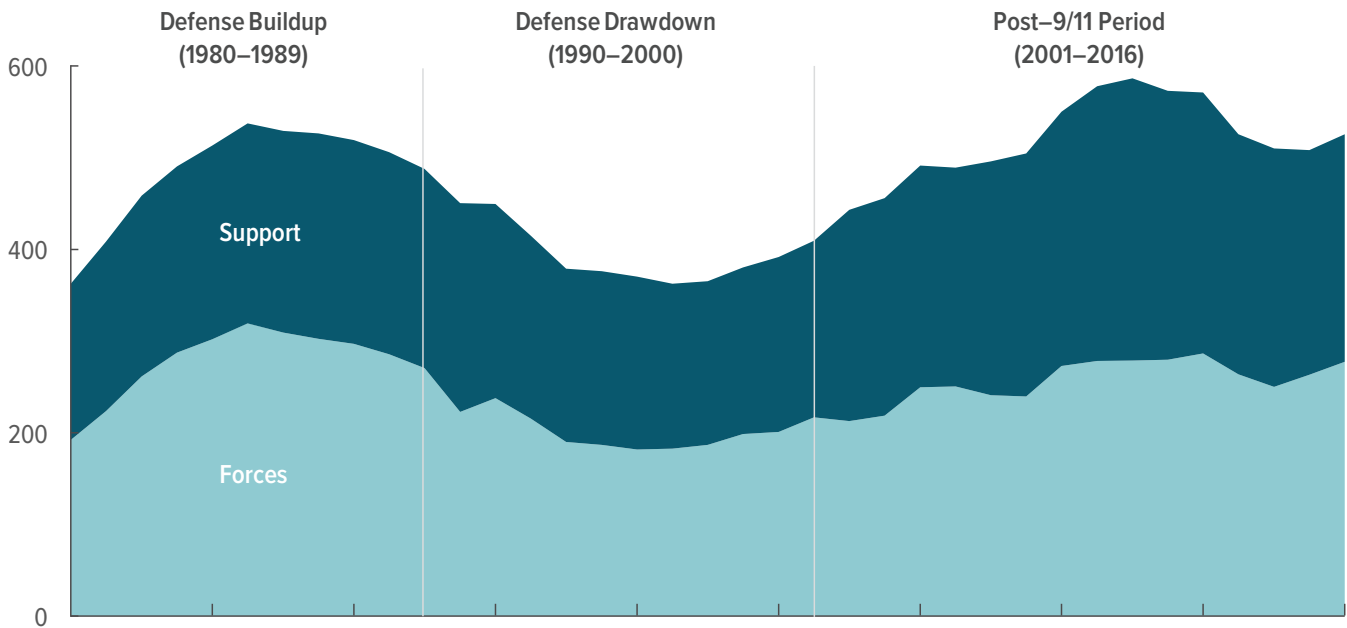


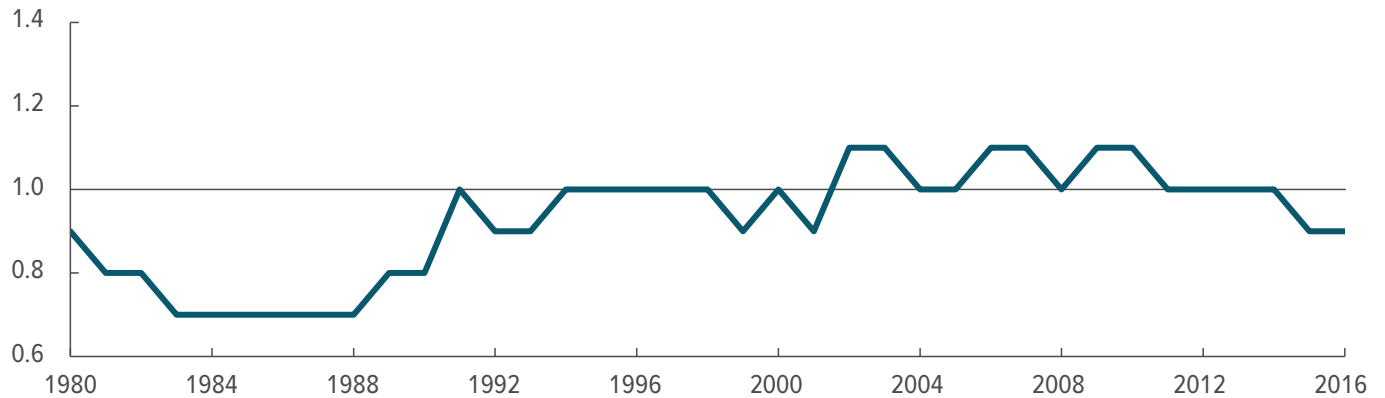
# CBO

## Trends in the Department of Defense's Support Costs

Billions of 2016 Dollars



Ratio of Funding for Support to Funding for Forces



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## Notes

Unless otherwise indicated, the years referred to in this report are federal fiscal years, which run from October 1 to September 30 and are designated by the calendar year in which they end.

All costs are expressed in 2016 dollars of total obligational authority (TOA), adjusted to remove the effects of inflation using the gross domestic product price index as projected by CBO; all growth rates are measured in those real terms. The Department of Defense uses TOA to measure the funding available for its programs each year. Although in any given year, TOA varies little from discretionary budget authority (the authority to incur financial obligations) provided in appropriation acts, it differs in some key ways; most notably, it incorporates unexpired budget authority from prior years, which causes it to be larger.

Numbers in the text and tables may not add up to totals because of rounding.

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# Trends in the Department of Defense's Support Costs

## Summary

The U.S. military's readiness to respond to current and future threats depends on the quality and availability of military forces—personnel, weapon systems such as ships and aircraft, and other material resources such as ammunition and fuel. In turn, the quality and availability of military forces depend on the support infrastructure. The military uses that support infrastructure—such as bases, depots, and schools—to recruit personnel, train units for deployment, acquire and maintain equipment, construct facilities, provide health care, facilitate communications, and more.

From the mid-1980s to the early 1990s, the Department of Defense's (DoD's) funding for support functions rose substantially relative to funding for forces. The ratio of funding for support to funding for forces has fluctuated since then, but it has not returned to the lower levels experienced through much of the 1980s. Policymakers have expressed concerns about the increases in support funding, and this report examines trends in funding for forces and support activities—during periods of both peacetime and war (particularly the current post-9/11 period)—in order to identify potential areas for further analysis. (Because the Congressional Budget Office's analysis is primarily focused on support functions, it examines DoD's base budget and excludes funding for overseas contingency operations, thereby avoiding the temporary effects of funding for wars.) In addition, this report provides a framework for judging the efficiency of that spending.

## What Trends Have Emerged in DoD's Support Funding?

From the 1980s to the 2010s, the funding for support activities in DoD's base budget rose in relation to funding for forces. Between 1980 and 1989, a period marked by the rapid defense buildup against the threat of the Soviet Union, support costs accounted for 43 percent of DoD's nearly \$500 billion base budget, on average. Between 1990 and 2000, during the defense drawdown after the Soviet Union's collapse, the average share of

DoD's base budget devoted to support costs grew to 49 percent. In the post-9/11 period, from 2001 to 2016, it rose further—to 50 percent (see Figure 1).

From 1980 to 2016, four types of support functions saw sustained increases in funding that outpaced the 46 percent increase (in real, or inflation-adjusted, terms) among support functions as a whole: medical infrastructure and systems (“central medical programs”; 234 percent growth), DoD-wide management (123 percent), communications and information infrastructure (110 percent), and DoD's science and technology program (94 percent).

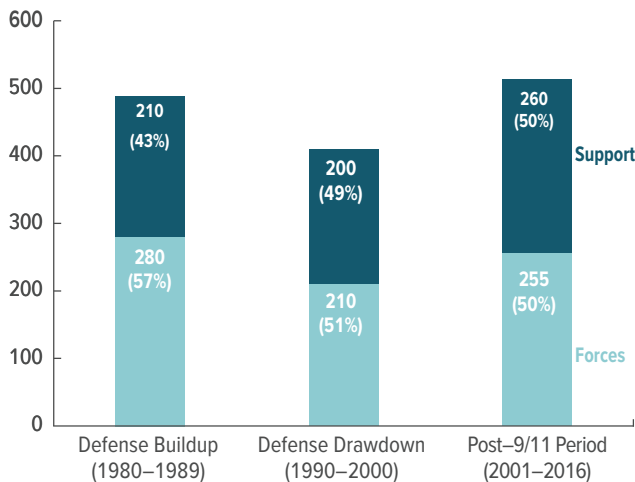
To illuminate recent trends, CBO conducted an in-depth analysis of the growth in DoD's funding for support functions from 2001 to 2016 (see Figure 2). That examination, which focused on year-by-year trends from 2001 to 2016 as opposed to averages for that period, showed the following increases in real terms:

- Funding for central medical programs increased by about \$18 billion (84 percent); the expansion of health care benefits for retirees and their families contributed to a significant portion of that growth.
- Funding for DoD-wide management functions grew by \$9 billion (45 percent); that growth was largely attributable to the management of DoD's military and civil activities overseas as well as headquarters staff in the services and in defensewide organizations.
- Funding for communications and information infrastructure grew by about \$3 billion (68 percent), an increase driven by spending on related headquarters and administration, operations of related facilities, and information-security programs.
- Funding for the science and technology program increased by about \$2 billion (18 percent), largely as a result of increased spending on the development of advanced technologies.

Figure 1.

### Average Annual Funding for Forces and Support Functions by Period

Billions of 2016 Dollars



Source: Congressional Budget Office, using data from DoD.

CBO's analysis examines funding in DoD's base budget; it does not include funding for overseas contingency operations such as the current Operation Freedom's Sentinel in Afghanistan or Operation Inherent Resolve in Iraq and Syria.

DoD categorizes the compensation of civilians assigned to force organizations as forces funding; the values shown here reflect CBO's recategorization of that compensation as support funding.

DoD = Department of Defense.

### What Are the Implications of Growing Support Costs?

Increased costs in some areas of support may have improved efficiency by helping meet military needs, boosting productivity, or reducing costs in other areas. For example, the growth in funding for DoD's communications infrastructure and science and technology programs may have improved DoD's overall combat capability in the face of new threats. Additionally, the growth in DoD-wide management costs related to military and civil activities overseas could be a natural corollary of the department's ongoing, years-long overseas military operations. Finally, increased investment in tools and machinery, a process that improves productivity and has occurred in DoD, may in part explain increases in spending on maintenance and other support activities.

Nevertheless, some factors suggest that DoD may face difficulties in achieving efficiency in spending. Because DoD lacks market-based incentives such as prices and profit, the Office of Management and Budget and the Congress have often resorted to using control measures,

such as targets for reductions in headquarters staff, to guide the department toward efficiency. That several of those measures have been implemented over time indicates that some of them were not perceived to be successful. In addition, DoD and its components perform diffuse tasks, from combat to the management of supply chains; the size of the department and the divergent outputs of those tasks make it difficult to measure and improve their efficiency. Moreover, DoD's responses to the unique risks it faces—including threats to resources and the lives of service members—may contribute to costly hedging strategies, such as maintaining a support infrastructure that is greater than needed.

Taken together, those factors suggest that spending on certain support functions, such as management, may not have improved efficiency as much as spending on other activities. At least one study has suggested that DoD's business functions are less efficient than analogous functions in the private sector, and the Government Accountability Office (GAO) includes the operations of many DoD support programs on its High Risk List, which identifies programs it believes to be at risk for waste, inefficiency, or ineffective spending.<sup>1</sup> These considerations suggest that the department may be able to cut some support costs without reducing its ability to perform its missions.

### An Overview of Trends in the Costs of Forces and Support Functions in DoD's Base Budget

CBO examined the trends in funding for the forces and support categories from 1980 to 2016, a time frame that allows for a long-term perspective and spans periods of both war and peacetime. From the mid-1980s to the early 1990s, funding for support rose in relation to funding for forces in terms of both amounts appropriated and funding per service member. Although it has varied somewhat in recent years, the ratio of funding for support to funding for forces has not returned to the lower levels experienced in the mid-1980s.

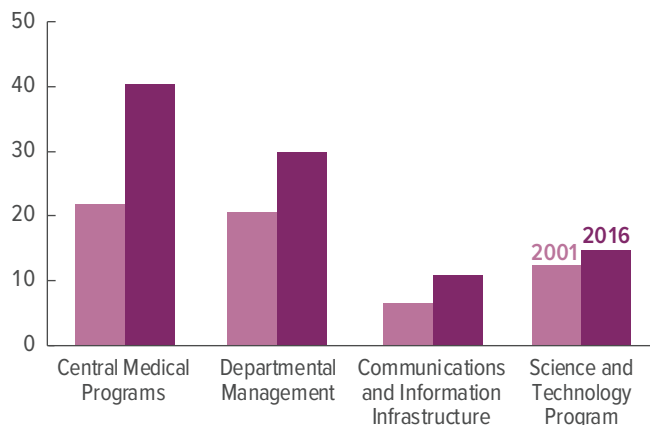
To obtain those results, CBO analyzed funding for categories of forces and support reported in DoD's budget database—the Future Years Defense Program (FYDP). (Box 1 describes the forces and support categories in the FYDP. In conducting its analysis, CBO made some

1. See Defense Business Board, "Transforming DoD's Core Business Processes for Revolutionary Change" (briefing at a public meeting, January 22, 2015), <http://go.usa.gov/xNhbD> (PDF, 823 KB), and Government Accountability Office, *Progress on Many High-Risk Areas, While Substantial Efforts Needed on Others*, GAO-17-317 (February 2017), [www.gao.gov/products/GAO-17-317](http://www.gao.gov/products/GAO-17-317).

Figure 2.

### Funding for Selected Support Functions, 2001 and 2016

Billions of 2016 Dollars



Source: Congressional Budget Office, using data from DoD.

CBO examined recent trends in spending among these four subcategories because their growth in spending from 1980 to 2016 outpaced the overall growth in support spending during that period.

CBO's analysis examines funding in DoD's base budget; it does not include funding for overseas contingency operations such as the current Operation Freedom's Sentinel in Afghanistan or Operation Inherent Resolve in Iraq and Syria.

DoD = Department of Defense.

adjustments to the FYDP classifications, which are discussed in detail in the appendix.) CBO examined funding for support in detail, analyzing 11 support subcategories and giving particular attention to those whose funding grew faster than support funding as a whole beginning in 2001.

In order to examine the support infrastructure needed in peacetime to create, train, and equip DoD's military units, CBO's analysis excludes funding for all wars since 1980 and focuses on DoD's base budget only. That is, the analysis excludes the funding for overseas operations that has been provided through separate appropriations.<sup>2</sup>

2. DoD's budget database combines base-budget funding and funding for overseas operations. To isolate base-budget funding, CBO examined the Treasury Account Symbols (codes that describe the nature of funded programs) associated with DoD's funding for overseas operations. Those codes, assigned by the Department of the Treasury in collaboration with the Office of the Management and Budget, generally conform to the forces and support categories in DoD's budget data; CBO therefore calculated base-budget funding for forces and types of support by subtracting associated funding for overseas operations reflected

To better illustrate trends, CBO divided the time frame under analysis into three distinct periods: the defense buildup between 1980 and 1989, the defense drawdown between 1990 and 2000, and the post-9/11 period between 2001 and 2016. The defense buildup was characterized by rapid increases in the defense budget during the Reagan Administration to counter the threat from the Soviet Union. The fall of the Berlin Wall in 1989 (which set in motion the chain of events leading to the collapse of the Soviet Union) hastened the cuts to the defense budget and U.S. forces that characterized the defense drawdown. After the terrorist attacks of September 11, 2001, DoD built up its military forces again to fight wars focused on counterterrorism, a mission significantly different from the missions of previous wars; the post-9/11 period in CBO's analysis extends from 2001 to 2016, the most recent year for which detailed data were available. Over the entire 1980–2016 period, the ratio of funding for support to funding for forces reached its low point—0.7—in 1985, rose to about 1.0 in 1991, and has hovered around that number since then.

### Overall Trends in the Base Budget

In the early to mid-1980s, DoD's budget grew steadily, largely because of increases in funding for forces during the defense buildup (see Figure 3 on page 6). Although spending began to decrease during the second half of the decade, average annual funding for forces and support accounted for roughly \$280 billion and \$210 billion, respectively, of DoD's \$490 billion average base budget between 1980 and 1989. The ratio of funding for support to funding for forces averaged 0.8 during that period.

By the time the Berlin Wall fell in 1989, the defense drawdown was already underway, and DoD's budget continued to decrease (in real terms) until 1997. During the drawdown, funding for forces fell more quickly than funding for support activities. Between 1990 and 2000, average annual funding for forces (about \$210 billion)

by the Treasury Account Symbols from the information in DoD's budget database.

Appropriations for overseas operations in Iraq and Afghanistan have continued for more than 16 years. Over time, they have evolved to fund support activities that arguably would otherwise be in DoD's base budget. (Since 2009, appropriations for those wars have been designated as funding for overseas contingency operations.) Sufficiently detailed data identifying the funding for some of those specific support activities are currently not available to CBO. The potential long-term implications of such funding for the base budget will be explored in a separate CBO report.

## Box 1.

## Definitions of the Forces and Support Categories

The Department of Defense's (DoD's) Future Years Defense Program (FYDP) database contains historical and projected information on resources (funding, personnel, equipment, and the number and types of military units) for the department's programs. Within that database, Force and Infrastructure Category (FIC) codes provide a classification scheme that allows DoD's total budget to be sorted into funding for forces and funding for infrastructure (referred to as support in this report).<sup>1</sup>

### Forces

Forces are organizations (military units, their command structure, and intelligence activities) and associated weapon systems that provide combat capability. In the FIC classification scheme, the forces category includes two main subcategories: operating forces, and command and intelligence.

**Operating Forces.** Forces assigned to combatant commands, along with closely related subordinate organizations that assist them in their missions, and agencies engaged in activities related to U.S. international policy (such as arms control and threat reduction) under the direct supervision of the Office of the Secretary of Defense.

**Command and Intelligence.** Programs and organizations that direct combatant military operations, including the activities of dedicated operational headquarters and associated command and control systems and activities related to intelligence collection and exploitation.

### Support

The support category consists of broad groupings of activities that provide goods and services that establish and sustain military units. In the FIC classification scheme, the support category contains 11 main subcategories.

**Central Medical Programs.** Medical infrastructure and systems, managed by the Assistant Secretary of Defense for Health Affairs, that provide health care to military personnel and retirees and their dependents.

**Departmental Management.** The activities of headquarters in managing the overall programs and operations of DoD and its components, administrative offices, international activities, and centrally managed defensewide support activities. (This subcategory excludes the management of combatant headquarters, which is assigned to the command and intelligence subcategory under forces, and the management of headquarters associated with other support subcategories.)

**Communications and Information Infrastructure.** Programs that ensure the secure distribution, processing, storage, and display of information through long-distance communications systems, computing systems at installations, Defense Enterprise Computing Centers and detachments, and information-security programs. (Communications and computer activities dedicated to other support subcategories are assigned to those respective subcategories.)

**Science and Technology Program.** Activities involved in scientific research and experimentation and the development of technology, including the application of results to military use.

**Acquisition.** Activities involved in developing, testing, evaluating, and procuring military equipment and supporting systems and providing technical oversight throughout each system's useful life. (Funding for weapon systems and equipment used by operational units is assigned to the forces category.)

**Central Personnel Benefits.** Programs that provide nonmedical benefits to service members, including family housing programs; commissaries and military exchanges; dependents' schools, both in the United States and overseas; community, youth, and family centers; child-development activities; off-duty and voluntary education programs; ceremonial and morale-boosting activities; and counseling services for personnel and dependents.

**Force Installations.** Installations at which military units are based; services and organizations necessary to house and sustain those units and support their daily operations; programs for maintaining, restoring, and modernizing each installation's buildings; and programs for protecting the environment.

**Central Training.** Programs and activities that provide formal training to personnel at central locations (schools). (This subcategory excludes training activities carried out by operational units, which are funded in the forces category.)

1. For more details on the FIC classification system, see Ronald E. Porten, Daniel L. Cuda, and Arthur C. Yengling, *DoD Force & Infrastructure Categories: A FYDP-Based Conceptual Model of Department of Defense Programs and Resources* (Institute for Defense Analyses, September 2002), [www.dtic.mil/get-tr-doc/pdf?AD=ADA409235](http://www.dtic.mil/get-tr-doc/pdf?AD=ADA409235) (PDF, 4,598 KB).



Box 1.

Continued

### Definitions of the Forces and Support Categories

**Central Personnel Administration.** Programs and activities related to recruiting and administering the DoD workforce.

**Central Logistics.** Programs and activities involved in furnishing supplies, conducting major repairs and overhauls of military equipment and supporting systems, transporting materials, and providing other products and services to units throughout DoD.

**Other Infrastructure Activities.** Programs that do not fit neatly into the other support subcategories, including programs that

manage, host, and support operations for DoD's intelligence activities; conduct meteorologic and oceanographic activities; manage and upgrade air traffic control activities; support war-fighting, war gaming, and battle centers and major modeling and simulation programs; procure and maintain contingency hospitals, mobilize medical reservists, identify biological warfare agents, and improve medical equipment intended for use in combat; and fund joint exercises sponsored by combatant commanders in chief and directed by the Joint Chiefs of Staff.

was only slightly higher than funding for support (about \$200 billion). During that period, on average, the ratio of funding for support to funding for forces was just under 1.0.

In the post-9/11 era, as DoD's base budget increased, funding for support increased more quickly than funding for forces until 2010. On average, the two categories accounted for equal shares of DoD's roughly \$510 billion base budget from 2001 to 2016; accordingly, the ratio of funding for support to funding for forces was about 1.0 during that period.<sup>3</sup>

Because combat forces (particularly in terms of their number of personnel) are often the initial targets of increases or decreases in the size and costs of the U.S. military, funding for forces tends to rise and fall more than funding for support during buildups and draw-downs. That pattern could be reinforced by other factors, such as legislation, that directly or indirectly lengthen the time it takes to change the size of the support infrastructure—for example, the requirement for Congressional approval before bases can be closed.

Although CBO's analysis shows that funding for support activities generally increased over time, the pattern

of growth varied among the different types of support activities (see Figure 4). For example, from 1980 to 2016, funding for central logistics generally rose and fell with the size of DoD's base budget, whereas funding for central personnel benefits grew at a moderate pace but contributed little to the growth in funding for support overall.<sup>4</sup> However, four types of support functions saw sustained growth in funding over that period that outpaced the overall 46 percent growth in support funding: central medical programs (234 percent growth), departmental management (123 percent), communications and information infrastructure (110 percent), and DoD's science and technology program (94 percent). Recent trends in funding within all of those subcategories except central medical programs are detailed later in this report.<sup>5</sup>

### Trends in Funding per Service Member

To remove the effects of changes to the size of the military between 1980 and 2016, CBO also examined the funding per service member in each subcategory,

3. The establishment of Working Capital Funds in the 1990s affected the categorization of some costs, shifting a portion of DoD's funding from support to forces. Adjusting for that shift would make the observed growth in support spending still larger, but CBO estimates that the effect of those shifts in categorization would not be sufficient to change the overall results and trends discussed in this report (for more detail, see the appendix).

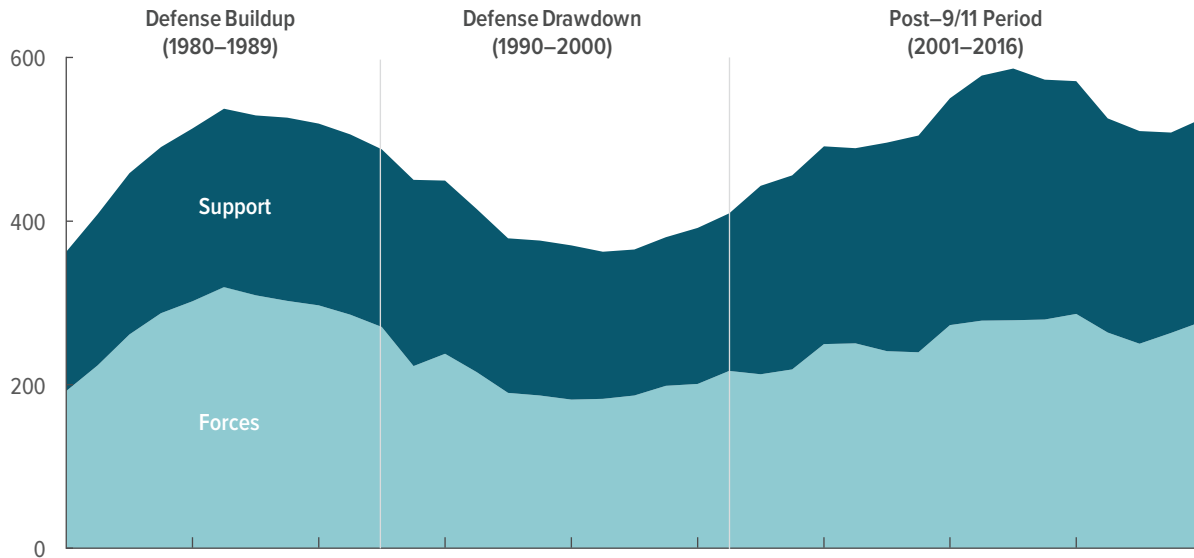
4. The relatively sharp drop in funding for central logistics in the 1990s was due in part to the advent of the Working Capital Fund system and the resulting shift in the assignment of related spending from support to force organizations. If the portion of those costs that should arguably be categorized as support costs were added back, the share of support spending in DoD's base budget would be larger than estimated in this report.

5. CBO has studied the causes of growth in spending for DoD's health care programs in earlier reports. For example, see Congressional Budget Office, *Approaches to Reducing Federal Spending on Military Health Care* (January 2014), [www.cbo.gov/publication/44993](http://www.cbo.gov/publication/44993).

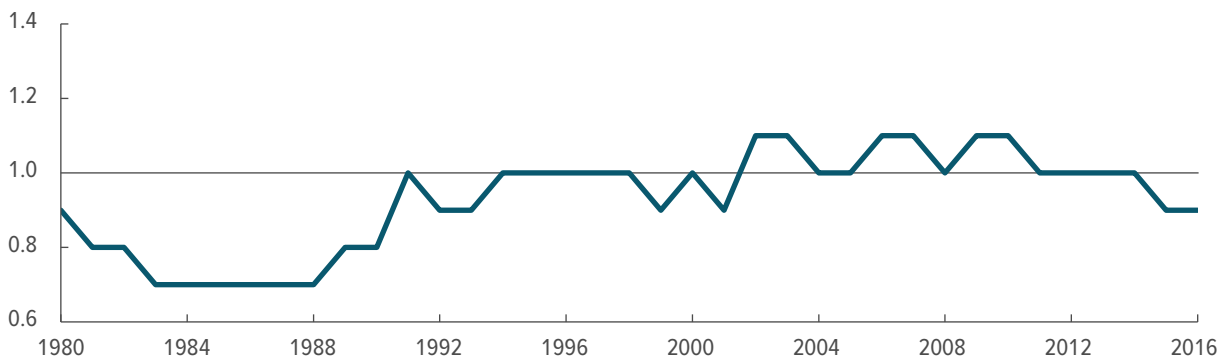
Figure 3.

**Funding for Forces and Support Functions, 1980 to 2016**

Billions of 2016 Dollars



Ratio of Funding for Support to Funding for Forces



Source: Congressional Budget Office, using data from DoD.

CBO’s analysis examines funding in DoD’s base budget; it does not include funding for overseas contingency operations such as the current Operation Freedom’s Sentinel in Afghanistan or Operation Inherent Resolve in Iraq and Syria.

DoD categorizes the compensation of civilians assigned to force organizations as forces funding; the values shown here reflect CBO’s recategorization of that compensation as support funding.

DoD = Department of Defense.

dividing funding by the number of service members.<sup>6</sup> That approach highlights changes in funding that are not related to increases or decreases in the number of service members.

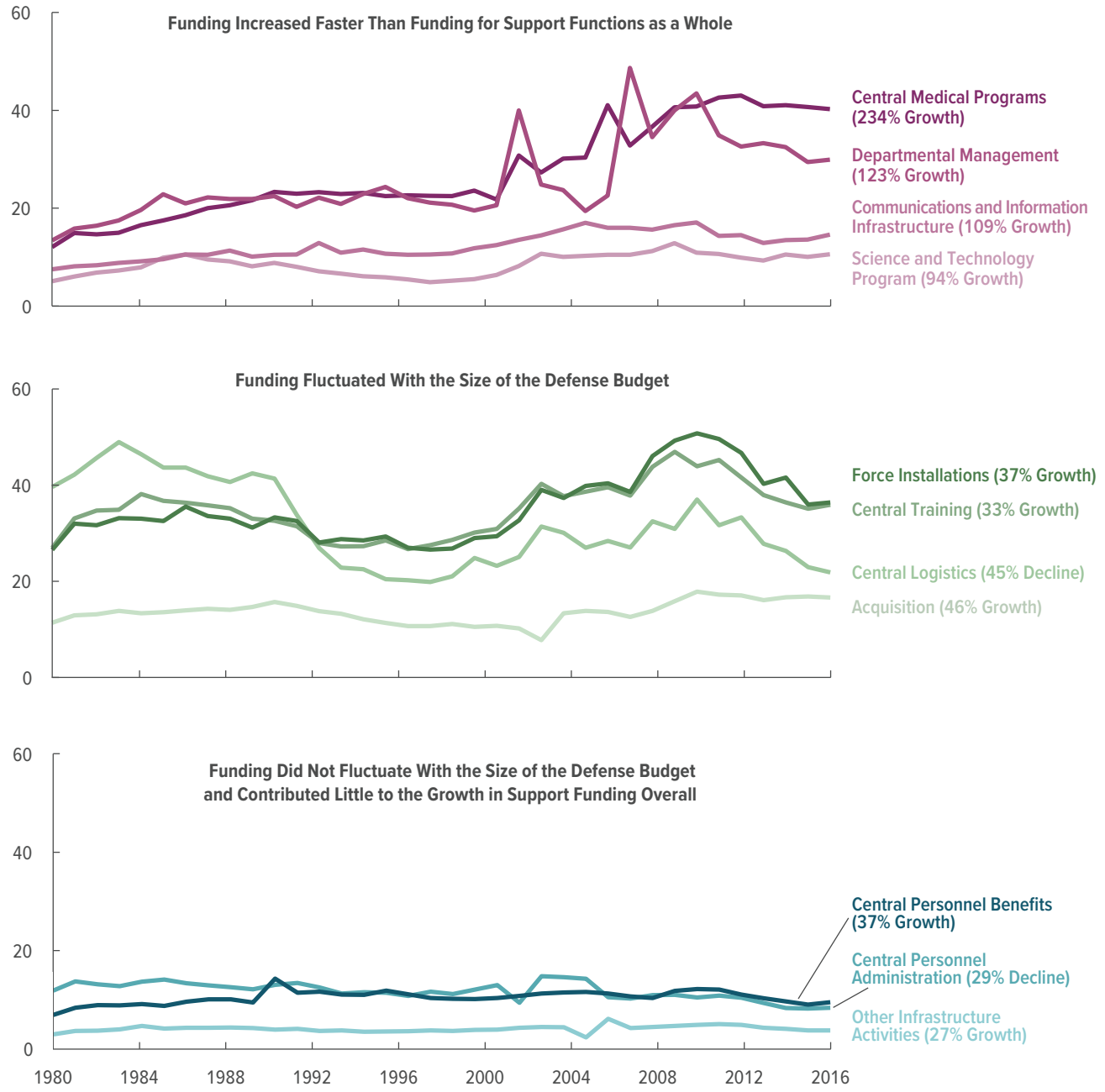
6. The service members included in CBO’s calculation of the size of the military are regular active-duty personnel and the average number of reservists on active status in a year, restricted to those who are in force organizations.

Funding for forces per service member rose sharply during the first part of the 1980s, then dropped sharply for several years (see Figure 5). After the defense buildup had abated, beginning in 1990, funding per service member for support rose at a faster annual rate (averaging about 1.7 percent a year) than funding for forces (averaging about 1.1 percent a year).

Figure 4.

**Trends in Funding for Various Support Functions, 1980 to 2016**

Billions of 2016 Dollars



Source: Congressional Budget Office, using data from DoD.

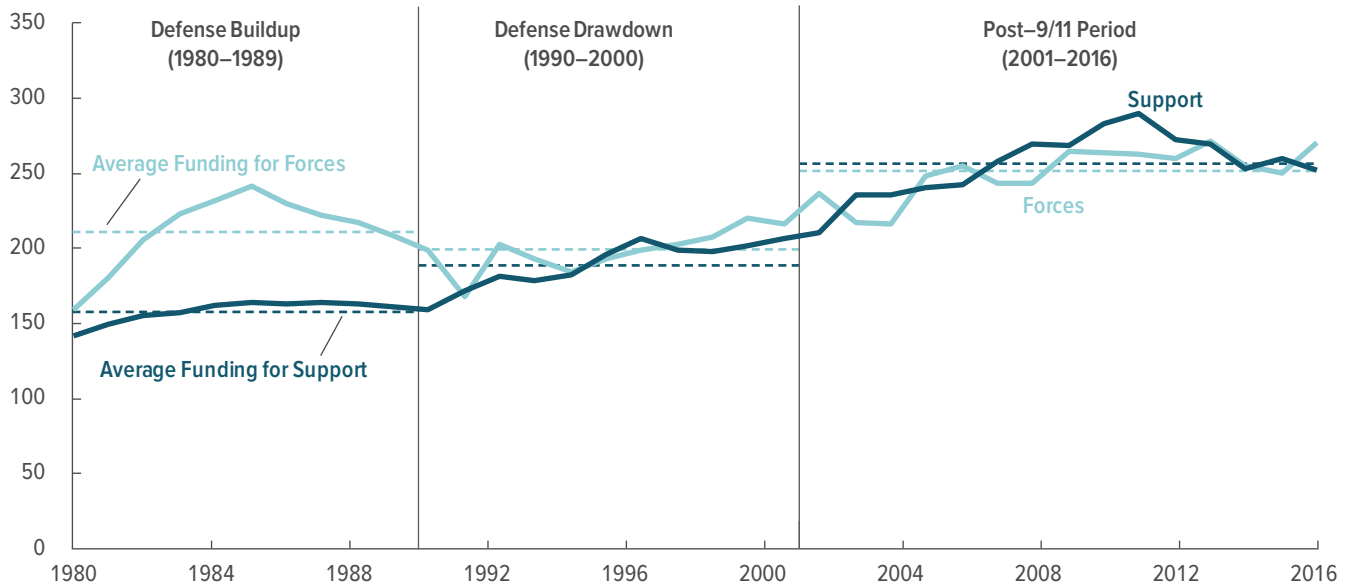
CBO's analysis examines funding in DoD's base budget; it does not include funding for overseas contingency operations such as the current Operation Freedom's Sentinel in Afghanistan or Operation Inherent Resolve in Iraq and Syria.

DoD = Department of Defense.

Figure 5.

### Funding for Forces and Support Functions per Service Member, 1980 to 2016

Thousands of 2016 Dollars



Source: Congressional Budget Office, using data from DoD.

CBO's analysis examines funding in DoD's base budget; it does not include funding for overseas contingency operations such as the current Operation Freedom's Sentinel in Afghanistan or Operation Inherent Resolve in Iraq and Syria.

The service members included in CBO's calculation are regular active-duty personnel and the average number of active reservists in force organizations in a year.

DoD categorizes the compensation of civilians assigned to force organizations as forces funding; the values shown here reflect CBO's recategorization of that compensation as support funding.

DoD = Department of Defense.

For the four types of support functions that saw the fastest rates of growth, funding per service member more than doubled (in real terms) from 1980 to 2016:

- Funding for central medical programs more than quadrupled from \$10,000 in 1980 to \$42,000 in 2016, averaging \$12,000 between 1980 and 1989, \$22,000 between 1990 and 2000, and \$36,000 between 2001 and 2016 (see Figure 6).
- Funding for departmental management almost tripled from \$11,000 in 1980 to \$31,000 in 2016, averaging \$14,000 between 1980 and 1989, \$21,000 between 1990 and 2000, and \$32,000 between 2001 and 2016.
- Funding for communications and information infrastructure more than doubled from \$4,000 in 1980 to \$11,000 in 2016, averaging \$6,000 between 1980 and 1989 and between 1990 and 2000, then

rising to an average of \$10,000 between 2001 and 2016.

- Funding for DoD's science and technology program also more than doubled from \$6,000 in 1980 to \$11,000 in 2016, averaging \$7,000 between 1980 and 1989, \$11,000 between 1990 and 2000, and \$15,000 between 2001 and 2016.

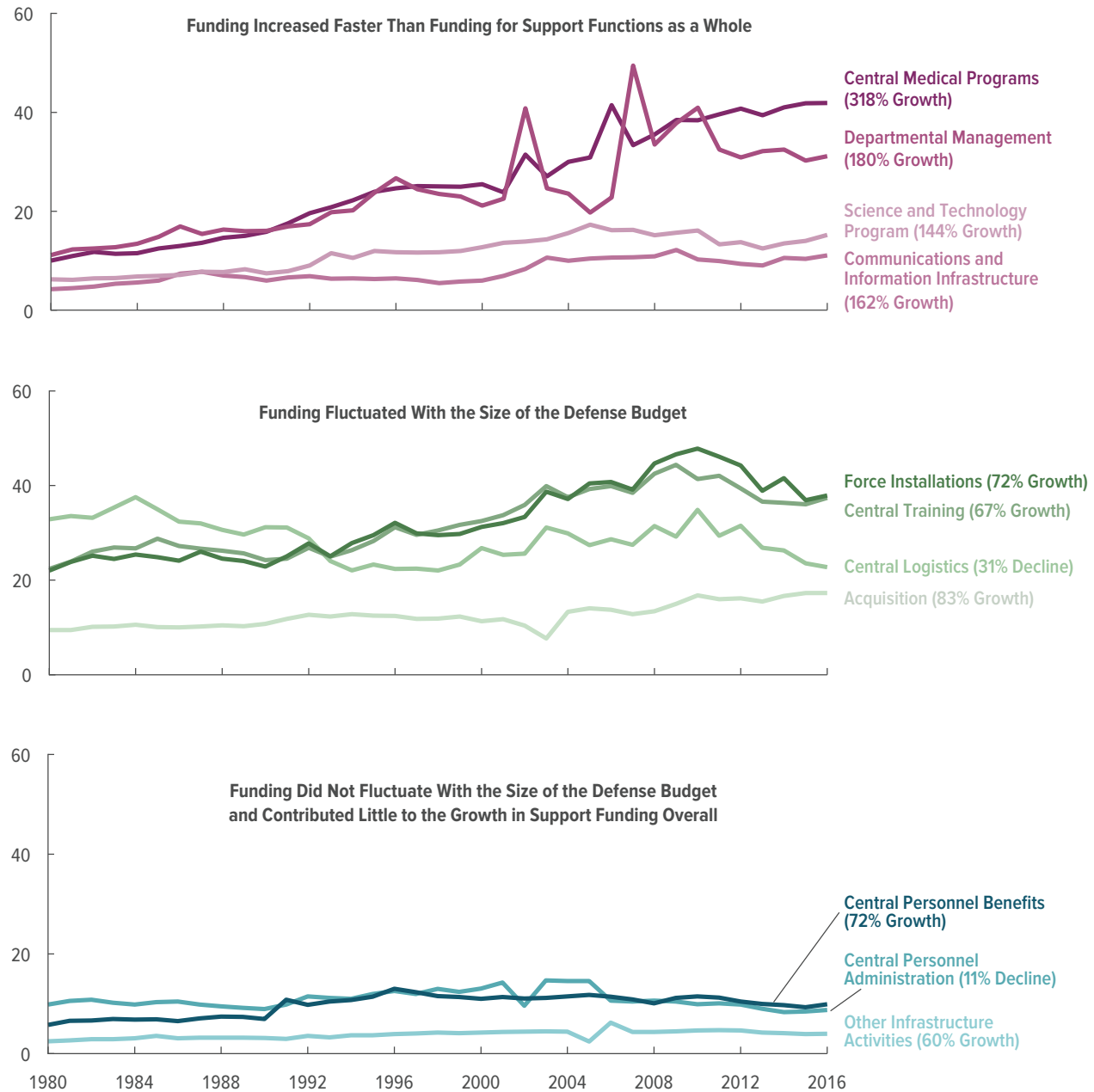
From 1980 to 2016, average support funding per service member rose among all components of DoD. Defensewide organizations showed the strongest sustained growth (see Figure 7).<sup>7</sup> Support funding per service member in the Navy and Marine Corps and in

7. Defensewide organizations include the various defense agencies (such as the Defense Logistics Agency), the Office of the Secretary of Defense, the Joint Chiefs of Staff, the Special Operations Command, and other organizations and programs that support the military services, including the Defense Health Program.

Figure 6.

**Funding for Each Support Function per Service Member, 1980 to 2016**

Thousands of 2016 Dollars



Source: Congressional Budget Office, using data from DoD.

CBO's analysis examines funding in DoD's base budget; it does not include funding for overseas contingency operations such as the current Operation Freedom's Sentinel in Afghanistan or Operation Inherent Resolve in Iraq and Syria.

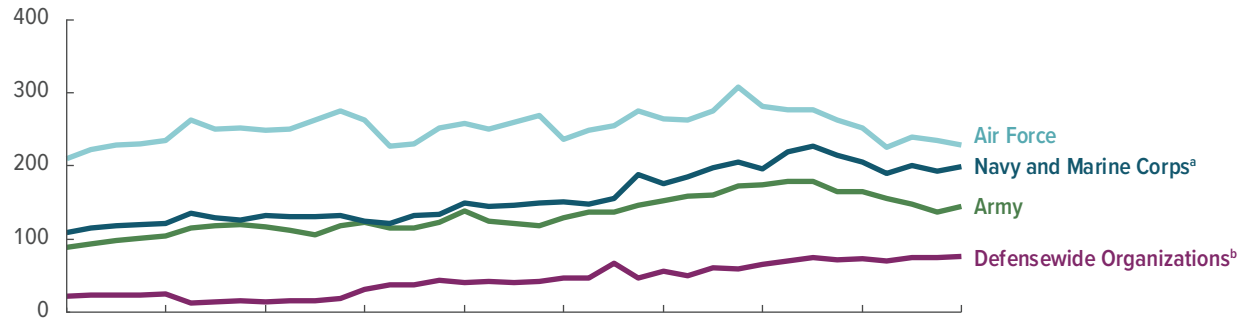
The service members included in CBO's calculation are regular active-duty personnel and the average number of active reservists in force organizations in a year.

DoD = Department of Defense.

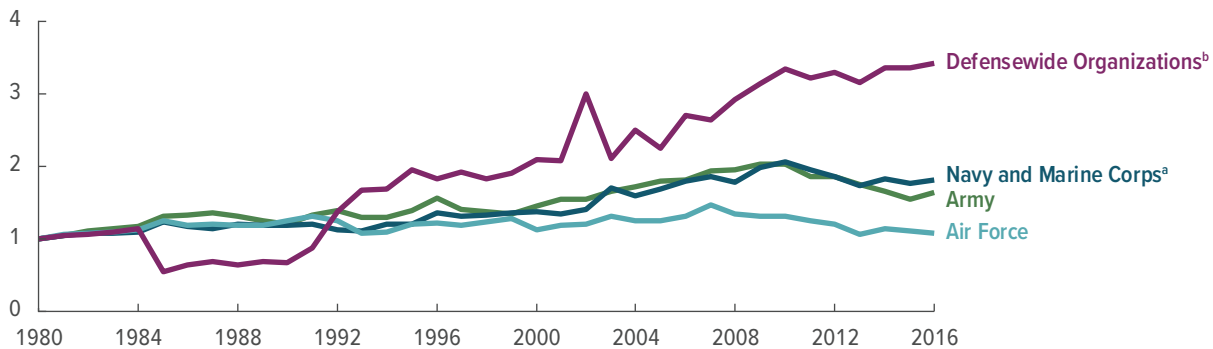
Figure 7.

**Funding for Support Functions per Service Member in the Military Services and Defensewide Organizations, 1980 to 2016**

Thousands of 2016 Dollars



Index, 1980 = 1



Source: Congressional Budget Office, using data from DoD.

CBO’s analysis examines funding in DoD’s base budget; it does not include funding for overseas contingency operations such as the current Operation Freedom’s Sentinel in Afghanistan or Operation Inherent Resolve in Iraq and Syria.

CBO calculated funding per service member by dividing DoD’s base budget by the number of service members assigned to force organizations. The service members included in CBO’s calculation are regular active-duty personnel and the average number of active reservists in force organizations in a year.

DoD = Department of Defense.

- a. CBO combined funding per service member for the Navy and the Marine Corps rather than treating the two services separately because the Navy provides many services that support the Marine Corps (for example, medical care and transportation of personnel and material by sea).
- b. Defensewide organizations include the various defense agencies and smaller independent programs, the Defense Health Program, the Office of the Secretary of Defense, the Joint Chiefs of Staff, the United States Special Operations Command, and other organizations that support the services. Funding per active-duty service member was lowest in defensewide organizations largely because funding for those organizations is divided by the number of service members for all four service branches combined.

the Army grew to a lesser extent, and that growth was largely sustained (see lower panel of Figure 7). In the Air Force, support funding per service member showed the least sustained growth, although the amount of support funding per service member was largest in that branch.<sup>8</sup>

In all of DoD’s components except for defensewide organizations, funding per service member has declined over the past several years.

8. In 2016, the Air Force’s base budget (about \$150 billion) was comparable to that of the Navy and Marine Corps (about \$160 billion) and larger than the Army’s (about \$122 billion), CBO estimates. However, in that year, the active-duty end

strength (the size of forces at the end of a fiscal year) for the Air Force (321,000) was lower than the end strength for the Navy and Marine Corps (513,000) or the Army (475,000). That pattern held for most years included in CBO’s analysis.

## Types of Support Showing the Most Growth in Funding From 2001 to 2016

CBO examined the types of support for which funding grew the most quickly—except for central medical programs—to determine the possible reasons for that growth. The causes of increases in funding for central medical programs (which grew by 84 percent between 2001 and 2016, from about \$22 billion to about \$40 billion) have been examined in earlier CBO reports; the principal driver of that growth was the expansion of health care benefits for military retirees and their families.<sup>9</sup>

CBO conducted an in-depth examination of the remaining three subcategories, focusing on year-to-year trends (measured in 2016 dollars) from 2001 to 2016 rather than average spending over that period. That analysis showed the following:

- The growth in funding for departmental management was chiefly driven by spending on headquarters staff in the services and defensewide organizations, the activities of combatant commands, and international activities.<sup>10</sup>
- The growth in funding for communications and information infrastructure was largely attributable to increased spending on headquarters and administrative activities, facilities support, and information-security systems.<sup>11</sup>

9. For example, the costs associated with changes in health care benefits for military personnel and their families are discussed in Congressional Budget Office, *Approaches to Reducing Federal Spending on Military Health Care* (January 2014), [www.cbo.gov/publication/44993](http://www.cbo.gov/publication/44993), and Congressional Budget Office, *Approaches to Changing Military Health Care* (forthcoming).

10. Combatant commands have broad and continuing missions and include forces from multiple services organized on either a geographical basis (for example, the United States Central Command, which is responsible for the Middle East and parts of central Asia) or a functional basis (for example, United States Strategic Command, whose missions include nuclear, space, and information warfare).

11. Headquarters and administrative activities in this subcategory include only those activities specifically associated with DoD's communications and information infrastructure, as opposed to DoD-wide management headquarters, whose mission is to manage the overall programs and operations of the department and whose activities are categorized as departmental management.

- The growth in funding for DoD's science and technology program was predominantly due to the development of advanced technologies.

**Departmental Management Activities.** Departmental management activities are carried out by top-level headquarters whose primary mission is to manage the overall programs and operations of DoD and its components.<sup>12</sup> Between 2001 and 2016, funding for departmental management grew at an average annual rate of about 2.4 percent, rising from \$20.6 billion to \$29.9 billion—a 45 percent increase (see Figure 8). According to DoD's data, nearly two-thirds of that growth was attributable to the management of three of nine types of activities: military service and defensewide management headquarters' activities, the activities of combatant commands, and international activities.<sup>13</sup> Although the remaining six activities collectively account for a large proportion of departmental management funding, they represent only one-third of the growth in funding for that subcategory.

*Management Headquarters.* Funding for management headquarters for the military branches and defensewide agencies, which are primarily responsible for overseeing subordinate organizations by guiding policy and evaluating program performance, increased from \$1.6 billion in 2001 to \$5.8 billion in 2012 before falling to \$4.3 billion in 2016. That nearly \$3 billion increase in funding for management headquarters between 2001 and 2016 accounted for 29 percent of the DoD-wide increase in funding for departmental management. During the past few years, DoD has attempted to improve the efficiency of its headquarters organizations to cut costs, in part in response to Congressional direction.<sup>14</sup> However, it is unclear whether and to what degree reductions in the costs of management headquarters since 2012 resulted from those efforts.

12. This subcategory does not include combatant headquarters, which provide command and control of military units and are assigned to the forces category.

13. For more information on the definition of management headquarters, see Department of Defense, *Major DoD Headquarters Activities*, Department of Defense Instruction 5100.73 (June 12, 2012), <https://go.usa.gov/xn3vJ> (PDF, 255 KB).

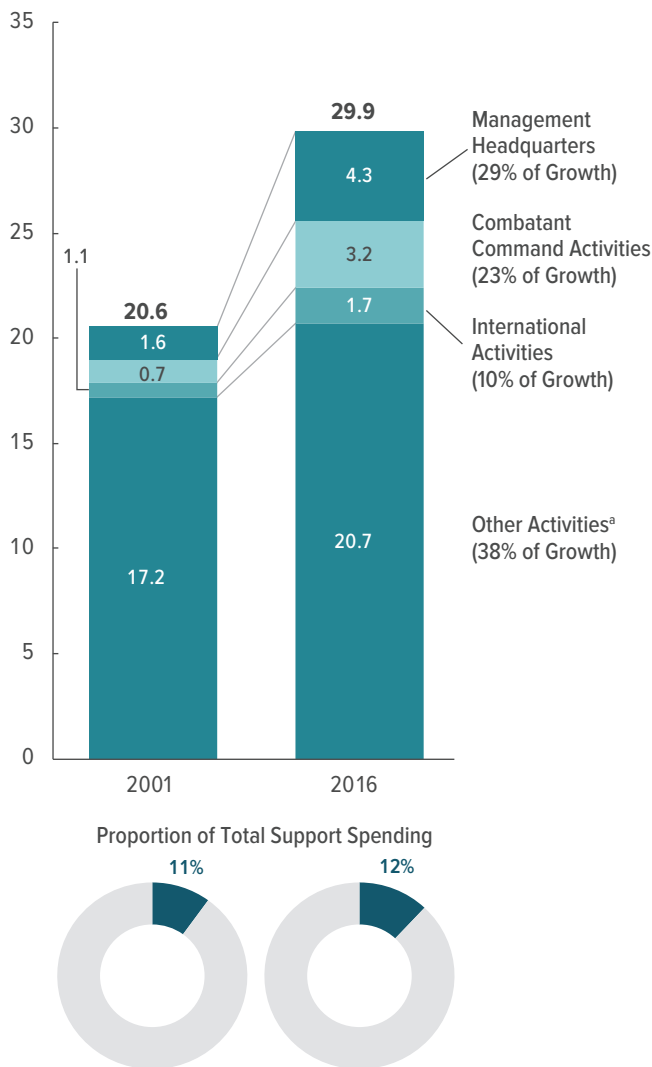
14. For instance, in 2013, the Secretary of Defense set a target to reduce DoD components' headquarters budgets by 20 percent. Also, in the National Defense Authorization Act for Fiscal Year 2014, the Congress directed DoD to develop a plan to streamline management headquarters to achieve targeted savings.



Figure 8.

**Funding for Departmental Management, 2001 and 2016**

Billions of 2016 Dollars



Source: Congressional Budget Office, using DoD's Future Years Defense Program database.

DoD = Department of Defense.

a. "Other activities" comprise activities carried out by the headquarters of the following organizations and programs: the Joint Chiefs of Staff; the Office of the Secretary of Defense; the secretariats and Washington headquarters of the military services; programs of the military services that provide support servicewide and to organizations outside of DoD; DoD-wide programs that manage bases, facilities, and environmental programs; and defensewide services and programs, such as security and investigative services and the Base Realignment and Closure program. Taken together, those activities account for a significant portion of departmental management spending; individually, however, they contribute relatively little to the total (amounting to about \$1.4 billion, or 4 percent, on average in 2016).

*Combatant Commands.* Funding for the activities of combatant commands outside of warfighting headquarters and supporting organizations increased by \$2.5 billion between 2001 and 2016, accounting for 23 percent of the DoD-wide increase in funding for departmental management. Those activities pertain to the day-to-day administrative operations of U.S. combatant commands.

*International Activities.* Funding for international activities, which facilitate cooperation between U.S. senior management and foreign governments, increased by \$0.6 billion between 2001 and 2016, accounting for 10 percent of the DoD-wide increase in funding for departmental management. Those activities include U.S. participation in international military organizations such as the North Atlantic Treaty Organization (NATO) and what DoD refers to as "nonsecurity assistance" to other nations for such things as logistics and training. Because of their nature, most of the increased funding for international activities comes from defensewide organizations and is provided through DoD's Operation and Maintenance account, which chiefly funds support functions and has grown substantially in recent years.

*Other Management Activities.* Funding for the remaining management activities increased by \$3.5 billion, accounting for 38 percent of the overall increase in funding for departmental management. Those activities are carried out by the headquarters of the following organizations and programs: the Joint Chiefs of Staff; the Office of the Secretary of Defense; the secretariats and Washington headquarters of the military services; programs of the military services that provide support servicewide and to organizations outside of DoD; DoD-wide programs that manage bases, facilities, and environmental programs; and defensewide services and programs, such as security and investigative services and the Base Realignment and Closure program.

**Communications and Information Infrastructure.**

This subcategory encompasses programs that enable the secure distribution, processing, storage, and display of information.<sup>15</sup> Between 2001 and 2016, funding for communications and information infrastructure grew at an average annual rate of 3.3 percent, increasing from \$6.3 billion to \$10.5 billion—a growth of nearly

15. Specific communication and computing activities dedicated to other support subcategories are assigned to those respective subcategories.



70 percent (see Figure 9). Of that \$4.3 billion increase, headquarters and administrative activities accounted for \$1.2 billion (28 percent), facilities support accounted for \$1.1 billion (26 percent), information-security programs (possibly in response to cybersecurity threats) accounted for \$0.9 billion (21 percent), long-distance communications on DoD's network accounted for \$0.8 billion (17 percent), and base and regional information-processing centers accounted for \$0.3 billion (7 percent).<sup>16</sup>

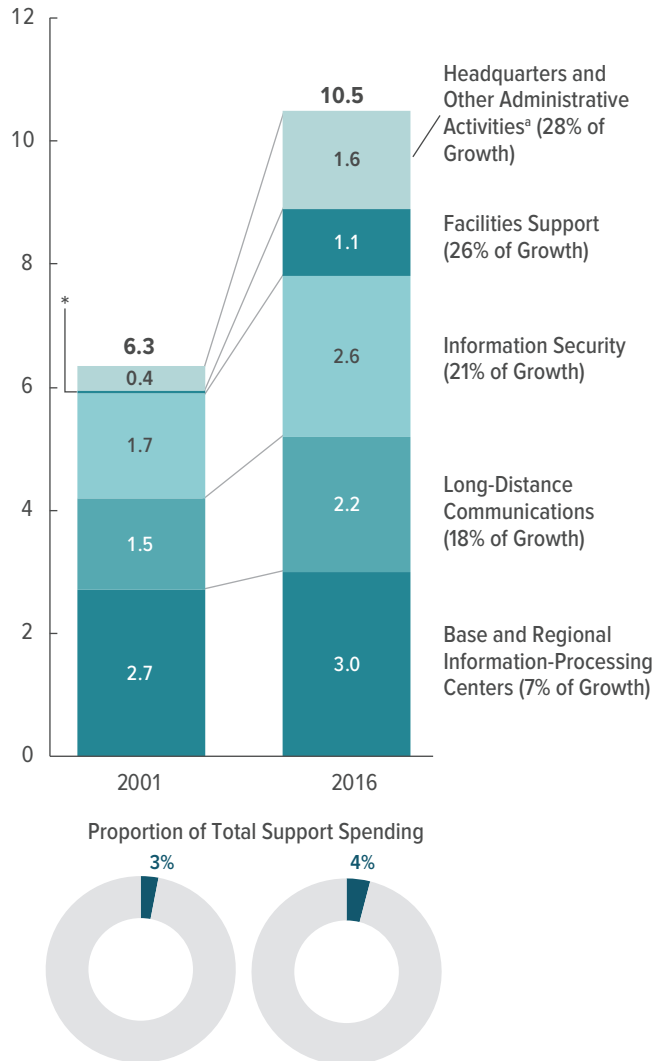
**DoD's Science and Technology Program.** The department's science and technology program manages scientific research and experimentation and determines whether and how the results can be applied to military use. The elements of that program are advanced technology development, which involves testing hardware in the field to establish military effectiveness; basic research, which is dedicated to increasing scientific knowledge without predetermined applications to specific products or processes; and applied research, which is focused on finding solutions to defined military needs.

Between 2001 and 2016, funding for the science and technology program grew at an average annual rate of 1.1 percent, rising by 17 percent overall, from \$12.4 billion to \$14.6 billion (see Figure 10). Of that \$2.2 billion increase, advanced technology development programs accounted for \$1.5 billion (about 70 percent), basic research accounted for \$0.6 billion (28 percent), and applied research accounted for \$0.1 billion (3 percent).

Figure 9.

**Funding for Communications and Information Infrastructure, 2001 and 2016**

Billions of 2016 Dollars



16. Headquarters and administrative activities in this subcategory include only those specifically associated with DoD's communications and information infrastructure, as opposed to DoD-wide management headquarters, whose mission is to manage the overall programs and operations of the department and whose activities are categorized under departmental management. Funding for headquarters and administrative activities related to communications and information infrastructure quadrupled between 2001 and 2016, rising from \$0.4 billion to \$1.6 billion.

Facilities support includes real property services and maintenance, repair, minor construction, disposal, and other activities involved in sustaining, restoring, and modernizing installation facilities related to DoD's communications and information infrastructure. Funding for facilities support grew from under \$10 million in 2001 to \$1.1 billion in 2016.

Source: Congressional Budget Office, using DoD's Future Years Defense Program database.

DoD = Department of Defense; \* = between zero and \$10 million.

a. Headquarters and administrative activities in this subcategory include only those activities specifically associated with DoD's communications infrastructure, as opposed to the activities of DoD-wide headquarters.

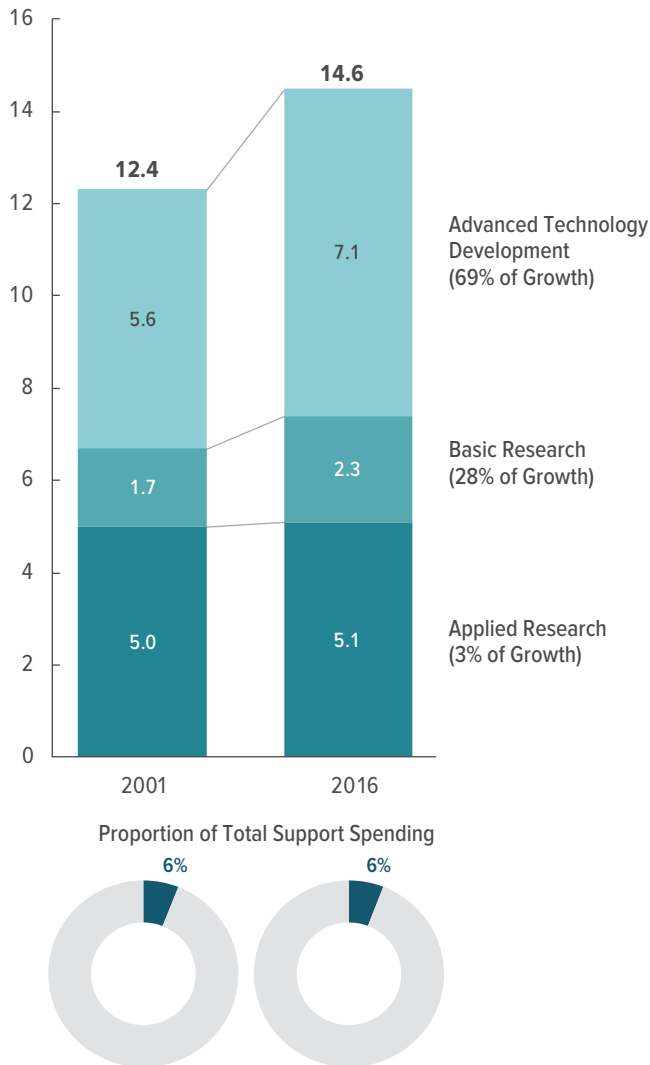
**The Significance of Rising Support Costs**

Rising support costs could have positive, negative, or neutral implications for DoD. They could signal increased combat capability, but they also could be a sign of inefficiency.

Figure 10.

### Funding for DoD's Science and Technology Program, 2001 and 2016

Billions of 2016 Dollars



Source: Congressional Budget Office, using DoD's Future Years Defense Program database.

DoD = Department of Defense.

### Why Growth in Support Costs Could Enhance Efficiency

Increases in spending on some support functions or programs could be the result of DoD's efforts to meet military needs. If they increased DoD's overall combat capability, increases in support costs could be efficient. Alternatively, growth in some support costs might increase the overall efficiency of DoD's allocation of resources by boosting productivity or reducing costs in other areas.

### Increased Spending for Support May Help Meet

**Military Needs.** Spending on some support activities, including those related to technological improvements and prolonged wartime operations, could be efficient if it addressed specific military needs.

*Improvements in Technology.* Spending on information-security systems and on the application of advanced technologies to military needs were factors in the growth in funding for DoD's communications and information infrastructure and DoD's science and technology program, respectively. For example, computerization of new weapons, enhanced information security, and advances in stealth technology (which makes weapon systems, such as fighter aircraft, difficult to detect)—improvements that DoD has implemented to meet evolving threats—require more expensive maintenance support. However, increased spending in those areas could be an efficient use of resources if it increased combat capability at a lower cost than alternative approaches.

*Prolonged Wartime Operations.* The growth in funding for departmental management in DoD's base budget after 2001 may in part be explained by the operations in Afghanistan and Iraq. The mobilization for those wars probably required an expansion of DoD's support infrastructure, some of which was funded in the base budget rather than through appropriations for those overseas operations. For example, as part of the U.S. involvement in those countries and the broader effort to counter terrorist groups, DoD sharply increased its base-budget funding for international activities and the activities of combatant commands, both of which are considered departmental management functions. Those activities, which are aimed at improving the civil and military capabilities of other nations, may help the U.S. military implement its strategy in those regions and arguably reflect changes in U.S. military missions after 2001. Given the continued U.S. involvement in the Middle East and South Asia, the increased level of funding for international activities (such as those in support of host nations), the activities of combatant commands (such as military exercises), and other departmental management functions in DoD's base budget could be enduring. However, if those activities help current U.S. operations to be more effective or help avoid future military operations or escalation, they could be considered an efficient use of support resources. For example, a stated goal of some nonsecurity assistance to other nations is to improve the management of finances and resources among U.S. allies' military forces, thereby ultimately

improving their overall defense capability and reducing the demands on U.S. forces.

**Increased Spending May Improve Efficiency Through Increased Capital Intensity.** A long-term shift toward increased investment in tools and machinery has occurred in DoD, increasing productivity by complementing human labor. For example, the automation of tasks previously performed by sailors has cut the number of crew members needed by new classes of ships and submarines; the introduction of GPS-guided individual navigation and communication devices has enabled ground troops to complete navigation tasks with greater speed and precision; and the increased amount of mechanical equipment, such as trucks, possessed by military units has increased those units' mobility and, thus, their combat power. Such trends have probably increased DoD's support costs in part because more equipment requires more funding for maintenance: A recent CBO report found that funding for maintenance of equipment and weapon systems, which is included in the central logistics subcategory, increased significantly between 2000 and 2012, contributing to the growth in DoD's Operation and Maintenance account during that period.<sup>17</sup> However, the same trends have probably allowed DoD to increase efficiency by reducing the size of ground forces (including those deployed overseas) and their associated costs.

### Why Growth in Support Costs Could Contribute to Inefficiency

As public-sector organizations, DoD and its components do not have some of the incentives to achieve efficiency that are present in the private sector. That circumstance increases the risk that the department might allocate resources to support activities in ways that are not efficient.

Unlike private firms that provide goods and services to consumers, DoD is not subject to market pressures of supply, demand, and prices that could guide it toward a more efficient mode and scale of operations. Furthermore, because DoD does not produce profits that it can keep, its managers operate under other incentives and may be motivated to advance the activities of their respective organizations with little incentive to control

costs.<sup>18</sup> Under those conditions, and given uncertainties about the optimum allocation of DoD's resources, DoD, the Office of Management and Budget, and the Congress have had to rely on direct monitoring, rule setting, and other control devices to encourage efficient operations within the department.<sup>19</sup>

However, researchers have shown that achieving efficiency is more difficult when such control measures are costly or insufficiently effective.<sup>20</sup> For instance, multiple reporting requirements mandated by the Congress may have unintentionally increased support costs by creating additional layers of bureaucratic management and oversight. Furthermore, some Congressional decisions that affect DoD's budget are based on objectives that could inadvertently hamper the department's efforts to increase efficiency. For example, the Congress has not yet approved DoD's request to close some military bases, despite the department's claims that the bases are not needed.

17. See Congressional Budget Office, *Trends in Spending by the Department of Defense for Operation and Maintenance* (January 2017), [www.cbo.gov/publication/52156](http://www.cbo.gov/publication/52156).

18. One such incentive may be pressure at the end of a fiscal year to "use it or lose it"—that is, to spend funds in the organization's budget that remain unused. To provide incentives to control costs, researchers have proposed gain sharing, which encourages reductions in costs in return for keeping a share of those savings. Cost savings occur when an activity's actual cost is lower than its budgeted cost; under gain sharing, a portion of the cost saved is returned in the form of employee bonuses and other benefits, such as additional vacation time. Indeed, DoD drew up such a plan for Working Capital Fund activities (see Department of Defense, "Chapter 12: Productivity Gain Sharing," *DoD Financial Management Regulation*, vol. 12, September 1996, <https://go.usa.gov/xn3hb> [PDF, 31 KB]). Data indicating how costs have been affected by that plan were not available to CBO. To make cost-saving incentives more effective, researchers have advocated for gain-sharing to apply to savings over longer terms; currently, gain sharing involves only the savings achieved during the first year that cost-cutting measures are implemented (see Francois Melese, "Gain-Sharing, Success-Sharing and Cost-Based Transfer Pricing: A New Budgeting Approach For the Department of Defense (DoD)," *Military Operations Research*, vol. 3, no. 1, 1997, <https://go.usa.gov/xRQsC>).

19. Indeed, the Congress has repeatedly directed DoD to provide information needed to monitor and set spending targets for numerous aspects of DoD's operations.

20. Seminal research reports on this topic include William A. Niskanen Jr., *Bureaucracy and Representative Government* (Aldine-Atherton, 1971), and J. A. Stockfish, *Analysis of Bureaucratic Behavior: The Ill-Defined Production Process* (RAND Corporation, January 1976), <https://tinyurl.com/yb75e8t5> (PDF, 693 KB).

Moreover, many DoD components perform multiple and varied tasks, such as maintaining equipment, training personnel, and developing weapons. Researchers have found that when large organizations perform multiple tasks whose outputs are difficult to comprehensively assess, they have weak incentives to be efficient.<sup>21</sup> Furthermore, large organizations like DoD and its components typically exhibit bureaucratic inertia, a phenomenon characterized by adherence to rules and established procedures even when such approaches are inefficient and counterproductive.<sup>22</sup>

Another complicating factor is that DoD faces unique risks that contribute to costly hedging strategies not normally observed in the private sector. For example, the possibility that unexpected conflicts could arise encourages maintaining a support infrastructure that is greater than needed in peacetime to guarantee surge capability in wartime; the possibility that resources could be destroyed by adversaries during hostilities encourages redundancy; and the possibility that unavailable supplies during combat could place lives at risk encourages surpluses in inventories of commodities such as spare parts, ammunition, and foodstuffs.

Those issues may explain the results of a study released by the Defense Business Board in 2015, which suggested that DoD's business functions, such as financial management and logistics, were less efficient than analogous functions in the private sector.<sup>23</sup>

The Congress has taken many actions to promote efficiency within DoD. For example, in the National Defense Authorization Act for Fiscal Year 2008, lawmakers designated the Deputy Secretary of Defense as DoD's chief management officer and established a new position, the deputy chief management officer, to oversee efforts to improve business operations in DoD. The department has also undertaken initiatives, both independently and under Congressional direction, to improve the efficiency of its headquarters organizations. However, despite those efforts, the costs of headquarters staff in the services and defensewide organizations grew significantly from 2001 to 2016, as shown by CBO's analysis and discussed above. In addition, the operations of many DoD support programs have been placed on GAO's High Risk List, which identifies federal programs that GAO believes are at risk for waste, inefficiency, or ineffective spending.<sup>24</sup> Indeed, DoD's continued business-reform initiatives—including its proposals to reform the military health care system that are still under Congressional review—suggest that spending on those support programs could potentially be reduced without a large-scale decrease in the quality of services provided.

21. For example, see Bengt Holmstrom and Paul Milgrom, "Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design," *Journal of Law, Economics, & Organization*, Special Issue, vol. 7 (January 1991), pp. 24–51, [https://academic.oup.com/jleo/issue/7/special\\_issue](https://academic.oup.com/jleo/issue/7/special_issue).

22. See Robert K. Merton, *Social Theory and Social Structure* (Free Press, 1957).

23. See Defense Business Board, "Transforming DoD's Core Business Processes for Revolutionary Change" (briefing at a public meeting, January 22, 2015), <https://go.usa.gov/xNhbd> (PDF, 823 KB).

24. The current High Risk List includes six areas in DoD: supply chain management, weapon systems acquisition, financial management, business systems modernization, support infrastructure management, and approach to business transformation. For more information, see Government Accountability Office, *Progress on Many High-Risk Areas, While Substantial Efforts Needed on Others*, GAO-17-317 (February 2017), [www.gao.gov/products/GAO-17-317](http://www.gao.gov/products/GAO-17-317).



# Appendix: Forces and Support Functions

Differentiating between the military forces responsible for fighting wars and the support infrastructure that creates and sustains those forces is a useful way to analyze costs. Such a classification exists in the Department of Defense's (DoD's) Future Years Defense Program (FYDP) database, which provides prospective and historical data on funding for military forces and support activities.<sup>1</sup> In the FYDP, military units, their command structure, and military intelligence activities are collectively termed "forces." The organizations that create and sustain those forces are collectively termed "infrastructure" in DoD's terminology but referred to as "support" in CBO's analysis.<sup>2</sup> DoD provides a common definition of those two categories for the service branches and continually reviews the criteria for categorization to encourage consistency in the assignment of expenditures to the forces and support categories in the branches' budget databases.<sup>3</sup>

1. The FYDP contains information on funding (total obligation authority, or TOA), numbers of military and civilian personnel, and force structure (equipment and combat units). CBO's analysis focuses on the TOA portion of the FYDP. For more information on the forces and support (infrastructure) classification system, see Ronald E. Porten, Daniel L. Cuda, and Arthur C. Yengling, *DoD Force & Infrastructure Categories: A FYDP-Based Conceptual Model of Department of Defense Programs and Resources* (Institute for Defense Analyses, September 2002), [www.dtic.mil/get-tr-doc/pdf?AD=ADA409235](http://www.dtic.mil/get-tr-doc/pdf?AD=ADA409235) (PDF, 4,598 KB).
2. DoD uses the term "support" in a wide variety of ways, and the term can have different meanings in different contexts. For instance, the term is used to refer to the assistance that one military unit (such as an Army artillery battalion) provides to other combat units (such as an infantry brigade) during an operation. For more on various uses of the term, see Congressional Budget Office, *The U.S. Military's Force Structure: A Primer* (July 2016), [www.cbo.gov/publication/51535](http://www.cbo.gov/publication/51535). In this report, "support" refers to the creation and maintenance of the military forces.
3. Although the accuracy of the categorization system depends on the accuracy of the services' inputs, discussions with DoD and service officials indicate that there are no significant problems with applying the categories consistently. However, although the two categories consistently adhere to the definitions provided in DoD's rules, the services have their own terms for "forces" and

## DoD's Forces and Support Categories

In the FYDP, the forces category includes funding for the personnel and material resources assigned to deployable military units, their command and control structure, and intelligence activities used to accomplish DoD's war-fighting missions. The support category includes funding for central organizations that perform support functions such as training and housing personnel in military units and developing, procuring, and maintaining weapon systems. (Box 1 on page 4 describes the categories and subcategories.) The primary data elements in the FYDP, termed "program elements," describe resources for particular programs. Program elements are assigned to the forces or the support category under DoD's classification system. With the exception of some slight modifications, discussed in the following section, CBO used DoD's categories.

The classification system in the FYDP reflects the provision of support by central organizations on the one hand and the receipt of that support by military units classified as forces on the other. For the most part, the support activities of those central organizations are funded by appropriations from the Congress. The classification system combines funding data from multiple central organizations according to the nature of the support provided. For example, when military schools provide training for multiple force organizations, the aggregate cost is categorized under "central training" spending in the FYDP rather than being directly associated with the individual force organizations. That approach allows for a clearer picture of the costs of particular functions.

However, the creation of Working Capital Funds (WCFs) during the 1990s caused the costs of some centrally provided support functions to be recategorized as spending for forces. DoD's WCF system is comparable to an internal marketplace; within it, defense organizations purchase goods and services from one another,

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"support." For example, the corresponding terms the Army uses are "operating force" and "generating force," respectively.



“selling” goods and services to “customers” (other defense organizations) from whom they obtain “revenues,” rather than receiving direct appropriations. Because funding for support functions under the WCF system is appropriated directly to customer organizations, which include force organizations, a portion of funding for support is shifted to forces.

The effects of that shift are reflected in the observed trends in forces and support spending—particularly for central logistics—that are discussed in this report.<sup>4</sup> Although shifting the costs of support activities to the force organizations they benefit serves the goal of revealing the full costs of forces, some of those costs should arguably be categorized as support costs; however, data with sufficient detail to accurately identify what portion of support costs was recategorized as forces costs under the WCF system were not available to CBO. Adjusting for the effects of recategorization under the WCF system would involve subtracting a portion of funding for forces and adding it to funding for support. Doing so would increase the observed share of support funding in DoD’s budget and make the observed growth in support spending still larger. However, CBO estimates that the magnitude of those costs is not sufficient to change the overall results and trends discussed in this report.

### Adjustments to DoD’s Categories

The FYDP classification system divides forces funding into two main subcategories and support funding into 11. The forces category and the support category each include an additional, minor subcategory—termed “force resource adjustments” and “infrastructure resource adjustments,” respectively—reflecting technical adjustments to account for such things as foreign currency

fluctuations. CBO allocated force resource adjustments and infrastructure resource adjustments to the forces and support subcategories, respectively, on the basis of the number of military and civilian personnel in those subcategories.

To provide a broad overview of trends in funding for forces, CBO combined DoD’s subcategories into two broad categories for forces and support but made certain adjustments to those categories. In DoD’s data, the compensation of some civilians who provide maintenance services for weapon systems, such as those in Navy shipyards, is combined with the funding for those weapon systems; likewise, the compensation of civilians responsible for functions such as analysis and management within deployable force organizations is combined with the funding for those combat forces. CBO recategorized compensation in each case as support funding to more accurately reflect the purpose of the spending. However, when examining the support subcategories separately, CBO did not include funding for the compensation of civilians assigned to force organizations. That decision was made because, in CBO’s judgment, although that compensation contributes to support spending in aggregate, it does not represent any particular program or functional area of interest that warrants specific analysis.

Finally, CBO’s analysis combines funding for DoD’s active-duty and reserve establishments. Elements of forces exist in each; however, the active-duty establishment predominantly carries out support activities for both active and reserve forces. For that reason, conducting separate analyses for the two would incorrectly make support activities in the active-duty establishment seem more costly than those in the reserve establishment.

4. Funding for the major repair and overhaul of weapon systems and equipment and the supply of items such as replacement parts for communications equipment (which were traditionally funded through central logistics programs) represents some of the funding for support functions that has been recategorized under the WCF arrangement.



## About This Document

This Congressional Budget Office report was prepared at the request of the Chairman of the House Budget Committee. In keeping with CBO's mandate to provide objective, impartial analysis, the report makes no recommendations.

Adebayo Adedeji of CBO's National Security Division prepared the report with guidance from David Mosher and Edward G. Keating. Natalie Tawil of CBO's Microeconomic Studies Division and William Ma of CBO's Budget Analysis Division provided helpful comments on the report. Daniel Cuda of the Institute for Defense Analyses, Benjamin Friedman of the Cato Institute, Francois Melese of the Defense Resource Management Institute, and Lieutenant Colonel Mark Zais of the Department of Defense also provided helpful comments. (The assistance of external reviewers implies no responsibility for the final product, which rests solely with CBO.)

Jeffrey Kling, Robert Sunshine, John Skeen, and Benjamin Plotinsky reviewed this report; Christine Browne edited it; and Jorge Salazar prepared it for publication. An electronic version is available on CBO's website ([www.cbo.gov/publication/53168](http://www.cbo.gov/publication/53168)).

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October 2017