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# How CBO Projects the Long-Term Costs of the Department of Defense's Future Years Defense Program

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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. Because decisions made in the near term can affect the defense budget in the longer term, the Congressional Budget Office has projected DoD's costs for the 10 to 15 years beyond the FYDP period for each of DoD's FYDPs since 2003. CBO regularly reports those projections in its *Long-Term Implications of the Future Years Defense Program*.[1] In this report, CBO describes some of the methods it currently uses to make those projections.

CBO's projections of DoD's costs can generally be separated into analysis focusing on two types of activities.

- **Activities whose funding is driven primarily by the size of the force and by economic cost factors.** These activities are funded by appropriations for military personnel and for operation and maintenance (O&M), which CBO combines into an *operation and support* (O&S) category, and the appropriations for military construction and family housing, which CBO combines into an *infrastructure* category.
- **Activities that can have a higher degree of flexibility in their program content and therefore exhibit greater annual variability.** These activities are funded by appropriations for research, development, test, and evaluation (RDT&E) and procurement, which CBO combines into an *acquisition* category.

CBO's *Long-Term Implications of the Future Years Defense Program* reports include two projections of DoD's long-term costs.

- **FYDP case.** For this case, CBO uses DoD's estimates of costs over the FYDP period and then bases its projection for the next 10 years on the economic and cost assumptions reflected in DoD's FYDP.
- **Alternative-cost case.** Because the assumptions that underlie DoD's FYDPs have often underestimated future costs, CBO also prepares a projection that includes the same program content as the FYDP case (for example, the same number of military personnel and the same schedules and quantities for weapons purchases), but its costs during the FYDP and beyond are based on CBO's projections of economic factors (for the O&S and infrastructure categories) and on DoD's record of cost growth in weapons programs (for the acquisition category).

## Projections of Operation and Support Costs

O&S funding covers the costs of DoD's personnel and their day-to-day activities, including operational and training missions and the maintenance of equipment and facilities. CBO's long-term projections of defense plans present O&S costs in two ways (see Figure 1). In the first, CBO enumerates the cost components found in the military personnel and O&M appropriation titles. In the second, CBO groups the O&S cost components into three categories related to what a cost component does, regardless of how funds for that cost component are budgeted or appropriated.

CBO's O&S categories are as follows:

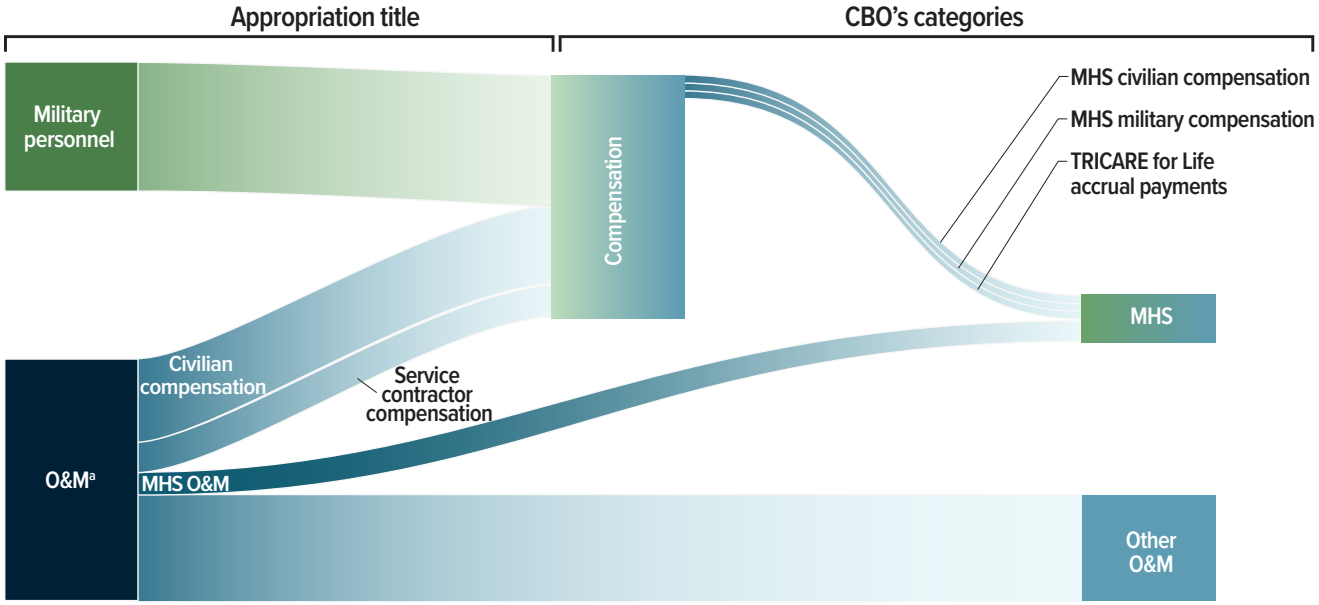
- **Compensation costs.** This category includes cash pay, noncash benefits, and accrual payments for retirement benefits for military personnel. It also

1. CBO's recurring *Long-Term Implications of the Future Years Defense Program* reports are available at www.cbo.gov/about/products/major-recurring-reports#6. DoD typically does not provide a five-year FYDP for the first budget request after a new President takes office. In such years, CBO's report covers only 11 years: the budget year plus a 10-year projection period.

Notes: Unless this report indicates otherwise, all years referred to are federal fiscal years, which run from October 1 to September 30 and are designated by the calendar year in which they end. Numbers in the text and tables may not add up to totals because of rounding.

Figure 1.

## Funding for Operation and Support, by Appropriation Title and in CBO's Categories




Data source: Congressional Budget Office.

Funding for operation and support is the sum of DoD's appropriations for military personnel, O&M, and revolving and management funds. The height of the bars is illustrative, representing the relative proportions for funding for each category. Values underlying the figure are from DoD's budget request for 2025.

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

a. 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.

includes compensation for civilian employees (pay and benefits) and costs to hire service contractors that assist with training, maintenance, and basic administrative needs. Compensation costs fall under the appropriations for military personnel and O&M (for civilian employees and contractors).

- **Military Health System (MHS) costs.** The MHS provides medical services to military personnel, including both peacetime medical care and the treatment of combat injuries. In addition, it provides the noncash benefit of health care for dependents of military personnel and the deferred benefit of health care for military retirees. MHS costs also fall under the appropriations for military personnel and O&M.
- **Other O&M costs.** Other O&M costs are the remainder of O&M appropriations after subtracting civilian compensation, contractor compensation, and MHS costs. This catchall category covers costs such as those for base operations, fuel, equipment maintenance, spare parts, and transportation.

The methods used to project the components of costs in CBO's categories are described in the sections that follow.

Each of the cost components is included in only one of the appropriation titles, but a cost component may appear in more than one of CBO's categories. Consequently, there is some overlap between two of CBO's three O&S categories that must be accounted for when reporting DoD's total O&S costs. The compensation category includes all components in the military personnel appropriation and civilian pay costs in the O&M appropriation. Costs in the MHS category are mostly covered with O&M funding, but some components are also included in the compensation category—specifically, costs to compensate uniformed and civilian medical personnel and to provide health care for military retirees (including the TRICARE for Life supplemental Medicare program). Costs in the other O&M category are funded entirely by the O&M appropriation. This report describes CBO's method of estimating each

component of DoD's costs only once but indicates when a cost component contributes to more than one category.

For each of the cost components, CBO projects two cases for O&S—the FYDP case and the alternative-cost case. The FYDP case takes DoD's plan exactly as programmed over the FYDP period and projects costs for an additional 10 years. For those calculations, CBO starts with DoD's estimated costs for the final year of the FYDP (essentially adopting DoD's assumptions about economic conditions during the FYDP period) and then uses CBO's economic forecasts to project future costs. In the alternative-cost case, CBO applies its own economic forecasts to DoD's plans, starting in the first year of the FYDP.

In most years, CBO's projections include only cost growth resulting from future economic changes; the projections incorporate the assumption that the program's size or content (or both) remains unchanged after the FYDP.[2] Rarely, when DoD explicitly states that end strength will grow (or shrink) in the years after the FYDP, CBO scales its projection of O&S costs by the anticipated change in the size of the force.[3]

## Methods Used to Project Compensation Costs

The compensation category in CBO's analysis of O&S costs includes three types of personnel: military service members, federal civilian employees, and service contractors. Each type has a different mix of pay and other benefits. Although compensation costs for the three types of personnel are related, decisions affecting them are made separately. Therefore, CBO uses different methods to project each type's costs over time.

**Compensation of Military Service Members.** The military personnel appropriation is composed of funding to compensate and manage military personnel, spanning both full-time (active component) and part-time (reserve component) forces. The military personnel appropriation has ranged from 20 percent to 25 percent of DoD's total budget over the past 20 years. To project military compensation costs, CBO divides the military personnel appropriation into five components that align with its estimates of inflation in various sectors of the economy: basic pay, basic allowance for housing, other allowances, nonpay and other costs, and retiree health care (TRICARE for Life). For its projection of the FYDP case, CBO starts with DoD's estimate of costs for the last year of the FYDP and projects each component on the basis of its associated price index (see Table 1). For its projection of the alternative-cost case, CBO applies its own price indexes starting with the first year of the FYDP.

For example, for basic pay in the FYDP case, cost growth is based on annual pay raises published by DoD during the first five years and on CBO's projection of the employment cost index (ECI) for the subsequent 10 years.[4] In the alternative-cost case, the pay raises follow the ECI starting in the first year of the FYDP. Therefore, the difference between the two cases hinges on the differences between DoD's planned pay raises and CBO's projections, which are based on the ECI. Because DoD's plans for pay raises over the FYDP period are usually lower than CBO's projections of the ECI, basic pay costs are usually higher in the alternative-cost case.

CBO uses the same approach for the other four components of military compensation, using the cost index associated with each: the consumer price index for urban residential rents for the basic allowance for housing, the personal consumption expenditures price index for other allowances, estimates from DoD's actuary for retiree health care, and the gross domestic product (GDP) price index for nonpay and other costs.

A key simplification in CBO's estimate is the assumption that military compensation funding after the FYDP period will be distributed among each component of military compensation in the same way that it is in the

2. Most of the data for CBO's projections come from DoD's budget request documentation, including *National Defense Budget Estimates* (known as the "Green Book"), the *Operation and Maintenance Overview*, the M-1 summary tables, the O-1 summary tables, and the FYDP. CBO uses the totals in the Green Book as a control value to check the output of all the estimates. FYDP data are required for two purposes: to divide costs into the health care categories for the MHS projection and to provide more detailed end-strength values for military (active and reserve) personnel, active guard and reserve personnel, and civilian personnel. See Office of the Under Secretary of Defense (Comptroller), "DoD Budget Request" (accessed July 10, 2024), https://comptroller.defense.gov/budget-materials.

3. End strength is the number of military personnel on the rolls at the end of a fiscal year.

4. The Bureau of Labor Statistics publishes the employment cost index for wages and salaries of private industry workers for past years. CBO uses its own analyses of the economy to prepare projections of those indexes for future years. CBO's historical data and economic projections for June 2024 are available at www.cbo.gov/data/budget-economic-data#11.

Table 1.

## Factors Used in CBO's Projection of Operation and Support Cost Components

| O&S cost component | Basis for CBO's projection | CBO's category |
|---|---|---|
| **Military personnel appropriation** | | |
| Military basic pay | Employment cost index | Compensation costs; subset for uniformed health care providers also included in the MHS |
| Military housing allowance | Consumer price index for urban residential rents | Compensation costs; subset for uniformed health care providers also included in the MHS |
| Other allowances for service members | Price index for personal consumption expenditures | Compensation costs; subset for uniformed health care providers also included in the MHS |
| Nonpay and other costs for military service members | Gross domestic product price index | Compensation costs; subset for uniformed health care providers also included in the MHS |
| Retiree health care (TRICARE for Life) | Estimates from DoD's actuary | Compensation and the MHS |
| **Operation and maintenance appropriation** | | |
| Federal civilian employee compensation | Employment cost index | Compensation costs; subset for civilian health care providers also included in the MHS |
| Service contractor compensation | Employment cost index | Compensation costs |
| Direct care in the MHS | CBO's projection of growth in health care costs | MHS |
| Purchased care in the MHS | CBO's projection of growth in health care costs | MHS |
| Pharmaceuticals | CBO's projection of growth in prescription drug costs | MHS |
| Other O&M | DoD's historical cost growth | Other O&M |

Data source: Congressional Budget Office.

Funding for O&S is the sum of DoD's appropriations for military personnel, O&M, and revolving and management funds.

DoD = Department of Defense; MHS = Military Health System; O&M = operation and maintenance; O&S = operation and support.

final year of the FYDP (for the FYDP case) or the first year of the FYDP (for the alternative-cost case). Of course, future policy actions taken by the Congress could change that distribution.

CBO's projections of military compensation costs are affected by two additional factors specific to basic pay. First, military pay raises are set by public law so that if neither the President nor the Congress acts, pay will increase automatically. Under 37 U.S.C. § 1009 (adjustments of monthly basic pay), the percentage increase in basic pay for a given calendar year is equal to the percentage increase in the ECI from the third calendar quarter three years before the effective date of the pay raise to the third calendar quarter two years before the effective date. The values of the ECI cited in public law are reported by the Bureau of Labor Statistics.[5] Generally,

5. For a general explanation of the ECI, see Bureau of Labor Statistics, "Employment Cost Index" (accessed July 11, 2024), www.bls.gov/eci/home.htm. The specific ECI used in this report is the quarterly index for wages and salaries, for private industry workers, by occupation and industry series (not seasonally adjusted). For the specific ECI tables, see Bureau of Labor Statistics, "Historical Datasets: Continuous Data" (accessed July 11, 2024), www.bls.gov/eci/tables.htm.

the President proposes a pay raise in the budget request, but the final value is up to the Congress.

A second factor affecting CBO's projections is that military (and civilian) pay raises occur on a calendar year basis, but FYDP costs are reported on a fiscal year basis.[6] To align calendar year pay raises with fiscal year budgets, CBO incorporates a time-weighted average:

$$r = \frac{1}{4}(r_0) + \frac{3}{4}(r_1),$$

where $r_0$ is the pay raise from the previous calendar year and $r_1$ is the pay raise in January, the second quarter of the fiscal year for which the funding is being requested. That equation yields the value of a pay raise in fiscal years, which CBO uses to estimate cost growth in basic pay.

**Compensation of Federal Civilian Employees.** The method CBO uses to project the costs of compensation for DoD's federal civilian employees is generally similar to the agency's method for projecting military compensation: CBO's FYDP case is based on DoD's plans for the FYDP period and CBO's economic projections for the subsequent 10 years, and CBO's alternative-cost case is based on CBO's economic projections starting with the first year of the FYDP. However, the details of the calculations for civilian compensation differ from those for military compensation in several important ways.

*Different Default Pay Raises.* Default pay raises for federal civilian employees differ from those for military personnel. Military and civilian pay raises are both linked to the ECI by public law. However, automatic raises for civilian employees under 5 U.S.C. § 5303 (annual adjustment to pay schedules) are smaller; the percentage increase in base pay for a given calendar year is equal to one-half of 1 percentage point less than the percentage increase in the ECI for private-sector wages and salaries unless the President or the Congress acts differently. (For example, in some years military and civilian pay raises are the same under the concept of "pay parity.") Although the default increase in civilian base pay is half a percentage point less than that for military basic pay, increases can also be made in civilian pay in specific localities under 5 U.S.C. § 5304 (locality-based comparability payments) to account for differences in the cost of living around the country. The civilian pay raise plans reported in DoD's budget documentation include both the annual adjustment to base pay and an average value of the locality-based comparability payments that correspond to the geographic distribution of the duty stations of DoD's civilian employees.[7]

*Projections Based on the ECI.* Projected increases in compensation costs for federal civilian employees are based only on the ECI. Although military compensation includes several benefits that are unique to the military and that can be changed independently (for example, the basic allowance for housing), CBO bases its projection of compensation increases for federal civilian employees on the ECI alone. The effects of changes in the cost of other benefits for civilians (such as health care) are included in the ECI.

*Estimated Workforce Size.* The size of the federal civilian workforce funded in O&M must be estimated. Civilian compensation and personnel are not tracked in DoD's budget with the same level of detail as military compensation and personnel. Military compensation costs are specified by service and by component (active duty, reserves, or National Guard). For civilian compensation costs, DoD provides estimates of the total but does not specify the amounts in O&M versus the amounts funded by other appropriations.[8] Although the overwhelming majority of DoD's civilians are funded through the O&M appropriation, some civilian compensation costs are included in other appropriations, primarily RDT&E, and in revolving and management funds. CBO includes the revolving and management funds with O&M because the amounts are small and they pay for activities similar to ones funded in O&M. CBO does not track civilian compensation costs in procurement and RDT&E separately, but they are are captured as an inherent part of the costs estimated for acquisition programs.

Although DoD does not report civilian compensation costs by appropriation, it does provide separate estimates of civilian full-time equivalents (FTEs).[9] CBO

6. For example, see DoD's pay raise assumptions for 2025 in Office of the Under Secretary of Defense (Comptroller), *National Defense Budget Estimates for FY 2025* (Green Book) (April 2024), Table 5-12, https://comptroller.defense.gov/budget-materials.

7. Office of the Under Secretary of Defense (Comptroller), *National Defense Budget Estimates for FY 2025* (Green Book) (April 2024), Table 5-12, https://comptroller.defense.gov/budget-materials.

8. Ibid., Table 6-14.

9. Office of the Under Secretary of Defense (Comptroller), *Operation and Maintenance Overview* (accessed July 10, 2024), p. 146, https://comptroller.defense.gov/budget-materials.

estimates the fraction of the total civilian compensation budget in O&M by using the ratio of civilian FTEs in O&M to total civilian FTEs reported in DoD's budget justification documents; that fraction is typically about 95 percent.

**Compensation of Service Contractors.** Service contracts are awarded expressly to augment DoD's military and civilian workforces. Contractor compensation is the cost that private companies charge DoD under service contracts for the people who perform that work, not what the workers themselves earn.[10] Contractors 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. (Service contractors in this category are distinct from people employed by companies to manufacture weapons or deliver other goods to DoD.)[11]

Like CBO's estimate for the compensation of federal civilian employees, CBO's estimate for service contractor compensation depends on three elements: the estimated compensation rate per contractor, the number of contract workers, and projected pay raises. Pay raises follow CBO's estimate of the ECI, and any increase in cost due to a pay raise is expected to be passed directly on to DoD. Although DoD provides information about military and civilian compensation, it does not provide summary data about the size or compensation of the contractor workforce.[12]

To construct an estimate, CBO uses an assortment of past and current reports published with the President's budget. CBO starts with the total cost of service contracts, which is reported annually in object class analysis code 20 (contractual services and supplies) in the President's budget.[13] But the subset of those costs that are spent on compensation is not reported. To estimate compensation, CBO developed a ratio of FTEs to total contract dollars that it derives from the Army's Enterprise Contractor Manpower Reporting Application (ECMRA) for 2016.[14] For service contracts, the ECMRA data provide the number of FTEs on contract and the components that make up the total cost: direct compensation, indirect compensation, and noncompensation costs. CBO estimates the annual cost of contractor compensation using the annual service contract cost and a historical compensation rate derived from the ECMRA data.[15]

## Methods Used to Project Costs of the Military Health System

The Military Health System provides health care for military personnel and their families and for military retirees. The costs of the MHS appear in both the O&M and the military personnel appropriations. CBO's projections of costs in the MHS are determined by two factors: changes in the size of the beneficiary population, and the growth in average program cost per beneficiary due to growth in medical costs in the U.S. economy.

10. Alexandra G. Neenan, *Defense Primer: Department of Defense Contractors*, Report IF10600, version 17 (Congressional Research Service, June 6, 2024), https://tinyurl.com/4ze7snk7.

11. For more on the compensation of service contractors, see Testimony of David E. Mosher, Director of National Security Analysis, Congressional Budget Office, before the Subcommittee on Personnel of the Senate Committee on Armed Services, *Approaches to Reducing the Department of Defense's Compensation Costs* (July 26, 2023), www.cbo.gov/publication/59375. For a full description of the types of contractors, see Alexandra G. Neenan, *Defense Primer: Department of Defense Contractors*, Report IF10600, version 17 (Congressional Research Service, June 6, 2024), https://tinyurl.com/4ze7snk7.

12. Shortcomings in DoD's contractor data are well identified. For example, see Timothy J. DiNapoli, Government Accountability Office, letter to Congressional committees, *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 22, 2021), www.gao.gov/assets/gao-21-267r.pdf.

13. See, for example, Office of Management and Budget, Executive Office of the President, *Object Class Analysis: Budget of the U.S. Government, Fiscal Year 2025* (March 11, 2024), p. 9, https://tinyurl.com/7fn2732c.

14. Before 2016, the Army used its ECMRA data to meet the inventory of contracts for services (ICS) reporting requirements. DoD eventually settled on using the System for Award Management (SAM) data to meet the ICS reporting requirements, and the Army stopped publishing its ECMRA data. Because the SAM data do not contain the same level of detail—in particular, they do not provide a measure of the cost per contractor FTE or a breakdown of contract labor and nonlabor costs—CBO bases its contract labor cost estimates on the Army's 2015 data and uses the gross domestic product price index to adjust total contract costs for inflation and the ECI to adjust contract labor rates for inflation. For more details, see the Army's handbook, *Contractor Manpower Reporting Application* (July 2016), https://tinyurl.com/bdhv96fa.

15. CBO's estimates of the size of the service contractor workforce are based on data from the Office of Management and Budget. For the 2024 budget, CBO used *Object Class Analysis: Budget of the United States Government, Fiscal Year 2024* (March 2023), p. 9, https://tinyurl.com/4wejr7zh.

**Size of the MHS Beneficiary Population.** According to DoD, 9.3 million people were eligible for medical care from the MHS as of 2023. Eligible beneficiaries included about 3.8 million military personnel and their family members and 5.5 million military retirees and their family members. CBO uses population projections from DoD's TRICARE report to estimate changes in the number of eligible beneficiaries over time.[16]

**Cost per MHS Beneficiary.** CBO's projection of MHS costs includes five components:

- *Direct care* covers the cost of government health care facilities and their civilian employees. To project direct care costs per beneficiary in the FYDP case, CBO uses DoD's estimate for the five years of the FYDP period and then increases those costs according to CBO's estimate of growth in medical care costs for the economy as a whole over the following 10 years. For the alternative-cost case, CBO applies its growth rates for medical care costs starting in the first year of the FYDP.
- *Purchased care* covers the cost of private-sector health care providers that DoD contracts with for additional health care services. CBO uses the same method that it uses for direct care to project those costs.
- *Pharmaceuticals* cover the cost of prescription medications for beneficiaries. To project pharmaceutical costs per beneficiary in the FYDP case, CBO uses DoD's estimate for the five years of the FYDP period and increases those costs according to CBO's estimate of growth in prescription drug prices for the economy as a whole over the following 10 years. For the alternative-cost case, CBO applies its growth rate for prescription drug costs starting in the first year of the FYDP.
- *Military personnel* covers compensation for uniformed health care providers. In CBO's projections, military personnel costs in the MHS grow at the same rate as those costs for DoD as a whole.
- *Accrual payments for retiree health care* cover the Medicare supplement for retired military personnel called TRICARE for Life that fills coverage gaps and provides lower out-of-pocket costs for military retirees age 65 or older to make their coverage more consistent with that for TRICARE for retirees under age 65.[17] CBO's cost projections of the TRICARE for Life program (identified as the Medicare-Eligible Retiree Health Care Fund in the budget) change according to estimates from DoD's actuary.[18]

The military personnel and accrual payments for retiree health care are also included in miliary compensation costs, and civilian compensation costs in the MHS included in the direct care component are also included in civilian compensation costs. Although CBO reports those amounts in the MHS category to provide a complete picture of DoD's health care costs, to avoid double counting they are not added to the calculation of DoD's overall O&S costs.

### Method Used to Project Costs of Other O&M

Other O&M is defined as total O&M funding minus the sum of civilian compensation, contractor compensation, and the O&M portion of MHS funding. CBO's projection of other O&M funding is based on historical real growth (that is, growth adjusted to remove the effects of inflation) in the base budget component of other O&M funding, where the base budget is defined as total funding minus any additional emergency funding, supplemental funding, or funding for overseas contingency operations.[19]

To remove the effects of year-to-year changes in the prices of all goods and services produced in the United States (including those exported to other countries), CBO divides historical funding data for other O&M (in nominal dollars, without adjusting for inflation) by the GDP price index. To ensure that CBO's projection of other O&M costs is not unduly influenced by years with uncharacteristically large changes in the size of the military force, CBO then divides the historical data by active component end strength for each year. The result is the

16. Military Healthcare System, "Annual Evaluation of the TRICARE Program" (accessed July 10, 2024), https://tinyurl.com/42c6wahe.

17. In the budget, the Medicare-Eligible Retiree Health Care Fund accrues to pay for the TRICARE for Life program. For more information about the Military Health System, see Congressional Budget Office, *Approaches to Changing Military Health Care* (October 2017), www.cbo.gov/publication/53137.

18. Department of Defense, Office of the Actuary, *Valuation of the Medicare-Eligible Retiree Health Care Fund: September 30, 2022* (February 2024), https://actuary.defense.gov.

19. For an explanation of base budget and other funding, see Congressional Budget Office, *Funding for Overseas Contingency Operations and Its Impact on Defense Spending* (October 2018), www.cbo.gov/publication/54219.

real other O&M cost per service member for each year. That time series is then fit with a line, the slope of which represents the past yearly real growth (per service member) for other O&M funding. CBO uses that historical real growth rate to project future funding.

CBO's projection of the FYDP case uses DoD's estimates of other O&M for the first five years, and the historical growth rate is applied to the 10 years beyond the FYDP period. In the alternative-cost case, the historical rate is applied starting with the first year of the FYDP to show how costs would change if O&M cost growth followed historical patterns over the entire 15-year projection period.

## Projections of Infrastructure Costs

Infrastructure funding supports the purchase and modernization of government-owned real property and military housing units. Infrastructure funding has averaged 2.4 percent of DoD's total budget over the past 20 years. The budget for infrastructure comprises appropriations for military construction and family housing, which provide funds to build and conduct major renovations of 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 DoD-operated housing on military bases.[20]

The methods used to project the costs of military construction and family housing rely on a combination of cost-growth estimates and historical averages of funding. Because appropriations for infrastructure programs vary widely, CBO's estimates rely on historical averages starting with 1980 and ending with funding reported two fiscal years before the current submission of the President's budget.

CBO's projection of military construction costs also includes an estimate of the cost changes (both increases and decreases) that could result from base reduction, realignment, and closure (BRAC)—DoD's process for closing and consolidating military bases with the goal of reducing costs. BRAC occurs episodically, whenever the Congress authorizes a new round of BRAC over the course of a FYDP. It represents the greatest uncertainty in infrastructure costs. The last round of BRAC began in 2005, and the Congress has not approved a new round since then.[21] Therefore, the only BRAC costs recently included in CBO's projections are the long-term BRAC maintenance costs, which, by CBO's estimate, grow with the GDP price index.

CBO's projections of infrastructure costs include the same two cases that CBO projects for the other parts of DoD's budget: the FYDP case and the alternative-cost case. In the FYDP case, costs for military construction and family housing match DoD's estimates for the first five years. For the remaining 10 years of the projection period, military construction costs grow with CBO's projection of future construction costs in the economy, and costs for family housing grow with CBO's projection of the growth in residential rents. In the alternative-cost case, military construction and family housing costs are both projected to grow with those two economic rates beginning in the first year of the FYDP.

## Projections of Acquisition Costs

Acquisition is primarily focused on ensuring that the military has enough equipment and that the performance and quality of that equipment are sufficient for units to accomplish their missions. 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. It comprises the appropriations for RDT&E and procurement. Acquisition costs have accounted for about one-third of DoD's annual funding, on average, over the past 20 years. Procurement has accounted for about 60 percent and RDT&E about 40 percent of DoD's acquisition funding over that time.

Typically, more than two-thirds of the acquisition costs in CBO's projections result from analyses of individual line items in DoD's budget. CBO bases its projections for individual programs on policies either stated or implied in planning documents published by

20. Since 1996, when lawmakers enacted the Military Housing Privatization Initiative, the operation and maintenance of most military housing has been transferred to private companies. In DoD's budget, most costs for that privatized housing have been shifted from the family housing appropriation to the housing allowances found in the military personnel appropriation. See Department of Defense, *Agency Financial Report* (November 2023), p. 221, https://tinyurl.com/2uwbsmj6.

21. The Congress often prohibits spending on additional rounds of BRAC, even when they have not been requested. See, for example, the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92), which was enacted in December 2019.

DoD, on the costs of earlier programs, or on historical trends. The other one-third of CBO's projected costs of acquisition—those primarily for smaller procurement programs and general research and development activities—is based on historical relationships between acquisition efforts for which CBO makes line-item projections and the acquisition budget as a whole.

As with the O&S and infrastructure parts of DoD's budget, CBO projects two cases for acquisition—the FYDP case and the alternative-cost case. For the FYDP case, CBO bases cost projections as much as possible on DoD's estimates. In the alternative-cost case, schedule projections are the same as in the FYDP case, but CBO applies growth factors to the costs in the FYDP case that reflect DoD's experience with cost growth in acquisition programs.

## The Structure of DoD's Acquisition Budgets

The detailed plans described in budget justification materials (known as the "J-Books") that DoD provides to the Congress with its annual budget request serve as the starting point for CBO's projections of DoD's acquisition plans beyond the FYDP period.[22] The acquisition J-Books reflect the plans in the FYDP and are made up of budget line items to align acquisition programs with appropriation accounts. By contrast, the FYDP is composed of program elements organized by major force programs to relate resources to missions. A single program element may span several appropriation accounts; a single budget line item is associated with only one appropriation account.

The acquisition J-Books describe DoD's plans at the line-item level. Line items can describe single programs; for example, line item 6 in Army missile procurement for fiscal year 2024 was for the Precision Strike Missile. Line items can also describe collections of related efforts; for example, line item 22 in Air Force aircraft procurement for 2024 includes 15 subprograms related to modernizing and sustaining the B-52 bomber. For all of DoD (including the three military departments and defense-wide activities), there are roughly 1,100 procurement line items and a similar number of RDT&E line items.

CBO examines each of the acquisition line items in DoD's J-Books and determines whether the line item is large or significant enough to prepare an individual projection or small enough to include its cost in an aggregate projection. CBO's analysis of the 2024 FYDP included about 500 individual projections. Those projections include about 25 percent of the acquisition line items but about 70 percent of total acquisition costs.

## Methods Used for Line-by-Line Projections

CBO's line-by-line projections for acquisition include large, specific programs (such as a new type of aircraft) and groups of small but related programs (such as sustainment activities for a type of aircraft that is already in the force). The method that CBO uses to project the cost of a particular part of DoD's acquisition plans depends on the amount of information available; those programs can be grouped into four general types:

- Programs with detailed long-term plans,
- Programs with articulated plans but limited details,
- Programs with no articulated plans but that CBO anticipates will be needed to maintain planned force structures, and
- Groups of smaller but related programs or activities.

CBO updates its projections annually as more information becomes available with each budget request. Sometimes changes in a program can be substantial. For example, the Air Force's plans for a new long-range strike aircraft changed several times between 2003 (the first year of CBO's long-term projection) and 2016, when planning settled on the schedule and capabilities for what would become the B-21 Raider. Similarly, a replacement for the Army's OH-58D Kiowa Warrior scout helicopter has been in and out of Army plans several times.[23] The projection method that CBO uses can also evolve if more detailed information becomes available.

**Programs With Detailed Long-Term Plans.** CBO bases its program-by-program projections not only on the FYDP but also on detailed plans that the services issue for some programs. Programs with detailed long-term plans typically include those for which the characteristics of the system being purchased are well defined and for which DoD has made information available about the cost, schedule, and purchase quantities it anticipates. CBO's projections adhere to long-term plans published by DoD when available. Examples of published plans with detailed cost and schedule information include Selected Acquisition Reports (SARs) and the Navy's annual 30-year shipbuilding plan. SARs summarize the latest estimates of cost, schedule, and performance

22. For DoD's budget materials, see Office of the Under Secretary of Defense (Comptroller), "DoD Budget Request" (accessed July 10, 2024), https://comptroller.defense.gov/budget-materials.

23. In February 2024, the Army announced that it was canceling the latest version of that program.

for programs that exceed the cost threshold for Major Defense Acquisition Programs.[24] The 30-year shipbuilding plan includes annual quantities and costs for new ship construction. If the long-term plans provided by DoD do not include year-by-year cost estimates, CBO uses historical analysis to estimate annual RDT&E expenditures and production rates for SAR programs by distributing total costs on the basis of annual expenditures for the system that have already been appropriated and on the schedules of similar systems in the past.

**Programs With Articulated Plans but Limited Details.** If detailed programmatic information is not available, CBO may base its estimates on more general descriptions that the services have provided about schedules and costs for development and procurement. DoD has not released full details about costs or schedules for many significant systems that are currently in development. Those systems may be in the early stages of development before a final design has been selected, or DoD may be treating schedules and costs as sensitive information. However, more general information is often available in official documents or public statements of DoD's officials. Examples include testimony to the Congress by senior DoD officials, explanatory text included in budget documentation, program budget briefings, and other DoD documents, such as the 30-year aviation plan and the Navy's A-11 aviation force structure projections. Such sources provide a great deal of information about DoD's objectives but often do not provide cost and schedule information for individual systems. In those cases, CBO develops projections by combining the information that is available for the new system with detailed program characteristics of similar systems in the past. As a program matures, CBO may replace those types of projections with projections that are based on more detailed DoD documents such as SARs.

The Future Long-Range Assault Aircraft (FLRAA) that the Army is developing to replace its UH-60 Black Hawk helicopters provides an example of how CBO projects costs when detailed plans are not available. In the early 2020s, the Army had stated its plans to field the FLRAA by the early 2030s and had provided range, speed, and payload objectives. Official cost and schedule estimates could not be made until a final design was selected, however.

In its earliest estimates of FLRAA costs, CBO used the MV-22 Osprey tilt-rotor aircraft as the basis for its projection because the capabilities of the MV-22 are akin to those the Army said it was pursuing for the FLRAA. CBO's steps from its starting point with the actual MV-22 data to its early FLRAA projections included modifying the schedule and costs to eliminate delays in development unique to the MV-22, to reflect the larger quantities of the FLRAA needed by the Army, and to account for differences in payload capacity, speed, and range requirements between the MV-22 and the FLRAA. (Several years later the Army did, indeed, choose a tilt-rotor design—the V-280 Valor—over a competing coaxial rotor design.) CBO annually updates its projections for the FLRAA as the program progresses and the Army makes more information available.

**Programs With No Articulated Plans.** CBO's analysis also includes systems that DoD has not yet begun to publicly discuss replacing but that will be needed at some point over CBO's 15-year projection period if DoD is to maintain the current size of the force. CBO's projections reflect the assumption that DoD will develop and purchase a generally similar but more modern replacement for any major weapon system that is expected to reach the end of its service life before the end of CBO's projection period.

For example, the oldest C-17 transport aircraft in the Air Force's fleet were delivered in the early 1990s and will be more than 40 years old in the 2030s. Recognizing that, CBO began including costs to develop a C-17 replacement near the end of its projection of the 2023 FYDP (after 2035). The following year, Air Force officials began discussing early efforts aimed at fielding a new airlifter, and CBO adjusted its projection of the 2024 FYDP accordingly. The absence of details about that new aircraft led CBO to base its estimate of the cost of the replacement aircraft on the cost of the C-17. However, since then, the Air Force has indicated that future airlifters may include capabilities that are not present in today's fleet and that could lead to higher costs.[25] CBO will update its projection when further details become available. Because the timeline for developing and fielding new systems is flexible, particularly for systems expected in the distant future, CBO tailors the schedules of those notional programs to smooth total annual acquisition costs as much as possible.

24. The Major Defense Acquisition Program cost threshold is an estimated eventual total expenditure for RDT&E of more than $300 million (in 1990 dollars) or an eventual total expenditure for procurement, including all planned increments or spirals, of more than $1.8 billion (also in 1990 dollars).

25. Brian Everstine, "USAF Accelerates Plans for Next-Generation Airlifter and Tanker," *Aviation Week Network* (November 2, 2022), https://tinyurl.com/2f5htk62.

**Groups of Smaller but Related Programs or Activities.** CBO uses a variety of approaches to project the costs of line items that include more than one activity or program in a particular area. Examples include the following:

- Projections based on growth in the ECI for activities likely to be dominated by compensation costs (such as basic research);
- Projections based on the estimated magnitude of an activity (such as sustainment of an existing type of aircraft, which could increase if substantial modifications are anticipated or decrease if that fleet is expected to shrink or be retired); and
- Projections based on the projections of other line items (such as scaling the costs of an aircraft's initial spare parts with the costs for new aircraft).

More than one method might be used to project costs for a single line item. For example, for the 15 subprograms under B-52 sustainment noted earlier, CBO prepared a detailed estimate for the large effort to replace the bombers' engines but based other projected costs on more typical historical sustainment costs.

### Method Used for Aggregate Projections of Remaining Line Items

Line items for which CBO does not prepare individual projections—primarily those for smaller procurement programs and general research and development activities—usually make up about one-third of DoD's procurement and RDT&E costs. CBO prepares aggregate projections of the costs of those programs, which it calls "minor acquisition," for the 10 years beyond the FYDP period.[26] The aggregate projections of minor acquisition beyond the FYDP period are based on the fraction of total acquisition costs that those programs account for during the FYDP period.

CBO prepares a projection of minor procurement costs for each military department. To provide further insight into which types of systems are affecting acquisition costs beyond the FYDP period, CBO separates its estimates of minor acquisition costs into categories that roughly align with DoD's procurement and RDT&E appropriation accounts (see Table 2). Costs for procurement are grouped into several categories that are based on the type of system, and RDT&E is grouped into a single category.

CBO's projections of the costs of aggregated line items in each category incorporate the assumption that the ratio of minor acquisition costs to the total cost of the individually projected line items will be the same beyond the FYDP period as DoD's estimate for the years in the FYDP. For each system category (such as aircraft), CBO determines that ratio for the five-year FYDP period and calculates the 10-year total for minor acquisition beyond the FYDP on the basis of the total cost of the line-item projections. The 10-year total is distributed beyond the FYDP by starting with the amount in the final year of the FYDP and increasing it linearly with time. That profile is consistent with the general trend of increasing costs that DoD has long experienced. (Minor acquisition costs could decrease, but that has not occurred since CBO adopted this method of projection.) Averaging over 10 years also captures DoD's flexibility to shift the timing of smaller programs to smooth year-to-year costs. Calculating minor acquisition costs on a yearly basis would result in choppier projections because years with higher costs for the individual line-item projections would also have higher minor acquisition costs.

### Methods Used for Estimates in the Alternative-Cost Case

In addition to preparing a projection that is based as much as possible on DoD's cost estimates, in its alternative-cost case, CBO assesses how growth in the costs of weapons programs could cause acquisition costs to differ from those 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.[27] Actual costs could be higher than early estimates for many reasons:

- Overly optimistic expectations about the costs of new systems among DoD and its contractors;
- Changes in economic factors, such as the costs of labor and raw materials;
- Changes in performance requirements, which can necessitate costly design modifications during development;

26. The term "minor" is not intended to reflect the importance of the programs that CBO projects in aggregate.

27. 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), www.acq.osd.mil/asda/ae/ada/docs/arc/ida-p5126.pdf; 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; 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.

Table 2.

## CBO's Acquisition Categories and the Department of Defense's Corresponding Accounts

| CBO's category | Department of Defense's account |
|---|---|
| | **Department of the Army** |
| Combat and support vehicles | Procurement of weapons and tracked combat vehicles, Army<br>Other procurement, Army; BA-1: tactical and support vehicles |
| Aircraft | Procurement of aircraft, Army |
| Missiles and munitions | Missile procurement, Army<br>Procurement of ammunition, Army |
| Other procurement | Other procurement, Army (excluding BA-1) |
| RDT&E | RDT&E, Army |
| | **Department of the Navy** |
| Ships | Shipbuilding and conversion, Navy<br>Other procurement, Navy; BA-1: ships support equipment |
| Aircraft | Aircraft procurement, Navy |
| Missiles and munitions | Weapons procurement, Navy<br>Procurement of ammunition, Navy and Marine Corps<br>Procurement, Marine Corps; BA-3: guided missiles and equipment |
| Marine Corps | Procurement, Marine Corps (excluding BA-3) |
| Other procurement | Other procurement, Navy (excluding BA-1) |
| RDT&E | RDT&E, Navy |
| | **Department of the Air Force** |
| Aircraft | Aircraft procurement, Air Force |
| Missiles and munitions | Missile procurement, Air Force<br>Procurement of ammunition, Air Force |
| Space systems | Procurement, Space Force |
| Other procurement | Other procurement, Air Force |
| RDT&E | RDT&E, Air Force<br>RDT&E, Space Force |
| | **Defensewide activities** |
| Missile Defense Agency | Procurement, defensewide<br>RDT&E, defensewide |
| Other defensewide agencies | Procurement, defensewide<br>RDT&E, defensewide |

Data source: Congressional Budget Office.

BA = budget activity; RDT&E = research, development, test, and evaluation.

- 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 prepares an alternative estimate for the costs of DoD's acquisition plans that reflects the agency's assessment of how those costs might differ if DoD's pattern of cost growth continued. For most of DoD's acquisition portfolio, CBO has used findings from the research literature that analyzed cost growth in previous large (major) defense programs. Relying on that research, CBO has developed a method to estimate cost growth in DoD's acquisition portfolio as a whole. Because the historical cost-growth data that underpin that method represent averages for major programs over many systems, CBO reports growth only for DoD's entire portfolio of

major weapon systems, not for each system. The phases of DoD's acquisition programs, historical research into cost growth experienced by past programs, and how CBO uses that research to provide an estimate of future cost growth are described in the following sections.

CBO does not use its historical cost-growth method for all parts of DoD's acquisition plans. In CBO's analysis of some acquisition programs (mostly Navy ships), the agency has developed its own detailed estimates of likely cost growth. In such cases, CBO has used those detailed estimates in place of an approach that would have relied instead on the average historical cost growth within a broad class of related programs.[28] Although CBO has developed history-based estimates of cost growth that rely on historical costs of completed programs, the agency does not address potential cost growth in smaller acquisition programs. Instead, CBO anticipates that DoD and the services will have greater flexibility to respond to growth in those areas (by adjusting schedules or modifying program objectives) without substantially affecting overall defense plans.

**Phases of DoD's Weapon Acquisition Process and Associated Cost Growth.** DoD has established a system of milestones for managing its acquisition programs. Those milestones mark the beginnings of key phases of development:

- Milestone A initiates the technology maturation and risk reduction phase.
- Milestone B initiates the engineering and manufacturing development (EMD) phase, in which a system is designed and developed, all technologies and capabilities are fully integrated into a single system, and preparations are made for manufacturing (including developing manufacturing processes, designing for mass production, and managing costs).
- Milestone C initiates the production and deployment phase.[29]

Cost growth is typically measured in relation to cost estimates made at Milestone B, the beginning of the EMD phase. Most studies of cost growth begin with the cost estimates contained in the SAR released closest to the date of the system's Milestone B approval. Those studies then compare the Milestone B estimates with the actual cost of the completed programs. When program offices prepare their SARs at the Milestone B juncture, they generally project costs for the RDT&E phase as well as the procurement phase.

**Sources of Historical Cost-Growth Information About Weapon Systems.** The RAND Corporation has researched the cost growth of weapon systems for several decades, forming a substantial body of literature. RAND's compilations from 2006 and 2007 provide an overview of its research and other literature in the field, summarizing key findings about cost growth and average cost growth for different weapon systems.[30] That work was largely based on statistical analyses of SARs to determine the frequency, magnitude, timing, and causes of cost growth. Many of RAND's analyses used the full set of SARs completed since 1969, when the SAR reporting requirement was introduced; others focused on more recent programs. IDA's long line of research on cost growth complements RAND's and is summarized in a 2014 study, also based on SARs data. The cost growth reported in IDA's study is similar to that reported by RAND.[31]

Some of RAND's and IDA's research indicates that, although cost growth has varied since the advent of the SARs, it has been a consistent presence despite dramatic

28. As an example of a system-specific approach to cost growth, CBO estimated the cost of most new Navy ships on the basis of the relationship between the weight and the actual cost of analogous ships already completed. CBO then adjusted the estimate for production efficiencies that occur as more ships of the same type are built simultaneously at a given shipyard and for efficiencies that occur as more ships are built during a production run. For more about CBO's approach to estimating ship construction costs, see Congressional Budget Office, *How CBO Estimates the Cost of New Ships* (April 2018), www.cbo.gov/publication/53785.

29. Department of Defense, "Operation of the Adaptive Acquisition Framework," DoD Instruction 5000.02 (updated June 8, 2022), https://tinyurl.com/4vt9a9es.

30. 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; 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.

31. 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), www.acq.osd.mil/asda/ae/ada/docs/arc/ida-p5126.pdf.

changes in the size and composition of the military, the technical sophistication of military systems, and many efforts to reform DoD's acquisition system. Because the phenomenon of cost growth is firmly established and estimates of its magnitude are relatively stable, most of RAND's more recent research has examined the causes of cost growth for particular acquisition programs.[32]

**CBO's History-Based Approach to Cost Growth.** CBO applies its history-based cost-growth analytic method to the major weapon systems in DoD's acquisition portfolio for which the agency has not analyzed costs independently. That approach includes three primary steps:

- *First, apply historical cost-growth factors to a service's portfolio of major weapon system programs.* CBO divides DoD's estimates of the costs for major weapons programs in each service into the years covered by the FYDP and the years of CBO's projection beyond the FYDP. The agency then separates those estimates into categories by type of system and applies historical cost-growth factors specific to each category. The calculated amounts are further summed to derive a total for each service.
- *Second, adjust cost-growth estimates to account for systems in different stages of development or production.* Because the cost-growth factors used in the first step are measured with respect to initial cost estimates, CBO reduces those total growth amounts to account for cost growth that has already occurred and been incorporated into DoD's cost estimates for ongoing programs.
- *Third, adjust cost-growth estimates for the FYDP period.* CBO reduces the amount of growth it reports for the FYDP period to account for inflexibility in near-term budgets (especially the current budget year) and the lag between recognizing cost-growth issues within a program and incorporating them into cost estimates for that program.

CBO's approach results in a simplified representation of potential cost growth. Because CBO estimates the cost of executing the current plan, the approach does not try to account for how other consequences of cost growth could affect the program, such as lengthening program schedules (by extending development time or by purchasing fewer systems each year over a longer period) or reducing the total quantity of weapons purchased. Also, CBO calculates and reports the growth as a percentage increase in planned costs for each period, even though actual cost growth may not be as smoothly distributed.

In the first step of the approach, CBO uses average factors for total program cost growth that are specific to each of seven types of weapon systems—fixed-wing aircraft, rotary-wing aircraft, communications equipment and electronics, missiles, ships, space systems, and ground vehicles and equipment—because different weapon systems have historically incurred different amounts of cost growth. Although cost growth has varied substantially even among systems of the same type, CBO applies an average cost-growth factor to the total of all systems of each type (see Figure 2). CBO adds those history-based estimates of cost growth to cost-growth estimates it has made for some individual systems (mostly for new ship construction).

In the second step, CBO adjusts to account for systems that are in different stages of development or production. One limitation of the historical cost-growth data is that they usually reflect average growth only in relation to a system's Milestone B cost estimate. However, CBO's analysis of DoD's acquisition portfolio includes systems in all stages of acquisition. Those stages include systems already in production (and typically with the smallest potential for cost growth) and systems not yet formally proposed (and for which no Milestone B cost estimate exists) but that CBO expects DoD to develop and even start buying by the end of the projection period to replace existing older systems. To account for that range in system maturity, CBO's second step incorporates additional data from research that describes how cost growth typically occurs for major programs between Milestone B and their completion (see the previous section).

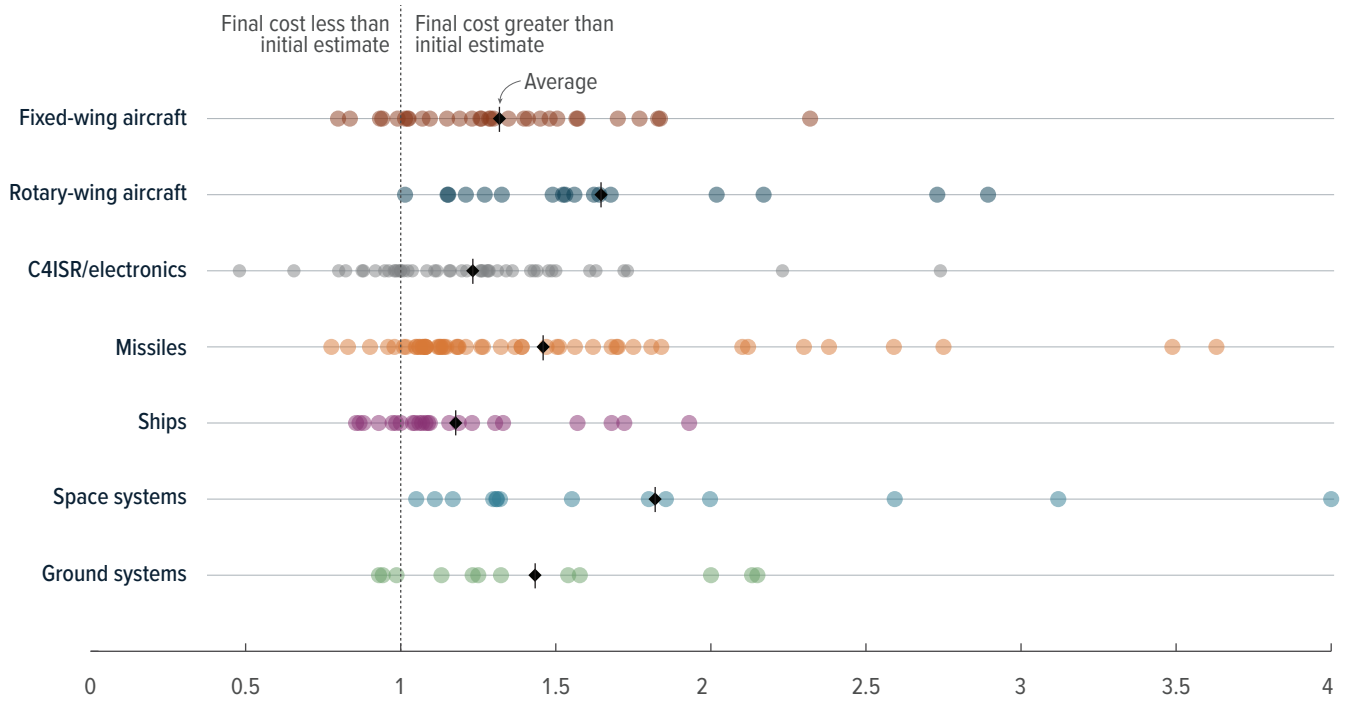
In the third step, CBO makes two more adjustments to the cost-growth estimates. First, CBO estimates no cost growth in the budget year (the first year of the FYDP). Acquisition programs are almost always required to operate within their planned budgets during the budget year so that any cost growth will be reflected in later years. Second, CBO also constrains cost increases in the three years after the budget year because plans for those years are based on better information about costs and available funding for the near term than are plans for the

32. See, for example, Irv Blickstein and others, *Methodologies in Analyzing the Root Causes of Nunn-McCurdy Breaches*, TR-1248-OSD (RAND Corporation, 2012), www.rand.org/pubs/technical_reports/TR1248.html.

Figure 2.

## Growth in Acquisition Costs for 195 Completed Major Weapon Programs

Ratio of final cost to initial estimate




Data source: Congressional Budget Office, using data from the Institute for Defense Analyses and the RAND Corporation. See www.cbo.gov/publication/60518#data.

The initial cost estimate used in this figure is the one made when the system enters engineering and manufacturing development.

C4ISR = command, control, communications, computers, intelligence, surveillance, and reconnaissance.

more distant future. For example, planned budgets in the near term are likely to already incorporate the effects of identified cost-growth issues as well as some knowledge about which funds will probably be made available for acquisition programs (as described, for example, in the FYDP). Later years are more likely to be affected by yet-unidentified development or manufacturing problems and overly optimistic assumptions about the funding that would be available. To reflect that general tendency, CBO reduces the estimated cost growth by 75 percent in the second year of the FYDP, by 50 percent in the third year, and by 25 percent in the fourth year. CBO does not apply such reductions to the final year of the FYDP or to the years beyond the FYDP period.

An example from CBO's analysis of DoD's acquisition portfolio for fixed-wing aircraft in the 2017 FYDP shows how CBO applied its history-based approach. Between 2017 and 2032, DoD's plans included purchasing many types of fixed-wing aircraft, including fighters, bombers, airlifters, tankers, reconnaissance aircraft, and trainers. On the basis of DoD's estimates, the projected acquisition costs of aircraft that CBO categorized as being major fixed-wing programs totaled $147 billion over the FYDP years and $371 billion for the 10 years after the FYDP, 2022 through 2032. In the first step, CBO applied to those two totals the cost-growth factor for fixed-wing aircraft at Milestone B (a factor of roughly 1.3, or about 30 percent). In the second step, CBO applied a downward adjustment to the growth calculated in the first step—a factor of 0.32 to account for growth that had already occurred in many of the fixed-wing aircraft programs—yielding a net growth of 9 percent. The result was a cost-growth estimate of about $13 billion (in 2017 dollars) for fixed-wing aircraft for the 2017–2021 period and $34 billion for the 2022–2032 period. In the final step, CBO adjusted the total for the FYDP years downward—to about $7 billion in this example—because funding for the budget year had already been requested and because near-term program activities are more certain.

This report is part of the Congressional Budget Office's continuing efforts to make its work transparent. In keeping with CBO's mandate to provide objective, impartial analysis, the report makes no recommendations.

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

Phillip L. Swagel
Director