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ECONOMIC POTENTIAL FOR WAR

A lecture delivered
at the Naval War College
on 27 October 1955 by
Professor Edward S. Mason

Concerning *Economic Potential for War*, I would say that the most important thing that economics and economists have to say about this subject has to do with the national income of a country — what determines the national income and what are the various dimensions of the national income.

You probably all know that the national income of a country is simply the value of all the goods and services that are produced per unit of time, say the value of all the goods and services that are produced per year in this country or in any other country. This is a pretty good first approximation of what the country could be expected to produce in military materiel. If you arranged all the countries of the world in terms of the national incomes they produce, you would have a pretty good first approximation of what you would expect those various countries to be able to produce in equipment for war. If a country is highly productive (that is simply another way of saying that its national income is high), it can usually produce in quantity the goods that constitute the basis for military power.

The national income of the United States is currently running at a rate of about 390 billion dollars. This is the estimated national income this year. The national income is roughly three or four times the Soviet national income. Here, of course, you get into very difficult questions of price comparisons, which I am not going into now. But the best estimates which I have seen that take full account of price differences estimate that the United States' national income is probably three or four times what the national income of Soviet Russia is. On a per capita basis, it is

even larger. The differences in the per capita of the income of the United States and Soviet Russia would perhaps be in the order of four or five times. Of course the national income of a country is made up of the value of output per person *times* the number of people. The larger the population of a country, other things being equal, and the larger the per capita output, the larger the national income. Both of these two elements, together, have to be considered.

If you look at the countries of the world, there is a tremendous range of variation in per capita incomes. The statistics collected in 1950 indicate that per capita income in Indonesia, for example, which was at about the bottom of the scale, was roughly \$27; the per capita income of the United States in the same year was roughly \$1,500 — both stated in dollar terms. Other countries range in between, with the so-called “underdeveloped areas” usually showing per capita incomes of less than \$100, and the highly industrial advanced countries of Western Europe, the United States, Canada, and so on, running anywhere from \$800 to \$1,500 per capita as of 1950.

So much for this first approximation.

In addition to national income, however, one has to take account of the composition of the national income. The distribution of products, essentially, as between agriculture and manufacture would be the most significant characteristic that one would have to bear in mind. It is true, of course, that to some small extent military procurement is procurement of agricultural products. But, overwhelmingly, it is procurement of manufactured products. So this question of how the economic resources of a country are distributed between agriculture and industry also has a bearing on a country's economic potential for war.

Everybody knows that the United States is a highly industrialized country. Currently, about 12% of the total of the gainfully employed workers in the United States are employed in agriculture and the rest are outside of agriculture. Despite that very small

percentage employed in agriculture, we are nearly self-sufficient with respect to agricultural products. When you look at Russia, you find that the percentage of the population employed in agriculture is much larger. The percentage would be about 40%. If you look at the United Kingdom, on the other hand, the percentage employed in agriculture is even smaller than it is in the United States. So there is not only the question of the size of a national income, but there is also the question of the composition of products as between industrial products and agricultural products. Even if your industry does not produce war materiel, it is relatively easy for large segments of industry to divert production from civilian to military use. So the second point which I am making is that the composition of a national product has a lot to do with the economic potential for war.

There is, however, this fact to bear in mind: if a country is extremely unbalanced as between industrial and agricultural output, that country may find itself under the necessity of importing heavily from abroad the raw materials and foodstuffs it needs to feed its manufacturing facilities. As everybody knows, that is roughly the situation in Great Britain. The percentage of gainfully employed in agriculture is very small. They only raise a little over 50% of their total foodstuffs, and, of course, they produce a not very large percentage of the total raw materials consumed by their manufacturing enterprises. So they are highly dependent on imports from abroad for this kind of goods. Clearly, that has some bearing on a country's economic potential for war if you raise the question of what is the vulnerability of various sources of supply of foodstuffs and raw materials. Let me look for a minute at that question, comparing the United States, Russia and the United Kingdom, with respect to their dependence on imports of foodstuffs and raw materials.

With respect to the United States, we are at the present time a net importer of foodstuffs. That may sound strange to some of you, considering the trouble we are having in Washington and

elsewhere with the tremendous agricultural surpluses that are building up in wheat and various other agricultural products — a good many of which are foodstuffs. But you have got to remember some of our imports. The most important of them is coffee. You might be surprised to know that on the average over the last few years the annual value of our imports of coffee has been \$1,300,000,000 per year. That is by far our most important import of any material. But, of course, we import various other foodstuffs, such as bananas, and so on. So at the present time if you take foodstuffs as a whole, the United States is a net importer; that is, the total value of our imports of foodstuffs exceeds the total value of our exports. I would expect that over time the United States would increasingly become a net importer of foodstuffs, although I do not think that within the next twenty-five years that dependence is going to be very large.

As I have already mentioned, the United Kingdom is terrifically dependent on imports of foodstuffs. Close to 50% of the total value of the consumption of foodstuffs in the United Kingdom is imported.

Russia, on the other hand, is nearly self-sufficient. The imports of foods that they do undertake are from their nearby satellites.

If you turn to raw materials — excluding foodstuffs and energy sources — the situation in the United States is about this. We produce domestically about 95% of our total consumption of raw materials and we export some raw materials. But we are again, a net importer of raw materials, including some quite important ones: copper, lead, zinc, iron ore, and so on. We are nearly self-sufficient on an over-all value basis, but we are quite dependent with respect to certain particular materials that are highly important in the manufacturing process. I do not think that there is any doubt but we are going to become increasingly dependent on imports of raw materials over time.

Two or three years ago, I spent a lot of time working on this range of problems as a member of the President's Materials Policy Commission, which turned out a report commonly known as the Paley Report (which I think is the best recent source of information on the raw materials position in the United States, including agricultural products, minerals, energy products, and so on). It was certainly the view of that Commission which I shared, after a fairly extensive study, that the United States is going to become increasingly dependent on raw material imports, and, looking twenty-five years ahead, we may find ourselves on a value basis in a situation in which something like 20% of the total raw materials consumed by United States' manufacture will be imported from abroad. Essentially, the reasons for that are easy to understand. In a number of materials, we have already exhausted the really high-grade resources. That is true of copper, zinc, lead, and a number of other things. Although our production is not likely to diminish in absolute terms a lot of it is pretty high-cost production, and, since there are cheaper sources abroad, there are economic reasons to draw from these foreign sources.

I, myself, do not think that this is a really serious strategic problem. I do not view with any great alarm the increasing dependence of the United States on imports of mineral products. The reason for that is that it is relatively easy in most cases to make adequate provision against a curtailment from these overseas sources. Of course the traditional ways of doing that are obvious. Most of these mineral products can be stockpiled in quite large quantities, or you can develop additional sources in less vulnerable areas — even though they are outside the United States. You can assist in the development of sources in Venezuela, Mexico, Canada, and so on. If we do not get into war, an effective process of priorities, rationing, and so on, is likely to assure military production of all the quantities that it needs. Then, finally — apparently by reason of military developments and military technology — we perhaps will not have to look forward (I do not know whether this is a hopeful or a pessimistic statement) to wars that

are very heavy raw-material consumers. So for all of these reasons, although I foresee an increasing dependence of the United States on foreign sources of raw material supplies, I am not very much alarmed by it if adequate precautions are taken.

With regard to the U. S. S. R., they are much less dependent than the United States on foreign sources of supply, and, in general, their mineral position seems to be very good. The best thing that I know on that subject is a book by Dimitri Shimkin, who was in Military Intelligence during the war and, later, in the Russian Research Center at Harvard. He has written a pretty exhaustive study of the U. S. S. R.'s mineral position, putting together all of the information on it that is likely to be available.

Looking at energy resources — here, of course, you are talking about coal, oil, gas, and hydroelectric power if you are talking about primary energy resources — the United States is more than self-sufficient with respect to coal. We are a fairly large net exporter of coal, perhaps to the extent of about 20 million tons now. We are a net importer of oil, and I do not think that there is any doubt about it that our net imports as a percentage of our total consumption are going to increase quite substantially over the next twenty-five years — imports not only from Venezuela, but probably from some extent from the Middle East (I will come back to this matter presently).

With respect to the United Kingdom, you get again a picture of extreme vulnerability of external sources of supply. The United Kingdom now produces all the coal it consumes, but it used to be a great exporter of coal. It now produces just about the quantity of coal that is consumed in Britain, and all evidence indicates that that quantity of output is not going to increase. Britain, of course, is completely dependent on oil imports for all of her oil consumption, and it looks as though as energy requirements rise in Britain she has got to meet these energy requirements either by oil imports or by the development of atomic energy sources at home.

Let me say a word or two about that. I spent a little time this summer as one of the U. S. delegates at the Atomic Energy Conference in Geneva, and there was a good deal of discussion concerning the British Atomic Energy Power Program. As most of you know, they are now going into the production of atomic power on a much larger scale than the United States and on a far larger scale than almost any other country. As far as I can see, the reasons for doing that are essentially strategic reasons. So far as we know anything about the present costs of producing power from atomic sources, they are still substantially higher than what they would be even if oil were used as a fuel — as it probably will have to be used increasingly in Britain. But, of course, there is no other source of energy other than coal, and, with the output of coal being pretty strictly limited, Britain will become in an increasingly vulnerable position with respect to its energy sources unless she does develop some kind of an alternative to oil. She will go on increasing her imports of oil, but I am sure that we are going to see a very rapid development of atomic sources of power in Britain.

With respect to the U. S. S. R., it appears to be completely self-sufficient regarding energy sources. Their coal resources are large. Their oil production has not been very large — certainly it is very small compared with that of the United States — but their oil reserves seem to be quite adequate.

All of this discussion of dependence on overseas sources of supply has a relation to our problem of what is the economic potential of a country for war in this sense: in order to realize the economic potential for war, a country has to be able to continue to produce. If it cannot supply its own requirements for raw materials, foodstuffs, and energy sources, and has to import from abroad, then, obviously, the question of how vulnerable are these foreign sources has a bearing on this problem.

I have talked about the size of the national income, I have talked about the composition of the national income in respect to

industry and agriculture, and that has led me into a consideration of the extent of dependence on foreign sources of supply. The next aspect of the national income which I want to consider that bears on this question has to do with the rate of growth of national income.

So far as one can see, the annual rate of growth or the trend of the United States' national income has been pretty constant now for a period of about seventy-five years. The U. S. national income on the average has increased at the rate of about 3% per annum on an accumulated basis. That means a doubling of national income about every twenty-five years. Everybody knows that the U. S. economy has not been an awfully stable economy in the past, so there are large variations around that trend. But I am talking about the trend of growth.

During recent years, the rate of growth of the Canadian national income has been slightly higher than ours.

The rate of growth of Western Europe as a whole has been definitely lower, or perhaps 2% per annum, although certain countries in Western Europe — for example, Sweden — have shown a rate of growth as large as the United States.

So far as one can see, the rate of growth of the Soviet national income is very much larger. If you are looking for the trend over the last couple of decades and a half, it appears to be somewhere in the neighborhood of 6%-8% per annum. The Soviet statistics say that it is very much higher than that: they say that it is 14%-15% per annum. I am relying on the estimates of colleagues of mine at the Russian Research Center at Harvard and on estimates by Professor Bergson at Columbia because these are the best people that I know of in the area of Soviet economic statistics. They say: "Squeeze down these statistics as you want, you cannot get them much lower than 6%-8% per annum." All of you having had an engineering training, it doesn't take any argument to convince you of what difference this makes if you are

talking about exponential growth rates. If you are talking about growth at an exponential rate over time, it does not take very long for a difference of that sort in accumulated rates of growth to make a great deal of difference.

I pointed out that a 3% rate of increase would lead to a doubling of the national income in about twenty-five years. A 6% rate of growth would double the national income in, say, about eleven years; an 8% rate of growth would double the national income in maybe six or seven years. So, although from the point of view of economic potential for war the United States looks pretty good vis-a'-vis Russia with respect to the size of the national income, with respect to its composition, and even with respect to vulnerability of raw material supplies, this problem of the differential in the rates of growth is a very serious problem indeed.

Why is there this difference? Of course the things which account for the rate of growth of a country are extremely numerous. There is the raw materials situation; there is the man-land ratio; there is the question of organization; there are all kinds of questions of public policy, and so on. But, so far as I can see, the two central issues, or the two central questions, that might explain this difference between the Russian and the U. S. rate of growth have to do with: (1) the rate of capital formation — the rate of savings and investment in these two different economies; and (2) the rate of technological change — the rate at which productive processes and products are being improved. I think that those are the two main factors.

When you look at the first of these factors — the rate of capital formation — the Russian rate of capital formation is very much greater than in the United States. During the last fifty or sixty years, the United States has tended year in and year out to invest on a net basis something like 10%-12% of its national income. The figures are no higher now than they were fifty years ago; on the other hand, they are not much lower than they were

fifty years ago. The U. S. economic process, as a whole, seems to generate year in and year out at a savings rate of about 10%-12% of the national income — and those savings are normally invested in productive enterprise.

We don't know much about the savings rate in Russia, but it cannot be less than 25%. The rate of capital formation is really very high. Of course one of the reasons that makes it high has to do with the dictatorship-totalitarian-terroristic structure of Russian society. The government itself can determine how much of the annual output is going to be consumed, even though it means that consumer incomes are not raised at all from one year to the next, and it can determine what share of the national output is going into investment. Totalitarian economies in this respect have a tremendous advantage over liberty-loving democracies.

With respect to the rate of technological change, nobody really knows much about that. But I think you probably could say (and maybe this is a comforting notion) that the rate of technological improvement in Russia to date has been high because it has been able to borrow very freely from technological and scientific developments in the rest of the world. A part of this very rapid rate of growth is undoubtedly due to the fact that Russia started on a low level and has been catching up, technologically speaking. Maybe, if you want to take some comfort from that, you could conclude that this particular source of rapid rate of growth in national income in Russia may be tapering off. There is, of course, this point — and it may be an important one: that measurement of the rate of growth starts in Russia from a very low basis indeed, and certainly for a few years it was very easy to get a high rate of growth. The fact that the base is continually enlarging may mean that there are increasing difficulties with time in extending this rate of growth.

There is one final aspect of national income that I want to mention as relevant to our subject: the question of the divertibility

of production from civilian products to military products, both in peace and in war. To what extent is it possible to compress the civilian sector of the economy? To what extent is it possible to expand the military sector of the economy? Here, again, at least in peacetime, totalitarian dictatorships have a great advantage over libertarian democracies. They have weapons of which the Government of the United States simply cannot avail itself. So in any kind of a peacetime period, when war does not seem to be very imminent, there is no doubt but what a totalitarian economy can divert a much higher percentage of productive resources away from civilian production and towards military production.

What determines that sort of process in the United States? Could the United States in peacetime spend much more than it does now for military production? What are the limitations to the amount that they can spend? Are they economic limitations? Have they to do with the effect of diversion from peacetime to military use on economic incentives (of course that diversion has to be accomplished by increasing taxes or by public borrowing in order to put funds in the hands of the military to spend)?

I, myself, feel quite strongly on this issue that the limits, such as they are, are essentially political limitations rather than economic limitations. So far as I can see, looking at this problem as an economist, there is really no economic reason why defense expenditures should not be nearly double what they are now. They are now running at the rate of roughly 35 billion dollars a year. The United States could spend 60 to 70 billion dollars, I am sure, without running into what you would call "economic limitations." A limitation of the sort of level of taxation required to accomplish this which would impinge so heavily on productive incentives that the total volume of the national income would tend to decline is what I would call an economic limitation. I do not think that is the limitation at all. I think it is a political limitation. It is the great difficulty of persuading Americans to pay more taxes, and the great difficulty of convincing Government officials

that balancing the budget is not a law that was handed down from somewhere in Heaven. It is something about which one can argue on both sides. I am sure that Secretary of the Treasury Humphrey feels quite different than I do about this matter. I am sure that he feels you could not spend another billion, two billion, or three billion without running into very serious economic difficulties and without running into things that would affect the efficient functioning of the economy. I do not think that that is so at all. I think that the difficulties are political difficulties.

Of course those political difficulties affect very seriously the kinds of taxes you can levy. If you are going to depend extensively on increasing the rates of corporate income taxes and individual income taxes, I would say there are some pretty definite limits and there are some incentive effects that would have to be taken into account. I think you could raise the lower brackets quite a lot — although I particularly would not like to see that done, and I imagine most of you would not like to see it done either. I think you run into incentive effects towards the upper brackets because of the very progressiveness of this individual income tax system. The normal corporate income tax is now 38%. Of course it has been 52%, and during the war it was higher than that.

The main reason which I have for thinking as I do about this is that during wartime we devoted to military purposes a much larger per cent of our national income than we are now doing. The per cent of the national income now going into defense expenditures is roughly 10%; during the war, it approached 50%. As high as it was during the war, there is no particular evidence that the level of the standard of living of most of the working men in American society declined in the absolute sense. Furthermore, other countries have for long periods of time devoted a much higher per cent than 10% of the national income to military purposes.

In order to do this effectively, one of the things which you want to try to do is to limit consumption. You are not particularly interested in limiting savings and investments. You want to encourage savings and investments because you have got to rely on this investment process to build up the facilities that you are going to need for a higher military production. So your primary purpose is to limit consumption. One of the best ways of limiting consumption is to impose a sales tax. The objections to a sales tax are not economic objections — it is a relatively easy tax to levy and collect, and it is a very productive tax — the difficulties are essentially political difficulties. This is all relevant to this final question: What about the “compressibility” (if I may use that term) of the national income in order to divert resources from civilian to military use?

Summarizing what I have said so far with respect to the various dimensions of the national income and its determinants, we have talked about the size of the national income and its relevance to war potential; we have talked about the composition of the national income — agriculture *versus* industry; we have talked about the question of vulnerability of foreign sources of supply with respect to the manufacturing process; we have talked about rates of growth of the national income; and, finally, we have considered what share of the national income might be diverted to military purposes in peacetime and war. With respect to war, I would say that war creates a political situation in which you can take measures that will put a very high per cent of your national income to military use. We saw that during the war, and Britain saw it during the war. I do not think that I need to elaborate on that further. So much for these various dimensions of the national income.

Let us turn now to the question of how a country like the United States proceeds to make its economic resources available for military use. Currently, of course, this is done simply by

bidding away these resources from the civilian sector of the economy. Taxes are levied; appropriations are made to the Defense Department; and the Defense Department, equipped with this purchasing power, goes out and bids away from the civilian sector of the economy what resources it can in the light of the funds which it has. In some cases it comes in as a competitor when goods produced are similar to civilian goods; in other cases, it attempts to secure the allocation of producing facilities to military purposes rather than civilian purposes. Currently, this bidding-away process is not leading to any serious kind of inflationary consequence. I would say there is a slight inflationary tension in the economy to date. The price level is going up infinitesimally, but it has been extraordinarily stable for the last two or three years — despite the fact that military expenditures have run from 35 to 40 billion dollars per year. The turning over of these funds for expenditure purposes has not produced any noticeable inflationary trend.

Of course when you look at the factors that do tend to produce inflation you have got to look not only at these military expenditures. You have got to look at the rate of consumer expenditures; you have got to look at the percentage of disposable income (*disposable income* is individual income after taxes). What is the per cent of disposable income that is being spent rather than saved? This tends at the present time to be running very high in the United States. You have also got to look at the total volume of investment expenditures. These are the three sources that impinge on prices and which will make the price level go up if the combination of them is extraordinarily high. If military expenditures are high, if the rate of investment is high, and if consumers are spending a very high per cent of their total disposable income, you are in for an inflationary situation.

The combination of all those elements at the present time is not producing a serious inflationary situation. If the military situation should change, however, and we would find ourselves with the necessity of doubling military expenditures, we would run into

a serious inflationary situation — and we would run into it almost immediately. There would be not only the increase in military expenditures, but it would involve an increase in private investments in the process of converting capital, equipment, and plants to military purposes. Also, during a wartime period it is pretty clear that the consumers' tendency to spend is intensely very high unless it is held down.

That raises the question: How rapidly could you increase military expenditures without running into this inflationary difficulty? The primary factor that bears on that question is this: How much unemployment have you got in your economy?

Let me say a word or two about the situation that existed within the United States roughly from 1938 to 1942. This was a period when military expenditures were increasing very rapidly, indeed, and where there was a concomitant increase in private investment. The price level did not move up with any terrible rapidity during that period. The main reason that it did not rise is that even in 1938 we had 9 or 10 million unemployed in the economy. This increase in expenditure from all sources tended simply to reemploy into productive use workers that were unemployed, and so we could expand our volume of output without serious price difficulty. Even so, we did have some measure of inflation. You are bound to have some measure of inflation, even if you have got a sizeable volume of unemployment, if the rate of increase in expenditures is very rapid. You are bound to run into bottleneck situations of one sort or another. After all, it takes time to adapt your plant and equipment from civilian to military production. When you have a heavy pressure of military expenditures on facilities that are not now completely adapted to the kind of production they have to undertake it takes time to create them, and you get more spending impinging on this particular area than the area can absorb. So, even under those circumstances you are apt to get some kind of a bottleneck inflation. But if you have a large volume of unemployment, you can increase military

expenditures quite rapidly without running into an inflationary danger.

Now, we are obviously in exactly the opposite situation: we are at full, or over-full, employment. If military expenditures were suddenly increased quite sizeably at the present time, you would inevitably run into a serious inflationary situation. That raises a question that may seem silly: Why should we be afraid of at least some inflation? I would say that the answer is that we need not be afraid of *some* inflation, but inflation has a way of quite easily getting out of hand. After all, we have gone through a lot of wars in the United States' history and we have never gone through a war without a sizeable measure of inflation. So, obviously, the economy can stand some inflation. But inflation can get out of hand. It is a kind of cumulative process, and if that cumulative process once gets into motion it is apt to have two very serious effects that bear on this question of war potential.

In the first place, inflation can affect production incentives quite seriously — and, particularly, saving incentives. If a man sees that the value of a dollar is falling very, very fast indeed, he is not likely to put his money in government bonds or in various other kinds of investment where he is going to receive a fixed return in dollars at the end of that period of time. So there can be no serious effects on production incentives — particularly, saving incentives.

Even more important than that, an inflationary process creates a tremendous amount of political instability that is very difficult to deal with. In any period of increase of the price level in any country there is no possible way of maintaining an even rate of increase for all elements in the population. Some elements in the population will have relatively fixed incomes; others will have incomes that move up rapidly. Profits tend to move up rapidly. Wage rates do not move up that rapidly, but under the impact of labor organization they have to move up fairly rapidly. Of

course all of the pension receivers in the society are on fixed incomes and most of your Government employees are on relatively fixed incomes. But in any process in which the price level is moving up rapidly, and in which the value of money is being lost, you are going to find developing in that society tremendous political tensions that will affect the whole morale of the country, and this will in turn impinge fairly seriously on military potential.

So it is necessary to handle the problem of inflation. How do you go about doing that? How do you in general, through public policy or action, go about seeing to it that the resources which you want for military production are made available to that military production? There are really two kinds of classes of controls that are designed to assure that end. One are so-called "general controls" (they are called "general controls" because, by and large, they impinge fairly evenly on broad classes of income receivers). In that category is *fiscal* policy (which is governmental policy relating to expenditures and taxation) and *monetary* policy (which is policy relating to the terms under which money can be created and borrowed in the system). In general in a democracy the further you can go with these general controls the better. These general controls permeate over the whole economy.

When you are talking about *direct* controls, you are talking about price controls; you are talking about rationing; you are talking about allocation of materials, and so on, and those impinge quite directly on some fairly specific interest groups. In a price control system, you can tailor the rate of increase to the particular industry that you want to affect. You have in that industry, however, a well-organized group of interests who are prepared to squawk in influential political quarters if you impose that kind of a control. Of course the squawks are going to be heard with respect to any kind of controls, but they tend to be less in a democracy with regard to general than to direct controls. This is a matter of serious concern the more broadly the effects are spread

throughout the economy, and, in general, fiscal policy and monetary policy belong in that broad category.

Obviously, what you want to do with the fiscal policy is to see to it that less money is put in the hands of the civilian sector of the economy, and, in particular, what you want to do is to see to it that less money is put in the hands of consumers. You have, therefore, to increase taxes and to devise a tax system which will accomplish that result. The best possible kind of a tax system for this purpose would be a sales tax, or a tax on wage incomes. You can obviously see how politically difficult it is to impose those kinds of taxes. But, looking at it from an economic point of view, that is exactly what you want to do. You want to cut down the amount of money in the hands of consumers for expenditure purposes. Of course that raises a revenue that can be used then for military production.

With respect to the monetary policy, presumably you want to make it more difficult for non-essential activities to be carried on. So what you do essentially is to raise the interest rate, seeing to it that the kind of production that you want to maintain in operation can find sources of capital — but raising the interest rate against those borrowers whom you do not want to see increasing their output. In particular, you try to raise the interest rate in those areas in which it will affect consumption expenditures, and that really means in the field of installment-buying or house-buying. You increase the amount that has to be paid down for an installment purchase, and you increase the interest rate that has to be paid. Essentially, those are the fiscal policy measures that are designed to take money away from consumption and put it into military production, and those are essentially the monetary measures; in other words, those are the general measures.

With respect to the direct measures, you are talking about price controls, rationing, allocations, and — if you can do anything about it — you should also talk about wage controls. These

are specific measures and they have a particular advantage in that they can hit quite directly the area of the economy you want to hit. On the other hand, there are tremendous political difficulties involved in the use of these measures. So in general I would say that in a democratic society which has to take account of political repercussions the government should go as far as it can with these general measures — with fiscal and monetary measures — but, of course, in a war emergency it will find it impossible to limit itself to that kind of measure.

Obviously, the purpose of rationing is to state the quantity of consumer goods of the particular sort which you are going to allow to be produced, and then see that they are equitably distributed as among the various consumers. Obviously the purpose of price controls is to assist your fiscal and monetary measures in preventing an upward movement of the general price level. Let me say this about it. An upward movement of the general price level can come from two main sources: it can come from the *expenditure* side or it can come from the *cost* side. I have talked about the expenditure side — you are going to get inflation in the economy if consumer expenditures *plus* investment *plus* military expenditures increase very rapidly as against an inability to increase your output of goods very rapidly.

But inflation can also come from the cost side if labor is so organized as to take advantage of any opportunity of increasing wage rates, which increase in wage rates then necessitates an increase in prices, which increase in prices then gives a justification for a further increase in wage rates, and so on. It can come from this wage-price spiral, too. So one of the purposes of your direct controls is to try to handle that wage-price spiral and to prevent inflation from that point of view.

Furthermore, you can accomplish by direct controls much more rapidly a shift of resources from civilian to military uses. If we had relied in 1941-42-43 merely on fiscal policy and monetary policy, we would still have found that there were plenty of

civilian cars being produced in the United States even though consumers had less income by reason of these fiscal measures. At some stage you have got to step in and say: "No more cars produced!" That is a direct control — and a very vigorous direct control. I am saying that in time of emergency those direct controls are necessary if you are going to divert to military production what you need.

I see that the end of my time is coming — I would have liked to have had a little more time to have talked about this general problem of how you shift resources in war emergency from civilian to military use. Let me now in a few minutes summarize what I think I have told you.

The first subject which I talked about was the various dimensions of the national income and how they impinge on war potential — the size of the income, the composition of the income, the rate of growth of the income, the vulnerability to external interferences, and, finally, the extent to which in peacetime production can be shifted from civilian to military use and what are the essential limitations. Here, again, I would emphasize that in the United States those limitations, as I see them, are essentially political rather than economic.

The second range of questions which I talked about was what is needed in the area of governmental policy in time of emergency if you are going to bring about this shift from civilian to military use. Here, you get into the question of whether it is really important to prevent inflation. I would say that it is not too important if inflation is held within certain limits. But your emergency inflation is not going to be held within those limits without some implementation from the field of public policy. Here, you run into your major general controls — fiscal policy and monetary policy — and those are going to do part of the job. If the job is not too big, they probably can do the whole of the job. But if the job is too big, then you have got to rely on direct controls. In a country

like the United States, it is only during wartime that these direct controls in any vigorous application would be found to be politically tolerable.

Thank you!

BIOGRAPHIC SKETCH

Professor Edward S. Mason

Professor Mason was graduated from the University of Kansas in 1919 with an A. B. degree. After graduation, he studied economics at Harvard and Oxford Universities, receiving an A. M. degree from Harvard (1920), a B. Litt. degree from Oxford University (1923), and a Ph. D. degree from Harvard University (1925). In 1948, he was awarded a Litt. D. degree from Williams College.

He has been on the faculty of Harvard University since 1923, beginning as an instructor in economics and advancing to full professorship in 1937. Since 1947, he has been Dean of the Graduate School of Public Administration.

Doctor Mason has served the Government in many capacities. He was an economic consultant to the Department of Labor during 1938-1939, after which he served on the Defense Commission for the next two years. From 1941 to 1945, he was chief economist of the Office of Strategic Services and was Deputy to the Assistant Secretary of State in charge of Economic Affairs in 1945. During 1946-1947, Doctor Mason was Economic Counsel to the State Department, also serving as Chief Economic Advisor to Secretary of State Marshall at the Moscow Conference in 1947.

He was appointed by President Truman as a member of the Advisory Committee on Management Improvement to assist in government organization in 1951, and was also appointed as a member of the Materials Policy Commission the same year. In 1946, he was awarded the Medal of Freedom. Doctor Mason has written books and articles on both industrial organization and international trade. A recent publication is, *Controlling World Trade: Cartels and Commodity Agreements*.