CONGRESS OF THE UNITED STATES
CONGRESSIONAL BUDGET OFFICE

CBO

Long-Term Implications of the 2013 Future Years Defense Program

JULY 2012

Notes

Unless otherwise indicated, all years referred to in this study are federal fiscal years (which run from October 1 to September 30), all costs apply to fiscal years and are expressed in fiscal year 2013 dollars of total obligational authority, and all growth rates are measured in real terms (with the adjustments for inflation made using the Congressional Budget Office's projection of the gross domestic product price index).

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

On the cover—

Top left: From an MC-130E, a loadmaster watches the aerial refueling of a CH-47 Chinook helicopter over Duke Field, Florida, March 2012. Photo by Staff Sergeant Tony Ritter, U.S. Air Force.

Top right: A pilot conducts a preflight inspection of a UH-60 Black Hawk helicopter at Camp Marmal, Afghanistan, May 2012. Photo by Staff Sergeant Joe Armas, U.S. Army.

Bottom: U.S. Marines return to the amphibious dock landing ship USS *Tortuga* via its stern gate, March 2012. Photo by Petty Officer 2nd Class Eric Crosby, U.S. Navy.

Pub. No. 4458

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Summary

In most years, the Department of Defense (DoD) provides a five-year plan, called the Future Years Defense Program (FYDP), associated with the budget that it submits to the Congress. Because decisions made in the near term can have consequences for the defense budget well beyond that period, the Congressional Budget Office (CBO) regularly examines DoD's FYDP and projects its budgetary impact over several decades. For this analysis, CBO used the FYDP provided to the Congress in March 2012, which covers fiscal years 2013 to 2017; CBO's projections span the years 2013 to 2030.

In February 2012, DoD requested appropriations for 2013 totaling almost $615 billion. Of that amount, about $526 billion was to fund the "base" programs that constitute the department's normal activities, such as the development and procurement of weapon systems and the day-to-day operations of the military and civilian workforce. The remaining roughly $88 billion was requested to pay for what are termed overseas contingency operations—the war in Afghanistan and other nonroutine military activities elsewhere.[1] The FYDP describes the department's plan for its normal activities and therefore generally corresponds to the base budget.

CBO has produced two projections of the base-budget costs of DoD's plans as reflected in the FYDP and other long-term planning documents released by the department. The first projection, the "CBO projection," uses CBO's estimates of cost factors and growth rates for military activities that reflect DoD's experience in recent years. The second projection, the "extension of the FYDP," starts with DoD's estimates of the costs of the FYDP through 2017 and extends them beyond 2017 using DoD's estimates where available and CBO's projections of price and compensation trends for the overall economy where DoD's estimates are not available.

Under either projection, the costs for DoD's plans would exceed the funding that the department can receive through 2021 under the caps established by the Budget Control Act of 2011 (BCA, Public Law 122-25).

Neither projection should be viewed as a prediction of future funding for DoD's activities; rather, the projections are estimates of the costs of executing the department's current plans. The degree to which the plans laid out by DoD are executed in the future will depend on the funding that will be provided in an era of increasing budgetary pressure and on the success of ongoing efforts to curb cost growth for such items as medical care and new weapon systems.

CBO's Projection

CBO's analysis of the costs of the 2013 FYDP yields these conclusions:

- To execute its base-budget plans for 2013 through 2017, DoD would need five years of appropriations totaling $53 billion (or 2.0 percent) more in real, or inflation-adjusted, terms than if funding for the base budget was held at the 2012 amount of $543 billion.[2] For the entire projection period of 2013 through

1. Expressed in terms of budget authority, DoD's request for 2013 was about $614 billion: roughly $525 billion for the base budget and about $88 billion for overseas contingency operations. The figures in the text differ slightly because they reflect total obligational authority (TOA), which CBO used for this analysis because it provides a more complete accounting of DoD's budget. TOA is larger than budget authority, but the difference is usually quite small.

2. Unless otherwise stated, all costs in this study apply to fiscal years and are expressed in fiscal year 2013 dollars of total obligational authority, and all growth rates are measured in real terms (with the adjustments for inflation made using CBO's projection of the gross domestic product price index).

2030, DoD's base-budget plans would require appropriations totaling $1.2 trillion (or 12 percent) more than if funding for the base budget was held at the 2012 amount in real terms.

- To execute its base-budget plans for 2013, the department would require appropriations of $535 billion, 1.4 percent less than the $543 billion appropriated in 2012. That figure for 2013 is $9 billion higher than DoD's request because CBO includes the cost of all active-duty personnel (whereas the department proposes to shift the cost of some of those personnel out of the base budget) and because CBO assumes that the Congress will continue its history of rejecting DoD's proposals to shift some health care costs to the military beneficiaries receiving the care.

- To execute its base-budget plans after 2013, DoD's appropriations would need to nearly return to their 2012 level in 2014 and grow at an average annual rate of 2.0 percent between then and 2017, all in real terms. From 2017 to 2030, DoD's appropriations would need to grow at an average annual rate of 0.9 percent in real terms. The cost of the department's plans would rise to $574 billion in 2017 and to $645 billion in 2030 in real terms (see Summary Figure 1).

- The primary cause of growth in DoD's costs from 2013 to 2030 would be rising costs for operation and support (O&S), which accounts for 64 percent of the base budget in 2012. In particular, under DoD's plans, there would be significant increases in the costs of military health care, compensation of the department's military and civilian employees, and various operation and maintenance activities. O&S costs would grow from $356 billion in 2013 to $460 billion in 2030, for an average annual growth rate of 1.5 percent per year, all in real terms.

- The costs of replacing and modernizing weapon systems would grow sharply in the near term, from $168 billion in 2013 to $212 billion in 2018 in real terms—an increase of 26 percent. However, acquisition costs would remain fairly steady at that level until 2025 before declining.

- The growth in DoD's costs would be less than CBO's projection of the growth of the economy, so costs would decline as a share of gross domestic product (GDP). Spending for DoD's base budget was 3.5 percent of GDP in 2010 and would decline to 3.0 percent of GDP in 2017 and to 2.5 percent in 2030.

Comparison with a Projection Based on DoD's Estimates

CBO compared its projection of the costs of DoD's plans with a projection based on DoD's estimates of the costs of the FYDP through 2017 and an extension of those estimates through 2030. That extension is based on DoD's estimates of costs beyond 2017 where they are available (for some weapon systems, for instance) and on costs consistent with CBO's projections of price and compensation trends for the overall economy where estimates by the department are not available (for health care costs and pay, for instance). For most categories of DoD's budget, costs under the CBO projection are higher than the costs estimated by DoD in the FYDP and the assumed costs for the extension of the FYDP. In particular, DoD's costs for providing health care and for developing and buying weapons have historically been higher than the department's planning estimates.

CBO's analysis yields these conclusions:

- To execute its base-budget plans for 2013 through 2017, DoD would need five years of appropriations totaling $70 billion (or 2.6 percent) less in real terms than if funding was held at the 2012 level, according to DoD's estimates. The 2013 request is $17 billion (or 3.2 percent) lower than the amount appropriated in 2012; after that drop, DoD estimates that the costs of its plans would rise a little but, by 2017, would remain 2.0 percent below the 2012 level in real terms.

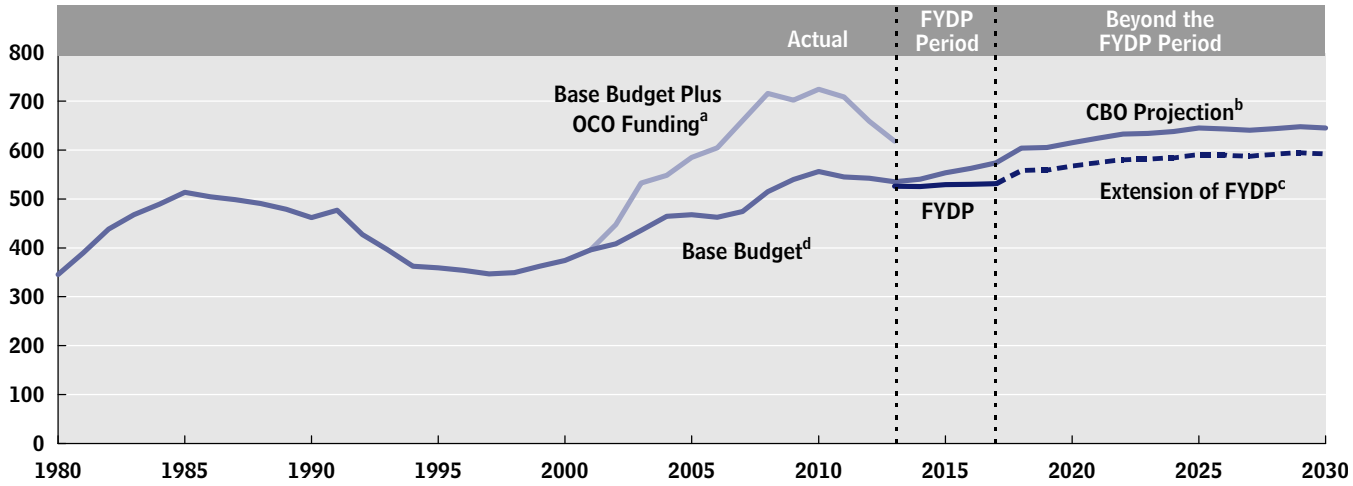
- Compared with DoD's estimate of the overall cost of the FYDP for 2013 through 2017, CBO's estimate is $123 billion (or about 4.7 percent) higher. Compared with costs under the extension of the FYDP, costs under the CBO projection would be about $43 billion (or 8.0 percent) higher in 2017 and about $52 billion (about 9.0 percent) higher in 2022. The gap would remain at about that level through 2030.

- DoD plans to reduce the number of active-duty service members gradually during the next five years, reaching a 5 percent cut by the end of 2017. In addition, DoD has transferred the costs of some active-

Summary Figure 1.

Costs of DoD's Plans

(Billions of 2013 dollars)



Source: Congressional Budget Office.

Note: FYDP = Future Years Defense Program; FYDP period = 2013 to 2017, the years for which the Department of Defense's (DoD's) plans are fully specified.

a. For 2002 to 2013, supplemental and emergency funding for overseas contingency operations (OCO), such as those in Afghanistan and Iraq, and for other purposes is shown separately from the base-budget data.

b. The CBO projection of the base budget incorporates costs that are consistent with DoD's recent experience.

c. For the extension of the FYDP (2018 to 2030), CBO projects the costs of DoD's plans using the department's estimates of costs to the extent they are available and costs that are consistent with CBO's projections of price and compensation trends in the overall economy where the department's estimates are not available.

d. Base-budget data include supplemental and emergency funding before 2002.

duty soldiers and marines from the base budget to the budget for overseas contingency operations, which accelerates the department's estimated cost savings for personnel in the base budget. The number of service members for whom costs are transferred in that way is 56,000 in 2013 and declines to zero by the end of 2017. By contrast, the CBO projection includes the costs of all active-duty personnel, adding an estimated $5 billion in personnel costs back into the base budget in 2013 and smaller amounts in 2014 through 2017. In total, CBO shifts $15 billion of personnel costs back to the base budget over the 2013–2017 period.

Compliance with the Budget Control Act

CBO compared its projection of the costs of executing DoD's plans with the maximum funding levels that could be provided to the department under the BCA, which limits discretionary appropriations through 2021. If DoD continues to receive its historical share of the national defense budget, CBO's analysis yields these conclusions:[3]

- The cost of DoD's base-budget plans for 2013 through 2021 is $508 billion higher in nominal terms than the funding that would be available to DoD under the BCA's limits on discretionary appropriations for national defense *before* reductions due to that law's automatic enforcement procedures. The gap would be $457 billion in real terms.

3. The Budget Control Act established funding limits on national defense (budget function 050), not DoD (budget subfunction 051). DoD has historically accounted for 95.5 percent of the 050 budget, and CBO estimated DoD's share of the limits on national defense funding assuming that the department continued to receive its historical share.

- The cost of DoD's base-budget plans for 2013 through 2021 is $978 billion higher in nominal terms than the funding that would be available to DoD *after* the reductions due to the BCA's automatic enforcement procedures, which are poised to take effect in January 2013. The gap would be $898 billion in real terms.

- For 2013, the cost of DoD's plans is $14 billion higher than the funding that would be available under the BCA's limits on discretionary appropriations for national defense before the BCA's automatic reductions. Those costs would be $66 billion higher than the funding that would be available after the automatic reductions. Accommodating those automatic reductions, in particular, could be difficult for the department to manage because it would need to be achieved in only nine months (between the cut's taking effect in January 2013 and the end of the fiscal year in September 2013). Even with that cut, however, DoD's base budget in 2013 would still be larger than it was in 2006 (in 2013 dollars) and larger than the average base budget during the 1980s.

CHAPTER

1

CBO's Projections of the Cost of DoD's Plans

The federal government's fiscal pressures have increased scrutiny of the Department of Defense's (DoD's) budget. Although funding decisions are usually made on an annual basis, near-term decisions about issues such as pay raises, health benefits for military retirees, and the acquisition of weapon systems can have effects on the composition and costs of the nation's armed forces that last many years into the future.

To provide information about its plans beyond the coming year, DoD generally issues its Future Years Defense Program (FYDP) in conjunction with its annual budget request. The FYDP is a detailed description of DoD's plans for national defense and their associated costs over the next five years. The latest FYDP, which was issued in March 2012, covers fiscal years 2013 to 2017.

Although DoD publishes information about its longer-term plans for some activities, such as shipbuilding and aircraft procurement, details about most activities beyond the FYDP period are unspecified. To gain a more complete picture of the funding that may be needed for defense plans over the longer term, the Congressional Budget Office (CBO) has projected the costs of DoD's defense plans over the next 18 years, through 2030. This study presents the results of those projections.

DoD's Budget Request

The FYDP and CBO's projections begin with DoD's proposed budget for 2013, in which the department requested a total of $615 billion.[1] That request can be separated into two parts:

- $526 billion for the base budget, which funds the normal activities of the department, including manning and training the force, developing and procuring weapon systems, and the day-to-day operations of the military and civilian workforce, and
- $88 billion for overseas contingency operations (OCO), which refer to the war in Afghanistan and other nonroutine military activities elsewhere.[2]

CBO's analysis focuses on DoD's base budget, which excludes funding for overseas contingency operations. Those operations have accounted for a significant fraction of DoD's total spending over the past 11 years, but future spending for such operations will depend on how conditions evolve in Afghanistan and on whether new contingencies or wars arise elsewhere.

The request for the base budget in 2013 is 3.2 percent less, after accounting for inflation, than the amount that the Congress appropriated for it in 2012. As described below, that request would be 0.9 percent more than what would be available to DoD under the funding limits on discretionary appropriations for national defense established in the Budget Control Act of 2011 (BCA, Public Law 122-25) *before* reductions to comply with that law's automatic enforcement procedures, under an assumption that DoD continues to receive its historical share of the national defense budget. After the automatic reductions,

1. Unless otherwise noted, all costs in this study apply to fiscal years and are expressed in fiscal year 2013 dollars of total obligational authority (TOA). Whereas budget authority describes the authority provided by law to incur financial obligations, TOA is a term used by DoD to most comprehensively measure the funding available for defense programs. TOA differs from budget authority principally in that it adjusts for some receipts, for spending from some trust funds and other accounts, and for some payments to the Military Retirement Fund. In recent years, the difference between TOA and discretionary budget authority in DoD's budget request for the coming year has generally been $2 billion or less. After the coming year, TOA and budget authority are almost identical in the remaining years in the FYDP period.

2. DoD requested $614 billion in budget authority for 2013: $525 billion for the base budget and $88 billion for overseas contingency operations. The figures in the text differ slightly from those amounts because they refer to total obligational authority.

Table 1-1.

Cost Assumptions for Two Projections of DoD's Plans

	CBO Projection (2013 to 2030)	Extension of FYDP[a] (2018 to 2030)
Military Pay	ECI	ECI[b]
Civilian Pay	0.5% increase in 2013; ECI after 2013	ECI[b]
Military Health Care	Starts with projected national growth rates for health care spending, plus excess cost growth based on DoD's recent experience; converges to projected national growth rates by 2028	Tracks with national growth rates for health care care spending
Operating Forces	DoD's estimates through 2017, plus the costs of the active-duty personnel that DoD funds with the OCO budget; after 2017, costs aside from pay and health care grow at their historical average rate	Costs aside from pay and health care grow at their historical average rate
Acquisition	Historical average cost growth	DoD's estimates with no cost growth
Military Construction and Family Housing	DoD's estimates through 2017; no real (inflation-adjusted) growth beyond 2017	No real growth

Source: Congressional Budget Office.

Note: DoD = Department of Defense; FYDP = Future Years Defense Program; ECI = employment cost index (the Bureau of Labor Statistics' index for wages and salaries in the private sector); OCO = overseas contingency operations.

a. The extension of the FYDP uses the cost estimates provided in the Future Years Defense Program through 2017.

b. Military and civilian pay would increase with the ECI beginning in 2017 but would start from a lower level than in CBO's projections because DoD assumes smaller pay raises during the 2014–2017 period.

however, the request would be about 12 percent above the funding available to DoD if historical funding patterns held.

Nearly all of DoD's funding for its base budget is provided in six appropriation categories. In its analysis of the costs of DoD's plans, CBO organized those six categories into three broader groups: operation and support (O&S), acquisition, and infrastructure.

Operation and support involves the normal activities of DoD and includes appropriations for operation and maintenance (O&M) and for military personnel. O&M appropriations fund the day-to-day operations of the military, the maintenance of equipment, the training of military units, the majority of costs of the military's health care program, compensation for most of DoD's civilian employees, and payments to DoD's support contractors. Military personnel accounts fund compensation for uniformed service members, including pay, housing and food allowances, and related items, such as moving service members and their families to new duty stations. O&M represents the largest portion, nearly 40 percent, of the request for the base budget in 2013, followed by military personnel, at 26 percent.

Acquisition includes procurement and research, development, test, and evaluation (RDT&E). Procurement accounts fund the purchase of new weapon systems and other major equipment, as well as upgrades to existing weapon systems. RDT&E accounts pay for the development of technology and weapons. Procurement represents 19 percent of the request for the base budget in 2013; and RDT&E, 13 percent.

Infrastructure refers to construction at DoD facilities. Appropriations for military construction and family housing fund the construction of buildings and housing on military installations. Together, they make up 2 percent of the request for the base budget.

CBO's Approach for the Projections

This study provides CBO's independent projections of the costs of implementing DoD's plans for operation and support, acquisition, and infrastructure contained in the 2013 FYDP. Extrapolating from the 2013–2017 period covered by those plans, CBO projects costs through 2030. In making its projections, CBO has relied on the number of military personnel, acquisition plans, and policies spelled out in the 2013 FYDP and the long-term acquisition plans that DoD publishes in selected acquisition reports and other official documents, such as the Navy's 30-year shipbuilding plan and DoD's 30-year aviation plan.[3] For the years beyond 2017, CBO assumes that the force structure and number of military and civilian personnel planned by DoD for 2017 will continue throughout the projection period.

CBO made two projections of the costs of DoD's plans:

- The "CBO projection," which is based on CBO's estimates of future costs, and
- The "extension of the FYDP," which is based on the department's estimates of costs where they are available and costs that are consistent with CBO's projections of price and compensation trends in the overall economy where the department's estimates are not available.

Specifically, the CBO projection uses CBO's estimates of the costs of DoD's plans through 2030 (see Table 1-1 for the assumptions CBO used in its estimates). CBO's estimates of cost factors and growth rates reflect those for DoD's activities seen in recent years. CBO's projection of the base budget includes the costs of all active-duty personnel, although DoD plans to fund some of those personnel out of the budget for overseas contingency operations. Also, CBO's projection includes additional costs starting in 2013 for providing health care to current and retired military personnel and their families because the Congress has historically resisted DoD's requests to increase the share of health care costs paid by the people receiving that care.

For the extension of the FYDP, CBO uses DoD's cost estimates for 2013 through 2017. For 2018 through 2030, CBO projects the costs of DoD's plans using the department's estimates of longer-term costs where they are available (for some major weapon systems, for instance) and costs that are consistent with CBO's projections of price and compensation trends where estimates by the department are not available (for health care costs and pay for military and civilian personnel, for instance).

For most categories of DoD's plans, costs in the CBO projection are higher than the costs estimated by DoD in the FYDP and the assumed costs for the extension of the FYDP. In particular, health care costs for DoD have outpaced its estimates, and the costs of developing and buying weapons have been, on average, 20 percent to 30 percent higher than the department's initial estimates. The CBO projection shows how rapidly defense budgets would have to grow to execute DoD's plans under the assumption that the department's costs continue to grow as they have in the past.

The two projections are not predictions of future funding for DoD; they are estimates of the costs of executing the department's current plans. Defense plans can be affected by unpredicted changes in the international security environment, Congressional decisions, and other factors that could result in substantial departures from the department's current intentions. One such factor is that DoD and the Congress frequently respond to higher-than-expected costs of weapon systems by changing acquisition plans—by, for example, delaying or reducing purchases of weapon systems or canceling systems outright. Another factor that has taken on prominence is the increasing pressure on the federal budget as a whole. Under the Budget Control Act, the department's funding will be well below the amounts required to implement the FYDP—according to DoD's estimates for the FYDP and CBO's estimates that extend those estimates by the department, and much more so according to the estimates in the CBO projection.

Projections of Costs

CBO's projections include the costs of DoD's base-budget plans over two time spans: the period from 2013

3. If a weapon system reaches the end of its service life before 2030 and DoD has not planned a replacement system, CBO assumes that the department will develop and purchase a new system to replace the aging one. DoD has not published plans for minor programs extending beyond the FYDP period. Therefore, CBO estimated costs for those programs on the basis of historical correlations between funding for major and minor programs.

Table 1-2.

CBO Projection of Costs of DoD's Plans in Selected Years

(Billions of 2013 dollars)

			FYDP Period		Beyond the FYDP Period		Average,
	2001	2012	2013	2017	2022	2030	2013–2030
				Base Budget			
Operation and Support							
Operation and maintenance[a]	149	203	214	227	250	286	248
Military personnel	103	144	141 [b]	145	156	175	156
Subtotal	252	347	356	373	405	460	403
Acquisition							
Procurement	79	108	99	125	145	116	129
Research, development, test, and evaluation	53	73	69	67	69	55	65
Subtotal	132	182	168	193	214	171	194
Infrastructure							
Military construction	7	12	10	8	12	12	11
Family housing	5	2	2	2	2	2	2
Subtotal	12	14	11	9	14	14	13
Total Base Budget	**396**	**543**	**535**	**574**	**633**	**645**	**610**
			Supplemental and Emergency Funding for Overseas Contingency Operations				
Total OCO Funding	**n.a.**	**117**	**83** [b]	**n.a.**	**n.a.**	**n.a.**	**n.a.**
				Total			
Total DoD Budget	**396**	**659**	**618**	**n.a.**	**n.a.**	**n.a.**	**n.a.**

Source: Congressional Budget Office.

Notes: The CBO projection incorporates costs that are consistent with the Department of Defense's (DoD's) recent experience.

FYDP = Future Years Defense Program; FYDP period = 2013 to 2017, the years for which DoD's plans are fully specified; OCO = overseas contingency operations; n.a. = not applicable.

a. For this analysis, CBO folded appropriations for most revolving funds (such as the one for the Defense Commissary Agency) into the appropriations for operation and maintenance. The exception is accounts in the National Defense Sealift Fund that are used to purchase ships, which CBO treated as procurement.

b. For 2013, CBO shifted $5 billion from the OCO budget into the base budget for military personnel to fund 56,000 active-duty soldiers and marines that DoD plans to fund out of the OCO budget. DoD requested $135 billion for military personnel in the base budget. DoD requested a total of $88 billion for the OCO budget.

to 2017 covered by the FYDP and the period from 2018 to 2030. Because the amount and composition of funding that will be requested for future overseas contingency operations are uncertain, costs for them are projected only as illustrative totals and are not broken out by budget category.

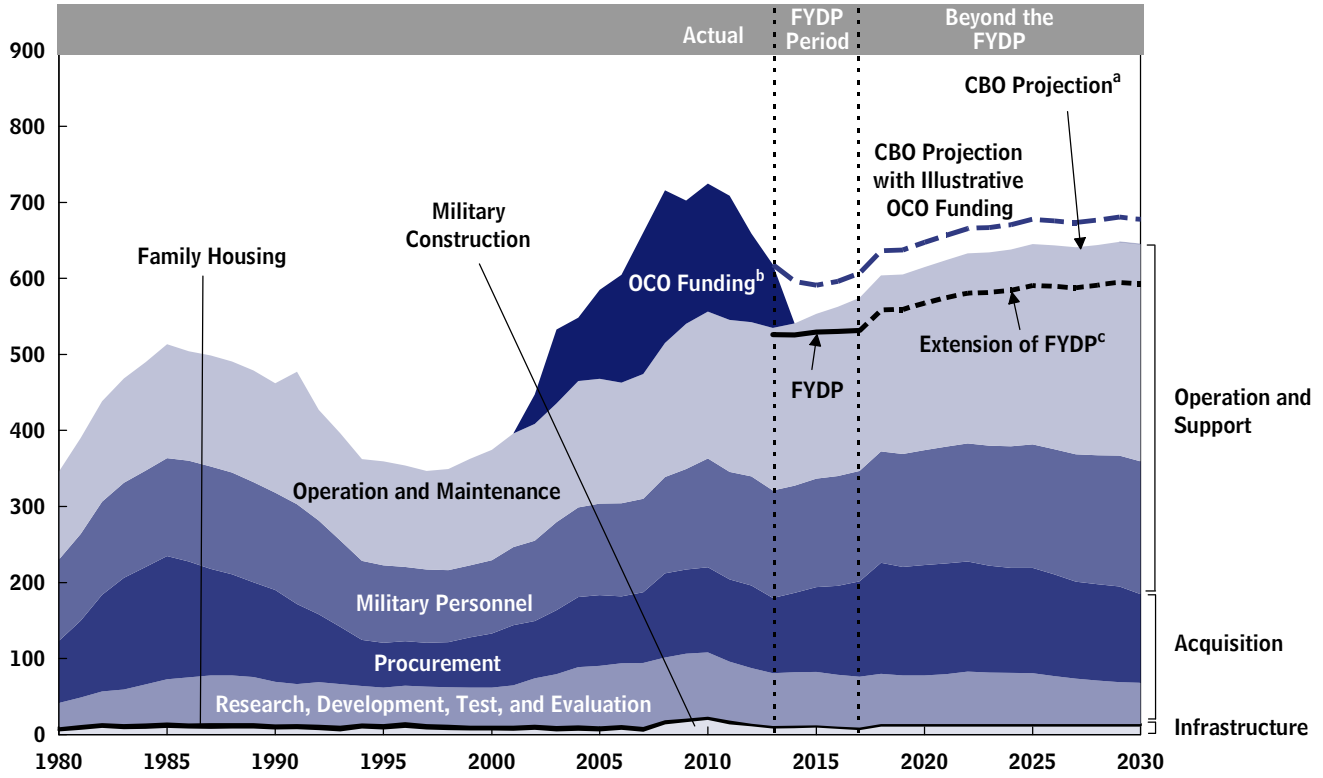
Costs of DoD's Plans During the FYDP Period (2013 to 2017)

According to the CBO projection, the annual cost of carrying out DoD's plans would be $574 billion in real (inflation-adjusted) terms by 2017, a 5.7 percent increase over the 2012 base budget of $543 billion (see Table 1-2 and Figure 1-1). Total costs for the 2013–2017 period would be $53 billion (or 2.0 percent) more than if

Figure 1-1.

Costs of DoD's Plans, by Appropriation Category

(Billions of 2013 dollars)



Source: Congressional Budget Office.

Notes: Base-budget data include supplemental and emergency funding before 2002. The amounts shown for the FYDP and the extension of the FYDP are totals for all categories.

FYDP = Future Years Defense Program; FYDP period = 2013 to 2017, the years for which Department of Defense's (DoD's) plans are fully specified.

a. Each category shows the CBO projection of the base budget from 2013 to 2030. That projection incorporates costs that are consistent with DoD's recent experience.

b. For 2002 to 2013, supplemental and emergency funding for overseas contingency operations (OCO), such as those in Afghanistan and Iraq, and for other purposes is shown separately from the base-budget data.

c. For the extension of the FYDP (2018 to 2030), CBO projects the costs of DoD's plans using the department's estimates of costs to the extent they are available and costs that are consistent with CBO's projections of price and compensation trends in the overall economy where the department's estimates are not available.

funding was kept at the 2012 level. That projection translates to real increases in defense budgets that average 1.1 percent per year between 2012 and 2017 (and 1.8 percent between 2013 and 2017).

By contrast, DoD's estimates in the FYDP anticipate that carrying out the department's plans would allow DoD's base budget to decline by 3.2 percent in 2013 but would then require the budget to grow at an average annual rate of 0.3 percent between 2013 and 2017 (again, in real terms). Those estimates show costs reaching $532 billion by 2017, still 2.0 percent below the base budget in 2012 (see Table 1-3). For the 2013–2017 period, costs under the CBO projection are $123 billion, or about 4.7 percent, greater than costs under DoD's estimates. Most of that difference results from CBO's higher estimates of the costs to pay military and civilian personnel, develop and procure new weapon systems, and provide health care to

Table 1-3.

Comparison of the CBO Projection of DoD's Future Years Defense Program and DoD's Own Projection

(Billions of 2013 dollars)

		FYDP Period					
	2012	2013	2014	2015	2016	2017	Total, 2013-2017
CBO Projection, Base Budget	543	535	541	553	563	574	2,766
DoD's 2013 FYDP, Base Budget	543	526	525	529	530	532	2,643
Difference Between the CBO Projection and DoD's FYDP	0	9	16	24	32	43	123

Source: Congressional Budget Office.

Notes: The CBO projection incorporates costs that are consistent with the Department of Defense's (DoD's) recent experience.

FYDP = Future Years Defense Program.

service members and retirees and their families. Another part of that difference is due to CBO's decision to include in the base budget the costs for all active-duty personnel, including the 56,000 active-duty soldiers and marines that DoD plans to fund out of its budget for contingency operations in 2013 and smaller numbers that DoD plans to fund in that way during 2014 through 2017 as it reduces the size of the military. In DoD's plans, the costs of personnel funded outside the base budget would amount to $5 billion in 2013 but would decline to zero by the end of 2017.[4]

Costs of DoD's Plans Beyond the FYDP Period (2018 Through 2030)

According to the CBO projection, the annual cost of carrying out DoD's plans would rise (in 2013 dollars) from $574 billion in 2017 to $633 billion in 2022 and to $645 billion in 2030 (see Figure 1-1). Between 2017 and 2030, the average real increase in costs would be 0.9 percent per year. The increase in costs between 2017 and 2030 can be more than explained by increases in the costs of operation and maintenance and of pay and benefits for military service members; acquisition costs actually decline over that period (see Table 1-2 and Figure 1-2). In particular:

- Costs for O&M are projected to grow by 1.8 percent per year from 2017 to 2030. That growth would result from the rising costs of medical care and increases in the costs of pay and benefits for civilian workers and of maintaining equipment. Growth during the FYDP period would be lower (1.5 percent per year) because DoD's plans to reduce the size of the force would trim the number of military personnel needing health care and support.

- Appropriations for military personnel would increase by about 1.4 percent per year from 2017 to 2030, reflecting pay raises exceeding the rate of inflation. During the FYDP period, growth would be slower (0.7 percent per year) because planned reductions in the number of military personnel would partly offset pay raises.

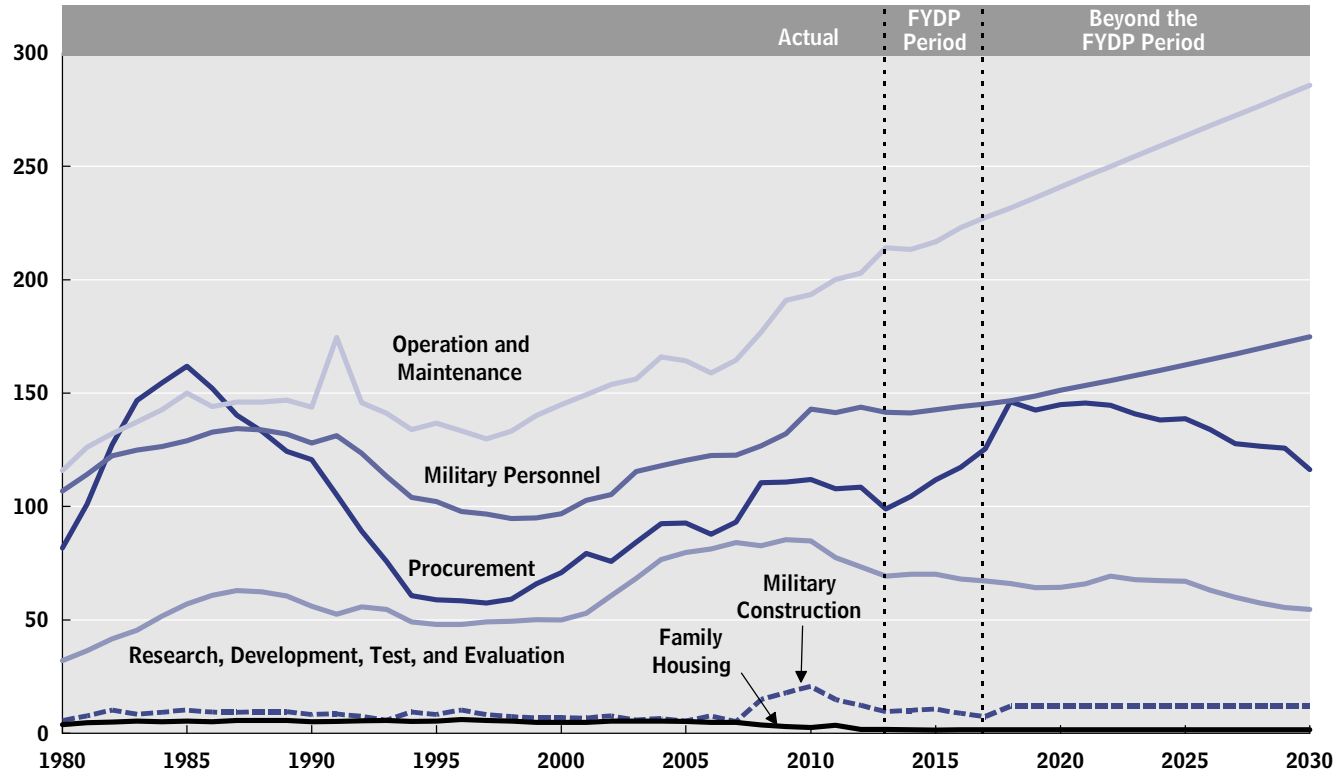
- After a rapid increase over the next six years, the total costs of developing and purchasing new weapon systems (and upgrading older systems) under DoD's current plans would be fairly steady from 2018 to 2025, at a level that is about 15 percent higher than that in 2012. After 2025, acquisition costs would gradually decline, and the projected amount in 2030 is about $10 billion below that in 2012. In those later years, the department will have largely achieved its current modernization goals, and it has not articulated plans for the next round of modernization. Therefore, that apparent decline may not occur.

4. DoD's base budget would place 56,000 active-duty soldiers and marines in the OCO budget as of September 30, 2013, the final day of fiscal year 2013. Over the course of the year, the average number being paid from the OCO budget would be larger, about 67,000. When estimating the annual costs to fund personnel in the base budget rather than the OCO budget, CBO used the average number of personnel in each year.

Figure 1-2.

CBO Projection of Base-Budget Costs of DoD's Plans, by Appropriation Category

(Billions of 2013 dollars)



Source: Congressional Budget Office.

Notes: Base-budget data include supplemental and emergency funding before 2002.

FYDP = Future Years Defense Program; FYDP period = 2013 to 2017, the years for which the Department of Defense's (DoD's) plans are fully specified.

Projected costs under the extension of the FYDP would reach $593 billion by 2030, about $52 billion less than the amount in the CBO projection.

Costs of DoD's Plans in the Context of the Budget Control Act of 2011

The Budget Control Act of 2011 established caps on discretionary appropriations through 2021 and automatic enforcement procedures that will further reduce discretionary appropriations (see Box 1-1). The budget authority required to implement DoD's base-budget plans would exceed the amounts set in the BCA (see Figure 1-3 on page 10).

According to the CBO projection, if DoD's base budget continued to receive its historical share (95.5 percent) of the national defense budget, the costs of the department's plans would be higher than the amount available under the BCA's funding limits on national defense *before* reductions due to that law's automatic enforcement procedures (compare the first and third rows in the top panel of Table 1-4 on page 11). That difference (in nominal terms) is $150 billion between 2013 and 2017 (the FYDP period) and $358 billion between 2018 and 2021.[5]

According to the department's estimates, the cost of DoD's plans would come closer to the BCA's limits on funding *before* the reductions due to the automatic enforcement procedures (assuming that DoD's share matched historical funding patterns) but would still

5. In real terms, the gap would be $139 billion during the FYDP period and $318 billion from 2018 to 2021 (compare the first and third rows in the bottom panel of Table 1-4 on page 11).

Box 1-1.

The Budget Control Act of 2011 and DoD's Budget

The Budget Control Act of 2011 (BCA, Public Law 112-25) made several changes to federal programs, set caps on discretionary appropriations through 2021, and included automatic enforcement procedures that would take effect if lawmakers failed to enact further legislation to reduce future budget deficits by specified amounts.

At the time of its initial consideration, the Budget Control Act's original caps on discretionary appropriations called for appropriations over the 2012–2021 period that would be roughly $0.8 trillion lower in nominal dollars during that period than if they were allowed to grow at the rate of inflation. The caps do not apply to funding for overseas contingency operations (OCO) and certain other activities.

The BCA stated that if legislation originating from a newly established Joint Select Committee on Deficit Reduction that was estimated to produce at least $1.2 trillion in deficit reduction (including an allowance for interest savings) was not enacted by January 15, 2012, automatic procedures for further limits on both discretionary and mandatory spending would be triggered. Because no such legislation was enacted, those procedures are now scheduled to go into effect at the beginning of January 2013.

Triggering the automatic enforcement procedures generated two changes to the way the caps will be implemented: It allocated the overall limits on discretionary appropriations between defense and nondefense budget functions, by setting separate caps for each, and it reduced the allowed amounts of funding below those caps. For 2013, the additional reductions will be achieved by automatically canceling a portion of the budgetary resources already provided to that point in an action known as sequestration; from 2014 to 2021, the reductions will be achieved by lowering the original caps on discretionary appropriations.[1]

1. For more information on those reductions, see Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2012 to 2022* (January 2012), Box 1-2; and *Final Sequestration Report for Fiscal Year 2012* (January 12, 2012).

Continued

exceed them. The cost of the FYDP would exceed those funding limits by a total of $21 billion (in nominal terms) through 2017. (That gap increases to $36 billion if the costs of the 56,000 active-duty positions slated to be eliminated by 2017 are moved from the budget for overseas contingency operations back into the base budget.) After the FYDP period, the cost of DoD's plans would exceed those funding limits by $148 billion (in nominal terms) from 2018 through 2021 (compare the second and third rows in the top panel of Table 1-4).[6]

The cost of DoD's plans would exceed to a much greater extent the lower caps on funding that would be in force *after* the automatic reductions of the Budget Control Act were implemented. Those reductions would lower annual funding levels for DoD by an additional $52 billion (in nominal terms) each year through 2021 (under an assumption that the department continues to receive its historical share of national defense funding). According to the CBO projection, the cost of DoD's plans (in nominal terms) would exceed those lower limits on funding by $410 billion between 2013 and 2017 and by $567 billion from 2018 through 2021. Under the department's estimates, the cost of its plans (again in nominal terms) would exceed those lower limits by less than the CBO projection but still by large amounts: $282 billion over the FYDP period and $356 billion from 2018 through 2021.[7]

6. In real terms, the gap would be $16 billion during the FYDP period ($31 billion if the costs of all active-duty personnel are funded in the base budget) and $130 billion from 2018 to 2021.

7. In real terms, the cost of DoD's plans would exceed those lower limits on funding by $393 billion from 2013 through 2017 and $505 billion from 2018 through 2021, according to the CBO projection, and by $269 billion from 2013 through 2017 and $317 billion from 2018 through 2021, according to DoD's estimates.

Box 1-1. Continued

The Budget Control Act of 2011 and DoD's Budget

Defense appropriations are defined as appropriations for budget function 050 (national defense), which includes the military activities of the Department of Defense (DoD), the nuclear weapons activities of the Department of Energy and the National Nuclear Security Administration, and the national security activities of several other agencies.[2] On average during the past 10 years, funding for DoD has represented 95.5 percent of total funding for budget function 050.

Under the allocation of the BCA's caps on discretionary appropriations stemming from the automatic enforcement procedures—but before the reductions in the caps due to those procedures—funding for national defense during the 2013–2021 period would be about $80 billion less than what would have been provided if appropriations increased with inflation starting from the amount appropriated in 2012. The automatic reductions will lower the caps on discretionary funding for national defense by an additional $492 billion over the 2013–2021 period, with the reduction spread evenly at nearly $55 billion per year. The resulting caps start at $491 billion in 2013 and rise to $589 billion in 2021; adjusted for inflation, the cap for 2021 is about 9 percent lower than the amount appropriated for 2012.

If DoD was assessed the same share of the $55 billion per year in automatic reductions for national defense as the department has received in funding historically, its budget authority would be reduced by about $52 billion each year.[3] For 2013, sequestration will apply to both the base budget and funding for OCO, and the effect on the base budget alone is unclear; the amounts discussed here are estimated as if the sequestration is applied entirely to the base budget.

2. For information about the caps on discretionary budget authority for national defense, see Congressional Budget Office, *Final Sequestration Report for Fiscal Year 2012*, Table 2.

3. Expressed in 2013 dollars, the average annual reduction from the caps on national defense funding would be about $49 billion over the whole period, beginning with $52 billion in 2013 and ending with $45 billion in 2021.

Costs of DoD's Plans in a Broader Context

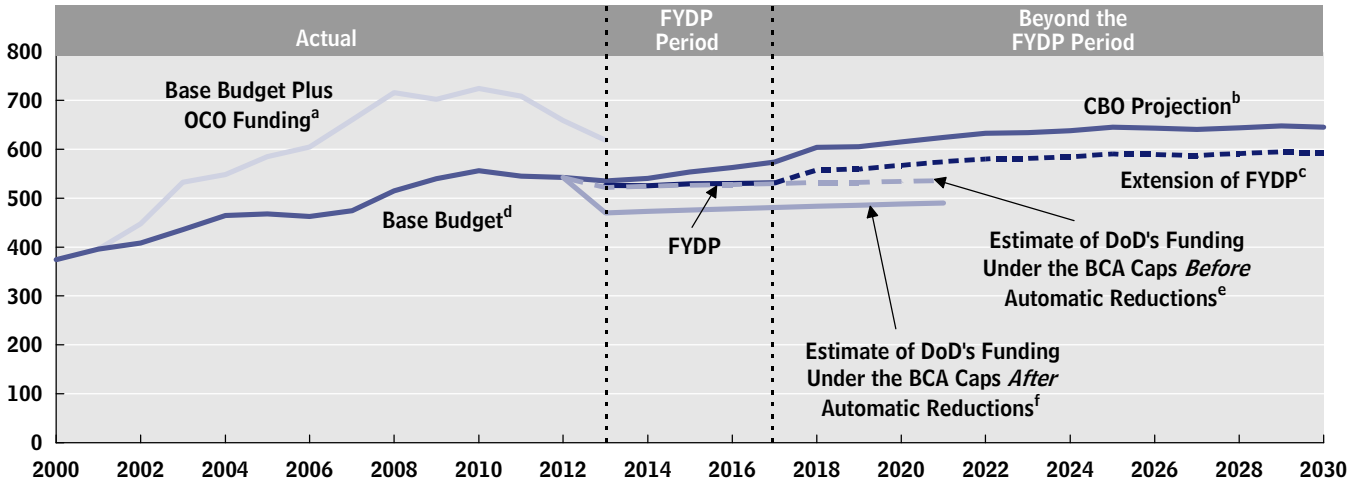
CBO's analysis is intended to highlight the long-term budgetary implications of DoD's plans embodied in the 2013 FYDP; it is not an evaluation of affordability or requirements for defense. When assessing the affordability of defense plans, some analysts consider the federal government's overall budget situation, including the costs of other programs and the amount of revenues being collected. Other analysts consider affordability in terms of the share of the U.S. economy (as measured by gross domestic product, or GDP) that is being used for defense.

Although the spending (outlays) to execute DoD's base-budget plans would increase under the CBO projection, that increase would not be as rapid as the future growth of the economy that CBO projects, so spending would decline over time as a share of GDP (see Figure 1-4 on page 12). Historically, spending for DoD as a share of GDP fell from an average of 5.6 percent in the 1980s to 3.8 percent in the 1990s. With supplemental and emergency spending for the wars in Iraq and Afghanistan included, DoD's spending as a share of GDP rose above 4.0 percent after 2007, peaking at 4.6 percent in 2010. According to the CBO projection, the cost of DoD's

Figure 1-3.

Costs of DoD's Plans in the Context of the Budget Control Act

(Billions of 2013 dollars)



Source: Congressional Budget Office.

Note: FYDP = Future Years Defense Program; FYDP period = 2013 to 2017, the years for which the Department of Defense's (DoD's) plans are fully specified; BCA = Budget Control Act of 2011.

a. For 2002 to 2013, supplemental and emergency funding for overseas contingency operations (OCO), such as those in Afghanistan and Iraq, and for other purposes is shown separately from the base-budget data.

b. The CBO projection of the base budget incorporates costs that are consistent with DoD's recent experience.

c. For the extension of the FYDP (2018 to 2030), CBO projects the costs of DoD's plans using the department's estimates of costs to the extent they are available and costs that are consistent with CBO's projections of price and compensation trends in the overall economy where the department's estimates are not available.

d. Base-budget data include supplemental and emergency funding before 2002.

e. This estimate assumes that DoD would receive 95.5 percent of the funding limit for national defense *before* reductions due to the BCA's automatic enforcement procedures, on the basis of DoD's average share of that funding in base budgets from 2002 to 2011.

f. This estimate assumes that DoD would receive 95.5 percent of the funding limit for national defense *after* reductions due to the BCA's automatic enforcement procedures, on the basis of DoD's average share of that funding in base budgets from 2002 to 2011.

plans would decline to 3.0 percent of GDP by 2017 and to 2.5 percent by 2030. Any future spending for overseas contingency operations would increase the share of GDP spent on defense relative to that projection.

Costs for Overseas Contingency Operations

Operations in Afghanistan and elsewhere are continuing, and those overseas operations, along with any others that might arise, will increase costs above the costs of DoD's base budget. From 2001 to 2012, DoD's appropriations for overseas contingency operations totaled $1.5 trillion (in 2013 dollars), an average of about $125 billion per year, or about 20 percent of the department's total funding during that period. Although DoD has requested $88 billion for those purposes for 2013 and some operations will probably continue after that year, the FYDP is not intended to and does not include estimates of the funding that might be needed to support overseas contingency operations in future years.

The funding needed in the future for overseas contingency operations will depend on how political and military conditions evolve in the coming years. As an illustrative example, if today's contingency force was drawn down from the roughly 150,000 troops that it was in December 2011 to 45,000 troops by 2015 and was then maintained at that number through 2030, contingency operations would add a total of roughly $240 billion above the base budget from 2013 to 2017 and an average

Table 1-4.

Costs of DoD's Plans and DoD's Funding Projected Under the Limits of the Budget Control Act of 2011

(Billions of dollars)

	Budget Control Act									
	Future Years Defense Program									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	Nominal Dollars									
CBO Projection[a]	535	549	570	590	613	657	670	694	718	742
FYDP and Extension[b]	526	534	546	556	567	607	620	641	661	680
Estimate of DoD's Funding Under the BCA Caps *Before* Automatic Reductions[c]	521	531	540	551	563	576	588	602	615	632 [d]
Estimate of DoD's Funding Under the BCA Caps *After* Automatic Reductions[e]	469	479	488	499	511	524	536	549	563	578 [d]
	2013 Dollars									
CBO Projection[a]	535	541	553	563	574	604	605	615	624	633
FYDP and Extension[b]	526	525	529	530	532	558	559	568	575	581
Estimate of DoD's Funding Under the BCA Caps *Before* Automatic Reductions[c]	521	524	525	527	529	531	532	533	535	539 [d]
Estimate of DoD's Funding Under the BCA Caps *After* Automatic Reductions[e]	469	472	475	477	480	483	485	487	489	493 [d]

Source: Congressional Budget Office.

Note: DoD = Department of Defense; FYDP = Future Years Defense Program; BCA = Budget Control Act of 2011.

a. The CBO projection of the base budget incorporates costs that are consistent with DoD's recent experience.

b. For the extension of the FYDP (2018 to 2022), CBO projects the costs of DoD's plans using the department's estimates of costs to the extent they are available and costs that are consistent with CBO's projections of price and compensation trends in the overall economy where the department's estimates are not available.

c. This estimate assumes that DoD would receive 95.5 percent of the funding limit for national defense *before* reductions due to the BCA's automatic enforcement procedures, on the basis of DoD's average share of that funding in base budgets from 2002 to 2011.

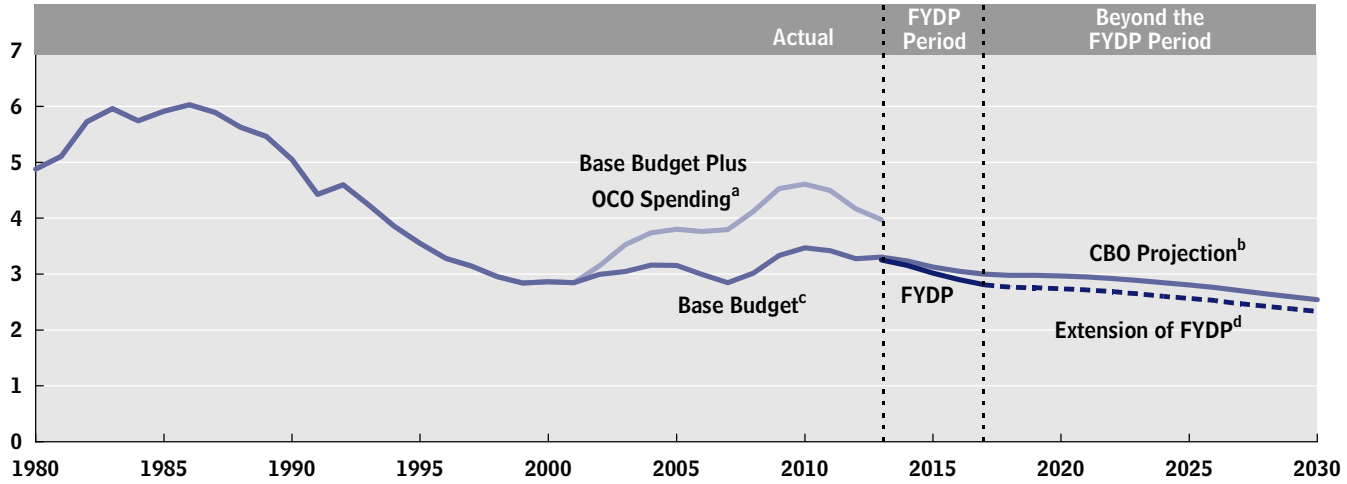
d. CBO estimates this value as the value for 2021 plus an adjustment for expected inflation.

e. This estimate assumes that DoD would receive 95.5 percent of the funding limit for national defense *after* reductions due to the BCA's automatic enforcement procedures, on the basis of DoD's average share of that funding in base budgets from 2002 to 2011.

Figure 1-4.

Costs of DoD's Plans as a Share of Economic Output

(Percentage of gross domestic product)



Source: Congressional Budget Office.

Notes: For this figure, estimates describe outlays (as opposed to total obligational authority).

FYDP = Future Years Defense Program; FYDP period = 2013 to 2017, the years for which the Department of Defense's (DoD's) plans are fully specified.

a. For 2002 to 2013, supplemental and emergency spending for overseas contingency operations (OCO), such as those in Afghanistan and Iraq, and for other purposes is shown separately from the base-budget data.

b. The CBO projection of the base budget incorporates costs that are consistent with DoD's recent experience.

c. Base-budget data include supplemental and emergency spending before 2002.

d. For the extension of the FYDP (2018 to 2030), CBO projects the costs of DoD's plans using the department's estimates of costs to the extent they are available and costs that are consistent with CBO's projections of price and compensation trends in the overall economy where the department's estimates are not available.

of $32 billion per year thereafter, CBO estimates.[8] That overseas force of 45,000 troops would be significantly smaller than the force deployed at the end of 2011 but about three to four times the average number deployed overseas between 1991 and 2001.

8. That scenario for contingency operations is the same as one of the policy alternatives presented in Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2012 to 2022* (January 2012), Table 3-5. The force levels referred to exclude U.S. military personnel who are permanently based overseas (in locations such as South Korea or Okinawa, Japan) but are not engaged in contingency operations. The drawdown through 2015 is roughly consistent with the President's announced plans for decreasing U.S. forces in Afghanistan.

CHAPTER

2

Projections of Operation and Support Costs

For 2013, the Administration requested $346 billion for operation and support—the sum of the appropriations for operation and maintenance and for military personnel (as well as for the Department of Defense's revolving funds, such as the one for the Defense Commissary Agency).[1] That sum represents two-thirds of DoD's total request excluding funding for overseas contingency operations. The Congressional Budget Office projection for the cost of DoD's plans for operation and support for 2013 is $356 billion because it includes costs for the active-duty personnel that DoD assumes will be paid for out of funds designated for contingency operations and because it incorporates the assumption that the Congress will continue its practice of rejecting DoD's attempts to shift some of the costs of military health care to the people receiving that care.

DoD plans to shrink the number of active-duty military personnel by 5 percent between 2013 and 2017 (see Box 2-1). Despite those plans, operation and support costs would rise to $373 billion (in real terms) by 2017 according to the CBO projection because the costs per person of military and civilian pay, military medical care, and other support would continue to grow over that period as they have in the past. By contrast, in the 2013 Future Years Defense Program, DoD estimates that costs for O&S would be roughly unchanged during that same period (see Figure 2-1 on page 16).

After 2017, under an assumption that the numbers of major combat units (Army divisions, Navy ships, Air Force squadrons, and so forth) and personnel remain the same as those in 2017, costs for O&S under the CBO projection would rise steadily, to $460 billion by 2030, representing annual growth of about 1.6 percent. At that rate, O&S costs would be 30 percent higher in 2030 than in 2013 and would account for 71 percent of the total cost of DoD's plans in that year. Those costs would be lower, $421 billion in 2030, under the extension of the FYDP, which uses DoD's estimates of costs or costs that are consistent with trends in prices and compensation that CBO projects for the overall economy. The difference stems partly from CBO's assumptions of faster growth in the cost of providing medical care to military personnel and their families, higher pay raises for DoD's military personnel, and correspondingly higher pay raises for civilian employees (equal to the pay raises for military personnel) from 2014 to the end of the projection period.

CBO's calculations of the future O&S costs of DoD's plans consist of three components:

- Compensation (that is, pay, cash benefits, and accrual payments for retirement benefits) for military personnel and DoD's civilian employees,
- Medical care for active-duty and retired military personnel and their families, and
- All other categories of operation and maintenance costs (such as fuel, repairs, and spare parts).

Compensation constitutes the largest of the three components in the 2013 budget request, accounting for more than half of the requested appropriation for O&S. Funding for compensation comes from the appropriations for military personnel and for O&M.

Medical care for military personnel, military retirees, and their families is also funded largely from the military personnel and O&M appropriation accounts. Under the

1. For this analysis, CBO folded the amounts appropriated for most revolving funds into the appropriation for operation and maintenance. The exception is accounts in the National Defense Sealift Fund that are used to purchase ships, which CBO treated as procurement.

Box 2-1.

The Number of Military Personnel, 2012 to 2017

Under the Department of Defense's (DoD's) plans, the number of military personnel would decline over the period covered by the Future Years Defense Program (FYDP). DoD measures the size of its force in terms of end strength—the number of military personnel on the rolls as of the final day of the fiscal year. In 2017, the department intends to fund end strength of about 1.32 million in the active force, excluding reserve and National Guard personnel serving on active duty. That total would be about 90,000 fewer than the number serving in 2012, with the reductions occurring primarily in the Army and the Marine Corps (see the table). Last year's FYDP, by comparison, would have reduced active end strength to 1.36 million personnel by 2016, a cut of about 50,000 relative to the 2012 level. The number of personnel in the reserve and National Guard also would decline over the current FYDP period: The department plans to fund about 825,000 personnel in those components in 2017, reflecting a decrease of about 20,000 relative to the number in 2012.

Beginning in 2013, the 2013 FYDP shifts the costs for 56,000 of the active-duty personnel slots that the department plans to eliminate by the end of 2017 from the base budget to the budget for overseas contingency operations (OCO). That approach allows the base budget to reflect the costs of an active-duty force of 1.34 million as early as 2013 and 1.32 million in 2014 through 2016, even though the actual active-duty force would decline more slowly.

In previous drawdowns, DoD has included the costs for all active-duty personnel in its base budget. Applying that precedent, the Congressional Budget Office (CBO) shifted all OCO funding for active-duty personnel back into the base budget for the CBO projection. Compared with the department's plans, that shift resulted in a $5 billion increase in base-budget costs in 2013 and a $15 billion increase over the FYDP period.

Continued

CBO projection, the cost of such care would experience faster growth than would compensation through 2030.

The third component contains the purchase through the O&M appropriation of myriad items ranging from office supplies to aircraft fuel (although it excludes major items such as ships, tanks, and aircraft, which are purchased from the procurement accounts) and many services, including contracts to maintain facilities, prepare food, repair weapon systems, operate information systems, and conduct many other activities.

CBO estimated costs for the first two components (compensation and medical care) in a "bottom-up" manner by combining estimates of underlying populations, physical quantities (such as numbers of prescriptions filled), and various factors relating to cost and price. However, such estimates were not possible for the third component of O&S costs because of the wide array of items and services purchased with those funds. Consequently, for that component of O&M, CBO used DoD's estimates through 2017 as a starting point and projected costs from 2018 to 2030 on the basis of DoD's historical experience. (See Box 2-2 on page 18 for a discussion of how O&M costs, including compensation for most of DoD's civilian employees and the bulk of the costs of the military's health care program, have grown over the years.)

Pay, Cash Benefits, and Accrual Payments for Retirement Benefits

Pay and cash benefits for military service members include basic pay, reenlistment bonuses, and housing allowances. In addition, DoD's appropriation for military personnel is charged for accrual payments to the Military Retirement Fund, calculated to provide a balance in the fund that is adequate to pay retirement benefits in the future to personnel who are currently service members. (Health care benefits available to service members and their families through the military medical system are considered separately in the next section.)

Box 2-1. Continued

The Number of Military Personnel, 2012 to 2017

DoD's Plans for Active-Duty End Strength

(Thousands of personnel)

		FYDP Period				
	2012	2013	2014	2015	2016	2017
Army						
Base Budget	547	502	490	490	490	490
OCO Budget	0	41	37	23	12	0
Navy[a]						
Base Budget	318	315	312	311	312	312
Marine Corps						
Base Budget	209	189	189	189	189	189
OCO Budget	0	15	10	6	0	0
Air Force[a]						
Base Budget	333	329	328	329	329	329
DoD Totals						
Base Budget	1,408	1,336	1,319	1,319	1,320	1,320
OCO Budget	0	56	47	29	12	0
All Budgets	1,408	1,392	1,367	1,348	1,332	1,320
Memorandum:						
Cost of Active-Duty Personnel in OCO Budget (Billions of 2013 dollars)	0	5.3	4.6	3.1	1.7	0.5

Source: Congressional Budget Office.

Notes: The Department of Defense (DoD) measures the size of its force in terms of end stength—the number of military personnel on the rolls as of the final day of a fiscal year. When estimating the annual costs to fund personnel in the base budget rather than the OCO budget, CBO used the average number of personnel each year.

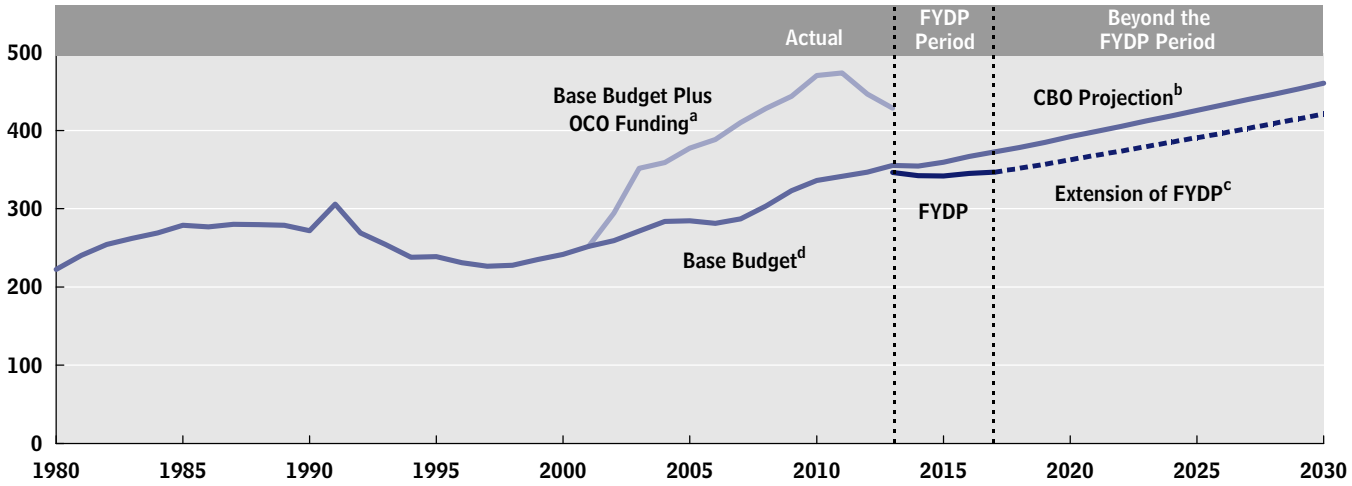
FYDP = Future Years Defense Program; OCO = overseas contingency operations.

a. The Navy and the Air Force do not have plans to fund active-duty military end strength with budgets for contingency operations.

Figure 2-1.

Costs of DoD's Operation and Support Plans

(Billions of 2013 dollars)



Source: Congressional Budget Office.

Note: FYDP = Future Years Defense Program; FYDP period = 2013 to 2017, the years for which the Department of Defense's (DoD's) plans are fully specified.

a. For 2002 to 2013, supplemental and emergency funding for overseas contingency operations (OCO), such as those in Afghanistan and Iraq, and for other purposes is shown separately from the base-budget data.

b. The CBO projection of the base budget incorporates costs that are consistent with DoD's recent experience.

c. For the extension of the FYDP (2018 to 2030), CBO projects the costs of DoD's plans using the department's estimates of costs to the extent they are available and costs that are consistent with CBO's projections of price and compensation trends in the overall economy where the department's estimates are not available.

d. Base-budget data include supplemental and emergency funding before 2002.

The Administration's 2013 budget request includes $195 billion in O&S funding for pay and benefits for DoD's military personnel and most of its civilian employees.[2] About $135 billion of that total is in the military personnel appropriation to support DoD's active-duty service members (plus reserve and National Guard members as necessary), excluding the 56,000 personnel discussed above whom the department proposes to fund within the OCO budget. An additional $60 billion is in the O&M request to compensate most of the department's roughly 800,000 full-time-equivalent civilian workers. DoD estimates that, over the FYDP period, annual costs to compensate military and civilian personnel will remain approximately constant at about $195 billion, reflecting a combination of planned reductions in personnel levels and pay growth averaging about the rate of inflation. Under the extension of the FYDP, those costs would grow by an average of 1.5 percent per year and reach $238 billion in 2030, CBO estimates.

According to the CBO projection of DoD's plans, the costs of pay and benefits in O&S would rise from $201 billion in 2013 to $211 billion in 2017, despite a 5 percent decline in the number of active-duty personnel (see Table 2-1). Those estimates are higher than the costs indicated in the FYDP because CBO assumes that all active-duty service members will be funded within the base budget and that pay raises will be higher than DoD proposes. After 2017, CBO estimates, compensation costs would grow by an average of 1.5 percent per year, reaching $258 billion by 2030.

2. Compensation for some civilian employees—about $13 billion in 2013—is paid from other appropriations. For instance, some civilians in military laboratories are paid from the appropriation for research, development, test, and evaluation, and some civilians are paid from the appropriation for procurement. See the "Green Book," namely, Department of Defense, *National Defense Budget Estimates for FY 2013*, (March 2012), Tables 6-1, 6-2, and 7-5, http://comptroller.defense.gov/defbudget/fy2013/FY13_Green_Book.pdf.

Table 2-1.

CBO Projection of Operation and Support Costs in DoD's Base Budget, 2013 and 2017

(Billions of 2013 dollars)

	2013 [a]	2017
Military Personnel		
Military personnel in the MHS	9	9
TRICARE for Life accrual payments	8	9
Other military personnel	125	127
Total, Military Personnel	**141**	**145**
Operation and Maintenance		
Civilian personnel		
Civilian personnel in the MHS	5	6
Other civilian personnel	54	60
Subtotal	60	66
Other O&M		
Other O&M in the MHS	29	41
Other O&M outside the MHS[b]	125	121
Subtotal	154	162
Total, Operation and Maintenance	**214**	**227**
Total, Operation and Support	**356**	**373**
Memorandum:		
Military Health System		
Military personnel in the MHS	9	9
TRICARE for Life accrual payments	8	9
Civilian personnel in the MHS	5	6
Other O&M in the MHS	29	41
Total, Military Health System[c]	**51**	**65**
Compensation[d]		
Military personnel	141	145
Civilian personnel	60	66
Total, Compensation[e]	**201**	**211**

Source: Congressional Budget Office.

Notes: The CBO projection applies CBO's estimates of costs that are consistent with DoD's recent experience to the Department of Defense's (DoD's) plans.

MHS = Military Health System; O&M = operation and maintenance.

a. Costs for military personnel in 2013 include the $5 billion that CBO shifted from the budget for overseas contingency operations (OCO) into the base budget for military personnel to fund 56,000 active-duty soldiers and marines that DoD plans to fund out of the OCO budget. Those positions will have been eliminated from the force by the end of 2017.

b. For this analysis, CBO folded appropriations for most revolving funds (such as the one for the Defense Commissary Agency) into the appropriations for operation and maintenance. The exception is accounts in the National Defense Sealift Fund that are used to purchase ships, which CBO treated as procurement.

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

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

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

Box 2-2.

The Context for the Projected Growth of Spending for Operation and Maintenance

In the Congressional Budget Office (CBO) projection, how does the growth of operation and maintenance (O&M) spending compare with historical experience? After normalizing O&M spending for the overall size of the armed forces (measured by the number of active-duty personnel), CBO analyzed historical O&M costs, including those for civilian personnel and military medical care, from 1980 to 2012. The result is a year-by-year measure of the Department of Defense's (DoD's) average cost to support each active-duty service member.

From 1980 to 2001, the last year before the onset of major operations in Afghanistan and Iraq, that cost grew steadily (see the figure). From $57,000 per active-duty service member in 1980, the cost grew at a roughly constant rate of about $2,300 a year despite significant changes at DoD, including the military buildup of the 1980s and the reduction in forces at the end of the Cold War. By 2001, the O&M cost per capita had nearly doubled from what it had been in 1980, reaching $108,000 per active-duty service member.

The overseas operations that began after 2001 caused rapid growth in O&M costs, which were funded largely through supplemental and emergency appropriations and not through the base budget. O&M funding per active-duty service member quickly departed from the historical trend as a result of the cost of conducting major operations on the other side of the world, the exceptional wear and tear on equipment in combat, and the large number of reserve and National Guard personnel deployed. (Those personnel are not included in the denominator in calculating costs per *active-duty* service member, but their support nevertheless contributes costs to the numerator.) By 2010, O&M costs per active-duty service member had doubled again, growing to $217,000, including costs for overseas contingency operations.

The large growth in O&M spending to support operations in Afghanistan and Iraq obscures another significant trend that developed during the war years—the rapid growth of O&M spending per active-duty service member in the base budget. That phenomenon is clearly illustrated in DoD's 2013 Future Years Defense Program (FYDP): At $158,000 in 2013, the O&M cost per active-duty service member is $29,000 (or 22 percent) above what the historical trend would indicate, which implies that such spending has grown by an average of more than $4,000 per year since 2001, or about 85 percent greater than the historical rate. DoD expects that those costs in the base budget will grow at less than the pre-2001 rate through the FYDP period, reaching $160,000 in 2017. Last year's FYDP, in contrast, anticipated growth at more than one and one-half times the historical rate.

With costs for overseas contingency operations excluded, costs per active-duty service member grow at a faster rate in the CBO projection than in the FYDP, reaching over $170,000 in 2017, reflecting an average annual increase of $4,700 from the estimated 2013 costs. Beyond 2017, O&M costs in the CBO projection grow more slowly than before that year but still more than 50 percent faster each year than the growth rate from 1980 to 2001. Furthermore, that growth starts from a projected per capita cost in 2017 that is $33,000 (or 24 percent) higher than would have been predicted by the historical trend. In CBO's projection, O&M costs exceed $215,000 per active-duty service member by 2030. In addition, as it has in the past decade, increased reliance on contractors to perform functions previously performed by military personnel could further increase O&M costs per active-duty service member.

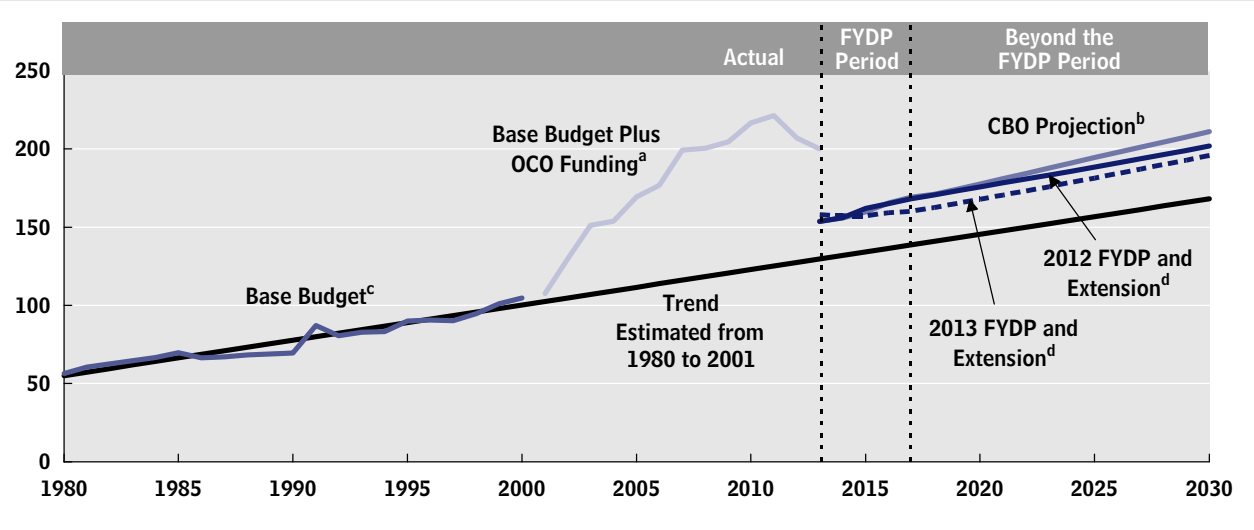
Continued

Box 2-2. Continued

The Context for the Projected Growth of Spending for Operation and Maintenance

Costs of Operation and Maintenance per Active-Duty Service Member

(Thousands of 2013 dollars)



Source: Congressional Budget Office.

Note: FYDP = Future Years Defense Program; FYDP period = 2013 to 2017, the years for which the Department of Defense's (DoD's) plans are fully specified.

a. For 2002 to 2013, supplemental and emergency funding for overseas contingency operations (OCO), such as those in Afghanistan and Iraq, and for other purposes is shown separately from the base-budget data.

b. The CBO projection of the base budget incorporates costs that are consistent with DoD's recent experience.

c. Base-budget data include supplemental and emergency funding before 2002.

d. For the extension of the FYDP (2018 to 2030), CBO projects the costs of DoD's plans using the department's estimates of costs to the extent they are available and costs that are consistent with CBO's projections of price and compensation trends in the overall economy where the department's estimates are not available.

CBO's projections of real growth in military compensation are based on current law, which indexes the annual increase in basic military pay to the percentage increase in the Bureau of Labor Statistics' employment cost index (ECI) for wages and salaries in private industry.[3] From 1981 to 2012, the ECI grew more rapidly than the gross domestic product deflator (a measure of the prices of all final goods and services produced in the economy) in all but four of those years. By CBO's estimates, the same pattern will continue between 2013 and 2017, and growth of the ECI will exceed growth of the GDP deflator by an average of 1.9 percentage points per year.[4] After 2017, according to CBO's projections, the ECI will continue to grow faster than the GDP deflator—by 1.7 percentage points per year—through 2030.

In enacting annual defense authorizations and appropriations, lawmakers often grant a military pay raise that is

3. Section 602 of the National Defense Authorization Act for Fiscal Year 2004 (P. L. 108-136, 117 Stat. 1498, codified at 37 U.S.C. 1009, Adjustments of monthly basic pay).

4. See Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2012 to 2022* (January 2012).

greater than the one already specified in law. Ten of the last 12 annual pay raises were one-half percentage point greater than the rate of increase in the ECI, provided as part of ongoing efforts to eliminate a perceived "pay gap" between military compensation and compensation in the private sector. Whether such a gap exists and how to measure its magnitude are matters of some debate.[5] Both the Ike Skelton National Defense Authorization Act for Fiscal Year 2011 (P. L. 111-383) and the National Defense Authorization Act for Fiscal Year 2012 (P. L. 112-81) broke with previous practice and did not authorize a military pay raise in excess of the ECI.

DoD's plans in the 2013 FYDP do not include military pay raises that keep pace with the ECI through the 2013 to 2017 period. The department's plans include a 1.7 percent pay raise for 2014, lower than CBO's projection of the increase in the ECI for that year but perhaps consistent with DoD's own projection of the ECI. For 2015 through 2017, DoD is proposing pay raises of 0.5 percent, 1.0 percent, and 1.5 percent, respectively—all deliberately smaller than the department's projection of ECI growth for those years. In its extension of the FYDP, CBO assumes that military pay raises will equal the increase in the ECI from 2018 through 2030. In its projection based on DoD's historical experience, CBO assumes that the Congress will provide military pay increases that keep pace with the growth in the ECI starting in 2013 and continuing through 2030.

DoD assumes that pay raises for its civilian employees will equal the percentage increases for military personnel for all years in the FYDP except 2013, when civilians are proposed to receive a 0.5 percent raise, compared with 1.7 percent for military personnel. CBO assumes in its extension of the FYDP that pay raises for DoD's civilian employees will keep pace with those for military personnel (and, therefore, the ECI) in every year after 2017.[6] In its own projection, CBO assumes that civilian pay raises will be 0.5 percent in 2013 but will equal growth in the ECI every year thereafter.

5. See Congressional Budget Office, *Evaluating Military Compensation* (June 2007); and statement of Carla Tighe Murray, Senior Analyst, Congressional Budget Office, before the Subcommittee on Personnel, Senate Committee on Armed Services, *Evaluating Military Compensation* (April 28, 2010).

The Military Health System

The TRICARE program provides health care for the military's uniformed personnel and retirees and for their eligible family members and survivors. Almost 10 million people are eligible to seek subsidized care from military treatment facilities, from regional networks of civilian providers under contract with TRICARE, or from other civilian providers. DoD also manages TRICARE for Life, a program that the Congress authorized in the 2001 National Defense Authorization Act to supplement Medicare for beneficiaries eligible for both Medicare and the military health benefit.

DoD's plans for 2013 include $47 billion for military health care, or about 9 percent of the requested budget for all activities covered by the department's base budget. According to the CBO projection, however, the costs of DoD's plans for its military health care system for 2013 would be $51 billion. CBO projects that such costs would reach $65 billion by 2017 and $95 billion by 2030 (see Figure 2-2). Over the FYDP period from 2013 to 2017, CBO's projection has average annual growth of 6.0 percent, compared with 2.6 percent in DoD's projection.

The CBO projection of DoD's medical costs consists of five categories:

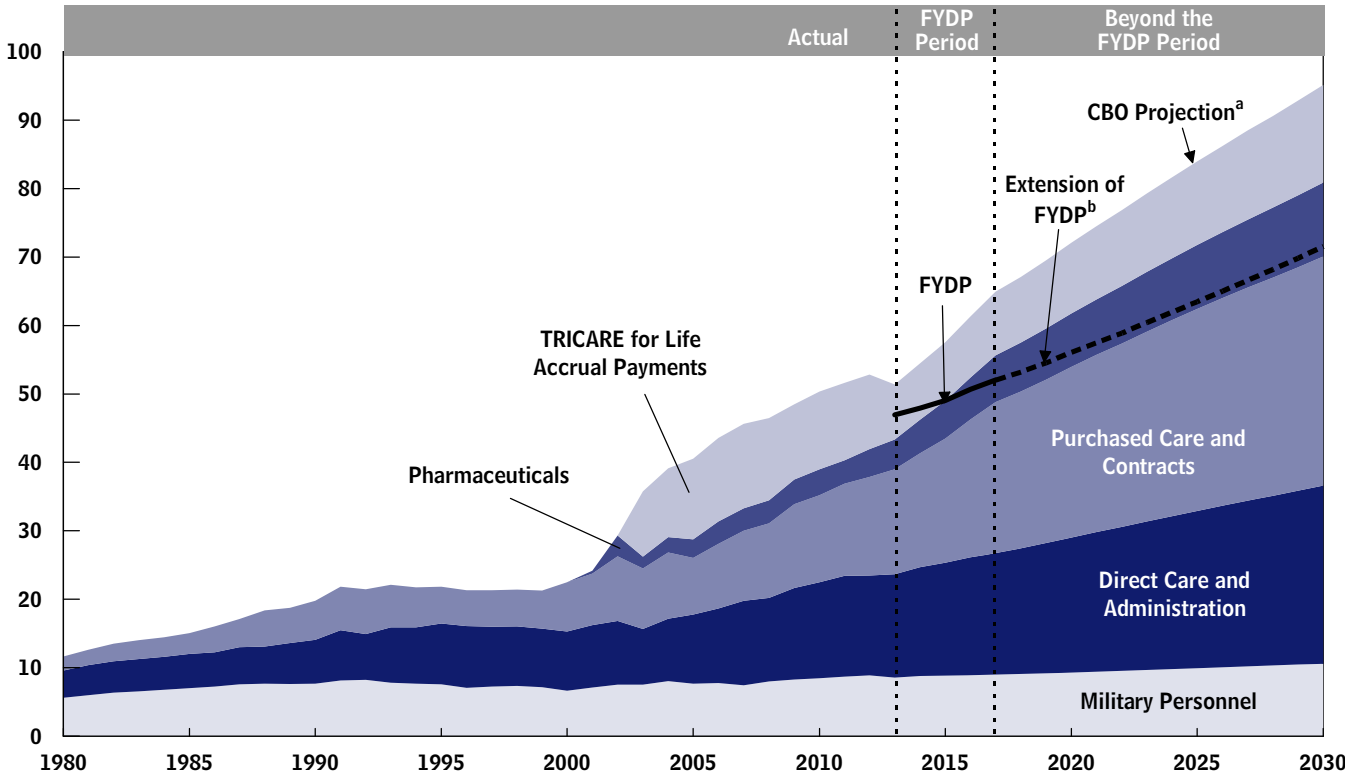
- **Military Personnel** funds pay and benefits for uniformed personnel assigned to work in the military health system.
- **Direct Care and Administration** funds the operation of military medical facilities and other administrative and training activities. This category includes pay and benefits for civilian personnel assigned to work in those facilities but excludes pay and benefits for military personnel.

6. CBO compared the annual pay raises that the two groups were granted between 1984 and 2012. For the military pay raises, CBO included across-the-board pay raises as well as the average additional increases in years in which pay raises contained additional amounts targeted toward particular grades or seniority levels. For the civilian pay raises, CBO included across-the-board pay raises as well as the average increases in locality pay. Over those 29 years, the military pay raises were larger in 11 instances, the civil service pay raises were larger in 2 instances, and the raises were equal in the remaining 16 instances.

Figure 2-2.

Costs of DoD's Plans for Its Military Health System

(Billions of 2013 dollars)



Source: Congressional Budget Office.

Notes: Supplemental and emergency funding for overseas contingency operations (OCO), such as those in Afghanistan and Iraq, is included for 2012 and earlier but not for later years.

Before 2001, pharmaceutical costs were not separately identifiable but were embedded in the costs of two categories: "Purchased Care and Contracts" and "Direct Care and Administration." In 2001 and later years, most pharmaceutical costs are separately identifiable, but some of those costs may be embedded in the category "TRICARE for Life Accrual Payments."

The amounts shown for the Future Years Defense Program (FYDP) and the extension of the FYDP are the totals for all categories.

FYDP period = 2013 to 2017, the years for which the Department of Defense's (DoD's) plans are fully specified.

a. Each category shows the CBO projection of the base budget from 2013 to 2030. That projection incorporates costs that are consistent with DoD's recent experience.

b. For the extension of the FYDP (2018 to 2030), CBO projects the costs of DoD's plans using the department's estimates of costs to the extent they are available and costs that are consistent with CBO's projections of price and compensation trends in the overall economy where the department's estimates are not available.

- **Purchased Care and Contracts** covers medical care delivered to military beneficiaries by providers in the private sector, both inside and outside the TRICARE network.

- **Pharmaceuticals** covers purchases of medicines dispensed at military medical facilities, at pharmacies inside and outside DoD's network, and through DoD's mail-order pharmacy program.

- **Accrual Payments for TRICARE for Life** covers funds deducted from DoD's discretionary budget request and credited to the Medicare-Eligible Retiree Health Care Fund. Outlays from that fund are used to reimburse military medical facilities for care provided to military retirees and their family members who are also eligible for Medicare and to cover most of the out-of-pocket costs that those beneficiaries would otherwise incur when seeking care from private-sector Medicare providers.

CBO projects that pay and benefits for military personnel who work in the military health system will increase at the same rate as for other military personnel. Although projected to rise, military compensation is not a major contributor to the overall increase in costs that CBO projects for the military health system.

CBO projected the costs per user of pharmaceuticals, purchased care and contracts, and direct care and administration between 2014 and 2020 using the projections of cost growth per person for pharmaceuticals and for a composite category of hospital care and physician and clinical services that are published by the Centers for Medicare and Medicaid Services (CMS).[7] The growth rates of per-person costs in the military health system over the past six years have been significantly higher than the corresponding national averages. For example, from 2006 to 2011, DoD's spending per user for purchased care and contracts and for direct care and administration grew by an average of 4.2 percent and 3.2 percent per year, respectively, compared with average growth of 1.3 percent per year for the comparable composite category for the nation as a whole (all measured as growth in excess of the rate of general inflation).[8] However, differentials of that magnitude are not likely to persist forever, so CBO applied progressively smaller increments to CMS's growth rates when projecting DoD's health care costs through 2020. After 2020—beyond the range of CMS's projections—CBO assumed that DoD's costs would decelerate, reaching a growth rate in 2030 that was around 1 percentage point higher than the growth of per capita GDP, an assumption that is roughly consistent with estimates in CBO's *The 2012 Long-Term Budget Outlook*.[9] Over the entire 2013–2030 period, the real growth rates per user in the military health system would average 5.5 percent per year for pharmaceuticals, 4.7 percent for purchased care and contracts, and 3.3 percent for direct care and administration.[10]

Low out-of-pocket expenses for TRICARE beneficiaries (many of whose copayments, deductibles, and maximum annual out-of-pocket payments have remained unchanged or have decreased since the mid-1990s), combined with increased costs of alternative sources of health insurance coverage, make the TRICARE program relatively more attractive each year. As a result, a larger share of military retirees and their dependents are relying on the program rather than participating in health insurance provided by civilian employers or purchasing insurance on their own.[11] In addition, low out-of-pocket costs and other factors have led to utilization rates for inpatient and outpatient care that are significantly higher for TRICARE beneficiaries than for people with other insurance. For example, DoD found that enrollees in TRICARE Prime (a managed care program that covers more than half of the people eligible for TRICARE and offers the lowest out-of-pocket costs) used services at a higher rate than did comparable civilian enrollees in health maintenance organizations (HMOs).[12]

DoD's 2013 budget request would implement the following changes to the TRICARE benefit beginning in that year:

- Institute an annual fee for Medicare-eligible military retirees who enroll in TRICARE for Life;

7. Centers for Medicare and Medicaid Services, *National Health Expenditure Projections, 2010–2020,* www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2010.pdf.

8. In nominal terms, the average annual growth rates that DoD experienced between 2006 and 2011 were 6.2 percent for purchased care and contracts and 5.2 percent for direct care and administration, compared with a national rate of 3.3 percent for the comparable composite category of hospital care and physician and clinical services. CBO used the six most recent years of spending as the basis for most of its projections because those years best reflect the TRICARE benefit as it is currently structured. The exception was for pharmacy costs: In that case, CBO used spending from 2006 to 2010 because a change in the law allowing TRICARE to receive more-favorable prices at retail pharmacies resulted in an atypically large drop in DoD's drug expenditures in 2011.

9. Congressional Budget Office, *The 2012 Long-Term Budget Outlook* (June 2012), p. 53.

10. In nominal terms, those average annual growth rates for the 2013–2030 period would be 7.4 percent for pharmaceuticals, 6.7 percent for purchased care and contracts, and 5.2 percent for direct care and administration. The calculation of the growth rate for pharmaceuticals excludes some pharmacy costs that are not paid explicitly from O&M funds but are embedded in the accrual payments for TRICARE for Life.

11. In 2001, about 50 percent of military retirees and their dependents had signed up for private health insurance, but by 2011 that figure had dropped to 25 percent. See Department of Defense, *Evaluation of the TRICARE Program: Fiscal Year 2012 Report to Congress* (February 28, 2012), p. 77, http://go.usa.gov/de7.

12. Ibid., pp. 62, 67, and 72.

- Increase the annual fee that military retirees who are not yet eligible for Medicare pay to enroll in TRICARE Prime;
- Institute an annual fee for military retirees not yet eligible for Medicare who enroll in TRICARE Standard (which operates as a traditional fee-for-service plan) or Extra (which operates as a preferred-provider network);
- Increase the annual deductibles for military retirees not yet eligible for Medicare who enroll in TRICARE Standard or Extra; and
- Adjust the pharmacy copayments for active-duty family members and for retirees and their families as an incentive to purchase mail-order and generic drugs.[13]

DoD estimates that those changes would generate savings of $5.5 billion in the department's O&M appropriation and $7.4 billion in accrual payments into the Medicare-Eligible Retiree Health Care Fund over the next five years, and those savings are incorporated into DoD's projections of the funding it will seek. Because the Congress has a long history of denying DoD's requests to increase cost sharing by TRICARE beneficiaries, the CBO projection incorporates the assumption that the savings generated by DoD's proposed fee increases starting in 2013 will not be realized. Indeed, the House of Representatives, in its version of the National Defense Authorization Act for 2013, has largely rejected DoD's proposal; the full Senate has not yet voted on its version of the National Defense Authorization Act.[14]

For the accrual payments for TRICARE for Life, DoD's contributions to the fund would grow at an average annual rate per service member of 3.7 percent between 2013 and 2020, by CBO's estimates.[15] After that point, CBO assumes, the rate of growth would slow and reach approximately 1 percentage point above the growth of per capita GDP by 2030. Accrual payments per service member would rise at an annual real rate of 3.4 percent, on average, over the 2013–2030 period (or 5.4 percent in nominal terms).

According to the CBO projection, DoD's health care costs in 2013 would exceed by $4 billion the amount requested by the Administration. Part of that difference arises from the savings in DoD's O&M appropriation and accrual payments that DoD estimates it would reap in that year if the Congress approved the department's proposals to increase beneficiaries' cost sharing. CBO also projects a larger number of users of military health care by virtue of transferring to the base budget the costs of 56,000 military personnel whom DoD would instead pay from the budget for overseas contingency operations.

The costs in CBO's projection exceed those in the extension of the FYDP. The annual growth rates for pharmaceuticals, purchased care and contracts, and direct care and administration are generally higher in CBO's projection than in the FYDP itself through 2017. For 2018 and beyond, costs begin at a higher level in the CBO projection and remain higher, although the growth rates in the two projections tend to converge in the last few years approaching 2030.

Other Operation and Maintenance Costs

The remainder of O&S spending is for the portions of operation and maintenance other than compensation for military personnel and DoD's civilian employees and the military health system. CBO also includes appropriations for most revolving funds in this category. Under both the CBO projection and the extension of the FYDP, those other O&M costs would fall from $125 billion in 2013 to $121 billion in 2017 as the size of the military decreased, and then such costs would rise to $140 billion in 2030.

Because myriad functions contribute to the remaining O&M costs, it was not practical for CBO to build an estimate from the bottom up—that is, developing estimates for all of the various components involved and summing those estimates—as was the case for the

13. Department of Defense, *Fiscal Year 2013 Budget Request: Overview* (February 2012), pp. 5-2 to 5-5, http://go.usa.gov/ynJ.

14. See U.S. House of Representatives, National Defense Authorization Act for Fiscal Year 2013, Section 4501 (passed on May 18, 2012). Section 718 would authorize one type of increase that DoD requested—to pharmacy copayments—but of a smaller magnitude than the department assumed when developing its budget.

15. In 2011, the DoD Board of Actuaries lowered its forecast of annual per capita spending growth over the long run from 6.25 percent to 5.75 percent. The latter figure, adjusted for inflation, is the basis for CBO's estimate.

estimates of compensation and military health care. Instead, CBO used a "top-down" methodology to project other O&M costs. Specifically, CBO relied on the FYDP through 2017 and used historical information on growth in other O&M costs (that is, excluding costs for compensation and military health care) per active-duty service member to project subsequent costs.

CBO estimated that the remaining O&M costs grew at about $1,200 per year (in 2013 dollars) per active-duty service member from 1980 to 2001; CBO used that rate of increase for its projections from 2017 to 2030. The historical growth in those remaining O&M costs could have been caused by a number of factors. For example, new weapon systems tend to be more costly to operate because they are more complex and technically sophisticated than are earlier generations. In addition, aging weapon systems tend to be more costly to operate and maintain, particularly as they approach the end of their service life or as they are upgraded to extend their service life. Finally, DoD may have been hiring contractors to provide services and functions that did not exist in earlier years or that had been provided by military personnel.

CHAPTER

3

Projections of Acquisition Costs

Acquisition budgets encompass the costs to develop and purchase weapon systems and other major equipment and to make modifications to upgrade the capabilities or extend the service life of weapon systems. They are the sum of the appropriations for procurement and for research, development, test, and evaluation. For 2013, the Administration requested $168 billion for acquisition, 32 percent of its total request for the Department of Defense (excluding funding for overseas contingency operations).

Under the Congressional Budget Office projection, the costs to implement DoD's plans for acquisition over the next five years would rise steadily to $193 billion in 2017 (in 2013 dollars), or about 14 percent above the amount in 2013 (see Figure 3-1). In 2018, the first year beyond the Future Years Defense Program, the costs of DoD's acquisition plans would increase sharply, by about 10 percent, to more than $212 billion. Costs would remain at about that level through 2025 and would decrease thereafter, dropping back to about the 2013 level by 2030. During those latter years and beyond, however, acquisition costs could rise again depending on future decisions about how to equip the military.

The steep increase in acquisition costs beyond the FYDP suggests that a classic "bow wave" is being created by DoD's constraining acquisition during a period of tight budgets but continuing to plan (as shown, for example, in the Navy's 30-year shipbuilding plan) for much more acquisition thereafter. During the past several years, fairly steady growth in projected acquisition did not present such a bow wave. But with the Budget Control Act of 2011 restraining the growth of appropriations, especially in the near term, a bow wave has emerged. The BCA may also explain another aspect of the services' base budgets for acquisition: a sharp drop in 2013 followed by a sharp increase in 2014. Acquisition can be easier to cut quickly than activities funded in other accounts, such as military personnel, where cuts can take a few years to phase in. Rapid reductions in acquisition budgets can, however, increase unit costs and total costs unless procurement quantities are reduced.

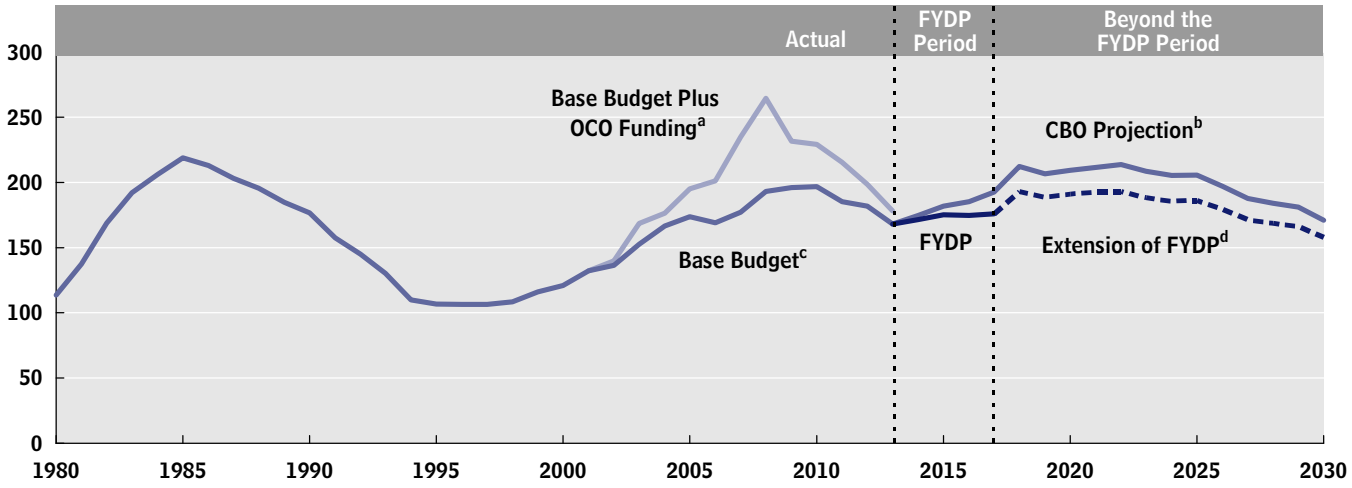
Under DoD's estimates for the FYDP, acquisition costs will be roughly constant between 2014 and 2017, averaging about $175 billion. In its extension of the FYDP, CBO estimates that acquisition costs would increase by about 10 percent in 2018 relative to the amount in 2017 and remain at that higher level—an average of about $190 billion per year—through 2025 before decreasing over the remaining years in the projection period. From 2018 to 2030, costs under the extension of the FYDP would be about 10 percent lower than under the CBO projection, primarily because of differences in estimates of the costs of new weapon systems. Specifically, costs for weapon systems that are not yet in production at a full rate are typically higher under the CBO projection than under the extension of the FYDP, reflecting CBO's higher estimates for the cost of the development of weapons based on the department's historical experience.[1]

1. Historical analysis of DoD's acquisition programs indicates that costs have grown substantially relative to initial estimates. See Mark V. Arena and others, *Historical Cost Growth of Completed Weapon System Programs,* TR343-AF (prepared by RAND for the United States Air Force, 2006), www.rand.org/pubs/technical_reports/2006/RAND_TR343.pdf; and Obaid Younossi and others, *Is Weapon System Cost Growth Increasing? A Quantitative Assessment of Completed and Ongoing Programs,* MG-588-AF (prepared by RAND for the United States Air Force, 2007), www.rand.org/pubs/monographs/2007/RAND_MG588.pdf.

Figure 3-1.

Costs of DoD's Acquisition Plans

(Billions of 2013 dollars)



Source: Congressional Budget Office.

Note: FYDP = Future Years Defense Program; FYDP period = 2013 to 2017, the years for which the Department of Defense's (DoD's) plans are fully specified.

a. For 2002 to 2013, supplemental and emergency funding for overseas contingency operations (OCO), such as those in Afghanistan and Iraq, and for other purposes is shown separately from the base-budget data.

b. The CBO projection of the base budget incorporates costs that are consistent with DoD's recent experience.

c. Base-budget data include supplemental and emergency funding before 2002.

d. For the extension of the FYDP (2018 to 2030), CBO projects the costs of DoD's plans using the department's estimates of costs to the extent they are available and costs that are consistent with CBO's projections of price and compensation trends in the overall economy where the department's estimates are not available.

DoD has also requested additional acquisition funding to continue supporting the overseas contingency operations in Afghanistan and elsewhere. For 2001 to 2012, approximately $326 billion in OCO funds was appropriated for acquisition. Those funds have been used for a variety of purposes, including replacing equipment destroyed in battle and purchasing new types of equipment, such as mine-resistant vehicles. For 2013, $9.9 billion of the $88 billion requested for overseas operations is for acquisition: $9.7 billion for procurement and about $250 million for RDT&E. This report does not address those costs.

To project the costs of DoD's acquisition plans, CBO tracked the procurement and RDT&E funding for more than 190 weapon systems or major upgrades to existing systems. Some of those systems are in or nearing production (for example, the Air Force's KC-46 tanker), and some are in the early planning stages (for example, the new combat vehicle planned for the Army). Others (a replacement for the Navy's F/A-18E/F fighter, for instance) are not based on specific plans but have been identified by CBO either as systems that would be necessary to maintain weapon inventories as existing systems reach the end of their service life and need to be replaced, or as systems that would provide new capabilities to meet goals described in the services' policy statements.

The following sections describe details of the more significant systems in DoD's acquisition plans and CBO's estimates of the costs of those plans for each of the military departments—the Army, the Navy (including the Marine Corps), and the Air Force—and for the parts of DoD outside the military services, including the Missile Defense Agency (MDA) (see Figure 3-2).

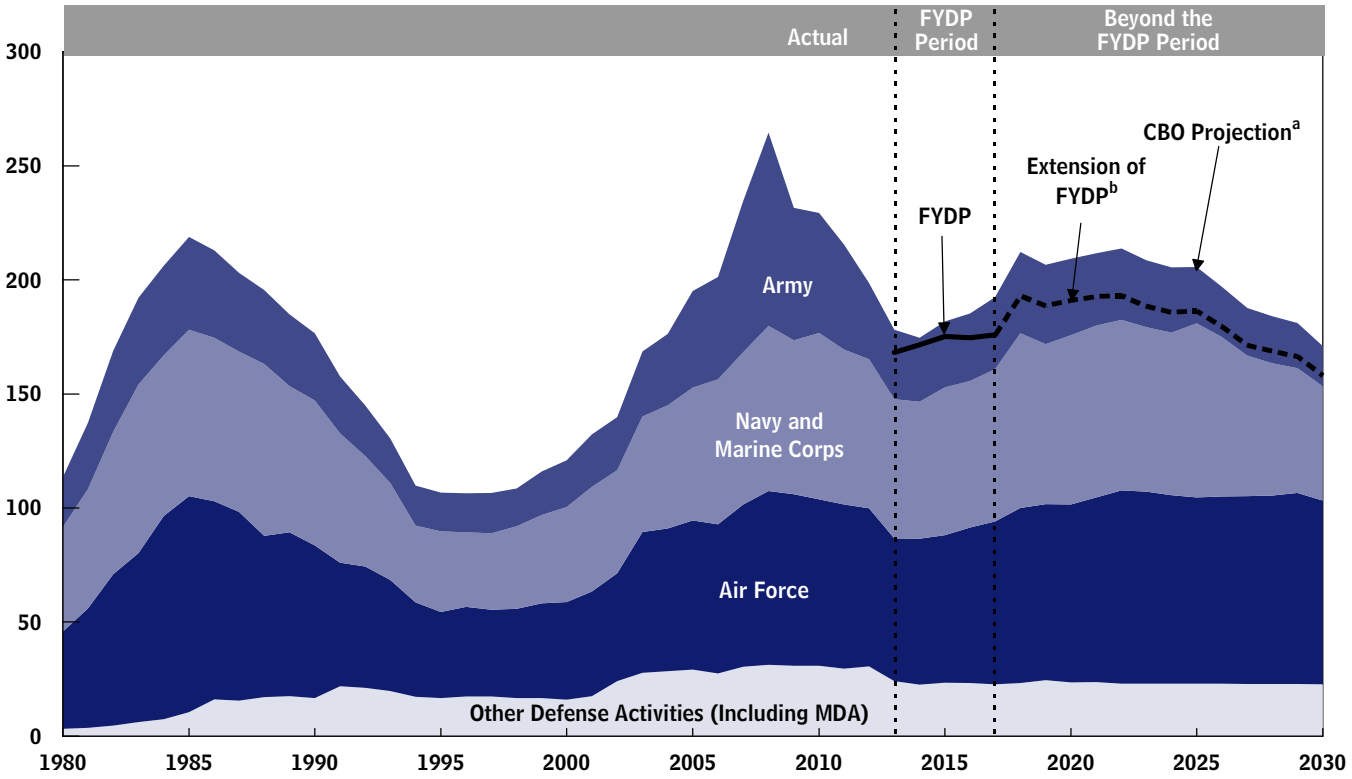
The Army

The Administration's 2013 request for acquisition funding for the Department of the Army includes $26 billion

Figure 3-2.

Costs of DoD's Acquisition Plans, by Military Service

(Billions of 2013 dollars)



Source: Congressional Budget Office.

Notes: The amounts shown for the Future Years Defense Program (FYDP) and the extension of the FYDP are the totals for all categories.

Supplemental and emergency funding for overseas contingency operations (OCO), such as those in Afghanistan and Iraq, is included in the service totals for 2013 and earlier but not for later years. The amount shown for the FYDP does not include funding for OCO.

FYDP period = 2013 to 2017, the years for which the Department of Defense's (DoD's) plans are fully specified; MDA = Missile Defense Agency.

a. Each category shows the CBO projection of the base budget from 2013 to 2030. That projection incorporates costs that are consistent with DoD's recent experience.

b. For the extension of the FYDP (2018 to 2030), CBO projects the costs of DoD's plans using the department's estimates of costs to the extent they are available and costs that are consistent with CBO's projections of price and compensation trends in the overall economy where the department's estimates are not available.

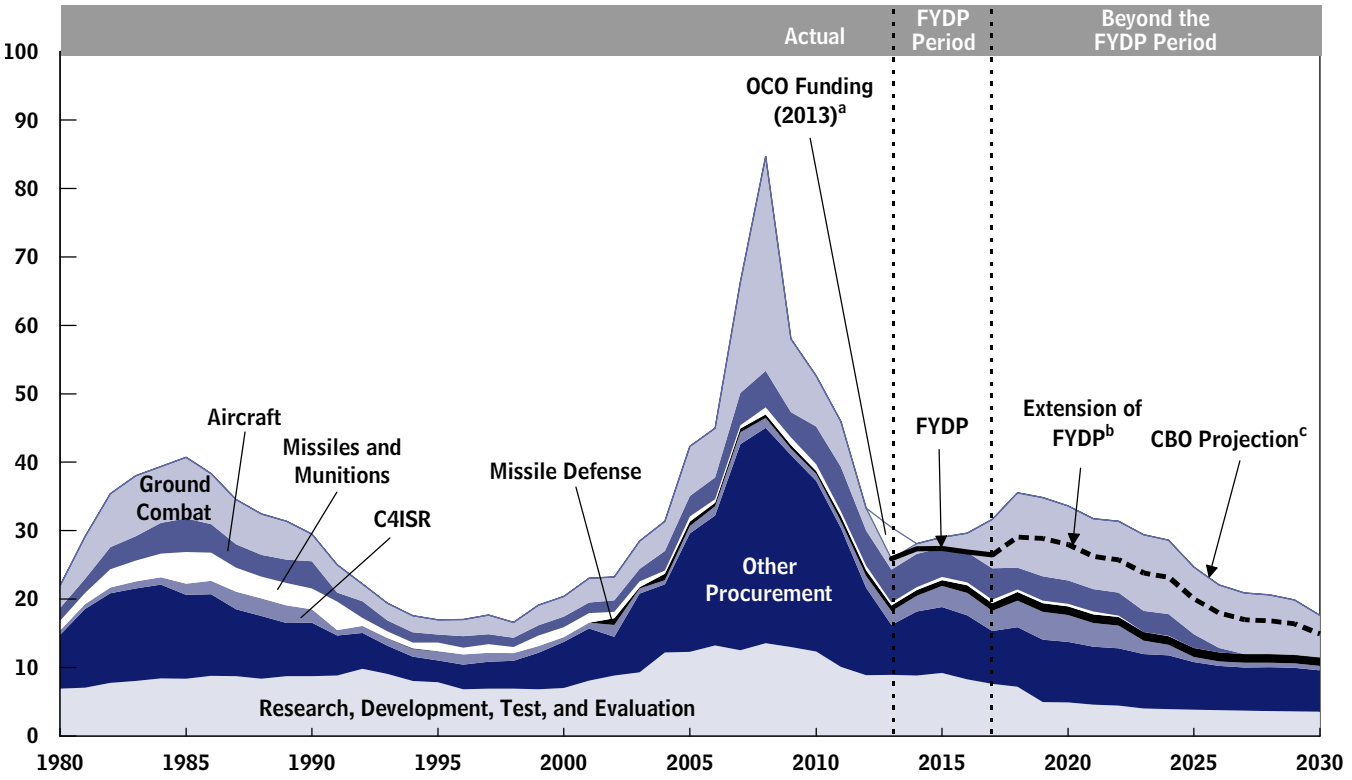
for the base budget plus an additional $4.6 billion for overseas contingency operations. According to the CBO projection of DoD's plans, acquisition costs for the Army's base budget would increase to $28 billion in 2014, or by 9 percent, and grow to $32 billion by the end of the FYDP period (see Figure 3-3). In 2018, the first year after the FYDP period, costs would increase by 12 percent relative to the amount in 2017 but then decline thereafter. The growth through 2018 would result primarily from increased funding for ground combat vehicles and trucks. The extension of the FYDP exhibits a similar profile but with total estimated costs for 2018 through 2030 that are about 18 percent lower than the costs estimated in the CBO projection.

For its projections of procurement costs for the Army, CBO tracked certain programs in five categories of major systems: ground combat vehicles and trucks; command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems; aircraft;

Figure 3-3.

Costs of the Army's Acquisition Plans

(Billions of 2013 dollars)



Source: Congressional Budget Office.

Notes: The amounts shown for the Future Years Defense Program (FYDP) and the extension of the FYDP are the totals for all categories.

FYDP period = 2013 to 2017, the years for which the Department of Defense's (DoD's) plans are fully specified; C4ISR = command, control, communications, computers, intelligence, surveillance, and reconnaissance.

a. Supplemental and emergency funding for overseas contingency operations (OCO), such as those in Afghanistan and Iraq, is included for 2013 and earlier but not for later years.

b. For the extension of the FYDP (2018 to 2030), CBO projects the costs of DoD's plans using the department's estimates of costs to the extent they are available and costs that are consistent with CBO's projections of price and compensation trends in the overall economy where the department's estimates are not available.

c. Each category shows the CBO projection of the base budget from 2013 to 2030. That projection incorporates costs that are consistent with DoD's recent experience.

missile defense systems; and missiles and munitions. The remaining programs are grouped together as other procurement.[2] The funding shown in those individual categories does not include the other component of acquisition, RDT&E, which is shown separately.

2. CBO's estimates of procurement costs for major weapon systems do not match those in the services' major procurement categories because CBO has focused on a subset of the programs contained in those categories and included the other programs in those categories under other procurement.

Ground Combat Vehicles and Trucks

The Army's plans include upgrades to some of its combat vehicles—including Abrams tanks, Bradley fighting vehicles, and self-propelled 155-millimeter howitzers. The plans also include the purchase of two new types of combat vehicles, the ground combat vehicle (GCV) and the armored multipurpose vehicle (AMPV). The Army intends to use the GCVs, which would be entirely new vehicles, to replace the infantry carrier version of the Bradley fighting vehicles in its combat brigades. The

AMPVs, based on existing vehicles, would replace the various versions of the M113 armored personnel carriers in the Army's combat brigades.[3] Procurement funding for the new GCVs would begin in 2016, and purchases of at least 100 vehicles per year would begin in 2019. Purchases of AMPVs are scheduled to begin in 2017.

In addition, the Army intends to modernize or upgrade some of its tactical vehicles (which are primarily types of trucks). The Army's plans include the purchase of a light truck that is being developed in cooperation with the Marine Corps and is expected to be safer and more fuel-efficient than the Army's current light truck, the high-mobility multipurpose wheeled vehicle (HMMWV). The Army plans to use the new truck to replace about one-third of the roughly 150,000 HMMWVs in its inventory. The Army also plans to extend the service life of its heavy and medium trucks.

C4ISR Systems

The Army's C4ISR systems include ones designed to enable Army units to communicate and share data. Two of the larger programs in this category are for new advanced radios—known as the Joint Tactical Radio System (JTRS)—and the Warfighter Information Network (WIN-T) data-networking system. The Army is scheduled to buy more than 250,000 radios through the JTRS program by 2025; the WIN-T program will be purchased in three increments to provide increasingly sophisticated networking hardware and software between 2013 and 2030.

Aircraft

The Army's plans for aviation programs include both rotary-wing and unmanned aircraft. Those plans include completing purchases of UH-72A Lakota light-utility helicopters, which are replacing the remaining UH-1H Hueys and OH-58C Kiowas. The Army is also exploring options for procuring Armed Scout helicopters to replace today's fleet of OH-58D Kiowa Warriors and the canceled Armed Reconnaissance helicopter. In both of its projections, CBO assumed that procurement of that new helicopter would begin in 2017. In addition, the Army's plans include programs to upgrade and extend past 2028 the service life of its Apache, Blackhawk, and Chinook helicopters. The projections also include plans to purchase several types of unmanned aircraft, including the MQ-1C Grey Eagle, which is similar to the Predator aircraft flown by the Air Force.[4]

Missile Defense

The Army's plans include purchases of equipment to defend against ballistic missiles. In recent years, the Army has planned to buy two systems: the Patriot Air and Missile Defense System, which includes the Patriot Advanced Capability-3 (PAC-3) missile, and the Patriot/Medium Extended Air Defense System (MEADS) Combined Aggregate Program, which was intended to be a follow-on to the Patriot system. However, in February 2011, DoD announced that the Army would not purchase MEADS but instead would terminate the program by 2014 after completing a limited development effort. Current plans continue to include procurement of the Patriot Missile Segment Enhancement interceptor, which is compatible with Patriot and MEADS and performs better than the PAC-3 missile, in the same quantities that had been anticipated before the MEADS program was terminated. The Army now plans to upgrade other components of the existing Patriot systems as well.

The Navy and the Marine Corps

The 2013 budget request contains $59 billion for acquisition in the base budget for the Department of the Navy, which includes the Navy and the Marine Corps, and an additional $1.6 billion for acquisition for overseas contingency operations. According to the CBO projection of DoD's plans, acquisition costs for the Navy and the Marine Corps would average about $63 billion from 2013 through 2017, about 3 percent higher than the average anticipated in the FYDP (see Figure 3-4).

Beyond the FYDP period, according to CBO's projection, the costs to implement the Navy and the Marine Corps' acquisition plans would increase substantially, jumping to $77 billion in 2018 (or by about 15 percent over the 2017 amount) and averaging about $74 billion per year through 2025. Costs would then decline sharply from 2026 through 2030. The FYDP and its extension exhibit a similar profile but with total estimated costs for

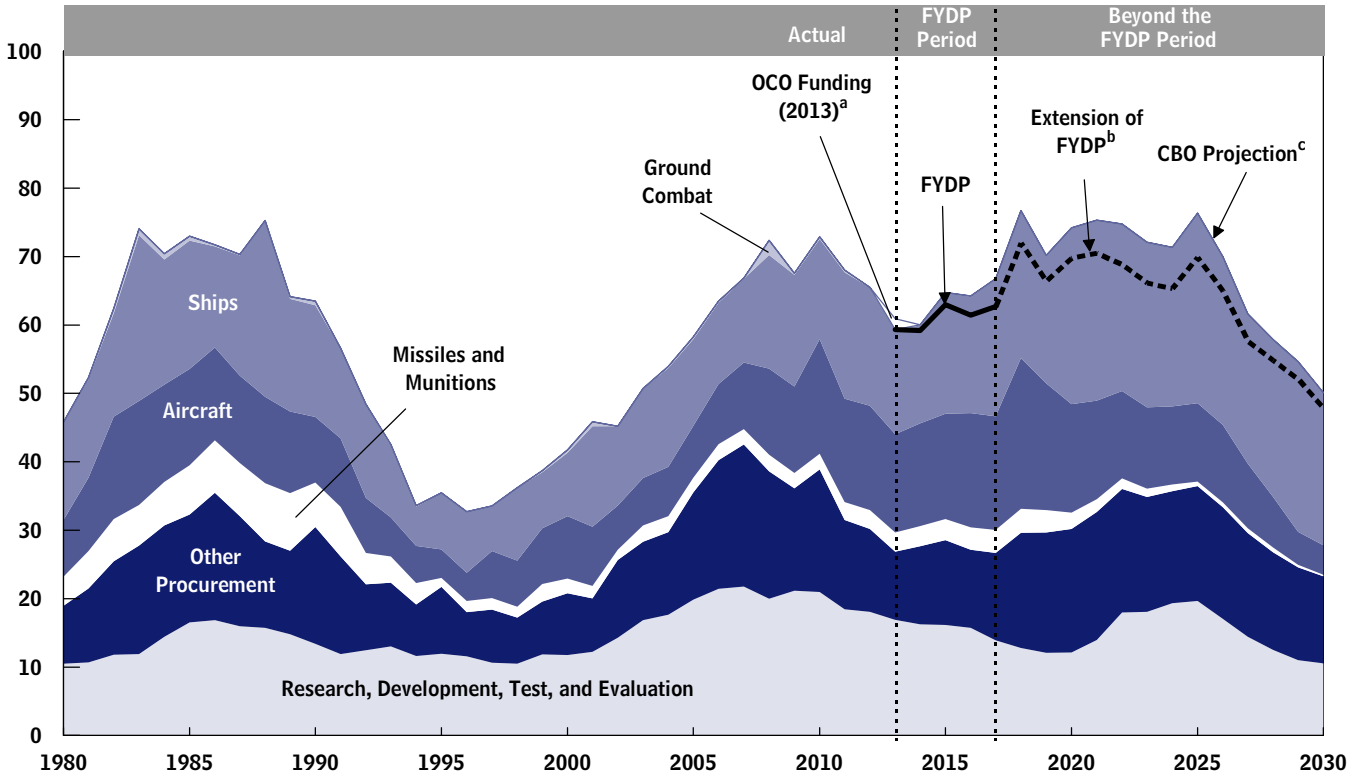
3. The AMPV is intended to be fielded in various versions, some of which may be based on modifications of existing Bradley fighting vehicles. According to current plans, the ambulance version of the AMPV may be based on one or more versions of the Mine Resistant Armor Protected (MRAP) vehicle.

4. For related discussion, see Congressional Budget Office, *Policy Options for Unmanned Aircraft Systems* (June 2011).

Figure 3-4.

Costs of the Navy and the Marine Corps' Acquisition Plans

(Billions of 2013 dollars)



Source: Congressional Budget Office.

Notes: The amounts shown for the Future Years Defense Program (FYDP) and the extension of the FYDP are the totals for all categories.

FYDP period = 2013 to 2017, the years for which the Department of Defense's (DoD's) plans are fully specified.

a. Supplemental and emergency funding for overseas contingency operations (OCO), such as those in Afghanistan and Iraq, is included for 2013 and earlier but not for later years.

b. For the extension of the FYDP (2018 to 2030), CBO projects the costs of DoD's plans using the department's estimates of costs to the extent they are available and costs that are consistent with CBO's projections of price and compensation trends in the overall economy where the department's estimates are not available.

c. Each category shows the CBO projection of the base budget from 2013 to 2030. That projection incorporates costs that are consistent with DoD's recent experience.

2018 through 2030 that are about 7 percent lower than the costs estimated in the CBO projection.

In analyzing procurement costs for the Navy and the Marine Corps, CBO tracked certain programs in four categories of major systems: ships, aircraft, ground combat vehicles (trucks and armored vehicles for the Marine Corps), and missiles and munitions. The remaining procurement programs are grouped together as other procurement. As with the Army, funding for RDT&E is shown separately.

Ships

The Navy requested $15.3 billion in 2013 for programs that fall into CBO's ship category. Included in that total are $13.6 billion for ship construction and major modifications plus additional funding for ships purchased through the National Defense Sealift Fund and for mission modules purchased for littoral combat ships (LCSs). The Navy's current plans reflect the goal of expanding the fleet from today's 282 ships to about 300 ships. According to the CBO projection, those plans would cost an average of $22 billion per year between 2013 and 2030.

Costs for 2013 through 2030 would total about $1 billion per year more under the CBO projection than under the FYDP and its extension.[5]

Surface Combatants. The planned increase in the Navy's fleet is primarily in the surface combatant force, which currently consists of 108 cruisers, destroyers, frigates, and LCSs. By 2030, the surface combatant fleet would grow to 140 ships under the Navy's plans—including 55 LCSs, which are smaller and faster than any of today's other surface combatants.

The Navy's plans for the surface combatant force changed somewhat between the submission of the 2012 budget and the promulgation of the 2013 budget plans. The Navy is currently defining its inventory objective for cruisers and destroyers as "approximately 90," compared with 94 ships under recent budgets. The Navy now has 83 cruisers and destroyers in the fleet but will retire 7 cruisers early over the next two years. The Navy is continuing with its plan to build new DDG-51 destroyers and is to begin purchasing substantially upgraded DDG-51 destroyers in 2016; from 3013 through 2030, the Navy plans to buy 39 DDG-51s. The Navy's plans would allow the service to achieve an inventory objective of 88 to 90 large surface combatants (cruisers and destroyers) between 2021 and 2028, but after that period the number of those ships would decline, to 85 by 2030.

With respect to small surface combatants (comprising frigates and LCSs), the Navy plans to build two versions of the LCS through at least 2015. It previously planned to select one of two competing designs but has opted to continue building both versions. The Navy intends to complete the purchase of 55 LCSs by 2026, five years earlier than under the 2012 budget plans.

Submarines. The Navy's plans would lead to a smaller submarine force. Although the Navy's stated goal is to have 48 attack submarines (SSNs) through the projection period, its plans for procurement would meet that goal through 2021 but then fall below that number thereafter. The Navy intends to replace the 14 ballistic missile submarines (SSBNs) of the Ohio class that are in service today with 12 new submarines starting in 2021. According to the Navy's plans, none of the four guided-missile submarines (SSGNs) that are scheduled for retirement will be replaced.

Amphibious and Maritime Prepositioning Ships. The Navy's plans call for a force of 32 amphibious ships, including 11 large-deck amphibious assault ships. Under those plans, the Navy would purchase three amphibious assault ships through 2030. The projections also incorporate the Navy's plans to begin buying dock landing ships in 2018 to replace those in today's force; eight such ships would be purchased by 2030.[6]

Aircraft Carriers. The Navy's plans include a future carrier force of 11 large-deck ships, all of which would be nuclear powered. The Navy ordered the first of its new class of aircraft carriers, the USS *Gerald R. Ford* (CVN-78), in 2008, and plans call for the Navy to order a new ship of that class every five years thereafter. In addition, plans would provide for the refueling and overhaul of 6 of today's Nimitz class carriers (including continued funding for the ongoing refueling and overhaul of the USS *Theodore Roosevelt*) over the projection period. The Navy expects to maintain a fleet of 11 aircraft carriers for all but three years of the projection period; the fleet would briefly drop to 10 aircraft carriers from 2013, when the USS *Enterprise* would be retired, to 2015, when the USS *Gerald R. Ford* would enter the fleet.

Aircraft

The Department of the Navy's aviation programs include Navy and Marine Corps aircraft and aircraft-related weapon systems. For 2013, the Administration requested about $14 billion to procure nearly 200 new aircraft. According to the CBO projection, the Navy's plans for aircraft would cost an average of about $13 billion per year between 2013 and 2030. Average annual funding would be considerably higher in the earlier years of the projection period—nearly $17 billion per year from 2013 to 2021—because of simultaneous purchases of several types of fixed- and rotary-wing aircraft. Once the production of those aircraft was completed, average funding would drop. The decrease after 2021 contributes to the

5. CBO's extension of the FYDP is, for Navy shipbuilding, based on the Navy's explicit 30-year shipbuilding plans and associated cost estimates. The CBO projection is based on the same plans, but with CBO's estimates of costs. For more details, see Congressional Budget Office, *An Analysis of the Navy's Fiscal Year 2013 Shipbuilding Plan* (forthcoming).

6. For related analysis, see Congressional Budget Office, *An Analysis of the Navy's Amphibious Warfare Ships for Deploying Marines Overseas* (November 2011).

drop in overall acquisition costs in the later years of the projection period. In the absence of future changes in the number of aircraft operated by the Navy and the Marine Corps, costs would be expected to increase again after 2030 as aircraft that are relatively new today would reach the end of their service lives and be replaced.

Fighter Aircraft. Plans for naval fighter aircraft call for completing procurement of F/A-18E/F multirole fighter and EA-18G electronic warfare aircraft by 2014, continuing development of the F-35 Joint Strike Fighter (both the F-35B short takeoff/vertical landing version and the F-35C carrier-based version), and initiating development of a new fighter to replace F/A-18E/Fs that are expected to reach the end of their service lives after 2025. Although plans still describe a total of 680 F-35s, procurement has been delayed: 81 fewer F-35 purchases are planned over the FYDP period than were anticipated in the 2012 plan (a decrease of about 50 percent), and production is now expected to last two additional years, through 2029. Both the CBO projection and the extension of the FYDP reflect CBO's assumption that the Navy will opt for a new fighter design to replace the F/A-18E/F. Projected costs for that new fighter are primarily for research and development beginning in 2016; initial production would begin in 2027.[7]

Other Fixed-Wing Aircraft. In addition to fighters, the Navy plans to purchase several other types of carrier- and land-based fixed-wing aircraft, including:

- A new version of the carrier-based E-2 Hawkeye airborne early-warning aircraft;
- A new land-based patrol aircraft, the P-8A Poseidon, which is based on a Boeing 737 airframe and is to replace the P-3C Orion; and
- An unmanned broad-area maritime surveillance aircraft that is a modified version of the Air Force's Global Hawk high-altitude unmanned aerial vehicle.
- Carrier-based unmanned combat air vehicles capable of conducting surveillance, reconnaissance, or strike missions;[8]

Tilt-Rotor and Rotary-Wing Aircraft. The Navy's plans include purchases of MH-60R/S helicopters and MQ-8A Firescout unmanned helicopters. The Navy is also evaluating options for a "VXX" aircraft to replace the current "Marine One" Presidential transport helicopters. CBO's analysis reflects the assumption that the new program will begin delivering replacements for Marine One in the second half of this decade.

The Marine Corps' plans also call for completing the replacement or upgrade of nearly every component of its tilt-rotor and rotary-wing forces. The Marine Corps is replacing its CH-46E medium-lift helicopters with MV-22 Osprey tilt-rotor aircraft and is modernizing its fleets of UH-1N light-utility helicopters and AH-1W attack helicopters with a mix of new and remanufactured aircraft. In addition, the Marine Corps is proceeding with plans to modernize its fleet of heavy-lift CH-53E helicopters with an upgraded version, the CH-53K.

Ground Combat Vehicles

The Marine Corps' plans for ground combat vehicles in the 2013 FYDP changed little from those in the 2012 budget. The Marine Corps is continuing with its plan to replace the expeditionary fighting vehicle canceled in 2012. In the short term, the intention is to extend the service life of existing amphibious assault vehicles and accelerate procurement of the Marine personnel carrier. In the longer term, the Marine Corps would develop and purchase a new amphibious combat vehicle, but the capabilities and quantity of that new vehicle have not yet been determined and its costs are therefore not included in CBO's projections. The Marine Corps also plans to participate in the Army's program to buy joint light tactical vehicles beginning in 2014.

Missiles and Munitions

Missiles and munitions encompass air-launched weapons (including air-to-air and air-to-ground missiles) and

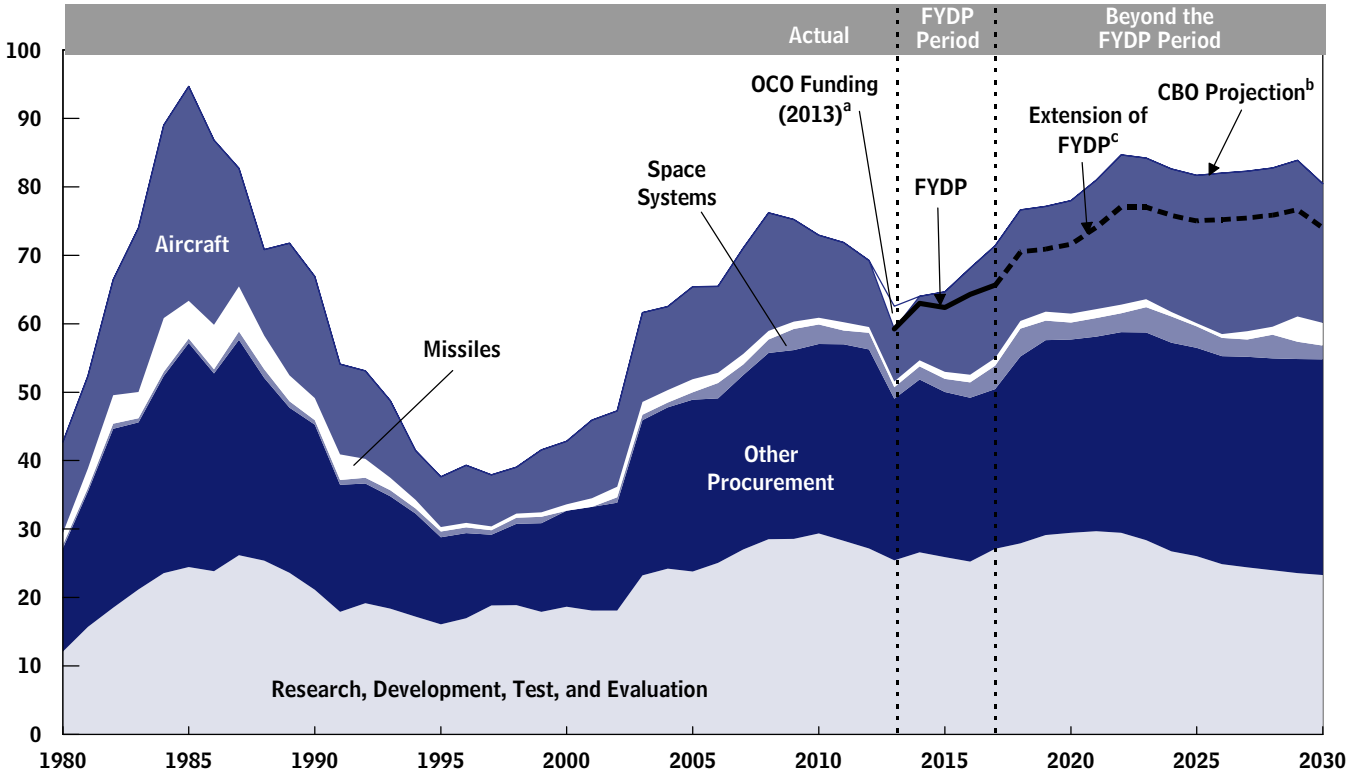
7. Instead of developing a new aircraft, the Navy might opt to purchase additional F-35Cs. That course of action would result in lower RDT&E costs than are reflected in CBO's analysis.

8. As part of the Unmanned Combat Air System Carrier Demonstration program, the Navy is developing the technologies necessary to field such aircraft. CBO's analysis reflects the assumptions that the effort will be successful and that the Navy will purchase 118 of those unmanned combat aircraft for its carrier air wings by 2028.

Figure 3-5.

Costs of the Air Force's Acquisition Plans

(Billions of 2013 dollars)



Source: Congressional Budget Office.

Notes: The amounts shown for the Future Years Defense Program (FYDP) and the extension of the FYDP are the totals for all categories.

FYDP period = 2013 to 2017, the years for which the Department of Defense's (DoD's) plans are fully specified.

a. Supplemental and emergency funding for overseas contingency operations (OCO), such as those in Afghanistan and Iraq, is included for 2013 and earlier but not for later years.

b. Each category shows the CBO projection of the base budget from 2013 to 2030. That projection incorporates costs that are consistent with DoD's recent experience.

c. For the extension of the FYDP (2018 to 2030), CBO projects the costs of DoD's plans using the department's estimates of costs to the extent they are available and costs that are consistent with CBO's projections of price and compensation trends in the overall economy where the department's estimates are not available.

ship-launched weapons (including defensive surface-to-air missiles, land-attack missiles, and torpedoes). Notable among those weapons are a substantial number of the Tactical Tomahawk cruise missiles for attacking land targets and the air-launched Joint Standoff Weapon, also for attacking ground targets.

The Air Force

The Air Force has requested $59 billion for acquisition in its 2013 base budget and $3.3 billion for OCO. According to the CBO projection of DoD's plans, the Air Force's acquisition costs would increase by about 20 percent over the period of the FYDP, to $71 billion in 2017, including an 8 percent increase between 2013 and 2014. The FYDP calls for a similar increase in 2014 but then generally flat acquisition costs that would average about $64 billion per year through 2017 (see Figure 3-5). Total costs for 2013 through 2017 are about 4 percent higher under the CBO projection than anticipated in the FYDP.

Beyond the FYDP period, funding for the Air Force's acquisition plans would, under the CBO projection,

steadily increase to a peak of almost $85 billion in 2022 and then average about $82 billion per year through the end of the projection period. The extension of the FYDP follows a similar pattern, but at average annual costs about 8 percent lower than the CBO projection.

For its projections of procurement costs for the Air Force, CBO tracked certain programs in three categories of major systems: aircraft, missiles and munitions, and space systems. The remaining programs are grouped together as other procurement. Funding for research, development, test, and evaluation is also assigned to a separate category.

Aircraft

The Air Force's plans include purchases of new aircraft and major modifications to existing aircraft. According to the CBO projection, the costs of new acquisitions or major modifications would rise significantly over the period covered by the FYDP, from about $8 billion in 2013 to over $16 billion in 2017. After that, the costs of procurement of new aircraft would nearly level off for a few years, averaging about $17 billion annually for 2018 through 2021, before increasing to an average of $22 billion per year through the end of the projection period.

More than half of the increase during the period of the FYDP would be due to increased production rates for the F-35A Joint Strike Fighter and the beginning of full-rate production of the KC-46A airborne tanker. CBO's analysis of those two aircraft is based on the December 2011 selected acquisition reports.[9] Other significant elements of the Air Force's acquisition plans for aircraft include the following:

- A replacement combat rescue helicopter: The Air Force is implementing plans to replace its fleet of HH-60G Blackhawk helicopters with new aircraft based on an existing design. Two test aircraft would be purchased in 2013, and CBO's projection includes purchases of 100 aircraft by 2022.

- A decrease in purchases of unmanned aerial vehicles relative to what was described in the previous FYDP: The Air Force has opted to halt production of the larger RQ-4B Global Hawk 21 aircraft short of the previously planned total. Also, Air Force plans call for slower production of MQ-9 Reapers. Instead of purchasing 192 aircraft by 2016, current plans call for 197 aircraft by 2021. CBO's analysis reflects the assumption that, after production of the Reaper has ended, the Air Force will begin procuring next-generation reconnaissance and strike unmanned aircraft that are better suited for operations in defended airspace than are the Reaper and Global Hawk.

- A new long-range bomber program: The Air Force is currently reviewing performance requirements and available technologies in anticipation of developing a new bomber to be fielded sometime after 2020. The 2013 FYDP indicates steadily increasing annual funding for development of that system; CBO's analysis reflects the assumption that development efforts will continue beyond the FYDP and that procurement of a new long-range strike aircraft will begin in 2021.

- An advanced theater transport aircraft: The Air Force has been exploring performance requirements for a new aircraft that would be used to move troops and equipment within a theater of operations. Although the type of aircraft has not been determined, the capability to take off and land vertically or in short distances will probably be a desired characteristic. CBO's analysis reflects the assumption that significant development work for this aircraft will begin within the next five years and that initial procurement will begin in 2022.

The rising costs of aircraft acquisition in the final few years of the CBO projection are largely due to the development and procurement of those latter two aircraft.

Missiles and Munitions

The Air Force's missiles and munitions include systems that range from air-to-air weapons to intercontinental ballistic missiles (ICBMs). Plans include upgrades to existing Minuteman III ICBMs to keep them in service until 2030. The CBO projection includes the assumption that a new ICBM will be developed to replace the Minuteman III. Air-to-surface weapons in this category include the Joint Air-to-Surface Standoff Missile, the Joint Direct Attack Munition, and the Small-Diameter

9. Current plans for the KC-46A indicate that the purchase of 179 tankers would be completed with a final 6 aircraft in 2027. For 2027 and the remaining years of the projection, though, CBO assumed that the Air Force would continue to purchase 15 tankers per year at costs similar to those for the KC-46A. The Air Force could select a different type of aircraft (sometimes referred to as the KC-Y), however.

Bomb. There are also plans to field a replacement for today's Air-Launched Cruise Missile that carries a nuclear warhead.

Space Systems

Space systems consist mainly of satellites and the space-launch systems used to put them into orbit. In the proposed 2013 budget, the Air Force has continued acquisition initiatives that it began in the 2012 budget.

For satellite programs, the strategy (now referred to as Efficient Space Procurement, or ESP) features blocks of satellites purchased at prenegotiated prices combined with ongoing technology development for follow-on systems. Procurement budgets for those programs would be smoothed by spreading the cost over multiple years. In the 2013 budget, the Air Force has requested funds to continue procurement of a block of two Advanced Extremely High Frequency Satellites; as authorized by the Congress in 2012, the total procurement costs are to be spread over six years. A similar approach is proposed for a block purchase of two Space-Based Infrared System-High satellites. For its projection, CBO has assumed that the Air Force will continue to use the ESP strategy to develop and field follow-on versions of those satellites when needed.

The Air Force has also continued its revamped approach to procuring the Evolved Expendable Launch Vehicle (EELV) for launching satellites. Prior to 2012, EELV purchases were tied to specific satellite launches, whereby a booster was procured for a given satellite two years before the expected launch. In an effort intended to lower the EELV's unit cost and provide a more stable market for the private firms producing the EELV, the Air Force has proposed to begin purchasing a fixed number of EELVs without assigning them to specific satellites in advance. Under that plan, the Air Force would purchase five EELVs each year starting in 2014.[10] In its projections, CBO has assumed that EELV purchases will continue at five per year beyond the period of the FYDP; by comparison, in its projections based on the proposed 2011 budget, CBO anticipated that EELV purchases over the same period would range between two and six per year, averaging about four per year.

10. That quantity does not include launches that may be purchased by other agencies, such as the National Reconnaissance Office.

For the first time in many years, the 2013 Air Force budget request contains no funds for development of a next-generation polar-orbiting weather satellite. In the fiscal year 2012 appropriations, the Congress directed the Air Force to cancel the Defense Weather Satellite System (DWSS), a program that began in 2010 after the disbanding of the National Polar-Orbiting Environmental Satellite System program, a joint effort between the Air Force and the National Oceanic and Atmospheric Administration that began in the mid-1990s. In the wake of the cancellation of DWSS, the Air Force has decided to delay development of a new satellite; to extend the period in which the current generation of satellites will operate by launching the two remaining satellites of the current generation sequentially in a single orbit instead of concurrently in two orbits as had been planned; and to conduct an analysis of alternative approaches to future weather satellites. For its projection, CBO has assumed the Air Force will continue research through the FYDP period and then begin procurement of a new weather satellite in 2018.

Other Defense Activities, Including Those of the Missile Defense Agency

In addition to funding for the Departments of the Army, Navy, and Air Force, DoD's budget provides funding for other components of the department, including specialized agencies that perform advanced research, develop missile defenses, oversee special operations, and manage financial and information systems. CBO has assumed that acquisition costs for defense organizations other than the Missile Defense Agency will remain constant over the course of its projection at about $14 billion, the costs for 2017 indicated in the FYDP (see Figure 3-6). For MDA, CBO has made estimates of future costs on a programmatic basis.

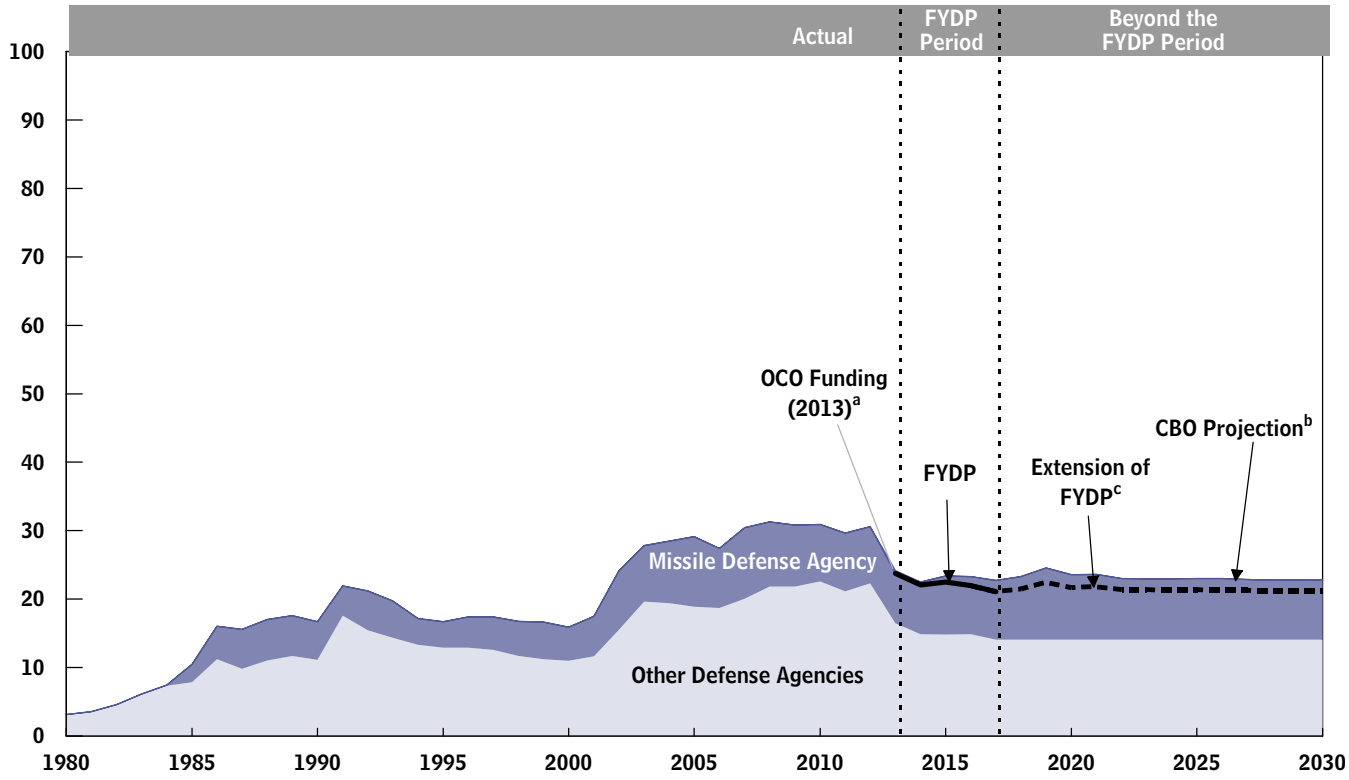
The 2013 budget request for MDA was $7.3 billion for acquisition ($6.2 billion for RDT&E and about $1.1 billion for procurement), about $300 million for operation and maintenance, and about $200 million for military construction.[11] This section deals only with the

11. Since its inception, MDA has managed research, development, and testing of DoD's missile defense programs as components of the Ballistic Missile Defense System (BMDS). In September 2009, MDA's responsibilities were broadened to include procuring and fielding those systems in the context of the BMDS Life Cycle Management Process.

Figure 3-6.

Costs of DoD's Acquisition Plans Other Than Those for the Military Services

(Billions of 2013 dollars)



Source: Congressional Budget Office.

Notes: The amounts shown for the Future Years Defense Program (FYDP) and the extension of the FYDP are the totals for all categories.

FYDP period = 2013 to 2017, the years for which the Department of Defense's (DoD's) plans are fully specified.

a. Supplemental and emergency funding for overseas contingency operations (OCO), such as those in Afghanistan and Iraq, is included for 2013 and earlier but not for later years. The amount shown for OCO funding for 2013 is about $400 million.

b. Each category shows the CBO projection of the base budget from 2013 to 2030. That projection incorporates costs that are consistent with DoD's recent experience.

c. For the extension of the FYDP (2018 to 2030), CBO projects the costs of DoD's plans using the department's estimates of costs to the extent they are available and costs that are consistent with CBO's projections of price and compensation trends in the overall economy where the department's estimates are not available.

acquisition portion of the budget; the O&M and military construction portions are included in the analysis of those accounts in Chapters 2 and 4. According to the CBO projection of DoD's plans, which incorporates DoD's historical cost growth, MDA's acquisition costs would average $8.8 billion annually from 2013 to 2030, increasing from $7.3 billion in 2013 to a peak of $10.5 billion in 2019 before declining to just below $9 billion by 2022 and thereafter.

The principal factors underlying the decrease in MDA's procurement budget over the FYDP period are a reduction in the number of Terminal High-Altitude Area Defense (THAAD) systems to be purchased, with a planned total of six THAAD batteries instead of nine, as had been previously planned, and a reduction in the number of AN/TPY-2 radars to be purchased, with a planned total of 11 radars instead of the 18 previously

intended.[12] The largest factor in the reduction in RDT&E funding is the decision to place the Sea-Based X-Band Radar in a limited test-support status, maintaining the ability to recall it to operational status if deemed necessary. Additionally, several technology development programs were scaled back, including the directed energy (laser) program.

CBO's analysis is based on plans for future missile defenses derived from the Administration's policy statements and details provided by MDA and the military services. Significant aspects of those plans affecting CBO's analysis of future costs include the following:

- Continued emphasis on the Aegis missile defense system, which is the centerpiece of the Phased Adaptive Approach, a deployment strategy to be applied in order to field defenses in Europe over the next decade: Specifics include purchasing more SM-3 interceptors, improving the SM-3's performance by developing several upgraded versions, improving the Aegis battle management system, and continuing to upgrade Navy ships to make them capable of defending against ballistic missiles. In addition to improving and expanding sea-based ballistic missile defense, plans include an effort to develop a ground-based version, designated "Aegis Ashore." Plans call for two Aegis Ashore sites to be established in Europe by 2018.

- Continued fielding and improvement of the Ground-Based Midcourse Defense (GMD) system, including 26 operational interceptors at Fort Greely in Alaska and 4 operational interceptors at Vandenberg Air Force Base in California:[13] In December 2011, MDA awarded a contract for developing and sustaining GMD that will extend through 2018. For its estimates, CBO has assumed that the same level of effort will continue throughout the projection period.

- Development and fielding of a space-based system for tracking ballistic missiles and their warheads: Current plans call for the Precision Tracking and Surveillance System (PTSS)—a restructuring of the Space Tracking and Surveillance System that had been pursued in past years and that has launched two demonstration satellites—to consist of 6 to 12 satellites. MDA plans to launch 2 initial prototype satellites in about 2017 and to begin launching an operational constellation several years later. CBO's analysis reflects the assumption that MDA will deploy 12 operational satellites and that the initial launch will occur in 2019.

12. The AN/TPY-2 radar can be utilized either as part of a THAAD battery or as a stand-alone, forward-based radar. Thus, part of the reduction in the number of radars is correlated with the decrease in THAAD batteries to be purchased.

13. Ballistic missile defense programs are categorized by the portion of the incoming missile's trajectory that they target. Boost-phase defenses attempt to destroy hostile missiles while their rocket motors are still burning and before their warheads separate from their booster rockets. Midcourse-phase defenses attempt to destroy warheads after they separate from their boosters but before they reenter the Earth's atmosphere. Terminal-phase defenses attempt to destroy warheads after they have reentered the atmosphere and are relatively close to their intended targets.

CHAPTER

4

Projections of Military Construction and Family Housing Costs

Together, the military construction and family housing budgets that support the infrastructure of military bases make up a small fraction of the Department of Defense's costs. In the 2013 budget, the request for military construction was not quite $10 billion, and the request for family housing was less than $2 billion.

Military Construction

Appropriations for military construction pay for the planning, design, construction, and major restoration of military facilities. Those appropriations also pay for the base realignment and closure (BRAC) process, including environmental assessments of sites designated for closure and construction projects needed to help consolidate personnel and units.

With funding for BRAC excluded, appropriations for military construction have averaged more than $8 billion annually since 1980. DoD's plans for 2013 to 2017 include funding for military construction averaging $9 billion a year. Under both the Congressional Budget Office projection and the extension of the Future Years Defense Program, CBO estimates that DoD's military construction costs would be about $12 billion per year, excluding funding for BRAC. That amount is consistent with the funding required to recapitalize or replace DoD facilities every 67 years, on average.[1] Lower levels of funding could force DoD to reduce its number of facilities or continue using facilities beyond their expected service lives.

DoD's military construction plans also include expenditures to pay for ongoing environmental and caretaking costs for properties closed as a result of BRAC. Between 2013 and 2017, DoD's plans call for about $400 million annually to cover ongoing cleanup and maintenance costs for properties closed in all rounds of BRAC that have not been converted to other uses. Under both the CBO projection and the extension of the FYDP, those costs would remain constant at about $300 million per year after 2017.

Family Housing

Appropriations for family housing—which pay for the construction, operation, maintenance, and leasing of military family housing—have averaged $5 billion per year since 1980. Those appropriations have fallen sharply since 2007, however, because, under a DoD program to have private companies build and maintain that housing on bases, funding comes primarily from private financing that is not recorded in the federal budget. As a result, in both the CBO projection and the extension of the FYDP, appropriations for family housing are projected to remain at about $1.5 billion throughout the projection period. Although the private financing reduces DoD's costs for building and operating family housing, it increases the government's costs for the basic allowance for housing that military personnel receive to rent those private housing units. Those housing allowances appear in military personnel costs in the operation and support budget.

1. Excluding buildings used for family housing, DoD estimates that the current replacement value for all its buildings, structures, and linear structures (such as roads and pipelines) is nearly $800 billion. In order to approximate the recapitalization requirement of its facilities, DoD has traditionally used a 67-year service life as a benchmark. Recapitalizing one-sixty-seventh of DoD's facilities each year would cost about $12 billion. DoD recently moved away from that benchmark and now uses a model to more precisely estimate its recapitalization requirement from the bottom up. CBO does not have access to that model, however, and continues to use a 67-year service life as the basis for its projections.

Lists of Tables and Figures

Tables

Figures

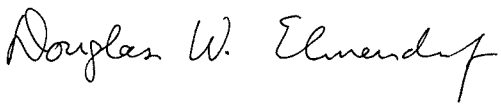
About This Document

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

Daniel Frisk, Adam Talaber, and David Arthur of CBO's National Security Division coordinated the preparation of the report under the supervision of David E. Mosher and Matthew S. Goldberg. Elizabeth Bass, Michael Bennett, Bernard Kempinski, Eric J. Labs, Frances Lussier, and Christopher Murphy of the National Security Division contributed to the analysis. Kent Christensen, Raymond Hall, David Newman, Dawn Sauter Regan, Matthew Schmit, and Jason Wheelock of CBO's Defense, International Affairs, and Veterans' Affairs Cost Estimates Unit, under the supervision of Sarah Jennings, also contributed.

Ron Gecan of CBO's Microeconomic Studies Division and Vance Gordon of the Institute of Defense Analyses provided thoughtful reviews and helpful comments. (The assistance of an external reviewer implies no responsibility for the final product, which rests solely with CBO.)

John Skeen edited the report, and Jeanine Rees and Maureen Costantino prepared the report for publication. An electronic version is available on CBO's Web site (www.cbo.gov).



Douglas W. Elmendorf
Director

July 2012