THE ECONOMIC CONSEQUENCES OF DISARMAMENT

13 February 1961

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COLONEL REID: General Mundy, Gentlemen: A few words have been passed from this platform by previous speakers reference the improbability of disarmament. Conferences and studies have been conducted for years on this problem. Many of them started before we were even members of this race. From the economic standpoint, however, very little has been said, written, or been done on the economic problems of disarmament. The economic problems require just as much emphasis as the military and the political problems.

In the past year and a half there has been what I termed a gentle movement into the field of studying the economic problems. Professor Melman says that "gentle" is too strong a word to use. However, there are a few university groups which at the present time are studying the economic consequences of disarmament or the economic problems of disarmament.

One group emphasizing this area is located at Columbia University. Among its other studies in this field, this group conducts a graduate level course on the economics of disarmament. Our speaker today, Professor Seymour Melman, is currently the head of this group. His subject is "The Economic Consequences of Disarmament."

Professor Melman, it's a pleasure to welcome you to your first appearance before the students of the Industrial College of the Armed Forces.

PROFESSOR MELMAN: The availability of knowledge about the economic consequences of disarmament affects the ability of our society to treat the general problems of war and peace; and you will agree that the problems of war and peace are central problems for the human race today.

Negotiation for disarmament involves risk. The maintenance of a military policy also involves risk. Readiness to take risks depends upon judgments about degrees of strength, of flexibility, and of mobility in given directions. Having knowledge about the economic consequences of disarmament gives greater ability to cope with the problems; and competence gives confidence, and the readiness to take the risks that must inevitably be taken.

We need to know, with specificity, what present resources are devoted to the military effort.

You can measure it first in manpower: about 11 million people in the labor force are directly concerned in the military effort. They are either in uniform or they supply materiel and direct services to those in uniform.

From 10 to 15 percent of the gross national product is allocated to military functions, and about 20 percent of the national income generated in manufacturing industry is due to direct military work. But estimating the resources devoted to these functions in average, economywide terms is somewhat misleading, for resources are concentrated in certain important ways. The percentage of military work is concentrated in indivdual industries. Looking at it this way, we see that in radio and electronics, about half of production is on military order, and in aircraft and missiles, over 90 percent of production is on military order.

Military work is also concentrated by occupation. About half of the scientists and engineers in the United States are engaged in military activities. There is major concentration of scientists and engineers in particular industries. Thus, as many as 85,000 scientists and engineers work in the aircraft and missile industry.

There is further concentration by regions. Southern California, the New York metropolitan area, the State of Connecticut, the suburbs of Boston all are concentration points of military-oriented industrial activities. In the State of Connecticut alone some 224 firms participate in work on missile contracts.

There are a number of types of disarmament agreements that might be made. Their economic effects would vary. A nuclear test ban would affect relatively few persons--only those engaged in specialized agency laboratories and the few firms who contract with the AEC in this field. However, subsequent moves could have wider effect. One plausible early-stage disarmament agreement might be a restriction on or complete cessation of production of fissionable material. Because we already have enormous stockpiles of fissionable material in the United States, and probably in the Soviet Union, ending further production would not drastically alter military capability, and is a logical early step.

Stopping production at the plants concerned calls for throwing the main power switches, putting a padlock on the gate, and setting a watchman on the premises. The inspection operation to insure that the plants do not operate is simply performed.

But closing down these plants would immediately affect the thousands of people who work in them. And second, it would affect many persons in ancillary industries. For example, some of the largest steampower stations in the United States have been built to supply the new plants of the Atomic Energy Commission--those around Oak Ridge, Paducah, and so on. If the AEC plants closed, the power output of the steampower stations would no longer be required. Neither would the fuel to operate the steampower stations be needed. In fact, if the power system containing these stations were to retain them because they are new and hence low-cost power producers, and if older, less efficient stations in the system were retired, then the reduction in fuel requirement would be even greater. Such a reduction in fuel requirements would have a dramatic effect on the coal fields in the Eastern States; and thousands of miners would see their livelihood vanish.

Another early-stage agreement might curtail freedom to conduct high-altitude missile tests. Such an agreement could be effectively monitored by a radar system around the world; even if tests for space exploration were carried out, they could be made under inspection and hence under control. But the curtailment of activity in many firms that design and make missiles would, again, end the jobs of thousands of people.

Agreements which reduce the numbers of people in the Armed Forces are also plausible as early-stage agreements.

The detailed effects of a disarmament process on employment can be estimated in terms of the proposals made by either the United States or the Soviet Union.

It would be disastrous to leave a vacuum where prosperity formerly depended on military work. Fortunately, there is no need to do so, for there is a wealth of alternative economic activity from which we can choose to serve the general welfare. Let me give a few examples:

Private estimates suggest that if world population growth continues, but at a slightly decelerating rate, then by the year 2000--40 years hence--the requirements for potable water in the world will be three times the present available supply. Providing that will require massive activity for desalination of water, for control of rainfall, and for decontamination of streams, and the like. One estimate has it that from 1960 to 1980 an investment of some $220 billion would be needed in the United States alone to produce potable water supplies to meet the needs of the foreseeable U.S. population; $1,500 billion would be needed to meet worldwide needs.

We have, now, certain notable areas of deficiency in American society--notable because these are repeatedly called to our attention--and I use the word "deficiency" because these are areas of inadequacy by our going standards. About 10 million school children in the United States go to school in antiquated buildings that are, by and large, fire hazards. Approximately 135,000 more teachers are needed nationally at this moment. New York City alone will have to have about 12,500 additional teachers in the next four years. Medical school capacity must be expanded by one-half if medical service is not to deteriorate.

Foreign economic development, to which this country is becoming increasingly committed, requires vast quantities of capital, and hence of equipment and services, which we as an advanced society can best provide. India, for example, must have major capital investments if she is to achieve a pace of economic development that will make possible a foundation for a free society.

A massive quantity of capital from the outside is essential in the next decade if India is to avoid an "Operation Bootstrap," a process of internal deprivation for the sake of amassing basic industrial capital. Internal deprivation is an invitation for internal political dictatorship. The only way to avert that danger is to lessen the need for forced internal deprivation. Outside capital is the necessary condition. Our society will therefore have to consider providing the capital in India and elsewhere as a major policy move.

There are unexploited, untapped areas of market development for consumer and other classes of goods within the United States. More than a third of the U.S. population now has an income of $2,000 to $3,000 a year per family; this section of society is virtually an underdeveloped area for the goods of life.

Various alternative areas of activity and expenditure have been suggested. The National Planning Association, in a report entitled: "Can the American Economy Adjust to Arms Reduction,"(4 January 1960) discussed plausible activities for the next five years and estimated the funds that they could absorb. Expenditure on education was estimated at 30 billion, on highways and skyways 75, urban renewal 100, water supply 60, health and hospitals 35; and expenditure on other programs--air pollution, research, and the like--at some 30 billion, with the total estimated at 330 billion over five years.

It would appear, then, that there is no scarcity of peaceful alternatives comparable to the magnitude of the military effort.

How are resources to be shifted from military to peaceful activity? What should be the strategy of economic conversion? Under what mode of organization can this conversion take place and can new activity be undertaken?

Immediately many possibilities are suggested. Thus, on one end of the scale, initiative could be limited exclusively to private firms, privately organized; at the other end, initiative could come exclusively from an agency representing the whole society--the Government.

In the United States we have a considerable tradition which allows a range of methods of organization. It would be possible in American society to make national appropriations of funds for broad purposes, but to organize the expenditure of these funds locally, so that the detailed administration of activities need not be nationwide or centralized. This is a crucial policy decision. My own preference is to avoid setting up a centrally-managed State capitalist administration of economic activity of the magnitude implied in an effective conversion program.

Dispersed initiative is feasible, for example, by using many of the private firms now on military contract to implement comparable peacetime contracts. The urban renewal of the lower end of Manhattan Island is a practicable unit for a single contract; a firm competent to carry out a multibillion-dollar contract for a military project should certainly be equally competent for an urban renewal project of great scope.

At the other end of the range of conversion problems is the necessity to cushion the shock to individuals who must make a personal transition from military to peacetime activity. This could be done through a series of programs which would make available retirement benefits, severance pay, fees for training for new occupations, allowances for movement to new areas. There is a precedent for this in the various veterans' programs. When such programs are operating, it becomes possible for each individual to make detailed decisions for himself; it is thus unnecessary to formulate detailed central plans for allocating each person.

The logic of this analysis is that, on the one hand, funds may be allocated in large blocks. On the other, the movement of individuals need not be centrally organized. This design is intended to avoid a centralized administration over individuals.

Within such a conception, activity may be executed by varied agencies. It may be carried out by private firms, by local public authorities,

by mixtures of private firms and public authority, by municipal, by State, by regional, by Federal activity. The principle is national allocation of funds, but local planning and administration of activities.

Conversion is complicated. It has problems, some of which we cannot foresee and some of which have no obvious solution. We must prepare for them as best we can, and we must know, at least, in what areas to expect them. These are the kinds of problems we must explore.

First, in industry. Because of the long duration of military activity, many management men have become specialists in producing for, and selling to, the military market. A marketing manager for an important military contractor visited our seminar in the economics of disarmament at Columbia University some time ago. His marketing problems were questions such as: should the firm concentrate its sales in one service, or should it diversify its sales among the three major services? Or his problems would extend to, say, the firm's contacts in one or another service, and the suitability of its facilities for supplying the requirements of a certain service.

These marketing problems are altogether different from those which confront a private firm, whose market consists of many firms in the case of capital goods, and of millions of persons in the case of consumer goods. This marketing manager was a highly trained specialist in a type of selling activity that promises to lose its importance under disarmament. The same applies to the general management of such firms. These men operate enterprises whose profit conditions are essentially risk-free.

Now, their managerial performance is rather different from those of private firms catering to the civilian market. Many of these managers operate largely with funds and equipment which they do not own. In the case of one important military contractor, as a management man put it to me: the Government owns everything in the company except some of the office carpets.

Engineers in these industrial firms present another conversion problem. Classically, engineers utilize knowledge of natural phenomena to meet a social requirement. If a society requires a certain object, and it must be produced within a given price range, the engineer is called on to use his knowledge of materials and processes to fashion a functional object that is salable within a given price range.

These cost criteria--which are usually important to our society--become blurred and lost to the engineer's art in work on military contracts. If an additional degree of precision in an instrument is desired, that requirement overrides considerations of cost. I do not mean cost may be without limit, but its range may be very wide. The result is that military engineers have become occupationally unsuited for a civilian market. Hence retraining would be required for these men.

Some retraining may also be necessary for production workers. Production skills, however, are substantially less specialized than either management or engineering. Since many functions in production are similar, no matter what the nature of the product being produced, less occupational reorientation may be needed.

A variety of institutions, including universities, will have conversion problems. Among the 100 largest (in dollar volume) military contractors are two universities--Massachusetts Institute of Technology and Johns Hopkins University. These data are from the latest available report of the Secretary of Defense. Clearly, an important part of the internal activities of large educational institutions in our society is oriented toward the military function. Reorientation and alternative use of their manpower, talent, and facilities will be called for.

There are problems of occupational retraining and relocation that have hardly begun to be defined. If the present activity in the missile field were to be curtailed, then a substantial number of electrical and mechanical engineers would be displaced.

Under present conditions finding other employment would not be a simple task, because the requirements of most other industries are clearly satisfied. There is some question whether society could provide employment under normal private market conditions for the thousands of engineers who might be freed by even a modest cutback; again occupational retraining is in order.

A degree of occupational retraining may in fact have independent virtue for the wider interest of society. Various occupations with high social value have received short shrift in the lopsided concentration on professions that pay. When I was an undergraduate, Class of 1939, high school teaching was regarded as one of the most desirable occupational goals. It was an occupation that had dignity, status, economic security, and a very acceptable level of income. That is not the case today, and our society has suffered in a degree we can't quite measure from the fact that able men today look elsewhere for status and remuneration.

The Military Establishment must be included in planning for peace. I think studies should be made of possible constructive utilization of military organizations and personnel. An idea for putting to good use the talents of the Army Engineering Corps comes immediately to mind. The Engineering Corps is one of the largest construction organizations in the world. The world has work of enormous importance for such an organization.

One of the most difficult, expensive, time-consuming processes in the economic development of unindustrialized areas is the provision of the network of transportation facilities, communication facilities, water supply, and power supply that are essential for an industrialized society to function. Those facilities are provided with the greatest difficulty in countries undergoing industrialization, usually because of the low level of national income. Major engineering organizations should be able literally to land on the beach of such a territory and install such facilities. It involves a kind of large-scale, creative, imaginative engineering which, to my knowledge, has yet to be tackled in an ordered way. Comparable opportunities should appear for the medical services.

Under disarmament a certain amount of inspection is called for. For example, an international radar net would be required to monitor an international agreement restricting high-altitude missile tests. It would have to be expertly operated. Moreover, such a worldwide radar net could also be the basis for an international air traffic control system. Organization and personnel competent in these areas would be most valuable.

A disarmament process calls for the formulation of appropriate pension plans for the military services, which recognize their services as valuable and deserving of adequate cushioning when society requires less of them.

A major area of opportunity for employment and activity in the United States is the revitalization of a large sector of our industry--the sector that produces both mechanical and electrical industrial machinery. This area of industry has been substantially underdeveloped. It is operating at a relatively low level of industrial labor productivity. Its products have been produced by methods that would be unacceptable in other industries--failing to utilize quantity production techniques and hence operating with low productivity, high cost, and high price.

Efficiency in the machinery-producing industry is critically important for internal development of productivity. Cheap machinery means

a readiness of management to buy it and use it. Expensive machinery means failure to purchase and therefore holds back productivity. Cheap machinery means a possibility for this society to supply the goods for international economic development. Expensive machinery means that other sources will be found.

For example: in the machine tool industry the Soviet Union produces a machine with 200 hours of labor per unit. Comparable equipment is produced in Western Europe with 400 to 600 hours of labor, and in the United States with 300 to 400 hours of labor. One basic machine tool is sold by the Soviet Union at about $3,500. Comparable equipment is sold in Western Europe for from $5,000 to $6,000 and in the United States for as much as $10,000. The contrast between $3,500 in the Soviet sphere and $10,000 in the United States suggests immediately that countries with limited capital will be hard put, whatever other preferences they may have, to seek in the United States the supplies they need for their industrial development.

I wish to make brief reference to the economics of disarmament in the Soviet Union. I mention it to excite your curiosity. I'm not going to resolve any major questions here.

We have been told from time to time that the economics of disarmament would not be a problem in the Soviet system, because of centralized managerial control over the economy and the society. There are bits of evidence suggesting that this may not be the case.

Dr. Oskar Lange, an important Polish economist and adviser to the Government, reported in an official address that there would be problems in the economics of disarmament in the Soviet sphere as well as in the West. He said these would be problems of a "frictional" sort, in the shifting of persons, in the movement of factories, in the change of production schedules. His estimate, however cursory, suggested problems similar to those that we would expect here as well.

In fact, in the Soviet sphere there are conditions which would aggravate conversion problems under disarmament. Severe housing shortages are general in Soviet countries. Such shortages sharply restrict the mobility of persons, and therefore industrial and occupational mobility.

Events in the last year have cast some light on these problems. The Soviet press has reported that some 250,000 officers were retired from the military service during a cutback of forces. Only about one-third could be placed in occupations comparable in income and status level to those they previously enjoyed. The other two-thirds were downgraded.

We know little and can do less about Soviet economic problems under disarmament. But we do know that Soviet economists and industrial managers would do well to turn their attention to the matter, for Russia, like the United States, has learned to depend heavily on her military industries.

I spoke earlier about the effects of particular disarmament moves on employment. What about the effect on employment of adopting some of the alternative programs I suggested? What does it mean for employment to spend a million dollars in urban renewal, in education, in medicine, in foreign economic development? We need the answers to this question in order to do realistic planning for economic conversion under disarmament.

We need to know, too, the nature of the impact, and the time span of impact, of particular curtailment activities. To my knowledge there does not now exist a serious study of what happens to a community when major contracts are withdrawn. What does closing down Mitchell Field on Long Island mean in terms of employment and economic activity in the area?

On 4 February 1961, the "New York Times" reported an Associated Press dispatch from Muskegan, Michigan, announcing that the Borg Warner firm was going to move a plant from Muskegan to a southern location. The move would end 1,800 jobs in the town. It is not a military plant, but the problem is similar. Again, the question is: what is the impact of such a withdrawal? What can happen in a community when it is left to its own resources? What can be done by outside agencies that is beyond the resources of the community itself? About a year ago I drew up a research proposal called "Problems of Converting Industry Under Disarmament." I outlined a set of problems whose solution would contribute to wiser policy in this area.

The importance of finding answers to the open problems of economic conversion lies first in the fact that we need confidence within our own society; that as a society we are responsible to each other. One of the tragic facts reported recently in one of the "distressed areas" of the United States is the comment of an industrial worker to an inquirer that: "No one seems to care what happens here."

I don't think it is acceptable in our society not to care about what happens under a major economic shift. I think ordered concern will make a difference. It will make a difference not only in the economic status of individuals, but it will give a political capability to our society that it could not have if such responsibility did not exist.

Industrial conversion under disarmament is a major economic and political problem of our society. In meeting this problem, in exploring it and defining its boundaries, in finding the knowledge we need, we give ourselves strength. We give ourselves strength not only to sustain economic change, but also in political vitality and influence.

On 30 October 1960, the "New York Times" reported an address by T. Coleman Andrews, former Commissioner of Internal Revenue. I quote Mr. Andrews:

"The greatest threat that faces America today is the chance that Russia's Nikita Khrushchev may come forward with a genuine peace proposal that cannot be refused. If the Soviets should present a sincere and reliable proposal for peace, it would throw us into an industrial tailspin the like of which we have never dreamed. It would result in the greatest depression America has ever known, because our arms industry, coupled with foreign aid, is responsible each year for 50 billion dollars in purchasing power."

This prognosis must not be allowed to stand.

COLONEL REID: Professor Melman is ready for your questions.

QUESTION: The Soviet Union in all of its disarmament proposals has used two years as the phasing period. All of the extreme figures that you have given on the effect of disarmament on the economy indicate that a much longer phasing activity is needed if it is to be orderly. Have you evolved a reasonable phasing period for the economy to have an orderly development?

PROFESSOR MELMAN: I do not have such an estimate of time requirement. Let me suggest by one example why I don't. Let us assume that we regard urban renewal as a significant area of activity. The question arises, how long does it take to get approval for one of the available Federal loans to carry out an urban renewal program? I don't know how long it takes to get that from the time of first application to the time one gets the "go ahead," where you can call in the architect and the contractor and lay down the first construction plan. There appear to be a multitude of questions of that sort to which we have no clear answer.

There are other matters on which it would seem that we have better answers. For example, suppose we knew that a given factory is competent to produce product X, which it now produces for military stock.

The engineers of that factory, given an appropriate leadtime, could probably make plans for rapid conversion.

Some of you may recall that in 1945 it literally happened that a workman finished working on the last product coming down a line of military goods, turned around, and started assembling the refrigerators that came down the next line.

We have an estimate from a recent study which says that under conversion conditions, the aircraft industry, without a major program of Government investment, might continue about half of its present personnel. Under those conditions its range of products could include: commercial aircraft, monorail trains, electric cars, housing sections, and hydrofoil boats. How long a period is required for managerial planning, in addition to the technical industrial planning, for such a change? At this moment we don't know.

QUESTION: I was aware that you considered taxes as an element of stabilizing the economics of disarmament, where you gave the consumer more money and he could buy more products, such as was the case at the end of World War II. They don't have it now.

PROFESSOR MELMAN: There is a dispute among economists who are expert in fiscal matters as to whether society is best served by making across-the-board tax reductions, or by making other allocation of the tax revenues brought in. The discussion includes questions such as, would it be possible to make different types of tax reductions so that, for example, the lower-income third or half of the population would be given substantial tax reductions, while a rather smaller tax reduction or possibly none at all would be given to the rest. The logic is that low income sectors are the area where tax reduction would immediately result in new requirements for all manner of durable consumer goods, whereas such an effect is not likely when a tax refund is made to persons with $10,000 or more income.

QUESTION: Relative to the last question, on the subject of whether we have a tax reduction as a part of the conversion program, wouldn't this greatly depend upon the economic conditions existing at the time of any such disarmament agreement?

PROFESSOR MELMAN: That again is a matter on which general economists and fiscal specialists have difference of views. But when you say it would depend on the general economic conditions, you should keep in mind that our knowledge and competence to carry out conversion

to more peaceful activities are a major part of what you would call the general economic conditions.

QUESTION: Would you address yourself to the degree of capacity utilization in many of our industries during the last few years?

PROFESSOR MELMAN: If capacity utilization in, for example, many consumer goods industries--soft and hard goods--were high, then some additional production capacity would be needed if consumer purchasing power were greatly enlarged. But capacity utilization has been low. Therefore, available industrial capacity could cope with demands of enlarged markets.

The several business recessions since the Second World War have been sequentially more severe. The recovery peak reached after each recession has been sequentially lower. That is not a basis for expecting a repeat of the 1945-46 experience.

A cursory check will show that we have an ample supply of both durable and soft consumer goods, and of industrial equipment, for the existing markets. Let me emphasize, for the existing markets and within the existing price structure. There would, contrarily, be a great demand for housing if it were available at a price that the market does not now provide.

QUESTION: Sir, a number of speakers over time have referred to this problem of the use of our manpower, the number of workers entering our labor force, and the like. How do you get into the study of this? Do you follow the requirements of a research area that are stimulated by the university under a research grant, or a private foundation, or are these studies stimulated by the Government itself?

PROFESSOR MELMAN: I got into this area because I decided that I wanted to be in it. I proceeded to accumulate knowledge myself, and I invited two other members of our faculty--one an economist, Professor William Vickrey, and another a business economist, Professor Emile Benoit--to join in sponsoring a seminar on the economics of disarmament. We went to the dean of the Graduate Faculties and said: "We need some money to pay for postage and to pay an honorarium to speakers that we may invite. Could we get some money?" He said we could have $2,000 from a certain fund. My department put up $500, the Economics Department put up $500; and that's how this seminar was financed.

Second, there has been a growing tradition that the only way to get something off the ground is to get an allocation of not less than a couple of hundred thousand dollars, to open up a suite of offices, hire a fleet of secretaries, and proliferate interoffice memoranda, progress proposals, interim reports, and the like!

I hope that men in other universities and other institutions will find it possible to recognize here an important area of problems and will undertake activity within their individual competence to deal with particular parts of it. Every particular contribution makes us better able to cope with this array of questions. Thus far it appears that many men have been fearful of approaching these questions, for all sorts of reasons; perhaps this discussion will give somewhat more optimism and readiness to go into these matters.

COLONEL REID: Professor Melman, on behalf of the Commandant and the College, it's certainly a pleasure to have had you here to speak to us and to rephrase in our minds some of these questions which you have just mentioned.

Thank you, sir.