

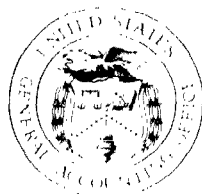
GAO

Report to the Chairman, Committee on
Armed Services, House of
Representatives

October 1990

U.S.-NATO BURDEN SHARING

Allies' Contributions to Common Defense During the 1980s



142501



United States
General Accounting Office
Washington, D.C. 20548

**National Security and
International Affairs Division**

B-234472

October 23, 1990

The Honorable Les Aspin
Chairman, Committee on Armed
Services
House of Representatives

Dear Mr. Chairman:

This report is the unclassified version of our classified report, which responds to your request that we review the efforts of U.S. NATO allies to share the common defense burden.

We are sending copies of this report to appropriate congressional committees and members of the Congress, the Secretaries of Defense and State, and other interested parties. Copies of the report will be made available to others upon request. Major contributors to this report are listed in appendix II. If you have any questions about the report, please call me on (202) 275-4128.

Sincerely yours,

A handwritten signature in cursive script that reads "Joseph E. Kelley".

Joseph E. Kelley
Director, Security and International
Relations Issues

Executive Summary

Purpose

Although defense burden sharing lacks a commonly accepted definition, it is often associated with the financial contributions made by the United States and each of its allies toward the common defense of the free world.

The Chairman, House Committee on Armed Services, requested that GAO determine (1) the status of U.S. burden sharing initiatives proposed to the North Atlantic Treaty Organization (NATO) allies since 1980 and the allies' responsiveness to those initiatives, (2) the allies' record in meeting their military commitments, and (3) the effect of future force reductions on defense burden sharing.

This report provides a historical presentation of defense burden sharing for use by the Congress in its deliberation on the future U.S. role in NATO. With the collapse of the Warsaw Pact, a potential treaty on conventional armed forces in Europe, the closer association between East European countries and the West, and the reunification of East and West Germany, the role of NATO and the defense burden to be shared among its members will likely undergo changes. A historical perspective provides valuable insight into the likelihood that U.S. allies will be willing to assume a greater share of the defense burden, even though that burden will be considerably lighter to bear.

Background

Since NATO's establishment in 1949, the cost of providing for the collective protection of the alliance was to "be shared equitably among the member countries." NATO addresses its defense requirements through the defense planning process. As part of this process, force goals are established and agreed to by each NATO member, after considering economic, political, and financial constraints. Force goals are expressed in a variety of ways, such as number of forces, level of readiness, quantity and capability of equipment, and stockpiles of critical munitions.

Results in Brief

According to commonly used indicators, during the 1980s, the United States had one of the best records of burden sharing performance among all member nations and assumed a relatively greater share of the economic burden of defending NATO than its allies. It has spent more on defense as a percent of its gross domestic product (with the exception of Greece in some years) and on a per capita basis than its allies. The United States has consistently been among NATO's top performers in meeting its force goals.

Many NATO members, however, have made expenditures and taken political risks within and outside NATO's boundaries to support common interests. Although these activities have benefited free world interests, they have not obviated the need for individual allies to address their military commitments to NATO.

With the prospects of the conclusion of a NATO-Warsaw Pact conventional armed forces agreement within a year and perhaps even further-reaching agreements in the future, defense burden sharing will remain as important, if not more so, in coming years. Improved NATO-Warsaw Pact relations and budgetary problems reported by many NATO nations make it questionable whether the necessary resources will be made available to address some of the NATO members' most serious and expensive problems. According to Department of Defense (DOD) officials, some of these problems will become "less serious" as a result of Warsaw Pact reductions; however, many still need to be addressed as member nations evaluate the future role of NATO.

GAO's Analysis

Factors Used to Assess the Relative Burden

Measuring each ally's share of the burden has caused considerable debate and disagreement within the alliance. However, two economic measures—percentage of and per capita gross domestic product spent on defense—are among those most commonly used. From 1980 through 1988, the United States devoted an average of 6.2 percent of its gross domestic product to defense, while the remaining NATO members devoted an average of 3.5 percent. On a per capita basis, the United States has spent more on defense than other NATO countries, including those that have higher per capita gross domestic products than the United States.

While some generalizations can be made in comparing U.S. and other NATO allies' burden sharing, a wide variance exists among individual NATO allies. For example, DOD notes in its 1990 Report on Allied Contributions to the Common Defense that Turkey, Greece, and the United Kingdom "look strong" in terms of the economic sacrifice made towards defense, while Luxembourg, Denmark, and Canada "look substantially below par." The remaining non-U.S. NATO allies' performance was considered "mixed."

Measuring the burden in terms of defense outputs—that is, the number and types of equipment and the number of personnel—provides a more favorable view of allied contributions than input measures such as the percent of gross domestic product spent on defense. However, output measures have numerous limitations, and the relative contributions made through output measures cannot be assessed.

NATO's Progress in Addressing Its Military Commitments

The United States, the United Kingdom, and West Germany rank among NATO's top performers in meeting force goals. DOD, however, considers West Germany's overall burden sharing efforts "mixed" in light of its economic strength and relatively low defense expenditures. Conversely, countries with weaker economies, such as Turkey and Greece, rank low in force goals performance but are considered good performers in terms of economic effort. Others, such as Luxembourg, Denmark, and Canada, rank low in both force goals performance and in economic sacrifice towards the common defense of NATO.

According to a NATO report, some of NATO's defense deficiencies could result in a failure to accomplish important NATO missions. Most NATO members have experienced deficiencies in addressing their force goals, even though they could financially afford to correct their most serious shortfalls. None of the NATO members—including the United States—have implemented all of the force goals considered critical to the accomplishment of their missions. However, DOD officials noted that, by their nature, the NATO reports are deficiency oriented and may therefore be overly pessimistic. Nevertheless, the relative efforts of individual countries can be determined and are an important indicator of future willingness to undertake NATO defense responsibilities.

Many allies have not been willing to spend more on defense because they perceived the Soviet/Warsaw Pact threat to be less serious than has the United States. This factor will undoubtedly take on even greater significance as NATO attempts to adjust to reduced tensions with Eastern Europe.

During the 1980s, NATO adopted several initiatives to correct long-standing military deficiencies. Most of these initiatives did not achieve their intended purposes. For example, most NATO nations fell far short of increasing their defense spending by 3 percent per year (after inflation), a goal that existed within NATO throughout the 1980s. The alliance was more successful in implementing limited initiatives rather than those requiring large financial contributions. DOD officials agreed that

although these initiatives did not achieve their intended goals, they were a positive influence within the alliance and resulted in some allied efforts that would probably not have been made otherwise.

Host Nation Support

Host nation support generally refers to assistance provided to U.S. forces by other allies in both wartime and peacetime. Wartime host nation support encompasses all civil and military assistance provided to allied forces located in or being deployed to and through the host country in times of war. Peacetime support includes cost sharing and other arrangements primarily for providing and supporting U.S. bases.

Negotiations requiring large financial commitments from the host nation have generally been less successful than requests for initiatives considered to be low cost. However, much of the support the United States has received from these countries has indirectly benefited the United States through cost avoidance. For example, West Germany provides most of the land used by U.S. forces on a rent-free basis. The United States has concentrated its host nation support efforts—and been more successful—in negotiating agreements for wartime support.

Effect of Proposed Force Reductions on Defense Burden Sharing

Notwithstanding the prospects for force reductions, defense burden sharing will likely remain as important, if not more so, in the coming years. Based on proposals being discussed in the Conventional Armed Forces, Europe talks, NATO European forces would be cut 5 to 15 percent below current levels in certain major weapons categories; the Warsaw Pact would have to make more massive cuts in order to reach relative parity. The proposals would also result in a troop reduction of 80,000 U.S. forces in Europe. If the U.S. force structure is reduced by that amount, substantial savings may be achieved.

Although savings may be achieved as a result of a conventional forces agreement, some additional costs will have to be shared among alliance members. Cognizant U.S. officials note that a reduction of NATO and Warsaw Pact forces would result in a greater reliance on the quality of defense. Therefore, more balanced, modern, and technologically advanced forces will be necessary. In addition, a more complex verification process would be required. Decisions would also be required on whose equipment should be destroyed to meet treaty limitations. If the older, less capable equipment is destroyed first, NATO will have to consider (1) the redistribution of more advanced equipment and (2) possible

compensation from the recipient countries to those allies who, in the past, have made investments in more modern forces.

If much greater force and equipment reductions take place, substantial savings or “peace dividends” may be possible for NATO forces. At that time, benefit sharing rather than burden sharing will need to be addressed.

Not all reductions and associated savings necessarily flow directly from implementation of the proposed treaty provisions. Savings will also most likely be achieved through a reconsideration of the level of defense believed necessary to counter the perceived threat.

Recommendations

GAO is making no recommendations.

Agency Comments and GAO Evaluation

GAO did not obtain written agency comments on this report but did discuss its contents with cognizant officials in the Departments of State and Defense. Their comments have been incorporated throughout the report, as appropriate.

Overall, DOD officials noted that while U.S. initiatives to correct long-standing allied military defense deficiencies have not been fully successful, many of the NATO partners made contributions that would not have been made otherwise. DOD officials expressed a general concern that the report (1) was too critical of output measures as an indicator of burden sharing and (2) relied too much on NATO evaluations of force goals performance.

GAO believes that output measures do not provide an adequate indication of defense burden sharing because they exclude factors such as training, readiness, and sustainability; are subject to differences in accounting for equipment that is included; and exclude major categories of defense investment such as U.S. transport capability. Also, there is no way to combine the contributions of the diverse categories used to measure output.

GAO believes that NATO evaluations of force goals performance offer a viable alternative because force goals are determined with consideration of each member’s economic, political, and financial constraints. A country’s output can be measured against goals agreed to within the

NATO framework. Moreover, opinions expressed and conclusions reached in U.S. reports of individual members' performance closely parallel those in NATO's evaluations.

State Department officials commented that the report is generally a complete and accurate historical account. They added that as the United States begins to reduce its forces in Europe, it may become increasingly difficult to persuade other NATO allies to adequately address their remaining defense commitments.

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Abbreviations

DOD	Department of Defense
NATO	North Atlantic Treaty Organization

Introduction

In 1989, the North Atlantic Treaty Organization (NATO) celebrated its 40th birthday. The purpose of the North Atlantic Treaty, signed on April 4, 1949, was primarily to provide for the collective protection of Europe and North America from the Soviet territorial expansion that had already begun during World War II. In one of the most important provisions of the Treaty, the NATO allies formally committed themselves to the collective defense of the alliance, stating that “the Parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all....”

The building of a defense base capable of responding to the perceived threat is, according to NATO, “based on the principle that the burden of defending the West should be shared equitably among the member countries....” Although “burden sharing” is a frequently used term, its definition and measurement have been the source of considerable debate among the alliance members virtually since NATO’s founding and have fostered many disagreements regarding how equitably that burden is being shared.

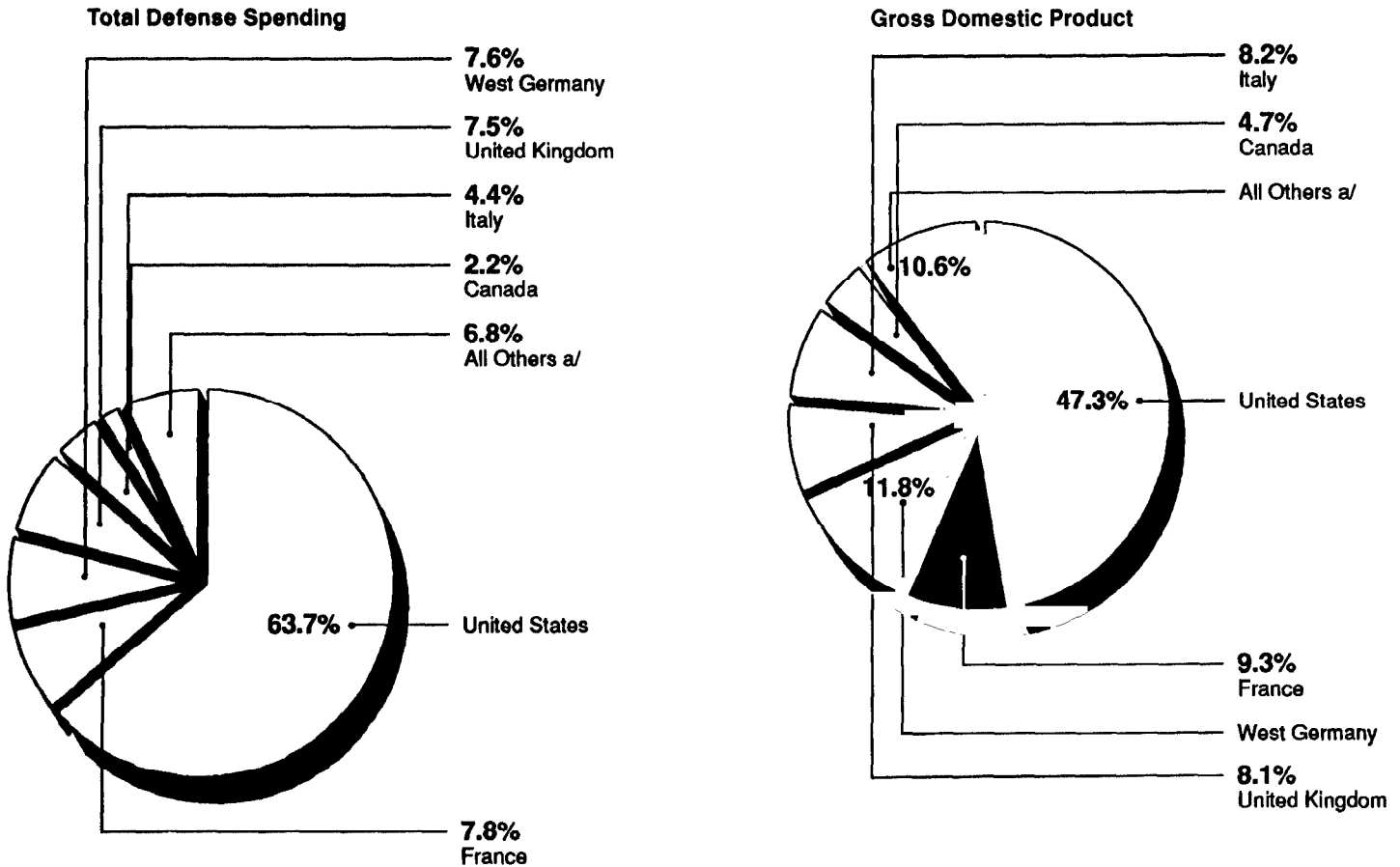
Congressional Concerns About NATO Defense Burden Sharing

For many years, members of Congress have expressed concern over the level of the defense burden shared by other NATO allies, particularly compared with the large costs incurred by the United States in support of the alliance. In 1988, the United States spent 6.1 percent of its gross domestic product¹ on defense, while the other allies spent an average of 3.1 percent. Although the U.S. expenditures, expressed as a percentage of the gross domestic product, have fluctuated during its 40-year membership with NATO, even at its lowest level, the United States has devoted relatively more of its resources to defense than the rest of the alliance.

As figure 1.1 shows, the United States overwhelmingly spends the most among the alliance members as a percentage share of total defense spending by NATO countries or gross domestic product.

¹According to the Defense Department, “GDP reflects the total value of all goods and services produced within the national borders of a country in a given year and, thus, is a good indication of the magnitude and rate of growth of a country’s economy.” Report on Allied Contributions to the Common Defense (Washington, D.C.: Department of Defense, Apr. 1987), p. 57.

Figure 1.1: NATO Nations' Total Defense Expenditures and Gross Domestic Product (1988)



^aBelgium, Denmark, Greece, Luxembourg, the Netherlands, Norway, Portugal, Spain, and Turkey.
Source: Department of Defense (DOD).

While the United States carried about 64 percent of the financial burden of the collective alliance defense (according to the NATO definition of defense spending) in 1988, the U.S. share of the collective gross domestic product was 47 percent.

Historically, the executive branch and Congress have emphasized different approaches to NATO defense burden sharing. The executive branch has called upon the allies to do more to increase their defense capabilities. On the other hand, members of Congress have called for the European allies to pay a greater share of U.S. stationing costs. Congress has also occasionally questioned whether the executive branch was doing

enough to encourage the NATO allies to assume more responsibility in this area.

Congressional dissatisfaction has been reflected in the recurring debate over the withdrawal of U.S. troops from Europe. Withdrawal has been proposed at various times during NATO's history but has never been enacted into law. In the 1950s, Senator Robert Taft opposed stationing U.S. troops in Europe because he feared that Europeans would depend on them indefinitely. During the 1960s and 1970s, Senate Majority Leader Mike Mansfield argued for a reduction in U.S. troops in Europe while encouraging West European countries to contribute more. Mansfield sought withdrawal of U.S. troops partly because postwar European recovery was considered to be complete and the U.S. military was making large expenditures in support of Vietnam.

Withdrawal initiatives continued in the 1980s, sometimes combining troop reduction proposals with admonitions that the allies should increase their contributions. For example, the 1984 Nunn-Warner-Roth amendment² proposed setting a timetable for phased U.S. troop withdrawals if NATO did not take specific actions to improve its conventional defenses. The proposed amendment received widespread attention and considerable congressional support, but it did not pass.

The State and Defense Departments' budget authorization legislation for fiscal year 1989³ expressed the sense of the Congress that U.S. allied costs related to defense alliances were not proportional to economic resources and that the administration should negotiate agreements with NATO and Japan on a more equitable distribution of the burden of financial support for mutual defense. In response to congressional criticism, in March 1988, the President asked the NATO allies to redouble their burden sharing efforts. A task force was subsequently formed, led by the Deputy Secretary of Defense, who visited NATO capitals to impress upon the allies the need for growth in defense budgets and more equitable sharing of the allied defense burden.

On December 18, 1987, the Chairman, Committee on House Armed Services, created a "Defense Burdensharing Panel," whose mission was to "review worldwide defense commitments, the costs of those commitments, and how the burden of providing for the defense of the United

²S. 3266, 98th Congress.

³P.L. 100-204 and P.L. 100-456, respectively.

States and its friends and allies is shared among nations.” The Panel held a series of hearings on these subjects and, in an interim report issued in August 1988,⁴ reached numerous conclusions. It concluded that the United States was bearing a disproportionate share of the defense burden and that Japan and Europe, as a whole, were not contributing to defense in a manner commensurate with their economic ability. Similarly, a Senate appropriations report stated that “Given the very real pressures caused by the budget deficit and the current trade imbalance with these same allied nations, it is not reasonable to expect U.S. taxpayers to continue to finance such a large percentage of the cost of common defense.”⁵

Assessing the Relative Burden

Most of the measures used to assess defense burden sharing generally show that the United States contributes a relatively greater share to the common defense than the other alliance members. For example, from 1980 through 1988, the United States devoted an average of 6.2 percent of its gross domestic product to defense compared to an average of 3.5 percent by the remaining NATO members. Even during the 1970s, when the U.S. defense budget was decreasing and those of other allies were increasing, the percentage of U.S. gross domestic product spent on defense remained higher than that of the rest of the alliance. The only countries that individually exceeded the U.S. share in any particular year since the 1970s were the aid recipient countries—Greece, Portugal, and Turkey.

Per capita measures—widely accepted indicators of economic development and standard of living—do not change the conclusion that the United States has borne a greater burden for defense than other NATO nations. U.S. per capita defense spending for fiscal year 1988 was reported by the Department of Defense (DOD) at \$1,190. No country makes per capita defense expenditures relative to its gross domestic product on a level equal to that of the United States, although some perform notably better than others. Countries such as Canada, Luxembourg, and West Germany have per capita gross domestic products approaching that of the United States but spend substantially less on defense on a per capita basis. Denmark and Norway, with higher per capita gross domestic products than the United States, spend only 38 and 58 percent, respectively, of what the United States spends on a

⁴Report of the Defense Burden-sharing Panel of the Committee on Armed Services (Washington, D.C.: House of Representatives, Aug. 1988).

⁵Senate Report 100-402 on Department of Defense Appropriations Bill for 1989, June 24, 1988, p. 12.

per capita basis, according to the 1990 DOD Report on Allied Contributions to the Common Defense.

In appendix I, we discuss in greater detail the use of gross domestic product as well as some arguments against its use as a sole criterion to compare relative defense burdens. In addition, we discuss NATO nations' contributions in terms of military capabilities, often referred to as "outputs," as another measure of the burden shared.

Use of Force Goals to Assess the Burden Shared

Assessments of the progress that countries make towards addressing their force goals serve as indicators of their efforts to contribute to the burden of the common defense of NATO. Force goals are established in consideration of members' economic, political, and financial constraints and are agreed to by each NATO member. According to NATO's Deputy Assistant Secretary General for Defense Planning, the assessment process provides the most comprehensive view of the shared burden within NATO. The Eurogroup⁶ Chairman also expressed this opinion, noting that NATO force goals are an equitable measure of effort in that they present an equal, reasonable challenge to all participating nations.

The concept of fairness within NATO dates back to 1951 when the first attempt was made to reconcile military requirements with the economic and financial resources of member countries. Recognition was given to the principle that no country should be called on to bear a defense burden beyond its means. In some instances, military assistance from NATO's more prosperous members has been sought for those who have difficulty in financing, from their own resources, the full range of contributions to the common defense.

Despite efforts to ensure that adequate resources are applied to fulfill defense programs and that consideration is given to the individual ability to contribute, all NATO nations have experienced deficiencies in addressing their force goals. With the exception of aid recipient countries, however, most NATO nations that have failed to meet force goals could have financially afforded to correct many of their most serious shortfalls.

⁶The Eurogroup is a strategic and political forum within NATO, including as members the defense ministers of 12 European countries. Excluded are the United States, Canada, France, and Iceland. An aim of the Eurogroup is to strengthen the European defense contribution to NATO and publicize this effort.

Other Burden Sharing Considerations

Some NATO members argue that the United States does not adequately consider a number of varied efforts as part of the burden they share. These NATO members believe that the United States—in particular, the Congress—has been too preoccupied with defense outlays as the primary indicator of burden sharing. They believe that other efforts or contributions that are not reflected in defense spending measures should be considered. For example:

- Virtually every country in NATO Europe hosts U.S. forces on its territory. West Germany hosts the greatest concentration of military forces in the western world; more than 400,000 allied troops are located in Germany (about 250,000 are U.S. forces). West Germany also hosts thousands of small and large annual military exercises that have increasingly become a sensitive domestic political issue.
- In 1988, the United States and Spain signed a new base agreement requiring the United States to relocate its 401st Tactical Fighter Wing based at Torrejon Air Base by May 1992. Italy agreed to accept the U.S. 401st when the Spanish agreement expires, and NATO agreed to fund a large amount of the costs associated with establishing the new base in Crotona, Italy.
- Italy was the first country to allow U.S. ground-launched cruise missiles on its soil, opening the way for similar agreements with other NATO countries. Subsequently, Belgium, the Netherlands, the United Kingdom, and West Germany agreed to base these missiles, sometimes in the face of strong public opposition. West Germany also agreed to have Pershing II missiles stationed on its territory. (Under the Intermediate-Range Nuclear Forces Treaty, these missiles will be withdrawn and destroyed by June 1991.)
- France, the United Kingdom, the Netherlands, Belgium, and Italy contributed forces to join U.S. units in support of naval operations in the Persian Gulf. Luxembourg shared in the costs incurred by the Belgian forces. The United Kingdom took a leadership role in coordinating the naval efforts of other European nations in the Gulf and provided support to the minehunting ships deployed by Belgium and the Netherlands. West German naval units deployed to the Mediterranean to compensate for other allied forces active in the Gulf.
- Turkey has approved U.S. requests for assistance with activities outside of NATO. For example, it allowed units of the U.S. Navy's Sixth Fleet engaged in peacekeeping activities in Lebanon to stop at Turkish ports for rest and recreation and, according to DOD, for extensive refueling.
- The United Kingdom allowed the United States to develop a major strategic base on Diego Garcia, located in the Indian Ocean, significantly improving the U.S. ability to support its policies in the region.

- Most NATO members have participated in various United Nations' peacekeeping activities throughout the world, and some were members of the Multinational Force and Observers, a U.S. organized effort to monitor the Sinai peace accord between Israel and Egypt.

As the preceding examples illustrate, the cooperative relationship among the NATO allies is complex, and their efforts often extend beyond defense spending and the implementation of force goals. Many of these efforts have involved assistance to the United States at considerable political risk. Clearly, these other activities advance and protect U.S. and allied interests. These activities have not, however, obviated the need for the individual allies to address their military commitments to NATO. Allies cannot substitute these activities for the often expensive task of establishing an adequate defense capability.

Perception of the Threat Affects Allied Defense Spending

Through the 1970s and 1980s, the NATO allies perceived the Soviet/Warsaw Pact threat to be less severe than the United States did. This perception affected their willingness to spend more on defense.

In our 1984 report assessing the allies' progress in the Long-Term Defense Program, we discussed differences in views about the Soviet threat and what was required to meet the threat. In the report, we referred to DOD's Report on Allied Contributions to the Common Defense, which stated that "emphasizing social and economic viability as their first priority, many Europeans continue to view the threat less seriously than the United States and European views of how best to counter the Soviet threat remain divergent."

Former Secretary of Defense James Schlesinger noted that since the early 1960s, the United States has regularly pressed its European partners to develop a full-fledged conventional deterrent.⁷ He added that such pressures have been resisted, first on doctrinal lines and later because of budgetary considerations. In Dr. Schlesinger's view, Europeans have generally regarded the Soviet military threat as "far less menacing" than has the United States. Consequently, they have felt much less need to create the appropriate military counters to Soviet conventional strength.

⁷James R. Schlesinger, "Problems Facing the Alliance," 35 Years of NATO, ed. Joseph Godson (New York: Dodd, Mead & Company, 1985).

According to DOD's 1989 Report on Allied Contributions to the Common Defense, most West Germans were satisfied with their current level of defense and would be reluctant to spend more in this area. In addition, German people were concerned that significant increases in defense spending could lead to higher levels of tension between West Germany and the Soviet Union and could damage inner German relations. Moreover, the majority of West Germans did not believe that Soviet conventional forces were strong enough to make aggression in Central Europe a realistic possibility, especially in view of the effects of perestroika on the Eastern European states. Other NATO nations have voiced similar sentiments. For example, Denmark's perception has been that the Soviet threat is rapidly decreasing. Therefore, the majority of people saw no reason to spend more on defense and would oppose such an idea as counterproductive to peace. In their view, such actions would have sent the wrong signal to the Soviets at a time when prospects for further disarmament were better than ever in the postwar period.

The possibility of NATO-Warsaw Pact agreements to place limitations on both nuclear and conventional forces appears to be placing greater pressure on governments to hold their defense spending to current levels or decrease it. Such pressures may also result in an inability to adequately address the force goals remaining after such agreements are reached, especially among some of the NATO members that have the lowest implementation rates.

According to a 1988 Defense Planning Committee⁸ report, the Intermediate-Range Nuclear Forces Treaty and signs of real change in Soviet policy have raised public expectations for further arms control negotiations and reductions in defense spending. It is within this environment that the Committee notes that a major challenge to all countries is to educate and persuade their citizens to support defense spending. Given many NATO nations' prior reluctance to spend more on defense when the Soviet threat appeared more menacing than it now does, this is likely to be a most difficult challenge. Threat perceptions will undoubtedly take on even greater significance as NATO attempts to adjust to proposals being discussed in the Conventional Armed Forces, Europe, talks and to political developments taking place within Eastern Europe.

⁸NATO's Defense Planning Committee is composed of representatives of the member countries participating in NATO's integrated military structure. It deals with matters specifically related to defense.

Objectives, Scope, and Methodology

The Chairman of the House Committee on Armed Services asked us to obtain information on U.S. efforts to urge its NATO allies to assume a greater role in defense burden sharing, the responsiveness of those allies to such efforts, and the effect of future force reductions on defense burden sharing. In August 1989, we issued a report on U.S.-Japan burden sharing.⁹ This report addresses U.S.-NATO burden sharing efforts. Our objectives were to determine

- the various ways in which NATO defense burden sharing contributions are measured;
- what major burden sharing initiatives the United States proposed within NATO during the 1980s and the NATO allies' responses;
- how well NATO allies, including the United States, have met their defense commitments; and
- the extent of bilateral support sought and received by U.S. forces from West Germany and the United Kingdom, the two European countries hosting the largest contingents of U.S. military personnel.

We interviewed officials and reviewed records at the Departments of State and Defense. We reviewed applicable legislation, treaties, and congressional reports and testimony. We also reviewed NATO reports as well as those issued by the Congressional Budget Office, Congressional Research Service, and private organizations pertaining to NATO defense burden sharing. In addition, we interviewed officials and reviewed records at the U.S. Mission to NATO in Brussels, Belgium; the U.S. Embassies in Bonn, West Germany, and in London, England; the U.S. European Command Headquarters in Stuttgart, the U.S. Air Forces Headquarters for Europe in Ramstein, the U.S. Army Headquarters for Europe in Heidelberg, West Germany; and the U.S. Naval Forces Headquarters for Europe in London, England.

We discussed defense burden sharing at NATO headquarters with representatives of West Germany, the United Kingdom, and the Netherlands governments and with NATO and Eurogroup officials. In addition, we obtained information from representatives of West Germany's Minister of Foreign Affairs and Minister of Defense and from the United Kingdom's Minister of Defense. Although we did not independently assess U.S. or allied efforts to address force goals, we reviewed U.S. and NATO assessments and related U.S. and NATO documents and obtained views from appropriate U.S. and foreign officials.

⁹U.S.-Japan Burden Sharing: Japan Has Increased Its Contributions but Could Do More (GAO/NSIAD-89-188, Aug. 1989).

As agreed with your staff, we did not obtain written agency comments on this report. However, we discussed the contents of this report with cognizant officials in the Departments of State and Defense. Their comments have been incorporated throughout the report, as appropriate. Our review was conducted from February 1988 to April 1990 in accordance with generally accepted government auditing standards.

NATO's Progress in Addressing Military Commitments

Efforts to enhance or maintain military capabilities are generally made within NATO's defense planning process. As part of this process, force goals are established and agreed to by each NATO member. Each member's economic, political, and financial constraints are considered. Annual assessments of allies' progress towards meeting their force goals provide an indication of their contribution to NATO's common defense. These assessments generally indicate how responsive the allies have been in achieving agreed-to initiatives to enhance or maintain NATO's military capabilities.

During the 1980s, the United States pursued numerous initiatives to enhance or maintain NATO's military capabilities. Once the commitments resulting from these initiatives were agreed to, they became NATO actions; that is, all members of the alliance adopted them. Some initiatives addressed broad issues, such as an increase in each country's real defense expenditures by at least 3 percent annually. Others focused on more specific issues, such as increasing contributions to the NATO infrastructure fund and paying for the relocation of the U.S. Air Force's 401st Tactical Fighter Wing.

Assessments of force goals performance serve as indicators of countries' efforts to contribute to the common defense of NATO. From a burden sharing perspective, force goals performance and related efforts to improve military capabilities are considered along with a country's individual ability to contribute. With some notable exceptions, most NATO nations that have a poor record in meeting force goals can financially afford to correct many of their most serious shortfalls.

NATO's progress in addressing its military commitments is considered from two separate but interrelated perspectives. First, we discuss allies' efforts to address their force goals and the impact that current weaknesses could have on NATO as a whole. Second, we address various U.S. efforts pursued during the 1980s to improve NATO military capabilities. These sections overlap somewhat because many U.S. initiatives were later incorporated into countries' force goals.

Force Goals Determined During NATO's Defense Planning Process

The principal method used by NATO to address its defense requirements is the defense planning process. During this process, force goals are established and tailored towards the accomplishment of defense missions that each NATO member agrees to. Force goals are generally defined in terms of military requirements that are expressed in a variety of ways, such as the number of forces; level of readiness, quantity, and

capability of equipment; and stockpiles of critical munitions. Packages of force goals for each participating nation are designed to promote the proper balance between force levels and the modernization, readiness, and sustainability of those forces. The force goals, numbering roughly 100 to 200 per nation, address land, air, and maritime force improvements.

The force goals for each country are collectively approved by NATO, and each country is asked to adopt these goals for implementation. The expenditures necessary to implement a country's force goals may exceed its planned defense budget, but the goals are intended to present a reasonable challenge and an equal challenge when political, fiscal, and economic circumstances are taken into account. Reconciling NATO's military requirements with the economic and financial resources of member countries dates back to 1951 and is based on the principle that "defense must be built on a sound economic and social basis and that no country should be called on to shoulder a defense burden beyond its means."

Every year, NATO reviews each nation's efforts to meet force goals, including progress made during the current year and plans for the next 5 years. NATO members' progress is documented in the Defense Planning Committee's General Report and in accompanying country chapters. This report is preceded by a multilateral meeting in which the defense gains and shortfalls of each country are discussed and encouragement is provided to countries to correct deficiencies. In preparation for the meeting, the U.S. Mission to NATO, the U.S. embassy in each NATO country, the Department of State, and DOD assess each member's defense progress through a series of internal messages.

Efforts to Meet Force Goals Affect NATO's Military Strategy

Each member of NATO's integrated military structure is tasked with force goals designed to enhance its capabilities to address agreed-to military missions. The military missions are based on a NATO assessment of Warsaw Pact capabilities. These missions reflect each country's geographic location, economic strength, and nature of the particular threat against it. Some countries' missions are more limited than others. For example, the Netherlands' missions emphasize maritime defense, the provision of reception areas for external reinforcements, and the defense of a sector in West Germany. The United States, on the other hand, as the leading power of the Western world interested in promoting stability on a global scale, has force goals affecting both conventional and nuclear forces and has military missions in all NATO regions.

In the following sections, we discuss NATO's and U.S. analysts' assessments of alliance members' efforts to meet force goals and how those efforts affect NATO as a whole. Table 2.1 illustrates selected defense capabilities of NATO countries relative to the alliance as a whole. DOD presents these and other comparisons to the Congress in its annual Report on Allied Contributions to the Common Defense. While no single table could cover all of the factors constituting NATO's total defense, table 2.1 provides a perspective on the relative size of the countries' military contributions and is useful in discussing their efforts to meet force goals.

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Table 2.1: NATO Members' Defense Contributions in Selected Areas (1988)

NATO country	Share of collective	
	GDP ^a	Manpower ^b
Belgium	1.5	1.9
Canada	4.7	1.3
Denmark	1.1	0.9
France	9.3	10.1
Germany	11.8	11.8
Greece	0.5	3.8
Italy	8.2	5.8
Luxembourg ^h	0.1	0.0
Netherlands	2.2	2.2
Norway	0.9	1.9
Portugal	0.4	1.3
Spain	3.3	5.0
Turkey	0.6	10.1
United Kingdom	8.1	5.2
United States	47.3	38.7
Total NATOⁱ	100.0	100.0

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Division Equivalent Firepower	Naval force tonnage^c	Maritime patrol aircraft	Naval aircraft^d	Air Force aircraft^e	Ballistic missile tubes^f	Ballistic missiles^g	Strategic nuclear bombers
1.5	0.3	0.0	0.0	2.3	0.0	0.0	0.0
0.9	1.7	3.3	0.0	2.5	0.0	0.0	0.0
1.3	0.4	0.0	0.0	1.0	0.0	0.0	0.0
6.2	7.1	5.5	4.5	9.9	11.8	1.8	4.4
10.9	3.1	2.6	4.5	6.3	0.0	0.0	0.0
5.4	1.8	2.4	0.0	5.0	0.0	0.0	0.0
4.4	2.2	2.6	0.0	5.5	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.3	1.4	2.4	0.0	2.4	0.0	0.0	0.0
1.4	0.6	1.3	0.0	0.9	0.0	0.0	0.0
0.6	0.6	0.0	0.0	0.9	0.0	0.0	0.0
3.4	2.7	1.1	0.5	2.6	0.0	0.0	0.0
10.4	2.7	3.3	0.0	4.0	0.0	0.0	0.0
3.9	11.9	6.2	2.8	10.2	7.8	0.0	0.0
46.4	63.5	69.3	87.7	46.5	80.4	98.2	95.6
100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^aGross domestic product.

^bActive duty military and civilian manpower and committed reserves.

^cAll ships less strategic submarines.

^dTactical fixed-wing naval combat aircraft.

^eTactical Air Force combat aircraft.

^fSubmarine-launched ballistic missiles tubes.

^gIntercontinental ballistic missiles and intermediate-range ballistic missiles.

^hLuxembourg has neither an air force nor a navy. Its army of 635 is too small to show up statistically.

ⁱIceland is omitted from the table because it has no military forces.

Source: Derived from various charts presented in DOD's 1990 Report on Allied Contributions to the Common Defense.

Accomplishment of Force Goals Related to Countries' Key Missions

Contained in the Defense Planning Committee's annual country assessments are separate evaluations by three major NATO military commanders—the Supreme Allied Commander, Europe; the Supreme Allied Commander, Atlantic; and the Commander-in-Chief, Channel area.¹ These commanders evaluate force goal efforts as they relate to 10 key mission components. According to DOD, these components are the critical elements necessary to maximize NATO's chances of prevailing in a conflict with the Warsaw Pact.

The Supreme Allied Commander, Europe, assessment contains an "index of worth" for each force goal that, according to the Defense Planning Committee, is "derived from an assessment of cost, priority, and the degree of KMC [key mission component] relevance to force goals." The index of worth is, in effect, a weighing of the force goals in recognition that some are more important than others and vary in the expense involved in their accomplishment. The other two commanders' assessments do not provide this index of worth, and their analyses are therefore not included in our discussion of key mission components. According to the Supreme Allied Commander, Europe, assessment, in 1988 none of the NATO members—including the United States—implemented all of the force goals considered critical to the accomplishment of their missions.²

The implications of members' efforts to meet force goals were discussed in the Defense Planning Committee's 1988 report. In the report, it was noted that, although countries have made a number of positive developments in efforts to meet force goals, the lack of adequate efforts, especially those highlighted under the Conventional Defense Improvements Program, gives cause for concern. For example, although air forces will continue to be reinforced, serious deficiencies remain in many of the receiving countries' ability to provide for their protection. Defense Planning Committee reports also noted that extensive obsolescence of arms

¹The Supreme Allied Commander, Europe, is responsible for air, ground, and naval forces in Northern Europe, including the Baltic approaches; Central Europe; Southern Europe, including the Mediterranean; United Kingdom air forces; the Allied Command Europe Mobile Force; and NATO's Airborne Early Warning and Control Force Command. The Supreme Allied Commander, Atlantic, is responsible for guarding the sea lanes in the North Atlantic area. The Commander-in-Chief, Channel and Southern North Sea, is responsible for controlling and protecting merchant shipping from the Southern North Sea through the English Channel.

²Five countries were omitted from the assessment. France is omitted because it is not part of NATO's integrated military structure and therefore has no force goals. Spain will commit forces to NATO commanders but does not yet have force goals. Greece and Turkey are assessed but do not allow their reports to be shared outside of NATO's Defense Review Committee. Iceland has no military forces.

and equipment in Greece, Portugal, and Turkey continue to represent one of the most serious weaknesses in NATO's defense posture.

According to the 1988 Defense Planning Committee report, some of NATO's defense deficiencies—as identified through the members' responses to their force goals—could result in a failure to accomplish important NATO missions. These weaknesses are considered preventable in that, except for aid recipient countries, most of the allies have the financial capability to correct many of their deficiencies. U.S. and NATO reports expressed concern that widespread constraints on defense spending continue to widen the gap between the acceptance of defense obligations by its members and the financial means made available to address them.

Countries Can Increase Efforts to Meet Force Goals

As discussed earlier, efforts to meet force goals must be considered along with the ability to contribute. The only exception to this general rule of thumb is that NATO aid recipient countries (Greece, Portugal, and Turkey) are asked to do more, with the help of other alliance members, than they alone can afford.

NATO considers only West Germany, the United Kingdom, and the United States as consistently implementing force goals at high levels. In the context of sharing the burden for the collective defense, however, West Germany, with the highest implementation rate, is not considered among the top performers. This is because West Germany's deficiencies are considered less than acceptable in light of its economic strength and relatively low defense expenditures (2.9 percent of gross domestic product in 1988) compared to the United Kingdom (4.2 percent) or the United States (6.1 percent). Greece, on the other hand, is considered a top performer in terms of its economic burden (defense expenditures were 6.4 percent of gross domestic product in 1988), although it has a low force goals implementation rate.³

DOD officials pointed out that non-U.S. allied force goals performance in the Central Region⁴ was generally good during the 1980s, especially in the area of equipment modernization. This is true because, aside from the United States, the countries contributing most of the forces and

³A factor affecting Greece's relatively large defense burden is its adversarial relationship with Turkey.

⁴The NATO European Central Region consists of Belgium, West Germany, Luxembourg, and the Netherlands.

equipment to the Central Region are West Germany and the United Kingdom, both of which are recognized as having high force goal implementation rates.

One of the most serious weaknesses in NATO's defense posture is the obsolete arms and equipment of the forces of the Southern Region aid recipient countries. Much of these countries' budgets goes towards personnel expenses and the maintenance of equipment that is considered incapable of matching modern Warsaw Pact battlefield mobility, range, and lethality. Over the years, NATO has urged its more wealthy potential donor nations to provide increased assistance. Only the United States and West Germany have regularly provided substantial assistance.

With the exception of aid recipient countries, most NATO nations with a poor record for meeting force goals can financially afford to correct many of their most serious shortfalls, according to U.S. and NATO assessments. This is also borne out in an analysis of economic indicators of defense burden sharing (see app. I). Therefore, eliminating many force goals weaknesses that the Defense Planning Committee identified is within the financial reach of all but the poorest countries in the Southern Region.

According to DOD officials, the NATO evaluations of countries' force goals performance are deficiency oriented and may therefore be overly pessimistic. However, we also relied on U.S. reports of individual members' performance. The opinions expressed and conclusions reached in those reports closely paralleled those in NATO's evaluations. Also, from NATO's reports we can determine individual countries' relative efforts which, in turn, are important indicators of future willingness to undertake NATO responsibilities.

Defense Improvement Programs in NATO During the 1980s

During the 1980s, the United States pursued various initiatives aimed at urging NATO nations to enhance or maintain their military capabilities. These initiatives, agreed to and adopted by NATO members, were long-term efforts aimed at correcting long-standing military deficiencies. We identified four initiatives that were among the most important:

- increasing all members' real defense expenditures by 3 percent annually,
- correcting long-standing deficiencies through the Long-Term Defense Program,

- correcting long-standing deficiencies through the Conventional Defense Improvements Program as a follow-on to the Long-Term Defense Program, and
- increasing the NATO infrastructure fund.

We also identified one multilateral effort—relocating the 401st Tactical Fighter Wing from Spain to Italy—that, although not directly related to force goals, reflects the NATO allies' cooperation on defense burden sharing issues and maintenance of the alliance's military capabilities.

While these areas do not include all initiatives pursued by the United States, they represent some of the most important efforts made by the United States during the 1980s, according to U.S. officials. We chose these initiatives because of their importance and because they resulted in discrete programs with identifiable goals usually requiring an expenditure of resources. Although most of these initiatives were aimed at correcting the alliance's most serious defense problems, to a certain extent, they have not met expectations. The alliance has been more responsive to limited initiatives, such as increasing the NATO infrastructure fund or assisting in the relocation of the 401st Tactical Fighter Wing.

Goal of 3-Percent Increase in Defense Spending

In the spring of 1978, NATO's defense ministers recognized that implementing major defense improvements would require greater contributions from each country. The defense ministers agreed that each country should seek an annual real increase of at least 3 percent in defense spending. They reaffirmed this goal every 2 years during the 1980s.

Table 2.2 shows the amount of real defense spending growth by the United States and the average growth for the non-U.S. NATO countries for the period 1980 through 1988 and estimates for 1989.

Table 2.2: NATO Real Defense Spending Growth (1980-88)

Figures in percent

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989 (Est.)
Non-U.S.-NATO total, including Spain ^a	3.0	3.0	2.5	1.4	1.6	1.0	-0.5	1.8	-0.9	1.1/1.6
United States	4.2	5.0	6.7	7.8	4.3	6.6	6.4	-0.3	-1.5	0.2

Note: According to DOD, the spending totals from which these figures were derived reflect NATO's definition of defense spending and are the best estimates that can be made on the basis of information now available. National fiscal years correspond with calendar years except for those of Canada and the United Kingdom, which run from April to March, and the United States, which begins its fiscal year in October. Turkish data through 1981 is based on a March-February fiscal year; in 1983, Turkey converted to a January-December fiscal year.

^aWeighted-average growth rates developed using constant 1988 prices and 1988 exchange rates.

Source: DOD's 1990 Report on Allied Contributions to the Common Defense.

Through 1986, only the United States achieved or exceeded the 3-percent goal every year. Since 1983, NATO allies averaged, as a group, significantly less than 3 percent in real increases in defense spending, although every ally, with the exception of Denmark, achieved the goal, individually, in one or more years. U.S. reports concluded that the allies' failure to increase their defense spending to or near the 3-percent level directly affected their performance in addressing initiatives and force goals designed to correct long-standing conventional defense problems.

In addressing our discussion on the responsiveness of NATO allies to the 3-percent goal and other U.S. initiatives, DOD officials pointed out that while these initiatives did not achieve 100 percent of their objectives, they resulted in a number of important improvements in alliance capabilities and efforts. For example, these officials noted that, although the initiative to increase real defense spending by 3 percent annually was not fully achieved, "it is generally agreed upon by NATO experts that country spending efforts were better than they would have been without the 3 percent objective."

Plans to Correct Long-Term Deficiencies

The Long-Term Defense Program was adopted by NATO in May 1978 to correct long-standing defense deficiencies. The program included over 120 qualitative and quantitative measures for improving nine areas: readiness; reinforcement; reserve mobilization; maritime posture; air defense; command, control, and communications; electronic warfare; rationalization; and consumer logistics. Although designed to be a long-term effort, the program ceased to exist as a discrete program in 1982—3-1/2 years after its adoption.

Procedural difficulties were the primary reason for terminating the separate monitoring and reporting that made the program discrete. For example, monitoring was often impeded by incomplete, inaccurate, and untimely submission of progress data. Progress that could be measured was also limited because of insufficient allied support. After the program's termination, the majority of the measures were incorporated into force goals or other NATO planning efforts. Our 1984 report on the program noted that some progress was made in measures involving little or no cost, but generally, the allies made unsatisfactory progress in correcting NATO deficiencies.

NATO periodically issued status reports on the program, and in its final NATO report on the program in 1982, NATO indicated that 30 percent of the measures were progressing unsatisfactorily compared to 60 percent in 1981. However, NATO cautioned that most of the failures were concentrated among particularly important programs, such as antiarmor, defense against chemical warfare, air-to-surface weapons and air defense generally, maritime posture, electronic warfare, and war reserve stocks of fuel and ammunition. Overall, NATO reports characterized the program's progress as unsatisfactory in implementing measures that required significant financial contributions by NATO members. Moreover, NATO assessments and U.S. officials expressed doubt concerning NATO's ability to carry out its defense strategy if the measures were not completed. NATO and U.S. officials believed, however, that the program contributed to NATO defense planning by emphasizing long-term and functional area planning.

Improvements in Conventional Defense

The Conventional Defense Improvements Program was introduced in December 1984 by the United States to redress "the steadily growing conventional imbalance favoring the Warsaw Pact." The program represents the latest attempt to correct critical deficiencies previously identified by the Long-Term Defense Program. Although less comprehensive than the Long-Term Defense Program, the Conventional Defense Improvements Program addresses many of the same persistent issues and problems.

The program is also addressed within NATO's force goals process. Typically, force goals for each country receive a priority of I, II, or III, which denotes their relative importance. In 1985, priority I force goals considered especially critical to NATO defense were highlighted by NATO defense ministers as force goals to receive special attention and effort under the Conventional Defense Improvements Program. Most of these program

force goals number between 15 and 20 and, by definition, were to be implemented in full. The program force goals address deficiencies in a number of areas, such as modernization and readiness, related to conventional forces.

Since 1986, efforts to address these force goals have been included in the Defense Planning Committee's annual report. Each force goal is reported on by its members as either (1) fully implemented, (2) implemented with some exceptions, (3) under consideration, or (4) not implemented/implemented with serious shortfalls. A fully implemented force goal may reflect substantial procurement but may also reflect plans to procure during a specified time frame, or it may involve a low/no cost force goal, such as participation in the development of a NATO identification system.

A force goal reported as "implemented with some exceptions" generally reflects a delay in completion, or it may involve a shortfall compared with target acquisition amounts. The third category, "goals under consideration," usually involves studies to determine the best way to address a problem, or may only involve consideration by the country to determine if it is willing to accept the force goal. The final category, "no implementation or implementation with significant shortfalls," usually reflects a less planned capability than necessary or no plans at all to address the shortfall, at least within the time period required.

U.S. and NATO reports of allied performance on the program between 1986 and 1988 indicate that 9 of the 13 countries⁵ assigned program goals have performed poorly, fully implementing less than one-half of their goals. The only countries fully implementing more than one-half of their program goals are the United States, the United Kingdom, West Germany, and the Netherlands. As noted, implementation of these force goals not only reflects actual attainment of program objectives but may also indicate plans to implement the highlighted force goals during a specified time period. Therefore, it is possible that a goal which was reported as fully implemented in one year may slip to a lower category the following year due to a change in the plans of the reporting country (for instance, delay or cancellation of a program).

⁵Three countries are omitted from this assessment. France is omitted because it is not part of NATO's integrated military structure and therefore has no force goals. Spain will commit forces to NATO commanders but does not yet have force goals. Iceland has no military forces.

DOD officials stated that, while "a few" smaller nations reported quite disappointing performance on NATO's Conventional Defense Improvements initiative, the larger non-U.S. allies—that is, those which account for a large proportion of total non-U.S. NATO capability—reported good performance in implementing the program's objectives. NATO reports indicate that, while some progress was made in implementing program force goals, the rate of implementation was far less than 100 percent. Also, the countries that typically performed well in addressing their force goals in general also addressed their goals highlighted by the Conventional Defense Improvements Program better. Those countries that generally had a low force goals implementation rate also performed poorly on program goals. Therefore, it appears that the program did not persuade those perennially poor performers to pay greater attention to those priority I force goals considered the most critical in NATO's view.

Efforts to Increase the NATO Infrastructure Fund

Another U.S.-initiated effort during the 1980s involved the NATO infrastructure fund. This common fund was established to finance the capital costs of constructing jointly approved, standardized military facilities and communications-electronics systems for single or joint use by NATO members. Although small in comparison to national defense expenditures, the NATO infrastructure budget—currently at about \$2.0 billion annually—is the largest commonly funded NATO program and is considered by the United States and its allies to be an important example of NATO's solidarity.

The infrastructure fund was established in the 1950s based on the member nations' ability to pay. As European economies grew, the U.S. share of program costs decreased from almost 44 percent to its present level of 28 percent. The United States and West Germany, at 27 percent, are by far the largest contributors to the program. According to DOD, about 35 to 40 percent of annual funding goes towards projects for U.S. use.

In the 1979 and 1984 negotiations to establish the program's budget (the infrastructure budget is established in 5-year increments), the United States attempted with mixed success to increase the infrastructure account to eliminate defense deficiencies. In 1979, a 5-year infrastructure funding ceiling of \$4.7 billion, about \$940 million annually, was agreed on for the 1980-84 programming cycle. This was less than two-thirds of the money required to fully support NATO military commitments under the program. Money was subsequently added, partly to fund

deployment of ground-launched cruise missiles to Europe, bringing the total for the cycle to \$5.9 billion, or about \$1.2 billion annually.

The United States played a role in seeking to increase funding in 1984 in a congressional climate of threatened troop withdrawals if NATO did not upgrade its conventional defenses. NATO agreed to increase funding for the 1985-90 period to \$11 billion—about \$2.2 billion annually—representing an increase of 56 percent, after adjusting for inflation. The increase represented NATO's effort to correct deficiencies in areas such as aircraft shelters, ammunition storage, logistics for reinforcement, and the storage of prepositioned supplies.

Based on the increase, countries raised the number of projects implemented, and 90 percent of the projects for the fourth year of the cycle were reported by DOD to deal with key NATO deficiencies, many of which were highlighted under the Conventional Defense Improvements Program. Projects included financing more aircraft shelters, antiaircraft missile deployment facilities, fuel storage and pipelines, air defense command and control, and NATO wartime communications. According to a U.S. official, this funding level would permit construction of more than half of projected shelter requirements for U.S. reinforcing aircraft.

401st Base Relocation

According to NATO and U.S. officials, the proposed action to relocate the U.S. 401st F-16 Tactical Fighter Wing, although not specifically related to force goals, indicates NATO's willingness to cooperate on defense burden sharing issues and maintain the alliance's military capabilities. On December 1, 1988, the United States agreed to Spain's request to remove the 401st from Torrejon. The Secretary of Defense reacted to Spain's decision by noting that if NATO did not bear the financial burdens involved in moving the unit to another European location, the 401st would be deactivated and brought back to the United States.

In response to a May 1988 request by NATO's defense ministers, Italy agreed to station the 401st at Crotona. NATO agreed to pay construction costs for the new base from its infrastructure program.⁶ NATO's infrastructure program normally restricts funding to minimum wartime operational capabilities. To keep the 401st in Europe, however, NATO took the unprecedented step of agreeing to fund construction of a new peacetime base, including land acquisition and utilities costs. NATO also agreed to

⁶The U.S. contribution to the NATO infrastructure fund is 27.8 percent.

prefinance the cost of housing construction, which is to be repaid by the United States over 10 years without interest.

In April 1990, DOD provided us with its latest estimate of the costs associated with relocating the 401st. According to DOD figures, the total cost to construct the new base at Crotona, without adjusting for inflation or the time value of money, is estimated at \$732 million. Table 2.3 shows the breakdown of those costs.

Table 2.3: Estimated Costs for Construction of Crotona Air Base

Dollars in millions	
U.S. Costs	
Base construction (U.S. portion of NATO infrastructure fund)	\$196.6
Housing (prefinanced by non-U.S. NATO)	89.0
Recreation facilities	12.9
Training range (U.S. share)	7.0
Total U.S. Costs	\$305.5
Non-U.S. Costs	
Base construction (non-U.S. portion of NATO infrastructure fund)	\$419.5
Training range (Italy's share)	7.0
Total Non-U.S. Costs	\$426.5
Total	\$732.0

As table 2.3 shows, the United States will assume 42 percent of the construction costs of Crotona Air Base. DOD estimates that annual expenditures will be required through 1994 for NATO and beyond 1994 for the United States.

According to DOD, all non-U.S. NATO costs will be incurred during the first 6 years, while U.S. outlays are required for a 15-year period. The longer U.S. payment period resulted from NATO's agreement to prefinance U.S. housing costs without charging interest. NATO also agreed to delay U.S. repayment of the first of 10 annual installment payments until 1994. DOD estimated that the present value of the \$89 million to be repaid to NATO by the United States is \$39 million.

The United States will incur other costs associated with vacating the base at Torrejon. DOD estimated these costs at \$130.3 million, which include severance payments to Spanish nationals whose employment will be terminated (\$19.2 million) and transfer costs for the remaining U.S. units at Torrejon (\$14.8 million). In addition, the United States will

lose the capital investment value of U.S. assets that will be left at Torrejon (\$96.3 million). All of these costs will be incurred regardless of where the 401st is eventually moved.

In the fiscal year 1990 Defense Authorization Act, Congress limited total DOD expenditures for relocating DOD functions from Torrejon to other non-U.S. locations (which would include Crotone) to \$360 million. According to DOD, this includes the \$305.5 million in U.S. costs shown in table 2.3 plus an estimated \$14.8 million for transferring the remaining units at Torrejon, or a total of \$320.3 million.

In September 1989, we issued a report on the costs associated with relocating the 401st.⁷ In that report we estimated that the U.S. costs for construction of Crotone plus the transfer costs for the remaining units at Torrejon amounted to \$464.8 million—substantially more than the \$360 million limitation on DOD expenditures imposed by Congress. According to DOD, the difference between current and previous estimates is due to a more favorable exchange rate, a better definition of requirements, and more refined cost estimates.

Effect of Proposed Force Reductions on Defense Burden Sharing

With the prospects of the conclusion of NATO-Warsaw Pact conventional forces agreement during the 1990s and perhaps even further-reaching agreements in the future, will defense burden sharing remain an issue within NATO? In all likelihood, defense burden sharing will remain as important, if not more so, in the coming years, as we reported in April 1990.⁸

Based on the proposals tabled in the Conventional Armed Forces, Europe, talks, NATO European forces would be cut 5 to 15 percent below current levels in certain major weapons categories; the Warsaw Pact would have to make more massive cuts in order to reach relative parity. The NATO cuts would not result in any one country's taking substantial reductions in equipment, according to State and DOD officials. Also, in January 1990, President Bush proposed a cap of 195,000 for U.S. and Soviet air and ground forces deployed in Central Europe. NATO and the Warsaw Pact agreed to this proposal in February 1990 and further

⁷Overseas Basing: Costs of Relocating the 401st Tactical Fighter Wing (GAO/NSIAD-89-225, Sept. 21, 1989).

⁸NATO-Warsaw Pact: Issues Related to Implementation of a Conventional Forces Treaty (GAO/NSIAD-90-130, Apr. 16, 1990).

allowed the United States to retain an additional 30,000 U.S. troops elsewhere in Europe while limiting the Soviet Union to 195,000 troops. The proposals would result in a troop reduction of 80,000 U.S. forces in Europe. If the U.S. force structure is reduced by that amount, substantial savings may be achieved.

According to DOD officials, while the proposed treaty requires removal of these forces from Europe, it does not require that total U.S. forces be reduced by 80,000. However, these officials noted that total U.S. forces will be reduced by at least 80,000 personnel because of defense budget cuts. If, however, the U.S. commitment to NATO remains unchanged, especially the commitment to supply 10 divisions to Europe within 10 days after a mobilization, greater demands will be placed on U.S. strategic lift capabilities.

Although savings may be achieved as a result of a conventional forces agreement, some additional costs will have to be shared among alliance members. For example, cognizant U.S. officials note that a reduction of NATO and Warsaw Pact forces would result in a greater reliance on the quality of NATO's defense. Therefore, more balanced, modern, and technologically advanced forces among all allies will be necessary. In addition, the implementation of the proposed treaty would require a verification process that is much more complex and demanding than that now required by existing agreements such as the Intermediate-Range Nuclear Forces Treaty. Decisions would also be required on whose equipment should be destroyed to meet treaty limitations. If the older, less capable equipment is destroyed first, NATO will have to consider (1) the redistribution of more advanced equipment and (2) possible compensation from the recipient countries to those allies who, in the past, have made investments in more modern forces.

Considering improved relations between NATO and the Warsaw Pact and budgetary problems reported by many NATO nations, it is questionable whether the necessary resources will be made available to address some of the NATO members' most serious and expensive problems, many of which are related to the lack of modernization.

If future talks result in much greater force and equipment reductions than are being considered, substantial savings or "peace dividends" may be possible for NATO forces. An issue to be addressed within the alliance at that time will be benefit sharing rather than burden sharing. Given the greater NATO defense burden that the United States has assumed

during the last 40 years, will it be able to assume proportionate benefits?

Not all reductions and associated savings necessarily flow directly from implementation of the proposed treaty provisions. Savings will also most likely be achieved through a reconsideration of the perceived threat from the Warsaw Pact countries and the level of defense believed necessary to counter that threat. For example, the developments in Eastern Europe are prompting questions about a number of U.S. programs, including the modernization of European-based U.S. short-range nuclear missiles and artillery, the number of B-2 Stealth bombers and other aircraft required for an adequate defense, the size and composition of the future U.S. Army, and the number of aircraft carriers required by the U.S. Navy.

West German and British Host Nation Support for U.S. Forces

Certain NATO nations contribute, on a bilateral basis, wartime and peacetime host nation support to U.S. forces. This support is considered when evaluating a nation's overall contributions to the common defense of NATO.

The large U.S. military presence in NATO Europe—about 322,000 military personnel—and the increasingly high U.S. defense costs have necessitated that the United States seek more allied support for its forces. Wartime host nation support encompasses all civil and military assistance provided by a host nation to allied forces located in or deploying to and through the host country in times of war. Peacetime host nation support includes cost sharing and other arrangements primarily for providing and supporting U.S. bases.

Host nation support, however, is not easily quantified because these contributions do not always fall under NATO's definition of defense spending. Generally speaking, any expenditure made by a host nation specifically to meet the needs of U.S. forces stationed in that country would be considered a defense expenditure. Other types of support, such as the provision of land, housing, tax exemptions, and civilian assets for wartime use, normally do not necessitate a financial outlay and are therefore not reflected in a country's percentage of gross domestic product devoted to defense. In general, host nation support is provided at no charge to the United States; in some cases, reimbursement is required. This differs by country and by the type of support provided.

Although most NATO countries provide some support to U.S. forces, this chapter concerns only West Germany and the United Kingdom. By the end of fiscal year 1988, approximately 86.0 percent of all U.S. military forces assigned to Europe were stationed in these two countries—77.2 percent, or 250,000, in West Germany, and 8.8 percent, or 30,000, in the United Kingdom.

Federal Republic of Germany: More Progress for Wartime Than for Peacetime Support

Because of the large U.S. presence, the United States has requested a wide range of wartime and peacetime host nation support from West Germany—more than from any other NATO country where U.S. forces are stationed. At least since the early 1980s, U.S. initiatives for greater West German assistance have focused on obtaining more wartime support than offsetting U.S. stationing costs in peacetime.

U.S.-West German Wartime Host Nation Support Agreement Concluded in 1982

In 1980, the United States made a major effort to obtain greater host nation support from West Germany. In that year, a formal message called the Stoessel Demarche was presented to the German government by the U.S. Ambassador, Walter Stoessel. The demarche listed, in order of priority, a number of issues related to assistance for U.S. forces stationed in West Germany. The most important concern, from the U.S. perspective, was wartime host nation support. The concept proposed relieving the United States of certain support functions in war, allowing it to place more combat units in front line and reinforcing roles. The other items related to peacetime host nation support.

The wartime host nation support concept, developed by the U.S. Army, Europe, during the mid-1970s, sought to address the U.S. forces' lack of combat service support¹ capabilities by transferring some of this responsibility to West Germany. In April 1982, West Germany agreed to dedicate up to 90,000 German Army reserve forces to support U.S. forces in times of crisis and war. The agreement also formalized Germany's intent to provide civilian sector support, such as transportation, maintenance, and other field support services.

According to U.S. officials, this agreement represented a milestone in the extent of support to be provided to U.S. forces during times of war. It is also the first wartime host nation support agreement with any NATO ally that provides for a large, dedicated host nation military force. Although other NATO nations, such as Belgium and Norway, have committed forces to support U.S. reinforcements, their support is not solely dedicated to U.S. forces. That is, these forces may be required to fulfill other functions and may therefore be unavailable for U.S. support. West Germany is also the first NATO ally to agree to pay a portion of the support costs.

Implementation Costs and Current Status of the 1982 Wartime Host Nation Support Agreement

The costs to establish and maintain the capability to provide wartime host nation support are being shared by the United States, West Germany, and NATO. Under the agreement, West Germany bears the personnel and certain equipment costs for the reservists as well as specific material investment costs for the military command, logistic, and training organizations of the forces. The United States bears the costs of all other material investment, the salaries of the civilian work force, annual operations and maintenance, and general administration. The

¹Combat service support is the assistance provided by nondivisional forces to air and ground combat units in areas such as equipment repair; distribution of ammunition, fuel, and other supplies; medical care provision; and reinforcement receipt and support upon arrival in the theater.

NATO infrastructure program is funding the construction of the facilities needed to support the reservists. The United States and West Germany will split the costs equally for facilities that NATO does not fund.

The peacetime cost of establishing the wartime host nation support capability over its first 5 years (1983-87) was originally estimated at about \$600 million, excluding the cost of the facilities. DOD now estimates that the total implementation costs will be about \$1.6 billion. The program's implementation costs have grown, primarily due to the decline of the dollar against the mark—affecting equipment procurement and construction costs—and because of an increase in the number of facilities needed to support the reservists. Full implementation, once targeted for 1987, has been delayed and is now scheduled for 1993, provided all equipment is delivered on time and the required infrastructure is made available. Table 3.1 shows current estimated implementation costs.

Table 3.1: Estimated Costs to Implement the Wartime Host Nation Support Agreement (1983-94)

Dollars in millions				
Cost category	United States	West Germany	NATO	Total
Equipment, operations, and maintenance	\$838.2	\$542.0	0	1,380.2
Infrastructure after NATO reimbursement	76.5	76.5	102.0 ^a	255.0^b
Total	\$914.7	\$618.5	\$102.0	\$1,635.2

^aAssuming NATO reimburses 40 percent of total construction costs.

^bThis amount will be prefinanced by West Germany.

Equipment Procurement

The cost for equipment procurement is divided into three areas: (1) personal equipment for the reservists (for example, uniforms), to be provided by West Germany; (2) material and services to be obtained upon mobilization from German civilian sources, such as transportation assets, which entail no peacetime costs to either government for procurement, storage, or maintenance; and (3) unique military equipment, such as arms, that cannot be obtained from civilian sources. The United States is responsible for the cost of this equipment.

According to DOD officials, the decline in the strength of the dollar against the mark, coupled with an overall increase in the quantity and costs of German-procured equipment, has increased the U.S. cost of the procurement program. When the program's funding was estimated in 1985, the dollar value was about 3.25 marks; recent contract payouts in

West Germany are near 1.75 marks per dollar. Equipment acquisition is not scheduled to be completed until the end of fiscal year 1992, and DOD officials now estimate that, once completed, the program will have cost the United States \$838.2 million and West Germany \$542 million.

Infrastructure Funding

According to U.S. Army officials, West Germany estimated in 1987 that providing sites for headquarters, training, ammunition, and equipment would cost about 430 million marks, or approximately \$175 million. Because most of the facilities needed to support the reservists normally qualify for NATO funding, it was anticipated that NATO would reimburse 80 percent of the total costs, or about \$140 million. The United States and West Germany would share the difference equally—\$17.5 million each. Further, both countries agreed that West Germany would prefinance the infrastructure costs and that the scope and quality of the construction would meet the standards for the German Armed Forces. Since then, however, the cost of the facilities has increased—primarily due to the decline of the dollar and an increased number of sites, but also because of NATO's refusal to fund 80 percent of the construction costs as originally planned. Currently, the total cost of the facilities is being estimated at \$255.0 million; NATO is expected to pay \$102 million, or 40 percent; the United States and West Germany are to pay \$76.5 million each. Most infrastructure projects are now expected to be completed by 1995.

Additional Wartime Support Provided Under Collocated Operating Bases

In addition to the 1982 Wartime Host Nation Support Agreement, the United States and West Germany have concluded agreements on collocated operating bases. These bases are active allied airfields which would support U.S. Air Force aircraft during contingencies that require the United States to deploy to Europe. At each base, the United States prepositions war reserve material and has facilities in which to store this material.

Peacetime Host Nation Support

The NATO Status of Forces Agreement and the Supplementary Agreement² cover three areas of West German contributions to U.S. forces: (1) land and housing, (2) maneuver damage claims, and (3) taxes and

²The Status of Forces Agreement, signed by the NATO members in 1951, is the principal document governing the rights, obligations, privileges, and immunities arising from the presence of U.S. forces stationed in other NATO countries. It allows for bilateral agreements relating to the provision of and payment for specific forms of support for U.S. forces. The Supplementary Agreement, signed in 1959, concerns the status of NATO forces stationed in West Germany; therefore, it applies only in West Germany.

customs fees. West Germany also contributes substantially to the stationing of U.S. forces in Berlin, though the two agreements do not cover these costs. On several occasions, the United States has sought increased support in a number of other areas related to troop relocations and facility improvements, the welfare and morale of U.S. service members, labor cost sharing, and plans for and fielding of the Pershing II and ground-launched cruise missiles. The support received on these requests has varied, depending upon the issue and associated costs.

Land and Housing

Under article 63 of the Supplementary Agreement, West Germany provides U.S. forces rent-free use of federal and state-owned land and facilities. West Germany provides U.S. forces approximately 292,000 acres for their use, as well as access to various training areas operated by NATO and German forces. In its 1989 Report on Allied Contribution to the Common Defense, DOD estimated that the replacement value of real property made available to U.S. forces was approximately \$28 billion, with an annual user value of \$800 million.

The German government also provides U.S. forces with 67,000 housing units, of which 56,195 are free of charge. The estimated annual utility value of the housing units provided to U.S. forces is about \$80.0 million. Until Congress, in fiscal year 1981, prohibited the use of military construction or family housing funds to pay real property taxes, the United States paid land taxes on family housing in West Germany.³ Although West Germany has paid these taxes to local governments on behalf of the United States since then, it takes the position that the United States is liable. DOD estimates that the total unpaid land tax bill is about \$50 million.

Maneuver Damage Claims

Claims procedures for damages caused by troops during exercise maneuvers are outlined in article VIII of the NATO Status of Forces Agreement. If the United States alone is legally responsible for the damage, the host nation—in this case, West Germany—pays 25 percent of the claim. The United States pays for the remaining 75 percent. If more than one visiting country is responsible, the amount is distributed equally among the visiting countries and the host country. If the host nation is not one of the countries responsible, its share is half that of the other countries. Over the last 8 years, annual payments for the U.S. share of damages in West Germany have averaged about \$29.0 million; West Germany's

³Although West Germany provides land and facilities free of charge for use by U.S. forces, article 63 of the Supplementary Agreement obligates the United States to reimburse West Germany for land taxes on accommodations made available by West Germany. While defense-related facilities are exempt from land taxes, family housing units are not.

share was approximately \$10.0 million. The U.S. Army estimates it conducts about 1,000 training maneuvers annually on public and private land in West Germany.⁴

Taxes and Customs Fees

U.S. forces are generally exempt from West German taxes and customs fees related to official purposes. In addition, individual service members are also exempt from some taxes, customs fees, and value-added taxes on items purchased on the local economy. While exemption from these taxes and fees does not represent a budgetary outlay to West Germany, it does result in cost avoidance to the United States and to the individual service members.

On defense-related facilities, West Germany also provides free services such as police, public health, and fire protection. DOD estimates that West German states pay more than 135 million marks, or about \$75.1 million, annually (using the 1987 exchange rate of 1.79 marks per dollar) to support communities where U.S. forces personnel and their dependents live. U.S. forces are exempt from paying taxes on items procured for official purposes on the local economy, such as fuel and construction supplies, and customs duties on provisions, supplies, and other goods imported for U.S. forces' use. DOD was not able to quantify the savings to U.S. forces from these exemptions.

West Germany exempts individual service members from some taxes, custom fees, and value-added taxes on items purchased on the local economy. These exemptions, like those extended to U.S. forces, result in cost avoidance to the individual service members. For example, DOD estimates that exemptions from value-added taxes save individuals stationed in West Germany about \$20.0 million annually.

Berlin Stationing Costs

West Germany is responsible for paying most costs related to stationing U.S. forces in Berlin, including all operations and maintenance, procurement of administrative vehicles, and local national and U.S. civilian payrolls. West Germany also pays the costs of stationing French and British troops in Berlin. DOD estimates that of the approximately \$500 million West Germany pays for Berlin occupation costs, 45.8 percent, or \$229 million, was for direct support of U.S. forces.

Troop Relocation and Facilities Improvements

A major program in U.S. Army, Europe, during the 1980s resulted from studies conducted in the mid-1970s to resolve stationing problems. This

⁴In 1988, we issued a report on DOD's maneuver damages in West Germany: Maneuver Damage: DOD Needs to Strengthen U.S. Verification of Claims in Germany (GAO/NSIAD-88-191, Aug. 9, 1988).

program, subsequently titled the Master Restationing Plan, envisioned correcting the malpositioning of U.S. troops in West Germany to (1) achieve a more effective forward defense and (2) remove these forces from inadequate facilities and urban areas where they could not maintain military preparedness without significantly inconveniencing the German people. The plan ultimately envisioned divesting U.S. Army, Europe, commanders of all except mission-related responsibilities for training and combat readiness.

Under the plan, the United States sought German funding for the construction of facilities for 28 battalions on three U.S.-controlled locations. The plan stalled, however, primarily because of congressional expressions that West Germany share the estimated construction costs in excess of \$1.2 billion. West Germany was willing to provide real estate and pay for some infrastructure but insisted that construction of military facilities be a U.S. responsibility.

According to the State Department, although the Germans were positive about the plan's concept, overall they viewed repositioning as a massive and politically sensitive issue whose implementation would present financial and environmental difficulties. According to DOD officials, the United States was able to correct some of the original malpositioning concerns by funding limited Master Restationing Plan-related station changes and constructing some facilities itself.

The United States also sought to obtain base operation and maintenance support through contracts with a German government agency or commercial organization on a completely reimbursable basis. By relieving U.S. forces of base support obligations in peacetime, U.S. Army, Europe, could concentrate solely on its primary mission of combat readiness. Although in the 1970s U.S. forces had been successful in obtaining contracts for base support at two U.S. facilities, West Germany showed no further interest in expanding the concept. In addition, the German government expressed concern that the provision of base support by a German agency would considerably increase the size of its bureaucracy.

In addition, U.S. forces have sought German government financing for modifications to U.S.-controlled facilities so that they would conform to German environmental pollution abatement standards. Although the United States recognizes its responsibility to ensure that it complies with these standards, it considers pollution abatement at host nation-owned, U.S.-operated facilities to be a host nation responsibility. Moreover, most West German pollution abatement standards have resulted

from legislation enacted after these facilities were originally placed at U.S. forces' disposal. Although West Germany has not provided funds to help U.S. forces meet these standards, U.S. forces have attempted to comply to the extent possible by, for example, designing all new construction to meet German environmental standards.

Welfare and Morale of U.S. Service Members

The welfare and morale of U.S. service members stationed in West Germany has been an issue of long-standing concern. U.S. requests in this area have focused on (1) obtaining additional housing for service members and their dependents, (2) modernizing and upgrading existing housing and work areas, and (3) relieving the social isolation and financial problems of U.S. service members.

The inadequate supply of family housing for U.S. service members stemmed primarily from the increases in the number of married soldiers stationed in West Germany. As a result of these shortages, many U.S. military personnel were forced to rent substandard living quarters on the German economy and live in depressing conditions, thus affecting their morale and effectiveness. The physical conditions of many of these substandard facilities raised concerns. Typical problems included faulty plumbing, antiquated utility systems, and lack of modern repair facilities.

The United States requested financial assistance to obtain about 55,000 additional housing units (estimated at about 10 billion marks, or \$4.4 billion, using the 1980 exchange rate of 2.24 marks per dollar) and assistance with the maintenance and repair work at some facilities (estimated at about 2.3 billion marks, or \$1.0 billion). Due to the German government's lack of responsiveness, the United States had to fund its own construction and rehabilitation programs.

Some progress, however, was achieved on the social isolation of U.S. service members. For example, according to U.S. Army, Europe, officials, the German government undertook a major effort to improve U.S.-German relations. At local levels, for example, entrance prices to museums and sports events were reduced and special campaigns to reduce off-post discrimination were initiated. These actions, though, did not require large expenditures on the part of West Germany.

In January 1989, U.S. embassy officials in Bonn presented to the German government a series of low-cost measures intended to improve the quality of life of U.S. service members. These measures ranged from simplification of existing value-added tax relief procedures to expanded

educational programs. U.S. Army, Europe, officials estimated that the annual cost of most of these proposals would not exceed \$2 million to \$3 million per year. Although Germany's reaction to this initiative has been slow, State Department officials believe that its minimal cost and non-controversial nature should make it attractive to the German government.

Labor Cost Sharing

Over the years, the United States has sought relief from the high costs of employing local nationals in West Germany, particularly since currency fluctuations have considerably increased payroll costs. Although some progress has been achieved in this area, the United States continues to pay for all expenses incurred in the employment of local nationals. U.S. forces in West Germany employ about 55,838 local nationals, and although the German government sets wages and conditions of employment, the United States is responsible for paying all costs associated with local national employment. These costs, which amounted to \$1.3 billion in 1988, include wages and salaries, pay supplements, bonuses, various benefits, and an administrative service fee levied to cover the German government's cost to process the payroll. The United States pays local nationals in marks at the prevailing exchange rate.

At various times, the United States has sought reimbursement of local nationals' payroll costs, assumption of certain categories of cost components, assumption of the administrative fee, and guarantee of a minimum exchange rate. Because West Germany has adamantly opposed any sort of real labor cost sharing, U.S. Army, Europe, has concentrated its efforts on decreasing the administrative fee. The rate, initially set at 1.25 percent of total payroll costs, was reduced to 1.16 percent in 1986 and 1.08 percent in 1987, where it stands today. U.S. Army, Europe, estimates that these reductions saved the United States 3.67 million marks (or \$1.7 million, using a 1986 exchange rate of 2.17 marks per dollar) in calendar year 1986 and 2 million marks (or \$1.1 million, using a 1987 exchange rate of 1.79 marks per dollar) in calendar year 1987.

In addition, West Germany agreed to fund a training program in U.S. installations for young Germans. The trainees work for a period of 6 to 9 months, hoping that by the end of the training period, U.S. Army, Europe, will be able to place the trainees within the local national work force. The training program includes both white and blue collar workers in areas such as clerical support and mechanics. The German government pays all costs associated with the training program. U.S. Army, Europe, officials estimated that this arrangement has saved the United

States about \$25 million in training costs since the beginning of the program in 1983. According to these officials, this program was attractive to German officials because it helped reduce unemployment.

Deployment of Nuclear Missiles

Under the recently concluded Intermediate-Range Nuclear Forces Treaty, the Pershing II and intermediate-range and short-range ground-launched cruise missiles located in West Germany are to be eliminated. When these were deployed, the German government provided real estate, space on West German military installations, and civil and military police protection. The estimated yearly cost to West Germany for providing base security from September 1983 through September 1988 was about \$9.5 million.

United Kingdom Responses: Limited Overall Progress

As in West Germany, the United States has sought to negotiate increased wartime and peacetime host nation support from the United Kingdom. Because of the lower number of U.S. forces, these initiatives have been much more limited in scope and have covered fewer areas than in West Germany. Most of the assistance the United States has received resulted from long-standing agreements reached between both countries prior to 1980.

The general wartime host nation support agreement, reached in 1973 between the United States and the United Kingdom, provides for lines of communication services to U.S. reinforcements deploying to and through the United Kingdom in times of crisis or war. In peacetime, the United Kingdom contributes to U.S. forces primarily by providing rent-free land and housing units. Although these contributions relieve some U.S. stationing costs, the United States has to pay certain related fees and charges. U.S. efforts to obtain greater peacetime host nation support have concentrated on the elimination or reduction of these charges.

Wartime Host Nation Support

From the 1973 lines of communication agreement, numerous joint logistics plans have resulted that, according to DOD, would provide substantial savings to the United States in manpower and material. In addition, under collocated operating base agreements, the U.S. Air Force units would share air bases with the Royal Air Force in crisis or wartime. These agreements include a wide variety of host nation support services. Both the lines of communication and collocated operating base agreements have resulted in the commitment of British military and civilian facilities and equipment for use by U.S. forces.

Lines of Communication
Agreement

In 1973, the United Kingdom formally agreed to provide lines of communication support to U.S. reinforcements during crisis or war.⁵ Since then, negotiations for wartime host nation support have mainly concerned the logistics plans to enhance the 1973 lines of communication agreement. Currently, 21 joint logistics plans are in force between the United States and the United Kingdom, and an additional 27 plans are in various stages of draft, development, and staffing. According to DOD officials, all types of combat support and combat service support have been included in the U.S. requests. These joint plans cover support for (1) port of debarkation reception and departure, (2) in-theater movement of reinforcements, (3) supply and services support, (4) facilities, (5) telecommunications, and (6) medical care.

Some of the most important joint logistics plans are those which call for the establishment of contingency hospitals and the provision of medical support by the United Kingdom. According to DOD officials, the United Kingdom is the NATO country that will provide the most contingency hospitals to support U.S. forces during a crisis or war. The United Kingdom has fully met U.S. Air Force and Navy requirements for hospital beds and about one-third of the Army's requirements. DOD officials expect the United Kingdom to fully meet the remainder of the Army's requirements in the near future.

The United States and the United Kingdom have reached agreement on the definition of types and categories of casualties and daily casualty flow for which the United Kingdom would provide medical support. According to DOD officials, the daily casualty flow number that British medical planners have agreed to support closely resembles U.S. casualty planning figures.

According to DOD officials, the lines of communication agreements between the United States and the United Kingdom are the most mature and fully developed of all those in NATO. The United States is pleased with the level of support the United Kingdom provides and with the efforts British defense officials are making to meet U.S. wartime requirements. According to one DOD official, the United Kingdom's experience in planning and implementing lines of communication agreements is extensive, having negotiated and concluded similar arrangements with other NATO countries prior to 1973. These officials added that the

⁵Under lines of communication agreements, the host nation permits the United States to use seaports, airports, roads, and inland waterways to deploy U.S. reinforcing units. Services such as medical care and communications, use of civilian equipment, and supplies may be provided.

United States has pioneered a number of wartime support efforts in the United Kingdom that have served the United States well in negotiating lines of communication agreements with other NATO countries.

DOD acknowledges that although these agreements allow for early reinforcement of NATO and considerably improve U.S. combat sustainability, they generally do not represent a U.S. cost savings, but rather a cost avoidance. For example, plans to move U.S. material from storage to user bases and to use host nation transportation assets benefit U.S. forces in peacetime by avoiding the costs of purchasing and manning these assets. Similarly, the majority of logistics plans do not require the host nation to make major financial outlays in peacetime, except for administrative costs related to implementing the plans. Although the United Kingdom has made some financial investments, DOD was not able to quantify British expenditures to support joint logistics plans.

Collocated Operating Bases

The United States and the United Kingdom have also concluded wartime host nation support agreements related to collocated operating bases. These are active Royal Air Force bases which would support U.S. Air Force aircraft during contingencies that require the United States to deploy to Europe. At these bases, the United States has prepositioned war reserve material such as fuel, munitions, and vehicles and has facilities in which to store this material. The United Kingdom has also agreed to provide wartime operation support of U.S. naval aviation. Under the base agreements, the United Kingdom would provide a wide range of support services such as air base security, airfield battle damage repair, transportation, fuel, medical, fire, and utility services.

Like lines of communication agreements, however, collocated operating base agreements entail little or no peacetime cost to the host nation. For example, the host nation normally does not have to provide additional land, since collocated operating bases are already existing bases. The host nation bears few direct costs to upgrade a base for collocated operations, since the NATO infrastructure fund and U.S. military construction programs pay for the facilities. Likewise, the United States is responsible for procuring the equipment and prepositioned war materials. DOD, however, could not quantify British expenditures to support U.S. collocated operating bases requirements.

Peacetime Host Nation Support

The NATO Status of Forces Agreement and several bilateral agreements cover the United Kingdom's major contribution to U.S. forces in peacetime—the provision of rent-free land, housing units, and exemptions

from certain taxes and fees. At the same time, some of these agreements obligate the United States to pay fees and charges related to the provision of the land and housing—most notably real estate taxes and accommodation charges.

Land and Housing

Under the NATO Status of Forces Agreement, the United Kingdom provides surplus federal land for bases and facilities at no cost to U.S. forces. The specific categories of land are covered under a 1973 agreement, which primarily concerns the use and financing of facilities, utility services, rights-of-way and other easements. Under this agreement, the United Kingdom provides up to 100,000 pounds sterling per British fiscal year (or \$163,000, using a 1987 exchange rate of 1.63 pounds per dollar) to purchase land on behalf of U.S. forces (that is, for land that is not surplus to the government) and to pay for incidental expenses related to making the land available. In its 1989 Report on Allied Contributions to the Common Defense, DOD estimated that the total value of U.S.-occupied land and facilities in the United Kingdom was approximately \$3 billion. The revenue foregone by the United Kingdom government in the form of rental value was estimated at about \$20 million per year.

The United States pays direct and indirect taxes, called rates,⁶ to the United Kingdom. Currently, for U.S. military facilities, the United States reimburses the British treasury an amount equal to 14 percent of the total bill to cover the value of public services received by U.S. forces. These U.S. payments are called contributions in lieu of rates. The United States also pays rates directly to British local governments for off-base leased housing. In fiscal year 1989, these payments amounted to about \$700,000.

The British government also provides about 4,806 housing units, most of which are surplus Royal Air Force housing units, to U.S. Air Force personnel. The United States pays a British charge, known as an accommodation charge, on surplus housing. This charge, which includes rent, rates, and maintenance fees, totaled \$2 million in fiscal year 1989. Obligation to pay this charge stems from a 1955 agreement governing the use of Royal Air Force housing by U.S. forces.

⁶Rates are levied by British local governments and are assessed on the annual rental value of property. Although British officials do not consider rates to be taxes, but rather charges for municipal services, rates are assessed and collected in the form of a tax, and the services provided are those typically connected to property taxes in the United States. Revenues collected from rates are used to support a wide variety of local expenses, such as education, refuse collection, and fire services.

Taxes and Custom Fees

Like West Germany, the United Kingdom exempts U.S. forces from British taxes and customs fees related to official purposes. For example, U.S. forces are exempt from paying the value-added tax and customs duties on goods imported for their use. Individual service members are not exempt from paying the value-added tax, however, and also must pay other charges, such as vehicle registration taxes, that are normally levied on the British population.

Other Peacetime Agreements and Services

The United Kingdom and the United States have concluded agreements under which the United Kingdom provides other forms of host nation support. In 1986, both countries agreed to modernize a U.S. ballistic missile early warning station in the United Kingdom. According to DOD, the United Kingdom will pay for the site's construction at an estimated cost of \$66 million and for the salaries of British nationals hired to maintain the facility.

The United Kingdom provides U.S. forces certain services free of charge. For example, the Royal Air Force provides the U.S. Air Force with various air traffic control services free of charge, and U.S. forces also use British small arms training ranges and other training areas without charge. DOD could not quantify the cost of these services to the British government.

Peacetime Initiatives Have Focused on Reducing Fees and Obtaining Housing

Because of the much smaller U.S. presence, the United States has not undertaken peacetime host nation support initiatives in the United Kingdom similar in scope and range to those negotiated with West Germany. The United States has attempted to identify areas in which U.S. military support costs could be reduced, primarily by eliminating the contribution in lieu of rates and accommodations charges, and by securing additional housing.

Reduction of Fees

In October 1979, the United States and the United Kingdom established a Joint Task Force—composed of U.S. Air Force, U.S. Embassy, and British Ministry of Defense officials—primarily to identify those areas that U.S. forces believed would enable them to reduce stationing costs. U.S. representatives to the Joint Task Force proposed that the United Kingdom eliminate the contributions in lieu of rates because other U.S. payments, specifically the rates paid for privately rented housing, more than compensate local governments for services received. Further, U.S. officials have pointed out that most U.S. personnel do not use the services for which the revenues are collected. For example, much of the

revenues collected are for education; however, most U.S. military personnel and their dependents attend U.S.-provided schools. British government officials, nevertheless, have been unwilling to completely eliminate these payments because they believe the rates reflect services received by U.S. forces. Since the agreement governing contribution in lieu of rates was signed, the assessed rate has been reduced by 60 percent—from 35 percent in 1955 to its current rate of 14 percent.

The British government has enacted legislation to replace rate payments with a per capita tax. Under this legislation, the United States will make its last rate payment in April 1990; however, the British government has asked for an alternative U.S. contribution. According to DOD officials, the Air Force is studying how these payments will affect U.S. forces.

The Joint Task Force also considered reducing accommodation charges on the surplus housing provided to U.S. Air Force personnel. U.S. efforts to eliminate accommodation charges date back to 1954, when the Air Force argued that charging these fees was counter to the terms of the 1953 agreement, which at that time provided free use of British-owned land. The United States sought relief from these charges primarily on the grounds that U.S. forces were being double-charged for maintenance; that is, they were paying for maintaining the facilities at their own expense and being billed for maintenance as part of the accommodation charge. Although British defense officials agreed that the United States was being double-billed and offered to cut the charges by 40 percent, it refused to eliminate them completely. In October 1982, the U.S. Air Force stopped paying these charges—because of a congressional prohibition—and did not resume payment until October 1983 when, as part of the plans to station ground-launched cruise missiles, the charges were reduced by half. Accommodation charges have never been eliminated, however, as the United States requested. These payments amounted to \$2 million in fiscal year 1989.

**Additional Housing Secured as
Part of Missile Stationing
Agreement**

Although the United States has not succeeded in obtaining full relief from paying rates and accommodation charges, it has concluded a one-time housing agreement securing additional surplus Royal Air Force housing units. These concessions were agreed to in connection with the plans to station ground-launched cruise missiles in the United Kingdom. As part of the missile stationing agreement, the United Kingdom (1) provided U.S. forces with an additional 1,019 housing units, (2) allowed the United States to share in the residual value of any of the properties renovated by U.S. forces and subsequently sold by the Royal Air Force, and (3) cut the accommodation charges in half.

The United Kingdom also agreed to provide 4 million pounds, or about \$6.6 million (using 1987 exchange rates), in offset funds to help defray the cost of its preference for building two of the missile bases on its soil instead of the one envisioned by the United States. However, this money had to be committed for renovation and construction of dormitories at one of the missile bases, following British insistence that the United States pay for these costs. In addition to the housing and reduction in accommodation charges, the United Kingdom also agreed to provide 220 security personnel for a joint security force to protect U.S. missile base sites. The British government estimated that it spends about \$1.6 million per year to provide missile base protection. Currently, the British government is cooperating with the United States in implementing the Intermediate-Range Nuclear Forces Treaty—including missile drawdowns and inspections by Soviet teams—and in discussing the future use of the missile base that is still in operation.

Factors Used to Reflect Each Country's Share of the Burden

A cornerstone of the NATO alliance is that the burden of defending Europe and the North Atlantic should be shared equitably among its members. Beyond agreeing to this general principle, however, acceptance of what should be included in measuring the burden, and therefore the degree of equity involved, has been a source of considerable debate and disagreement within the alliance. As noted by DOD, "alliances will endure only if the burdens and benefits of the enterprise are equitably shared—and perceived to be so—by the participants."¹

The dilemma and source of controversy over how the burden should be measured were discussed in a report by the Defense Budget Project, a research organization that analyzes defense budget issues and national security policy.² In that report, it was noted that

the burdens of the alliance—funding, personnel and equipment for the alliance's forces—are easy to identify, but exceedingly complex to define, measure and distribute. The NATO members have never negotiated a comprehensive, clear or detailed definition of what constitutes each member's "fair share" of that burden.

This appendix addresses the factors most often referred to by the Congress, DOD, and other NATO nations as indicators of NATO members' contributions to the alliance—namely (1) the percentage of and per capita gross domestic product spent on defense and (2) measures of military forces such as numbers of tanks, aircraft, and naval vessels. In addition, we also discuss adjustments to defense expenditures often made by NATO countries to help account for burdens not reflected in actual defense outlays.

Percentage of and Per Capita Gross Domestic Product and Defense Spending

The most commonly used measure of a country's defense burden sharing is the percentage of the gross domestic product allocated to defense. This measure generally shows that the United States outspends the other NATO allies in terms of providing for the common defense. NATO broadly defines defense spending as expenditures each national government makes specifically to meet the needs of its armed forces. Only actual outlays are included. Indirect subsidies, such as the loss of revenues resulting from waiving import duties or port fees for NATO partners, are not included in the NATO definition.

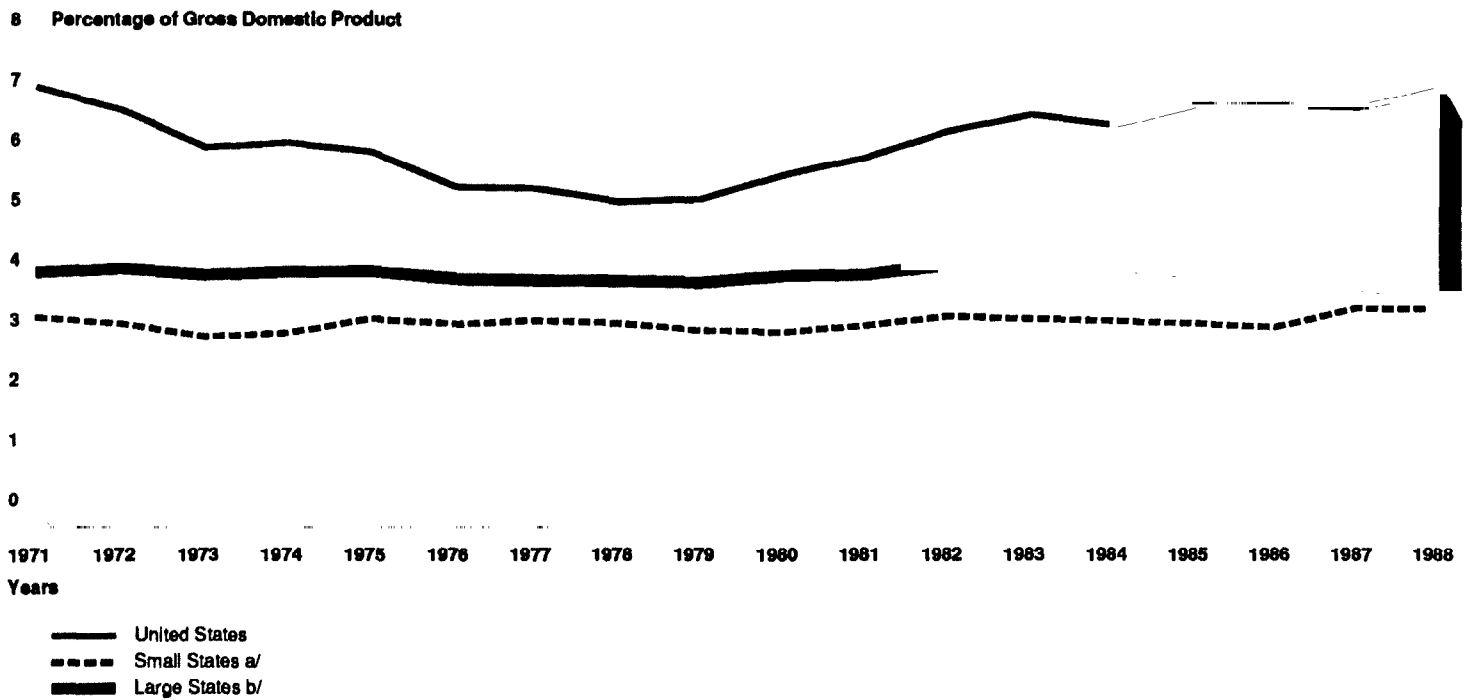
¹Report on Allied Contributions to the Common Defense (Washington, D.C.: Department of Defense, Apr. 1987), p. i.

²Gordon Adams and Eric Munz, *Fair Shares: Bearing the Burden of the NATO Alliance* (Washington, D.C.: Defense Budget Project, Mar. 1988).

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From 1980 through 1988, the United States devoted an average of 6.2 percent of its gross domestic product to defense, compared to an average of 3.5 percent that the remaining alliance members spent. Only Greece exceeded the United States in terms of relative defense expenditures. Some NATO allies point out that restricting this measure to the 1980s is inherently biased in that it does not include the pattern of decreasing U.S. defense expenditures in the 1970s. They add that, during this time, their percentages of gross domestic product spent on defense actually increased. As figure I.1 shows, however, while the United States decreased its defense expenditures as a percentage of gross domestic product in the 1970s, it spent significantly more than its NATO allies.

Figure I.1: NATO Defense Spending as a Percentage of the Gross Domestic Product (1971-88)



^aSmall states are Belgium, Canada, Denmark, Greece, Luxembourg, the Netherlands, Norway, Portugal, and Turkey.

^bLarge states are the Federal Republic of Germany, France, Italy, and the United Kingdom.

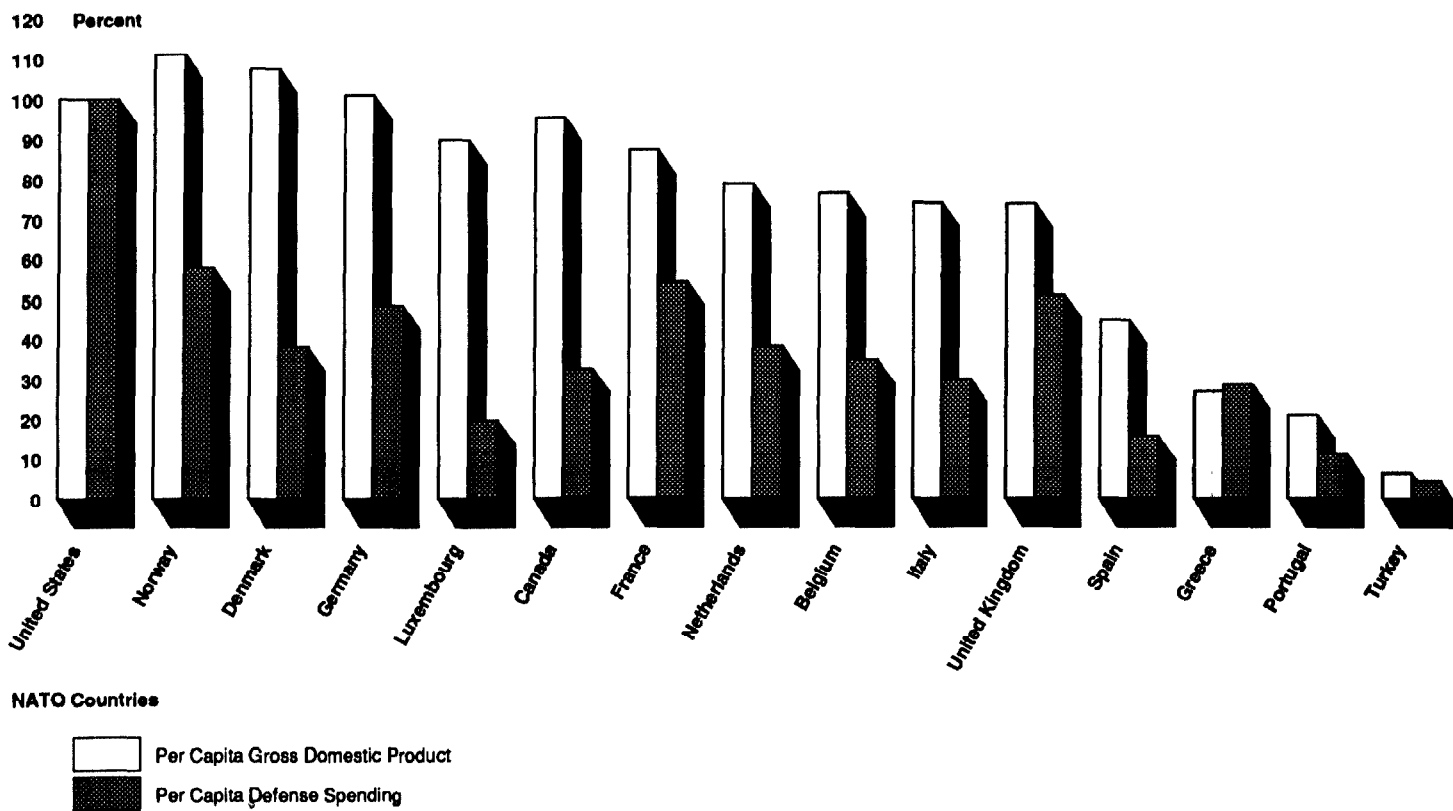
Source: Adapted from Fair Shares: Bearing the Burden of the NATO Alliance. Based on 1986 exchange rates except for 1987 and 1988.

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Another measure often used to indicate allied defense burdens is defense spending on a per capita basis. Per capita gross domestic product is, according to DOD, a widely accepted measure of economic development and standard of living. Two countries, for example, may have identical gross domestic products, but one may have twice the population. The average standard of living for the more populated country is lower, and the burden of defense expenditures is, therefore, greater.

Per capita measures reinforce the conclusion that the United States bears a greater burden for defense. Figure I.2 illustrates the 1988 per capita gross domestic product (the solid bar) and per capita defense spending (the hatched bar), using the United States as the base (at 100 percent).

Figure I.2: Relationship of Per Capita Gross Domestic Product and Per Capita Defense Spending (1988)



Source: Derived from figures presented in DOD's 1990 Report on Allied Contributions to the Common Defense.

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While no NATO country matches the United States in per capita defense expenditures, some spend notably more than others. For example, although France is seventh in terms of per capita gross domestic product, it has the third largest per capita defense expenditures. The United Kingdom, which ranks eleventh in terms of per capita gross domestic product, is the fourth largest per capita defense spender. Also, although the per capita defense expenditures of poorer countries such as Turkey are low when compared to most countries, their defense expenditures appear more commensurate with their per capita gross domestic product than do those of other allies. That is, as shown in figure I.2 (using the United States as the basis for comparison), as a country's per capita defense spending bar approaches the height of its per capita gross domestic product bar, the country comes closer to spending at a level commensurate with its wealth.

According to DOD,

although "fairness" is often assumed to imply an equal or proportional sharing of the common defense burden (e.g., equal percentages of GDP [gross domestic product] devoted to NATO's defense), it could be considered fair for those countries with a higher standard of living to contribute a greater share of their national income to defense, in much the same way that a progressive income tax collects a greater than proportional share of revenues from individuals in the upper income brackets.

DOD also noted that what constitutes a "fair" distribution of the burden is fundamentally a subjective judgment. However, using DOD's logic, countries with per capita wealth approaching that of the United States should spend a progressively higher percentage of that wealth on defense. As shown in figure I.2, however, this is not the case. For example, Canada, Luxembourg, and West Germany spend substantially less on defense than the United States when compared to their relatively high per capita gross domestic products (in 1988, Germany's per capita gross domestic product slightly exceeded that of the United States). Also, although Denmark and Norway have higher per capita gross domestic products than the United States, they spend only 38 and 58 percent, respectively, of what the United States spends on defense on a per capita basis. Conversely, the per capita defense contributions of other countries such as the United Kingdom and the NATO aid recipient nations appear substantially better, given their respective levels of per capita gross domestic product.

Adjustments to Defense Expenditures

Certain European allies argue that several adjustments to defense expenditures are necessary which, when taken into consideration, help account for burdens not reflected in defense outlays. These adjustments include defense spending in non-NATO areas, the use of conscripts versus all-volunteer forces, economic assistance, and other costs. Including these adjustments, however, does not alter the conclusion that the United States has borne a larger defense burden.

U.S. Spending for Non- NATO Commitments

Some NATO allies argue that not all U.S. defense expenditures should be used to measure the U.S. contribution to NATO, since the United States makes substantial expenditures for defense commitments outside the NATO area. DOD estimated that about 60 percent of its budget is spent on the U.S. commitment to NATO.³ Therefore, instead of using the total U.S. defense expenditures, which amounted to 6.1 percent of the gross domestic product in 1988, it is argued that only 60 percent of that amount, or 3.7 percent, should be used in comparisons with other NATO allies' defense expenditures. At 3.7 percent, the U.S. expenditure for NATO's defense is more in line with (but still exceeds) the average spent by other alliance members.

DOD has disagreed with the validity of the congressional requirement to determine the costs of U.S. forces for NATO. DOD has stated that if the nature of the conflict so required, all of its forces could be used for the defense of NATO. The U.S. position is that it will not necessarily restrict itself to the theater in which an attack by Soviet forces is initiated; rather, the United States plans to strike the enemy in areas it believes are the most advantageous. Therefore, U.S. forces, although located in other theaters, could play a key role in the defense of NATO by striking the enemy in other vulnerable spots. Finally, U.S. defense commitments in areas outside of NATO's boundaries generally protect interests of the allies as well. For example, U.S. activities in the Persian Gulf have been a key factor in keeping vital sea lanes open during regional conflicts. These U.S. actions protected both U.S. and the allies' interests, since Europe is highly dependent on Persian Gulf oil resources.

³The Department of Defense Authorization Act for 1985 (P.L. 98-525) required DOD to submit, beginning in fiscal year 1986 and each year thereafter, a report on the status and cost of the U.S. commitment to NATO.

Use of Conscripts Versus All Volunteer Forces

All of the NATO allies except the United States, Canada, Luxembourg, and the United Kingdom use a system of conscription, or draft, to fill their military forces. The use of conscription enables them to pay less than market wages. Countries using conscription maintain that, by holding down defense personnel costs, they are able to spend more in other defense areas. They point out that at least part of the higher U.S. defense expenditures goes to pay the increased personnel costs required by an all volunteer force. In their opinion, such costs distort valid comparisons of defense spending.

In March 1988, we reported on the potential impact of returning to peacetime conscription as a staffing alternative of U.S. military forces.⁴ In that report, we noted that by instituting a draft system, as much as \$1.4 billion could be saved in the first year and \$7.8 billion annually (in 1987 dollars) in the long run. If such long-run savings could be realized, however, the percentage of U.S. gross domestic product devoted to defense would be reduced by only about .2 percent, not nearly enough to bring the U.S. share down to the average spent by the rest of the allies. Also, the savings would be offset by a much less effective force because there would be fewer careerists.

The force size could be increased to counteract the loss of force effectiveness, but such measures would increase costs. In addition, if it is assumed that 12 months of experience are required to train new service members, estimated annual budgetary savings would drop to about \$4 billion. Further, if 24 months of experience are required for full occupational effectiveness, budgetary costs might even increase by as much as \$2.6 billion per year. The costs to the U.S. civilian economy of reinstating the draft are estimated to range from \$3 billion to as high as \$9 billion annually.

The study also showed that countries such as West Germany and France tend to have proportionately more manpower in their armies but with terms of service of only 12 to 15 months. While their larger armies reflect their significant combat role, they may also reflect the need for a larger force to compensate for a loss in force effectiveness.

As discussed, the allies may not be accurate in contending that increased U.S. personnel costs are due to the use of an all volunteer force. In commenting on our previous report, DOD noted that a draft system would not necessarily cost less, would require more manpower (the population of

⁴Military Draft: Potential Impacts and Other Issues (GAO/NSIAD-88-102, Mar. 1988).

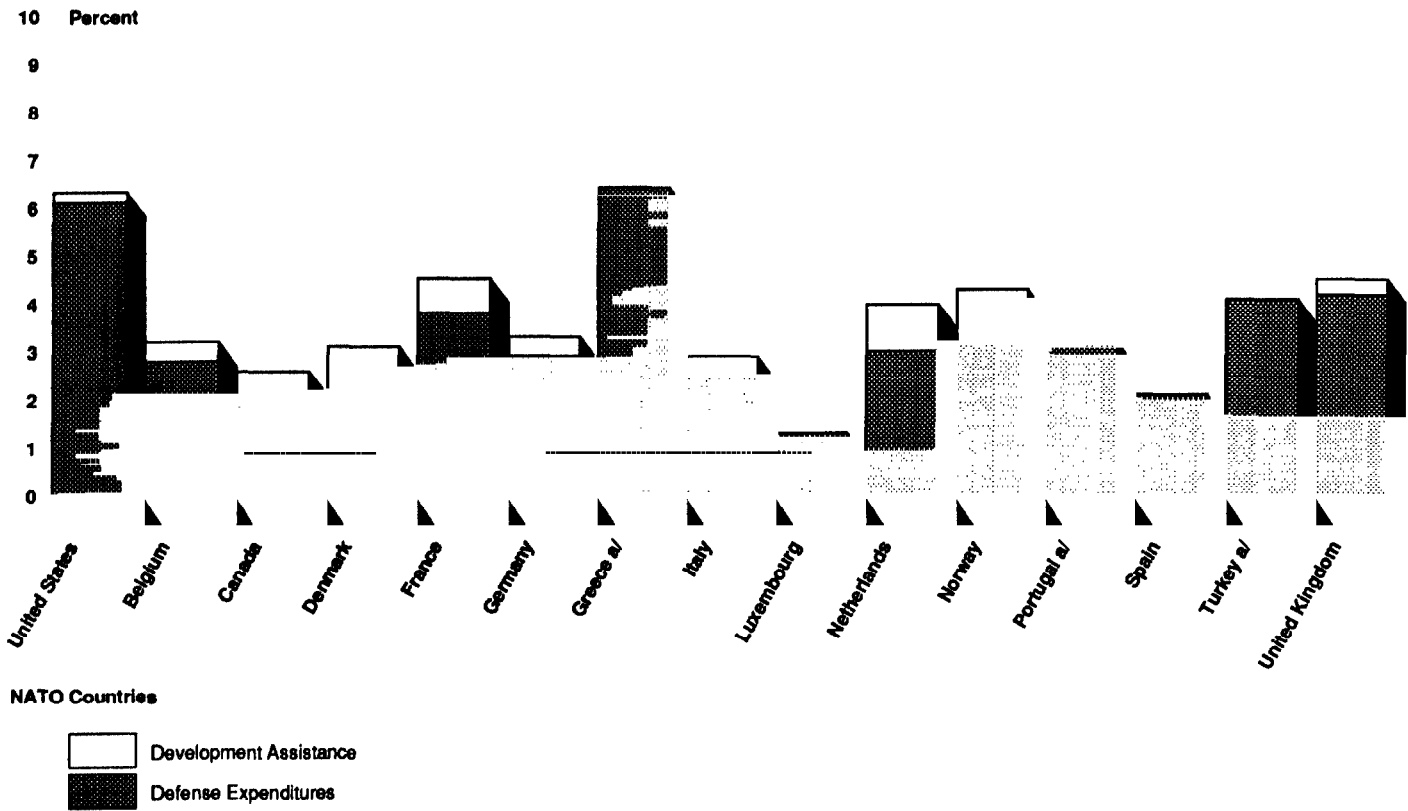
trainees and trainers would swell), and would reduce force effectiveness.

Adding Development Assistance

Some allies argue that the exclusion of economic or development assistance as a form of burden sharing understates non-U.S. allies' contributions to the common defense. Economic assistance helps recipient countries increase their fiscal capital, improve the quality of their labor force, and free up resources for the recipients to spend on their own defenses. In this area, some U.S. allies spend several times more than the United States, when measured as a percentage of gross domestic product. However, as figure I.3 shows, in most cases, the amount spent on development assistance is small relative to the donor country's defense spending and does not alter the basic conclusion that the United States devotes relatively more to security than its allies.

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Figure I.3: Percent of Gross Domestic Product Spent on Defense and Development Assistance (1988)



^{a/}Aid recipient.

Source: Derived from figures presented in DOD's 1990 Report on Allied Contributions to the Common Defense.

Other Costs

Some allies absorb military-related costs that are not included within the definition of defense expenditures. These expenses may require an outlay of funds or represent a loss of potential revenue. In addition, some allied nations point out that their agreement to provide the United States with transportation assets during wartime has enabled the United States to avoid significant expenditures.

With the concentration of allied forces on its soil and with Berlin occupation costs, West Germany probably incurs more of these expenses than any other NATO ally (see ch. 3). As shown in table I.1, West Germany incurred roughly \$1.5 billion in military costs in 1988 that are excluded from defense spending by NATO's definition.

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**Table I.1: Military-Related Expenditures
Absorbed by West Germany (1988)**

Dollars in millions	
Category	Cost
Police protection of Intermediate-Range Nuclear Facilities	\$9.0
Berlin occupation costs (exclude aid)	500.0
Payments for communities where U.S. personnel live	71.4
Germany's share of U.S. maneuver damages	10.0
User value of real property available to U.S. forces	800.0
Utility value of housing units provided to U.S. forces at no cost	80.0
Exemptions from value added tax	20.0
Contributions to Armed Forces recreation facilities and services	20.0
	\$1,510.4

Source: DOD's 1990 Report on Allied Contributions to the Common Defense.

Adding the costs in table I.1 to defense expenditures included within the NATO definition would raise West Germany's 1988 percentage of gross domestic product devoted to defense from 2.9 percent to a little over 3 percent. These other costs and the development aid discussed in the previous section raise Germany's contribution to 3.4 percent of gross domestic product, still far below the 1988 U.S. contribution of 6.1 percent for defense only.

Also, it appears that U.S. expenditures in the host country would, at least to some extent, tend to offset some of the costs associated with the U.S. presence. During fiscal year 1987, for example, DOD spent about \$9 billion outside the United States for such things as equipment, repairs, petroleum, construction, supplies, and local labor.⁵ Almost one-fourth was spent in West Germany, not including expenditures by military personnel. Therefore, it appears appropriate that, when considering the costs of hosting U.S. forces by an ally, the U.S. expenditures should be included as well.

In some discussions, it is pointed out that significant allied civilian assets that are designated for U.S. use during wartime should be recognized as defense contributions. For example, during a crisis or war, many NATO countries are committed to mobilizing transportation assets such as cargo planes, trucks, and vessels to support incoming U.S. reinforcements. These assets would no doubt add significantly to the U.S.

⁵DOD, which collects these statistics, notes that its data in some cases reflects obligations rather than the actual transfer of articles between the United States and other countries. In the future, DOD intends to rename its summaries from "defense trade balance" to "defense procurement activity" to more accurately reflect the nature of the information collected.

burden if it had to procure them in peacetime for potential wartime use. However, countries' expenditures on such assets are an integral part of their productive economies during peacetime and would exist with or without a potential U.S. need. Moreover, while some allied transportation assets—such as commercial sea and air transport—will be available for U.S. forces' use during a NATO conflict, the countries providing the vessels do not absorb the associated costs. The U.S. government is obliged to lease them and pay applicable wartime insurance rates as it must do in the United States.

Use of "Output" Measures, or Contributions of Military Forces

Critics assert that using defense spending relative to the gross domestic product is overly simplistic and results in an incomplete assessment of the facts. They suggest that an examination of "output" factors measured in terms of military equipment numbers and personnel reveals that member nations' contributions to NATO's conventional capability far exceed those indicated by the use of economic measures of defense spending (that is, their "inputs"). NATO nations' contributions in terms of military capabilities can be compared by such measurements as the fire power of the combat division ground-based equipment, numbers of tactical aircraft, and naval tonnage.

Ground Forces Division Equivalent Firepower

To compare ground forces, NATO and DOD use a measurement of division equivalent firepower, a measure of a weapon's capability. These adjustments make it possible to compare dissimilar units. Based on this approach, DOD reported in its 1990 burden sharing report that non-U.S. NATO allies' land forces accounted for slightly over half of the division equivalent firepower, while the United States provided the remainder (including equipment in the United States). For two major categories of ground forces equipment—main battle tanks and artillery—DOD reported that U.S. allies have a significantly higher inventory than does the United States.

Tactical Aircraft and Naval Tonnage

According to DOD's 1990 Report on Allied Contributions to the Common Defense, non-U.S. NATO allies contributed their fair share of air force tactical aircraft compared to their collective gross domestic product share. While the non-U.S. NATO allies supplied 54 percent of the tactical aircraft with a 53-percent share of the collective gross domestic product, the United States provided 46 percent of the tactical aircraft compared to its 47 percent of the collective gross domestic product.

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In its 1987 report on allied contributions, DOD included each country's air force capability but excluded data on tactical fighters or attack aircraft in naval squadrons. According to the Congressional Budget Office's analysis of the report, if these assets had been included, the U.S. share would have been 60 percent, an increase of 15 percent over that reported by DOD, which would have shifted the balance in favor of the United States. Also, like the division equivalent firepower measure, the tactical air forces comparison does not include differences in training, readiness, and sustainability. Moreover, according to DOD, only 37 percent of the non-U.S. NATO allies' aircraft is considered new generation compared to 60 percent for the United States.

Although the 1988, 1989, and 1990 DOD reports on allied contributions have been revised to include a comparison of naval tactical air forces, the data is provided separately from the comparison of such aircraft in each country's air forces. The reports show that the United States provides about 90 percent of the naval tactical air forces. Although an improvement over previous reports, tactical air comparisons in DOD's summary reports still exclude those assets provided by the U.S. Navy.

A U.S.-allied comparison of conventional surface combatants and attack submarines resulted in a more favorable picture of the U.S. contribution to the common defense than other output comparisons. In terms of tonnage,⁶ the United States contributes over half of the total.

**Output Measure
Limitations**

The use of the output measures provides a much more favorable view of the allied contribution than input measures such as the percent of gross domestic product spent on defense. There are a number of reasons why output measures, as they now exist, are poor indicators of burden sharing. For example, although land force comparisons, as measured by division equivalent firepower, make non-U.S. NATO allies look better as a whole, they do not adequately reflect countries' capabilities in this area.

For example, in its analysis DOD acknowledges that division equivalent firepower does not include important aspects like training, readiness, and sustainability. A Congressional Budget Office study concluded that if such factors were incorporated, U.S. land forces might rank higher,

⁶Tonnage is a static measure of aggregate fleet size.

especially in the area of sustainability.⁷ While all NATO nations have deficiencies in stocks of munitions, for example, the United States is generally conceded to be better supplied than the others.

Also, a comparison of output measures is questionable because of the way that equipment is accounted for and major output categories are defined. For example, while DOD reported in 1989 that U.S. allies have much greater artillery holdings than the United States, the Defense Budget Project reported in 1988 that the U.S. artillery inventory accounted for over half of NATO's stocks.⁸ Differences in how major weapons categories are defined may also have a major impact on output comparisons. In the artillery example noted above, the Defense Budget Project includes mortars larger than 105 millimeters and coastal defense guns. DOD, on the other hand, excludes these. In the Conventional Armed Forces, Europe talks, mortars are included in the definition of artillery beginning with 100 millimeters rather than 105 millimeters. According to a DOD official, such discrepancies may also occur because older weapons that have been replaced by newer ones have not yet been retired, resulting in a higher than normal inventory count in some countries. DOD noted that such factors may account for the major differences in individual allies' equipment holdings.

A major U.S. defense category is strategic mobility assets to transport vast numbers of U.S. reinforcement personnel, equipment, and supplies to Europe during a crisis. This category is vitally important to the United States in addressing its commitments but is excluded from output measure discussions. European countries do not have such requirements due to their geographic location, but these assets are no less important contributions to NATO's defense than are the other output measures often used to compare capability.

Another major drawback in the use of output measures is that they are not additive; that is, such weapon comparisons have no common denominator. Thus, there is no way to combine the contribution of tanks to aircraft to naval vessels, and so on, to arrive at a total contribution by each NATO member. These individual measures do not provide adequate information on which to base comparisons of relative contributions.

⁷Alliance Burden Sharing: A Review of the Data (Washington, D.C.: Congressional Budget Office, June 1987), p. 11.

⁸Adams and Munz, Fair Shares: Bearing the Burden of Defense.

Comments by DOD Officials and Our Evaluation

DOD officials stated that it is important to recognize that the percentage of gross domestic product devoted to defense is not a perfect measure of burden sharing and that no single measure can fully depict burden sharing efforts. The officials added that the obvious discrepancy between the U.S. share of the gross domestic product devoted to defense and the shares of many U.S. allies can be attributed in part to the U.S. historic role as a nuclear superpower (a role that DOD points out the United States would not wish its allies to take on), U.S. worldwide interests and responsibilities, and the "subpar" burden sharing of some allies. DOD officials also objected to the extent to which we used gross domestic spending and defense spending on a per capita basis as measures of burden sharing.

We agree that no single measure can fully capture the burden sharing efforts of any ally, including the United States. It is for this reason that we discuss many other indicators of burden sharing, such as spending for non-NATO commitments, development assistance, and the provision of host nation support to allied forces. However, in terms of making comparisons of the extent to which defense consumes economic resources, defense spending as a percentage of the gross domestic product remains the most comprehensive and most widely used indicator of burden sharing.

Regarding the U.S. role as a nuclear superpower and its worldwide interests, it is sometimes argued that the discrepancy between U.S. defense expenditures and those of its allies is the result of allied decisions to spend less for defense because of the security provided to them by the U.S. nuclear umbrella. Also, as we point out in our report, although the United States has worldwide defense commitments, that defense protects not only U.S. interests but also those of its allies.

DOD officials objected to our use of per capita measures of gross domestic product and defense spending, especially in figure I.2. This figure depicts the relationship of these two measures for each NATO country using the United States as the basis for comparison. In the opinion of these officials, the information could be misleading because it might imply that U.S. allies should be spending what the United States spends on defense relative to its per capita gross domestic product. DOD officials also noted that, by definition, per capita measures are too sensitive to changes in population. In terms of our overall discussion of economic measures, these officials stated that since we had addressed total national gross domestic product and defense spending, use of this same

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data expressed on a per capita basis does not provide any new information.

Our comparison of U.S. per capita gross domestic product and defense spending with that of other NATO nations is not intended to imply that what the United States spends is the "correct" amount. However, the information provides an indication that many nations failed to adequately address their force goals during the 1980s because they spent their resources in other areas, not because they lacked a sufficient economic base.

We also disagree that per capita measures provide no new information that is not already provided by the use of national data. Lost in any table showing countries' total gross domestic product and total defense spending is any indication of individual economic well-being or productivity and defense sacrifice. For example, the gross domestic product of Norway is not significantly larger than that of Turkey, and both countries' levels of defense spending are similar. However, because of Norway's much smaller population size, it has the highest per capita gross domestic product of any alliance member, including the United States. As noted in our discussion of per capita defense spending, the Norwegian citizen spends only a little over 50 percent of what the U.S. citizen spends relative to the strength of their economies. Turkey, on the other hand, has such a large population that its per capita gross domestic product is the lowest in the alliance. However, only two nations—the United States and Greece—spend more for defense relative to their respective gross domestic products.

In responding to our discussion on output measures, DOD officials stated that, in their view, output measures have greater utility than they are given credit for in our report. While we agree that current output measures enable comparisons in selected areas, their limitations severely restrict their utility in discussions of burden sharing when the ultimate objective is to reach decisions on relative economic sacrifice.

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