



Long-Term Implications of the 2023 Future Years Defense Program



At a Glance

As part of the President's annual budget request, the Department of Defense (DoD) develops a plan—called the Future Years Defense Program (FYDP)—that reflects DoD's expectations about its programs and costs over the next five years. In this report, the Congressional Budget Office analyzes DoD's plans for 2023 through 2027 (as presented in the 2023 FYDP, which was issued in April 2022) and projects how those plans would affect defense costs for an additional 10 years (through 2037).

- In his proposed budget, the President requested \$772 billion for DoD in fiscal year 2023. That amount is about 1.5 percent less (after removing the effects of inflation) than the amount appropriated for 2022.
- According to estimates provided in the 2023 FYDP, DoD's budget in 2024 would increase by 1.5 percent, to \$784 billion, and then slowly decrease to \$762 billion in 2027. (All dollar amounts in this report are expressed in 2023 dollars.) The portions of the budget allocated for day-to-day operations, acquisition of new weapons, and upkeep of infrastructure would remain nearly unchanged through 2027.
- In the 10 years beyond the FYDP period, the inflation-adjusted cost of DoD's plans would increase by 9 percent, to \$830 billion in 2037, CBO projects on the basis of DoD's cost estimates through 2027. Nearly 80 percent of that increase would be for costs of operation and maintenance and military personnel. CBO's projections for those later years are based as much as possible on policies underlying DoD's estimates of costs in the 2023 FYDP, current laws regarding the compensation of military personnel, and the longer-term acquisition plans that DoD publishes in its official documents.
- Costs would be higher if CBO's projections were based on DoD's historical cost growth and current expectations about cost growth in the economy as a whole. In that case, the cumulative cost of implementing DoD's plans would be about 5 percent higher over the FYDP period than DoD estimates and about 8 percent higher over the full 15-year period (2023 to 2037) than CBO projects on the basis of DoD's estimates for the FYDP period. In addition, the higher amount that the Congress appropriated for 2023 (\$44 billion, or 6 percent, more than the Administration's request) may provide a basis for more costly FYDPs in the future.

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All 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.

Dollar amounts are expressed in 2023 dollars. To remove the effects of inflation, the Congressional Budget Office adjusted amounts with its projections of the gross domestic product price index. Those projections are available in *The Budget and Economic Outlook: 2022 to 2032* (May 2022), www.cbo.gov/publication/57950. CBO is in the process of updating its economic forecast; the agency anticipates that inflation will be higher and persist for longer than in the May 2022 projections used in this analysis. Dollar amounts attributed to the Department of Defense (DoD) for 2023 through 2027 are based on DoD's plans in nominal dollars adjusted to 2023 dollars using CBO's inflation indexes.

In this report, any cost of DoD refers to total obligational authority (TOA), a financial measure used by DoD to identify the funding available for its programs. TOA differs from budget authority most notably in its adjustment for the timing of rescissions and lapses of prior-year budget authority. In recent years, the difference between TOA and discretionary budget authority in DoD's budget request for the coming year has generally been \$1 billion or less.

Numbers may not add up to totals because of rounding.

Previous editions of this report, which CBO publishes annually, are available at <https://go.usa.gov/xEnE6>.

On the cover: The Air Force's and the Navy's flight demonstration squadrons (the Thunderbirds and the Blue Angels) fly over the Pentagon on May 2, 2020. The photograph was taken by Air Force Tech. Sgt. Ned T. Johnston and provided courtesy of the Department of Defense.

Summary

In most years, the Department of Defense (DoD) produces a five-year plan, called the Future Years Defense Program (FYDP), that is associated with the budget it submits to the Congress. The 2023 FYDP, issued in April 2022, comprises DoD's request for appropriations in 2023 and a series of planned budgets for 2024 through 2027. In this report, the Congressional Budget Office analyzes the 2023 FYDP and summarizes DoD's expectations about the costs of its plans for 2023 through 2027. Because decisions made in the near term can have consequences for the defense budget in the longer term, CBO projected the costs of the 2023 plan through 2037, 10 years beyond the end of the period covered by the current five-year plan.

What Are DoD's Budget Plans According to the 2023 FYDP?

The proposed budget for DoD in 2023 totaled \$772 billion, about 1.5 percent less than the amount that was appropriated for 2022 in real terms (that is, after removing the effects of inflation). When adjusted for inflation, the amounts that DoD indicated it would request for the remaining four years of the FYDP period average \$773 billion per year—about the same as its 2023 request. Those totals include a small placeholder amount of less than 1 percent of the total budget each year for possible war costs—\$6.9 billion in 2024, decreasing steadily to \$3.7 billion in 2027. (Those amounts would have formerly been classified as costs of overseas contingency operations, a category that encompassed funding for the wars in Afghanistan, Iraq, and Syria, as well as other activities.)

Within DoD's total budget, the relative amounts allocated for day-to-day operations, the acquisition of new weapons (including their development and procurement), and the upkeep of infrastructure would remain nearly unchanged over the FYDP period. Although acquisition costs at the end of the FYDP period would be less than 1 percent higher than in 2023, procurement costs would increase by 9 percent and development costs would decrease by 9 percent. That shift suggests that DoD plans to field more weapons over the period.

In December 2022, the Congress appropriated \$816 billion for DoD as part of the Consolidated Appropriations Act, 2023—\$44 billion (or about 6 percent) more than the Administration requested. (That amount does not include an additional \$7.8 billion emergency appropriation for Ukraine.) Nearly all that increase was for additional weapon acquisitions and military construction projects and for adjustments to account for higher inflation than the Administration anticipated when the 2023 budget was prepared. As a result, the differences will not necessarily have a significant effect on the inflation-adjusted costs of DoD's plans in later years.

What Would Those Plans Cost Beyond the FYDP Period?

Unlike DoD's estimates for the costs of its plans over the FYDP period, CBO's projections indicate that costs after 2027 would increase faster than inflation. In CBO's estimation, those costs would reach \$830 billion (in 2023 dollars) by 2037, an increase of 9 percent in real terms during the decade following 2027 (see Figure S-1). These are the key factors projected to drive up DoD's costs through 2037:

- Costs to *compensate military personnel* and for operation and maintenance (O&M) are projected to grow faster than inflation; and
- Costs to *acquire weapon systems* are projected to increase in the first few years beyond the FYDP period. They would remain fairly steady thereafter, and the shift in funding from development to procurement would persist.

Of the \$67 billion increase in annual costs that CBO projects between 2028 and 2037, 25 percent is for military personnel, 54 percent is for O&M, 18 percent is for developing and purchasing weapon systems, and 3 percent is for infrastructure.

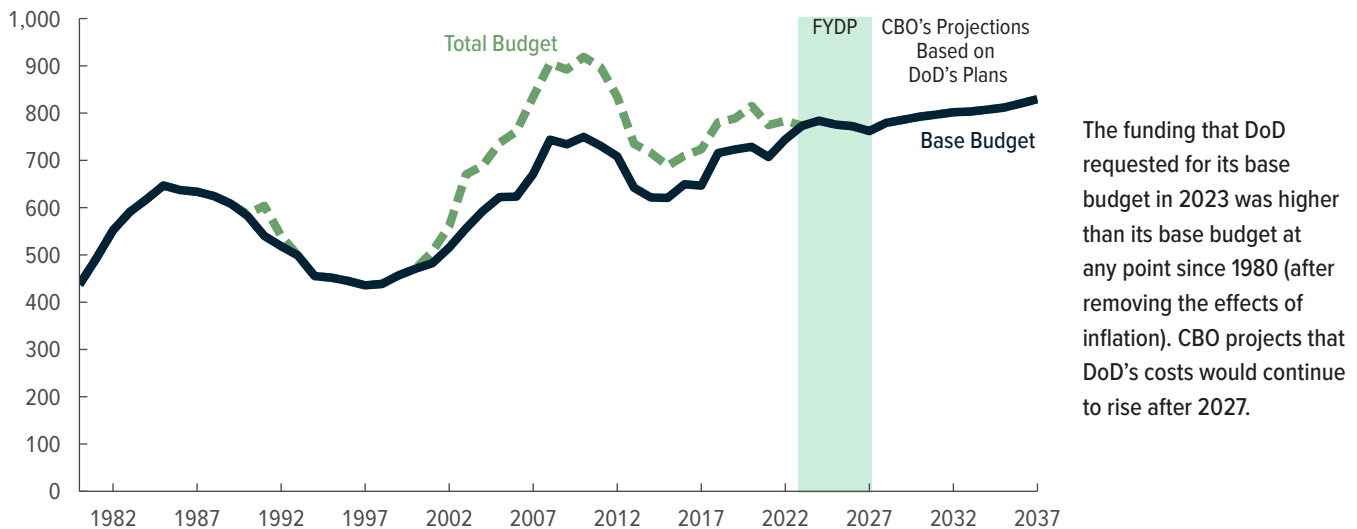
How Would Costs Change If Growth Followed Historical Patterns?

In many areas of DoD's budget, costs have historically grown more rapidly than they would grow in the 2023 FYDP. For example, lawmakers have often enacted

Figure S-1.

Historical Funding for DoD's Activities, Plans in the 2023 FYDP, and CBO's Projections

Billions of 2023 Dollars



Data source: Congressional Budget Office. See www.cbo.gov/publication/58579#data.

DoD's total budget consists of the following: base-budget funding that is appropriated for normal, peacetime operations and other activities that are anticipated during the regular budgeting process; and supplemental funding that is appropriated for overseas contingency operations and emergencies such as natural disasters. Starting in fiscal year 2022, DoD began requesting funding for the anticipated costs of enduring overseas operations as part of its regular appropriations.

DoD = Department of Defense; FYDP = Future Years Defense Program.

increases in compensation for military and civilian personnel that were larger than the increases DoD incorporated in its plans. Similarly, DoD has frequently underestimated costs for O&M and the acquisition of weapon systems.

To assess the possible effects of such factors, CBO prepared an alternative projection of the costs of implementing DoD's 2023 plans using estimates that better reflect the patterns of growth in DoD's costs over the past several decades. According to those estimates, total costs from 2023 through 2027 would be \$175 billion (or about 5 percent) higher than DoD indicated in the 2023 FYDP, and total costs from 2023 through 2037 would be \$895 billion (or about 8 percent) higher than in the 2023 FYDP and in CBO's projections using DoD's estimates (see Table S-1).

What Uncertainties Could Affect the Costs of Those Plans?

DoD's plans in the FYDP and CBO's projections through 2037 are estimates of the long-term costs of

executing DoD's plans as they stood when DoD was preparing its 2023 budget and supporting documentation. Those plans could change as a result of international events, Congressional decisions, and other factors. (The Congress has already appropriated more than DoD requested for 2023.) Furthermore, even if DoD's plans generally remained unchanged, many program-level policies that underlie the costs of the plans might not come to pass. For example, technical difficulties in a weapons development program could cause DoD to cancel the program and instead extend the service life of existing weapons. Even if DoD's plans came to pass as currently envisioned, uncertainties would remain in the projections of economic factors such as inflation, labor costs, or the costs of raw materials for weapon systems. For those reasons, CBO's projections should not be viewed as predictions of future funding for DoD; rather, the projections are estimates of how the costs of executing the department's 2023 plans would evolve over time under the premise that those plans would not change.

Table S-1.

Increases in DoD's Costs Under Alternative Policies and Projection Methods

Billions of 2023 Dollars

	2023– 2027	2023– 2037
Areas in Which Alternative Policies Could Be Adopted		
Military pay increases at the rate of the ECI starting in 2023	21.0	99.2
Civilian pay increases at the rate of the ECI starting in 2023	24.2	118.4
Areas in Which CBO Used Alternative Projection Methods		
MHS costs grow at the projected rate of health care costs in the general economy starting in 2023	49.6	210.8
Other O&M costs (adjusted for the size of the military) experience cost growth starting in 2023 consistent with growth since 1980 ^a	35.6	212.6
Major acquisition programs experience cost growth consistent with cost growth since 1970	44.4	254.1
Total	174.8	895.1
Memorandum:		
Total cost of DoD's plans projected using DoD's estimates for 2023 through 2027	3,866	11,894
Total cost of DoD's plans projected using CBO's alternative policies and methods	4,041	12,789

Data source: Congressional Budget Office. See www.cbo.gov/publication/58579#data.

DoD = Department of Defense; ECI = employment cost index for wages and salaries of workers in the private sector, as defined by the Bureau of Labor Statistics; MHS = Military Health System; O&M = operation and maintenance.

a. "Other O&M" is the sum of the O&M and revolving and management fund appropriation titles minus costs for civilian compensation and the MHS.

Chapter 1: Costs of the 2023 Future Years Defense Program

The Congressional Budget Office analyzed the costs of the Department of Defense's plans over the five-year period covered by the latest Future Years Defense Program—2023 through 2027—and projected the costs of those plans over an additional 10 years, through 2037. Nearly all of DoD's funding is provided in appropriations under seven public law titles: military personnel; operation and maintenance; procurement; research, development, test, and evaluation (RDT&E); military construction; family housing; and revolving and management funds. For its analysis, CBO divided that funding into three broad categories, according to the types of activities that are funded:

- Military personnel, operation and maintenance, and revolving and management funds make up the **operation and support** (O&S) category;
- Procurement and RDT&E constitute the **acquisition** category; and
- Military construction and family housing make up the **infrastructure** category.

DoD's Estimates of Costs in the 2023 FYDP

The proposed budget for DoD in 2023 was \$772 billion. That amount is 1.5 percent smaller (after adjusting for inflation) than the amount that the Congress appropriated for 2022. Funding for O&S would decrease by \$9.2 billion (or nearly 2 percent), funding for acquisition would increase by \$1.2 billion (or less than 1 percent), and funding for infrastructure would decline by \$3.4 billion (or 22 percent). Although the amount requested for infrastructure funding in 2023 was smaller than the amount lawmakers enacted for 2022, it is \$2.0 billion (or 20 percent) more than the amount DoD requested for that year.

According to the 2023 FYDP, DoD's costs would increase by 1.5 percent in 2024, from \$772 billion to \$784 billion (in 2023 dollars). Over the final three years of the five-year FYDP period, costs would decrease (in real terms) at

an average rate of 0.9 percent per year, falling to \$762 billion in 2027. Annual costs for O&S, which account for roughly two-thirds of DoD's budget, would decline from \$484 billion in 2023 to \$472 billion in 2027. Costs for acquisition, which account for about one-third of the budget, would rise from \$276 billion to \$279 billion. Infrastructure costs, which account for 1.7 percent of DoD's total costs over the FYDP period, would vary between \$11 billion and \$16 billion annually.

In December 2022, the Congress appropriated \$816 billion for DoD as part of the Consolidated Appropriations Act, 2023—\$44 billion (or about 6 percent) more than the Administration requested. (That amount does not include an additional \$7.8 billion emergency appropriation for Ukraine.) Nearly all that increase was for additional weapon acquisitions and military construction projects and for adjustments to account for higher inflation than the Administration anticipated when the 2023 budget was prepared. As a result, the differences will not necessarily have a significant effect on DoD's inflation-adjusted costs to implement the FYDP in future years. For example, DoD could opt to return weapon acquisition efforts and military construction projects to the (lower) levels anticipated in the 2023 FYDP. Increases in compensation or in the size of the force would have been more likely to result in higher costs that would persist in future years. However, the higher amount appropriated for 2023 may provide a basis for more costly FYDPs in the future.

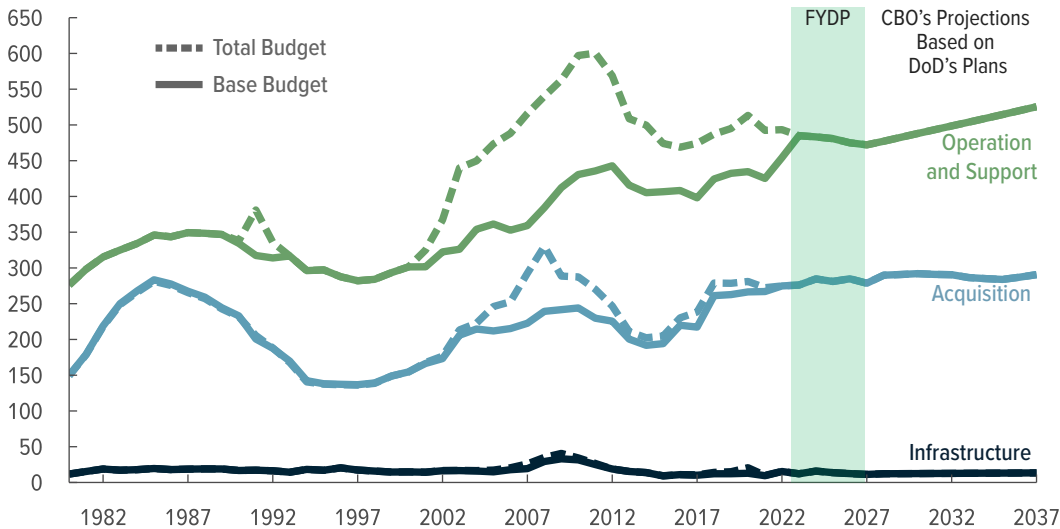
CBO's Projections of DoD's Costs for 2028 Through 2037

On the basis of DoD's estimates in the FYDP (converted by CBO into 2023 dollars), CBO projects that the costs of the department's plans over the 10 years following 2027 would increase at an average annual rate of 0.9 percent (in real terms), rising from DoD's estimate of \$762 billion in 2027—the end of the FYDP period—to \$830 billion in 2037 (see Figure S-1 on page 2). The average annual increase from 2023 through 2037 would be 0.5 percent.

Figure 1-1.

Costs for Operation and Support, Acquisition, and Infrastructure in the 2023 FYDP and in CBO's Projections

Billions of 2023 Dollars



Data source: Congressional Budget Office. See www.cbo.gov/publication/58579#data.

DoD's total budget consists of the following: base-budget funding that is appropriated for normal, peacetime operations and other activities that are anticipated during the regular budgeting process; and supplemental funding that is appropriated for overseas contingency operations and emergencies such as natural disasters. Starting in fiscal year 2022, DoD began requesting funding for the anticipated costs of enduring overseas operations as part of its regular appropriations.

Funding for operation and support is the sum of the appropriations for military personnel, operation and maintenance, and revolving and management funds. Acquisition funding is the sum of the appropriations for procurement and for research, development, test, and evaluation. Infrastructure funding is the sum of the appropriations for military construction and family housing.

DoD = Department of Defense; FYDP = Future Years Defense Program.

Costs for O&S, acquisition, and infrastructure would all contribute to the increase in the costs of DoD's plans after 2027 (see Figure 1-1). Costs for O&S would rise steadily, from DoD's estimate of \$472 billion in 2027 to \$525 billion in 2037—an average annual increase of 1.1 percent. Costs for acquisition would increase by about 4 percent in the first year beyond the FYDP period—from DoD's estimate of \$279 billion in 2027 to \$290 billion in 2028—and change only slightly from year to year thereafter, ending the projection period at \$291 billion. In CBO's projections, costs for infrastructure rise steadily after the FYDP period, from DoD's estimate of \$11 billion in 2027 to \$13 billion in 2037.

CBO's Estimates of DoD's Costs Under Alternative Assumptions About Cost Growth

If DoD's future costs were estimated on the basis of an analysis of historical trends and current economic indicators, they would be larger than the estimates provided by DoD through 2027 and CBO's projections for 2028

through 2037 (which are based on DoD's plans). Two factors that could affect those estimates are military pay raises and the costs of weapon systems. Historically, the Congress has often provided larger military pay raises than DoD planned in its FYDPs, and weapon systems have often cost more than DoD estimated. To assess the effect of such factors, CBO estimated how DoD's costs would change if the projection methods CBO used for O&S for 2028 through 2037 were also applied to the FYDP period and if costs to acquire weapon systems grew as they have in the past.

Using those alternative policies and projection methods, CBO estimates that the costs of DoD's plans would increase by \$175 billion (or about 5 percent) over the FYDP period. Over the full 15-year period (2023 through 2037), costs would increase by \$895 billion (or about 8 percent), in CBO's estimation (see Table S-1 on page 3). Nearly 30 percent of the increase over the 15-year period would be in acquisition costs.

Table 1-1.

Methods Used by CBO to Project the Costs of DoD's Plans Beyond the 2023 FYDP

Area of DoD's Budget	CBO's Methods
Military Pay	After 2027, the rate of growth matches CBO's projection of the growth rate for the ECI.
Civilian Pay	After 2027, the rate of growth matches CBO's projection of the growth rate for the ECI.
Military Health System (Excluding military pay and civilian pay)	After 2027, projected costs track with CBO's projection of the growth rate for health care spending in the broader economy.
Operation and Maintenance (Excluding civilian pay and the MHS)	After 2027, projected costs grow at the historical average rate for operation and maintenance.
Acquisition	Projected costs are estimated on a program-by-program basis using information from DoD or CBO's estimates, which are based on previous programs.
Infrastructure	After 2027, projected costs equal the historical average and grow at a rate equal to CBO's projected growth rate for construction costs in the broader economy.

Data source: Congressional Budget Office.

This table does not show the methods that CBO used to produce alternative projections of the costs of implementing DoD's plans reflected in the 2023 FYDP. Those alternative projections are based on historical trends and show how DoD's costs might differ from the estimates provided in the 2023 FYDP.

DoD = Department of Defense; ECI = employment cost index for wages and salaries of workers in the private sector, as defined by the Bureau of Labor Statistics; FYDP = Future Years Defense Program; MHS = Military Health System.

How CBO Projected the Costs of DoD's Plans Beyond the FYDP Period

CBO's analysis of the costs of DoD's plans for 2028 through 2037 is based on the estimates DoD provided in the 2023 FYDP for 2023 through 2027. CBO's analysis reflects the assumption that the larger appropriations enacted for 2023 would not significantly change DoD's costs to implement the FYDP over the following four years. CBO's projections for the years beyond the 2023 FYDP are based as much as possible on policies underlying DoD's estimates of costs in the 2023 FYDP, current laws regarding the compensation of military personnel, and the longer-term acquisition plans that DoD publishes in its official documents (such as the Navy's 30-year shipbuilding plan). CBO incorporated its estimates of how the economy will change in the future in its projections of those costs.¹ For the parts of DoD's budget for which such policies and cost estimates were

not specified, CBO generally based its projections on trends in prices and compensation anticipated for the broader economy (see Table 1-1).²

CBO's projections also reflect the assumption that the size and composition of the military and the number of civilian personnel would remain unchanged after 2027, unless DoD has specified otherwise. Additionally, CBO's projections reflect the assumption that for any major weapon system that is expected to reach the end of its service life before 2037 but for which DoD has not yet announced a replacement, DoD would develop and purchase a generally similar but more modern system.

CBO's estimates of the costs for O&S and infrastructure over the 2028–2037 period are based primarily on the projected size of the force, historical cost growth, and economic factors, such as growth above inflation as measured by the employment cost index for wages and salaries of workers in the private sector and by the gross domestic

1. See the supplemental data that accompany Congressional Budget Office, *The Budget and Economic Outlook: 2022 to 2032* (May 2022). The file, which is listed under the heading "Historical Data and Economic Projections," is available at www.cbo.gov/data/budget-economic-data#11. CBO is in the process of updating its economic forecast; the agency anticipates that inflation will be higher and persist for longer than was estimated in the May 2022 projections that underlie this analysis.

2. For a detailed discussion of CBO's methods for projecting costs for the individual components of DoD's budget, see Congressional Budget Office, *An Analysis of the Obama Administration's Final Future Years Defense Program* (April 2017), www.cbo.gov/publication/52450. (Chapter 2 covers O&S, and Chapter 3 covers acquisition.)

product (GDP) price index. (The employment cost index, or ECI, is a measure of the cost of compensating workers that is reported by the Bureau of Labor Statistics.)

CBO's estimates of acquisition costs are based primarily on how spending for individual DoD acquisition programs is expected to change over the projection period. About two-thirds of the acquisition costs in CBO's projections are based on either DoD's long-term plans for specific programs or CBO's expectations about the way

other major components of DoD's acquisition portfolio (such as programs that DoD has not yet started but that CBO projects will be needed before 2037) might unfold over the coming years. The other one-third of acquisition costs—primarily for smaller programs—is based on historical relationships between major acquisition efforts and the total acquisition budget. (For a detailed discussion of O&S funding, see Chapter 2; for acquisition funding, see Chapter 3, and for infrastructure funding, see Chapter 4.)

Chapter 2: Projected Costs of Operation and Support

Funding for operation and support is the sum of the appropriations for three public law titles: military personnel, operation and maintenance, and revolving and management funds. (In this analysis, the Congressional Budget Office includes the relatively small amount that the Department of Defense requested for revolving and management funds with the O&M appropriation because those titles involve similar activities.)

O&S funding can be separated into three general types of costs, regardless of which public law title funds them:

- *Compensation* includes pay and cash benefits for military personnel and DoD's civilian employees, as well as the costs of retirement benefits. Those costs fall under the appropriations for military personnel and O&M (for civilian employees).
- The *Military Health System (MHS)* provides medical care for military personnel, military retirees, and their families. Those costs also fall under the appropriations for military personnel and O&M.
- *Other O&M* covers costs such as those for base operations, fuel, depot maintenance, spare parts, and civilian contractor support. Those costs fall entirely under the appropriation for O&M.

CBO based its projections of DoD's O&S costs on the anticipated growth in those categories.

A sum of the costs in the categories would exceed total O&S funding because the costs of compensation for military and civilian personnel who work in the MHS would be counted twice: once in the compensation category and again in the MHS category (see Table 2-1). When discussing the categories in isolation, CBO included those costs in both categories to present a more complete picture of each category's costs, but it corrected for that double-counting in its presentation of overall O&S costs.

O&S Costs in the 2023 FYDP

Nearly two-thirds of DoD's total budget request for 2023 was for O&S: \$174 billion for military personnel and \$310 billion for O&M. Adjusted for inflation, the \$484 billion requested for O&S in 2023 was \$9 billion less than the amount enacted for 2022—a reduction of about 2 percent. From 2024 through 2027, O&S costs would decrease slowly (in real terms), ending the FYDP period \$12 billion below the amount requested for 2023.

Although total O&S funding would be \$12 billion lower in 2027, military personnel costs would be \$12 billion higher; those costs would increase sharply in 2024—by \$10 billion—and then rise by an additional \$2 billion for 2025 through 2027. That growth would be more than offset by a projected \$24 billion decrease in O&M costs, about half of which would occur in 2024. DoD's expectation that O&M costs will decrease in real terms over the period covered by the 2023 Future Years Defense Program marks a departure from a decades-long trend of real growth in O&M costs per service member.

Part of the increase in military personnel costs and decrease in O&M costs projected for 2024 reflects an accounting change that DoD is proposing for the way it pays for the health care that it provides to military retirees who are not yet eligible for Medicare. Although CBO used DoD's proposed approach in its analysis of the FYDP, that change is not certain to occur. Lawmakers would need to approve the change before DoD could implement it.

Compensation

Within the O&S category, total funding for compensation would increase by 5 percent (in real terms) over the FYDP period (see Table 2-1). In its 2023 budget, DoD requested a 4.6 percent pay raise for military personnel, which equals the increase in the employment cost index that DoD expected when the FYDP was prepared. DoD also requested a 4.6 percent pay raise for its civilian employees in 2023, which is the same as what the

Table 2-1.

DoD's Operation and Support Costs, by Appropriation Title and as Categorized by CBO

Billions of 2023 Dollars

	President's Budget Request, 2023	FYDP, 2027	CBO's Projections Based on DoD's Plans, 2037
By Appropriation Title			
Military Personnel			
Military compensation	164	163	173
TRICARE for Life accrual payments	10	23	30
Total	174	186	203
Operation and Maintenance ^a			
Civilian compensation	99	100	110
O&M in the MHS	29	17	21
Other O&M	182	169	192
Total	310	286	323
Total Appropriations for Operation and Support	484	472	525
By CBO Category			
Compensation ^b			
Military personnel	174	186	203
Civilian personnel ^c	99	100	110
Total	273	286	313
Military Health System ^d			
Military pay in the MHS	9	9	10
Civilian pay in the MHS	8	8	8
O&M in the MHS	29	17	21
TRICARE for Life accrual payments	10	23	30
Total	56	57	69
Other O&M ^e	182	169	192

Data source: Congressional Budget Office. See www.cbo.gov/publication/58579#data.

Funding for operation and support is the sum of the appropriations for military personnel, operation and maintenance, and revolving and management funds.

DoD = Department of Defense; FYDP = Future Years Defense Program; MHS = Military Health System; O&M = operation and maintenance.

- CBO included the relatively small amount in DoD's budget for revolving and management funds with the O&M appropriation because those two titles involve similar activities.
- Compensation consists of pay, cash benefits, and accrual payments for retirement benefits. For civilians, it also includes DoD's contributions for health insurance.
- The amounts shown here do not include compensation for civilian personnel funded from accounts other than O&M.
- These amounts do not include spending for the MHS in accounts other than operation and support. The amounts shown for military and civilian pay in the MHS and TRICARE for Life accrual payments are also included in the compensation category. Because those costs are included twice, the sum of the components in the lower panel of the table exceeds total appropriations for operation and support in the upper panel.
- "Other O&M" is the sum of the O&M and revolving and management fund appropriation titles minus costs for civilian compensation and the MHS.

President has proposed for civilian employees throughout the federal government.¹ That pay raise has now taken effect. Those raises do not apply to potential increases in

costs to compensate contractors hired to support DoD's operations (see Box 2-1).

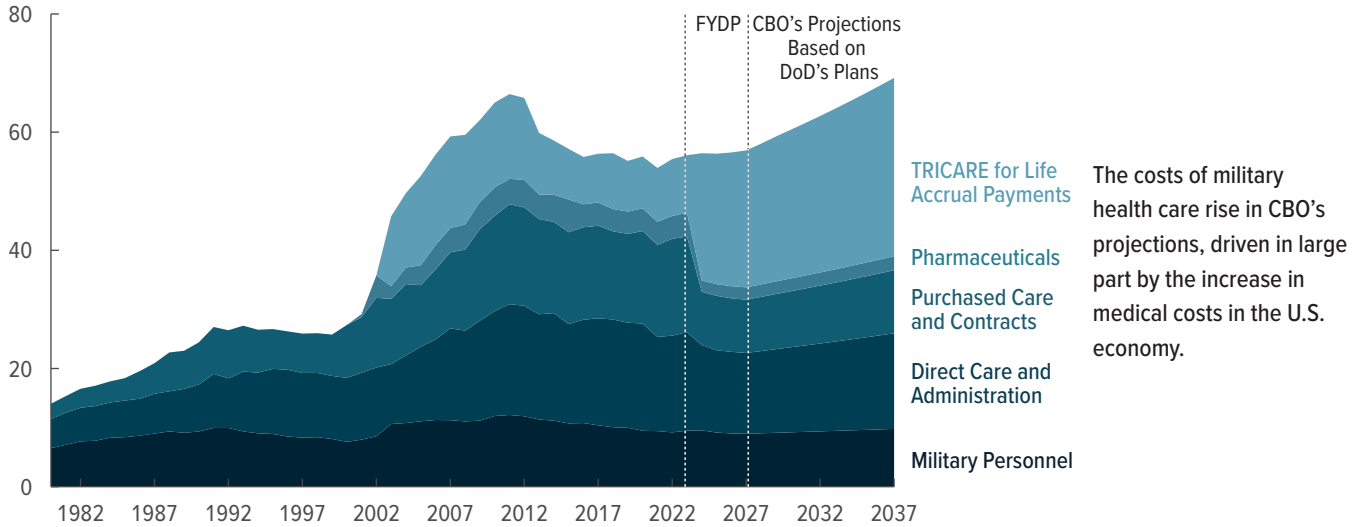
For 2024 through 2027, DoD's FYDP reflects the assumption that pay for military personnel would increase by 2.6 percent per year and pay for civilian personnel would increase by 2.1 percent per year (in current dollars). Both amounts are far below the average annual

1. About 85 percent of DoD's civilian employees are compensated using funds from O&M or revolving and management accounts. The remainder are compensated using funds appropriated for procurement, military construction, family housing, or research, development, test, and evaluation.

Figure 2-1.

Costs of the Military Health System in the 2023 FYDP and in CBO's Projections

Billions of 2023 Dollars



Data source: Congressional Budget Office. See www.cbo.gov/publication/58579#data.

Before 2001, pharmaceutical costs were not identified separately but were embedded in the costs of two categories: “Purchased Care and Contracts” and “Direct Care and Administration.” Since 2001, most pharmaceutical costs have been identified separately, but some are embedded in the category “TRICARE for Life Accrual Payments.”

The amounts shown here do not include spending for the Military Health System in accounts other than military personnel and operation and maintenance.

DoD = Department of Defense; FYDP = Future Years Defense Program.

increase in the ECI (3.4 percent) that CBO projected when the FYDP was released.²

Military Health System

DoD requested \$56 billion for MHS costs in 2023 (see Figure 2-1). For 2024 through 2027, MHS costs increase by a total of 1.5 percent (in real terms) in DoD’s projections. Five categories of costs are part of the MHS: military personnel (for uniformed health care providers), direct care and administration (for government health care facilities and their civilian employees), purchased care and contracts (for private-sector health care providers), pharmaceuticals, and TRICARE for Life accrual payments (for health care provided to military retirees and their families).

2. See the supplemental data that accompany Congressional Budget Office, *The Budget and Economic Outlook: 2022 to 2032* (May 2022). The file, which is listed under the heading “Historical Data and Economic Projections,” is available at www.cbo.gov/data/budget-economic-data#11. CBO is in the process of updating its economic forecast; the agency anticipates that inflation will be higher and persist for longer than the May 2022 projections that CBO used in this analysis.

Two developments affect MHS funding in DoD’s 2023 FYDP. First, beginning in 2024, there is an abrupt decrease in funding for the accounts for the Defense Health Program and a commensurate increase in the accounts proposed for the Medicare-Eligible Retiree Health Care Fund (MERHCF). That accounting change—moving funds from the O&M appropriation to the military personnel appropriation—signals DoD’s desire to consolidate health care costs for its military retirees into a single place in the budget, the MERHCF accounts.

Second, DoD projects that health care costs will remain relatively flat over the FYDP period (in real terms). DoD estimates that cost growth in medical care will be offset by savings from the department’s plans to consolidate military treatment facilities and move military personnel out of the MHS while shifting the responsibility for that care to civilian personnel. That assumption stands in contrast to the economywide growth in medical costs that CBO projects for the coming years. Although DoD has been able to slow growth in medical costs through efficiency initiatives in recent years, it is uncertain whether it will

Box 2-1.

Accounting for the Costs of Contractor Compensation

In its projections of operation and maintenance (O&M) funding, the Congressional Budget Office rolls compensation costs included in service contracts into a broad category labeled Other O&M. Even though compensation costs may grow at different rates than many of the other items in Other O&M (like fuel and spare parts), those costs are not projected separately. The accuracy of CBO's projections of O&M costs could be improved if the agency had data that enabled it to separate the compensation costs of service contractors into its own category and develop specific factors to project growth in those costs.

Projecting Costs for Operation and Maintenance

To project the Department of Defense's (DoD's) costs for O&M, CBO divides the appropriation into three broad funding categories: civilian compensation, the Military Health System (MHS), and Other O&M. CBO's projections of funding for civilian compensation and the MHS are based on the agency's most recent economic forecast (from May 2022) of how the costs of labor and health care will evolve over time.¹ For Other O&M, though, aligning that category's funding with the forecast of a single economic variable is difficult because the category encompasses a wide range of goods, services, and activities. To project future growth of Other O&M funding, therefore, CBO relies on past trends rather than economic forecasts.

Projecting Other O&M funding accurately is important because it is the largest of the three categories, accounting for about 59 percent (or \$182 billion) of DoD's total request for O&M funding in 2023 (see the left-hand panel of the figure). Splitting the Other O&M category into smaller pieces whose costs could be estimated using appropriate economic factors could improve CBO's projections. One such piece could be contractor compensation, which is the cost that private companies charge DoD under service contracts for the personnel that perform work under those contracts.² In 2020, those personnel made up about 17 percent of DoD's workforce.³ Service contracts are awarded expressly to augment DoD's military and civilian workforce.

1. Congressional Budget Office, *The Budget and Economic Outlook: 2022 to 2032* (May 2022), www.cbo.gov/publication/57950.

2. Heidi M. Peters, *Defense Primer: Department of Defense Contractors*, Report IF10600, Version 10 (Congressional Research Service, December 17, 2021), <https://tinyurl.com/kbkfypnv>.

3. Office of the Under Secretary of Defense (Comptroller)/Chief Financial Officer, *Defense Operation and Maintenance Overview* (August 2021), pp. 145, 156, and 162, <https://tinyurl.com/3pfsfvuv> (PDF).

Identifying and Projecting the Costs of Contractor Compensation

Contractor personnel provide a wide range of services that are not inherently military or governmental and perform specific tasks, including administrative support, equipment maintenance, lawn maintenance, food services, installation security, and analytic support. Those service contract personnel are a separate category from the personnel employed by private companies that contract with DoD to provide goods such as weapon systems or uniforms.

DoD does not currently provide specific data about the costs of compensation in service contracts. Instead, DoD's data show the total cost of service contracts, which include costs other than compensation. To estimate the amount of contractor compensation in DoD's 2023 budget request, CBO uses the number of full-time equivalent (FTE) personnel that DoD reported will be funded through service contracts and estimates a rate for their compensation costs that is based on DoD's costs for its civilian employees.⁴ Using that method, CBO estimates that proposed funding for contractor compensation under O&M service contracts in 2023 is probably between \$40 billion and \$50 billion. That range reflects, in part, the uncertainty in the difference between compensation costs for contractors and those for DoD's civilian employees.⁵ Using the midpoint of \$45 billion (or 15 percent of total O&M funding), CBO estimates that moving contractor compensation into its own category would reduce Other O&M funding from \$182 billion (or 59 percent) to \$137 billion (or 44 percent) of total O&M funding (see the figure).

Difficulties in Projecting Those Costs Accurately

Two main issues make it difficult for CBO to project DoD's costs for contractor compensation. First, the data are limited and inconsistent. Aggregate contractor data extend back only to 2010. Those data appear to be reported differently over the years as well, complicating CBO's efforts to develop historical factors for cost growth. Second, the data that DoD provide are lacking in the detail necessary for CBO to determine how much of the total funding for service contracts is for compensation

4. Data are aggregated from the fiscal year 2023 O&M justification books for the military services and defensewide organizations.

5. Those costs are based on data from an unpublished analysis. See the figure showing the distribution of the difference between contractor and civilian compensation costs in OSD/CAPE, *Comparing the Cost of Civilians and Contractors* (April 2017), p. 3.

Box 2-1.

Continued

Accounting for the Costs of Contractor Compensation

costs. DoD is trying to address shortcomings in its service contract data, so CBO may be able to obtain more complete data for its estimates in future years.⁶

Using Data About Contractor Compensation to Track and Manage DoD’s Workforce

Better data on the costs of contractor personnel and the number of those personnel in the workforce would be useful for DoD to understand its total mix of military, federal civilian, and contractor personnel and manage that workforce. For example, to control costs, DoD might reduce the labor costs for lower priority missions by moving military personnel to other missions, replacing them with lower-cost civilian personnel, or

contracting out or eliminating positions altogether.⁷ Tracking the size of all three components of the workforce would help ensure that costs were not simply shifted from military to civilian personnel or to contractors.

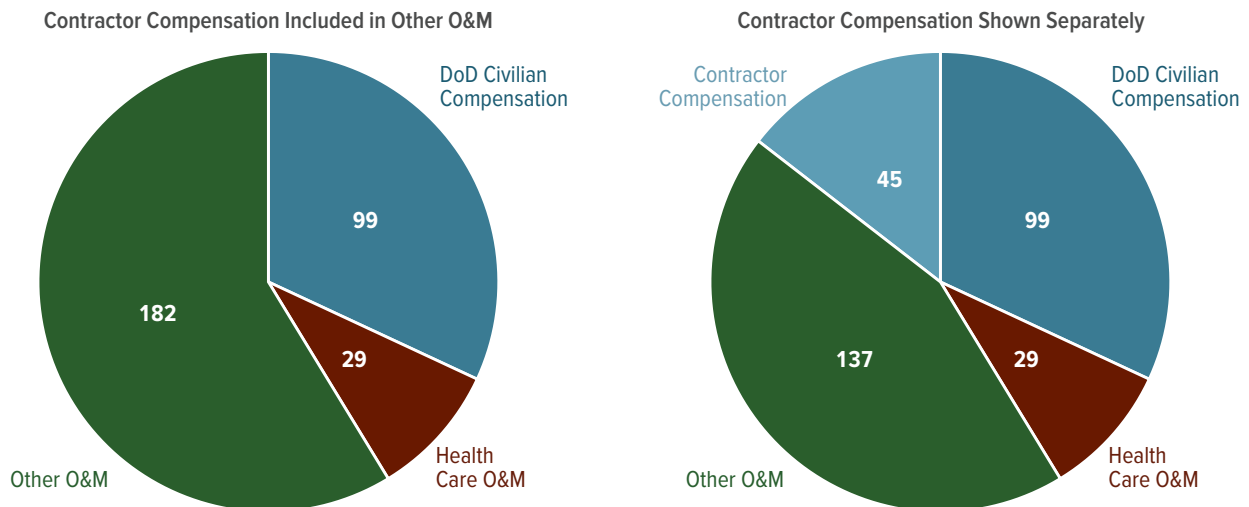
Current budget documentation lacks aggregate details about the contractor labor force compared with details provided for military and civilian personnel—in particular, the number of contractor FTEs identified by program in the Future Years Defense Program’s manpower data (mirroring data about military and federal civilian personnel) and a breakout of compensation and noncompensation components of the costs in service contracts. More complete data would help DoD’s leaders enforce management decisions, allowing them to track changes in the composition of the workforce.

6. Government Accountability Office, *Service Acquisitions: DOD’s Report to Congress Identifies Steps Taken to Improve Management, But Does Not Address Some Key Planning Issues*, GAO-21-267R (February 2021), www.gao.gov/products/gao-21-267r.

7. Congressional Budget Office, *Replacing Military Personnel in Support Positions With Civilian Employees* (December 2015), www.cbo.gov/publication/51012.

DoD’s Request for Operation and Maintenance Funding for 2023, With Costs of Contractor Compensation in Different Categories

Billions of 2023 Dollars



Data source: Congressional Budget Office. See www.cbo.gov/publication/58579#data.



be able to achieve the efficiencies planned over the next five years, including reductions of military manpower and consolidation of treatment facilities, that would be necessary to offset projected inflation in medical costs.

Other O&M

This category comprises thousands of different activities in a wide range of areas: providing training, maintaining equipment, operating military bases, purchasing fuel, and supporting contractors, for example.

Spending for Other O&M is projected to decrease by about 7 percent (in real terms) over the FYDP period. To reduce O&M costs, DoD might expect that it would be able to achieve some improvements in efficiency and eliminate some programs. But achieving such cost reductions runs counter to historical trends, which have shown growth in Other O&M spending above the rate of inflation (after adjusting for changes in the size of the military) since 1980.

Projections of O&S Costs for 2028 Through 2037

Beyond the 2023 FYDP period, CBO projects that O&S costs would rise steadily. In CBO's projections, those costs increase from DoD's estimate of \$472 billion in 2027 to \$525 billion in 2037, or at an average annual rate of 1.1 percent above inflation (see Figure 1-1 on page 6). Costs for compensation, the MHS, and Other O&M would all increase after 2027.

Compensation

CBO based its projections of compensation costs beyond 2027 on current law, which sets military pay raises equal to the growth in the ECI unless the Congress or the President act to provide different amounts. According to CBO's long-term economic projections, the ECI after 2027 is expected to increase at an average annual rate of 1 percentage point above economywide inflation. Other elements of military compensation, including housing and subsistence allowances, would also rise faster than inflation, resulting in an overall real increase of \$10 billion in military compensation by 2037. Furthermore, increases in accrual charges for retirees' health care would add \$7 billion to military personnel costs by 2037. In addition, CBO projects that civilian pay would rise with the ECI, maintaining parity with military pay raises and resulting in an increase of \$10 billion in compensation costs (in real terms) by 2037. In total, compensation

would increase by \$27 billion, from \$286 billion in 2027 to \$313 billion in 2037, or at an average annual rate of 0.9 percent in real terms (see Table 2-1 on page 10).

Military Health System

To project costs of the Military Health System, CBO estimated that they mainly would grow at a rate similar to that of the costs of health care in the general economy but adjusted for the specific demographics of the population under the care of the MHS. The exception is the portion of MHS costs designated for the compensation of military personnel and federal civilians (which CBO assumed would grow at the rate of the ECI). Combined, those changes push up projected costs for the MHS from \$57 billion in 2027 to \$69 billion in 2037, yielding average annual growth of nearly 2 percent (see Figure 2-1 on page 11).

Other O&M

Consistent with long-standing trends, costs for Other O&M are projected to increase faster than inflation.³ Between 1980 and 2020, costs for that category more than tripled in real terms (adjusted for changes in the size of the military), increasing annually by about \$1,700 per active-duty service member. Projected growth that is consistent with that historical trend would cause annual costs for Other O&M to increase by \$23 billion (or 14 percent) by 2037—an average real increase of 1.3 percent per year after 2027.

Uncertainty in Projections of O&S Costs

CBO's projections are not meant to predict future budgetary outcomes. They are extrapolations of DoD's estimates in the FYDP, made on the premise that the primary aspects of the current defense plan would remain unchanged. But DoD's plans could change for many reasons. Moreover, projections of economic factors that could affect DoD's costs—such as changes in the ECI or health care costs—are also uncertain, so DoD's actual costs could differ from CBO's projections even if the department's plans did not change. Alternative projections of inflation and the ECI over the next five years could affect the size of DoD's budget substantially, for example.

3. For more details about CBO's approach to analyzing Other O&M costs, see Congressional Budget Office, *An Analysis of the Obama Administration's Final Future Years Defense Program* (April 2017), www.cbo.gov/publication/52450.

CBO's Estimates of O&S Costs Under Alternative Assumptions About Cost Growth

DoD's actual costs could differ from its estimated costs not only because of uncertainties but also because several of DoD's estimates about O&S costs over the FYDP period are not consistent with recent trends. Those estimates result in lower projected rates of cost growth over the FYDP period in all three categories of O&S when compared with CBO's estimates for 2028 through 2037.

- Even though DoD planned for a 4.6 percent pay raise for both military and civilian personnel in 2023, for 2024 and the following years of the FYDP period DoD assumes that pay raises would be a constant 2.6 percent for military personnel and 2.1 percent for civilian personnel. Those amounts are slightly more than half of CBO's estimates for growth in the ECI during those years. If military pay raises matched CBO's ECI projections, DoD's costs for military compensation would be larger than anticipated in the FYDP. If civilian pay raises matched ECI projections, O&M costs for civilian compensation would also be larger than anticipated in the FYDP.

- DoD projected that costs for the MHS would remain nearly unchanged throughout the FYDP period, which is counter to CBO's projections that economywide health care costs in the United States will increase through 2027.
- Other O&M costs have increased for decades despite DoD's efforts to improve efficiency and eliminate unnecessary activities. Nonetheless, in DoD's plans, other O&M costs fall by about 7 percent (in real terms) over the FYDP period. If those costs grew at their historical rate, they would exceed the amounts projected in the FYDP, in CBO's estimation.

Using alternative assumptions about cost growth that are more consistent with the factors described above, CBO estimates that cumulative O&S costs would be \$130 billion (or about 5 percent) higher than costs under DoD's plan from 2023 to 2027 and \$641 billion (or about 9 percent) higher than costs under that plan plus CBO's extrapolation of it from 2028 through 2037 (see Table S-1 on page 3, first four rows).

Chapter 3: Projected Costs of Acquisition

Acquisition accounts for 36 percent of the Department of Defense’s funding request for 2023. Acquisition funding is used to develop and buy new weapon systems and other major equipment, to upgrade the capabilities or extend the service life of existing weapon systems, and to support research on future technologies. That funding comprises appropriations for procurement and for research, development, test, and evaluation.

How CBO Projected Acquisition Costs

The Congressional Budget Office used two approaches to project acquisition costs. For major programs involving the acquisition of new weapon systems or upgrades to existing systems, CBO projected costs and schedules on a program-by-program basis. For smaller programs and general activities related to research and development, CBO made aggregate projections on the basis of policies either stated or implied in DoD’s planning documents or on the basis of historical relationships between total acquisition funding and the funding for major programs.

CBO based its program-by-program projections not only on the 2023 Future Years Defense Program but also on detailed plans, such as Selected Acquisition Reports, that the services have issued for some major systems (such as the Air Force’s new trainer aircraft). For other major systems (such as a new armed reconnaissance aircraft for the Army), CBO based its estimates on more general descriptions the services have provided about schedules and costs for development and procurement. For still other systems (for instance, future fighter aircraft that the Navy and Air Force are considering fielding in the 2030s), CBO based its estimates on the premise that the services would replace retiring weapon systems with similar but more technologically advanced ones. (In those cases, even though DoD has not yet developed detailed schedules or cost estimates, acquisition can be anticipated if DoD is to maintain the current size of the force when today’s weapons reach the end of their service lives.)

Acquisition Costs in the 2023 FYDP

DoD’s 2023 budget request for acquisition totaled \$276 billion—\$146 billion for procurement and

\$130 billion for RDT&E. That request was less than 1 percent more than the inflation-adjusted amount appropriated for 2022. Acquisition costs in the 2023 FYDP increase by about 3 percent in 2024 (to \$285 billion) and then remain steady, averaging \$282 billion annually through 2027.

Costs, by Appropriation Title

Costs for procurement would increase to \$164 billion in 2026 and then fall back to \$160 billion in 2027, for a net increase of nearly 10 percent over the FYDP period. The 2027 amount is about 2 percent higher than the inflation-adjusted average of total procurement costs (including costs for the wars in Afghanistan, Iraq, and Syria) over the past 20 years.

The increase in procurement costs would be offset by a net decrease of 9 percent in RDT&E costs over the FYDP period: After increasing by 1.2 percent in 2024 (to \$132 billion), RDT&E costs would decrease at an average annual rate of 3.3 percent (to \$119 billion) for 2025 through 2027. Despite that decrease, costs for RDT&E would remain substantial compared with past costs; annual funding for RDT&E has averaged about \$82 billion since 1980 and \$99 billion since 2002 (in 2023 dollars).

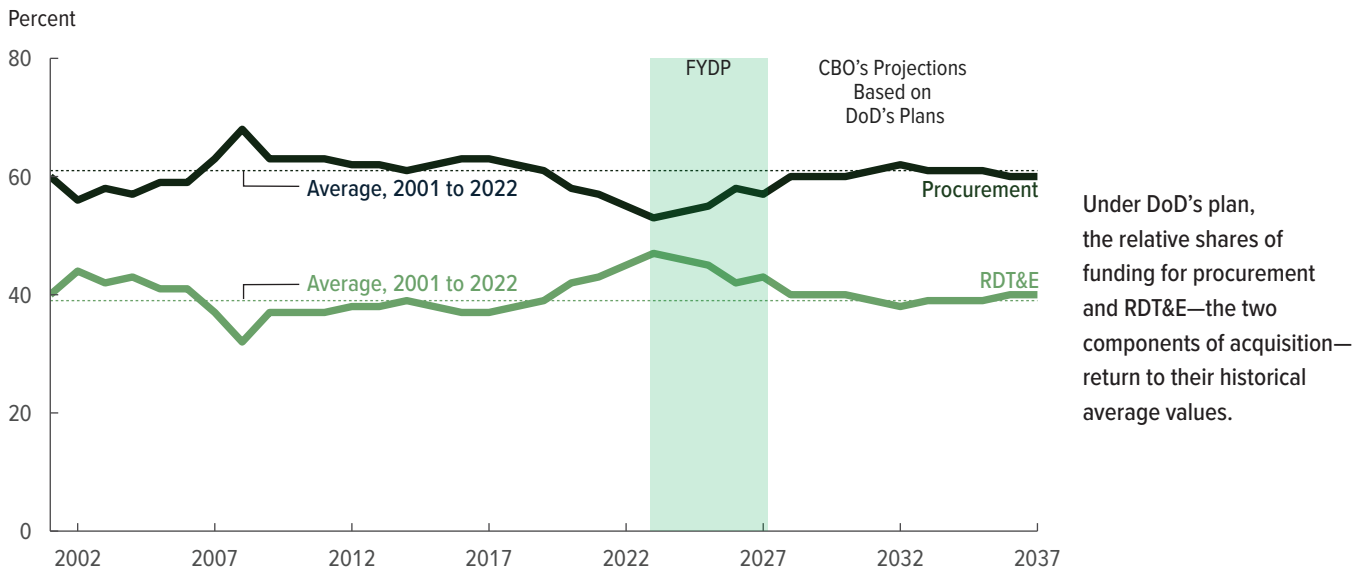
Since the mid-2010s, RDT&E has accounted for a steadily increasing share of acquisition funding, reaching a proposed 47 percent in 2023 (see Figure 3-1). That shift is a result of DoD’s changing its focus from procuring weapons for counterinsurgency operations to developing new weapons for potential conflicts against adversaries with advanced military capabilities. The projected shift from RDT&E back to procurement over the FYDP period suggests that the services will soon begin purchasing the modern weapons that DoD has been developing.

Costs, by Military Department

Over the FYDP period, the Army’s acquisition costs would decrease at an average annual rate of 1.1 percent, from \$36 billion in 2023 to \$34 billion in 2027 (see Figure 3-2). Costs for procurement would increase by 8 percent, though, as the Army continued its shift toward weapons for conflicts against technologically advanced

Figure 3-1.

Share of Acquisition Costs Allocated to Procurement and RDT&E in the 2023 FYDP and in CBO's Projections



Data source: Congressional Budget Office. See www.cbo.gov/publication/58579#data.

DoD = Department of Defense; FYDP = Future Years Defense Program; RDT&E = research, development, test, and evaluation.

adversaries. According to the Army's plans, annual costs for combat and support vehicles would rise by 30 percent—from \$4.7 billion in 2023 to \$6.1 billion in 2027—as purchases of Armored Multi-Purpose Vehicles and Mobile Protected Firepower vehicles increased and as upgrades to Abrams tanks were accelerated. Costs for aircraft procurement would decline by 9 percent over the FYDP period, although decreases as current aircraft programs were completed would be offset by initial purchases of new Future Vertical Lift (FVL) aircraft at the end of the FYDP period. Missile procurement costs would be 35 percent higher in 2027 than in 2023 owing to increased purchases of missile defense systems and several new long-range offensive systems. (Missile procurement would average about one-third of total Army procurement over the FYDP period, more than double its share over the previous 10 years.) Funding for RDT&E would decrease by 25 percent through 2027 as development of those new systems was completed.

Acquisition costs for the Department of the Navy (including the Marine Corps) would decrease by about 2 percent, from just over \$90 billion in 2023 to slightly less than \$88 billion in 2027. Over the FYDP period, procurement would increase by \$1.6 billion, and RDT&E would decrease by \$3.7 billion. Within procurement, a nearly 50 percent increase in costs for missiles and munitions

(including modernized Trident nuclear ballistic missiles as well as Standard and Evolved Sea Sparrow air defense missiles) would be partially offset by a 2 percent decrease in other categories of procurement.

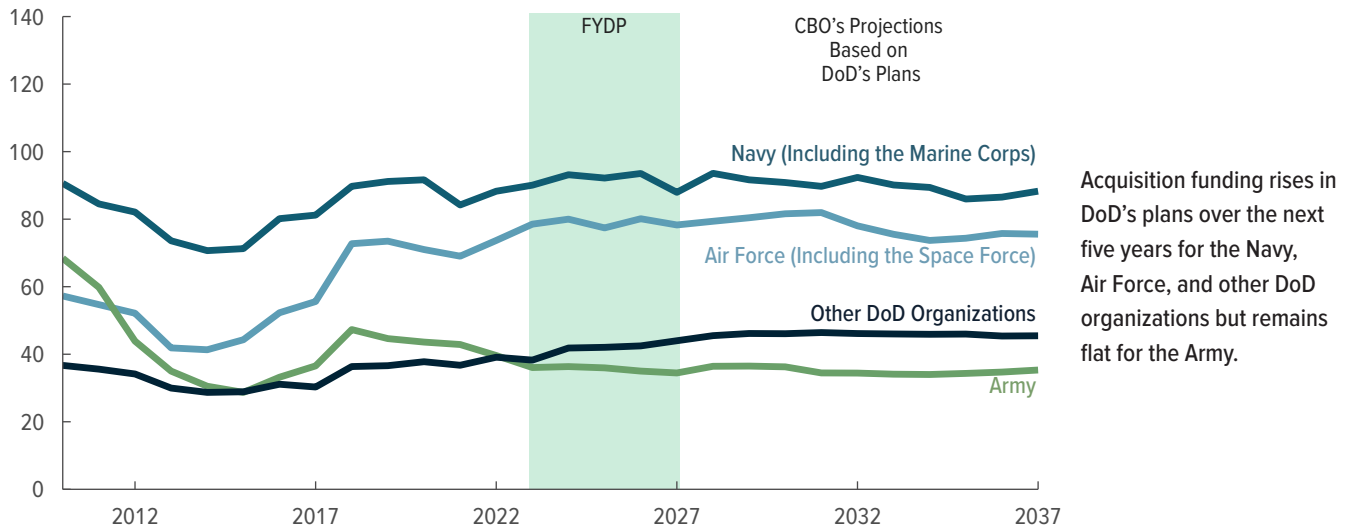
For the Department of the Air Force (including the recently established Space Force), annual acquisition costs would average \$79 billion from 2023 through 2027 and would vary only slightly over that time.¹ As with the other services, increased costs for procurement would be offset by decreased costs for RDT&E. Procurement costs would rise by about 30 percent, from \$29 billion in 2023 to \$38 billion in 2027. Costs for aircraft would increase by more than 20 percent as the service purchased more F-35As and as the new advanced trainer and the B-21 bomber entered production; similarly, costs for missiles and munitions would more than triple (from \$3.2 billion in 2023 to \$10.4 billion in 2027) as replacements for the Minuteman III intercontinental ballistic missiles entered production. Although the procurement costs for space systems would

1. The Air Force's acquisition costs do not include costs for classified activities performed outside of the Air Force that are funded through the service's procurement and RDT&E accounts. Those costs, which totaled \$33 billion in the 2023 budget request, are included when CBO refers to total acquisition costs for DoD. CBO estimated that those costs would increase slightly each year (in real terms) over the FYDP period.

Figure 3-2.

Acquisition Costs, by Military Department, in the 2023 FYDP and in CBO's Projections

Billions of 2023 Dollars



Data source: Congressional Budget Office. See www.cbo.gov/publication/58579#data.

Acquisition funding is the sum of the appropriations for procurement and for research, development, test, and evaluation.

Funding shown for the Air Force does not include more than \$30 billion each year for classified activities not carried out by the service.

DoD = Department of Defense; FYDP = Future Years Defense Program.

be only 5 percent higher in 2027 than in 2023, they would be 35 percent higher, on average, from 2024 through 2026 than in 2023. The Air Force's costs for RDT&E would decrease from \$49 billion to \$40 billion over the FYDP period, leaving its total acquisition costs nearly unchanged.

DoD's budget also includes defensewide acquisition funding, which is allocated to defense agencies other than the three military departments. The agencies funded by defensewide appropriations carry out activities in conjunction with the services—for example, performing advanced research, developing missile defenses (through the Missile Defense Agency), overseeing special operations, and managing financial and information technology systems. In the 2023 FYDP, acquisition costs for defensewide programs increase by 15 percent, from \$38 billion in 2023 to \$44 billion in 2027. Most of that increase—about 9 percent—would occur in 2024. Costs for the Missile Defense Agency would average 22 percent of defensewide funding over the FYDP period.

Projections of Acquisition Costs for 2028 Through 2037

In CBO's projections, DoD's acquisition costs rise in the years immediately after the FYDP period, from \$279 billion in 2027 to \$290 billion in 2028, and then climb further—to \$292 billion—in 2030 (see Figure 1-1 on page

6). Costs would vary slightly from year to year thereafter, averaging \$288 billion from 2031 through 2037.

Costs, by Appropriation Title

Procurement costs would climb to a high of \$179 billion in 2032, an increase of \$19 billion (or 12 percent) from their 2027 total, CBO estimates. After 2032, those costs would fall back, declining to \$174 billion in 2037 (an amount that would be \$14 billion, or 9 percent, higher than in 2027). The share of acquisition funding dedicated to procurement would increase from 57 percent in 2027 to 61 percent in 2031 and remain near that level through the end of the projection period. (By comparison, procurement's share of acquisition funding has averaged 61 percent since 2000.)

Costs for RDT&E would decrease from \$119 billion in 2027 to \$111 billion in 2033 but then steadily increase, reaching \$117 billion in 2037.

Costs, by Military Department

The Army's acquisition costs would increase by 6 percent in the first year after the FYDP period (rising from \$34 billion in 2027 to \$36 billion in 2028) and remain at that higher level through 2030 before dropping back to the 2027 level and varying slightly thereafter (see Figure 3-2). On average, for 2028 through 2037,

procurement costs would be 12 percent higher than in the final year of the FYDP period, and RDT&E costs would be 22 percent lower, CBO estimates. As a share of acquisition funding, procurement would average 77 percent over the 2028–2037 period—substantially higher than its estimated share of 70 percent for the final year of the FYDP period or its expected average of 66 percent for the FYDP period as a whole.

Most of the increase in the Army's procurement costs after the FYDP period would be attributable to purchases of FVL aircraft (both the Future Long-Range Assault Aircraft and the Future Attack Reconnaissance Aircraft) and ground combat vehicles (including a new armored fighting vehicle that would replace today's Bradley vehicles).² Offsetting that increase somewhat would be decreases in missile procurement after 2028.

For the Navy (including the Marine Corps), acquisition costs would increase by 6 percent in the first year after the FYDP period (rising from \$88 billion in 2027 to \$94 billion in 2028), CBO estimates. The Navy's acquisition costs would average \$92 billion from 2028 through 2032 and then range from \$86 billion to \$90 billion through 2037. Almost all increases in costs beyond the FYDP period would be for procurement; costs for RDT&E would remain fairly constant from 2028 to 2037.

Annual shipbuilding costs from 2028 through 2034 would average \$29 billion (roughly the same as their average over the FYDP period) as the Navy continued to expand its fleet and to replace two of its most expensive classes of ships: aircraft carriers and ballistic missile submarines.³ In 2034, after the last of the funding for ballistic missile submarines had been provided, shipbuilding costs would drop substantially, CBO estimates. Annual costs of missiles and munitions would continue to increase after the FYDP period, as the Navy added purchases of long-range hypersonic Conventional Prompt Strike missiles to its ongoing Trident

D5 modernization effort. Aircraft procurement costs would increase by 11 percent from 2027 to 2030, in part because of initial procurement of replacements for the E-6B Mercury aircraft; those costs would then decrease through 2035, CBO estimates, as current programs to acquire new aircraft (such as the F-35 Joint Strike Fighter and the Marine Corps' CH-53K helicopter) and modify existing aircraft were completed. Aircraft procurement costs would swing upward again after 2035 because of initial procurement of a new fighter to replace the F/A-18 Super Hornet.

Acquisition costs for the Air Force (including the Space Force) would increase slowly and then stabilize in the years beyond the FYDP period. Those costs would rise from \$78 billion in 2027 to \$82 billion in 2031 and hover between \$74 billion and \$78 billion thereafter, CBO estimates.⁴ Growth in the Air Force's costs would result primarily from two types of purchases: first, from increased procurement of several new weapon systems, including fighters (the F-35A), bombers (the B-21), supersonic trainers (the Advanced Pilot Training aircraft), nuclear cruise missiles (the Long-Range Standoff Weapon), and intercontinental ballistic missiles (the Ground-Based Strategic Deterrent); and, second, from costs to develop new systems for achieving air superiority—in particular, systems being developed under the Next Generation Air Dominance program—that would be fielded in the 2030s.⁵ In CBO's projections, costs for procuring space systems show a pronounced upward trend in the decade beyond the FYDP period (rising from \$4.4 billion, on average, over the FYDP period to \$10.4 billion in 2037) as the Space Force fields new generations of satellite constellations.

In CBO's projections, defensewide acquisition costs remain fairly constant (in real terms) from 2028 to 2037, averaging \$46 billion per year over that period. Missile defense costs would average \$10 billion annually over the decade, about 6 percent higher than in the FYDP period. Other costs, such as those for other defense agencies, would increase very slowly (by roughly 0.5 percent annually in real terms).

2. For a detailed discussion of the Army's ground combat vehicle and aircraft fleets, see Congressional Budget Office, *Projected Acquisition Costs for the Army's Ground Combat Vehicles* (April 2021), www.cbo.gov/publication/57085, and *The Cost of Replacing Today's Army Aviation Fleet* (May 2019), www.cbo.gov/publication/55180. Projections of costs and replacement schedules have changed since the publication of those reports, though.

3. Congressional Budget Office, *An Analysis of the Navy's Fiscal Year 2023 Shipbuilding Plan* (November 2022), www.cbo.gov/publication/58447, and *How CBO Estimates the Cost of New Ships* (April 2018), www.cbo.gov/publication/53785.

4. Those amounts do not include the classified activities that are funded through the Air Force's acquisition budget but not carried out by the service.

5. For details about DoD's aircraft fleets, see Congressional Budget Office, *The Cost of Replacing the Department of Defense's Current Aviation Fleet* (January 2020), www.cbo.gov/publication/55950. Projections of costs and replacement schedules have changed since the publication of that report, though.

Uncertainty in Projections of Acquisition Costs

Like CBO's projections of O&S costs, the projections of DoD's acquisition costs are subject to considerable uncertainty. Much of that uncertainty stems from the possibility that DoD's plans and their associated costs could change, as well as the possibility that future weapon systems that CBO anticipates, consistent with those plans, might evolve differently. Changes in acquisition plans, sometimes substantial, can result from various factors. In earlier FYDPs, for example, the funding constraints imposed by the Budget Control Act of 2011 led DoD to curtail its planned acquisition spending. Adjustments in the military capability of perceived adversaries can also spur changes in DoD's acquisition plans. For instance, DoD had no plans to purchase thousands of mine-resistant vehicles until they became necessary to counter roadside bombs in Iraq; similarly, DoD did not have programs focused on contending with hypersonic weapons (missiles and projectiles that travel much faster than the speed of sound) until China began testing such weapons several years ago.

Plans being pursued by the military services for the fielding of future space systems and for new command and control systems are particularly uncertain. For example, the Space Force has outlined plans for several satellite constellations that would provide an array of capabilities, including communications, missile defense, surveillance and reconnaissance, and tracking of ground targets. If pursued, those plans are likely to be costly. They might enable DoD to lower costs in other areas, though—by allowing the Air Force to retire some of its reconnaissance aircraft, for instance.

CBO's Estimates of Acquisition Costs Under Alternative Assumptions About Cost Growth

Growth in the costs of weapons programs could cause acquisition costs to differ from DoD's and CBO's projections. According to analyses by the RAND Corporation and the Institute for Defense Analyses (IDA), DoD has tended to underestimate the costs of its major weapons programs.⁶ Actual costs could be higher than early estimates for many reasons, including these:

- Underestimates of costs in DoD's initial plans;
- Changes in economic factors, such as the costs of labor and raw materials;
- Changes in performance requirements, which can result in the need for costly design modifications during development;
- Lower-than-anticipated annual funding, which can increase total costs by disrupting established plans and schedules and by extending programs (and their associated overhead costs) over longer periods; and
- Unanticipated technological challenges posed by new systems, including their integration with established systems.

CBO's projections of long-term acquisition costs are based on DoD's estimates of development and procurement costs and on the quantity of a given item that would be purchased each year and in total (as specified in DoD's long-range plans). To illustrate how growth in the costs of acquisition programs might affect the total costs of DoD's 2023 budget plans, CBO prepared alternative estimates using historical patterns of growth in DoD's costs. For those estimates, CBO applied cost-growth factors derived from RAND's and IDA's research to the portfolio of large weapons programs, excluding those for Navy ships, in the 2023 FYDP.⁷ (For Navy ships, CBO used detailed estimates that it prepares for its annual analysis of the Navy's shipbuilding plans.)

Using the resulting cost estimates instead of DoD's cost estimates raises total projected acquisition costs by 4 percent over the FYDP period and by 8 percent over the 2028–2037 period. Those increases equate to an additional \$9 billion per year, on average, over the 2023–2027 period and an additional \$21 billion per year, on average, for 2028 through 2037 (see Table S-1 on page 3, fifth row). Because uncertainty about costs is greater in the more distant future, the potential increases are larger for the years beyond the FYDP period.

and Ongoing Programs, MG-588-AF (RAND Corporation, 2007), www.rand.org/pubs/monographs/MG588.html; and Mark V. Arena and others, *Historical Cost Growth of Completed Weapon System Programs*, TR-343-AF (RAND Corporation, 2006), www.rand.org/pubs/technical_reports/TR343.html.

6. David L. McNicol and Linda Wu, *Evidence on the Effect of DoD Acquisition Policy and Process on Cost Growth of Major Defense Acquisition Programs*, IDA Paper P-5126 (Institute for Defense Analyses, September 2014), <https://apps.dtic.mil/dtic/tr/fulltext/u2/a609472.pdf>; Obaid Younossi and others, *Is Weapon System Cost Growth Increasing? A Quantitative Assessment of Completed*

7. For details about how CBO applies those cost-growth factors, see Congressional Budget Office, *An Analysis of the Obama Administration's Final Future Years Defense Program* (April 2017), pp. 47–50, www.cbo.gov/publication/52450.

Chapter 4: Projected Costs of Infrastructure

Infrastructure funding accounts for less than 2 percent of the Department of Defense’s funding request for 2023. The budget for infrastructure comprises appropriations for military construction and family housing, which provide funds to build and renovate DoD’s facilities. Appropriations for military construction cover facilities such as buildings, runways, and piers used by the military. Appropriations for family housing are used to manage, maintain, and sustain the housing on military bases.¹

Infrastructure Costs in the 2023 FYDP

DoD requested a total of \$12 billion for infrastructure in 2023, which is about 20 percent more than it requested for 2022 but 22 percent less than the amount that the Congress appropriated for that year. Requested infrastructure funding makes up 1.6 percent of DoD’s total request in 2023 and includes \$10 billion for military construction and \$2 billion for family housing.

In the 2023 Future Years Defense Program, annual infrastructure costs jump to \$16 billion for 2024 and then fall back to \$11 billion in 2027. Military construction costs would increase by 40 percent from 2023 to 2024 (rising from \$10 billion to \$14 billion) and then average

\$11 billion per year over the final three years of the FYDP period. Appropriations for family housing would remain nearly constant (in real terms) for 2024 through 2027, averaging \$1.6 billion per year over that period.

Projections of Infrastructure Costs for 2028 Through 2037

In the Congressional Budget Office’s projections, infrastructure costs in DoD’s budget increase by an average of 1.7 percent per year after the FYDP period, reaching \$13 billion in 2037. Those increases are based on CBO’s projections of real growth in the costs of construction projects in the general economy.

Uncertainty in Projections of Infrastructure Costs

The primary source of uncertainty in CBO’s current projections of infrastructure costs is whether the Congress will authorize a new round of Base Realignment and Closure (BRAC)—a process in which DoD closes and consolidates military bases to streamline its allocation of resources and cut costs. The last round of BRAC began in 2005, but the Congress has not approved a new round since then.² Infrastructure costs would change if a new round of BRAC was authorized, but the size and timing of those changes cannot be estimated with confidence.

1. Since lawmakers enacted the Military Housing Privatization Initiative in 1996, costs to operate and maintain most military housing have been transferred to private companies. In DoD’s budget, costs for that privatized housing have been shifted to housing allowances in the military personnel appropriation.

2. The Congress prohibited spending on an additional round of BRAC in the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92), which was enacted in December 2019.

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About This Document

This report was prepared at the request of the Chairman and Ranking Member of the Senate Committee on the Budget for the 117th Congress. In keeping with the Congressional Budget Office's mandate to provide objective, impartial analysis, the report makes no recommendations.

David Arthur and F. Matthew Woodward prepared the report with guidance from David Mosher and Edward G. Keating. Alia Abdelkader, Elizabeth Bass, Michael Bennett, Eric J. Labs, and Adam Talaber contributed to the analysis. In addition, Adam Talaber fact-checked the report.

Jeffrey Kling and Robert Sunshine reviewed the report. Christine Bogusz edited it, and R. L. Rebach created the graphics and prepared the text for publication. The report is available at www.cbo.gov/publication/58579.

CBO seeks feedback to make its work as useful as possible. Please send comments to communications@cbo.gov.



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