

CBO

Long-Term Implications of the 2019 Future Years Defense Program



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At a Glance

In most years, the Department of Defense (DoD) develops a five-year plan—called the Future Years Defense Program (FYDP)—that is associated with the budget it submits to the Congress. This report is based on the 2019 FYDP, which was released in 2018 and reflects DoD’s expectations about its costs from 2019 through 2023. Because decisions about national defense that are made today can affect DoD’s budget beyond the period covered by the FYDP, the Congressional Budget Office has also projected how DoD’s 2019 plans would affect defense costs through 2033.

- DoD requested \$686 billion for 2019: \$617 billion for the base budget, which funds normal, peacetime activities, such as day-to-day operations and the development and procurement of weapon systems, and \$69 billion for the overseas contingency operations (OCO) budget, which is intended to fund temporary, war-related activities, such as operations in Afghanistan, Iraq, and Syria. Appropriations enacted in September 2018 provided total funding nearly equal to the amount that DoD requested.
- Measured in 2019 dollars, total annual costs would remain about the same over the 2020–2023 period. However, DoD plans to make an “OCO-to-base” shift that would move the costs of many enduring activities from the OCO budget into the base budget. As a result, costs included in the base budget would be, on average, \$47 billion higher per year (about \$665 billion), and costs included in the OCO budget would be reduced by about the same amount.
- Costs under DoD’s plans would comply with the cap on discretionary funding set by the Budget Control Act for 2019 but would exceed the caps for 2020 and 2021 (the last two years for which caps are in effect).
- A planned increase in the number of military personnel and increases in the cost of many components of DoD’s budget may make it difficult for the department to succeed in carrying out its plans without real growth (that is, growth after removing the effects of inflation) in its budgets through 2023.
- On the basis of DoD’s estimates, CBO projects that the costs of DoD’s 2019 plans would increase steadily after 2023: The base budget would reach \$735 billion (in 2019 dollars) by 2033, an increase of 11 percent in real terms over those 10 years. Using cost estimates that are based on historical trends in place of some of DoD’s estimates, CBO projects that the cumulative base-budget costs of DoD’s plans from 2019 through 2033 would be about 5 percent higher than under DoD’s estimates.



Contents

| | |
|--|----|
| Summary | 1 |
| DoD's Budget Plans for 2019 Through 2023 | 1 |
| CBO's Projection of DoD's Costs for 2024 Through 2033 | 2 |
| Uncertainties in Projections of DoD's Plans | 2 |
| Costs of the 2019 Future Years Defense Program Through 2033 | 3 |
| DoD's Estimate of Costs in the 2019 FYDP | 3 |
| BOX 1. DOD'S PLANS TO SHIFT ENDURING OCO FUNDING TO THE BASE BUDGET | 4 |
| CBO's Projection of DoD's Costs for 2024 Through 2033 | 5 |
| How the Costs of the 2019 FYDP Compare With the Caps Set by the Budget Control Act | 6 |
| How CBO Projected the Costs of DoD's Plans Beyond the FYDP Period | 6 |
| Projected Costs of Operation and Support | 7 |
| O&S Costs Under the 2019 FYDP | 9 |
| CBO's Projection of O&S Costs for 2024 Through 2033 | 10 |
| Uncertainty in Projections of O&S Costs | 10 |
| Differences Between DoD's Estimates of O&S Costs and Historical Experience | 10 |
| Projected Costs of Acquisition | 11 |
| Acquisition Costs Under the 2019 FYDP | 11 |
| CBO's Projection of Acquisition Costs for 2024 Through 2033 | 12 |
| Uncertainty in Projections of Acquisition Costs | 13 |
| Differences Between DoD's Estimates of Acquisition Costs and Historical Experience | 13 |
| Projected Costs of Infrastructure | 14 |
| Infrastructure Costs Under the 2019 FYDP | 14 |
| CBO's Projection of Infrastructure Costs for 2024 Through 2033 | 15 |
| Uncertainty in Projections of Infrastructure Costs | 15 |
| List of Tables and Figures | 16 |
| About This Document | 17 |

Notes

Unless otherwise indicated, 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 2019 dollars, adjusted for inflation using the Congressional Budget Office's projection of the gross domestic product price index.

In this report, "cost" refers to the total obligational authority (TOA) that the Department of Defense (DoD) would need to implement the Administration's plans. TOA is a financial measure used by DoD to identify the funding available for its programs. It 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 in the text and tables may not add up to totals because of rounding.

This report is an annual publication of CBO, prepared in response to a request by the Senate Committee on the Budget. Previous editions are available at <https://go.usa.gov/xEnE6>.



Long-Term Implications of the 2019 Future Years Defense Program

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. This report describes the Congressional Budget Office's analysis of the 2019 FYDP, which was issued in April 2018 and summarizes DoD's expectations about the costs of its plans from 2019 through 2023. Because decisions made in the near term can have consequences for the defense budget in the longer term, CBO projected the costs of that plan through 2033.

DoD's Budget Plans for 2019 Through 2023

The 2019 FYDP comprises DoD's budget request for 2019 and its planned budgets for 2020 through 2023. The 2019 budget request called for \$686 billion in funding for DoD. Of that total, \$617 billion was for the base budget, which funds normal, peacetime activities, such as day-to-day operations and the development and procurement of weapon systems. The remaining \$69 billion was for the overseas contingency operations (OCO) budget, which is intended to fund temporary, wartime activities, such as those associated with the conflicts in Afghanistan, Iraq, and Syria. (Appropriations enacted in September 2018 provide DoD with \$616 billion in base-budget funding and \$69 billion in OCO funding for 2019—approximately the same amounts that the Administration requested.) Adjusted for inflation, the total amount DoD requested (and received) for 2019 was 1 percent more than what was appropriated for 2018.

Under DoD's 2019 FYDP, total annual costs (measured in 2019 dollars) would remain about the same over the 2020–2023 period as in 2019. However, DoD plans to make an “OCO-to-base” shift that would move the cost of many enduring activities currently funded in the OCO budget into the base budget. As a result, costs included in the base budget would be, on average, \$47 billion higher per year (about \$665 billion), and

costs included in the OCO budget would be reduced by about the same amount.¹ Over that period, DoD's annual base-budget costs would be greater than in any year over the past several decades (see Figure 1). DoD intends to offset any real growth (that is, growth after removing the effects of inflation) in its costs through 2023 with savings from improving the efficiency of its operations. However, plans in the 2019 FYDP for an increase in the number of military personnel may make it difficult to prevent real increases in spending over that period.

In several areas of DoD's base budget, costs have historically grown more rapidly than DoD projected in the 2019 FYDP. For example, increases in the costs of military and civilian compensation are smaller in the 2019 FYDP than they have been in recent experience. Similarly, DoD has frequently underestimated costs in other areas, such as the acquisition of weapon systems. To assess the possible effects of such factors, CBO prepared an alternative estimate of the costs of implementing DoD's 2019 plans that incorporates policies and patterns of growth that are more consistent with the changes in costs DoD has experienced over the past several decades (see Table 1). Using estimates based on those trends, CBO projects that total costs from 2019 through 2023 would be about \$85 billion (or 3 percent) higher than indicated in the 2019 FYDP.

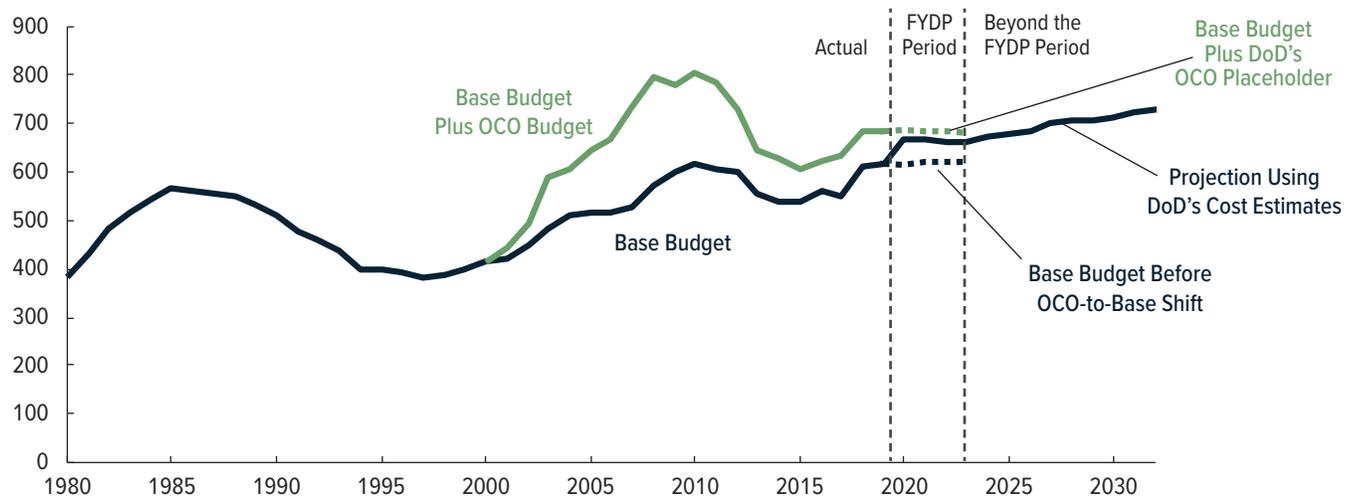
National defense funding for the 2019–2021 period is subject to caps set by the Budget Control Act of 2011 (BCA) as modified by the Bipartisan Budget Act of 2018. The funding DoD requested for its base budget in 2019 (and the amount that was later appropriated) adhered to the cap for that year. However, the caps are significantly lower after 2019. Estimated base-budget

1. For a discussion of base-budget versus OCO funding, see Congressional Budget Office, *Funding for Overseas Contingency Operations and Its Impact on Defense Spending* (October 2018), www.cbo.gov/publication/54219.

Figure 1.

Historical Funding for DoD's Activities and Projected Costs Under the 2019 FYDP

Billions of 2019 Dollars



Source: Congressional Budget Office.

Base-budget funding before 2001 includes supplemental and emergency funding. For 2001 through 2019, supplemental and emergency funding for OCO are shown separately from the base budget. "Base Budget Plus DoD's OCO Placeholder" illustrates DoD's total costs if its plans for the base budget are implemented (including the shift of enduring costs from the OCO budget to the base budget) and its costs for OCO amount to about \$20 billion per year for 2020 through 2023. DoD has characterized those estimated OCO costs as placeholders because its costs will ultimately depend on how overseas operations change over time.

DoD = Department of Defense; FYDP = Future Years Defense Program; FYDP period = 2019 through 2023, the period for which DoD has estimated its total costs; OCO = overseas contingency operations.

costs in the FYDP would exceed DoD's historical share of the caps by \$129 billion in 2020 and \$123 billion in 2021, measured in 2019 dollars. (OCO funding is not constrained by the BCA's caps.)

CBO's Projection of DoD's Costs for 2024 Through 2033

On the basis of DoD's estimates, CBO projects that the costs of DoD's 2019 plans would increase steadily after 2023: The base budget would reach \$735 billion (in 2019 dollars) by 2033, an increase of 11 percent in real terms over those 10 years. Several factors would contribute to that increase:

- The costs of compensation for military personnel, which have grown faster than inflation in 20 of the past 30 years;
- The costs of operation and maintenance (O&M), which have also grown steadily in real terms (after adjusting for changes in the size of the military) over the past several decades; and

- The acquisition of weapon systems, including several new types of aircraft and enough ships to increase the size of the Navy's fleet, and the development of land-based weapon systems to fulfill the Army's objectives for modernization.

About 25 percent of the total growth from 2024 through 2033 would be in military personnel costs, 55 percent in O&M costs, and 20 percent in costs to develop and purchase weapon systems.

Using estimates based on historical trends, CBO projects that DoD's total costs from 2024 to 2033 would be about \$395 billion (or 6 percent) greater than the amounts projected on the basis of DoD's estimates. Total costs from 2019 through 2033 would be about \$480 billion (or 5 percent) greater.

Uncertainties in Projections of DoD's Plans

The possibility that cost estimates might be inaccurate is not the only source of uncertainty when projecting

Table 1.

Increases in DoD’s Base-Budget Costs With Respect to the 2019 FYDP Under Alternative Policies and Projection Methods

| | Total Increase (Billions of 2019 dollars) | |
|---|--|---------------|
| | 2019–2023 | 2019–2033 |
| Areas in Which Different Policies Could Be Adopted | | |
| Military Pay Increases at the Rate of the ECI Instead of the Lower Rate Specified in the 2019 FYDP for 2019 Through 2023 | 11.6 | 67.7 |
| Civilian Pay Increases at the Rate of the ECI Instead of the Lower Rate Specified in the 2019 FYDP for 2019 Through 2023 | 19.5 | 84.0 |
| Areas in Which CBO Used Different Projection Methods | | |
| MHS Costs Grow at the Projected Rate of Health Care Costs in the General Economy Instead of the Lower Rate Projected in the 2019 FYDP for 2019 Through 2023 | 3.6 | 21.5 |
| Other O&M Costs (Adjusted for the Size of the Force) Grow as They Have Since 1980 Rather Than Decreasing After 2019 as Projected in the 2019 FYDP | 26.4 | 153.2 |
| Major Acquisition Programs Experience Cost Growth Consistent With Cost Growth Since 1970 | 24.0 | 155.0 |
| Total | 85.0 | 481.4 |
| Memorandum: | | |
| Projections of Total Costs Using DoD’s Estimates and Their Extension | 3,276 | 10,324 |
| Projections of Total Costs Using Alternative Policies and Projection Methods | 3,361 | 10,805 |

Source: Congressional Budget Office.

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.

DoD’s long-term costs. The projections of base-budget costs in the FYDP and CBO’s extended projections through 2033 are estimates of the long-term costs of executing the specific plans that DoD articulated in its 2019 budget and supporting documents. If those plans change as a result of factors such as international events, Congressional decisions, and unanticipated advances in technology, DoD’s costs would probably change as well. Furthermore, even if DoD’s plans generally remained unchanged, many program-level policies that underlie DoD’s projections of its costs may not come to pass. For those reasons, CBO’s projections should not be viewed as predictions of future funding for DoD; rather, the projections are estimates of the costs of executing the department’s 2019 base-budget plans without changes.

Costs for OCO are highly uncertain because they depend on how ongoing conflicts evolve and whether

new conflicts arise. This report does not include projections of OCO costs.

Costs of the 2019 Future Years Defense Program Through 2033

CBO analyzed the costs of DoD’s plans over the FYDP period—2019 through 2023—and projected the costs of those plans over an additional 10 years, through 2033.

DoD’s Estimate of Costs in the 2019 FYDP

The 2019 budget request called for \$686 billion in funding for DoD. Of that total, \$617 billion was for the base budget and \$69 billion was for the overseas contingency operations budget. In the 2019 FYDP, DoD’s base budget increases to \$667 billion in 2020 and remains essentially unchanged through 2023 after adjusting for inflation. However, nearly all of the increase from 2019 to 2020 results from plans to shift enduring costs from the

Box 1.

DoD's Plans to Shift Enduring OCO Funding to the Base Budget

The caps under the Budget Control Act of 2011 (BCA) limit discretionary appropriations for the defense base budget (which is intended to fund normal, peacetime activities, such as day-to-day military and civilian operations and the development and procurement of weapon systems) but do not limit appropriations designated for emergencies or overseas contingency operations (OCO). Since 2016, however, the Congress has explicitly funded some of the Department of Defense's (DoD's) base-budget activities with OCO appropriations to increase base-budget funding without exceeding the BCA caps. In a recent analysis, the Congressional Budget Office found earlier discrepancies between the amount of funding appropriated for OCO and the extent of DoD's overseas activity (measured by factors such as the number of service members deployed), indicating that funding for base-budget activities had migrated into the OCO budget even before 2016.¹

The Bipartisan Budget Act of 2018, enacted in February 2018, relaxed the BCA's budget caps for 2018 and 2019. The higher caps allowed the Congress to shift about \$20 billion of OCO funding requested to pay for base-budget activities in the 2018 budget into the base budget. The caps have not been increased for 2020 and 2021, however.

After the budget caps were relaxed, DoD amended its original 2019 request, moving about \$20 billion out of the OCO budget

and into the base budget. The base-budget appropriations for 2019, enacted in September 2018, are consistent with DoD's amended budget request. According to the 2019 FYDP, DoD plans to further reduce or eliminate its reliance on OCO funding to pay for activities that the department has determined are likely to endure, in line with its practice before 2001. Beginning in 2020, the costs of those activities would be shifted from the OCO budget to the base budget. Those costs would total about \$181 billion, spread roughly evenly over the 2020–2023 period, and would amount to about a 70 percent reduction in OCO funding relative to recent levels. However, that shift would increase by more than 50 percent the amount by which DoD's base budget would exceed the BCA's caps for 2020 and 2021 (the last two years for which caps are in effect).

Although DoD has identified a total amount that it plans to shift from the OCO budget to the base budget, it has not specified how that amount will be spread among DoD's appropriation titles. To project DoD's costs for base-budget categories beyond 2019, CBO had to estimate how the costs that DoD plans to shift to the base budget would be apportioned. To do so, CBO spread the unallocated costs in the FYDP for 2020 through 2023 among DoD's appropriation titles in proportions equivalent to those in DoD's original OCO request for 2019 (see the table). Most of the shifted costs were in the appropriation title for operation and maintenance.

1. See Congressional Budget Office, *Funding for Overseas Contingency Operations and Its Impact on Defense Spending* (October 2018), www.cbo.gov/publication/54219.

CBO's Allocation of Funding for Enduring Activities That Would Shift From DoD's OCO Budget to Its Base Budget

| Appropriation Title | 2019 OCO Budget Request | | Projected Shift of OCO Funding to Base Budget (Billions of 2019 dollars) | | | |
|---|-----------------------------|------------------------|---|-------------|-------------|-------------|
| | Billions of 2019 Dollars | Percentage of Total | 2020 | 2021 | 2022 | 2023 |
| Military Personnel | 4.7 | 6.8 | 3.5 | 3.0 | 2.9 | 2.8 |
| Operation and Maintenance ^a | 49.3 | 71.4 | 37.1 | 31.4 | 30.7 | 30.1 |
| Procurement | 12.8 | 18.6 | 9.6 | 8.1 | 8.0 | 7.8 |
| Research, Development, Test, and Evaluation | 1.3 | 1.9 | 1.0 | 0.8 | 0.8 | 0.8 |
| Military Construction | 0.9 | 1.3 | 0.7 | 0.6 | 0.6 | 0.6 |
| Family Housing | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 69.0 | 100.0 | 51.9 | 43.9 | 43.0 | 42.1 |

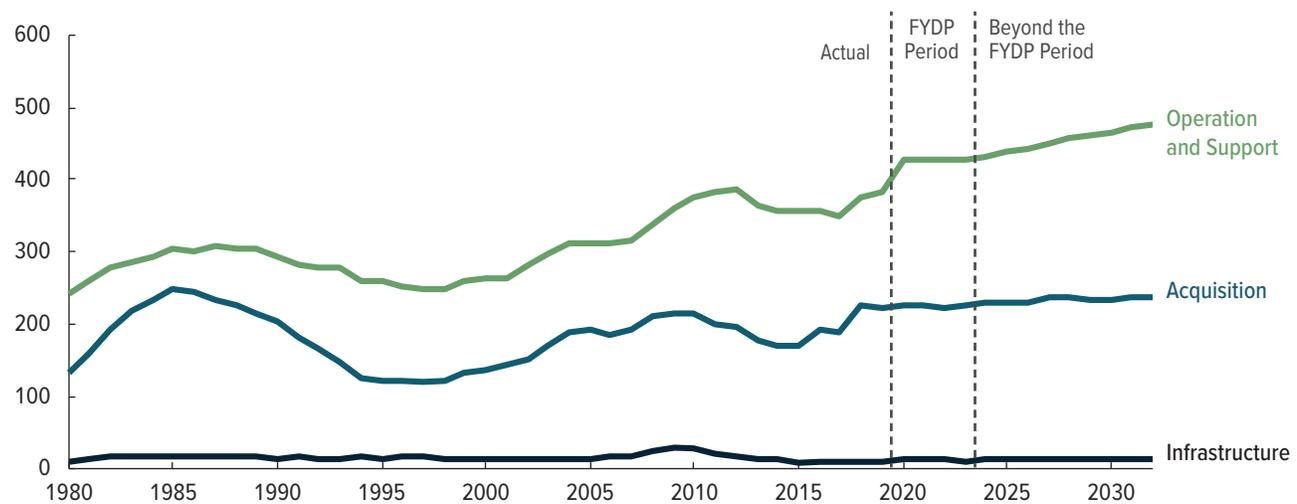
Source: Congressional Budget Office.

a. For this analysis, CBO folded appropriations for most revolving and management funds (such as the appropriation for the Defense Commissary Agency) into the appropriations for operation and maintenance.

Figure 2.

Base-Budget Costs of Operation and Support, Acquisition, and Infrastructure Under the 2019 FYDP

Billions of 2019 Dollars



Source: Congressional Budget Office.

Operation and support funding 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.

FYDP = Future Years Defense Program; FYDP period = 2019 through 2023, the period for which the Department of Defense has estimated its total costs.

OCO budget to the base budget (see Box 1). Factoring in that shift, base-budget costs under the 2019 FYDP would effectively change little over the entire 2019–2023 period. (Alternative estimates of DoD’s costs that incorporate historical cost trends in place of DoD’s estimates for specific parts of the base budget are higher—by 3 percent over the 2019–2023 period.)

CBO’s Projection of DoD’s Costs for 2024 Through 2033

Over the following 10 years, on the basis of DoD’s estimates in the FYDP, CBO projects that the base-budget costs of DoD’s plans would increase at an average rate of 1 percent annually (in real terms), rising from \$663 billion in 2023 to \$735 billion in 2033. (Alternative cost estimates that incorporate historical trends are about 6 percent higher for 2024 through 2033.) Costs for OCO, which would depend on how today’s conflicts evolve (and what others might arise), are not included in CBO’s projection.

To analyze and project the costs of DoD’s plans, CBO organized the components of DoD’s base budget into

three broad categories according to the types of activities they fund: operation and support (O&S), acquisition, and infrastructure. Costs for O&S currently account for roughly two-thirds of DoD’s base budget; costs for acquisition account for about one-third; and costs for infrastructure account for less than 2 percent. After factoring in DoD’s planned OCO-to-base shift, costs for O&S and infrastructure would be almost unchanged, and costs for acquisition would decrease slightly by 2023.

Costs for all three of those categories would contribute to the increase in the cost of DoD’s plans after 2023 (see Figure 2). Measured in 2019 dollars, costs for O&S would increase steadily, from \$426 billion in 2023 to \$482 billion in 2033. Costs for acquisition would generally increase over that period—from \$225 billion in 2023 to \$240 billion in 2033—but would exhibit year-to-year variations as a result of changes in individual weapon programs. Costs for infrastructure would increase steadily after the FYDP period, from \$11.2 billion in 2023 to \$12.7 billion in 2033. CBO’s analysis of

those categories is described in greater detail later in this report.

How the Costs of the 2019 FYDP Compare With the Caps Set by the Budget Control Act

The Budget Control Act of 2011 established caps on discretionary appropriations—including those for national defense—through 2021.² However, those caps do not constrain appropriations designated for OCO or for emergency requirements in defense or other areas (such as relief after natural disasters). The BCA's limits have been increased four times since 2011: by the American Taxpayer Relief Act of 2012 and the Bipartisan Budget Acts of 2013, 2015, and 2018. Taken together, those laws eased the constraints on funding for each year from 2013 through 2019. The limits for 2020 and 2021 have, so far, been left unchanged.

Under the terms of the BCA, if lawmakers provided defense appropriations that did not exceed the BCA's limits on funding for national defense, DoD's funding would not be subject to sequestration (automatic spending cuts that occur through the withdrawal of appropriated funding). However, if appropriations for national defense (excluding OCO funding) exceeded the BCA's caps, then total national defense funding—including OCO funding—would face sequestration of the excess.

The President's 2019 budget request included \$647 billion in discretionary base-budget funding for national defense, of which \$617 billion (or about 95 percent) is for DoD. The request was structured to satisfy the BCA's cap for national defense in 2019. CBO estimates that if DoD continued to receive 95 percent of the funding for national defense and shifted enduring costs from the OCO budget to the base budget as planned, its base-budget costs under the 2019 FYDP would exceed its proportional share of the BCA's caps by \$129 billion in 2020 and \$123 billion in 2021 (measured in 2019 dollars). Those gaps arise both because the caps for 2020 and 2021 are significantly lower than the caps for 2019 and because of the OCO-to-base shift.³ Avoiding

sequestration would require amending the BCA again to increase the caps, scaling back DoD's activities (and possibly those of the other agencies funded by the national defense budget), shifting the amounts of base-budget funding in excess of the caps back into the OCO budget, or some combination of those actions.

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

CBO's projection of the long-term costs of DoD's plans is made up of DoD's estimates in the 2019 FYDP for the years 2019 through 2023 and CBO's further projection of the costs of those plans for 2024 through 2033. For the latter period, CBO's projection is based as much as possible on policies underlying the cost estimates in the 2019 FYDP, current laws regarding the compensation of military personnel, and the longer-term acquisition plans that DoD publishes in Selected Acquisition Reports and other official documents, such as the Navy's 30-year shipbuilding plan.⁴ For the areas of DoD's budget where such policies have not been specified, CBO generally based its projection on trends in prices and compensation in the broader economy (see Table 2 for details).⁵ CBO's projection also incorporates the assumption that the size and composition of the military and the number of civilian personnel would remain unchanged after 2023 unless DoD has specified changes. For example, DoD plans to increase the number of Navy ships over the coming decades, so CBO's projection incorporates an increase in personnel to support a larger fleet. If a weapon system is expected to reach the end of its service life before 2033 and DoD has not yet announced plans for a replacement system, CBO assumed that the department would develop and purchase a generally similar but more modern system to replace the aging one.

Nearly all of DoD's funding is provided under seven appropriation titles: military personnel; operation and maintenance; procurement; research, development,

Outlook: 2019 to 2029 (January 2019), Table 3-5, www.cbo.gov/publication/54918.

2. Appropriations for accounts in budget function 050 (national defense) include those for DoD, the Department of Energy's nuclear weapons activities, and a host of smaller defense-related activities in other departments and agencies.

3. By CBO's estimate, the nominal caps on national defense funding are \$576 billion in 2020 and \$590 billion in 2021. See Congressional Budget Office, *The Budget and Economic*

4. Because DoD has not published plans for many minor acquisition programs extending beyond the FYDP period, CBO estimated costs for those programs on the basis of correlations between funding for major and minor programs.

5. For a more detailed discussion of CBO's methods of 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.

Table 2.

Methods Underlying the Projection of DoD’s Costs Under the 2019 FYDP

| Area of DoD’s Budget | Methods |
|--|--|
| Military Pay | Projected costs match DoD’s estimates through 2023; after 2023, the rate of growth matches CBO’s projection of the growth rate for the ECI |
| Civilian Pay | Projected costs match DoD’s estimates through 2023; after 2023, the rate of growth matches CBO’s projection of the growth rate for the ECI |
| Military Health Care | Projected costs match DoD’s estimates through 2023; after 2023, they track with CBO’s projection of the growth rate for health care spending in the broader economy |
| Operation and Maintenance ^a | Projected costs match DoD’s estimates through 2023; after 2023, they 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 based on previous programs |
| Military Construction | Projected costs match DoD’s estimates through 2023; in 2024, costs equal the historical average and thereafter grow at CBO’s projection of the growth rate for construction costs in the broader economy |

Source: Congressional Budget Office.

Not shown in this table are the methods for producing alternative cost estimates based on historical trends that CBO used to estimate how DoD’s costs might differ from its estimates in the 2019 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.

a. Excludes the costs of civilian pay and military health care.

test, and evaluation (RDT&E); military construction; family housing; and revolving and management funds. However, the 2019 FYDP includes estimates of base-budget costs for 2020 through 2023 that DoD has not yet allocated to those appropriation titles. Those costs would result from DoD’s plan to shift the costs of all enduring activities out of the OCO budget and into the base budget after 2019. For this analysis, CBO allocated those costs to individual appropriation titles in 2020 and beyond in proportions that matched each title’s share of DoD’s initial OCO request for 2019. (See Box 1 on page 4 for more details.)

A limitation of this analysis is that it is based on DoD’s plans as of early 2018, when the 2019 FYDP was released. CBO’s projection of DoD’s costs through 2033 incorporates the assumption that those plans would not change. However, international events, Congressional decisions, and other factors can markedly alter DoD’s plans, sometimes very soon after a FYDP is released. In addition, projections of economic factors that affect DoD’s costs—such as growth in health care costs—are rarely perfect, which could also cause DoD’s

actual costs to be higher or lower than projected even if its plans remain unchanged. Because of those uncertainties, CBO’s projections should not be thought of as predictions of DoD’s future budgets, which will be set each year by lawmakers.

Projected Costs of Operation and Support

O&S funding is the sum of the appropriations for military personnel, O&M, and revolving and management funds. (In its analysis, CBO includes the relatively small amount DoD requested for revolving and management funds with the O&M appropriation because the two appropriation titles involve similar activities.) O&S appropriations can be separated into three general types of costs:

- Compensation, which consists of pay and cash benefits for military personnel and DoD’s civilian employees as well as retirement benefits. Those costs fall under the appropriations for military personnel and O&M (for civilian employees).

Table 3.

Projected Base-Budget Operation and Support Costs in Selected Years Under DoD's 2019 Plans

Billions of 2019 Dollars

| | 2019 | 2023 | 2033 |
|---|------------|------------|------------|
| By Appropriation Title | | | |
| Military Personnel | | | |
| Military pay in the MHS | 9 | 9 | 10 |
| TRICARE for Life accrual payments | 8 | 9 | 12 |
| Remaining military pay | 132 | 139 | 152 |
| Total | 148 | 157 | 175 |
| Operation and Maintenance ^a | | | |
| Civilian pay in the MHS | 6 | 6 | 6 |
| Remaining civilian pay | 68 | 68 | 76 |
| Operation and maintenance in the MHS | 27 | 28 | 34 |
| Other operation and maintenance | 134 | 167 | 191 |
| Total | 236 | 269 | 308 |
| Total Appropriations for Operation and Support | 384 | 426 | 482 |
| By Type of Costs | | | |
| Compensation ^b | | | |
| Military personnel | 148 | 157 | 175 |
| Civilian personnel ^c | 74 | 73 | 82 |
| Total | 222 | 231 | 257 |
| Military Health System ^d | | | |
| Military pay in the MHS | 9 | 9 | 10 |
| Civilian pay in the MHS | 6 | 6 | 6 |
| Operation and maintenance in the MHS | 27 | 28 | 34 |
| TRICARE for Life accrual payments | 8 | 9 | 12 |
| Total | 50 | 52 | 63 |
| Other Operation and Maintenance Funding | | | |
| Total | 134 | 167 | 191 |

Source: Congressional Budget Office.

DoD = Department of Defense; MHS = Military Health System.

a. For this analysis, CBO folded appropriations for most revolving and management funds (such as the appropriation for the Defense Commissary Agency) into the appropriations for operation and maintenance.

b. Compensation consists of pay, cash benefits, and accrual payments for retirement benefits. For civilians, it also includes DoD's contributions for health insurance.

c. These figures do not include compensation for civilian personnel funded from accounts other than operation and maintenance.

d. These figures do not include MHS spending in accounts other than operation and support.

- The Military Health System (MHS), which 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, which covers costs such as those for base operations, fuel, depot maintenance, and spare parts. Those costs fall entirely under the appropriation for O&M.

CBO based its projection of DoD's O&S costs on the anticipated growth in those three categories of costs.⁶

O&S Costs Under the 2019 FYDP

In DoD's budget request for 2019, \$384 billion—nearly two-thirds of the base-budget request—was for O&S: \$148 billion for military personnel and \$236 billion for O&M (see Table 3). Adjusted for inflation, the amount requested in the base budget for O&S in 2019 was \$10 billion more than the amount enacted for 2018—an increase of 2.7 percent. (The amounts appropriated for 2019 were close to the amounts requested: about \$146 billion for military personnel and \$231 billion for O&M.)

For 2020, CBO estimates that O&S costs in DoD's base budget would total \$428 billion—\$44 billion more than O&S costs for 2019. However, because \$41 billion of that amount would be costs shifted from the OCO budget to the base budget, the net growth in costs would be only about 1 percent. For 2020 through 2023, O&S costs in the 2019 FYDP remain fairly constant, averaging \$427 billion per year, despite a planned increase in personnel (an increase of about 30,000 service members and a decrease of 3,000 civilians, for a net increase of about 1 percent) and a decades-long trend of real growth in O&S costs.⁷

6. A simple sum of the costs in the three categories would exceed the total for O&S because compensation for military and civilian personnel working in the medical system counts toward both compensation and MHS costs. When discussing the categories in isolation, CBO included those overlapping costs to present a more complete picture of each category's costs, but CBO corrected for that double counting in its presentation of overall O&S costs.

7. In Congressional testimony and other statements in 2017, DoD officials suggested that much larger increases in the number of military personnel would be requested in budgets after 2018. Such increases are not reflected in the 2019 FYDP. However, DoD officials have said that the 2020 FYDP will be the first to fully incorporate the Administration's military strategy, which

After accounting for the OCO-to-base shift, the cost of compensation would increase by about 1 percent in real terms from 2019 to 2023 (roughly in proportion to the increase in the number of personnel), but the per capita cost of personnel would be flat. In the 2019 FYDP, DoD assumed that service members would receive a 2.6 percent pay raise in 2019, which would equal the projected increase in the employment cost index (ECI, a measure of the cost of compensating private-sector workers that is defined by the Bureau of Labor Statistics). Civilian employees would not receive a pay raise in 2019, according to DoD's request. (The pay raise the Congress enacted for service members in 2019 matched the Administration's request. On December 29, 2018, the President issued an executive order freezing federal civilians' pay. However, civilians could still receive a raise if one is provided as part of further appropriation legislation for 2019.)

DoD assumes that from 2020 through 2023, pay for both military and civilian employees would rise by 2.1 percent per year (in nominal terms), which is 1.3 percentage points below the projected average annual increase in the ECI. Adjusted for inflation, costs for the MHS would increase by about 5 percent during the FYDP period, or about 1.1 percent annually. Taken together, the costs for compensation and the MHS would increase by about 4 percent over the FYDP period, according to DoD's budget proposal. The Administration has expressed its intent to counter such upward pressure on DoD's budget by improving the efficiency of its operations or eliminating spending on lower-priority activities. Many of those activities would probably be part of CBO's "other" O&M category.

After accounting for the shift of costs from the OCO budget to the base budget, net costs for other O&M would decrease by about 2 percent in real terms over the FYDP period. That reduction may reflect some of the aforementioned improvements in efficiency or elimination of programs. It could also reflect another factor: Since 2017, DoD has received increased funding for other O&M activities such as training and maintenance of equipment to improve military readiness, which DoD asserts has declined in recent years. The department

might include significant increases in the size of the armed forces. Such increases would result in significantly higher costs. See Congressional Budget Office, *Analysis of the Long-Term Costs of the Administration's Goals for the Military* (December 2017), www.cbo.gov/publication/53350.

might anticipate that as readiness is restored, those costs will decrease by an amount that is greater than the general growth in other O&M costs.

CBO's Projection of O&S Costs for 2024 Through 2033

In CBO's projection beyond the 2019 FYDP period, O&S costs rise steadily after 2023, from DoD's estimate of \$426 billion for that year to \$482 billion for 2033, at an average annual rate of 1.2 percent (see Figure 2 on page 5). Each of the three types of O&S costs would increase.

For compensation, CBO based its projection on current law, which sets military pay raises equal to the growth in the ECI unless the Congress or the President takes action to provide different raises. According to CBO's long-term economic projections, the ECI would increase at an average rate of 1 percentage point above economy-wide inflation, which would result in a real increase of \$17 billion in military pay by 2033 (see the lower panel in Table 3). CBO projects that civilian pay would also rise with the ECI, maintaining parity with military pay increases and rising by \$9 billion in real terms by 2033. In total, compensation would increase by 11 percent.

In CBO's projection for the MHS, costs grow at the same rate as CBO's estimate for the costs of health care in the general economy, except for 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 would yield an average annual increase in MHS costs of about 1.9 percent above economywide inflation, or 0.8 percentage points above the rate DoD incorporated over most of the FYDP period. At that higher rate, costs for the MHS would grow by about 20 percent from 2023 to 2033, from \$52 billion to \$63 billion.

In its projection for other O&M, CBO estimated that costs would increase faster than inflation, consistent with long-standing trends.⁸ Since 1980, DoD's O&M costs have more than doubled in real terms after adjusting for changes in the size of the military, increasing by about \$1,500 per year per active-duty service member. Because it is not practical to make individual estimates

of the costs of the thousands of activities that comprise other O&M, CBO's projection reflects overall growth in those costs that is consistent with that historical trend. That results in an average annual increase of 1.3 percent in real terms, which would cause annual costs for other O&M to increase by \$24 billion (or 14 percent) from 2023 to 2033.

Uncertainty in Projections of O&S Costs

CBO's projections are not meant to predict future budgets. They are extrapolations of DoD's estimates in the FYDP, made under the assumption 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 affect DoD's costs—such as changes in the ECI or health care costs—are rarely perfect, which could also cause DoD's actual costs to differ from CBO's projections.

Differences Between DoD's Estimates of O&S Costs and Historical Experience

DoD's actual costs could differ from its estimated costs not only because of the uncertain factors described above but because several of DoD's estimates of O&S costs over the FYDP period appear counter to recent trends. Those estimates result in the lower projected rates of growth over the FYDP period in all three categories of O&S costs when compared with CBO's estimates for 2024 through 2033:

- In DoD's plans, military pay increases more slowly than projected growth in the ECI from 2020 through 2023, but in 20 of the past 30 years, pay raises have matched or exceeded growth in the ECI.
- DoD planned for no pay raise for its civilian workers in 2019, but civilian raises have usually been slightly smaller than or equal to those for military personnel.⁹
- DoD projected that O&M costs for the MHS would increase at only about half the rate CBO projects for health care costs in the economy as a whole.
- DoD planned for other O&M costs to decrease after 2019 despite the decades-long trend of increases in

8. For a more detailed discussion of CBO's analysis of "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.

9. The President's executive order freezing pay for federal civilians, issued on December 29, 2018, was consistent with the plans reflected in the 2019 FYDP. However, civilian pay rates could be changed as part of appropriations legislation for 2019 enacted after that date.

those costs, even with efforts to improve efficiency and eliminate unnecessary activities.

If growth rates over the FYDP period matched the growth rates CBO used in its projection of DoD's costs from 2024 through 2033 instead of those incorporated into DoD's plan, DoD's costs in each of those areas would be higher (see Table 1 on page 3). Cumulative O&S costs would be \$61 billion (or about 3 percent) higher from 2019 to 2023 and \$265 billion (or about 6 percent) higher from 2024 to 2033, for a total difference of \$326 billion. About 46 percent of the difference in the cumulative costs for 2019 through 2033 would be attributable to compensation, 7 percent to the MHS, and 47 percent to other O&M.

Projected Costs of Acquisition

Acquisition funding comprises appropriations for procurement and RDT&E. That 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 conduct research on future weapon systems.

CBO used two approaches to project acquisition costs beyond the FYDP period. 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 research and development activities, CBO made overall projections based on policies either stated or implied in DoD's planning documents or on historical relationships between total acquisition funding and the funding for major programs. (CBO's projections for programs did not account for unexpected growth in costs that might occur; CBO explored the effect that historical rates of cost growth could have in an alternative estimate, discussed below.)

CBO based its program-by-program projections not only on the 2019 FYDP but on detailed plans, such as Selected Acquisition Reports, that the services have issued for some major systems (for example, the Army's and Marine Corps' Joint Light Tactical Vehicle). For other major systems (for example, the Air Force's T-X trainer aircraft), CBO based its estimates on more general descriptions the services have provided about schedules and costs for development and procurement. For still other systems (such as future fighters that the Navy and Air Force are considering putting into service in the

2030s), there are no detailed schedules or cost estimates, but their 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. In those cases, CBO based its cost estimates on the assumption that the services would replace weapon systems they retire with similar but more technologically advanced ones.

Acquisition Costs Under the 2019 FYDP

In DoD's budget request for 2019, \$223 billion—about one-third of the base-budget request—was for acquisition: \$132 billion for procurement and \$91 billion for RDT&E. The amount requested in the base budget for acquisition in 2019 is 10 percent more than the Administration requested for 2018 but about 2 percent less than the amount appropriated for that year (after adjusting for inflation). DoD also requested \$14 billion in OCO funding for acquisition. (The amounts appropriated for 2019 were close to those requested: about \$135 billion for procurement and \$94 billion for RDT&E in the base budget and \$14 billion for acquisition in the OCO budget.)

For 2020 through 2023, acquisition costs under the 2019 FYDP would be slightly higher than in 2019, averaging \$226 billion per year. That amount includes CBO's estimate of the acquisition costs that would be shifted to the base budget in the OCO-to-base accounting change planned by DoD. Adjusted for inflation, costs for procurement would increase by nearly 10 percent over the FYDP period, reaching \$146 billion in 2023. Costs for RDT&E would decrease by 13 percent, to \$79 billion in 2023. Despite that decrease, costs for RDT&E would still be substantial over the FYDP period compared with the past: Adjusted for inflation, annual funding for RDT&E has averaged \$68 billion since 1980.

Acquisition costs for the Army and the Navy would remain nearly unchanged over the FYDP period, averaging \$34 billion and \$76 billion per year, respectively. (The Congress appropriated \$33 billion for Army acquisition and \$79 billion for Navy acquisition in 2019.) Air Force acquisition costs would increase from \$84 billion in 2019 to \$91 billion in 2023. (The Congress appropriated \$84 billion for Air Force acquisition in 2019.) Roughly two-thirds of the Air Force's acquisition costs in each year would be for its own acquisition programs. The other one-third would be for classified activities that are not conducted by the Air Force but are funded through its appropriations. DoD's budget also includes

defensewide acquisition funding, which is allocated to defense agencies other than the three military departments. Those agencies carry out activities in conjunction with the services—for example, performing advanced research, developing missile defenses, overseeing special operations, and managing financial and information technology systems. Under the 2019 FYDP, acquisition costs for defensewide programs would decrease from \$29 billion in 2019 to \$24 billion in 2023. (The Congress appropriated \$33 billion for defensewide acquisition programs in 2019.)

CBO's Projection of Acquisition Costs for 2024 Through 2033

In CBO's projection, DoD's acquisition costs rise at a fairly steady rate in the five years after the FYDP period, reaching \$238 billion in 2028 (see Figure 2 on page 5). Costs would briefly dip as several Navy aircraft programs ended but would then resume their growth, reaching \$240 billion in 2033. The increase from 2023 through 2033 would average about 0.7 percent per year in real terms. Acquisition costs would rise primarily because of increases in the cost of procuring weapon systems, which would be \$17 billion (or about 12 percent) higher in 2033 than in 2023, whereas the cost of RDT&E would be about \$2 billion lower.

For the Army, acquisition costs would increase slowly over the 2023–2033 period, growing from \$33 billion to a high of \$37 billion in 2032 and then dropping to \$36 billion in 2033 (see Figure 3). Most of that increase would be attributable to procurement costs for new aircraft and armored vehicles. RDT&E costs would average about \$9 billion per year. The Army has defined broad acquisition priorities that encompass nearly all of its weapon systems. Those “Big Six” objectives are to acquire new long-range precision weapons, a new armored combat vehicle, new vertical-lift aircraft, an improved communications network for combat units, improved air and missile defense systems, and improved weapons and other equipment for soldiers. Although the Army has not defined the specific systems that would be acquired through those objectives, CBO's projection beyond the FYDP period includes notional programs for a new reconnaissance aircraft in the mid-2020s, a replacement for the Bradley infantry fighting vehicle and a long-range surface-to-surface missile in the late 2020s, and a new transport aircraft in the early 2030s. The projection also

reflects continued improvements to the Army's air and missile defense and digital network systems.

For the Navy and Marine Corps, CBO estimates that acquisition costs would average \$77 billion per year for 2024 through 2028 before declining to an average of \$74 billion per year for the last five years of the projection period. Costs for shipbuilding would generally increase as the Navy continued to expand the fleet toward its goal of 355 ships and replaced two of its most expensive classes of ships: aircraft carriers and ballistic missile submarines. By contrast, aircraft-related costs would generally decrease as programs to acquire new aircraft (such as the F-35 Joint Strike Fighter and the Marine Corps' CH-53K helicopter) and modify existing aircraft are completed. The cost of the Navy's RDT&E, which would drop by nearly 30 percent over the FYDP period, would return to its 2019 amount (\$18 billion) by 2026 and average about \$20 billion over the last seven years of the projection period.

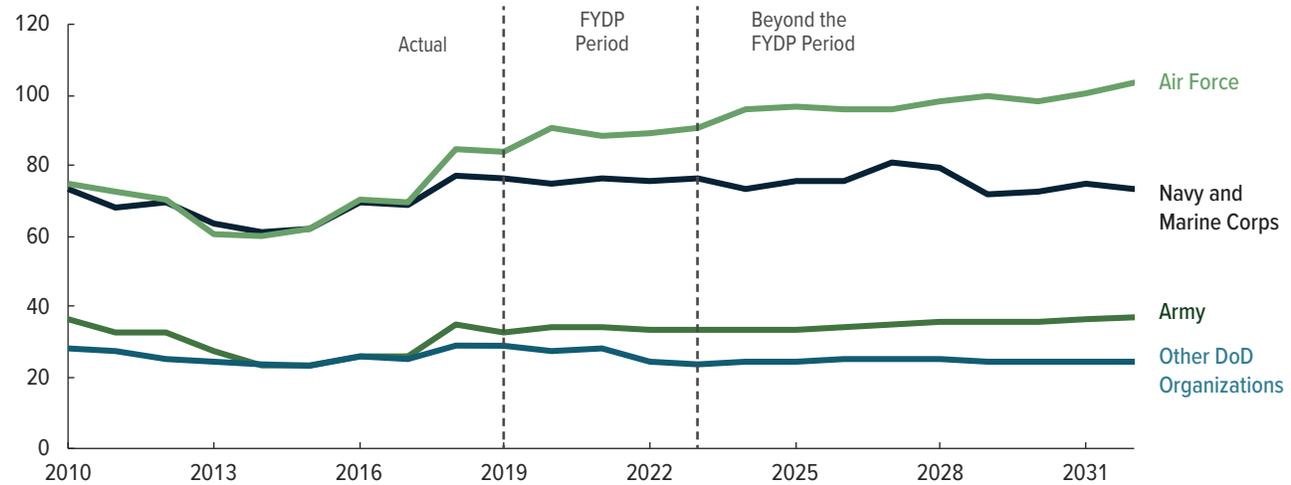
For the Air Force, CBO projects that acquisition costs would steadily increase, from \$91 billion in the final year of the FYDP period to \$104 billion in 2033. (Those amounts include CBO's projection of a constant \$31 billion per year, in real terms, for classified activities funded through the Air Force's budget but not carried out by the service.) The increase would result primarily from the acquisition of several new weapon systems, including fighters (the F-35A), bombers (the B-21), supersonic trainers (the T-X), nuclear cruise missiles (the Long-Range Standoff Weapon), and intercontinental ballistic missiles (the Ground-Based Strategic Deterrent). Costs to develop those new systems would contribute to keeping RDT&E costs in 2024 and 2025 similar to those during the FYDP period before they decreased thereafter.

Acquisition costs for other DoD organizations would increase by about 3 percent in real terms from 2023 through 2033. That increase would result from a 9 percent increase in missile defense costs over that period. (CBO's projection incorporates the assumption that defensewide acquisition costs other than those for missile defense would grow with inflation after 2023.) Missile defense costs could be higher if the findings of the Missile Defense Review that the Administration released in January 2019 lead DoD to pursue a more expansive missile defense program than the one reflected in the

Figure 3.

Base-Budget Costs of DoD’s Acquisition Plans Under the 2019 FYDP, by Military Service

Billions of 2019 Dollars



Source: Congressional Budget Office.

DoD = Department of Defense; FYDP = Future Years Defense Program; FYDP period = 2019 through 2023, the period for which DoD has estimated its total costs.

2019 FYDP. For example, the Administration might request funding for new constellations of satellites for missile defense that are not reflected in the 2019 FYDP or in CBO’s projection.

Uncertainty in Projections of Acquisition Costs

Like the projections of O&S costs, the projections of DoD’s acquisition costs are highly uncertain. One major source of uncertainty is the possibility that DoD’s plans and their associated costs would change. Changes in acquisition plans, sometimes substantial, can result from various factors. For example, the funding constraints imposed by the Budget Control Act led DoD to curtail the acquisition spending it had planned for in earlier FYDPs. Changes in the military capability of perceived adversaries can also motivate changes in DoD’s acquisition plans. For example, DoD had no plans to purchase thousands of mine-resistant vehicles until they became necessary in the face of roadside bombs in Iraq. Similarly, DoD did not plan for programs to counter hypersonic weapons—weapons with speeds more than five times the speed of sound—until China began testing such weapons several years ago.

Uncertainty about the 2019 FYDP is heightened because DoD is in the early stages of shifting its emphasis from counterinsurgency operations to technologically advanced warfare. For instance, the Army has yet to define detailed acquisition plans (such as might be found in a Selected Acquisition Report) for any of its Big Six acquisition priorities, which are focused on combat against modern adversaries. The shift in DoD’s emphasis is also reflected in the relatively large amounts of funding requested for RDT&E in the 2019 FYDP and in the Administration’s announcements about nascent plans to field highly advanced (but not yet well-defined) systems, such as hypersonic weapons and integrated networks of independent sensors for battlefield reconnaissance.

Differences Between DoD’s Estimates of Acquisition Costs and Historical Experience

Growth in the costs of weapon programs could also cause actual acquisition costs to differ from 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 weapon

programs.¹⁰ Actual costs can be higher than early estimates for many reasons, including:

- Underestimates of costs in 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 changes during development;
- Less annual funding than anticipated, which can boost total costs by disrupting established plans and schedules and by stretching programs (and their associated overhead costs) over longer periods; and
- Unanticipated technical challenges posed by new systems.

CBO's projection of long-term acquisition costs is based on DoD's estimates of development and procurement costs and on the number of units to be purchased per 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 2019 plans, CBO prepared an alternative estimate using historical patterns of growth in DoD's costs. To prepare that alternative estimate, CBO applied cost-growth factors derived from RAND's and IDA's research to the portfolio of large weapon programs other than Navy ships in the 2019 FYDP.¹¹ For Navy ships, CBO used detailed estimates prepared for its annual analysis of the

Navy's shipbuilding plans.¹² Using the resulting cost estimates instead of DoD's cost estimates raises total projected acquisition costs by 2.4 percent over the FYDP period and 6.4 percent over the 2024–2033 period. That equates to an additional \$5 billion per year, on average, for 2019 through 2023 and an additional \$13 billion per year, on average, for 2024 through 2033. Because uncertainty about costs is greater in the more distant future, the percentage increases are more uncertain for the years beyond the FYDP period.

Projected Costs of Infrastructure

The budget for infrastructure comprises appropriations for military construction and family housing, which provide funds for building and renovating DoD's facilities. Appropriations for military construction cover facilities such as buildings, runways, and piers used by the military. Appropriations for family housing cover a portion of the housing on military installations.¹³

Infrastructure Costs Under the 2019 FYDP

DoD requested \$10.5 billion in base-budget funding for infrastructure in 2019: \$8.9 billion for military construction and \$1.6 billion for family housing. Altogether, that amount made up less than 2 percent of its total request. The amount requested in the base budget for infrastructure in 2019 was about 2 percent more (after adjusting for inflation) than the amount enacted for 2018. (The amounts enacted for military construction and family housing in 2019—\$8.8 billion and \$1.6 billion, respectively—were about the same as requested.)

Under the 2019 FYDP, annual infrastructure costs for 2020 through 2023 would be about 10 percent higher than for 2019, averaging \$11.5 billion. That total includes CBO's estimate of a small amount that would be shifted to the base budget in the OCO-to-base accounting change. Military construction costs would average \$10.2 billion per year from 2020 through 2023. Costs for family housing would average \$1.3 billion per year over that period.

10. See 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; 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, 2014), <http://tinyurl.com/y2oa4gho> (427 KB); and Obaid Younossi and others, *Is Weapon System Cost Growth Increasing? A Quantitative Assessment of Completed and Ongoing Programs*, MG-588-AF (RAND Corporation, 2007), www.rand.org/pubs/monographs/MG588.html.

11. 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.

12. See Congressional Budget Office, *An Analysis of the Navy's Fiscal Year 2019 Shipbuilding Plan* (October 2018), www.cbo.gov/publication/54564, and *How CBO Estimates the Cost of New Ships* (April 2018), www.cbo.gov/publication/53785.

13. Since the enactment of the Military Housing Privatization Initiative in 1996, the construction and operation of some military housing has been transferred to private companies.

CBO's Projection of Infrastructure Costs for 2024 Through 2033

In CBO's projection, infrastructure costs in DoD's base budget would increase steadily by 1.2 percent per year after the FYDP period, reaching \$12.7 billion in 2033. Those increases are based on CBO's projection of real growth in the cost of construction projects in the general economy.

Uncertainty in Projections of Infrastructure Costs

A point of uncertainty in 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 bases in order to streamline its allocation of resources and cut costs. The last round of BRAC was in 2005; the Congress has not supported DoD's more recent efforts to implement a new round.



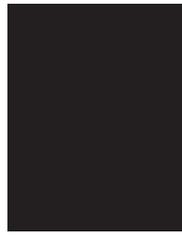
List of Tables and Figures

Tables

- | | | |
|----|--|---|
| 1. | Increases in DoD's Base-Budget Costs With Respect to the 2019 FYDP Under Alternative Policies and Projection Methods | 3 |
| 2. | Methods Underlying the Projection of DoD's Costs Under the 2019 FYDP | 7 |
| 3. | Projected Base-Budget Operation and Support Costs in Selected Years Under DoD's 2019 Plans | 8 |

Figures

- | | | |
|----|---|----|
| 1. | Historical Funding for DoD's Activities and Projected Costs Under the 2019 FYDP | 2 |
| 2. | Base-Budget Costs of Operation and Support, Acquisition, and Infrastructure Under the 2019 FYDP | 5 |
| 3. | Base-Budget Costs of DoD's Acquisition Plans Under the 2019 FYDP, by Military Service | 13 |



About This Document

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

David Arthur and F. Matthew Woodward prepared this report with guidance from David Mosher and Edward G. Keating. Elizabeth Bass, Michael Bennett, Eric J. Labs, and Adam Talaber contributed to the analysis. Jodi Capps of CBO, Michael McCord of the Institute for Defense Analyses, Brendan McGarry of the Congressional Research Service, and Lynn Williams provided helpful comments. (The assistance of external reviewers implies no responsibility for the final product, which rests solely with CBO.) Eric J. Labs fact-checked the report.

Jeffrey Kling and Robert Sunshine reviewed the 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/54948).

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

Keith Hall
Director
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