Economic Impacts Of Disarmament

UNITED STATES ARMS CONTROL AND DISARMAMENT AGENCY PUBLICATION 2

Economic Series 1

Released January 1962

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington 25, D.C. - Price 15 cents

ECONOMIC IMPACTS OF DISARMAMENT

UNITED STATES ARMS CONTROL
AND DISARMAMENT AGENCY

A REPORT
OF THE PANEL ON ECONOMIC IMPACTS OF DISARMAMENT

Submitted to

THE UNITED STATES ARMS CONTROL AND DISARMAMENT AGENCY

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FOREWORD

This report was prepared by a panel of experts under the chairmanship of Professor Emile Benoit of Columbia University, at the request of John J. McCloy while he was Adviser to the President on Disarmament. It was completed and submitted to the United States Arms Control and Disarmament Agency after the latter had been created by Congress as the successor agency to the Disarmament Administration of the Department of State.

The act establishing the Arms Control and Disarmament Agency specifically directs the Agency to conduct research and develop studies regarding "the economic . . . consequences of arms control and disarmament, including the problems of readjustments arising in industry and the reallocation of national resources." The report by the Panel on the Economic Impacts of Disarmament is a first significant development in this area of responsibility.

I believe the report will be of broad interest. The panel of experts, who served in their individual capacities, was drawn from the U.S. Government, from industry, from labor, and from the academic community. They have examined the problem of the economic impact of disarmament on the basis of a disarmament model devised by them. They conclude that, while the economic problems which may be expected in the event of disarmament are by no means insuperable, these problems do require the development of sensible adjustment policies and vigorous government leadership for solution. They also point out that the impact of disarmament would only accentuate structural problems which already exist as the result of technological advance and other developments in our economy and that, if these problems are overcome, achievement of major national goals will be greatly facilitated by the use of the human and physical resources released from the defense program.

I believe the report will contribute to a better understanding of the implications of disarmament for the economy, and I hope that its publication will stimulate further study and discussion of this vital aspect of disarmament.

The opinions and conclusions presented in this report are, of course, those of the panel and do not necessarily represent the views of this Agency or any other agency of the United States Government.

WILLIAM C. FOSTER, *Director*
United States Arms Control
and Disarmament Agency

WASHINGTON, D.C., *January 1962*

TRANSMITTAL LETTER

OCTOBER 24, 1961

TO THE HONORABLE WILLIAM C. FOSTER:

I am pleased to transmit herewith the report of the Panel on Economic Impacts of Disarmament based on extensive discussions of our panel since last June, and utilizing research conducted by the Program of Research on Economic Adjustments to Disarmament, of which I have been the Director. It is my understanding that the report is accepted as to its broad emphasis and conclusions by all members of the panel, although individual members might have some reservations with respect to particular assertions, emphasis, or treatment. It is understood, moreover, that all panel members subscribed to this report only in their individual capacities and without commitment as to the Government agencies or other organizations to which they may belong.

The report seeks to summarize the various sources of concern within the country as to possible economic difficulties arising from general and complete disarmament, to project the net reductions in defense expenditure (after various offsets), and to appraise the likely economic impact under various assumptions with respect to adjustment policies.

Respectfully submitted,

EMILE BENOIT
Chairman

Report of the Panel on Economic Impacts of Disarmament

Introduction

Threats to national security now require an improvement in U.S. military capabilities. It is important at this time to emphasize that the U.S. Government in no way abandons its goal of general and controlled disarmament under international law with international security maintained by a strong international peacekeeping authority. The United States has not relinquished the hope that, when it is made sufficiently clear that aggression or threats no longer promise to achieve any useful result, the ground will be laid for an acceptance by all nations of a genuine disarmament agreement in the above sense in the interest of avoiding the grave dangers and heavy burdens of modern armaments.

The conclusion of a satisfactory disarmament agreement would create serious apprehensions about the potential economic impact. While the Soviet Government has recently conceded that the United States and other Western nations could disarm without major or permanent ill effects to their economies, this is by no means obvious to public opinion generally, either abroad or at home. There exists a widespread and understandable fear, especially on the part of defense industries and workers in these industries and in the armed forces, of the economic disruptions connected with a disarmament agreement.

To dispel misconceived or exaggerated apprehensions, as well as to help develop appropriate policies for handling the genuine problems involved, it now seems appropriate that the U.S. Government undertake a serious and objective study as to the extent to which a disarmament program might have adverse effects and the measures which might be required to avoid or soften unfavorable economic impacts.

A task force of economic experts drawn from the universities, Government, business, and the labor unions has, therefore, been assembled to make a preliminary report on this subject. Its purpose

has been to determine the chief elements in the problem, to collect and summarize the results of previous research in this general area, and to set forth tentative conclusions on the basis of the preliminary and partial evidence so far available.

The broad conclusions of the panel put in a very summary form are as follows:

(a) That disarmament of the type, and at the pace which the panel considers to be implied by the United States Program for General and Complete Disarmament in a Peaceful World, submitted to the United Nations on September 25, 1961—after allowance for proposed expansion in National Aeronautics and Space Administration (NASA) and civilian Atomic Energy Commission (AEC) programs and the requirements of disarmament inspection and international peace enforcement—should create small danger of provoking immediate depression in our economy, assuming sensible adjustment policies and vigorous Government leadership to dispel adverse effects on business and consumer anticipations and to provide reassurance that aggregate demand will not be allowed to decline precipitantly;

(b) That a steady decline in defense spending spread over several years may prove a significant drag on the economy and pose serious problems for policymakers. These problems can be mastered by the application of appropriate policies, the chief obstacles to which would be political resistance rather than deficiencies in our economic knowledge;

(c) That structural problems in particular industries or areas are unavoidable and could be serious for the individuals, companies, and communities prominently affected;

(d) That the alleviation of these structural difficulties may require a variety of adjustment programs, some providing assistance for the retraining, temporary support, and relocation of individuals and reconversion and diversification of enterprises, some promoting the importation of new industries into areas hard hit by the closing of defense plants and installations, and some, perhaps, seeking new publicly supported uses of national importance for part of our existing defense resources, particularly our capabilities in research and development;

(e) That included in the latter category might be research and development programs on technological bottlenecks impeding international economic development, which could also make a significant contribution to one of our major foreign policy objectives;

(f) That the impact of disarmament would only accentuate structural problems which already exist and which will have to be solved anyhow if the nation is to produce up to its full potentialities;

(g) That if these problems are overcome, achievement of major national goals will be greatly facilitated by the use of the human and material resources released from the defense program;

(h) That within wide limits the Nation can afford to have as high or as low a level of defense expenditure as is deemed politically desirable and should feel no constraint on the economic side in adjusting defense expenditures to whatever level seems best to accord with our political objectives. However, advance planning by Government at all levels and by business firms, labor unions, and other private organizations is required if the economy is to adjust smoothly to significant changes in the level of defense spending, particularly such as would result from general and complete disarmament.

The Problem [1]

The chief public concern about the effects of disarmament is the possibility that it might create a sudden and severe decline in economic activity, i.e. a depression. Another danger, of a less dramatic but possibly more realistic character, is that a sustained decline in defense expenditures could impair the long-term stability and growth of our economy. Another obvious and unavoidable problem is that certain companies, industries, workers, and communities that are heavily involved in defense activities may face serious structural readjustment problems even if overall demand can be kept high and no general decline occurs. Shifting people and resources to new uses takes time and may well create considerable hardship for the parts of the economy that have to make the shifts.

The reasons for concern can be set forth briefly. The defense program absorbs nearly a tenth of the total U.S. production of goods and services and employs, directly and indirectly, a like percentage of the labor force. (This is inclusive of personnel in the Armed Forces and in the Defense Department.)

In some industries the dependence on defense employment is especially high. Approximately 95 percent of the employment in aircraft and missiles, 60 percent in ship and boatbuilding, and 40 percent of the employment in radio and communications equipment is dependent on defense expenditures. On the other hand only 6

[1] The tables referred to below are carried at the end of the report.

percent of employment in transportation, 2 percent in construction, and less than 1½ percent in trade and services is similarly dependent on the defense program; and much of this dependence is indirect. (See Table I.)

In some areas of the country the dependence on defense production is already very tangible and a serious source of concern. For example, in 1959 missile and aircraft production provided at least 82 percent of the manufacturing employment in San Diego, 72 percent in Wichita, 53 percent in Seattle, and 27 percent in the Los Angeles–Long Beach area. Certain States are clearly subject to disproportionately heavy economic impacts because of the relatively heavy dependence of their manufacturing on major items of procurement. Table II shows 14 States with above-average dependence on major procurement for their employment, and 9 additional States with exceptionally heavy dependence on Department of Defense (DOD) payrolls to sustain their income. Kansas, Washington, New Mexico, California, and Connecticut appear as the cases of most severe relative dependence on defense manufacturing, with 20 to 30 percent of their manufacturing employment in major procurement; Alaska, Hawaii, District of Columbia, and Virginia have the heaviest dependence on DOD payrolls, with 10 to 26 percent of their income supplied by military pay and allowances or civilian wages and salaries. It is disquieting to note that several of the States with heavy dependence on major procurement for employment are also well above the average for dependence of income on Department of Defense payrolls. This is notably true for New Mexico and Utah, but it is also true to some extent for Kansas, Washington, and California.

Moreover, it appears that defense expenditures are particularly important in precisely those industries, notably the electronics and aerospace industries, that have shown the most rapid pattern of growth and technological innovation and provided a large share of the support for research and development. The defense program now finances about half of all industrial research and development and one-fourth of all pure research.

The projected earnings of firms heavily engaged in the defense program have been very highly capitalized in the stock market, and the present level of their common stock value would appear to be quite vulnerable in the event of any major reduction in defense expenditures.

Moreover, the industrial character of the defense program has been changing in ways that may intensify the problem of adjustment in major defense cutbacks. By contrast with the situation during

World War II, and even the Korean War, a larger share of defense industry today is in the hands of highly specialized defense contractors whose products bear little resemblance to any civilian items, who have limited experience outside of defense production, who have never "converted" from civilian production, and for whom entry into production of civilian end-items would typically involve not so much "reconversion" as radical diversification. Their attempts to date to get into civilian lines of production have been frequently unprofitable.

Some people also fear, rightly or wrongly, that our economy has suffered certain changes since the 1945–53 period as regards both structure and demand and that these changes might make it more sensitive to deflationary stimuli and less capable of easy and automatic readjustment to cutbacks in defense demand.

Disarmament Assumptions

In attempting to project the economic impact of disarmament, it is first of all necessary to have a reasonably clear-cut set of assumptions about the nature and timing of the disarmament process. While these matters are and will continue to be the subject of negotiation, the ultimate outcome of which can hardly be predicted at this stage, it is nonetheless necessary to make assumptions about the general character of the disarmament process with respect at least to those factors that will have a decided economic impact.

The disarmament assumptions we used in making our projections are intended to be generally consistent with the major U.S. disarmament objectives and policies as set forth in the proposals presented by the President to the United Nations. The model was, however, designed by the panel. The timing and phasing of disarmament used in the model are, in the judgment of the panel, the optimum that can realistically be expected from the negotiation and implementation of general and complete disarmament in view of the fundamental and complex factors involved and in view of the negotiating history of recent years. However, the specific measures and dates assumed in the model involve matters upon which determinations of U.S. policy have not yet been made.

With a different concept or model of disarmament, the economic implications might be considerably altered. For example, an arms control agreement involving a major change in the weapons mix might involve no reduction in defense expenditure and, because of the heavy new inspection costs, might even make for some net increase in mili-

tary budgets—at least for a time. Similarly, a crash disarmament program, such as might arise out of a crisis situation described by T. C. Schelling under the heading "Reciprocal Fear of Surprise Attack," or a region-by-region sequential disarmament pattern as suggested by Louis Sohn, would considerably change the economic impact. Such more remote alternatives have been ignored here, to concentrate on the possible implications of more conventional conceptions of disarmament.

Even within such a conception, some of the elements are economically more strategic than others. Any important changes made with respect to these elements during the course of negotiation of a disarmament agreement could, in some degree, undermine the projections and analyses of this report.

One crucial assumption in this sense is with respect to the date of the cutoff in new production of delivery vehicles and nuclear warheads. Another is the pace of demobilization of personnel. Another is the magnitude and type of inspection, police, and deterrent forces established under an international control organization (or, as the September 25 plan calls it, I.D.O.—International Disarmament Organization) and responsible for administering and enforcing the disarmament agreement. The rate and timing of the buildup of such forces is likewise very important. (It should be noted that the cost of the inspection service is a particularly uncertain item, with a very wide dispersion of estimates among experts with respect to the type and amount of inspection activities and equipment and even with respect to the probable costs of particular inspection systems.) Another assumption of obvious importance is with respect to the total duration of the disarmament program. Finally, the projected severity of the disarmament impact will also be affected by the assumptions with respect to the size of the national forces at the beginning of the program and after disarmament is completed.

Our model is in line with informal estimates of 1965 defense expenditures as falling within the range of $50 to $60 billion. We have used the upper end of this range in order to reduce the likelihood that our projections of disarmament impacts would underestimate the extent of the problem. With respect to other economically strategic assumptions mentioned above we have sought to choose those assumptions which seem most in line with the official disarmament proposal and have checked the quantitative estimates with the opinion of experts wherever possible—adopting compromise figures wherever the range of expert opinion was itself very wide.

The disarmament model adopted by the panel for the purposes of this report, and its implications for U.S. security expenditures—national and international—are shown in Table III. In approximate terms, it projects a decline in defense expenditure of $17 billion (1960 dollars) in the first 3 years, a further decline in national defense programs in the second stage of $12 billion partly offset by a $3.5 billion contribution to international inspection costs, and so forth (i.e., a net reduction of about $8.5 billion), and a further net reduction in the third (two-phase) stage of $13.5 billion in the last 6 years. The total net reduction in U.S. security expenditures (after allowance for the U.S. contribution to the costs of an international organization responsible for inspection, police, and deterrent functions) would thus be about $38.5 billion over a 12-year period, with roughly $6 billion a year in the initial 3-year period.

These cutbacks might be partly offset by a buildup in certain programs which have been closely associated with our defense effort in the past, such as the NASA and the civilian AEC programs. The projections with respect to these programs shown in Table III include an allowance for the NASA moon program recently announced, et cetera. If the revised projections prove realistic, the offsets provided by the expansion of both "associated programs" together would be close to a total of $2.5 billion over the initial 3-year period of maximum defense cutbacks. The total expansion of these programs over the whole disarmament program is estimated at $6.8 billion, based on existing plans. If these programs are accelerated between now and 1965, this could result in a slower pace of buildup between 1965 and 1977 than assumed in our model but would more likely be associated with a corresponding increase in the size of the 1977 program so that the projected increase between 1965 and 1977 might not be greatly changed. Our projections, incidentally, do *not* involve additional space programs which might be adopted as specific disarmament offsets.

If we take account of the offset provided by the costs of inspection forces and the buildup of the NASA and civilian AEC programs, we find a net reduction in U.S. security and associated expenditures of about $22 billion in the first 6 years, with only about $5 billion a year during the crucial introductory 3-year period of maximum impact.

The Fear of Depression

The chief popular economic fear of disarmament is that it might suddenly lead to a severe depression. This seems to us a rather improbable contingency, assuming the relatively slow pace of the cuts as set forth herein and the strong likelihood of some offsetting policies. A net reduction of defense expenditures of only about $5 billion a year, or less than 1 percent of the gross national product, even in the initial period of maximum impact, would be a far smaller percentage of the GNP than was represented by the post World War II and post-Korean defense cuts, which for a time were, respectively, 30 percent and 3 percent of GNP.

It would, of course, be possible in the absence of further compensatory action for an initial deflationary net impact of even $5 billion a year to cause a serious slowdown, via the action of the multiplier. Under these conditions, the reduction in defense spending would be reflected in reduced incomes for employees of the defense industries and of the industries supplying, directly and indirectly, the defense contractors. Profits (after taxes) in these industries would also be reduced, and this almost certainly would be reflected in some cutback in dividends. Declines in personal incomes would be mitigated by reduced taxes and increased transfer payments, but, given existing laws, a dollar reduction in defense spending would cause a fall in disposable income leading to about a dollar reduction in personal consumption. In addition, the decline in aggregate demand would lead to a reduction in capacity and inventory requirements and thus to some fall-off in investment. As a result, a $5 billion yearly cutback in defense spending might well generate a total decline of aggregate demand of between $10 billion and $12 billion a year, if compensating policies were not brought into play.

Yet it is hard to believe that we would stand by idly and let the multiplier have its full impact by failing to take some further compensatory action. Public pressures would be strong to reduce taxes and to permit the expansion of some high priority nondefense Government programs that are being kept on ice during the period of heavy defense budgets. It seems unlikely that we would repeat the mistake made in 1953–54 when Federal nondefense expenditures were cut by over $2 billion at the very time that heavy cuts were being made in defense. (It should be noted, moreover, that tax cuts and a relaxation of monetary policy in 1954 prevented the GNP from declining as much as military spending, i.e., in effect, the multiplier effects were more than offset.)

Perhaps the chief danger of a precipitant decline would be psychological. We would be facing an extended series of future defense cuts over more than a decade ahead. We have never had a situation exactly parallel to this in our history, and we cannot be sure just how this would affect business and consumer anticipations and expenditure plans. Pessimism might be heightened by a major break in stock market prices, which, as indicated above, would be likely to occur at such a time.

A great deal might depend on whether the Government could provide sufficient reassurance by demonstrating that a definite program of offsets had been readied and would be promptly implemented. In this connection, people's expectations would be considerably affected by their experience in the years prior to disarmament. If public policy had succeeded in reducing excessive unemployment and restoring a rapid rate of growth, the economy could more readily absorb deflationary impacts without serious hurt, and confidence in the Government's power to protect prosperity would be higher. On the whole, it is our judgment that a sharp letdown during disarmament remains unlikely and should be avoidable if the Government exercises a modicum of economic sense, foresight, and courageous leadership.

Long-Term Adequacy of Demand

Dealing effectively with the year-by-year declines in defense expenditure may be much more difficult. It will be a problem to maintain sufficient aggregate demand to utilize the resources being released year after year by the defense program as well as the rapid expansion of our industrial potential. In particular, we appear to be in for a period of exceptionally rapid growth in the labor force, and some authorities believe we may also be on the threshhold of a period of exceptionally rapid productivity advances. Yet failure to find constructive use for our growing resources might be especially dangerous in a postdisarmament situation because the international rivalry between the free and regimented societies might center to an even larger extent than at present on their respective economic performances and their ability to supply aid and leadership in international economic development. Certainly a continuing and growing burden of excess unemployment and a marked failure to restore a rapid growth of industrial output could gravely affect our international prestige as well as impair our domestic morale.

Some reassurance may be found in the relative success of the demobilization experience after World War II and after Korea. Yet these experiences (especially the former) occurred under conditions sufficiently different from those prevailing now, or possibly prevailing at the time of a future disarmament, that their relevance is open to question. Nor were these experiences so unqualifiedly successful that a repetition would fully meet our requirements in the sixties.

The situation in 1946 was one of hyperliquidity and repressed inflation, based essentially on $255 billion of wartime deficit financing in conjunction with war-imposed shortages. This had contributed to an abnormal rise in savings and consumer liquidity during the war years. The savings rate rose to over 25 percent in 1944, and total personal savings accumulated during the war years totaled over $160 billion. With the sharp decline in the rate of savings after the war (it fell to the highly abnormal low of 2.8 percent) and with a rapid rise of consumer debt (from the very low level of 4.5 percent of disposable personal income), there was a tripling of expenditures on consumer durables and a tenfold increase in nonfarm residential construction between 1944 and 1948. In recent years consumer debt has been running at around 15 percent of disposable income and the savings ratio has shown great stability at levels between 6 and 8 percent. There is simply nothing in our recent experience suggesting that any comparable jump in consumer expenditure financed out of savings or consumer debt is in the cards in the event of defense cutbacks. (This does *not* imply, of course, that consumer expenditure will not increase rapidly if disposable income is raised fast enough!)

Moreover, while the 1945–48 reconversion was accomplished with an unexpectedly low rate of unemployment, it did involve sharp declines in the total labor force, hours of work, and industrial output. These reductions were a reaction to the relaxation of the unusual economic pressure of the war years. In a peacetime situation in the 1960's such a decline in the supply of labor is to be neither expected nor welcomed.

The post-Korean demobilization, set against an optimistic background of full employment, recent inflationary price trends (in 1951), rapidly rising equity values in homes, and a still fairly low level of consumer debt, was not without some discouraging aspects. With the decline of about one-third in the real U.S. defense expenditures from 1953 to 1960, industrial output (which had risen 54 percent from 1946 to 1953) rose only 18 percent from 1953 to 1960. The $6.7 billion cash surplus in 1956 and 1957 was associated with a marked decline in the growth rate and a substantial increase in the year-in-

year-out rate of unemployment. These remarks, of course, do not imply that the U.S. economy requires rising defense expenditures to prosper. They do suggest, on the other hand, that failure to supply adequate offsets for defense cuts may impose severe restrictions on the attainable rate of growth.

Popular beliefs and attitudes responsible for our failure to provide adequate offsets to defense cuts in the past may well continue to give us some trouble in the future. One such attitude is the fear of inflation, which may result in deliberate efforts to restrain increases in demand lest too great opportunities be thereby afforded for producer elements to raise costs. Another relevant attitude is an antipathy to budget deficits and national debt and a conviction that at even a moderately high level of employment, and before full employment and rapid growth have been restored, we should consider ourselves morally obligated to try to achieve a budget surplus for reductions in the national debt.

There is at least some evidence that attitudes of this sort might lead to attempts to reduce the national debt during a period of major defense cutbacks. A recent survey conducted by the University of Michigan Survey Research Center, on behalf of the Research Program on Economic Adjustments to Disarmament, found a strong public attitude favoring the use of defense savings for national debt reduction, with 20 percent of the respondents choosing it as the best use for such savings and another 15 percent naming it as their second choice. This use of defense savings was far more popular than an expanded foreign aid program and just as popular as a reduction in income taxes. Respondents with college education were particularly strong for debt reduction.

It may be assumed that such attempts to obtain a surplus for debt reduction would have a deflationary effect even though some offset might be provided by the actual use of the surplus to reduce the national debt, if the resulting increase in investor liquidity and expansion of bank reserves would facilitate private borrowing and investment. Except under unusual inflationary conditions the net effect of obtaining the surplus together with using it to reduce the national debt would, however, be clearly deflationary.

Even if adequate offset measures are approved there may be institutional difficulties in having them implemented quickly enough to neutralize the effect of the cutbacks. In this connection it is important to note that the economy responds sharply not only to

declines in defense expenditures, but also to *declines in defense orders*.[2] To do the most good therefore, offsetting measures should, if possible, be initiated at the very time that defense contracts are canceled and before defense expenditures—not to speak of actual production and employment—begin to drop. The complex and slow-moving machinery of Congress, and its need to consider measures from the point of view of regional and local interests, would appear to make any such anticipatory response difficult or impossible. Much depends on congressional willingness to grant the executive branch adequate discretionary authority to accomplish such an objective, e.g., in the form of standby public works or tax reduction bills to be implemented only under conditions specified by the Congress in advance, or in broad congressional authorization to the President to make limited changes in certain tax rates for stabilization purposes as proposed in the recent report of the Commission on Money and Credit.

A heavy emphasis on tax cuts as a stabilizing measure may encounter additional difficulties. Substantial tax cuts will raise fundamental questions of tax equity as between various classes of taxpayers and complex questions of tax efficiency and the need for tax reforms. As a result, it may prove difficult or impossible to time tax cuts so as to provide a sufficiently prompt and adequate offset to defense cuts. Furthermore, owing to the operation of the "balanced budget multiplier," a reduction in Government expenditure, even if exactly matched by a decline in taxes actually collected, will not provide quite as much of a stimulus to the economy as is lost by the decline in public expenditure.[3] To provide adequate offsets, therefore, tax reductions would have to be even greater than the net reductions in Government expenditure, raising the politically sensitive issue of deliberate deficit financing, and possibly encountering the troublesome obstacle of the national debt ceiling.

[2] Thus in 1953, between the second and fourth quarters there was a decline of $2.8 billion in defense obligations for hard goods, with an associated drop of $9.7 billion in new orders received by the durable goods industries and a 4.3 percent decline in industrial production. Yet actual defense expenditures in the fourth quarter were only about half a billion lower than in the second quarter. Again in 1957, between the first and third quarters there was a $1.5 billion decline in defense obligations for hard goods, with $5.5 billion decline in new orders received by the durable goods industries. By the last quarter of the year, industrial production had dropped off by 5.9 percent despite the fact that the dollar value of national defense expenditures had been rising and was still running slightly ahead of the first quarter.

[3] This is fundamentally due to the fact that a portion of the increased disposable income will not immediately be translated into higher expenditure.

A second kind of difficulty that might arise if the offsets to defense cuts were mainly in the form of tax cuts is related to the possible disadvantages of functioning with a permanently smaller public sector in the economy—at least smaller relatively to total GNP. It is generally agreed that the greatly enlarged public sector since World War II, resulting from heavy defense expenditures, has provided additional protection against depressions, since this sector is not responsive to contraction in the private sector and provides a sort of buffer or balance wheel in the economy. The high tax rate required by this high level of Government expenditures provides a large volume of revenue which is very sensitive to changes in income, so that shocks to the economy are in good part absorbed in declines in taxes rather than in disposable income. A reduction in the size of the public sector would weaken this type of protection.

The above long catalog of possible difficulties which may be encountered in maintaining adequate aggregate demand for rapid growth in the disarmament period is not intended to imply that we are faced with any fatal inevitability in this respect. As is clearly implied in our description of the problems to be encountered, the essential economics of the situation do not create the difficulties so much as do the institutional and attitudinal limitations of an essentially political character. It follows that, with a sufficient willingness to embark on new offsetting nondefense programs and/or to contemplate drastic tax reductions to the full extent necessary to offset defense cuts and without regard to budget balancing or national debt reduction objectives, there need be no substantial problem in maintaining any level of demand required to employ our expanding resources for civilian production. We have, indeed, a considerable degree of choice as to just how we wish to do it.

It is highly desirable that the Government prepare well in advance detailed measures for disarmament adjustment, so that they should be available in time and so that they should be of a character which promotes our long-range objectives. This will permit us to take advantage of the great opportunities which disarmament will afford for the improved allocation of our resources and will help to prevent our readjustment measures being too much influenced by considerations of expediency and by short-run political pressures. In this context the potentialities for expanded and improved programs in the fields of education and research, transportation, urban renewal, public health, et cetera, should be carefully explored, as well as those of tax reductions, contributing not only to an expansion of private demand but also to a strengthening of private investment incentives

and resources. Advance discussion of such measures would be helpful in preparing a better informed public opinion, neither unduly fearful of disarmament adjustments nor complacent to the point of denying the need for advance preparations for handling the problems that will arise. Such discussion will also make clear the fact that we do have important alternatives in the way the problem is handled and that various possible combinations of adjustment programs which might suffice to promote a smooth adjustment may have quite different long-run effects on our future growth rates and the capacity of the postdisarmament economy to meet our broader long-term objectives.

The major problem of policy planning would be to choose a policy which, first, is sufficient to prevent serious unemployment and excess capacity and, second, will guide the labor and resources freed by disarmament to where the needs are determined to be greatest. There is a wide range of fiscal and monetary policies which have a comparable impact on aggregate demand but different effects on the composition of output and on the allocation of resources among competing needs. The balance struck between tax reduction and increased Government spending will be governed by the relative importance accorded to private demand for such goods and services as food, clothing, housing, recreation, health, higher education, machine tools, research, and development—as against public demand for school construction, teacher training, roads, space exploration, urban renewal, area redevelopment, public health, and social services, et cetera. Policy will also have to strike the appropriate balance between those measures that satisfy present wants and those that promote the long-term dynamic growth of the economy.

It also would be possible, at least in theory, to "take up the slack" by bringing about a reduction in working hours, an increase in the length of vacations, a reduction in the average age of retirement, a rise in the average age at which young people start looking for jobs, and a reduction in the proportion of women seeking jobs. It is not clear to what extent Government policy can readily influence some of these choices, nor how much resistance such policies would encounter.[4] Since such policies, if effective, would facilitate the Soviet objective of catching up with U.S. industrial output, their international implications should be carefully considered before giving them any endorse-

[4] There is some evidence which suggests that the marginal preference for leisure over income may be low or negative even among those already employed full time. The Bureau of Labor Statistics also projects a continued rapid expansion in the number of women in the labor force, and there is no indication of any substantial trend toward earlier retirement.

ment. However, pressures for reduction of working time to spread employment would be strong if the only alternative available were loss of an equivalent number of man-hours through unemployment.

But controversy over the best use of the available resources would serve the Nation poorly if it distracted attention from the fundamental importance of using them one way or another, and using them all, and if it were made an excuse for inaction or delay in taking the fundamental measures that assure that *some* constructive use will be made of the resources becoming available. Because of the inherent interconnectedness of the different parts of the gross national product (GNP), an expansion in any one sector is likely to bring about expansion in the others as well, unless subject to exceptional restrictions (as in wartime). It should be stressed that if we do not handle the aggregate demand problem adequately, the question as to priorities of use of our resources has little significance. However, if we do handle the aggregate demand problem well, disarmament affords an unmatched opportunity for satisfying our most pressing needs if the necessary measures are prepared in time.

Structural Problems

It seems entirely possible that some of the most stubborn and difficult problems connected with disarmament will be those arising from the concentration of persons and productive resources in particular industries, areas, or vocational groups and from the difficulties of making the necessary shifts in employment and resource utilization. To be sure, many of these shifts will be easily made through the spontaneous and unaided action of individuals responding to the pull of free market forces. The success of this type of adjustment process will be greatly facilitated if a high level of demand is maintained. There is less incentive to move or to retrain if unemployment is endemic and society derives little benefit from adjustment processes which provide jobs for some people only by taking jobs from others. Nevertheless, even under conditions of full employment opportunity some of the adjustment processes will be difficult for the individuals, companies, and communities concerned, and some Government measures to assist in this process may be morally justified, economically sound, and politically inevitable.

The employment phase of the readjustment may be complicated by the fact that the labor force will be expanding with exceptional rapidity and labor displacement through automation may also be

advancing with great speed. It should be noted that the spread of automation may be accelerated as defense firms diversify their production and apply their advanced technology to more traditional industries.

Particular difficulty may be experienced in finding satisfactory reemployment for members of the permanent defense force, many of whom lack traditional civilian industrial skills, are in difficult age groups for placement, are accustomed to relatively high salary levels (taking into account the imputed values of living accommodations provided), or have personality orientations not well adapted to humdrum civilian employment. Certain cadres, on the other hand, may have outstanding civilian skills, plus a variety of attitudes and experiences which may be of special usefulness in civilian life—as e.g., leadership qualities, abilities to endure discomforts, and knowledge of foreign areas which might be particularly useful in international economic development work.

As for the rank and file workers in the defense industries, not enough is yet known about their skill and wage levels to make a reliable appraisal of the difficulties they may experience in reemployment. We expect, however, that a fair amount of retraining will be necessary, much of it of a fundamental sort involving elementary education. Policy decisions on the handling of such matters are rendered very difficult by the paucity of reliable research in this field. Some of the experiments in retraining, such as those by the Armour Company and in the Belgian coal mines, have been relatively unsuccessful in the sense of showing a relatively small number of workers willing and able to benefit from them and the requirement of a large investment in order to produce a rather small result. On the other hand, these conclusions have been criticized as premature and the experiments regarded as inconclusive by some qualified observers who believe that, by the use of improved teaching methods and measures to provide incentives, retraining programs may succeed better in the future.

In the solution of regional problems there is an important change of emphasis which has developed over the last quarter of a century. With the rapid rise in the cost of community facilities (housing, mass education and health facilities, and so on) relative to the cost of factories and equipment, with the lower proportionate costs of transportation and power, and with the increased rate of obsolescence in plant and equipment, the case becomes more and more persuasive for aiding new industry to enter areas where there is an existing skilled labor force, rather than seeking to move unemployed workers to where idle

manufacturing facilities are. It seems to be no accident that most of the European programs have concentrated on bringing additional industry to structurally depressed areas, rather than helping the workers to go elsewhere. The new U.S. legislation on depressed areas takes the same approach, and experience gained under it should provide some useful guidelines for area readjustment policy under disarmament.

Because of the considerable concentration of defense industry in particular localities, the structural readjustment problems of the industries and the localities are almost inseparable, and in some respects the readjustment problems may better be handled in terms of the industries than of the areas. So far we have relatively little information about the distribution of defense industry by region except in relation to prime contracts and in regard to the West Coast. Our information about the distribution by industry is somewhat better and may be more illuminating.

An industrial breakdown of the employment impacts is provided in Table I. The big concentration of employment especially vulnerable to disarmament will likely be—in very round numbers—700,000 persons in aircraft, another quarter million each in ships and ordnance, and another 400,000 in radio and other electrical equipment and machinery, plus another 150,000 in nonelectrical machinery and in instruments. (Missile employment is chiefly in aircraft but also in ordnance and electronics.) While another million and a quarter persons in other industries are also likely to be dependent on defense demand, this dependence will be for the most part *indirect*. Also, the 90,000 or so who make the steel which enters directly or indirectly into defense uses could very well maintain their existing jobs after disarmament if alternative types of demand for quality and special steels could be quickly built up.

It is of interest to examine the extent to which different types of demand which might replace defense demand would provide employment opportunities for workers in those particular industries most likely to suffer from a loss of defense demand. This type of analysis has been pursued in the Leontief-Hoffenberg article, "Economic Consequences of Disarmament," in the April 1961 *Scientific American*. Essentially, this analysis proceeds by the use of what are called "trade-off matrices" which show the net change in demand for the output of particular industries if a given quantity of defense demand is replaced by an equal quantity of other final demand—personal consumption, investment, nondefense Government services, or exports. In general, the data presented suggest that an expansion of invest-

ment or capital exports would more easily utilize the released resources than would other programs.

Considerations of this sort would supply a more relevant guide to policy in a crash disarmament program, where structural problems would be so severe as rightly to dominate adjustment policy, than in the case of a deliberate and moderately paced disarmament program of the sort here under consideration. Indeed, it should be the aim of policymakers, under these conditions, to resist the strong political pressures which will undoubtedly exist to provide particular opportunities which will reemploy released resources with the minimum amount of change in the existing industrial and geographic patterns. Rather, the opportunity should be taken to facilitate the movement of resources into those occupations, industries, and areas with the biggest expansion potential and which promise to make the largest long-run contribution to the achievement of our national goals.

A number of specific recommendations with respect to structural readjustment policies may be drawn from the foregoing analysis of the problems. It is clear first of all that a great deal of what may have to be done in the event of disarmament is along the same lines as what would be highly desirable right now, since the economy is already suffering from various structural maladjustments arising from technical changes, population shifts, past changes in the composition of the defense program, et cetera. Among the particular programs upon which a start can well be made in the near future may be included:

(a) A strengthening of our system of employment offices so as to provide a more complete, accurate, and up-to-date central source of knowledge about job openings and job availabilities. (A leading obstacle—and one not easily overcome—is reluctance of industry to list job availabilities.)

(b) A strengthening of our unemployment insurance program with efforts to assure adequate minimum standards and a greater degree of uniformity between States.

(c) A stronger attempt to develop a workable retraining scheme, giving adequate recognition to the fact that such retraining will often require particular attention to elementary education and even such matters as literacy and elementary arithmetic.

(d) A more ambitious attempt to explore the potential value and costs of a relocation program which may possibly play a considerable role in highly specialized defense communities which either have no worthwhile potential for nondefense production or which will take

some considerable time to develop alternative industrial opportunities.

(e) An open-minded consideration should be given to the possible helpfulness of encouraging defense industry to adopt more liberal provisions with respect to severance pay, even by making some allowance for such programs as a legitimate cost in defense contracts. (In fairness, the Government should then consider expending similar benefits to its own defense forces and civilian employees.)

(f) Similarly helpful would be Government attempts to influence industry to provide more liberal and flexible provisions permitting the vesting of pension rights, providing extended coverage with respect to group insurance, hospitalization, and similar perquisites, and providing employees with company-wide rights of transfer. Measures of this sort would be valuable in removing existing constraints on worker mobility.

(g) Careful attention should be given to the possibility of encouraging defense contractors (possibly by subsidizing their research on these matters) to begin making studies as to their postdisarmament adjustments, including such things as the types of civilian items to the production of which they could convert with the least difficulty, the likely alternative employment availabilities in their immediate communities, grades of manpower and kinds of skill now on the staff which would probably be redundant in a civilian economy, the new type of research and development programs to which they might hopefully contribute, their financial requirements in the event of a sudden cancellation of defense contracts, and the types of financial assistance which they would find beneficial, and so forth.

(h) Knowledgeable people from defense industry have also suggested that financial provisions in defense contracts encouraging defense industry to begin exploratory work on research and development with respect to disarmament inspection requirements might be very helpful not only in developing advance planning and capabilities in this field (which could provide a useful type of offset program) but also in creating an atmosphere of greater realism about the whole subject of arms control and disarmament, indirectly encouraging other types of advance preparation for such a contingency. Last but not least, the search for technological breakthrough in the field of inspection is not necessarily a hopeless one, and any major achievements along this line could significantly add to the feasibility of disarmament.[5]

[5] Thus, for example, an interesting research idea for the development of a new method for locating buried objects was not followed up by one large defense contractor because there was no official indication that such a device if proved feasible would find a market.

The Special Problem of Research and Development (R&D)

Research and development may perhaps rate a separate discussion. One can consider this peculiarly significant for growth. It is clear, in any case, that the disproportionately large impact which disarmament may have on R&D should be a matter of serious policy concern. About half of our R&D effort is financed by defense agencies.

Disarmament would certainly cause a slackening in the rate of growth of the R&D effort, and quite possibly an absolute decline in industrial R&D, if only of a temporary character. Further, although basic research probably would not be too hard hit by disarmament, the elimination of national military development programs would greatly reduce the proportion of development work directed toward achieving major breakthroughs. A partial offset might be provided by the R&D programs associated with the inspection and other activities of the international control organization. While some reduction in employment of scientists and engineers would appear to be unavoidable under these circumstances, there is every likelihood that this would prove to be only a shortrun phenomenon. R&D is one of the fastest growing activities in our economy, and employment of scientists and engineers is growing at a faster rate than employment of almost any other occupational group. Although it is true that during the late 40's and early 50's increasing defense R&D support was the prime mover, since the mid-1950's nonmilitary R&D has grown at as rapid a rate as has military R&D.

A temporary decline in R&D employment, despite the difficulties it would cause to individuals and the possible interruptions it might cause in promising research activities, might have the important offsetting benefit of facilitating a general review and reassessment of research goals and a new evaluation of the most promising areas for concentrating future efforts. Along with this could go a reallocation of research resources and personnel to areas where public and private potential returns seemed to be the greatest. Some of these areas will require public support if they are to draw the appropriate share of our R&D effort, and new institutional arrangements for extending such support may need to be created.

Since our problems in the fields of urban transportation, education, and housing are longrun in nature, programs of expanded research in these fields would undoubtedly merit Government support even

though our chief shortrun problems here may not depend so much on technological breakthroughs as on clearing away political and other obstacles to the application of existing technology. Other areas where increased research might yield considerable long-term benefits to society include the exploration of space, the development of atomic power (especially from fusion processes, if these prove workable) and other unconventional energy sources, the industrial exploitation of our ocean resources, and a renewed attack on the related problems of cell chemistry, aging, and many forms of disease.

Another area of vital political as well as humanitarian importance which might possibly benefit from a major organized program of research and development relates to the technological obstacles to international economic development. Research and development in this area might attack such problems as: development and mass production of teaching machines and related communication equipment; solar engines; water purification and other techniques for overcoming aridity and restoring desert areas; new methods of providing cheap power to remote areas; the elimination of tropical and other endemic diseases; population control; large batch production and transportation (perhaps in remodeled surplus shipping) of essential nutritional elements widely deficient in tropical countries; and systematic techniques for effective use of low-cost labor to mass-produce standard components required for economic development, such as roadmaking materials and machinery, simple housing and office buildings, farm implements, power systems, and even simple machine tools and standard types of industrial plants, and so forth. U.S. contributions to economic development along these lines would be one of the ways of fulfilling strong expectations in the underdeveloped countries that resources freed by disarmament would be utilized in part for the furtherance of international development.

Programs such as the above would entail a significant shift of the orientation of R&D from the present pattern. Scientists and engineers who have devoted their working careers to one field would be called on to switch to others. It is not clear, as yet, how easily our scientific resources are "shiftable" to new lines of developing interest, but presumably our centers of higher education at least could effect some shift in their instructional emphasis to take account of new R&D requirements and opportunities.

Such long-range and ambitious R&D programs might not only provide challenging work opportunities for a part of the managerial, engineering, and scientific resources now employed on defense projects but would provide constructive outlets for international rivalries,

which would certainly not disappear with the advent of disarmament and would also maintain a healthy pressure on our educational system to turn out the increased flow of first-rate scientists and engineers upon which our ultimate success in this competition will likely depend.

TABLE I

PROJECTED PRIMARY IMPACT ON EMPLOYMENT OF REDUCTION IN NATIONAL DEFENSE EXPENDITURES [1]

Industry	% Output used by military 1958	Defense employment (000) 1965	Decrease in defense employment [2] (000)				
			Stage I 1965–68	Stage II 1968–71	Stage IIIA 1971–74	Stage IIIB 1974–77	Total decrease [4]
Chemicals	5	63	23	15	9	9	57
Fuel & power	7	86	29	20	13	11	73
Petroleum	(10)	(52)	(16)	(12)	(9)	(7)	(44)
Primary metals	13	198	81	51	22	27	182
Iron & steel	(10)	(90)	(35)	(23)	(11)	(12)	(82)
Fabricated metals	8	150	54	35	24	20	132
Nonelec. machinery	5	92	30	22	18	12	82
Elec. machinery	21	376	126	85	68	61	341
Radio, commun.	(38)	(279)	(100)	(64)	(43)	(48)	(256)
Trans. equip. & ordnance	38	1302	505	376	146	173	1199
Aircraft & parts	(94)	(739)	(361)	(193)	(36)	(115)	(705)
Ships & boats	(61)	(239)	(87)	(123)	(5)	(3)	(218)
Ordnance	(100)	(291)	(45)	(52)	(97)	(52)	(245)
Instruments	20	67	30	17	4	11	63
Transportation	6	129	45	29	19	16	109
RR & trucking	(5)	(101)	(37)	(23)	(14)	(12)	(86)
Trade	1	159	60	36	24	16	137
Service, etc.	1	260	85	60	40	33	219
Business services	(4)	(105)	(36)	(25)	(16)	(13)	(91)
Prof. & serv. industries	(2)	(129)	(39)	(29)	(20)	(17)	(105)
Construction	2	82	37	7	0	0	45
Other industries [3]	2	228	85	53	31	26	195
Total industry [4]	6	3193	1191	807	419	417	2835
Government [4]	[5] 85	4171	827	770	1179	678	3454
Armed Forces	. . .	(3000)	(500)	(500)	(1000)	(500)	(2500)
Civilian	. . .	(1171)	(327)	(270)	(179)	(178)	(954)
Total industry & Government [4]	. . .	7364	2018	1577	1598	1095	6289

See footnotes on p. 24.

[1] "Primary Impact" refers to direct and indirect effects as measured by input-output analysis but ignoring possible multiplier effects or final demand offsets.

[2] The assumed reductions in expenditures are in accord with the hypothetical model of general and complete disarmament (see Table III) as follows: Stage I $17.2 billion; Stage II, $11.9 billion; Stage IIIA, $9.7 billion; Stage IIIB, $7.1 billion.

[3] Food and kindred products, apparel and textile mill products, leather products, paper and allied products, rubber and rubber products, lumber and wood products, nonmetallic minerals and products, and miscellaneous manufacturing industries.

[4] Totals not exactly equal to sum of parts because of rounding.

[5] Federal purchases of goods and services for national defense as percent of total Federal purchases of goods and services.

SOURCE: Leontief-Hoffenberg 1958 matrix, adjusted to 1965. Table prepared by READ (Research Program on Economic Adjustments to Disarmament).

TABLE II

STATES LIKELY TO EXPERIENCE A RELATIVELY HEAVY ECONOMIC IMPACT FROM DISARMAMENT

State	Employment in major defense industries [1] Apr. 1960, as percent of:		Dept. of Defense Payrolls [2] as percent of personal income Dec. 31, 1960
	Total manufacturing employment	Total nonagricultural employment	
Kansas	[3] 30. 2	[3] 6. 2	4. 1
Washington	[3] 28. 6	[3] 8. 6	4. 9
New Mexico	[3] 23. 8	[3] 1. 7	9. 0
California	23. 3	6. 3	3. 7
Connecticut	21. 1	9. 5	0. 5
Arizona	[3] 20. 6	[3] 3. 0	4. 2
Utah	[3] 20. 4	[3] 3. 6	6. 7
Colorado	17. 8	2. 9	4. 7
Florida	14. 1	2. 1	3. 8
Maryland	12. 2	3. 5	5. 2
Missouri	10. 3	3. 0	2. 0
Texas	10. 0	1. 9	5. 5
Massachusetts	9. 5	3. 5	2. 3
Oklahoma	[3] 8. 2	[3] 1. 2	5. 9
NATIONAL AVERAGE	7. 3	2. 2	2. 9
Virginia	7. 0	2. 2	10. 2
New Hampshire	[3] 5. 0	[3] 2. 2	7. 4
Georgia	[3] 4. 3	[3] 1. 4	6. 8
Alabama	[3] 3. 9	[3] 1. 2	6. 1
Alaska	[3] 2. 1	[3] 0. 2	26. 5
District of Columbia	[3] 1. 5	[3] 0. 6	10. 8
South Carolina	1. 1	0. 4	7. 6
Hawaii	[3] 0. 4	(*)	18. 2
Nevada	[4]	[5]	6. 5

See footnotes on p. 26.

[1] Ordnance, electronic components, aircraft and parts, shipbuilding and repairing. Not all employment in these industries (except ordnance) is on military production. Employment in these industries and total employment in manufacturing includes only employment in firms covered by unemployment insurance, but in practice most of such employment is covered.

[2] Military pay and allowances and civilian Department of Defense wages and salaries.

[3] Incomplete because employment in defense industries excludes employment which, in one or more of the industries, was not given by State since that would disclose information about particular firms. For the whole country, the amount excluded from the State-by-State distribution amounted to 13,900 or 1.1 percent of the total employment in major defense industries. For an individual State, of course, the exclusion might be much more important.

[4] Between zero and 1 percent.

[5] Less than ½ of 1 percent.

*Not available.

SOURCES: Employment in defense industries and total covered employment in manufacturing from U.S. Department of Labor, Bureau of Employment Security, *Employment and Wages*, Second Quarter 1960, pp. 22, 30, 73, 74. Total nonagricultural employment from the Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, June 1961, p. 18. DOD payrolls from Department of Defense, Office of the Secretary of Defense, Directorate of Statistical Services. Personal income for 1960 from *Survey of Current Business*, Aug. 1961, p. 13. Table prepared by READ.

TABLE III

MODEL OF GENERAL AND COMPLETE DISARMAMENT

	U.S. Expenditures for Security and Associated Programs [1] (in billions of 1960 dollars)					
	1960	1965	Stage I 1965–68	Stage II 1968–71	Stage IIIA 1971–74	Stage IIIB 1974–77
U.S. Defense [2]						
Personnel	11.7	15.1	13.1	11.1	6.7	4.7
Operation and maintenance	10.2	12.6	8.9	6.0	3.9	2.1
Procurement (inc. research & development)	18.0	20.9	12.2	6.3	4.8	1.5
Aircraft	(6.9)	(6.0)	(2.0)	(0.5)	(0.5)	(0.5)
Missiles	(5.1)	(5.4)	(0.5)	(0.1)	(0.1)	(0.1)
Military space	(0.5)	(2.6)	(4.4)	(2.5)	(2.5)	(0.0)
Ships	(1.9)	(2.4)	(1.5)	(0.2)	(0.2)	(0.2)
Other	(3.6)	(4.5)	(3.8)	(3.0)	(1.5)	(0.7)
Construction	1.6	2.0	0.5	0.2	0.2	0.2
Military assistance program	1.6	2.4	2.0	1.5	0.0	0.0
Military AEC	2.1	1.4	0.5	0.2	0.0	0.0
Civil defense [3]	(5)	1.7	1.7	1.7	1.7	1.7
U.S. Defense—Total	[6] 45.2	56.1	38.9	27.0	17.3	10.2
U.S. contribution to international [4]						
Inspection	. . .	. . .	. . .	3.2	2.6	1.3
Police forces	. . .	. . .	. . .	. . .	1.8	2.7
Deterrent forces	. . .	. . .	. . .	. . .	. . .	2.6
Juridical & administrative functions	. . .	. . .	. . .	0.5	0.5	0.5
U.S. contribution—Total	. . .	. . .	. . .	3.7	4.9	7.1
TOTAL U.S. EXPENDITURES ON SECURITY PROGRAMS	45.2	56.1	38.9	30.7	22.2	17.3
Associated programs						
NASA	0.4	2.7	4.5	5.9	7.4	8.9
Civilian AEC	0.5	1.4	2.0	2.0	2.0	2.0
Associated programs—Total	0.9	4.1	6.5	7.9	9.4	10.9
GRAND TOTAL	46.1	60.2	45.4	38.6	31.6	28.2

See footnotes on p. 28.

[1] Disarmament assumptions are intended to be broadly consistent with the U.S. program.

[2] Defense expenditure estimates made by READ based on Bureau of the Budget projections, published in *Special Study* (Jan. 1961); George Steiner's unpublished manuscript, "Defense Activities in Southern California in the 1960's"; and confidential industry sources.

[3] While a number of the specific estimates in Table III involve controversial assumption of the Bureau of the Budget projections, published in *Special Study* (Jan. 1961), and the estimates for later years are based on the assumption that in a period of disarmament the United States would be glad to adopt any measures of a defense character which would increase its physical security and not be incompatible with the disarmament agreement. They might be viewed as a desirable form of insurance against possible breakdowns in the disarmament program, especially during a period before all nations were participating. Nor would such a program reduce the deterrent power of the Peace Force; on the contrary it alone could render the exercise of such power credible.

[4] The U.S. contribution to the international control organization and the Peace Force is assumed to cover one-third of total costs, but no charge is assumed for existing weapons or bases transferred to the international control organization or the Peace Force.

[5] Less than $50 million.

[6] Excluding revolving fund.

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