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ECONOMIC FACTORS IN THE FORMULATION OF NATIONAL STRATEGY

A lecture delivered by
at the Naval War College
on 5 May 1953 by
Dr. Charles F. Roos

Gentlemen:

The problem given to me today is a very broad one. In fact, I think it is entirely too broad for a lecture confined to 40-50 minutes. I have chosen only three aspects, each of which I will develop in some detail. Perhaps in the Question Period some other aspects can be considered.

First, I want to talk about Economic Warfare by the Soviets. That, naturally, means that we will have to examine the Soviet economy. We will have to see what they are capable of and what they are not.

Secondly (and this is related to the first), I want to talk about the Industrial Potentials and the Resources for War of the Soviets, Ourselves and Our Allies.

Thirdly, I want to talk about the Domestic Economy of the Two Major Nations and some of the problems which they have to face.

The first subject requires a few comparisons. You have probably seen most or all of these some place or other, but it would be just as well to review them here.

RAW MATERIALS—ANNUAL PRODUCTION

	<u>U. S. S. R.</u> (Approximately)	<u>United States</u> (Approximately)
Coal	354 million tons	500 million tons
Petroleum	45 " "	326 " "

	<u>U. S. S. R.</u> <u>(Approximately)</u>	<u>United States</u> <u>(Approximately)</u>
Pig Iron and Ferroalloys (This is entirely different from Steel; our Steel is nearer 120 than the figure of 70. Steel is made from pig iron and scrap steel and iron)	27 million tons	70 million tons
Aluminum	250 thousand tons	1,300,000 tons
Cotton Textile Industry	5½ billion sq. yd.	9½-10 billion sq. yd.
Cars and Trucks	700 thousand per yr.	7 million per yr.

These are basic economic factors. How, under such conditions, can the Soviet hope to compete with us? In each of the major categories we outclass them by quite a bit.

But there are other problems which are involved. One of these is the long transportation which we must meet in our operations in contrast to their nearness to areas of aggression, trouble, or whatever name you choose.

Up until 1950—in fact, up until the Korean War started—the Russians were able to increase their supply of civilian goods each year, a fact which shows in their published figures on production and in their price actions. In each of the years from 1947 on to 1950, around the first of March, they reduced prices of consumers' goods about 10%. They were able to reduce prices because their productivity or output per man-hour was increasing at the rate of something like 12% a year in those years. That 12% for productivity increase is a very high figure; it should be compared, for example, with our long-term average of about 2%. We have attained a short-term average of as high as 10-12% for a year or two at the most. Indeed, when we have increased our own productivity by as much as 10%, it has been accomplished by closing down high-cost plants, and one can hardly call that an overall increase.

With respect to productivity, there is no question but what the Soviet economy has been improving very substantially. Improvement really goes back to about 1935-36, when they began to turn away from compulsory methods to incentive methods; when they put through their Stakhanovite System, for example. From the beginning of their five-year plans in 1928 they began to open up the spread between wages in a plant and management, between artists, scientists and management, and the ordinary workers. As a result of such changes in policy, we find that productivity increased very substantially in the Soviet Union.

Planned increases of the Soviets for the five-year period, 1951-55, are 9% a year. They have probably just about accomplished such an increase in productivity for 1951-52, but I believe they are a little bit short of it. My studies indicate that instead of 9% they probably came out with something between 7½-8%—but, then, that is hardly enough to quarrel about. Even 7½% is a rather substantial increase and I think it has some implications, certainly, over the long run.

Ever since 1928 (when the Soviet Five-Year Plans were started), Soviet productivity has increased on the average about 7½% a year. Productivity actually went down during the war rather considerably. The high rates after the war were due, primarily, to the fact that they were opening up bottlenecks. Furthermore, they were importing machinery and equipment from Germany and from some of the other European countries—and this provided a short cut. I don't believe that the Russians can maintain the 7½% increase in productivity of the past 25 years—I think that the increases are more apt to stabilize around 4% annually.

But if the Russians should be able to stabilize their annual increases in productivity around 7% and our productivity increase per year should drop to 1½% (that is, from 2 to 1½%), then, in 1970, industrial productivity would be equal in Russia and the United States.

If Russian industrial productivity should equal our own, there is no question but that Russia would be the most powerful industrial nation in the world. The Russians have a larger population than the United States and as a result they have a larger labor supply. Consequently, Russia would be the most powerful nation in the world under these conditions.

On the other hand, if the Russian productivity should increase at only 4% per year and ours at 2%, by 1970 theirs would still be only three-fifths of our own. That is the other more hopeful side. I think that a 4% increase for them is a more reasonable assumption than the other one. Yet, of course, military people have to look out for the worst so I put the unfavorable hypothesis first for that particular reason.

The Russians have been finding, since 1950, considerable difficulty in meeting their armament plans and improving the lot of the civilian. For example, there was no price reduction in March of 1951. There was no decrease in prices on March 1, 1952; and, yet, there was no significant rise in wages. Thus, one can assume that their increase in productivity was absorbed by the military program—that is the only way such a condition could develop since the government budget was about balanced.

In 1953, March 1 passed without a price increase. But about that time certain other important developments begun to unfold. For example, Joseph Stalin died. There must have been some internal trouble, for on April 1, 1953, the new government again reduced prices. I don't believe that the reduction was a result of productivity increasing enough to offset the military expenditures. I think that, instead, the reduction was forced by economic dissatisfaction at home. It is rather hard to keep people static, particularly if they have low standards of living. They become dissatisfied very quickly.

There are, of course, some things in which Russia has been going ahead very fast—particularly, through the efforts of the satellites. For example, the Russians have asked the Czechs, the Poles, and various others to supply them with certain civilian goods in return for Russian machinery and equipment. As a result of that trade deal, the plans of the satellites show very substantial step-ups in production of civilian goods. I think if you would analyze the Russian satellite trade agreements, you would have to conclude that the price paid by the satellites was rather high—that is, that the satellites did not get advantageous trade terms.

There is further evidence which I think may be helpful to us in formulating policy. There is, for example, very definite evidence that the Russians have experienced during the past year short supplies of iron, molybdenum, cobalt, tin, tungsten and nickel.

In the case of iron, there is evidence that the mines of Magnitogorsk are badly depleted and the Russians have been increasing production of low-grade ore at Alapayevsk and Ayat, in the Urals. To mine this low-grade ore requires a considerable amount of special work—magnetic separation is necessary and the ore must be sintered, or joined together in pellets to make it useful. The Russians are again working Krivoy Rog's marginal ores and the Kerch low-grade deposits in Crimea are scheduled to be reopened. The Russians are even working iron deposits in the Arctic in a place called Yeno and hauling the ore 800 miles for processing. It seems that such a situation alone indicates that they are under pressure with respect to the important element of iron. As an offset, you should bear in mind that the civilian uses of iron by the Soviets are relatively small compared with our own. Consequently, they can put a greater proportion, quite a bit of their resources, into armaments and military production. Vanadium has been substituted for both molybdenum and tungsten in steel used for tools and machinery. Moreover, iron has been substituted for steel in a number of instances.

Transportation is rather inadequate in Soviet Russia. The ton-mileage on their railroads, for example, is 40% higher than on our own for each unit of production. When we each produce a ton of goods, they will haul it 40% more miles than we will. Such a long haul is quite a strain on any transportation system and it is a good thing to bear in mind. In case we should become involved in war, we could cause much difficulty by messing up their already burdened transportation system.

You will find that the Russians have had trouble with their labor supply. Labor has not been available for certain things that seem to have needed help. For example, in 1951, employment in manufacturing, mining and utilities was increased—but not in construction. Yet, there are three people to every room in Russia. Such crowding hardly represents a good standard of living. Again, the labor supply was not increased in transportation (which I have already indicated in inadequate) nor in the service industries. On the other hand, agriculture received 24% more gear tractors than in 1950, presumably to free farm labor.

I believe that Russia, as of now, is incapable of any serious economic warfare on us. I think that sustained full-scale war would be very difficult.

On the other hand, it is conceivable that the Russians could divert their efforts to the production of such things as consumers' goods, particularly textiles, clothing, and some of the other things which are already in adequate or full supply in the world. By flooding world markets, they could bring on business recessions that might be embarrassing to us. That is one possibility, but I believe that it is unlikely. Their own needs are too pressing at the present time to allow them to do much in the way of economic warfare.

I have tried to find areas in which the Russians might be able to hurt us, economically, and I find it extremely dif-

ficult. Of course, there are products here and there which we used to get from Russia. But we have found substitute sources in the last four or five years. As of now, it would be very difficult for the Russians to wage successful economic warfare on us.

I think that longer range problems are, however, very important. I touched on the fact that the Russians have incentive systems which have been leading to substantial increases in production per man-hour. In contrast, our whole tendency has been in the opposite direction. We have taxes that are almost wholly income taxes. The fellow who is good enough to make the income pays the taxes; the fellow who loses, who is incompetent and has little or no income, is taken care of on relief. In New York State, encouragement is given to those who quit work and take up relief. That is hardly a system likely to achieve the greatest productivity or production per man-hour.

In Russia, personal income taxes range from about $1\frac{1}{2}\%$ to 12% of income. An executive who would be making the equivalent of, say, \$100,000 a year in this country would be paying the 12% income tax; the marginal worker would be paying the 1%. The average income tax is about 8%. Please don't misunderstand me—I am not defending the Russians; I'm merely trying to compare situations and to point out long-run implications unfavorable to us.

There is a very sizeable sales tax in Russia. It amounts, on the average, to about one-third of the selling price of the goods. In effect, such a tax is a tax on spending rather than on income. As an economic force, it is much more desirable than an income tax—particularly if we want greater productivity and higher standards of living. I am, of course, not saying that we should have a 35% tax on sales—the people here would not accept it, or anything like it; you know that as well as I do. But, I do think that our emphasis has been in the wrong direction. The burden of taxes ought to be redistributed so that the fellow who is really more

productive than his associates, who has ideas, and who can get along, could be rewarded a little better.

Furthermore, I do not see why the Treasury should be concerned about the period chosen for depreciation. After all, the Treasury is going to be collecting taxes for a very long time. Does anybody doubt that? What difference does it make whether the taxes are collected this year, next year, or the year after? And yet, it does make a very considerable difference in the incentive to invest and the development of new techniques, new ideas, and in the over-all problem of productivity. If the economic horizon is low, high rates of write-off can induce investment and the result be better standards of living.

There is another important area in which we suffer handicaps—that is in the area of world trade. There are no tariffs in the Communist Bloc. In contrast, in the United States and among its Allies, tariffs are important factors limiting markets. They tend to shut out and insulate markets so that in each, production is for a very small market. What the Europeans have recently been doing is setting up plants—and then looking towards the United States for markets. Yet, world markets could be more easily expanded and trade facilitated by the letting down of tariff barriers in Europe and other places.

I have indicated here some of the problems and some of the areas in which we may be able to improve our own lot. I am sure that our potential for production of both civilian and military goods in this country is sufficiently high—and can be made higher—so that we can have a preparedness program that will always be much in advance of anything that the Russians can achieve. In addition, we can still have a civilian economy that grows. I am sure that we have sufficient built-up capital, accumulated ideas, know-how, techniques, and so on to enable us to accomplish this aim. Consequently, from the point of view of potentials, I am not at all worried about the outcome. I think that we can be sufficiently

armed and otherwise prepared that Russia will be unable to match us—because if she should try, she would experience a break-down in her own economy.

The Russians are already suffering from some of the containment which we have imposed and which we hope will later on lead to a settlement of the problems without war. Increased pressure in the direction of cutting off essential imports from the West will cause increased trouble and a greater desire to settle basic problems without recourse to war. But at the same time, our own attitudes must be such as to show the Russian people that we can be friendly and helpful to a Russia that shows willingness to turn away from aggression.

What I have told you indicates that I believe that we are about ready to win the conflict with Russia. However, we must not let down our guard at this point and the armament program of the United States for the next year or two (possibly three) will have to be a forward-looking one. First, we cannot tolerate inefficiencies—whether they are in the industrial plant, the armed services, or in other departments of government. We will have to work against inefficiencies wherever they appear. We could then look forward to producing the most modern weapons in adequate supply to meet contingencies. At the same time, our civilian economy could grow. We would win the economic war with the Soviets and get peace on terms acceptable to us. For emphasis, let me say again it is highly important that we not jump immediately into large-scale disarmament. The military program should be kept near the current rate, at least through the fiscal year 1954. We can take another look later on to see whether we can safely move in the direction of disarmament.

The domestic economies of nations other than the United States and Russia are varied. They run all the way from almost capitalistic economies—like our own, with a minimum of regulation—to almost communistic economies like Russia. I said “almost,”

for there are many gradations both on the side of the United States and of the Soviets.

It is possible, within any economy, to have a mixed system. There are certain areas in which government investment or government control of activities are accepted features. There are other areas in which private enterprise functions best.

Specifically, the Yugoslav economy which is identified as one of our allies is a communistic one; and we also have very capitalistic economies like Canada and Mexico. The system in Russia itself is, moreover, nothing like the Communistic economy visualized by Lenin, Trotsky, or any of the other early Russians. The Russian economy has come a long way from their conceptions and I am confident that it will progress further in our direction.

The economic differences are principally concerned with matters of emphasis. Over here, we tolerate socialism; and, in fact, we encourage it in many cases. When I was a little boy private roads were still quite common, but we hardly think in terms of them any more. All can remember when the private school was much more important than it is today. We have come a long way from the commonplace of 25 to 50 years ago.

The American economy, with its gradations from strict socialism with respect to public relief to, say, almost unadulterated capitalism in the case of the extractive industries where the government is not particularly concerned about taxes and the industries do about as they please with respect to depreciation, contains many gradations. Similar gradations exist in other countries. Among our immediate allies, there is England—much more socialistic than we are, for her key industries are under control. Yet, in England there are still many areas of free enterprise left. France is even more socialistic than England, and Norway and Sweden probably even more so. One could actually arrange our allies ac-

ording to a scale showing their degree of socialization. The dividing lines in many cases would be indistinct or blurred.

The communist nations also show somewhat similar gradations. There was a time when the Russian government decreed that even farming should be communistic and many kulaks who objected were actually liquidated. Private industry was forbidden—the state had to do everything. Well, those times have changed. At present, anyone in Russia can hire three people and can make anything in competition with the state and sell it in the markets. That is hardly enterprise as we know it, but at least it is a start in our direction. Today, the farmer is almost left alone provided he can get along with three helpers and does not cause trouble for the state.

Today, the Russians have great difficulty in getting their plant managers to adhere to the state plans. The Russians have the same kind of cheating that we have had here under controls. For example, the Russian plant managers given a plan will resort to almost everything, including bribery, to get the banks to finance them to a greater extent than planned so that they can put on regular payrolls what is actually construction labor. Various deviations of that sort have caused trouble. People—whatever their nationality—want to be independent, to do things their own way rather than to be told how to do them by the state.

We will find among the communist states, an increasing trend toward our own form of economy; that is, there will be more freedom for the individual, more encouragement of enterprise, perhaps over-all plans with less of the direct controls than we have seen in the past. This is not a new thought. If you should resurrect the old N. R. A. files—if they still exist—you would find a memorandum dated February or early March of 1934 in which I considered problems of socialism and enterprise economies. I said that over a period of fifty years you would probably be unable to recognize the difference between our own economy and the

one that started out in Russia as a communist economy. It said that the communists would have to turn to the incentive methods of the enterprise system, and that our own system would extend the areas of government control. Development of incentives in Russia would almost inevitably result in complexity and a lessened need for government controls.

We will agree that we have come a long way toward socialism. We are not there by any means, but we have taken a number of steps along the road towards socialism in this country. Similarly, the communists have come a long way from the type of organization outlined in the doctrine of Lenin and Trotsky. There are still about thirty-one years to go.

I have spent so much time on this point because I believe that the critical period in our dealings with Russia is going to be of a short duration. I would not want you to think that what you will have to do for the next two or three years will determine what you will have to do the next ten, twenty, or thirty years. I think the problem is to get by during the next three years; to maintain our strength and our positions; to understand what we are driving at and why. Perhaps only two years represent the critical period, possibly only one. Time only will give the answer. It would be a serious mistake to set up communism as a hundred-year enemy. Long before the century has passed, even long before this generation has passed (the children that are now born), there will be more important worries than Soviet Russia.

One can always plan for the long run by negotiating successfully the short run. If one takes the short steps unerringly, he must come out alright in the long run. Over the short run it is highly important to maintain our military strength, perhaps even to increase it. Notice I said "strength" rather than "expenditures." As I tried to indicate early in my lecture, there may be an important difference.

It is extremely important that we do certain things to increase our productivity. These should be made important aims of the government itself and of the people.

A few years ago, the General Motors Company concluded a labor agreement that specifically rewarded productivity. Up to that time, the labor unions generally were very little interested in improving productivity. But once it was put into a contract and wage increases were automatically based on it, the story was different. This is extremely significant from the long-run point of view.

We ought also examine our whole tax structure with the aim of providing greater incentives to successful persons and corporations. In particular, the Treasury should get out of the business of trying to tell business how to set up its depreciation accounts.

By fixing the weak points in our economic system, we ought to be able to win both the armament race and the economic marathon.

Thank you!

BIOGRAPHICAL SKETCH OF LECTURER

Dr. Roos was born in New Orleans, Louisiana, on May 18, 1901. He attended Rice Institute Houston, Texas, receiving a B. A. degree in 1921, M. A. in 1924, and Ph.D. in 1926. In 1926-27, he did graduate work at the University of Chicago, and at Princeton University in 1927-28.

He began his career as a teaching assistant in mathematics at Rice Institute in 1920. From 1921 to 1923, he was a civil engineer and contractor, returning to Rice in 1924 as a teaching fellow. From 1926-28, he was a National Research Council fellow in mathematics and from 1928-31 was an Assistant Professor of Mathematics at Cornell University. From 1928-33, Dr. Roos

was with the American Association for the Advancement of Science, serving first as Secretary of Section K (1928-31) and as permanent Secretary and a member of the Executive Committee from 1931-33. He was a Guggenheim fellow from April to July, 1933, following which he became Principal Economist and Director of Research for N. R. A. In 1934, he went to Colorado College as Professor of Econometrics, remaining there until 1947. He is now President of the Econometric Institute.

Dr. Roos is a joint-founder of the Econometric Society, of which he is Vice President and a fellow, having served as Secretary-Treasurer in 1931-32, Secretary and member of the Council of the President in 1948. He is a member of numerous professional and scientific organizations—such as the International Statistics Institute, American Mathematics Society, and the Mathematics Association of America. He serves as a member of the advisory editorial board for *Econometrica*.

Dr. Roos is the author of several books on economics and a contributor to various scientific journals. He is interested in research concerned chiefly with the technique of statistics and analysis and development of mathematical theories of dynamic economics.



GROUP SESSION