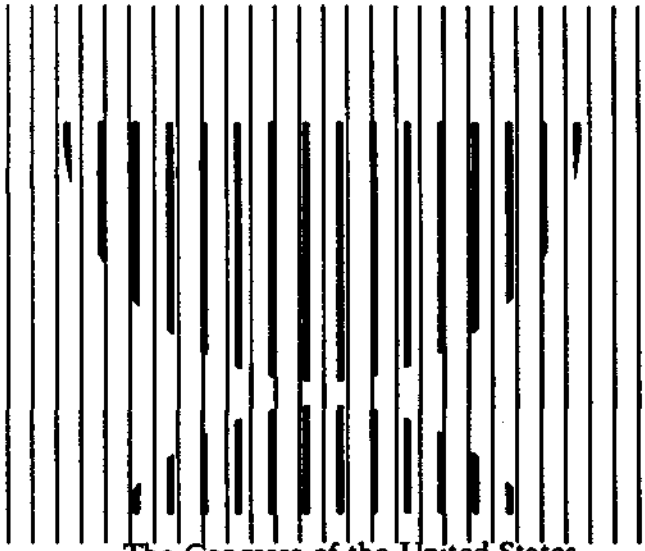
CBO STAFF MEMORANDUM

SUMMARY OF THE ECONOMIC EFFECTS OF REDUCED DEFENSE SPENDING

March 1990



The Congress of the United States
Congressional Budget Office

THE CONGRESS OF THE UNITED STATES
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The memorandum was prepared by the Congressional Budget Office (CBO) at the request of the Committee on the Budget of the U.S. House of Representatives. In keeping with CBO's charter to provide neutral and nonpartisan analyses, the memorandum makes no recommendations.

In order to provide information in time for the debate over the budget resolution, this memorandum summarizes information and results compiled by CBO. A forthcoming CBO publication will provide further details.

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INTRODUCTION

During the last few years, and particularly the last six months, astonishing political changes abroad have occurred that eventually could greatly reduce the threats to the national security of the United States. For the past four decades, threats to U.S. security have come chiefly from the Soviet Union and its allies in the Warsaw Pact. Today, many of the Eastern European nations that are part of the Warsaw Pact have begun moving toward democratic governments, which raises questions about how willing these countries would be to join the Soviet Union in any future attack on NATO countries. The Soviet Union itself seems much more concerned with internal problems and reforms than in the past, and thus appears less likely to embark on foreign military adventures.

At the same time, the United States and the Soviet Union have made significant progress toward the Strategic Arms Reduction Talks (START) treaty reducing strategic nuclear weapons. NATO countries have also made progress in negotiating a treaty with the Warsaw Pact that would limit conventional forces in Europe (CFE). NATO's proposed version of this CFE treaty--which in many cases matches proposals the Warsaw Pact has already made--would reduce Pact weapons many times more than what would be required of NATO.

These favorable security developments have raised the prospect of large cuts in the U.S. defense budget, which some have labeled the "peace dividend." While

almost everyone favors reallocating resources that no longer need to be spent on defense, concerns have been raised about problems of economic dislocation and management that could occur as the country makes the transition to lower defense budgets.

THE RATE OF DEFENSE REDUCTIONS

In assessing the potential for problems of economic dislocation and management posed by cuts in defense spending, the rate of budgetary reduction is important. Rapid reductions would permit less time for adjustments, such as the Federal Reserve making changes in monetary policy that would minimize adverse effects on the economy as a whole. Rapid cuts would also allow less time for managers in the public and private sectors to make adjustments to ameliorate the negative effects of reduced defense spending on businesses, communities, and individuals.

Without attempting to forecast the rate or ultimate size of any reductions in defense spending, this memorandum considers three alternative budgetary paths that would reduce defense budget authority below its real 1990 level by roughly 4 percent, 7 percent, and 10 percent a year in the 1991-1995 period. In 1991, the reduction in government outlays associated with these paths ranges from about $8 billion to about $17 billion (see Table 1). By 1995, the range extends from about $62 billion to about $139 billion. These reductions in outlays are relative to outlays under the CBO baseline, which assumes that budget authority for defense is increased over its 1990 level only by enough to adjust for inflation.

TABLE 1. ALTERNATIVE REDUCTIONS IN DEFENSE SPENDING AND THE BUDGET DEFICIT (In billions of dollars)

	1991	1992	1993	1994	1995
Reductions in Budget Authority for Defense Only					
Option I	-14	-27	-40	-54	-68
Option II	-22	-44	-67	-90	-113
Option III	-32	-62	-93	-122	-151
Reductions in Outlays for Defense and Related Functions[a]					
Option I	-8	-18	-31	-45	-62
Option II	-12	-30	-51	-76	-102
Option III	-17	-42	-72	-104	-139
Balanced Budget Act Deficit Reduction Targets[b]	-70	-113	-148	c	c

SOURCE: Congressional Budget Office.

NOTE: The options assume annual real reductions in defense budget authority of roughly the following amounts: Option I, 4 percent; Option II, 7 percent; Option III, 10 percent.

a. Assumes defense reductions are used to cut the deficit and thus reduce interest payments.

b. These figures are based on CBO's economic and technical assumptions excluding non-interest Resolution Trust Corporation spending.

c. The Balanced Budget Act established deficit targets for 1988 through 1993.

A comparison of these reductions in defense spending with those that have occurred in the past suggests that, in most cases, they are as slow or slower (see Table 2). For all three alternatives, the decline in real defense budget authority and the decline in the defense budget's share of gross national product (GNP) are slower than those experienced during the period of defense reduction that followed the Korean War (1952 to 1954). All three alternatives would also reduce the defense share of GNP more slowly than was the case during the five-year period following the peak of spending during the Vietnam War (1968-1973). Moreover, only the largest of the three alternatives would result in a significantly higher rate of reduction in real defense budgetary authority than the rate that followed peak spending during the Vietnam War.

BENEFITS OF DEFENSE REDUCTIONS FOR THE ECONOMY AS A WHOLE

Defense spending cutbacks should benefit the U.S. economy in the long term. In the shorter term, cutbacks could slow economic growth but probably not by enough to trigger a recession.

Long-Term Benefits

Cuts in defense spending should result in higher U.S. standards of living. A reduction in military threat would allow the United States to spend less of its resources on defense without suffering increased security risks. That reduced

TABLE 2. IMPACT OF REDUCTIONS IN DEFENSE SPENDING DURING SELECTED PERIODS

Period	Average Annual Reduction in Budget Authority (Billions of 1990 dollars)	Average Annual Rate of Reduction in Budget Authority During Period (Percentage points)	Average Annual Reduction in Defense Share of GNP (Percentage points)	Average Annual Reduction in Active-Duty Military Personnel (Thousands)
Past Reductions				
World War II (1945-1948)	121	44	11.5	3,559
Korean War (1952-1954)	83	23	1.4 [a]	250 [a]
Vietnam War (1968-1973)	17	6	0.7	260
Possible Future Reductions				
Option I (1991-1995)	11	4	0.3	77[b]
Option II (1991-1995)	18	7	0.4	126[b]
Option III (1991-1995)	25	10	0.5	190[b]

SOURCES: Department of Defense Budget Estimates and CBO Projections.

a. Indicates average annual reduction for the 1953-1956 period.

b. Assumes an even distribution of reductions among all categories of defense spending.

spending could be used to meet federal spending needs in nondefense areas, or to reduce taxes, which would permit citizens to use the peace dividend for higher consumption or personal saving.

Alternatively, a reduction in spending could be used to cut the federal deficit, which would lead to higher standards of living in the future. Lower deficits would increase national saving, resulting both in higher domestic investment and lower indebtedness to the rest of the world. Both of these outcomes would increase future incomes--domestic investment by increasing productivity in the U.S. economy, and lower overall indebtedness by reducing the share of future incomes that will have to be paid to foreigners in interest and dividends on their investments here.

In the long run, cutbacks in defense spending might also help improve productivity. Although the flow of innovations from defense research that spill over into the private sector might lessen, scientific and technological resources that could be transferred to nondefense research would grow.

Short-Run Effects

Taken alone, reduction in defense outlays could temporarily slow economic expansion and raise unemployment. Results from econometric models suggest that the largest of the reductions in defense spending considered in this memorandum--if not offset by increases in nondefense spending, reductions in taxes, or stimulative monetary policies--might cut the growth of real GNP by a few tenths of a percentage point in 1991, and less in later years. This slowing of economic growth could lead

to an increase in the rate of unemployment, though probably by small amounts. Higher unemployment would trigger increases in unemployment benefits and outlays under other federal transfer programs.

It is unlikely, however, that this slowing of growth in GNP would be sufficient to cause a recession. Today, most economic forecasters expect the U.S. economy to grow by enough to absorb the defense cuts discussed in this memorandum and still avoid the negative growth associated with a recession. The Congressional Budget Office (CBO), for example, forecasts real growth in GNP of 2.5 percent in 1991, which should be large enough to withstand the assumed reductions in defense outlays without causing a recession.

Moreover, cutbacks in defense spending may not result in any reduction at all in GNP below the CBO forecast. CBO's economic projection already assumes overall budget reductions similar in size to the largest cuts in defense spending that are discussed in this memorandum. Therefore, real growth in GNP would be reduced below the CBO forecast only if reductions in defense spending were larger than those discussed here. If there is no decline in real growth, there would be no increase in unemployment and hence no increase in unemployment benefits or outlays for other federal transfer programs.

In addition, the Federal Reserve might well act to offset the effects of reduced defense spending if cuts in defense spending were added to other cuts required under the Balanced Budget Act. The central bank's policy has held short-term interest rates at relatively high levels in recent months out of a concern that easier

credit could spark renewed inflation. If cuts in defense spending lowered the deficit, however, interest rates would have room to fall without risking a sharp spike in inflation. Simulations with econometric models suggest that lower interest rates could stimulate various sectors of the economy, such as housing and durable goods, by enough to offset any slowdown that cuts in the deficit would produce.

This relatively sanguine outlook for the overall economy is consistent with experience from past reductions in defense spending, even though they have sometimes contributed to recessions. For example, the demobilizations that followed World War II and the Korean War are widely thought to have brought about economic downturns. However, those reductions in defense spending were much larger in relation to GNP than the defense cutbacks that are considered in this memorandum. In the years following the Vietnam War, a recession also took place, but it was caused largely by economic developments unrelated to defense spending, including tight monetary policies and sharp increases in the price of imported oil. Indeed, such economic events unrelated to defense spending have sometimes led to recessions even when defense spending was growing sharply, as in the early 1980s.

THE IMPACT OF DEFENSE REDUCTIONS ON SELECTED PARTS OF THE ECONOMY

While the economy as a whole stands to benefit from reduced defense spending, certain geographical areas and particular industries will suffer disruptions. For those selected areas and industries, that disruption could be significant, and they could be even harder hit if the spending reductions are rapid.

Effects by Geographic Area

Cutbacks in defense could have their greatest effect on three of the nine census regions in the United States--New England, the Pacific region, and the South Atlantic region--where defense spending is most heavily concentrated. Total per capita defense spending in New England equals 142 percent of the average per capita defense spending in all of the United States (see Table A-1 in the Appendix). Per capita spending in the Pacific and South Atlantic regions equals 140 percent and 110 percent, respectively, of the national average.[1]

The regional effects of lower defense spending could differ depending on whether cutbacks are made primarily in employment or in purchases of goods and services. If large cuts are made in employment levels, the South Atlantic and Pacific regions could experience a disproportionate impact since these regions have the largest concentrations of people employed by the Department of Defense. If reductions in spending are focused primarily on purchases, New England and the Pacific regions are likely to be the hardest hit since they are the major beneficiaries of defense purchases.

Some states and metropolitan areas are also likely to be more severely affected than others. For example, more than 9 percent of the output of Virginia, Alaska, Washington, and Hawaii relates to defense spending (see Table A-2). Certain

1. Department of Defense, "Projected Defense Purchases: Detail by Industry and State" (November 1989), p. 7. The data are based on estimated defense expenditures on a per capita basis using 1988 dollars.

metropolitan areas--including Los Angeles-Long Beach, Nassau-Suffolk (New York), Boston, and Washington, D.C.--also have economies that benefit significantly from defense spending.

Disruptions are apt to be most severe, however, in those smaller communities near military bases that would be closed or near defense plants whose contracts would be terminated or curtailed. Local impacts could be offset if other uses for defense bases are found or if companies diversify into nondefense work or are replaced by companies in nondefense markets. But it can take several years to make the transition from defense to nondefense activities. Thus, a rapid reduction in defense spending would exacerbate the disruption for certain communities and businesses in the near term.

Effects by Industry

Defense cutbacks would also heavily affect selected industries, though they are a small fraction of all U.S. industries. Industries heavily dominated by defense business include those producing guided missiles, shipbuilding, tanks and components, and large caliber ammunition. For each of these industries, defense is responsible for more than 75 percent of total domestic production (see Table A-3). Except for these few industries, however, major industrial groups devote less than half of their output to defense, and usually they devote much less.

Nor do many large companies depend heavily on defense work. Among the 10 private companies that did the largest amount of business with the Department of

Defense (DoD) in 1988, defense prime contracts averaged only 17 percent of their total sales. But a few large companies, and many smaller companies, depend more heavily on defense work and would be adversely affected by a cutback.

Of course, many U.S. companies cease operations each year for a variety of reasons. These failures certainly hurt owners and stockholders. For the company's employees and for nearby communities, the adverse effects are temporary, however, if other firms replace the failed company and provide comparable job opportunities. Nevertheless, if companies now producing defense goods can convert or diversify to produce commercial items, the transition to lower levels of defense spending will be smoother for employees and communities.

Complete conversion would be difficult, however, for many defense firms because their plants were designed, built, and operated to produce military goods for which there is no civilian market. Diversification is a more feasible option, either by developing commercial products, purchasing companies producing nondefense goods, or merging with such companies. A number of defense businesses recently indicated their intention to diversify in response to the prospect of lower defense spending.

But diversification can be difficult and time-consuming. In 1985, the President's Economic Adjustment Committee analyzed how companies fared in conversion and diversification and concluded that successful firms must overcome some significant obstacles.[2] For example, defense companies are often not familiar with the demands

2. President's Economic Adjustment Committee, "Economic Adjustment/Conversion" (July 1985).

of commercial markets, especially developing and servicing products to meet consumers' demands. Moreover, the need to generate profits quickly can tempt companies to introduce commercial products before they are adequately tested.

The study found that, first, an open competitive market must exist that a firm could profitably enter. Entry could be difficult since, in some cases, opportunities for new markets may be limited for certain products in certain geographical areas. The study concluded that, because of the lead time required to plan, develop, test, and market new products, the process of conversion or diversification could take from five years to ten years before generating a profit. A firm would need the time and the business base to undertake such a transition. Thus, a rapid cutback in defense spending could preempt efforts to diversify by forcing firms to lay off workers or to divest themselves of assets.

THE IMPACT OF DEFENSE REDUCTIONS ON THE DEPARTMENT OF DEFENSE

The Department of Defense will also face difficult problems in defense policy and management if its budget is reduced, especially if the reduction is rapid. Reduced budgets will mean smaller military forces--indeed, perhaps much smaller. Smaller forces in turn could require changes in the way DoD develops and acquires weapons. It would also require reducing the number of military personnel and bases.

The budgetary reductions considered in this memorandum could lead to substantial reductions in the number of personnel and forces. By the fifth year, the

three illustrative reductions described in this memorandum would lower the defense budget by roughly $55 billion to $125 billion (in constant 1990 dollars). Recent studies have analyzed how much would be saved by various reductions in military personnel and forces (see Table A-4). Those studies suggest that, under these illustrative budgetary reductions, the size of the active-duty military--which today numbers about 2.1 million--could be reduced by as much as about three-quarters of a million people. Reductions would also take place in the number of military units. For example, the Army's 28 active and reserve divisions could be reduced by one-third or more, while the Navy's fleet of ships--which now numbers about 550--might be reduced by more than 300 ships. Moreover, there would be fewer nuclear warheads available, and the forces carrying them could be less modern than would be the case under current plans.

Of course, the exact nature and extent of changes to the number of personnel and forces will depend on the details of how defense spending cutbacks are carried out. But it is clear that all of the options to reduce defense spending discussed in this memorandum would result in substantial reductions in U.S. military forces, and those will most surely pose management problems for the Department of Defense.

Policies for Acquiring Weapons and Conducting Research

With many fewer forces, DoD would have to make hard choices about how it acquires weapons. If the department chooses to maintain most existing production lines, for example, it would have to do so at low levels of production. Although this approach would spread the economic effects of reduced spending for procurement

across a large number of companies and geographic areas, it would increase the cost of each weapon. The military services have estimated that reducing the production rates of aircraft by half in order to keep all production lines open would increase the average real cost of weapons by between 7 percent and 35 percent.[3] Even if production rates were cut by less than half, the increase in unit costs could be substantial.

Maintaining fewer production lines, each with a higher rate of production, would achieve greater efficiencies in production, but closing production lines would concentrate economic losses on a few defense plants. Moreover, with fewer defense plants producing weapons, the nation would be less able to rebuild its forces quickly in the event of a military emergency.

DoD must also decide how to invest in research and development in order to guard against technological surprises that could jeopardize U.S. security. Continued emphasis on developing weapons might, however, make it harder to close production lines and achieve efficiencies in production.

Personnel Cutbacks

Budgetary reductions considered in this memorandum could lead to substantial reductions in the number of active-duty military personnel. For example, if budgetary reductions were applied equally to all categories of defense spending, including spending for military personnel, a 4 percent annual real cut in defense

3. Congressional Budget Office, *Effects of Weapons Procurement Stretch-Outs on Costs and Schedules* (November 1987), p. xiii.

budget authority could result in a cutback of about 400,000 military personnel over the next five years.

Such large personnel reductions are bound to pose management problems. Today's military has a high proportion of career personnel (53 percent of enlisted personnel have four or more years of service compared with 39 percent in 1974). To avoid increasing the proportion of senior personnel, DoD could pursue a balanced approach to personnel cutbacks--reducing the number of new recruits who are brought in, but also separating some personnel who are already in the military.

Under today's volunteer military, however, a large pool of draftees anxious to leave military service simply does not exist. The entire military is made up of volunteers, many of whom plan to make a career of military service. Thus, reducing the number of personnel already in the military could involve involuntary separation of substantial numbers of personnel.

For example, if DoD must reduce the size of its active-duty force by 115,000 in 1991, and it chooses a balanced approach that includes cutbacks of new recruits along with cuts in those already in the military, then more than 20,000 involuntary separations of enlisted personnel might be necessary.[4] Aside from being painful to carry out, these involuntary separations might entail separation payments, which would reduce near term budgetary savings.

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4. Congressional Budget Office, "Meeting New National Security Needs: Options for U.S. Military Forces in the 1990s" (February 1990), CBO Paper, pp. 33-37.

Alternatively, DoD could reduce active-duty personnel mostly by cutting back on the number of new recruits. The turnover in the military is about 300,000 a year, which means that large cuts could be accomplished by recruiting fewer people. This approach also avoids the problems and costs associated with involuntary separations, but, over the long run, it might leave DoD with an insufficient flow of recruits to support even a significantly smaller military. Emphasizing reductions in new recruits would also lead to an even more senior force. Finally, this approach could impose the greatest disruption on individuals who depend on the military for entry-level employment, particularly minorities who make up a disproportionate number of military recruits.

These personnel choices would become more painful if cutbacks in personnel spending have to be made swiftly. Reducing personnel does not necessarily reduce spending quickly since, particularly in the year the cutbacks are carried out, savings are offset by separation payments, higher travel costs, payments for unused leave, and other added expenditures. Thus, DoD can achieve rapid cutbacks in personnel spending only by making extremely large reductions in the number of personnel.

Closing Bases

A significant reduction in military forces would require that DoD close and realign military bases. In turn, closing bases could significantly disrupt the economies of nearby communities. This is particularly true for smaller communities whose economies depend heavily on the base. Where it is not feasible to replace military

activities with civilian ones, the disruption and adverse effects on the community may be long lasting.

In most cases, however, communities that have faced base closings have adjusted successfully. In 1986, DoD conducted a survey of 100 communities that had experienced base closings and realignments between 1961 and 1986.[5] The communities reported losing about 93,000 civilian or contractor jobs because of the base closings. But they also reported that about 138,000 civilian jobs were generated by civilian activities that replaced the military facilities.

Closing and realigning bases can achieve significant savings in the long run, but these actions usually require additional spending in the near term. For example, the President's Commission on Base Realignment and Closure estimated that last year's decision to close or realign 145 military installations will ultimately save the government about $700 million a year.[6] To achieve these savings, however, DoD had to request a total of $1.1 billion in added budget authority for 1990 and 1991 to pay for the cost of closing bases and relocating personnel and equipment. Moreover, these added costs do not include funds required for cleaning up the environment of the bases that are being closed.

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5. President's Economic Adjustment Committee, "Twenty-Five Years of Civilian Reuse" (April-May 1986), p. 1.

6. Congressional Budget Office, "Past Base Closures and Realignments: Costs and Savings," Staff Working Paper (February 1989); and General Accounting Office, "Military Bases: An Analysis of the Commission's Realignment and Closure Recommendations" (November 1989). CBO and the General Accounting Office believe these estimates of the Commission to be somewhat optimistic.

PROGRAMS TO OFFSET ADVERSE EFFECTS OF DEFENSE REDUCTIONS

A number of programs are available to ease the disruptions caused by a transition to smaller defense budgets. Some of these programs are designed to help communities affected by base closings. Between 1961 and 1987, for example, the federally funded Defense Economic Adjustment Program provided more than $800 million to plan for the adjustments required by base closings. In addition, a recent CBO study found that sales of land and property associated with some past base closings accounted for only about 35 percent of the total value.[7] This finding suggests that the federal government assisted in the transition from defense to civilian uses by giving away property or selling it well below its market value. State and local jurisdictions have also provided support to communities through economic development programs.

Programs are also available to assist individuals who lose their jobs because of defense cutbacks, including personnel on active duty in the military. Those losing jobs can receive assistance from the Unemployment Insurance system, which provides unemployment benefits for up to 26 weeks (but only 13 weeks for ex-service members). Those who lose their jobs are also eligible for help in training and job placement through such programs as the Employment Service, the Job Training Partnership Act, and--in the case of civilian defense workers--the DoD Priority Placement Program. As was noted earlier, it is not at all certain that cutbacks in defense spending would increase unemployment in the country as a whole. Specific individuals, however, would lose their jobs, and these existing

7. Congressional Budget Office, "Past Base Closures and Realignments: Costs and Savings," Staff Working Paper (February 1989), p.7.

federal programs would provide them temporary benefits while they sought new employment.

If the Congress judges that further assistance is appropriate for those who lose jobs because of defense cutbacks, it could provide additional unemployment benefits, targeted either on areas or individuals affected by cutbacks in defense spending. The Congress could also provide additional funds for training and job placement services with the provision that priority be given to those workers who lose jobs because of a reduction in defense spending.

TIMING OF CUTBACKS IN DEFENSE SPENDING

One theme emerges throughout this analysis of how cutbacks in defense spending affect the economy and management. The more rapid the cutback, the more likely the disruption is to be serious--particularly for DoD, for military and civilian personnel, and for the smaller communities and companies that are most apt to experience harsh effects.

These problems would become particularly severe if the Administration and the Congress, in trying to meet the Balanced Budget Act deficit targets, were to require substantial reductions in defense outlays in the budget year. This would leave little time for public- and private-sector managers to adjust to the cutbacks.

Moreover, the need to achieve outlay savings in the budget year, rather than the dictates of national security, tends to determine the types of spending reductions. In the budget year, cuts in some types of defense programs--most notably procurement--yield small savings in outlays because of the time that elapses between appropriation of funds for a program and its execution. For changes in other programs, such as cutbacks in military personnel, outlay savings in the budget year would be modest because cuts in personnel are typically made midyear or later and because the cuts sometimes trigger added expenses that offset payroll savings. In still other cases, such as base closings, increases in costs almost always occur during the first year or two as a result of financing community assistance and other transition programs.

The key to an orderly transition to lower defense spending is to develop a long-range plan for altering U.S. defense forces that reflects a consensus about reductions in the threats to U.S. security. Such a blueprint would permit the United States to plan today for the kind of military it wants in, say, five years. A focus on carrying out that five-year plan, rather than on annual reductions in outlays, would almost surely result in more efficient management of any military drawdown.

APPENDIX TABLES

TABLE A-1. ESTIMATED PER CAPITA DEFENSE SPENDING BY REGION, 1990
(As a percentage of the U.S. average)

Region	Direct Spending			Indirect Spending	Total Spending
	Pay	Purchases	Total		
New England	66	186	141	141	142
Mid-Atlantic	47	80	68	101	85
South Atlantic	181	97	128	94	110
East North Central	39	56	49	101	76
West North Central	66	102	88	98	93
East South Central	96	57	72	83	78
West South Central	105	77	87	87	87
Mountain	128	73	93	87	89
Pacific	143	185	169	113	140

SOURCE: Department of Defense, "Projected Defense Purchases: Detail by Industry and State" (November 1989).

TABLE A-2. STATES WITH THE HIGHEST PROPORTION OF DEFENSE OUTPUT

State	Defense Output (Billions of dollars)	Nondefense Output (Billions of dollars)	Defense Output as a Percentage of Total Output
Virginia	25	205.9	10.8
Alaska	1.7	15.6	9.8
Washington	14.1	131.6	9.7
Hawaii	3.6	34.1	9.5
California	90.1	92.2	8.9
Connecticut	12.6	149.7	8.9
Maryland	14.2	149.7	8.7
Mississippi	5.7	63.6	8.2
Massachusetts	17.7	227.5	7.2
Missouri	13.4	173.3	7.2

SOURCE: Congressional Budget Office, based on data reported in L. Dougles Lee, "Economic Adjustments After the Cold War," testimony before the Joint Economic Committee (December 12, 1989), Table 5.

TABLE A-3. TEN INDUSTRIAL GROUPS WITH THE LARGEST DEFENSE OUTPUT IN 1989

Industrial Group	Defense Output (Billions of 1988 dollars)	Defense Output as a Percentage of Domestic Production
Communications Equipment	40.2	46.9
Aircraft	17.4	43.3
Guided Missiles	15.7	88.5
Aircraft Parts	13.0	44.0
Shipbuilding	8.9	84.4
Electrical Components	8.9	15.2
Aircraft Engines	7.1	32.7
Large Caliber Ammunition	5.5	76.6
Tanks and Components	4.9	75.4
Blast Furnaces and Steel Mills	4.5	6.9

SOURCE: Department of Defense, "Projected Defense Purchases: Detail by Industry and State" (November 1989).

TABLE A-4. EFFECTS OF ALTERNATIVE FORCE STRUCTURES

Options	Force Reductions: Army Divisions	Force Reductions: Air Force Tactical Wings	Force Reductions: Navy Ships	Force Reductions: On-Line Strategic Warheads	Active-Duty Personnel (Thousands)	Long-Run Annual Costs (Billions of 1990 dollars)
1990 Level	28	36	551	11,800	2,100	302
Changes Under						
Option I: Possible Administration Proposal	-5	-5	-50	-2,900	-250	-26
Option II: Large Cuts in Active and Reserve Forces	-11	-15	-108	-3,200	-600	-80
Option III: Kaufmann Proposal	-11	-12	-320	-4,900[a]	-800	-138

SOURCES: Congressional Budget Office, "Meeting New National Security Needs: Options for U.S. Military Forces in the 1990s" (February 1990); and William W. Kaufmann, Glasnost, Perestroika, and U.S. Defense Spending (Washington, D.C.: Brookings Institution, 1990).

a. Kaufmann does not estimate total on-line warheads but does assume there are about 2,000 fewer warheads than would be available under the START limits. Thus, the reduction assumed here is about 2,000 more than under Option I in this table.