could work in a modern factory. They had to raise a certain fraction of them up to a level of competence of skilled engineers, or able scientists, or good technical officers in the Engineer Corps of the Soviet army.

I don't know. Some day I think a psychiatrist or psychologist ought to make a study concerning the psychic effect of these things--of having these millions of people, who were living in the 17th century, go suddenly over with a shock into the 20th century, having some of them working on guided missiles, even on atomic energy. What does it do to human beings?

There is a human revolution too, and it is still going on. There is no slackening anywhere. One thing that many people here are excited about is the fact that the Russians are training more engineers and more scientists than we are. The human revolution is still going on.

There is a third facet of how they accomplished this miracle. This third facet has been the finding and exploiting of rich natural resources in Russia. New sources of iron, coal, petroleum, nickel, uranium, thorium, and so on are being exploited by the USSR today that weren't known at all or were only vaguely known in 1928.

One of the things is that the Soviet Government realized early that there would be need to know as much about its natural resources as it could. And so, beginning about 1928, tens of thousands of people have been sent out each year. You hear talk about the uranium rush in Colorado. The Soviet Union has sponsored each year just a general minerals rush. The Russians have sent school kids, students on vacation from college, geologists, all kinds of people, out all over the country. They have given them very simple instructions: "Every time you come to a different kind of rock, just chip off a hunk, mark down exactly where you found it, and bring it home." If you have enough thousands of people doing that thing, you are going to find some rocks that are very interesting. And this is what has happened.

Hence one of the key aspects of this tremendous economic development has been that the Soviet Government's knowledge of its own natural resources has been greatly multiplied. Russia has been found even richer in basic mineral wealth of most kinds than anybody had envisioned. We have estimated in a very rough fashion that Russia is roughly as rich in mineral wealth as we are in the United States.

You have to add a second thing, that is, the American mineral wealth has been depleted more rapidly than has the Russian mineral wealth. We began depleting it rapidly much earlier than the Russians did, and we are still depleting our mineral wealth much more rapidly than they are depleting theirs.

And a third thing that also happens is this, and it is the one note of hope for us in the situation: The Russians' original development of the economy, their original industrial development, were based upon the development of western Russia, particularly the Ukraine, the Moscow area, and the Leningrad area. As a result their best deposits of things like oil, iron ore, and coal have taken a terrible beating. So now one of the key problems for the Soviet Government is that the old industrial areas, the ones which got first priority, and which once had very rich deposits of iron ore, say, in the Donets Basin and at Magnitogorsk, are now greatly reduced. Where Magnitogorsk used to throw aside anything that didn't have 60 percent of iron content, today

it is using ore with 35 percent iron content and is darned glad to get it. The oil resources at Baku have been exploited for three-quarters of a century. Baku once supplied 80 percent of Soviet oil. It was though to be an inexhaustible reservoir. Baku even in 1954 didn't come anywhere near approaching its prewar high; and it is showing such signs of exhaustion now that the Soviet Government has announced that it will no longer try to increase the Baku production. It is going to try to keep the Baku production stable. And even to do that, it has to drill under the Caspian Sea; and it is more expensive to drill for oil under water than to drill on dry land.

What I am trying to say is that the Soviet Government appears to be faced with the economic problem of relocation of industry, because half of its old industry is located in areas where the resources have been badly depleted. All the new, rich, virtually untouched resources are out there in Siberia, around Lake Baikal and the Amur River. The trouble is that there is no one living around Lake Baikal and the Amur River--nobody in comparative terms. So now the Russians not only have to go through that process again of moving people thousands of miles, but they have to build great new cities and new railroads. It is a very difficult problem.

Well, I think we have covered so far the capital aspects of the Soviet economy, the industrial and labor aspects, and the natural resources aspects. We may very realistically ask: How much longer are the Russians likely to go on developing so rapidly? Well, it is a very difficult question to answer. You will probably get as many answers as people you ask. All I can do is to try to give you my own view on the thing. If I am wrong, well, you pay your money and take your choice.

I think their development is going to slow down somewhat. It is rather interesting, for example, that it has been announced for 1955, as their planned target, an increase in industrial production of only a little over 9 percent. From 1947 to 1954, however, they have been claiming at least--I don't want to say anything here about the complex problem of Russian statistics; so let's just accept their word for it--production increases of 12 or 13 to 26 percent a year. In other words it looks as if they are running into some of the problems that you get with depletion of resources. Russian cities have become so jammed up that you can't put many more people in them. Also agricultural production is already so extremely limited that they can't move many people out of agriculture. The Russians probably will have to move people into the farms if they don't want them to starve. So some of the

problems are beginning to catch up with them. Their rate of increase, I am convinced, is slowing down.

Well, this represents my thinking as of about 1950, when I wrote my book. It still overwhelmingly represents my thinking now. But a couple of new angles have been introduced in the past five years. So just to add to the general disquiet, I would like to say that I am not so sure that for the long run they are really going to slow down very appreciably. I might add that the 9 percent industrial growth planned for 1955 is still far above the American rate.

What are some of the possibilities that are open to the Russians? For one thing, there is automation. My friends who are in the automation business tell me that automation is going to throw all economics into a cocked hat. You have to compare what they are doing now with what automation can do to their productivity. The Russians read everything we write on the subject. They have lots of people studying all this. So one possibility is that this automation revolution, which is just beginning, may produce a new upsurge in the Soviet economy and solve their labor problems for them. I don't know. But it is a possibility.

A second possibility, in theory, is this: What about industry using atomic energy? I don't mean just the atomic bomb part, but the radioisotopes and the other angles of this matter.

What I am saying is that I think humanity is now on the threshold, or perhaps just stepping over the threshold, of two of the greatest industrial revolutions in human history--the automation revolution and the atomic revolution. The minute you realize that, you become very cautious about what is going to happen in the future in an economy which is as cognizant of these revolutions as the Soviet economy is, and which is determined, as is the Soviet economy, to take full advantage of these revolutions for its own purposes. And so I am a lot less happy than I was in 1950 and a lot less sure that we can assume that the Soviet prospective industrial growth is going to continue to go down. It may turn up again because of this technical revolution that is going on. I don't know.

Finally, I would like to say this: The main reason why the Soviet economic development is not an argument for communism is because of the tremendous cost in human lives, human suffering, and liberty that has been required to produce this fantastic and fabulous and successful effort.

While the Soviets managed to produce the hydrogen bomb a lot faster than we thought they would, or our intelligence said they would, this has all been done at the price of producing a people who are educated, so that many of them can now understand what is being done to them. They are not ignorant peasants any more. And, second, they are people who know darn well they are getting much less in clothing, food, housing, and so forth than their economy is capable of producing if those were the chief objectives of their economy. So there is a morale problem in the Soviet Union. I get the impression that even Khrushchev in the last months has been worried. He has to keep his attention centered on heavy industry, but at the same time he has to keep his people at least minimally happy.

I spent all of yesterday reading the Yalta papers. I noticed this point in the Yalta papers--that Stalin was saying: "You have to give the people something if you want them to go to war against Japan. They are not going to go to war against Japan unless we have given them something." That was in 1945. I would suggest that Mr. Khrushchev is worried about that same general point. You have to give the people something if you are going to have them produce the goods at this rate.

Thank you very much.

DR. CLEM: Dr. Schwartz is ready for your questions.

QUESTION: I was reading some statistics, which I won't argue about, on the Soviet Union. We have been told that there is literally no unemployment there except criminals and the mentally incompetent, and that their economy is running on a 48- or 50-hour week. I would like you to comment, if you will, on this: With that type of full utilization of their manpower, and also the fact that most of the women who can work are now being employed in industry and agriculture, What is their potential for mobilization?

DR. SCHWARTZ: Well, that is a hard question to answer just off the cuff. It is something I would prefer to sit down for a couple of days and think about and let you know. But I think I can make one or two general observations.

One thing is quite clear--thinking in overall terms, they are closer to their limit at any moment than we are. We have a rich, comfortable, and fat economy, with lots of people who might work in this country, who could work if we had war, who just don't work because they don't have to.

They may do other things. My wife, for example, runs around Westchester County trying to collect money and do things for people who are suffering with a disease called multiple sclerosis. It is a very worthwhile activity, but in case of a pinch she could be in a factory line making something. There are lots of people like that.

Also we normally do not work 48 hours. We have several million people employed who are not even working 40 hours. We could shove the workweek up to 48 hours.

So there is a much greater potential of overall expansion in the American economy than in the Soviet economy. But I would like to make this point here: In time of pinch the Soviet Union would put everybody to work who could work. In World War II the Russians took practically everybody, beginning at age 12 or 13. They put everybody to work. They didn't put them to work for 48 hours; they put them to work for 60 hours.

So I think there are those two parts to the answer. One is, they are closer to the limit of their economic potential than we are, because they are always working under forced draft. Second, they do have some room for expansion, because in time of war they put absolutely everybody to work, including kids and men of 80 or 90, women with four kids, and so on.

I don't believe I have answered your question fully, but I have given part of the answer.

QUESTION: Following World War II Russia carried on a rather ruthless policy of reparations in the way of capital goods. To what extent do you feel this contributed to their recovery?

DR. SCHWARTZ: I am glad you asked that question, because it did play a role in their recovery. You see, one of the fantastic things about their very rapid progress during the thirties was that it was accomplished entirely out of indigenous capital. They squeezed the capital out of their own people. They got very little capital from the outside world. During World War II they got some capital from the United States and Great Britain under Lend Lease. It was rather interesting in reading the Yalta memorandum yesterday to see that Stalin in 1945 was toasting Lend-Lease's great contribution. It wasn't just things for the army. It was also machinery and things for the civilian economy.

On reparations it is very difficult to figure the total, because the Russians have not exactly been anxious to proclaim to the world to what extent they robbed Czechoslovakia, Manchuria, and Germany. The estimates I have seen have been something on this order of magnitude, very relative: They may have taken 10 billion dollars or more of equipment, raw materials, and livestock out of the occupied areas. It might have been 15 billion or it might have been 8 billion, but 10 billion is somewhere near.

That sum of 10 billion dollars is the value of the material in the original location, in situ. In moving this stuff, part of the value was lost. I will never forget the day in 1945 when I was riding around in a jeep in Berlin near where the Soviet command had its headquarters. I passed by the railroad line; and for several miles along the railroad line on both sides stood all kinds of machinery, sitting there out in the open, under the sun and open to the rain, wind, dust, and so on. Well, by the time that machinery got to Russia, I am sure it had lost much of its original value.

I talked with some Germans who were forced to "volunteer" to help move this machinery. They told me: "Well, when we are moving this machinery, a lot of it is awfully heavy and every now and then we drop it by accident."

If they took 10 billion dollars' worth out, it wasn't worth 10 billion dollars by the time it got to Russia. Probably it was worth at least 5 billion dollars, though, and played quite a significant role--the fact that they had this machinery and raw material that could be used to the extent it was usable by the time it got to Russia, that could be put into place.

Of course, the further you go away from 1945, the less important did reparations become. But it did have very definite importance, particularly during the period 1946 to 1948. Today these reparations are infinitesimal in their effect. But they certainly enabled the Russians to progress much more rapidly in the way of recovery than they would have been able to without those reparations.

QUESTION: We have been exposed to the Joint Economic Report, "Trends in Economic Growth," a congressional committee report. I wonder if you would comment on that, particularly on its conclusions, which are slightly optimistic, it seems to me.

DR. SCHWARTZ: Normally, I would have some inhibitions about talking about somebody else's work, but I happen to have talked with one of the chief movers of the thing--Dr. Shimkin. He is going to be here, I believe, next week. I told him what I think of it. So I will tell you what I told him, and then you can ask him questions if you want to, and quote me back to him and let him tell you his side of the story.

One has to distinguish, it seems to me, between two things: One, what the man or the group actually says; and, second, what the public is led to believe. Now, most of the news stories I have seen about that report, particularly the conclusions of that report, tended to emphasize the rosy conclusions that we were away ahead of the Russians and will continue to be away ahead of them. I think that one reading the news stories tended to end up with the general idea that all is well with the world, and that we have the best of all possible worlds. I don't think that is true. I don't think all is well by any means, or that this is the best of all possible worlds by any means.

Well, I think Dr. Shimkin very correctly would point out, as he pointed out to me, and as I would agree, that there were a couple of fundamental problems in preparing this report. However, if I had been doing it, I would have done it differently. I would not have come out with quite the same conclusions that they did.

As a matter of fact, there are some nonrosy conclusions buried in the report, if you can find them. For one thing, I don't think they took adequate account of the fact that you can't just compute the rate by saying that from 1928 to 1953 the Russians did this, and then project it. You have to take account of the fact that World War II came and the Russians had a terrible setback. You have to take account of all that sort of thing, and the fact that their gains might have been much greater without World War II.

Second, that report, I don't think took adequately into account this very important fact: That the Russian economy by its nature, if its pace is unchallenged, is going to keep on going up. Every year is going to be better than last year. Each year sets new industrial production records.

But the American economy is not like that. Neither is the English, nor the western European economies. Last year we were almost 10 percent below the industrial production obtained in 1953. It is conceivable that there may be even worse recessions.

You can't say that the American economy increases every year by X percent and the Russian economy increases by Y percent. The American economy is a much more variable economy, unless our Government changes its policies and sees to it that we increase our production every year. But in doing that we may not be balancing the budget, and the President and Secretary Humphrey have some strong ideas about balancing the budget.

Third--and this is perhaps the part of the report that disquiets me most--the way the news stories were written, I am sure the ordinary even intelligent citizen, if he wanted to make a real comparison between the Communist side and our side, would have seen that they left out a very important factor. They left out Communist China. I asked Dr. Shimkin, "Why did you leave out Communist China?" He said, "We didn't have anybody around to ask about it, and we had to get this report out in a hurry."

You know that Communist China is a new source of potential. It is true that today with a production of 2 million tons of steel, it probably has less industrial production overall than a country like Belgium or the Netherlands--very small. But the potentials in Communist China, certainly the desires of the Chinese Communist leaders, are boundless. And if Communist China has 15, 20, or 25 years to grow, as the Russians did in the thirties, or have had since 1946, Communist China is going to be a darned important element in the world economic situation. In case of a new world war in, say, 1970, I don't see how you can leave Communist China out of this report if you want the report to be meaningful.

So let us put it this way to sum up--I think the basic faults of the report are: One, it was done in too much haste. That is just the way Congress acts. Congress doesn't pay any attention to something for a long time, and then suddenly wants a report on it yesterday. My sympathy goes out to the people who had the problem of preparing this report.

Second, I detect some elements in it that somebody involved in preparing the report was a little bit worried that if he came up with too rosy a picture of Russia and too bad a picture of us, Senator McCarthy might be after him. Maybe that is unfair, but I like to say that this is the feeling I get. Well, if we are going to close our eyes to the truth because of fear that some big bad wolf from Wisconsin may be after us, then we are really lost.

Third, I think it is simply inexcusable that they didn't discuss the potential of Communist China. The United States Government certainly has any number of people who are competent to discuss and write about the economic potential of Communist China and where it may be by 1970 or 1980.

I wrote an editorial on this in "The New York Times," and I approximately said this: "We are glad to see this report, because it is about a subject that needs discussing; but this report should be considered as only the beginning of the discussion. We need more discussion, and in particular we have got to include Communist China in the calculation."

Then there is the public relations aspect of this report. In part the reporters were responsible, because of the way they interpreted what was said by Dr. Shimkin and his colleagues. But the public relations aspect of the report, in my opinion, was unfortunate.

QUESTION: We have been told that the development of transportation and communication plays an important part in our own economy. Would you comment on what it has done to the Russian economy during this period?

DR. SCHWARTZ: Certainly transportation and communication are both extremely important. Let me say this: The Soviet philosophy or attitude toward these two services which is what they are, has been what you might expect--to give very terrific focus upon the production of commodities, particularly heavy industrial commodities. Their whole philosophy has been: "Give transportation as little as you can get away with." The result has been that the Soviet railway system is by far the most overloaded transportation system in the world.

I have forgotten what the figures are. There is something in my book about it. But I have the feeling--I might not be able to prove it, but the general impression is not wrong--that on the average, in the most heavily traveled key portions of the Soviet railroad network-- and that accounts for 85 percent of the total--the freight mileage per mile of track is 10 to 20 or 30 times what it is in the United States. A length of track that we would consider a heavily traveled stretch, like the Philadelphia to New York line of the Pennsylvania Railroad, in Russia would be considered only little above average.

The Russians have built some new lines, put in better switching apparatus, and built better locomotives; but it is still kind of a creaky

transportation system, because the Russians didn't feel that transportation contributed anything directly and therefore they neglected it. So they have just gone from crisis to crisis.

It is rather amazing what they have been able to do with the limited investment of resources in transportation. But I think they really are in a situation where if war came, they would be very vulnerable from the transporation point of view. But again there I refer back to the Yalta statement. It was very interesting to me to read that Stalin was worried in talking about preparation of transportation for a war with Japan, that the Japanese might be able to cut the trans-Siberian railway, which was the only full-length Moscow-to-Vladivostok railroad. Well, I think we could very seriously cripple their transport system in time of war, because it is operating so very close to capacity; and, if anything goes wrong, it will be all fouled up.

In communications they don't have anything like the very extensive network of telephonic and telegraphic communications that we have here. Large areas of the country have only recently, for example, gotten a telephone--one telephone in each farm village. But, on the other hand, they do know the most modern communications technique. They are trying to build up their communications network. I should think that they are good enough in radio and related fields so that it would be much more difficult to disrupt their communication system than their transportation system in the event of war. But the general philosophy that they have had says: "Put as little into transportation and communication as you can get away with."

QUESTION: In the United States we believe that our diversity in consumer goods production gives us a base for our strength in war. With the Russian philosophy do you think it likely that they might get this gimmick into their system?

DR. SCHWARTZ: Which gimmick?

QUESTION: The gimmick of consumer goods production in this country, which caused us to develop and expand so much in World War I and World War II that we were the arsenal of democracy, were able to produce so tremendously.

DR. SCHWARTZ: So far at least there is no sign that they are going to do that, although they have some plans to increase television production and refrigerators. I would say, however, that one of the

things that worries me is the possible assumption that we might in a third world war be able to have the same happy quiet reconversion period to turn our automobile factories into tank factories and so forth. Instead what might happen is that we might be wiped out the first night by hydrogen bombs. In other words our real problem is that if world war III saw an atomic attack on our major cities, we would not have any consumer goods industries to reconvert. We would have to fight with what we had.

Now, the Russians have felt all along that they were so poor and so far behind that they needed to focus directly upon direct or indirect military production. Their idea of reconversion is to shift from a tractor factory to tanks rather than from the steel industry to tanks. At the moment, and for quite a while to come, I wouldn't anticipate their taking very seriously to the idea of building durable goods industries so they could reconvert them. Today they are not producing many television sets; they are producing lots of radar.

QUESTION: If a future war between Russia and the United States should start with mass destruction of our cities, it seems to me that the speed with which we rehabilitate after the destruction would be an important factor. What advantage, if any, was Russia's experience during World War II in that phase?

DR. SCHWARTZ: The Russians did a really remarkable job in that after the German invasion in June 1941, they moved some 1,300 large factories, and some of the equipment and the key personnel of those factories, from the western area to various places in the Volga valley, Siberia, central Asia, and so on.

As far as repair goes, yes, they had a tremendous experience in repairing the devastated areas as their armies marched back again and reoccupied the devastated areas.

I would say that one key advantage the Russians have is this: They are planning much more realistically, I think, than we are at times. They really have been very busily engaged already in the past decade in building up reserves of raw materials and machines and spotting them around. They have been assuming the worst and trying to lay stores and supplies away, so that when, as, and if the worst comes, they will be ready to repair things. Also, my impression is that their secrecy of location of plants and tracks is much better than ours. So that there is the problem of, Would we do as much damage to them as they might do to us?

I don't know. The prospect of a real nuclear holocaust in which everybody is going to let go with all 15 barrels is just something so completely frightening, so completely foreign to anything the human race has ever known before, that it is difficult to say whether there will be any human beings left alive afterward. So in a sense it is almost impossible to answer this assumption that the worst will come.

My own feeling is that, if I were planning American military policy, I would be planning that you would have to carry on the war after the initial nuclear strike on the basis of what you have then and there. So I would make sure I had lots then and there already produced and stored up away from the target areas.

QUESTION: Coming back to our automation, I wonder if you would go a little more into detail on that. You mentioned that there is no sign at the moment of any increase in consumer expenditures or that type of activity. Yet automation would require for its effective use that they produce things in relatively large bulk.

It would seem that if automation is to be an effective contributor and make some impact on their economy, the Russians have two ways to go. One would be to produce more consumer goods. The other would be to produce military goods, in which case you have two paths. One is to produce them and not use them, in which case you store them away; and the other is to produce them and use them. If you produced them in large quantity, there would be no sense in that unless you do use them. Would you comment on how you think automation is going to be effectively used?

DR. SCHWARTZ: Well, I didn't come here to pose as an expert on automation; I am certainly not an expert on it. It seems to me that this problem is less complex than you indicate--not for the Russians--automation itself is very complex.

After all, the Russians are using many million of many different things. For example, they produce millions of pairs of pants, and on each pair of pants they would like to have a zipper. I know a little plant on Long Island that has two or three machines, where you push a button and out come zippers. It is the most fantastic thing in the world. They produce them at about one-fifth the labor cost of making zippers in the usual way.

I am taking the zipper simply as an illustration. There are lots of things that they make in large quantities every day in the year. There is no reason why they can't apply automation to them. Just take radio and radar components. They must make millions of them for the Armed Forces alone. This new automation involves the use of what you might call building blocs of people. They can get as much again from automation in building radio sets as we can, because they have the people.

So I don't think we should assume that because the Russians don't produce a lot of nonmilitary things, they are not able to produce them by automation. They do produce a lot of nonmilitary things. They produce a lot of propaganda books. Anything that makes the production of books more inexpensive through automation will cut down the cost in the propaganda field. They produce lots of tanks, or at least lots of components of tanks, that could be set up in an integrated line of machines where you press a button at one end, feed metal in, and out comes a gadget at the other end. There is an opportunity for automation. I can tell you, the Russians are working very hard on it.

I wrote an article for one of the automation magazines about a year ago, and in it I was able to show that the Russians are right on their toes and have done some things in some areas which we haven't done. In a modern economy, automation is going to cut costs so that production can build up very rapidly.

QUESTION: We have heard the argument that for the effective use of automation, it would be almost necessary to have a large production of consumer goods. So it seems inevitable that, if they introduce automation, they are going to have to produce more consumer goods.

DR. SCHWARTZ: Well, it might be that they will become so productive, that is, in total of productivity, in a period of 10 years, they will become so rich, that they can have both guns and television sets. Well, now, if they reach that point, if they get enough guns--and I am using the word "guns" generically to mean military goods overall--then it may well be that they will produce more consumer goods. But for the immediate future I see automation as being applied primarily to heavy industry, increasing the productivity,there, and perhaps counteracting some of the forces which otherwise tend to slow down their economic growth. I don't think there is really as much difference between us as it sounds at present; and I think that in a period of 10, 15, or 25 years from now there will be very little.

DR. CLEM: Gentlemen, our time has run out. Dr. Schwartz we all thank you for your very comprehensive coverage of a difficult subject and the stimulating discussion which we have had.

(13 Apr 1955--250)S/gmh

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