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MORE MONEY ON THE HORIZON?

ANALYSIS OF THE FY 2018 DEFENSE BUDGET REQUEST

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ABOUT THE AUTHOR

Katherine Blakeley is a Research Fellow at the Center for Strategic and Budgetary Assessments. She directs the budget program and works to educate and inform policy makers, senior leaders, and the general public about the defense budget and issues pertaining to resourcing national security. Dr. Blakeley has authored publications on trends in the defense budget, defense acquisitions, military personnel, nuclear weapons, and other issues. She frequently contributes to print and broadcast media, and her writing has appeared in Politico, The Hill, Newsweek, and other publications. Dr. Blakeley began her policy career at the Congressional Research Service (CRS) providing authoritative, confidential, objective, and non-partisan policy analysis for Members and Committees of Congress. As a defense policy analyst in the Defense Manpower and Budget section, she worked on a range of defense policy issues including military manpower and health, acquisitions, and defense energy use, specializing in analysis of the defense budget and defense appropriations. After leaving CRS in 2013, Dr. Blakeley became a defense policy analyst at the Center for American Progress (CAP), a non-partisan think tank. At CAP, Dr. Blakeley covered a range of defense issues, including military compensation, veterans, nuclear weapons, and alliance relationships, but continued her primary focus on the defense budget. While at CAP, Dr. Blakeley was the primary author of several reports about the defense budget. She received her B.A. from Vassar College and her M.A. and Ph.D. in Political Science from the University of California, Santa Cruz. Her academic research examines Congressional defense policymaking and implementation.

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Cover Graphic:

A seaman looks through shipboard binoculars aboard the aircraft carrier USS Dwight D. Eisenhower (CVN 69), flagship of the carrier strike group, on March 25, 2016. U.S. Navy photo by Mass Communication Specialist 3rd Class Taylor L. Jackson.

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CHAPTER 1

Overview of the FY 2018 Defense Budget Request

The Trump administration's first President's Budget (PB) requests a total of $667.6 billion in discretionary national defense funding for FY 2018, including $639.1 billion for the Department of Defense (DoD). The administration requested $603 billion in base discretionary funding for national defense, an additional $64.6 billion for overseas contingency operations, and $9.7 billion in mandatory spending for a total of $677.1 billion in funding for national defense, known as budget function 050.

According to Secretary of Defense James Mattis, the FY 2018 defense budget is intended to "achieve program balance."[1] The administration sought to "restore readiness" with a requested $30 billion of additional funding in FY 2017, predominantly in operation and maintenance (O&M) accounts.[2] Congress provided half of this requested funding, or $15 billion, as Overseas Contingency Operations funding in the FY 2017 Omnibus Appropriations Act. The FY 2019 defense budget, spanning the FY 2019–FY 2023 Future Years Defense Program (FYDP), will be informed by the 2018 National Defense Strategy, now underway, and the accompanying Nuclear Posture Review. Underpinned by a new defense strategy and force sizing construct, the FY 2019 defense budget is expected to both "build capacity" and "improve lethality." In other words, the administration's position is that a buildup will begin in FY 2019. However, forgoing a request for additional defense spending in its first budget, when a new administration has the greatest chance of making big course corrections, was a strategic mistake.

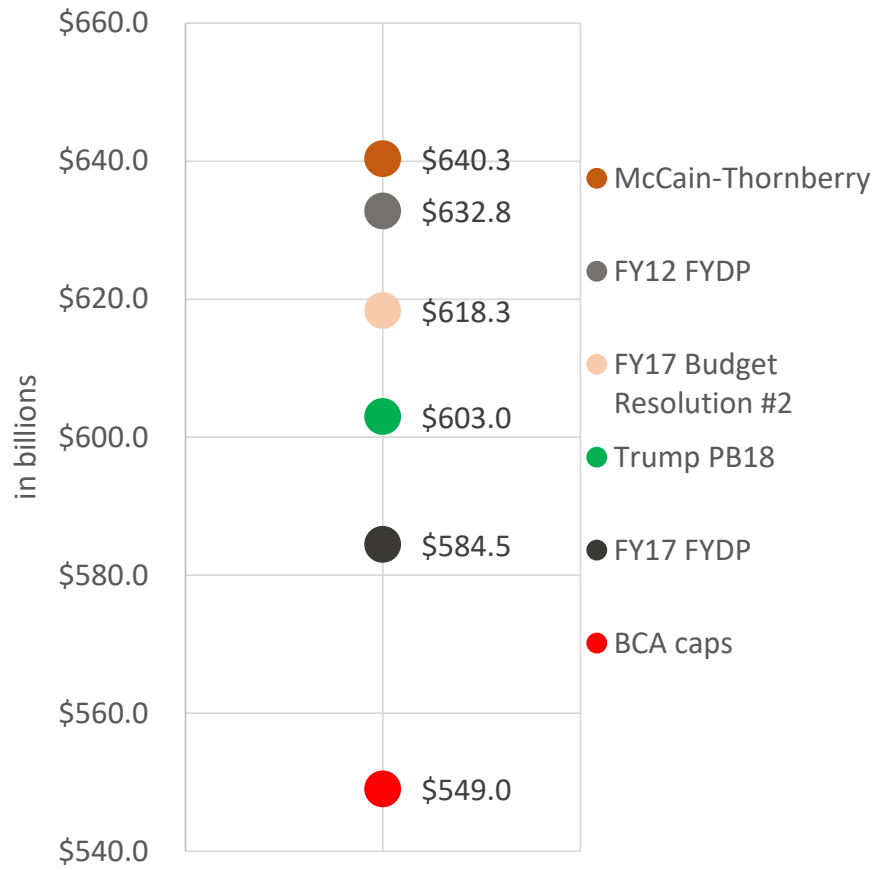
1 Secretary of Defense James Mattis, "Implementation Guidance for Budget Directives in the National Security Presidential Memorandum on Rebuilding the U.S. Armed Forces," memorandum to Department of Defense (DoD) leadership, January 31, 2017, available at https://media.defense.gov/2017/Feb/01/2001693094/-1/-1/0/DDD-170201-373-002.

2 Director of the Office of Management and Budget (OMB) Mick Mulvaney, "Request for Additional Appropriations," letter to the White House, March 14, 2017, available at https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/amendment_03_16_18.pdf.

By delaying the ask for a substantive defense buildup until FY 2019, the administration has squandered any honeymoon and allowed Congress to set the terms of the budget debate.

This proposed $603 billion in discretionary base national defense spending would be $51.8 billion dollars more than the $551 billion the Obama administration requested in FY 2017, an increase of 9.4 percent. The requested $603 billion is also $54 billion, or 10 percent, over the caps on national defense spending for FY 2018 established by the Budget Control Act of 2011 (BCA), as amended. However, the requested $603 billion represents a much more modest $18.5 billion, or 3 percent, over the $584.5 billion in the Obama administration's PB 2017 projection for the national defense base budget in FY 2018. It is also some $37 billion, or 5.7 percent, below the $640 billion in funding for national defense called for by Sen. John McCain and Rep. Mac Thornberry, the chairmen of the Senate and House Armed Services Committees, respectively. The Trump administration's request for $603 billion is well below the projected defense spending levels of the FY 2012 Gates budget—the last budget formulated before the BCA caps, widely considered to be the last budget driven by strategy rather than resources—and the level of national defense spending agreed to in the FY 2017 budget resolution adopted by the Congress in January 2017 (see Figure 1-1). National defense funding comprises funding for the Department of Defense (about 95.5 percent of all national defense funding), funding for the nuclear weapons work of the Department of Energy (DOE), and a small amount of funding for other defense-related activities. One major question as the beginning of the 2018 fiscal year approaches is whether Congress, deeply divided between the Republican defense hawks, the conservative Freedom Caucus, and the Democrats, will be able to come up with a deal to increase or amend the BCA caps, as they have done in each of the past five years that caps were in force.

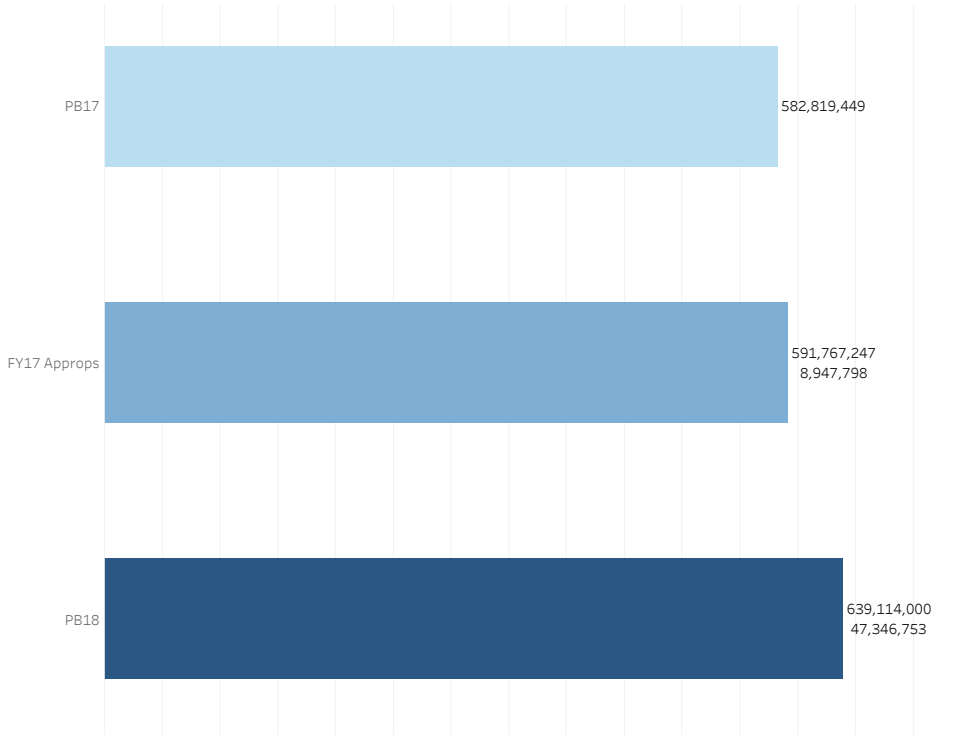
FIGURE 1-1: PB18 NATIONAL DEFENSE BUDGET REQUEST



At $639 billion for DoD, the Trump administration's FY 2018 request is about $56.3 billion more than the Obama administration's PB 2017 request and $47.3 billion more than the total of $591.8 billion appropriated for DoD in FY 2017 (see Figure 1-2).[3] Of this total DoD request, $574.5 billion is for the base defense budget, while $64.6 billion is for Overseas Contingency Operations (OCO) funds.

3 This $591.8 billion appropriated for DoD in FY17 includes funds appropriated in the initial continuing resolution (P.L. 114-223), the December extension of the continuing resolution (P.L. 114-254), the short April extension of the continuing resolution (P.L. 115-30), and the FY17 omnibus funding bill (P.L. 115-31).

FIGURE 1-2: TOPLINE DOD FUNDING



Source: Office of Management and Budget (OMB), Budget Analysis Branch, *Public Budget Database: Budget of the United States Government, Fiscal Year 2018, Budget Authority* (Washington, DC: OMB, May 2017), available at https://www.gpo.gov/fdsys/pkg/BUDGET-2017-DB/xls/BUDGET-2017-DB-1.xls; CSBA tabulation of FY17 appropriations (P.L. 114-223, P.L. 114-254, and P.L. 115-31); OMB, Budget Analysis Branch, *Public Budget Database: Budget of the United States Government, Fiscal Year 2017, Budget Authority* (Washington, DC: OMB, February 2016), available at https://www.gpo.gov/fdsys/pkg/BUDGET-2017-DB/xls/BUDGET-2017-DB-1.xls. Analysis in Tableau.

Note: Dollars in thousands.

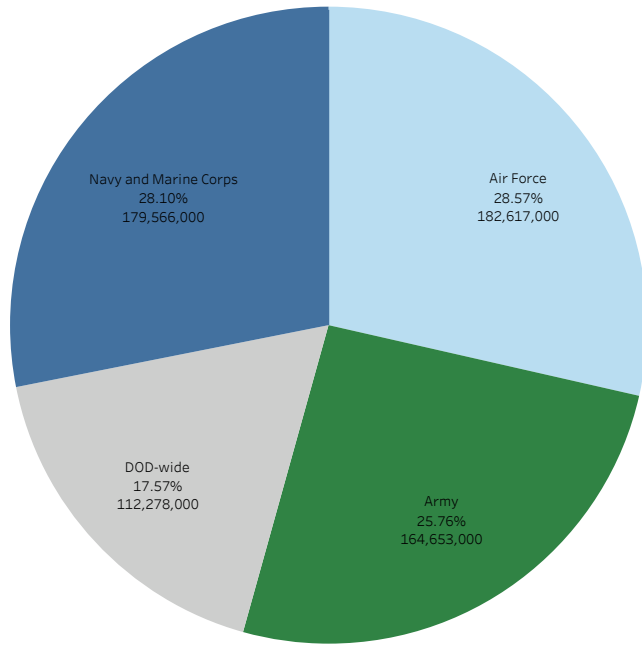
Service Funding

Per the Office of Management and Budget (OMB), of the $639.1 billion in discretionary funding requested for DoD in the FY 2018 budget request, $182.6 billion, or 28.6 percent, would go to the Air Force; $179.6 billion, or 28.1 percent, would go to the Navy and Marine Corps; $164.7 billion, or 25.8 percent, would go to the Army; and $112.3 billion, or 17.4 percent, would go to DoD-wide activities (see Figure 1-3). However, the OMB and DoD budget request information are not mutually consistent. Per the DoD budget overview, the Air Force's request is $183 billion, $415 million more than the OMB figures; the Navy's is $180 billion, for a delta of $426 million more; the Army's is $166 billion, for a delta of $1.4 billion more; and the DoD-wide request is $110.1 billion, or $2.2 billion less.[4]

Compared to the FY 2017 budget request, each of the Services would receive 8–12 percent more funding. The greatest increase would go to the Army, which would receive between $16.6 billion and $18 billion (some 10–12 percent) more in the FY 2018 request. The smallest increase would be for DoD-wide spending, which would still see requested funding go up by $7.1–$7.4 billion (7–8 percent) more than the FY 2017 request. However, Congress appropriated $9.1 billion more for DoD in FY 2017 than the original FY 2017 President's Budget requested. For FY 2017, congressional appropriations for discretionary spending for DoD totaled $591.8 billion, $9 billion more than originally requested in the FY 2017 budget request. Accordingly, the amounts requested in the FY 2018 President's Budget are smaller increases from the amounts actually appropriated as compared to the original FY 2017 budget. Overall, the $639.1 billion requested in FY 2018 is $47.3 billion more than appropriated in FY 2017, or an 8 percent increase. From the FY 2017 appropriated amounts, the Army would see a 7–8 percent increase, the Navy a 5–6 percent increase, the Air Force a 9 percent increase, and defense-wide spending an 11–13 percent increase (see Table 1-1 and Figure 1-4).

4 The OMB budget database, the DoD overall budget documents, and the Service budget documents present divergent dollar figures. For example, the FY18 budget request for the Marine Corp's operation and maintenance (O&M) account is inconsistent across these sources. The DoD-wide O&M justification book and the FY18 OMB Future Years Defense Program (FYDP) budget database present this request as $8.05 billion, while the Navy's own O&M justification book has a figure of $6.93 billion, a difference of some $1.12 billion. This report will note the source of the budget figures used for each reference, but will not attempt to reconcile divergences between the budget numbers presented by OMB, DoD, and the Services. For a fuller discussion, see the section "Budget Discrepancies."

FIGURE 1-3: FY18 DOD REQUEST BY DEPARTMENT



Source: OMB, Public Budget Database FY18. Analysis in Tableau.

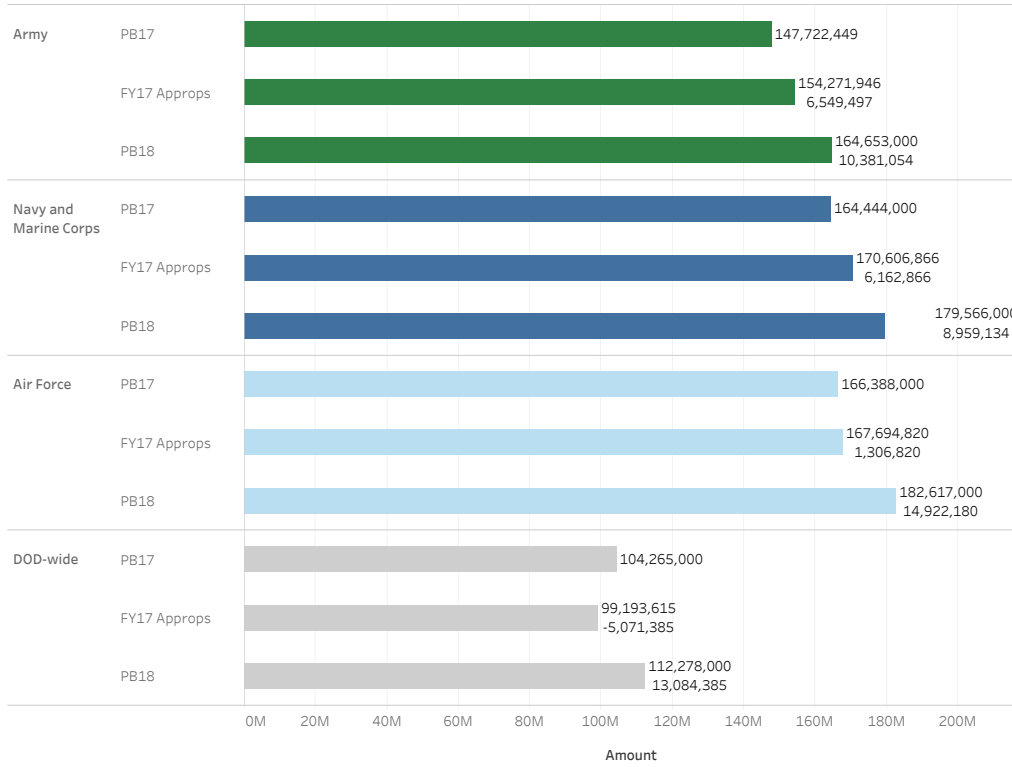
Note: Dollars in thousands.

TABLE 1-1: FY18 DOD REQUEST BY DEPARTMENT, AS COMPARED TO PB17 AND FY17 APPROPRIATIONS

Current-year dollars in millions	PB17 request	FY17 appropriations	PB18 request DoD	PB18 request OMB	Delta from PB17	Delta from FY17 appropriations
Army	$148,034	$154,272	$166,022	$164,653	10–12%	7–8%
Navy	$164,861	$170,607	$179,993	$179,566	8–9%	5–6%
Air Force	$166,879	$167,695	$183,032	$182,617	9–10%	9%
DoD-wide	$102,927	$99,194	$110,068	$112,278	9–10%	11–13%
DoD Total	$582,701	$591,768	$639,115	$639,114	10%	8%

Source: OMB, Public Budget Database FY18; CSBA tabulation of FY17 appropriations (P.L. 114-223, P.L. 114-254, and P.L. 115-31); OMB, Public Budget Database FY17; Office of the Under Secretary of Defense (OUSD)(Comptroller)/Chief Financial Officer (CFO), *Department of Defense Fiscal Year 2018 Budget Request: Defense Budget Overview* (Washington, DC: DoD, May 2017), available at http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2018/fy2018_Budget_Request_Overview_ Book.pdf.

FIGURE 1-4: FY18 DOD REQUEST BY DEPARTMENT, AS COMPARED TO PB17 AND FY17 APPROPRIATIONS



Source: OMB, Public Budget Database FY18; CSBA tabulation of FY17 appropriations (P.L. 114-223, P.L. 114-254, and P.L. 115-31); OMB, Public Budget Database FY17. Analysis in Tableau.
Note: Dollars in thousands.

Appropriation Categories

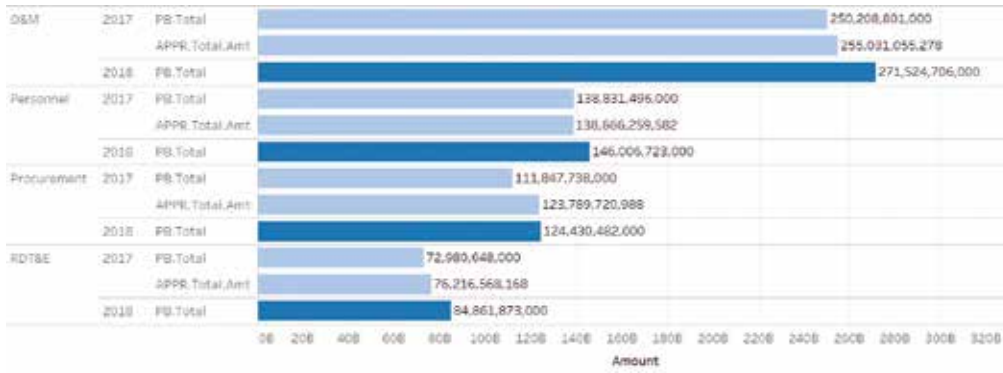
The differences between the Trump administration's PB 2018 plan and the FY 2017 request and appropriations are starker when examining the appropriations categories of defense funding. The PB 2018 request asks for a total of $271 billion in O&M funding, $146 billion for military personnel (MILPERS), $124 billion for procurement, and $83 billion for research, development, test & engineering (RDT&E) (see Figure 1-5).

FIGURE 1-5: FY18 REQUEST BY APPROPRIATIONS TITLE

Source: Data from VisualDOD. Analysis in Tableau.

Compared to the Obama FY 2017 request, the Trump FY 2018 request envisions modest growth in MILPERS and O&M of 5 percent and 8.5 percent, respectively. The major increases are in RDT&E and procurement at 16.3 percent and 11.3 percent, respectively. However, Congress appropriated funding for DoD at a higher level than the Obama administration's FY 2017 request, most notably in an additional $12 billion for procurement, an approximately 10 percent increase. Compared to congressional appropriations for FY 2017, the Trump administration's budget for FY 2018 requests an additional $7.3 billion, or 5.3 percent, for MILPERS to fund additional end strength; an additional $16.5 billion, or 6.5 percent, for O&M; and an additional $8.6 billion, or 11.3 percent, for RDT&E. Due to Congress' higher procurement appropriations than requested in FY 2017, following the March 2017 request for additional appropriations, the PB 2018 procurement request increases by just $641 million, or 0.5 percent (see Figure 1-6, Table 1-2, and Table 1-3).

FIGURE 1-6: PB18 DOD REQUEST BY APPROPRIATIONS TITLE, AS COMPARED TO THE PB17 REQUEST AND FY17 APPROPRIATIONS



Source: Data from VisualDOD. Analysis in Tableau.

TABLE 1-2: FY17 APPROPRIATIONS AND PB18 REQUEST BY APPROPRIATIONS TITLE, AS COMPARED TO THE PB17 REQUEST

				Amount	Delta from PB17	% Delta from PB17
O&M	2017	PB. Total	2017	250,208,801,000	0	0.00%
		APPR. Total. Amt	2017	255,031,055,278	4,822,254,278	1.93%
	2018	PB. Total	2018	271,524,706,000	21,315,905,000	8.52%
Personnel	2017	PB. Total	2017	138,831,496,000	0	0.00%
		APPR. Total. Amt	2017	138,666,259,582	-165,236,418	-0.12%
	2018	PB. Total	2018	146,006,723,000	7,175,227,000	5.17%
Procurement	2017	PB. Total	2017	111,847,738,000	0	0.00%
		APPR. Total. Amt	2017	123,789,720,988	11,941,982,988	10.68%
	2018	PB. Total	2018	124,430,482,000	12,582,744,000	11.25%
RDT&E	2017	PB. Total	2017	72,980,648,000	0	0.00%
		APPR. Total. Amt	2017	76,216,568,168	3,235,920,168	4.43%
	2018	PB. Total	2018	84,861,873,000	11,881,225,000	16.28%

Source: Data from VisualDOD. Analysis in Tableau.

TABLE 1-3: PB18 DOD REQUEST BY APPROPRIATIONS TITLE, AS COMPARED TO FY17 APPROPRIATIONS

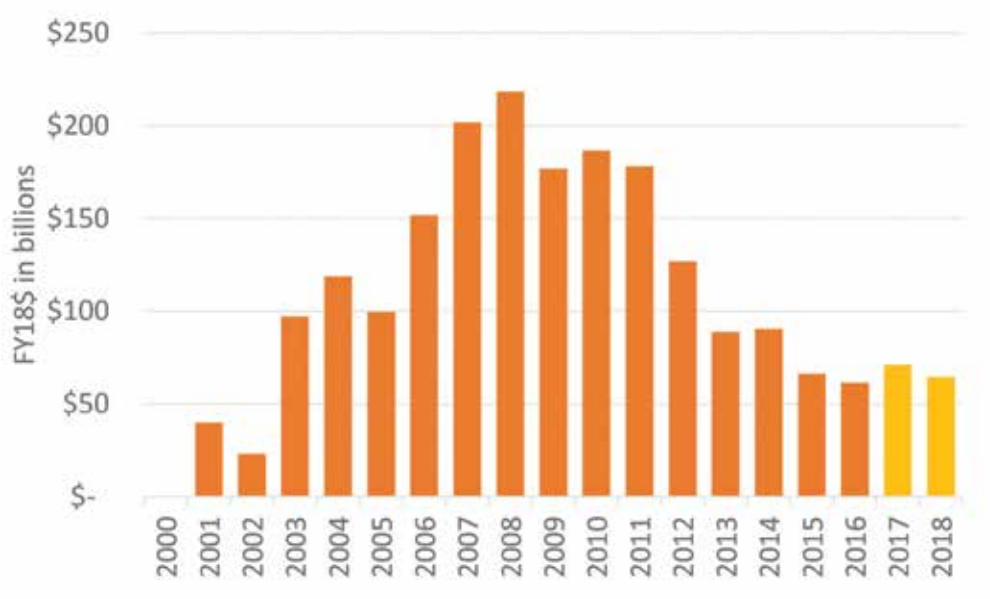
			Amount	Delta from FY17 Approps	% Delta from FY17 Approps
O&M	APPR. Total. Amt	2017	255,031,055,278	0	
	PB. Total	2018	271,524,706,000	16,493,650,722	6.47%
Personnel	APPR. Total. Amt	2017	138,666,259,582	0	
	PB. Total	2018	146,006,723,000	7,340,463,418	5.29%
Procurement	APPR. Total. Amt	2017	123,789,720,988	0	
	PB. Total	2018	124,430,482,000	640,761,012	0.52%
RDT&E	APPR. Total. Amt	2017	76,216,568,168	0	
	PB. Total	2018	84,861,873,000	8,645,304,832	11.34%

Source: Data from VisualDOD. Analysis in Tableau.

Overseas Contingency Operations

The PB 2018 request includes $64.6 billion in Overseas Contingency Operations funds, which is $5.8 billion more than the $58.8 billion requested in the Obama administration's PB 2017 request but $4.7 billion less than the total of $69.7 billion requested for FY 2017 (including the November request for an additional $5.8 billion to support operations in Afghanistan and the March 2017 request for an additional $5.1 billion to support the campaign against ISIS). However, the FY 2017 request included $5.2 billion in explicit OCO-to-base funds, as required by the Balanced Budget Act of 2015 that amended the BCA caps for FY 2016 and FY 2017. Without this $5.2 billion, the balance of the FY 2017 OCO request, $64.5 billion, closely matches the FY 2018 request for $64.6 billion.

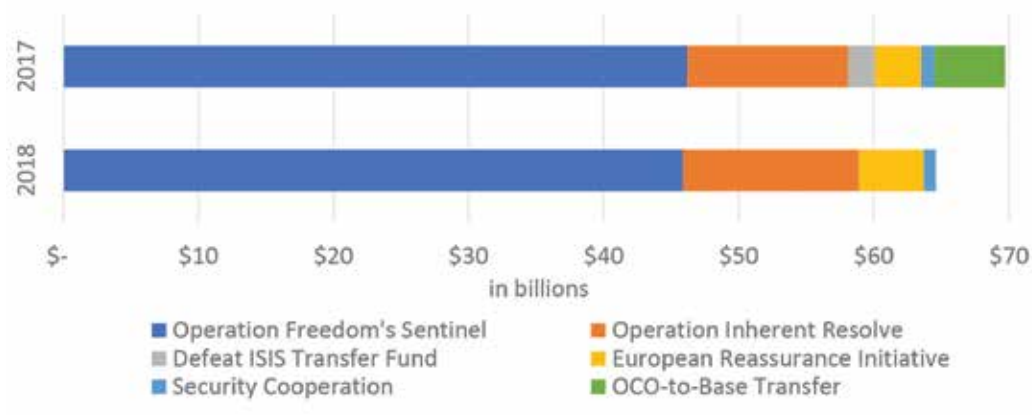
FIGURE 1-7: OCO FUNDING ENACTED FY01–FY16 AND REQUESTED FOR FY17 AND FY18



Source: OUSD (Comptroller), *National Defense Budget Estimates for FY 2018*, FY 2018 Greenbook (Washington, DC: DoD, June 2017), Table 2-1, "Base Budget, War Funding, and Supplementals by Military Department, by P.L. Title (FY 2001 to FY 2018)"; OUSD (Comptroller)/CFO, *Department of Defense Fiscal Year 2017 Budget Request: Defense Budget Overview: Overseas Contingency Operations Budget Amendment* (Washington, DC: DoD, November 2016); OUSD (Comptroller)/CFO, *Request for Additional Fiscal Year 2017 Appropriations* (Washington, DC: DoD, March 16, 2017).

The FY 2018 request includes $45.9 billion in OCO funds for the support of Operation Freedom's Sentinel in Afghanistan and related missions, $13 billion for Operation Inherent Resolve in Iraq and Syria and related missions, $4.8 billion for the European Reassurance Initiative, and $900 million for security cooperation funds. In a point of continuity with the Obama administration, the funding requested for each mission area aligns very closely with the amounts requested in FY 2017.

FIGURE 1-8: TOTAL FY17 AND FY18 OCO FUNDING REQUESTED



Source: OUSD (Comptroller)/CFO, *Department of Defense Fiscal Year 2018 Budget Request: Defense Budget Overview*, Figure 6.1, "Overseas Contingency Operations (OCO) Funding by Activity," p. 6-1.

DoD and National Defense Funding in Context

Of the $603 billion requested for base national defense discretionary funding, $574.5 billion, or 95.2 percent, is for DoD. Of the remainder, $20.6 billion is for the nuclear weapons activities of the DOE, and $7.8 billion is for other defense-related activities, predominantly in the Federal Bureau of Investigation and the Department of Homeland Security. The total request of $667.1 billion includes $9.6 billion in mandatory spending, which does not need to be specifically appropriated by Congress. $7.9 billion of this mandatory spending is for DoD pension accrual obligations, and the bulk of the remainder is for occupational health payments to those harmed by nuclear weapons activities and CIA pension accrual payments (see Table 1-4).

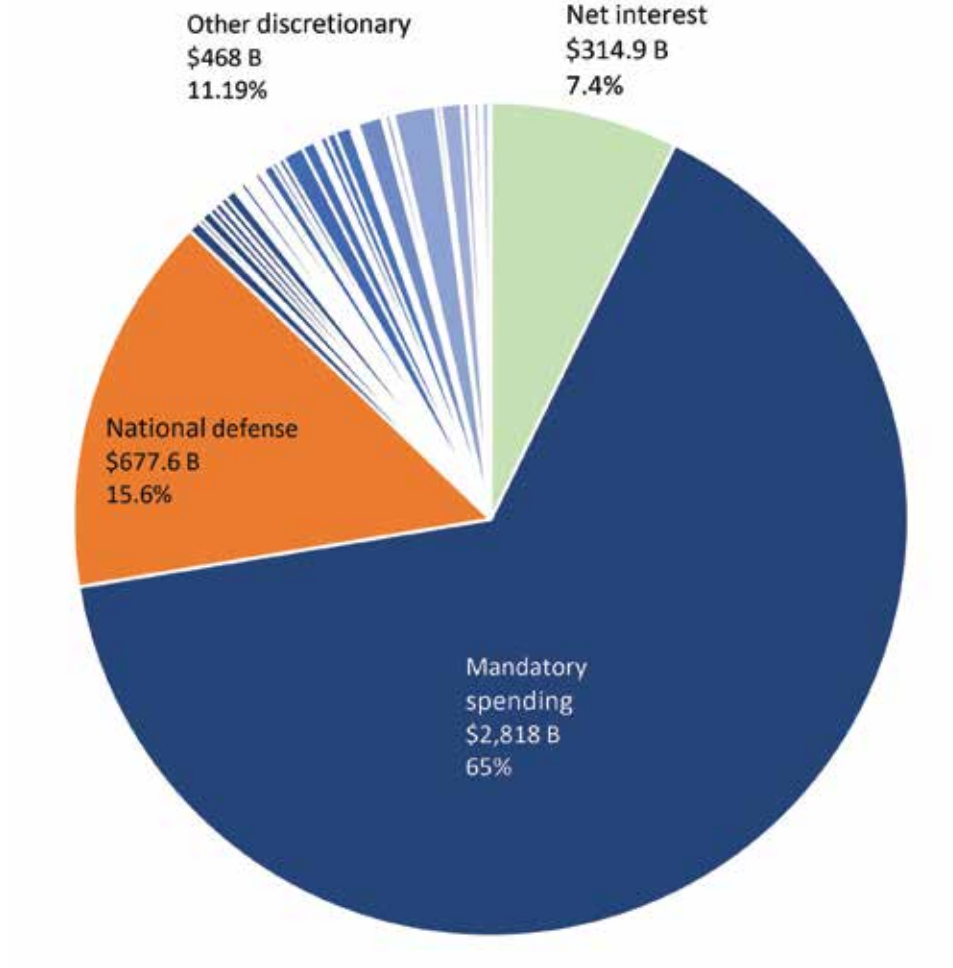
TABLE 1-4: TOTAL NATIONAL DEFENSE SPENDING REQUESTED, PB17 AND PB18

Current-year dollars in billions	PB17 request for FY17	PB18 request FY18	Delta	Percent delta
DoD base	$523.9	$574.5	$50.6	9.7%
DOE	$18.9	$20.6	$1.7	9.0%
Other defense-related	$8.2	$7.9	-$0.3	-4.2%
Base discretionary total	**$551.0**	**$603.0**	**$52.0**	**9.4%**
DoD OCO	$58.8	$64.6	$5.8	9.9%
DoD discretionary total	$582.7	$639.1	$56.4	9.7%
Discretionary total	**$609.8**	**$667.6**	**$57.8**	**9.5%**
DoD	$7.4	$7.8	$0.4	5.6%
DOE	$1.2	$1.2	$0.0	0.3%
Other defense-related	$0.6	$0.6	$0.0	-6.0%
Mandatory total	**$9.2**	**$9.6**	$0.4	4.3%
DoD Total	**$590.1**	**$646.9**	$56.8	9.6%
Overall Total	***$655.1***	***$677.1***	***$22.0***	***3.4%***

Source: OMB, Public Budget Database FY18, Table 25-1, "Budget Authority and Outlays by Function, Category and Program," available at https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/25_1.xls; OMB, Public Budget Database, FY 2017, Table 28-1, "Budget Authority and Outlays by Function, Category and Program," available at https://www.gpo.gov/fdsys/pkg/BUDGET-2017-PER/xls/BUDGET-2017-PER-8-6-1.xls.

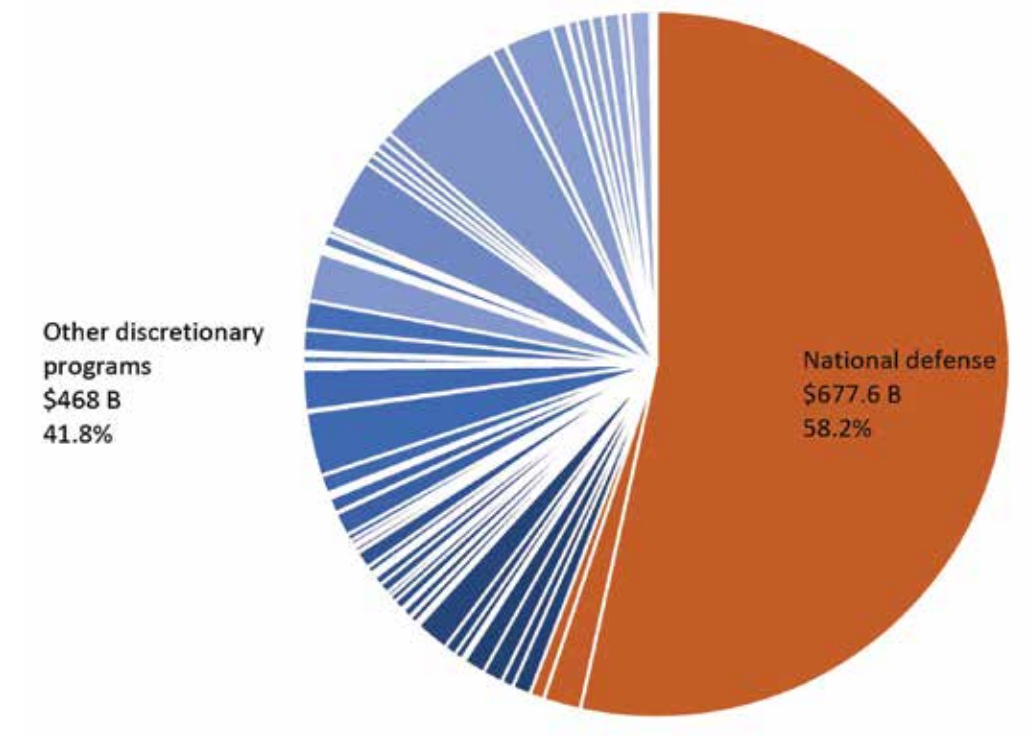
Mandatory spending, predominantly Social Security, Medicare, and Medicaid, accounts for 65.9 percent of federal spending in the FY 2018 budget, while net interest accounts for 7.5 percent. Discretionary spending accounts for 26.8 percent of all federal spending requested. Overall, the $677.1 billion proposed for national defense spending would account for 15.8 percent of the $4,279.5 billion federal budget (see Figure 1-9). In the FY 2018 budget request, national defense spending would make up 58.23 percent of all federal discretionary spending, a departure from the more even split between national defense and non-defense elements of federal spending under the separate caps created by the BCA of 2011 (see Figure 1-10).

FIGURE 1-9: NATIONAL DEFENSE SPENDING AS A PROPORTION OF THE TOTAL FY18 BUDGET REQUEST



Source: OMB, Public Budget Database FY18.

FIGURE 1-10: NATIONAL DEFENSE SPENDING AS A PROPORTION OF DISCRETIONARY SPENDING IN THE FY18 REQUEST



Source: OMB, Public Budget Database FY18.

Areas of Focus

Although President Trump touted a defense buildup during the campaign, the PB 2018 defense budget postpones any major increases in defense spending over the amounts planned for FY 2018 by the outgoing Obama administration in the PB 2017 request. Much of the additional $18.5 billion requested in base national defense spending over the planned FY 2018 defense budget is allocated to increases in O&M and RDT&E funding, including a relatively large increase in funding of $2.3 billion for classified RDT&E programs. The FY 2018 request includes a small boost to procurement spending compared to the PB 2017 projection, but because Congress appropriated additional funds for procurement in FY 2017, it will not represent any growth over actual FY 2017 spending level.

The PB 2018 budget funds a modest increase in end strength in FY 2018 over the current force as funded by Congress for FY 2017. Maintaining the active-duty Army at 476,000 and the Marine Corps at 185,000, it would fund an additional 4,000 sailors and an additional 4,100 airmen, for a total of 8,100 additional active-duty servicemembers. It would also increase the Reserve components by 2,700 servicemembers, for a total end-strength growth of 10,800. This modest growth is largely a continuation of the efforts by Congress to halt the drawdown

of military personnel above the levels forecast for FY 2017. However, it does result in real end-strength growth of 12,700 in the active component and 4,900 in the Reserves compared to the FY 2016 end strength. Each appropriations title will be discussed in depth in forthcoming sections of the FY 2018 defense budget request.

Budget Discrepancies

The OMB budget database, the DoD overall budget documents, and the Service budget documents present different dollar figures. For example, the OMB budget database for FY 2018 states that the Navy's total O&M funding request is $60.76 billion. The DoD budget overview states that the Navy's total O&M request for FY 2018 is $61.04 billion, while the Navy's budget overview document states that the O&M request totals $59.64 billion. Part of this discrepancy is due to different figures presented for the FY 2018 budget request for the Marine Corp's O&M account. The DoD-wide O&M justification book and the FY 2018 OMB FYDP budget database present this request as $8.05 billion, while the Navy's own O&M justification book has a figure of $6.93 billion, a difference of some $1.12 billion.

Although the OMB and the DoD overview figures sum to nearly the same levels within each appropriation type, the amounts allocated to each Service diverge substantially. In the procurement accounts, DoD overview figures show the Army with $962 million more than the OMB budget data does. The OMB budget data allocates this $962 million to DoD-wide procurement instead. Similar divergences appear in the O&M, Military Construction Program (MILCON), and revolving funds appropriation types. Across the Services, the DoD PB18 budget overview documents allocate $2.2 billion to the Services that the OMB budget data allocates to the DoD-wide accounts. Specifically, the DoD overview documents allocate $1.4 billion to the Army, $426 million to the Navy, and $415 million to the Air Force that the OMB database allocates to DoD-wide (see Table 1-5). This report will note the source of the budget figures used for each reference, but will not attempt to reconcile divergences between the budget numbers presented by OMB, DoD, and the Services.

TABLE 1-5: COMPARISON OF THE FY18 BUDGET DATA PRESENTED BY OMB AND DOD, BY SERVICE AND APPROPRIATION TYPE

		MILPERS	O&M	Procurement	RDT&E	MILCON	Family Housing	Revolving Funds	Total
	DoD	$60,894	$72,341	$21,177	$9,545	$1,402	$529	$134	$166,022
	OMB	$60,894	$72,125	$20,215	$9,544	$1,345	$530	$0	$164,653
Army	Delta	*$0*	*$216*	*$962*	*$1*	*$57*	*-$1*	*$134*	*$1,369*
	DoD	$48,050	$61,035	$50,336	$17,805	$1,844	$412	$509	$179,991
	OMB	$48,050	$60,754	$50,335	$17,805	$1,701	$412	$509	$179,566
Navy	Delta	*$0*	*$282*	*$1*	*$0*	*$143*	*$0*	*$0*	*$426*
	DoD	$37,019	$60,271	$47,727	$35,050	$2,496	$403	$66	$183,032
	OMB	$37,019	$59,977	$47,727	$35,049	$2,442	$403	$0	$182,617
Air Force	Delta	*$0*	*$294*	*$0*	*$1*	*$54*	*$0*	*$66*	*$415*
	DoD	-	$78,283	$5,988	$20,928	$3,271	$63	$1,535	$110,068
	OMB	-	$79,076	$6,949	$20,928	$3,527	$63	$1,735	$112,278
DoD-wide	Delta	-	*-$793*	*-$961*	*$0*	*-$256*	*$0*	*-$200*	*-$2,210*
	DoD	$145,963	$271,930	$125,228	$83,328	$9,013	$1,407	$2,244	$639,113
	OMB	$145,963	$271,932	$125,226	$83,326	$9,015	$1,408	$2,244	$639,114
Total	Delta	*$0*	*-$1*	*$2*	*$2*	*-$2*	*-$1*	*$0*	*$0*

Source: OMB, Public Budget Database FY18; OUSD (Comptroller)/CFO, *Department of Defense Fiscal Year 2018 Budget Request: Defense Budget Overview*.

Note: Dollars in millions.

CHAPTER 2

The Trump Administration's FY 2018 Defense Budget in Context

Far from an Historic Increase

Strengthening the U.S. military was one of the key themes of Donald Trump's presidential campaign. After saying that "our military is a disaster," and "depleted," he colorfully promised to make the U.S. armed forces "so big, so powerful, so strong, that nobody—absolutely nobody—is gonna mess with us."[5] Trump painted his plans in bold strokes: increasing the size of the Army to 540,000 soldiers; adding 20,000 Marines; bringing the Air Force to at least 1,200 combat aircraft; and increasing the Navy to a fleet of some 350 ships. Funding this force structure buildup would require roughly $200 billion more over five years than envisioned in the Obama administration's 2017 defense plan. Getting just the Navy to its promised force structure of 355 ships would require an extra $5.5 billion annually over current shipbuilding funding.[6] Achieving these force structure levels would require funding increases that are more than double the Trump administration's proposal for $18.5 billion over the PB 2017 projections for FY 2018, or an additional $40 billion annually over the PB 2017 FYDP.[7]

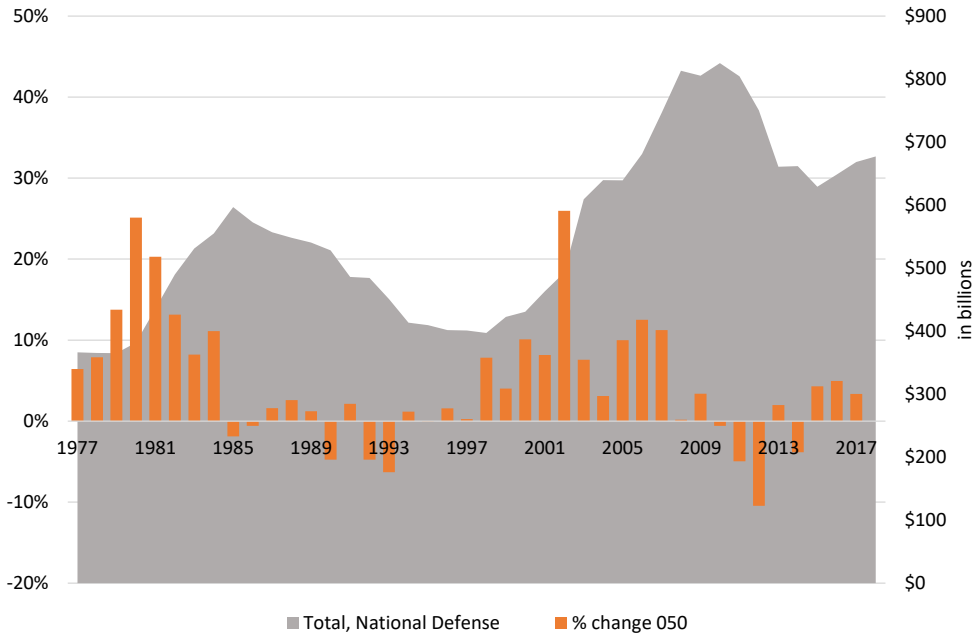
5 Andrew Tilghman, "Donald Trump Paints a Dismal Picture of Today's Military," *Military Times*, October 3, 2016, available at http://www.militarytimes.com/articles/trump-paints-dismal-picture-of-todays-military; and Josh Eidelson and Dimitra Kessenides, "The Promises of President-Elect Donald Trump, in His Own Words," *Bloomberg Businessweek*, November 10, 2016, available at https://www.bloomberg.com/news/articles/2016-11-10/the-promises-of-president-elect-donald-trump-in-his-own-words.

6 Eric Labs, *Costs of Building a 355-Ship Navy* (Washington, DC: Congressional Budget Office (CBO), April 2017), p. 1, available at https://www.cbo.gov/system/files/115th-congress-2017-2018/reports/52632-355shipnavy.pdf.

7 This calculation is based on CSBA analysis utilizing CSBA's proprietary Strategic Choices Tool to grow the force structure and associated capabilities to these proposed levels.

President Trump painted his proposed $603 billion national defense budget as "historic," focusing on the requested 9.4 percent increase over the Obama administration's request for FY 2017 and 10 percent increase over the BCA caps for FY 2018.[8] However, even against this more generous yardstick than the 3 percent increase over the $584.5 billion in national defense funding projected for FY 2018, the requested $603 billion is far short of an historic increase. There have been year-over-year increases in total national defense spending of 10 percent or more ten times between FY 1977 and FY 2017, largely during the Carter–Reagan buildup of the early 1980s and again during the ramping up to the Iraq war in the early 2000s (see Figure 2-1).

FIGURE 2-1: YEAR-OVER-YEAR IN 050 NATIONAL DEFENSE SPENDING, FY77–FY18



Source: OMB, *Historical Tables, Budget of the United States Government, Fiscal Year 2018* (Washington, DC: Government Printing Office, 2017), Table 5.1, "Budget Authority by Function and Subfunction: 1976–2022," available at https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/hist05z2.xls.

Note: This figure presents total 050 national defense spending, including both base and OCO spending, in FY18 dollars. The year-over-year figures are calculated using current-year dollars to maintain consistency with President Trump's point of comparison.

8 Steve Holland, "Trump Seeks 'Historic' U.S. Military Spending Boost, Domestic Cuts," *Reuters*, February 28, 2017, available at http://www.reuters.com/article/us-usa-trump-budget-idUSKBN1661R2.

President's Budget Roadblocks to a Defense Buildup

National security is an afterthought in the FY 2018 President's Budget request, playing fourth fiddle to tax cuts, cutting non-defense discretionary spending by 30 percent over a decade to a record low of 1.4 percent of GDP, and balancing the federal budget within ten years.[9] Instead of repealing the BCA caps on defense, as both congressional Democrats and Republicans have called for, this budget would extend them six years through 2027. It does call for raising the defense caps by 2 percent annually, which would yield an additional $489 billion for national defense spending—but it offsets these raises with $1.6 trillion of deep cuts to non-defense discretionary spending that are unlikely to be enacted (see Figure 2-2 and Figure 2-3). Many of the cuts have drawn criticism from conservative Republicans like long-time appropriator Rep. Hal Rogers (R-KY), who said that he is "deeply concerned about the severity of the domestic cuts," and the current chairman of the House Appropriations Committee, Rep. Rodney Frelinghuysen (R-NJ), who emphasized that Congress retains "the power of the purse."[10] Many other Republican legislators whose votes the Trump administration would need have offered dim prospects for the budget's survival in Congress and emphasized congressional primacy in appropriations. Sen. John Cornyn (R-TX) said that "almost every president's budget proposal that I know of is basically dead on arrival," while Rep. Tim Scott (R-SC) characterized the PB 2018 request as "like a press release. I don't think anyone is going to focus on the president's budget to decide how we create our own budget."[11] Senate Budget Committee Chairman Michael Enzi (R-WY) enjoined people from panicking: "They're just suggestions."[12]

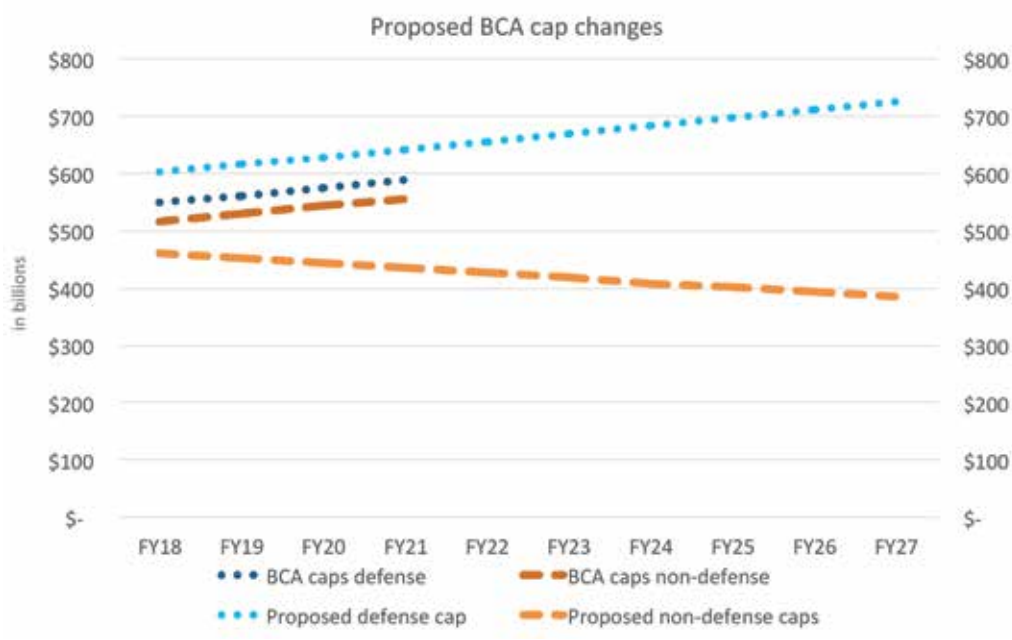
9 Gary Cohn, "President Trump Proposed a Massive Tax Cut. Here's What You Need to Know," The White House blog, April 26, 2017, available at https://www.whitehouse.gov/blog/2017/04/26/president-trump-proposed-massive-tax-cut-heres-what-you-need-know; and OMB, *Budget of the U.S. Government, Fiscal Year 2018: A New Foundation for American Greatness* (Washington, DC: U.S. Government Printing Office [GPO], May 2017), "Summary Tables."

10 Andrew Restuccia, Matthew Nussbaum, and Sarah Ferris, "Trump Releases Budget Hitting his Own Voters Hardest," *Politico*, May 22, 2017, available at http://www.politico.com/story/2017/05/22/trump-budget-cut-social-programs-238696; and Rodney Frelinghuysen, chairman of the House Appropriations Committee, "Statement on President's Budget Request," May 24, 2017, available at https://frelinghuysen.house.gov/top-news/chairman-frelinghuysen-statement-on-presidents-budget-request/.

11 Andrew Taylor and Martin Crutsinger, "Trump's Proposed Federal Budget Calls for Deep Domestic Cuts," *Associated Press*, May 22, 2017; and Susan Ferrechio, "GOP Spooked by Big Cuts in Trump's Budget Plan," *The Washington Examiner*, May 24, 2017, available at http://www.washingtonexaminer.com/gop-spooked-by-big-cuts-in-trumps-budget-plan/article/2623964.

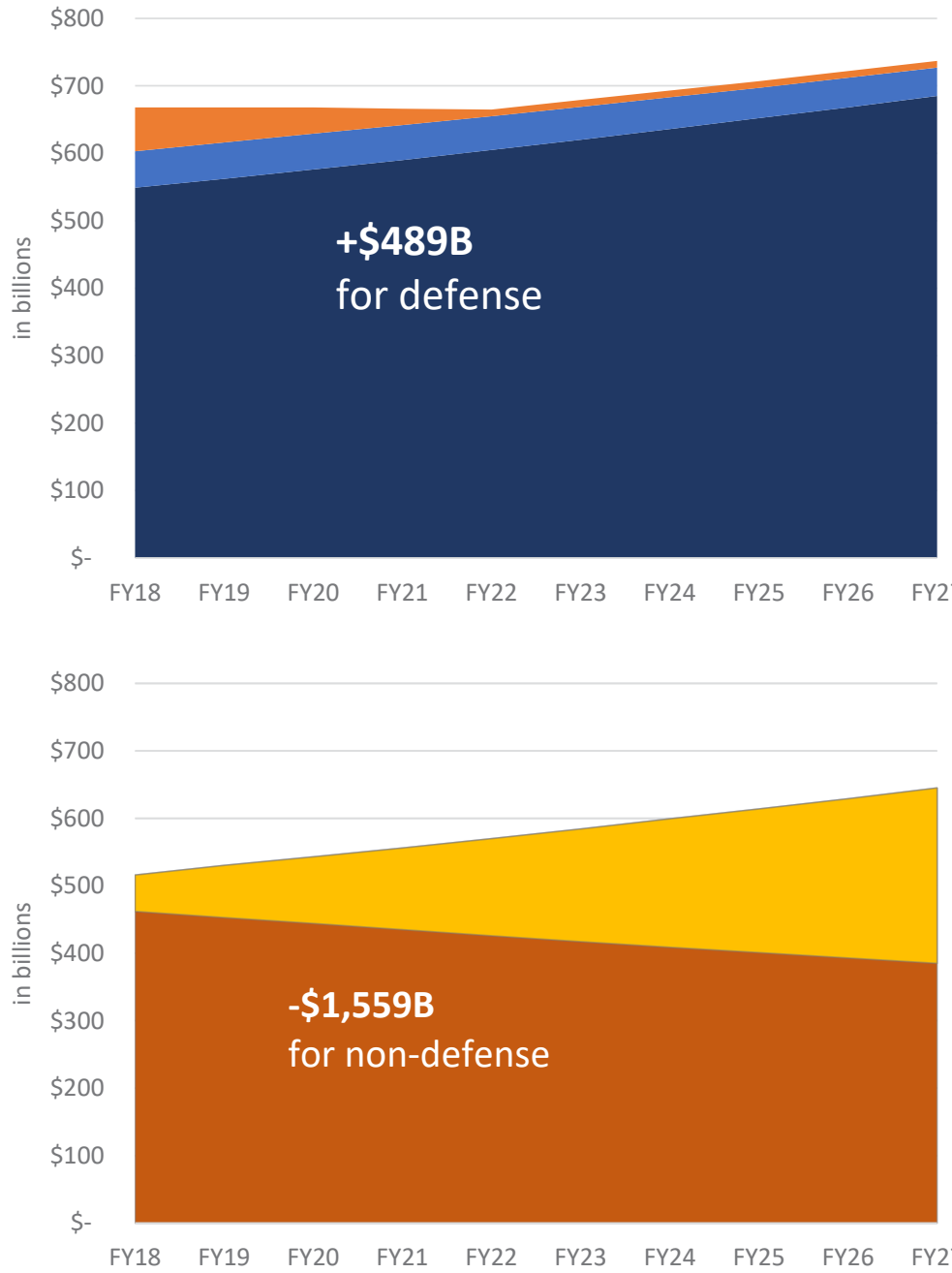
12 Ryan McCrimmon, "Trump Budget Request Rolls Out to a Quarreling Congress," *Roll Call*, May 23, 2017, available at http://www.rollcall.com/news/politics/first-trump-budget-request-rolls-quarreling-congress.

FIGURE 2-2: CURRENT AND PROPOSED CAPS IN DEFENSE AND NON-DEFENSE DISCRETIONARY SPENDING



Source: OMB, *Budget of the U.S. Government, Fiscal Year 2018*, "Summary Tables," Table S-7, "Proposed Discretionary Caps for 2018 Budget," in current-year dollars.

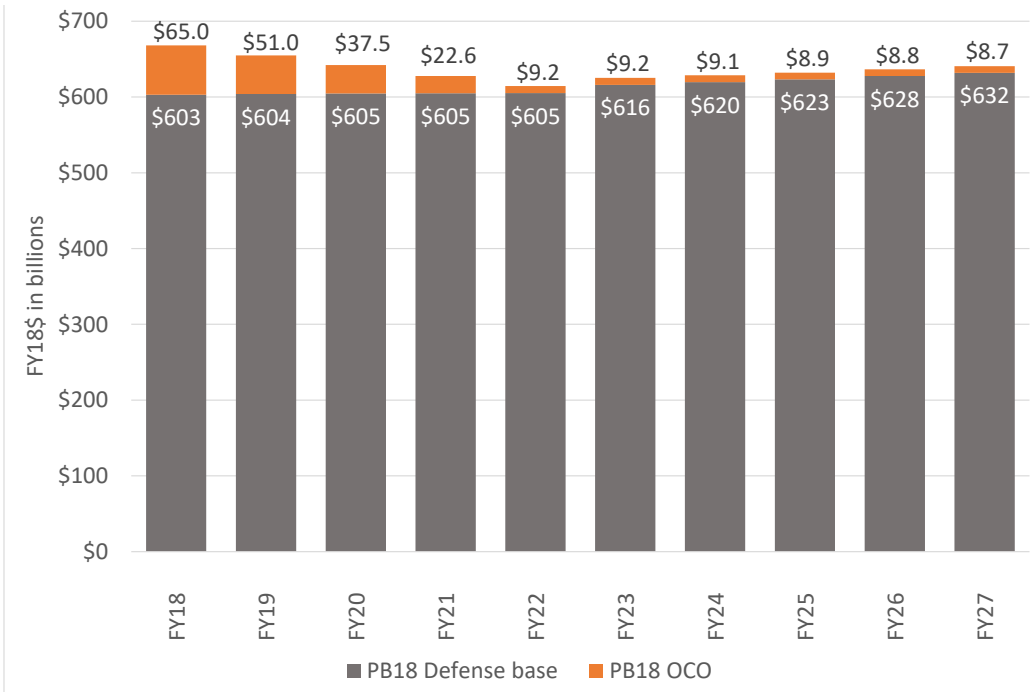
FIGURE 2-3: PROPOSED CHANGES TO DEFENSE AND NON-DEFENSE DISCRETIONARY SPENDING IN PB18



Source: OMB, *Budget of the U.S. Government, Fiscal Year 2018*, "Summary Tables," Table S-7, "Proposed Discretionary Caps for 2018 Budget," in current-year dollars.

The FY 2018 President's Budget also suggests phasing out the overseas contingency operations account, the "emergency supplemental" that has provided a substantial portion of the military's recent funding. OCO funding would decline from $60 billion in FY 2018 to $10 billion in FY 2022. By giving with one hand and taking away with the other, the Trump administration's PB 2018 budget would actually depress the overall level of national defense spending by $3 billion over five years—from $668 billion in 2018 to $665 billion in 2022 in current dollars. After adjusting for inflation, total national defense spending would fall by 2 percent annually in real terms over the next five years—from $668 billion in FY 2018 to $614.4 billion in FY 2022. Between FY 2022 and FY 2027, national defense spending would rise by 1 percent annually.[13] By FY 2027, national defense spending would be $640.6 billion in FY 2018 dollars—$27.4 billion lower than the $668 billion requested in FY 2018 and equal to just 2.4 percent of GDP (see Figure 2-4).[14]

FIGURE 2-4: PROPOSED NATIONAL DEFENSE BASE AND OCO SPENDING FY18–FY27



Source: OMB, President's Budget FY18, "Summary Budget Tables, Table S-7. Proposed Discretionary Caps for 2018 Budget."

Note: in FY18 dollars.

13 OMB, *Budget of the U.S. Government, Fiscal Year 2018*, "Summary Tables," Table S-7, "Proposed Discretionary Caps for 2018 Budget."

14 Ibid., Table S-5, "Proposed Budget by Category as a Percent of GDP."

Small-print footnotes in the 2018 budget request allow for a glimmer of hope, noting that the prospective defense budget numbers don't reflect a policy judgment about the right level of defense spending.[15] In a July 7 memo, OMB Director Mick Mulvaney directed federal agencies to submit proposed additional investments for up to a 5 percent overall budget increase.[16] Unfortunately, the deficit-hawk orthodoxies embraced in the request are incompatible with a real-world–driven approach to defense spending. Any increases to defense spending above the flat levels penciled into the budget would require either further discretionary cuts or abandoning a balanced budget within ten years and embracing at least some measure of deficit spending—anathema to OMB Director Mulvaney and other GOP deficit hawks. A major decision point for President Trump looms: will his administration pursue higher levels of national defense spending in FY 2019 and beyond, even if it isn't offset by non-defense discretionary cuts?

Where's the CAGR?

The absence of any real defense buildup in the Trump administration's PB 2018 is clear. After adjusting for inflation, the PB 2018 plan through FY 2022 grows base national defense spending to $605.2 billion—just $2.2 billion over the base budget request for $603 billion in FY 2018. This is a cumulative annual growth rate (CAGR) of just 1.2 percent above the $562.2 billion in base national defense funding requested by President Obama for FY 2017. If base national defense spending were to grow by 3–5 percent annually in real terms between FY 2017 and FY 2022, it would reach $670 to $755 billion in FY 2022 (in FY 2018 dollars). This is at or over the McCain–Thornberry proposed level of $684 billion in FY 2022, which would represent real growth of 3.3 percent annually. Factoring in OCO funding, total national defense funding would have to increase from President Obama's FY 2017 level of $622.1 billion to between $740 billion and $835 billion in FY 2022 to reach a CAGR of 3–5 percent annually (see Table 2-1 and Figure 2-5).

15 Ibid., Table S-7, "Proposed Discretionary Caps for 2018 Budget," and p. 41.

16 OMB Director Mulvaney, "Fiscal Year (FY) 2019 Budget Guidance," Memorandum for the Heads of Departments and Agencies, M-17-28, July 7, 2017, available at https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2017/M-17-28.pdf.

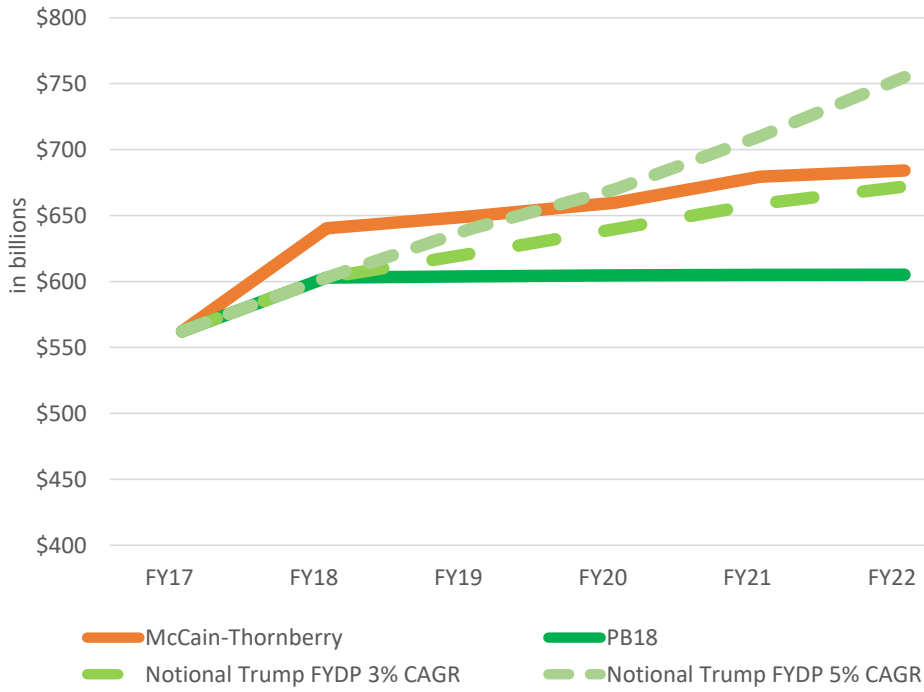
TABLE 2-1: NATIONAL DEFENSE FUNDING CAGR FROM FY17 REQUEST, COMPARED

	FY 2022 national defense base	CAGR from PB 2017 base request	FY 2022 national defense total	CAGR from PB 2017 total request
PB 2017 FYDP	$576.5	0.4%	$576.5	-1.3%
PB 2018 FYDP	$605.2	1.2%	$614.4	-0.2%
Notional 3% CAGR	$659	3%	$740	3%
McCain–Thornberry	$684.2	3.3%	$739.6	2.9%
Notional 5% CAGR	$755	5%	$835	5%

Source: OMB, *Budget of the U.S. Government, Fiscal Year 2017*, "Summary Tables," Table S-10, "Funding Levels for Appropriated ("Discretionary") Programs by Category"; OMB, *Budget of the U.S. Government, Fiscal Year 2018*, "Summary Tables," Table S-7, "Proposed Discretionary Caps for 2018 Budget"; Office of Senator John McCain, "Restoring American Power," p.20. CSBA calculations.

Note: All dollars are in inflation-adjusted FY 2018 dollars in billions.

FIGURE 2-5: NOTIONAL NATIONAL DEFENSE SPENDING GROWTH RATES



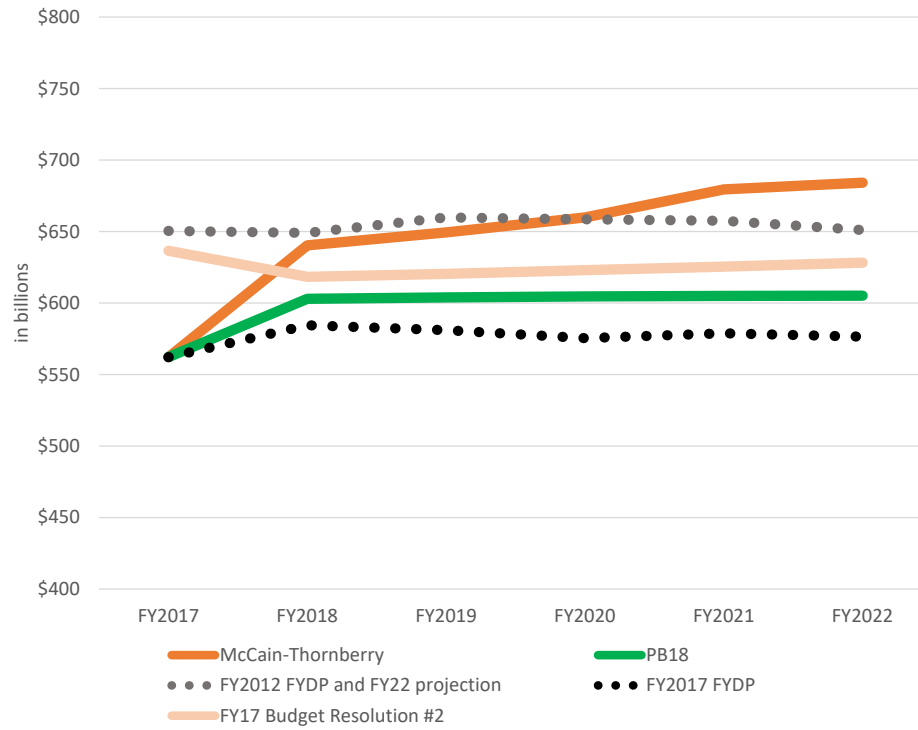
Source: OMB, *Budget of the U.S. Government, Fiscal Year 2018*, "Summary Tables," Table S-7, "Proposed Discretionary Caps for 2018 Budget"; Office of Senator John McCain, "Restoring American Power," p.20, CSBA calculations.

Note: All dollars are in inflation-adjusted FY 2018 dollars in billions.

Across the FY 2018–FY 2022 FYDP, after adjusting for inflation, President Trump's proposed base national defense funding is not only substantially below that proposed by Sen. McCain and Rep. Thornberry but also lower than the national defense funding levels agreed to by the House and Senate Republican caucus in the FY 2017 budget resolution as passed in January 2017. Across the five years of the PB 2018 FYDP, after adjusting for inflation, the Trump administration's proposed base spending on national defense would total $3.02 trillion, some $291 billion lower than the $3.31 trillion total proposed by Sen. McCain and Rep. Thornberry. However, the Trump administration's proposal for $3.02 trillion would be a cumulative $125.4 billion over the planned national defense funding levels from the Obama administration's PB 2017 (see Figure 2-6).

After factoring in projected OCO spending, the Trump administration's total national defense funding for FY 2018–FY 2022 would total $3.21 trillion in FY 2018 dollars, creating a gulf of $395 billion below the total of $3.6 trillion in overall national defense funding called for by Sen. McCain and Rep. Thornberry (see Figure 2-7).

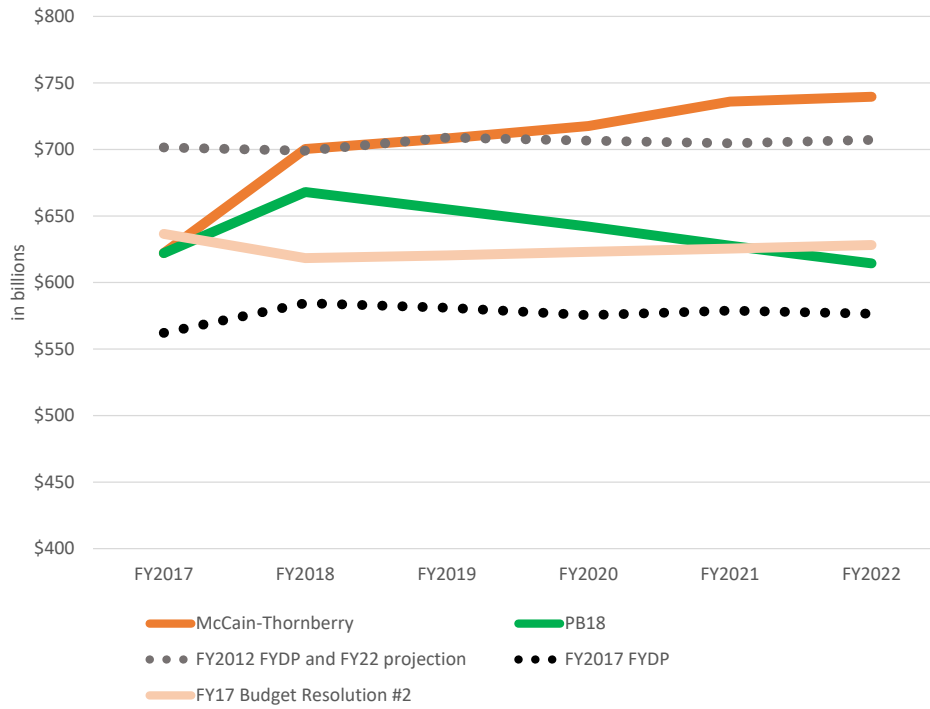
FIGURE 2-6: FY18–FY22 BASE NATIONAL DEFENSE FUNDING PLANS



Source: OMB, *Budget of the U.S. Government, Fiscal Year 2017*, "Summary Tables," Table S-10, "Funding Levels for Appropriated ("Discretionary") Programs by Category"; OMB, *Budget of the U.S. Government, Fiscal Year 2018*, "Summary Tables," Table S-7, "Proposed Discretionary Caps for 2018 Budget"; OMB, *Budget of the U.S. Government, Fiscal Year 2012*, "Analytical Perspectives," Table 32-1, "Policy Budget Authority and Outlays by Function, Cateogry, and Program"; Office of Senator John McCain, "Restoring American Power," p.20; House of Representatives, "FY17 Budget Resolution," January 3, 2017, available at https://budget.house.gov/uploadedfiles/fy17_reconciliation_bill_text.pdf. CSBA calculations.

Note: The FY 2012 FYDP extends through FY 2021. The FY 2022 projected extension of the FY 2012 FYDP was calculated by applying the 10-year CAGR forward one year.

FIGURE 2-7: FY18–FY22 TOTAL NATIONAL DEFENSE FUNDING PLANS



Note: The FY 2012 FYDP extends through FY 2021. The FY 2022 projected extension of the FY 2012 FYDP was calculated by applying the 10-year CAGR forward one year. The FY 2012 FYDP includes a notional $50 billion OCO placeholder, which was carried forward into FY 2022. The FY 2017 FYDP does not include any OCO placeholder. The second FY 2017 Budget Resolution includes zero OCO funding past FY 2017.

CHAPTER 3

A Defense Buildup in the Near Term?

Not content with the Trump administration's decision to defer a defense buildup to FY 2019 and beyond, Congress is taking matters into its own hands. In the FY 2018 authorization and appropriations cycle to date, the House is coalescing at a national defense topline of about $696.5 billion, some $30 billion over the Trump administration's request for $603 billion in base funding and a further $65 billion in OCO for a total of $667 billion. Defense hawks in Congress—like Rep. Thornberry and Sen. McCain—advocated for higher defense funding levels in FY 2018, arguing that the military can't wait until after the beginning of the FY 2019 fiscal year on October 1, 2018 to begin restoring capacity and investing in improved capabilities.[17] There appears to be broad consensus about the need for greater defense spending in Congress, including a surprising degree of agreement between the Freedom Caucus and the defense hawks in the House. However, deeper divisions about the right levels of non-defense discretionary spending and cuts to mandatory spending twice postponed the release of a budget resolution in the House Budget Committee, leaving a short legislative timeframe before the beginning of FY 2018.[18] The statutory limitations on national defense spending imposed by the BCA of 2011 also pose a formidable hurdle.

17 Aaron Mehta and Joe Gould, "McCain, Thornberry Rip White House Budget Plan on Defense," *Defense News*, February 27, 2017, available at https://www.defensenews.com/2017/02/27/mccain-thornberry-rip-white-house-budget-plan-on-defense/; and Megan Eckstein, "House Defense Bill Pushing for $640B in Base Budget; Would Trade Lower Top Line for Long-Term Budget Stability," *USNI News*, June 23, 2017, available at https://news.usni.org/2017/06/23/house-defense-bill-pushing-640b-base-spending-trade-lower-top-line-long-term-budget-stability.

18 Niv Elis, "GOP Faces Critical Month for Budget," *The Hill*, July 9, 2017, available at http://thehill.com/policy/finance/341055-gop-faces-critical-month-for-budget.

Defense Committee Actions

The appropriate level of national defense and non-defense discretionary funding has been the subject of intense debate and negotiation between the Armed Services Committees, the Defense Subcommittees of the Appropriations Committees, and the Budget Committees as the annual National Defense Authorization Act (NDAA) and appropriations process for the FY 2018 fiscal year begins and the House and Senate attempt to pass an FY 2018 budget resolution with spending targets for the Appropriations Committees.[19] There is wide agreement within the Republican caucus that increases in defense spending are necessary. Although the exact figures vary, the House Armed Services Committee (HASC), the Senate Armed Services Committee (SASC), and the House Appropriations Committee, Defense Subcommittee (HAC-D) have all marked to a total national defense topline that is about $30 billion more than the Trump administration's PB 2018 request, demonstrating strong will to increase defense spending in Congress.

The HASC marked to an NDAA that authorizes a total of $621.5 billion in discretionary base spending for national defense and an additional $75 billion in OCO in a compromise negotiated with the House Budget Committee. This negotiated funding level for national defense also reportedly includes a guarantee that the House will seek a 5 percent increase in defense funding over this level in FY 2019, FY 2020, and FY 2021.[20] The House Budget Committee negotiations over the rest of the federal budget have broken down over the amount of mandatory spending cuts to include in the FY 2018 budget resolution.[21] The House Budget Committee advanced an FY 2018 budget resolution on July 19.[22] However, the Freedom Caucus, whose votes will be necessary to win the passage of the resolution in the House, is reportedly unwilling to vote for the draft resolution, objecting to the higher levels of spending than in the administration's FY 2018 budget proposal.[23] The HAC-D, whose portfolio excludes nuclear weapons activities and military construction, appropriated $584.2 billion in base DoD funding and an additional $73.9 billion in OCO, a dollar amount consistent with the HASC's overall national defense topline of $696.5 billion. Much of this increase in the HAC-D bill

19 Joe Gould, "House Armed Services Moving Ahead with $640B Top Line," *Defense News*, June 23, 2017, available at http://www.defensenews.com/articles/house-armed-services-moving-ahead-with-640b-top-line; and Joe Gould, "House Armed Services Panel Unveils $696.5 Billion Defense Authorization Bill," *Defense News*, June 26, 2017, available at http://www.defensenews.com/articles/hasc-unveils-6965-billion-defense-authorization-bill.

20 Joe Gould, "Thornberry Wins Pledge to Grow DoD Budgets, but Will It Stick?" *Defense News*, June 27, 2017, available at https://www.defensenews.com/congress/budget/2017/06/27/thornberry-wins-pledge-to-grow-dod-budgets-but-will-it-stick/.

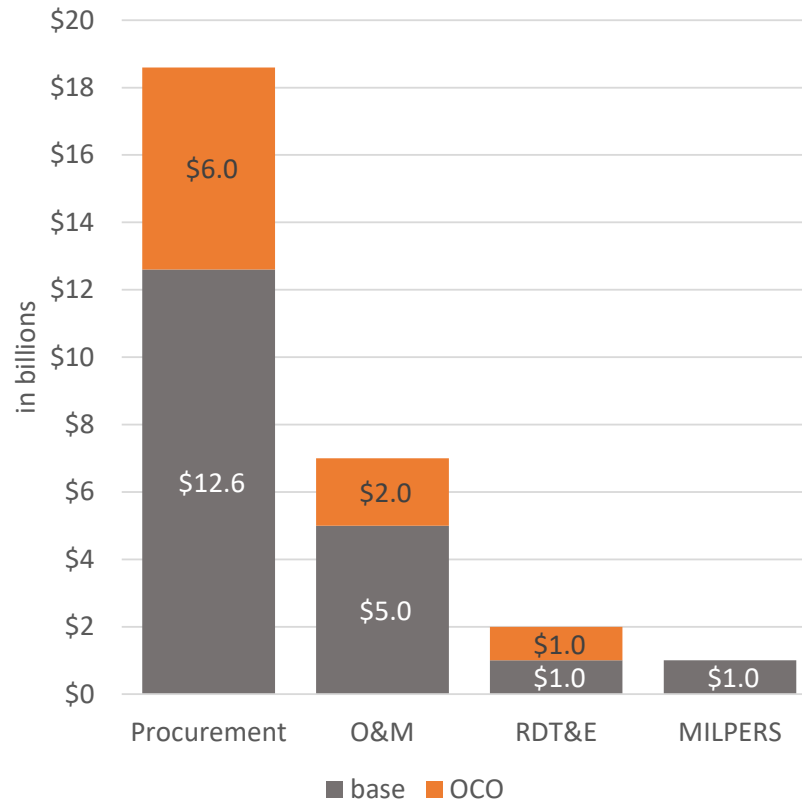
21 Sarah Ferris and Rachael Bade, "Fight Between GOP House Chairs Imperils Budget Deal," *Politico*, June 27, 2017, available at http://www.politico.com/story/2017/06/27/tax-budget-cuts-house-239982.

22 Niv Elis, "House Committee Advances Budget Resolution," *The Hill*, July 19, 2017, available at http://thehill.com/policy/finance/342862-house-committee-advances-budget-resolution.

23 Niv Elis, "Freedom Caucus Won't Support House Budget Resolution," *The Hill*, July 17, 2017, available at http://thehill.com/policy/finance/budget/342358-freedom-caucus-unprepared-to-support-budget-resolution; and Susan Ferrechio, "Republican Budget at Risk in the House," *Washington Examiner*, July 21, 2017, available at http://www.washingtonexaminer.com/republican-budget-at-risk-in-the-house/article/2629303.

to a $696.5 billion topline comes in the form of a new National Defense Restoration Fund. This new fund would provide $28.6 billion in FY 2018 in order to allow the Pentagon to fund necessary investments identified in the National Defense Strategy review immediately in FY 2018, rather than waiting until FY 2019 or beyond.[24] This fund as proposed would appropriate $18.6 billion for procurement, $7 billion for O&M, $2 billion for RDT&E, and $1 billion for MILPERS (see Figure 3-1). These funds would be available at the Secretary of Defense's discretion, with a 15-day notice period to Congress.

FIGURE 3-1: PROPOSED NATIONAL DEFENSE RESTORATION FUND APPROPRIATIONS BY APPROPRIATION TITLE



Meanwhile, the SASC has marked to a $640 topline and $60 billion in OCO for a total of $700 billion in national defense spending.[25] This total is $3.5 billion more than the House

24 Rep. Kay Granger, chairwoman of Defense Subcommittee, House Committee on Appropriations, "Opening Statement on Defense Spending Bill for FY18," June 29, 2017, available at https://kaygranger.house.gov/press-release/chairwoman-granger%E2%80%99s-opening-statement-defense-spending-bill-fy18.

25 Gregory Hellman, "SASC to Mark NDAA to $700 Billion," *Politico Pro*, June 26, 2017, available at https://www.politicopro.com/defense/whiteboard/2017/06/sasc-to-mark-ndaa-to-700-billion-089658.

national defense total but reflects a greater shift of national defense funding into the base budget instead of OCO. There is no indication that either the Senate Appropriations Committee or the Senate Budget Committee has settled on a national defense topline (see Table 3-1).

TABLE 3-1: CONGRESSIONAL DEFENSE FY18 FUNDING LEVELS

in billions	Base	OCO	Total	Notes
PB 2018	$603	$65	$667	Includes all national defense funding
HASC	$621.5	$75	$696.5	Includes all national defense funding, $10 B of OCO earmarked for base budget needs
House budget	$621.5	$75	$696.5	Deal as reported, not finalized Includes all national defense funding
HAC-D	$584.2	$73.9	$658.1	Includes DOD spending only, but excludes MILCON DOD spending is typically 95.5 percent of overall national defense funding.
SASC	$640	$60	$700	Includes all national defense funding
Senate budget	-	-	-	No information
SAC-D	-	-	-	No information

BCA Caps Bar a Base Buildup

The most pressing question of the debate about the FY 2018 defense budget is whether Congress will be able to raise or remove the statutory caps that limit national defense spending. The BCA of 2011, as amended, forms a formidable barrier to a defense buildup. The original BCA of 2011 was passed as part of negotiations over raising the national debt ceiling limit and concern about high spending deficits and lower federal revenues following the financial crisis of 2008. It capped discretionary spending for both national defense and non-defense spending over ten years. It also empowered a Joint Select Committee on Deficit Reduction, popularly known as the supercommittee, which was charged with reaching a deal to reduce the federal deficit by at least $1.5 trillion between FY 2012–FY 2021. Because the committee was unable to reach a deal, the BCA mandated that the discretionary spending caps be further reduced by $1.2 trillion across FY 2013–FY 2021, split evenly between national defense and non-defense discretionary funding.[26] In FY 2013, these further automatic reductions in the discretionary spending caps were realized as a sequester, which proportionally cut the funding allocated to nearly every discretionary program, project, and activity of the federal government. The discretionary spending caps, popularly known as the "sequester" caps, have

26 For a detailed history and discussion of the Budget Control Act (BCA) of 2011, see Grant A. Driessen and Marc Labonte, *The Budget Control Act of 2011 as Amended: Budgetary Effects* (Washington, DC: Congressional Research Service (CRS), December 29, 2015), available at https://fas.org/sgp/crs/misc/R42506.pdf.

been amended three times, increasing the spending caps in FY 2013–FY 2017 and delaying their imposition in FY 2013.[27] This "sequester relief" has averaged $19 billion in each fiscal year, though the actual amount has varied between $9.2 billion and $26.7 billion.

The Trump administration's proposed FY 2018 budget of $603 billion in discretionary national defense spending is $54 billion over the current statutory caps—at the level at which defense spending would have been capped had the supercommittee succeeded. The administration's budget proposes offsetting the increases in national defense spending over the BCA caps by imposing $54 billion of cuts to non-defense discretionary spending. For FY 2019–FY 2027, the administration proposes raising the defense BCA caps by 2 percent annually, while cutting the non-defense BCA caps by 2 percent annually. However, the BCA caps for defense and non-defense spending are independently binding. Additionally, although the PB 2018 budget claims that it "fully repeals the defense sequestration," the proposed budget merely raises the national defense caps for FY 2018–FY 2021 and extends them for six more years after their expiration in FY 2021.

Unless the caps are amended in statute, any increases to national defense base funding over the $549 billion allowed in FY 2018 would trigger a sequester, per the enforcement provision in the BCA, even if offset by equivalent cuts in non-defense discretionary spending.[28] The requested increase in FY 2018 national defense spending of $54 billion is nearly three times the average amount of negotiated sequester relief and twice the single largest amount by which Congress has previously raised the caps (see Table 3-2).

TABLE 3-2: NATIONAL DEFENSE BUDGET CONTROL ACT CAPS IN CURRENT-YEAR DOLLARS

in billions	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Original BCA caps	$555.0	$546.0	$556.0	$566.0	$577.0	$590.0	$603.0	$616.0	$630.0	$644.0
Amended BCA caps		$491.3	$501.3	$520.0	$523.0	$536.0	$549.0	$562.0	$576.0	$590.0
ATRA 2012		$518.0	$497.3							
BBA 2013			$520.5	$521.3						
BBA 2015					$548.1	$551.1				
PB18 proposed							*$603.0*	*$616.0*	*$629.0*	*$642.0*
Sequester relief		$26.7	$19.1	$9.2	$25.1	$15.0	*$54.0**	*$54.0**	*$53.0**	*$52.0**

Note: Bold denotes amended caps. * denotes proposed cap relief.

27 The BCA Caps of 2011 have been amended by the American Taxpayer Relief Act of 2012 (P.L. 112-240), the Bipartisan Budget Act of 2013 (P.L. 113-167), and the Bipartisan Budget Act of 2015 (P.L. 114-74).

28 Pat Towell and Lynn M. Williams, *The Trump Administration's March 2017 Defense Budget Proposals: Frequently Asked Questions* (Washington, DC: CRS, April 3, 2017), available at https://fas.org/sgp/crs/natsec/R44806.pdf.

Either bipartisan agreement—in extremely short supply in Congress—or further shredding of legislative precedent in the Senate would be needed to raise the budget caps.

As it did in the three previous deals to amend the BCA caps, Congress could reach a bipartisan deal. However, any regular bill to raise the BCA caps would require the votes of eight Democratic senators to vote for cloture. Others have floated raising or eliminating the BCA caps in practice by including a provision directing that they be waived for FY 2018, and potentially other fiscal years, in other legislation. Any non-reconciliation legislation would still require the votes of at least eight Democratic senators in the Senate to invoke cloture on a bill.

Many senior Democrats, including the ranking members of the HASC and SASC, and the ranking members of the Defense Subcommittees of the House and Senate Appropriations Committees, have argued that the BCA caps on national defense spending and non-defense spending must be increased or eliminated. SASC ranking member Sen. Jack Reed (D-RI) has argued against the caps in the BCA, stating: "Setting arbitrary spending thresholds on defense and non-defense spending has not made our country safer, and it has not fixed our broader fiscal problems."[29] HASC ranking member Adam Smith (D-WA) re-introduced the Relief from Sequester Act (H.R. 1745) on March 23, 2017, which would eliminate the sequester provisions of the BCA, leaving the spending caps at their original levels, as described in Table 3-2.[30] Rep. Pete Visclosky (D-IL), the ranking member of the HAC-D, has characterized the caps as an "albatross" around the neck of Congress and said they impose "unacceptable risk" on the military.[31]

However, Senate Democrats have been consistent in demanding parity between increases in the caps on defense and non-defense discretionary spending. This parity principle was adhered to in each of the three prior deals to raise the BCA caps. The budget debates have grown more contentious as Senate Democrats have used filibusters to insist on parity between BCA cap increases for defense and non-defense spending, filibustering the FY 2016 and FY 2017 defense appropriations—backed up by veto threats by President Obama.[32] For FY 2018, the Senate Democratic leadership and senior Democrats on the Budget and Appropriations committees sent a letter to Senate Majority Leader Mitch McConnell (R-KY) and Senate Appropriations Committee Chairman Thad Cochran (R-MS) insisting that the caps for national defense and non-defense spending be lifted equivalently in exchange for Democratic

29 Sen. Jack Reed, ranking member of the Senate Armed Services Committee (SASC), "Opening Statement on Defense Budget Request for FY 2018," June 13, 2017, available at https://www.reed.senate.gov/news/releases/opening-statement-by-ranking-member-reed-at-sasc-hearing-on-defense-budget-request-for-fy-2018.

30 *Relief from Sequestration Act of 2017*, H.R. 1745, 115th Congress (2017–2018), available at https://www.congress.gov/bill/115th-congress/house-bill/1745/text.

31 Rep. Peter Visclosky, ranking member of the Defense Subcommittee, House Committee on Appropriations, "Opening Statement on FY 2016 Defense Bill," June 10, 2015, available at https://visclosky.house.gov/media-center/press-releases/congressman-visclosky-opening-statement-on-fy-2016-defense-bill-0.

32 Kelsey Snell, "Democrats Begin Appropriations Blockade, Filibustering Defense Bill," *The Washington Post*, June 18, 2015; and Joe Gould, "Senate Democrats Block DoD Spending Bill," *Defense News*, July 13, 2017, available at http://www.defensenews.com/story/defense/2016/07/13/senate-democrats-block-dod-spending-bill/87020058/.

support for amending the caps.[33] However, conservative Republicans are unlikely to accept higher non-defense domestic spending as the price for higher national defense spending, particularly when the break point between the Freedom Caucus and other House Republicans negotiating the House budget resolution for FY 2018 has been whether $200 billion in mandatory spending cuts is deep enough.[34] These deep and immutable policy differences are likely to lead negotiators to the same impasse that has made prior BCA cap deals difficult to broker and exceedingly modest in scope.

Sen. McConnell could amend the Senate rules to eliminate the legislative filibuster as the last remaining "nuclear option" allowed by Senate precedent—something he stated in April that he would never do.[35] In an effort to avoid the need for Democratic support to amend the caps, some have discussed eliminating the BCA caps in a reconciliation bill under an FY 2018 budget resolution and accompanying reconciliation instructions. Although reconciliation bills may affect both discretionary and mandatory funding, the BCA caps cannot properly be amended via reconciliation. Because the spending caps do not themselves appropriate any funding, any Senate-originating provision or conference amendment between the two chambers amending the BCA caps would be vulnerable to a point of order in the Senate. Any attempt to amend the BCA caps could be challenged as extraneous to budget reconciliation under the first prong of the Byrd Rule, because it does not itself produce a change in outlays or revenues.[36] Any senator on the Senate floor may raise the point of order against a provision or provisions in the bill. The presiding officer then rules upon the point of order, with the advice of the Senate parliamentarian. It requires a three-fifths majority to overrule the presiding officer's decisions on budget process points of order on appeal.[37] Because the Byrd Rule is enacted in statute, the Senate does not have the same discretion to amend it as it would for points of order raised under the Senate's rules.[38]

However, because the presiding officer of the Senate makes the final determination about violations of the Byrd Rule, some Republicans, including Sen. Ted Cruz (R-TX), have argued that the presiding officer should ignore the parliamentarian and decades of Senate precedent. As Sen. Cruz argued in May regarding Republican efforts to functionally eliminate Obamacare

33 Sen. Charles E. Schumer, Sen. Richard J. Durbin, Sen. Patty Murray, Sen. Debbie Stabenow, and Sen. Patrick Leahy, letter to Senate Majority Leader Mitch McConnell and Chairman Thad Cochran of the Senate Appropriations Committee, June 26, 2017, available at https://www.leahy.senate.gov/imo/media/doc/FY2018%20Letter.pdf.

34 Lindsey McPherson, "Budget Disagreements Bedevil House GOP," *Roll Call*, June 27, 2017, available at http://www.rollcall.com/news/politics/house-gop-struggles-agree-budget.

35 Seung Min Kim, "McConnel Promises Not to Kill Filibuster for Legislation," *Politico*, April 4, 2017, available at http://www.politico.com/story/2017/04/mitch-mcconnell-promises-not-to-kill-filibuster-236873.

36 The Byrd Rule, enacted as amended by Section 13214 of the Budget Enforcement Act of 1990, Title XIII of the Omnibus Budget Reconciliation Act of 1990 (P.L. 101-508), is codified at 2 U.S.C. 644.

37 Valerie Heitshusen, *Points of Order, Rulings, and Appeals in the Senate* (Washington, DC: CRS, April 7, 2017), available at https://fas.org/sgp/crs/misc/98-306.pdf.

38 James V. Saturno, *Points of Order in the Congressional Budget Process* (Washington, DC: CRS, October 20, 2015), available at https://www.senate.gov/CRSpubs/814bf855-39fc-4626-9356-4235537a6f89.pdf.

via the Better Care Reconciliation Act of 2017, "The parliamentarian merely advises, the vice president decides."[39] Other Republican senators appear less sanguine about undoing the protection against extraneous provisions in reconciliation bills provided by the Byrd Rule. As Senate Budget Committee Chairman Enzi noted, "It would set a new precedent for the Senate that would allow anybody to bring up any bill on any other bill at any other time, even under reconciliation."[40] Breaking the precedent of deferring to the parliamentarian's judgment in order to get around a Byrd Rule violation would effectively allow any type of provision to be attached to a reconciliation bill, rather than limiting it to budget matters. Because reconciliation bills require simple majority votes to pass, this would be analogous to eliminating the legislative filibuster and the 60-vote threshold in the Senate.

Since the adoption of the Byrd Rule, senators have raised points of order because a provision failed the first prong of the test (i.e., it did not impact revenues or outlays) 38 times. In 30 cases, the presiding officer ruled that the provision was not permissible, and there either was no motion to waive or the motion was unsuccessful. In seven cases, the motion to waive was successful, resulting in the offending provision being permitted in the bill. Only once did the presiding officer rule that the provision was not in conflict with the Byrd Rule. In a parallel to any attempts to amend the BCA caps through reconciliation, four amendments that would have amended congressional budget procedures without directly impacting outlays or revenues were challenged under the Byrd Rule—all were ruled out of order by the chair and fell after failing to receive the 60 votes necessary on motions to waive the points of order (see Table 3-3).[41] In other words, in each of the previous four cases where a Byrd Rule point of order was raised for a provision in a reconciliation bill that would set deficit targets or spending limitations on the basis that it did not directly impact outlays or revenues, the point of order was sustained.

39 Burgess Everett, "GOP Pins Health Care Hopes on an Unlikely Figure: Ted Cruz," *Politico*, May 9, 2017, available at http://www.politico.com/story/2017/05/09/ted-cruz-health-care-238174.

40 Dylan Scott, "If Republicans Reach a Health Care Deal, It Must Survive this Obscure Senate Rule," *Vox*, July 5, 2017, available at https://www.vox.com/policy-and-politics/2017/5/22/15629974/senate-byrd-rule-obamacare-repeal.

41 Bill Heniff Jr., *The Budget Reconciliation Process: The Senate's "Byrd Rule"* (Washington, DC: CRS, November 22, 2016), available at https://fas.org/sgp/crs/misc/RL30862.pdf.

TABLE 3-3: PREVIOUS BYRD RULE FIRST PRONG POINTS OF ORDER FOR PROVISIONS TOUCHING ON BUDGETARY AND BUDGET ENFORCEMENT MATTERS

Legislation	Provision	Purpose	Waiver motion	Point of order result
Omnibus Budget Reconciliation Act of 1993 (P.L. 103-66)	Gramm Amendment No. 557	To impose limits on the amount of the federal deficit	Rejected, 43–55	Sustained, amendment fell
Taxpayer Relief Act of 1997 (P.L. 105-34)	Gramm Amendment No. 556	To impose limits on federal deficit spending, to be enforced with a sequester	Rejected, 37–63	Sustained, amendment fell
Taxpayer Relief Act of 1997 (P.L. 105-34)	Brownback/Kohl Amendment No. 570	To achieve a balanced federal budget by establishing direct spending targets, to be enforced through a mandatory budget reconciliation process	Rejected, 57–43	Sustained, amendment fell
Taxpayer Relief Act of 1997 (P.L. 105-34)	Frist Amendment No. 571	To achieve a balanced federal budget in FY02 and thereafter by creating a Senate point of order against any bill that would result in deficit spending	Rejected 59–41	Sustained, amendment fell

OCO as a Defense Spending Safety Valve

As in past years, the OCO accounts could serve as a safety valve, allowing higher levels of defense spending while not technically violating the BCA caps. Under the BCA, funds designated as "emergency" funding by Congress and the president are not subject to the caps, though they are subject to any sequester. Accordingly, if a satisfactory deal to amend the BCA cannot be reached, it would be possible for Congress to substantially increase defense spending by appropriating base national defense spending at the $549 billion allowed by the caps for FY 2018, then increasing OCO funding to $118.6 billion to reach the Trump administration's proposed topline, or to $147.5 billion to reach the topline agreed to by the House. This would require increasing OCO by about $54–$83 billion over the administration's request for $65 billion—an eye-popping increase in OCO funding. If Congress takes that route, OCO funding would rise to about the levels of FY 2012 or FY 2006, respectively, after adjusting for inflation. Such a large increase in OCO funding may be difficult for many in Congress to swallow, particularly fiscal conservatives. While this maneuver could be implemented within a regular FY 2018 appropriations bill, it would require the approbation of at least eight Democratic senators in order to avoid a filibuster, the same threshold as actually amending the BCA caps. However, this would amount to a de facto increase in defense spending without any commensurate increases for non-defense spending, which the Democrats have pledged to oppose.

Blatantly avoiding the BCA caps by designating increased funding as "emergency" OCO funding could also be accomplished within an FY 2018 reconciliation bill, as the caps would remain intact in letter if not in spirit. This may be more palatable than compromising with the Democrats to raise defense spending at the price of some increases to non-defense discretionary spending. However, reconciliation requires an FY 2018 budget resolution to start the reconciliation process. The Republican caucus remains riven over the scale of mandatory spending cuts and dedicated to using the FY 2017 budget resolution as a vehicle to eliminate Obamacare. The House may not pass an FY 2018 budget resolution before the month-long August recess, and the Senate Budget Committee has yet to reveal an FY 2018 budget resolution.[42] There are just 12 legislative days that both the House and Senate are in session between the August recess and the end of the fiscal year on September 30. Additionally, any FY 2018 budget resolution is earmarked as the vehicle for comprehensive tax reform, a process that is just as likely to experience legislative divisions and gridlock as health care. Meanwhile, Congress' window for funding defense—and the rest of the government—before the end of the 2017 fiscal year is short and closing fast.

Bottom Line—Whence a Defense Buildup?

These procedural and political hurdles make it difficult to see how a substantial defense buildup on the order of the $54 billion proposed by the Trump administration, the $621.5 billion agreed to by the HASC and the HAC-D, or the $640 billion proposed by the SASC can be realized. The wide gulfs between the political parties, and between the defense hawks and the fiscal hawks, will not be closed soon. Additionally, the full legislative calendar of the Congress before September 30, 2017, including Obamacare repeal, FY 2018 appropriations, and an impending debt ceiling debate, increase the likelihood that FY 2018 will begin with a several-months-long continuing resolution, rather than a substantial increase in defense spending.

42 Lindsey McPherson, "No Budget, No Tax Reform: GOP Races Reality of Remaining Agenda," *Roll Call*, July 27, 2017, available at http://www.rollcall.com/news/politics/no-budget-no-tax-reform-gop-faces-reality-remaining-agenda.

CHAPTER 4

Military Personnel

2018 Request

The costs of pay and benefits for the Pentagon's military and civilian personnel make up the single largest category of costs in the DoD budget. In the PB 2018 request, the Trump administration projected a total force of 2,212,900, with an active-duty end strength of 1,314,000 and 815,900 in the Reserve components. In addition, the request would fund 740,000 DoD civilian employees, with an additional 480 funded in the OCO budget.[43] Funding these military end-strength levels would cost $133.9 billion in MILPERS appropriations; $7.8 billion in accrual payments for current servicemembers' TRICARE benefits; $7.5 billion in concurrent receipt accrual payments for military retirement; $9.4 billion in other benefits, including the DoD's network of K–12 schools; and $34.6 billion for the Defense Health Program. About 60,000 DoD civilians are employed by the Defense Health Program, and smaller numbers are employed by the DoD education program and other benefits programs; their salaries are included in the total funding for these programs. The pay and benefits for the balance of DoD civilian employees amounts to $75.2 billion for FY 2018 (see Figure 4-1). Overall, the pay and benefits of military personnel and civilian employees accounts for $272.7 billion, or 42 percent of the total $647 billion FY 2018 DoD budget request (see Figure 4-2). DoD also employs thousands of contractor personnel. As of FY 2015, about 44 percent, or $75 billion, of DoD's total contracting obligations went toward various service contracts.[44]

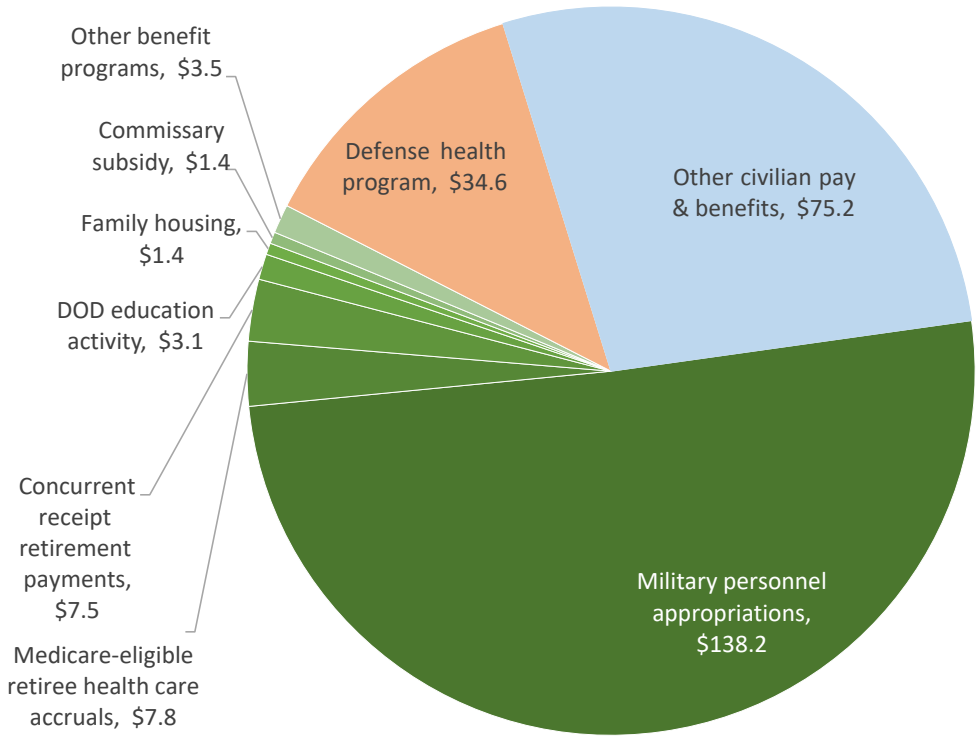
These figures do not include the $183.1 billion requested in PB 2018 for the Department of Veterans Affairs, the $83.8 billion of pension obligations for current military retirees paid by

43 Office of the Undersecretary of Defense (OUSD) (Comptroller), *National Defense Budget Estimates for FY 2018*, FY 2018 Greenbook (Washington, DC: DoD, June 2017), Table 7-5, "Department of Defense Manpower," p. 246.

44 Moshe Schwartz, John F. Sargent Jr., Gabriel M. Nelson, and Ceir Coral, *Defense Acquisitions: How and Where DoD Spends and Reports Its Contracting Dollars* (Washington, DC: CRS, December 20, 2016), pp. 5–6.

the Treasury, or the $9.7 billion of payments for TRICARE for life for current beneficiaries paid by the Treasury.[45]

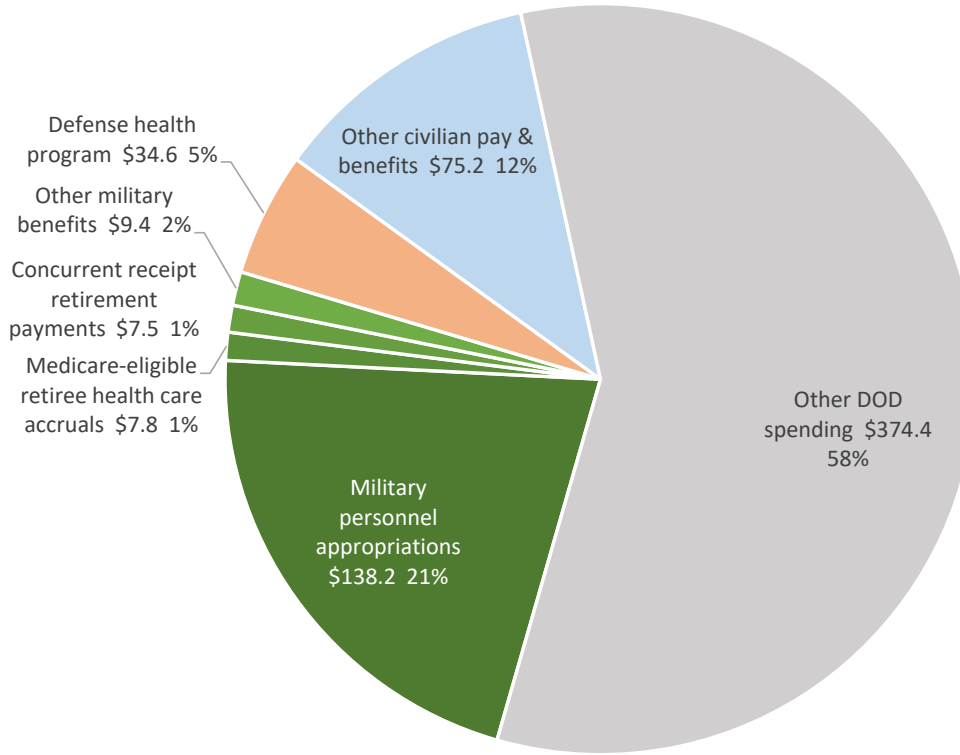
FIGURE 4-1: MILITARY PERSONNEL COSTS IN THE PB18 DEFENSE BUDGET



Source: OUSD(Comptroller)/CFO, *Department of Defense Fiscal Year 2018 Budget Request: Defense Budget Overview* (Washington, DC: DoD, May 2017), Table 5-1, "Pay and Benefits Funding," available at http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2018/fy2018_Budget_Request_Overview_Book.pdf.

45 OMB, Budget Analysis Branch, *Public Budget Database: Budget of the United States Government, Fiscal Year 2018, Budget Authority* (Washington, DC: OMB, May 2017), available at https://www.gpo.gov/fdsys/pkg/BUDGET-2017-DB/xls/BUDGET-2017-DB-1.xls. Analysis in Tableau.

FIGURE 4-2: MILITARY AND CIVILIAN COSTS WITHIN THE PB18 DEFENSE BUDGET



Source: OUSD (Comptroller)/CFO, *Department of Defense Fiscal Year 2018 Budget Request: Defense Budget Overview*, Table 5-1, "Pay and Benefits Funding."

Military Personnel

End Strength

Increasing the size of the armed forces was one of President Trump's key campaign pledges. The PB 2017 planned force structure levels across the Services in FY 2018 would have totaled 1,271,200 in the active-duty forces and 802,300 in the Reserves, for an overall end strength of 2,073,500. The PB 2018 defense budget request would see the active-duty component reach 1,314,000, with 815,900 in the Reserves, for a total force of 2,219,000. As compared to the projected FY 2018 end strengths in the PB 2017, the Trump administration's budget would fund an additional 42,800 active-duty servicemembers and an additional 13,600 reservists.[46] However, Congress largely rejected planned force structure reductions during FY 2017. The PB 2018 would increase the active-duty component by 8,100 and the Reserves by 2,700 over the funded force structure levels in FY 2017.

46 OUSD (Comptroller)/ CFO, "Fiscal Year 2018 Budget Request," PowerPoint briefing, May 2017, slide 9, available at http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2018/fy2018_Budget_Request.pdf.

In particular, President Trump set the goal of a 540,000-strong active-duty Army during the campaign. Under the PB 2017 projections, the size of the Army would have reached a low point of 450,000 in FY 2018, shrinking from a recent high of 566,000 in FY 2010 and FY 2011, following years of declining budgets imposed by the BCA. A 540,000-strong Army would have been an increase of 80,000 soldiers, or 17 percent, over the planned FY 2017 end strength of 460,000. However, Congress rejected 460,000 as the Army's active-duty end strength in FY 2017 and funded a higher end strength of 476,000 in FY 2017, for a real end-strength growth of 1,000 soldiers from the FY 2016 end strength of 475,000. Including the active components of the other Services and 79,000 activated Guard and Reserve members, the FY 2018 active-duty military would be 1.393 million people, a slight growth of 15,000 from the post-World War II low of 1.378 million in FY 2016.[47]

The PB 2018 asks for an Army of 476,000 soldiers and a Marine Corps of 185,000, the same numbers that Congress funded in FY 2017. It also calls for an additional 4,000 sailors and 4,100 airmen over the FY 2017 appropriations period, for an active-duty force that is 8,100 members larger than in FY 2017. At 1,314,000, the FY 2018 active-duty force would be 32,100 people larger than the PB 2017 requested active-duty end strength and 8,100 more than the end strength funded by Congress in the FY 2017 appropriations bill. The PB 2018 describes this growth in Navy and Air Force active-duty end-strength levels as intended specifically to address readiness challenges, including Air Force pilot and maintainer shortfalls. Maintaining a 185,000-strong Marine Corps will allow it to maintain a 1:2 deploy-to-dwell ratio for major force elements.

In the Reserve components, the PB 2018 adds an additional 1,000 to the Navy Reserve over the FY 2017 appropriated end-strength levels, 800 to the Air Force Reserve, and 900 to the Air National Guard. This would make a total of 815,900 reservists, for a real growth of 2,700 servicemembers over the FY 2017 end strength funded by Congress. In FY 2017, Congress funded a total Reserve end strength of 813,200–14,700 servicemembers more than the PB 2017 request of 801,200 (see Table 4-1). Like other areas in the defense budget, the congressional defense committees have seen the Trump administration's FY 2018 proposal for active-duty and Reserve end strengths as unsatisfactorily low. In the House, the HASC added an additional 17,000 soldiers to the Army's total force. The HASC added an additional 10,000 active-duty servicemembers to the Army's active-duty end strength, bringing the Service to 486,000. This Army end strength is 5,000 less than in FY 2015 and would make the Army about the same size it was in FY 2002.[48] The HASC also added 3,000 soldiers to the Army Reserve and 4,000 to the Army National Guard. HAC-D echoed the HASC by funding an additional 10,000 active-duty servicemembers and 7,000 reservists, but left them unallocated by Service. In the Senate, the SASC made more modest additions over the PB 2018 end-strength

47 OUSD (Comptroller), *National Defense Budget Estimates for FY 2018*, Table 7-5, "Department of Defense Manpower," p. 246.

48 Historical Army end-strength numbers are from OUSD (Comptroller), *National Defense Budget Estimates for FY 2018*, Table 7-5, "Department of Defense Manpower," p. 246.

levels, adding 1,000 Marines, 5,000 soldiers to the active-duty Army, and 500 soldiers each to the Army National Guard and Reserves (see Table 4-2).

TABLE 4-1: PROPOSED MILITARY END STRENGTH

	FY16 end strength	FY17 request	FY17 Appropriations	FY17 Appropriations Delta from FY17 request	FY18 request	PB18 request Delta from FY17 Appropriations	Delta from FY17 Request
Army	475,000	460,000	476,000	6,000	476,000	0	*16,000*
Navy	327,300	322,900	323,900	1,000	327,900	4,000	*5,000*
Marine Corps	182,000	182,000	185,000	3,000	185,000	0	*3,000*
Air Force	317,000	317,000	321,000	4,000	325,100	4,100	*8,100*
Active Total	1,301,300	1,281,900	1,305,900	4,900	1,314,000	8,100	*32,100*
Army Reserve	198,000	195,000	199,000	1,000	199,000	0	*4,000*
Navy Reserve	57,400	58,000	58,000	1,600	59,000	1,000	*1,000*
Marine Corps Reserve	38,900	38,500	38,500	0	38,500	0	*0*
Air Force Reserve	69,200	69,000	69,000	0	69,800	800	*800*
Army National Guard	342,000	335,000	343,000	7,000	343,000	0	*8,000*
Air National Guard	105,500	105,500	105,700	200	106,600	900	*1,100*
Reserve Total	811,000	801,200	813,200	9,800	815,900	2,700	*14,700*
Total Force	2,112,300	2,083,100	2,119,100	14,700	2,129,900	10,800	*46,800*

Source: OUSD (Comptroller)/CFO, *Department of Defense Fiscal Year 2017 Budget Request: Defense Budget Overview* (Washington, DC: DoD, February 9, 2016), Table A-2, "Active Component End Strength (in Thousands)," and Table A-3, "Reserve Component End Strength (in Thousands)," available at http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2017/FY2017_Budget_Request_Overview_Book.pdf; and OUSD (Comptroller)/CFO, *Department of Defense Fiscal Year 2018 Budget Request: Defense Budget Overview*, Table A-2, "Active Component End Strength (in Thousands)," and Table A-3, "Reserve Component End Strength (in Thousands)."

TABLE 4-2: COMMITTEE ACTION ON FY18 END-STRENGTH LEVELS

	FY17 Appropriated	FY18 request	House Armed Services	Delta	HAC-D	Delta	Senate Armed Services	Delta
Army	476,000	476,000	486,000	*10,000*	*		481,000	*5,000*
Navy	323,900	327,900	329,900	*0*	*		327,900	*0*
Marine Corps	185,000	185,000	185,000	*0*	*		185,000	*1,000*
Air Force	321,000	325,100	325,100	*0*	*		325,100	*0*
Active Total	1,305,900	1,314,000	1,324,000	*10,000*	1,324,000	10,000 (unallocated)	1,330,000	*6,000*
Army Reserve	199,000	199,000	202,000	*3,000*	*		199,500	*500*
Navy Reserve	58,000	59,000	59,000	*0*	*		59,000	*0*
Marine Corps Reserve	38,500	38,500	38,500	*0*	*		38,500	*0*
Air Force Reserve	69,000	69,800	69,800	*0*	*		69,800	*0*
Army National Guard	343,000	343,000	347,000	*4,000*	*		343,500	*500*
Air National Guard	105,700	106,600	106,600	*0*	*		106,600	*0*
Reserve Total	813,200	815,900	822,900	*7,000*	822,900		816,900	*1,000*
Total Force	2,083,100	2,129,900	2,146,900	*17,000*	2,146,900	17,000	2,136,900	*7,000*

Source: OUSD (Comptroller)/CFO, *Department of Defense Fiscal Year 2017 Budget Request: Defense Budget Overview*, Table A-2, "Active Component End Strength (in Thousands)," and Table A-3, "Reserve Component End Strength (in Thousands)"; OUSD (Comptroller)/CFO, *Department of Defense Fiscal Year 2018 Budget Request: Defense Budget Overview*, Table A-2, "Active Component End Strength (in Thousands)," and Table A-3, "Reserve Component End Strength (in Thousands)"; and House Committee on Appropriations, *Department of Defense Appropriations Bill, 2018*, Committee Report (Washington, DC: U.S. House of Representatives, June 29, 2017), available at https://appropriations.house.gov/uploadedfiles/hrpt-115-hr.pdf. House and Senate Armed Services Committee numbers are from the respective House and Senate FY18 NDAA summaries: House Armed Services Committee, "Reform and Rebuild: National Defense Authorization Act for FY18," 2017, p. 6, available at https://armedservices.house.gov/sites/republicans.armedservices.house.gov/files/wysiwyg_uploaded/FY18%20NDAA%20Floor%20Summary%20Draft%20vFinal.pdf; and Senate Armed Services Committee, "NDAA FY18," June 28, 2017, p. 3, available at https://www.armed-services.senate.gov/imo/media/doc/FY18%20NDAA%20Summary6.pdf.

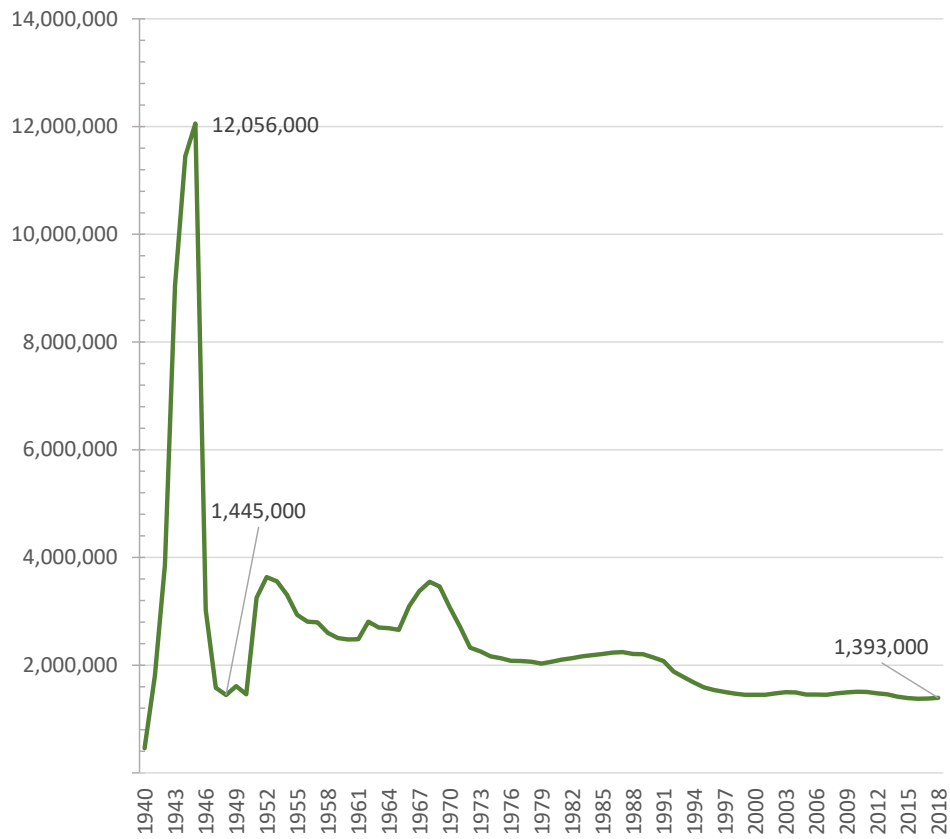
Note: The House Appropriations Committee added 10,000 active-duty servicemembers and 7,000 reservists, but funded this 17,000-member growth in end strength out of the proposed National Defense Restoration Fund, rather than allocating those costs across the Services' MILPERS accounts.

Size of the Active-duty Force

The 1,378,000 active-duty soldiers and activated reservists in FY 2016 comprised the smallest U.S. active-duty force since before World War II. The FY 2016 end strength was 67,000 servicemembers fewer than that previous post-World War II low, the sharp trough in personnel numbers as U.S. forces demobilized after World War II and before the Korean War (see Figure 4-3 and Figure 4-4). The active-duty force was at its recent peak of 1,506,000 in FY 2011 before drawing down to 1,378,000 in FY 2016.

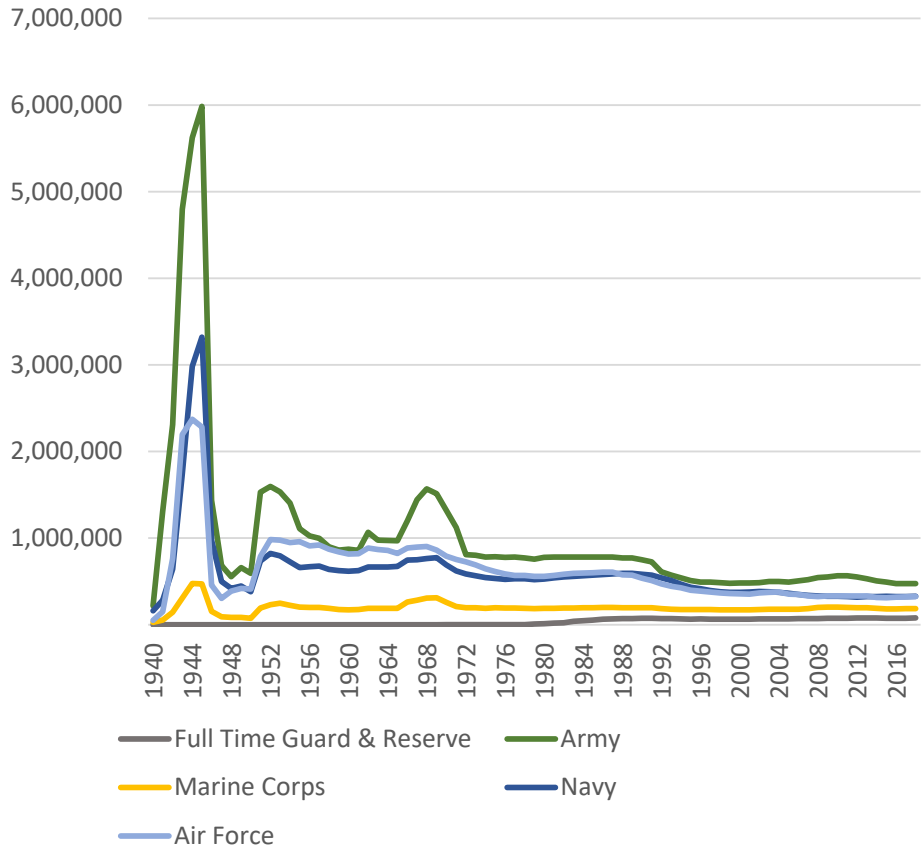
The reduction of active-duty forces came largely out of the Army and the Marine Corps, which reached their recent maximum end strengths of 566,000 and 203,000 in FY 2011 and FY 2009, respectively. In FY 2016, the end strength of the Army was 16 percent less and the Marine Corps 9 percent less than those maximums. These reductions were driven by the draw-downs of U.S. forces in the wars in Iraq and Afghanistan and the simultaneous imposition of the caps on defense spending by the BCA of 2011. Military personnel spending drives a large share of the budgets of the manpower-heavy Army and Marine Corps. By contrast, the Navy and Air Force have steadily shrunk since the early part of the 2000s. The FY 2016 Navy is 15 percent smaller than when it reached its recent end-strength maximum of 383,000 sailors in FY 2002. Similarly, the FY 2016 Air Force is 16 percent smaller than when it reached its recent peak of 377,000 airmen in FY 2004 (see Figure 4-5).

FIGURE 4-3: TOTAL ACTIVE-DUTY AND ACTIVATED RESERVE FORCES, FY40–FY18



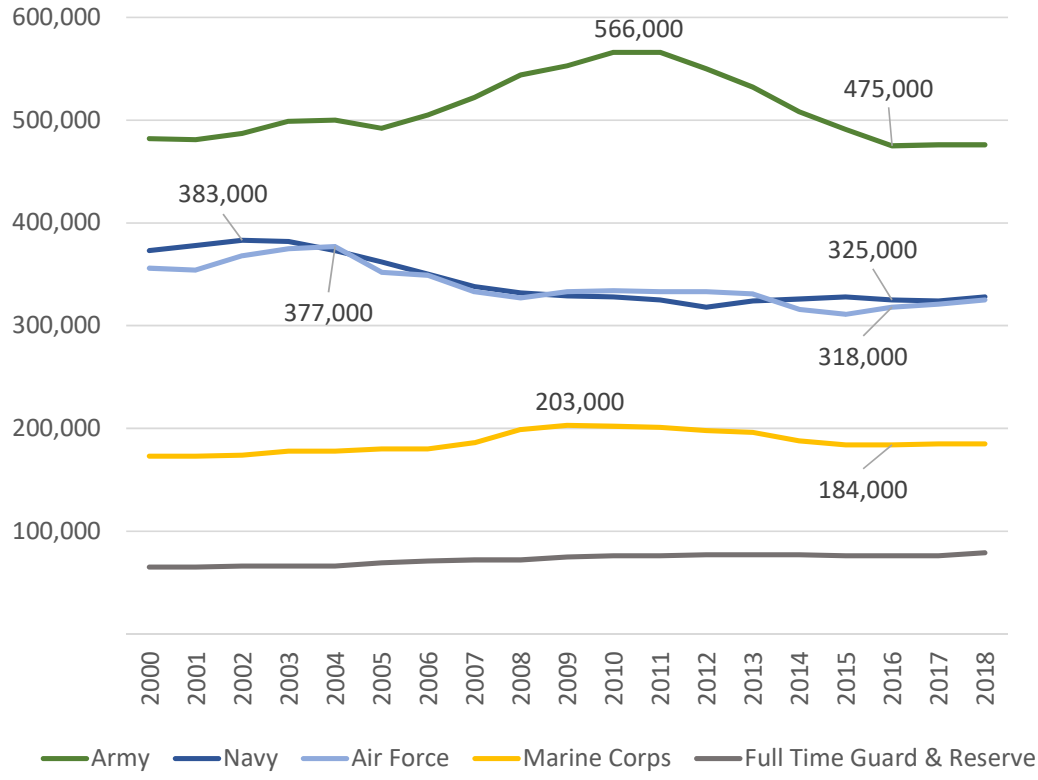
Source: OUSD (Comptroller), *National Defense Budget Estimates for FY 2018*, FY 2018 Greenbook (Washington, DC: DoD, June 2017), Table 7-6, "U.S. Labor Force," available at http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2018/FY18_Green_Book.pdf.

FIGURE 4-4: TOTAL ACTIVE DUTY BY SERVICE AND ACTIVATED RESERVE, FY40–FY18



Source: OUSD (Comptroller), FY 2018 Greenbook, Table 7-5, "Department of Defense Manpower."

FIGURE 4-5: ACTIVE-DUTY END STRENGTH BY SERVICE, FY00–FY18



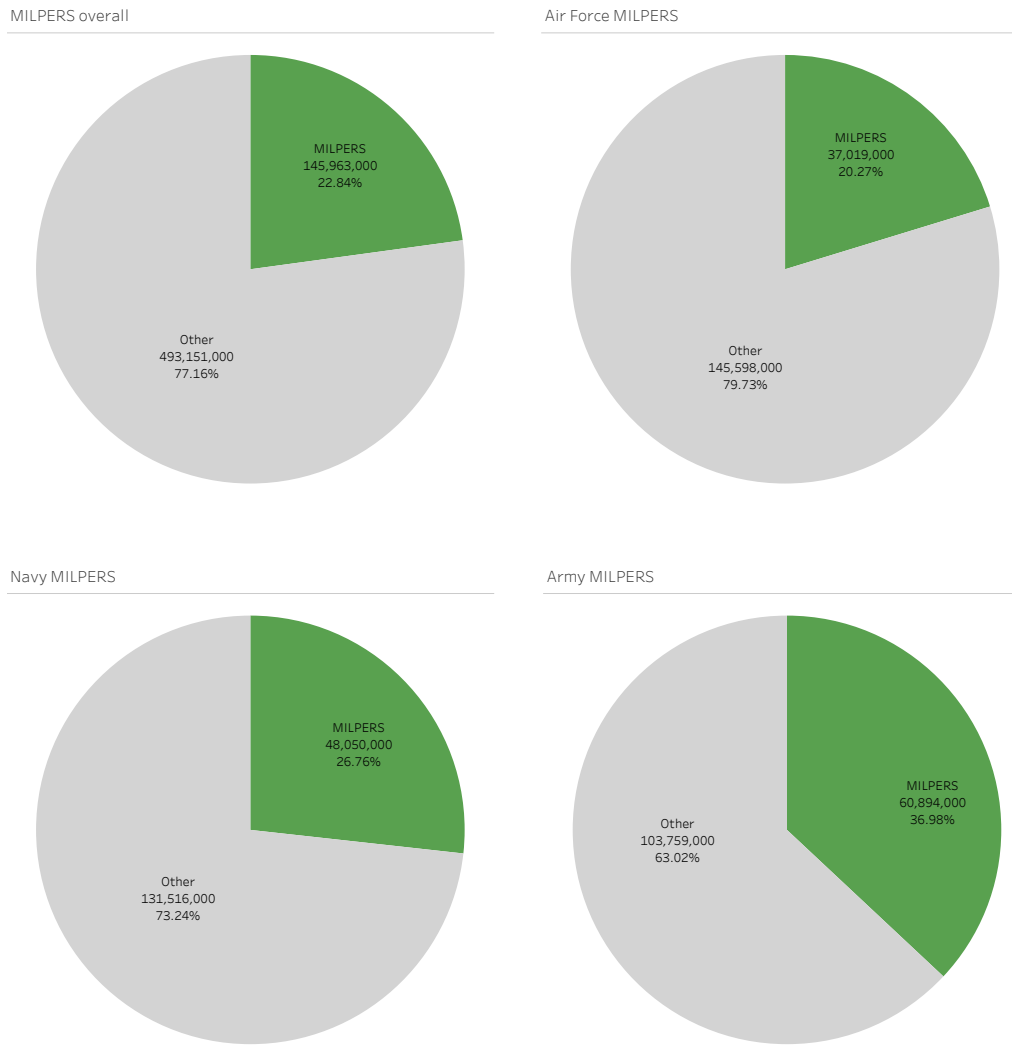
Source: OUSD (Comptroller), FY 2018 Greenbook, Table 7-5, "Department of Defense Manpower."

Military Personnel Costs

Overall, the cost of MILPERS pays and benefits, at $146 billion, accounts for 23 percent of DoD's discretionary budget request for FY 2018. However, military personnel costs are not evenly distributed across the Services. MILPERS costs account for 20 percent of the Air Force's budget and 27 percent of the Navy's. However, as the largest Service with the least procurement funding, the Army devotes 37 percent of its overall budget to MILPERS (see Figure 4-6). Because the Army is the Service with the largest fraction of its budget devoted to military personnel costs, it is most sensitive to changes in the costs of military personnel, such as increases to the amount of basic pay or retention bonuses. Conversely, the Army is less able to fund manpower costs with savings in other appropriations titles, leaving adjustments to end-strength levels as the major lever the Army has to meet topline budget restrictions. Overall, the Army accounts for 42 percent of all of DoD's MILPERS spending. At $60.9 billion in the FY 2018 budget request, the Army's MILPERS request is 25 percent greater than the Navy's and the Marine Corps's request for $48 billion (33 percent of total MILPERS spending)

and 65 percent greater than the Air Force's request for $37 billion (25 percent of total MILPERS spending) (see Figure 4-7).

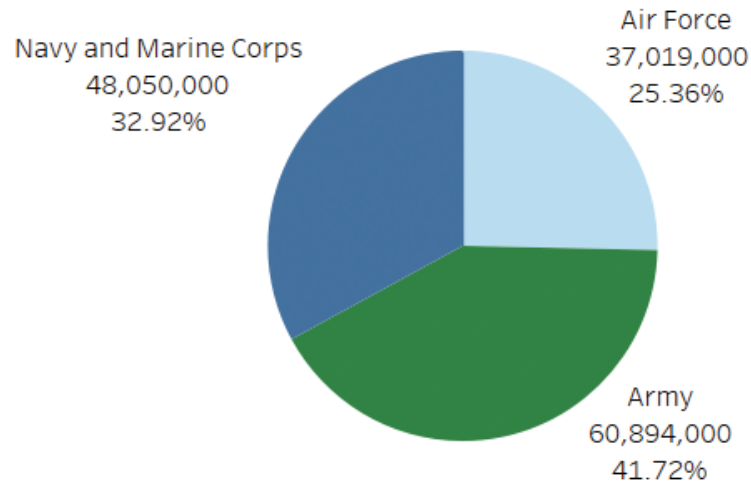
FIGURE 4-6: PB18 REQUEST FOR MILPERS FUNDING OVERALL AND BY MILITARY DEPARTMENT



Source: OMB, Budget Analysis Branch, *Public Budget Database: Budget of the United States Government, Fiscal Year 2018, Budget Authority* (Washington, DC: OMB, May 2017), available at https://www.gpo.gov/fdsys/pkg/BUDGET-2017-DB/xls/BUDGET-2017-DB-1.xls. Analysis in Tableau.

Note: Dollars in thousands.

FIGURE 4-7: PB18 MILPERS FUNDING BY MILITARY DEPARTMENT

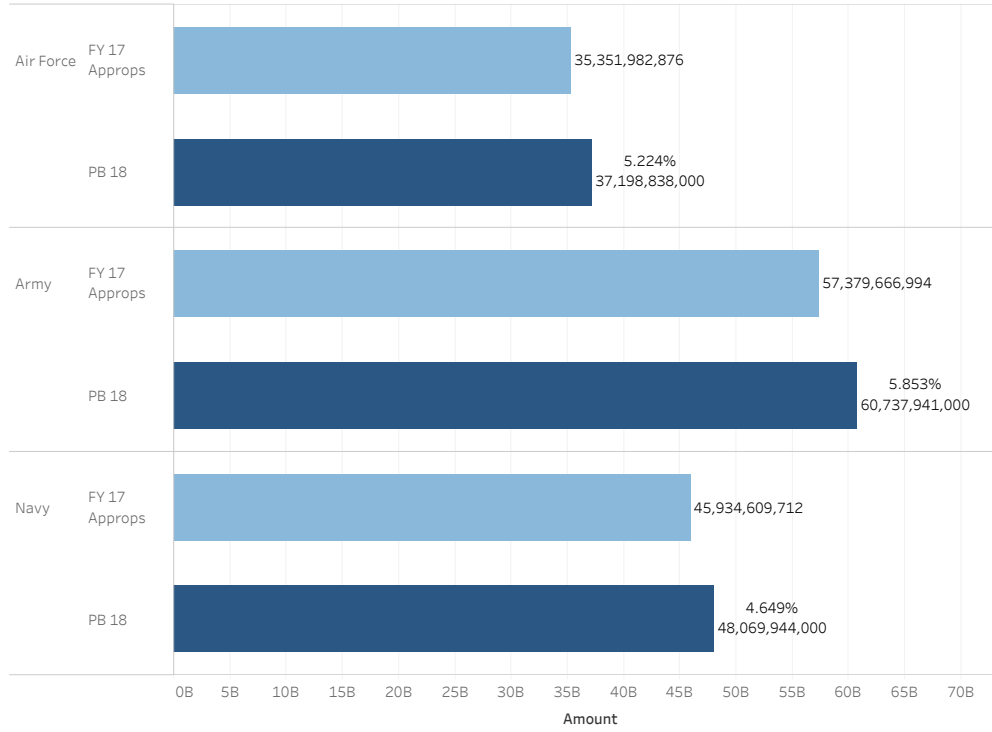


Source: OMB, Public Budget Database FY18. Analysis in Tableau.

Note: Dollars in thousands.

As compared to the FY 2017 appropriations, the FY 2018 budget request asks for more funding for military personnel costs for each of the Services (see Figure 4-8). These increases would pay for an additional 4,000 sailors and 4,100 airmen in the active component, 1,000 additional sailors in the Navy Reserve, 800 more airmen in the Air Force Reserves, and 900 more airmen in the Air National Guard over the end strength funded by the FY 2017 appropriations bill. The additional funds would also cover a 2.1 percent basic pay increase, higher basic allowance for housing costs, more administration costs, and other rising expenses.

FIGURE 4-8: PB18 MILPERS REQUEST BY SERVICE, AS COMPARED TO FY17 APPROPRIATIONS

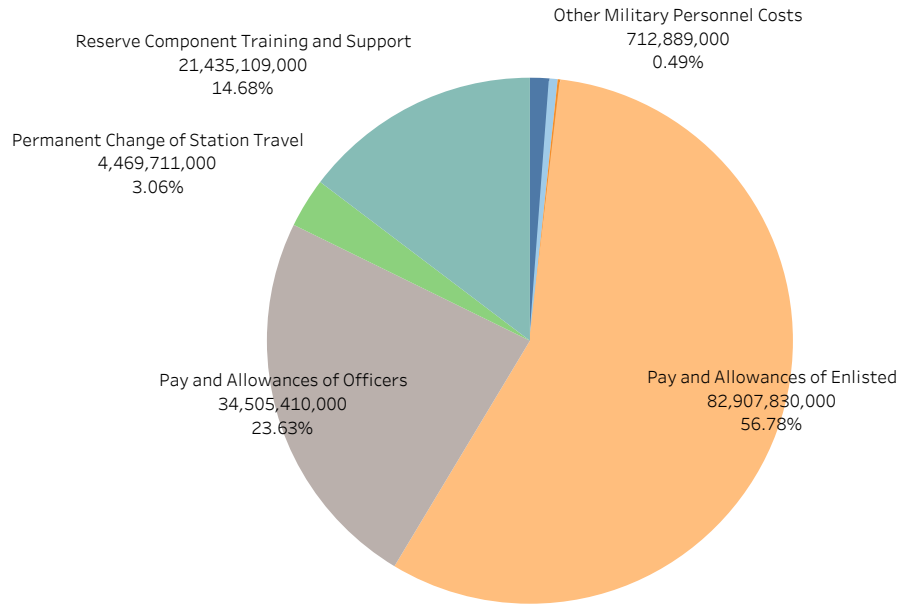


Source: VisualDOD data, analysis in Tableau.

Overall, at $34.5 billion in the FY 2018 request, the pays and allowances for the Pentagon's 228,586 officers accounts for 23.6 percent of the MILPERS appropriation request. At $82.9 billion, pays and allowances for the Pentagon's 1,053,507 enlisted servicemembers accounts for 56.8 percent of MILPERS appropriations requested.[49] Training and pays for reservists, at $21.4 billion, account for 14.7 percent of MILPERS (see Figure 4-9).

49 Numbers of officers and enlisted servicemembers as of May 31, 2017. Defense Manpower Data Center (DMDC), "Active Duty Military Personnel by Rank/Grade," *DoD Personnel, Workforce Reports & Publications*, May 31, 2017, available at https://www.dmdc.osd.mil/appj/dwp/dwp_reports.jsp.

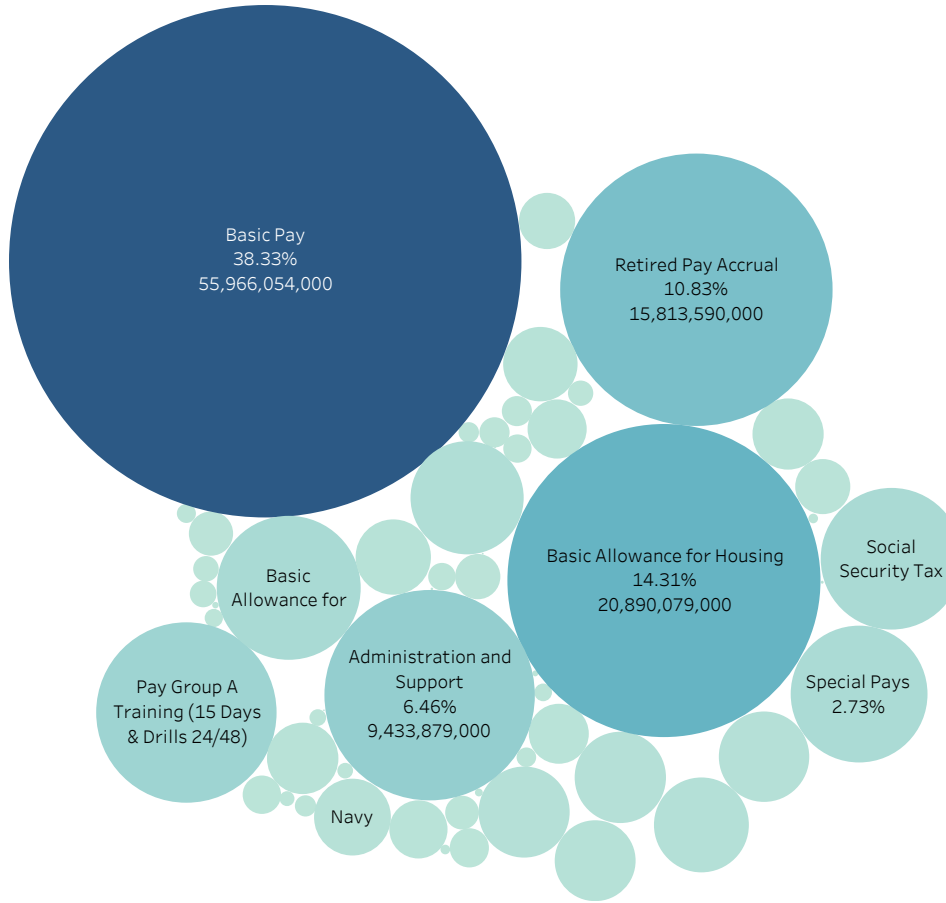
FIGURE 4-9: PB18 MILPERS REQUEST BY TOTAL FORCE ELEMENT



Source: DoD budget data from VisualDOD, analysis in Tableau.

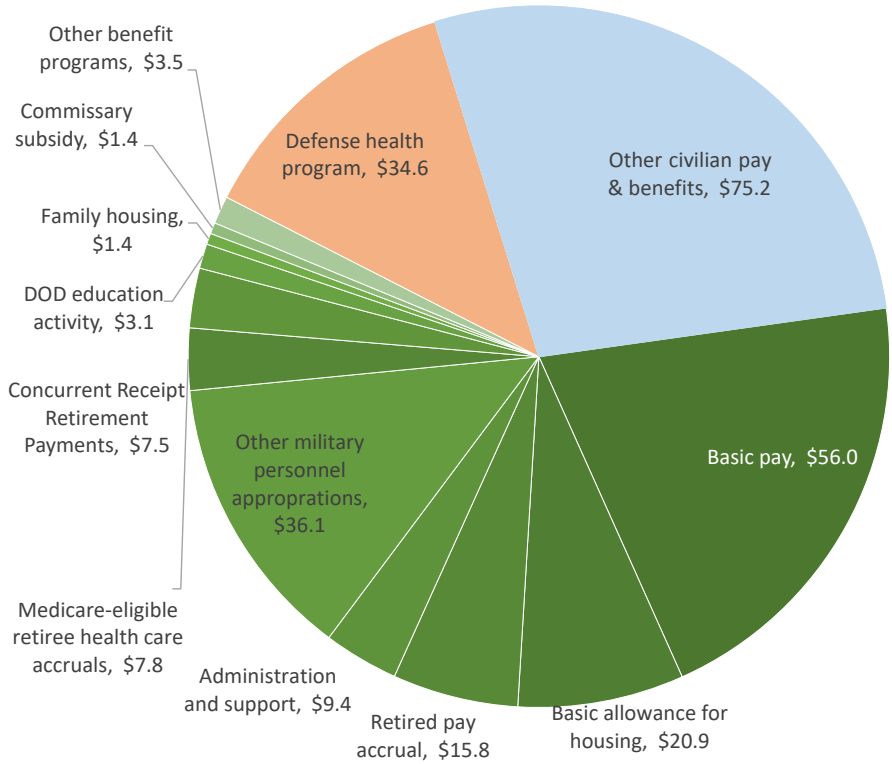
Within MILPERS, basic pay, the basic allowance for housing (which covers housing expenses); accrual payments for current servicemembers' retirement benefits; administrative costs; pay and training costs for reservists; and the basic allowance for subsistence (which subsidizes food costs) make up 79 percent of MILPERS costs. The balance is accounted for by DoD's payment of the servicemembers' share of Social Security taxes, training pay, specific allowances, travel and moving expenses, and various types of incentive pays. At $56 billion in PB 2018, basic pay for officers and enlisted servicemembers was the largest single element in the MILPERS title at 38 percent, followed by the basic allowance for housing at $20.9 billion or 14 percent, then accrual payments for current servicemembers' retirement benefits at $15.8 billion or 10.8 percent (see Figure 4-10). Although predominantly paid for with O&M funds, the Defense Health Program is one of the most important, and expensive, portions of the overall military compensation package. Accordingly, changes to basic pay, the basic allowance for housing, the Defense Health Program, and retirement benefits are the four major levers the Pentagon has to affect the overall compensation cost per servicemember (see Figure 4-11).

FIGURE 4-10: PB18 MAJOR COSTS WITHIN MILPERS



Source: DoD budget data from VisualDOD. Analysis in Tableau.

FIGURE 4-11: PB18 COMPONENTS OF MILITARY COMPENSATION



Source: OUSD (Comptroller)/CFO, *Department of Defense Fiscal Year 2018 Budget Request: Defense Budget Overview*, Table 5-1, "Pay and Benefits Funding"; and DoD budget data from VisualDOD.

Note: Dollars in billions.

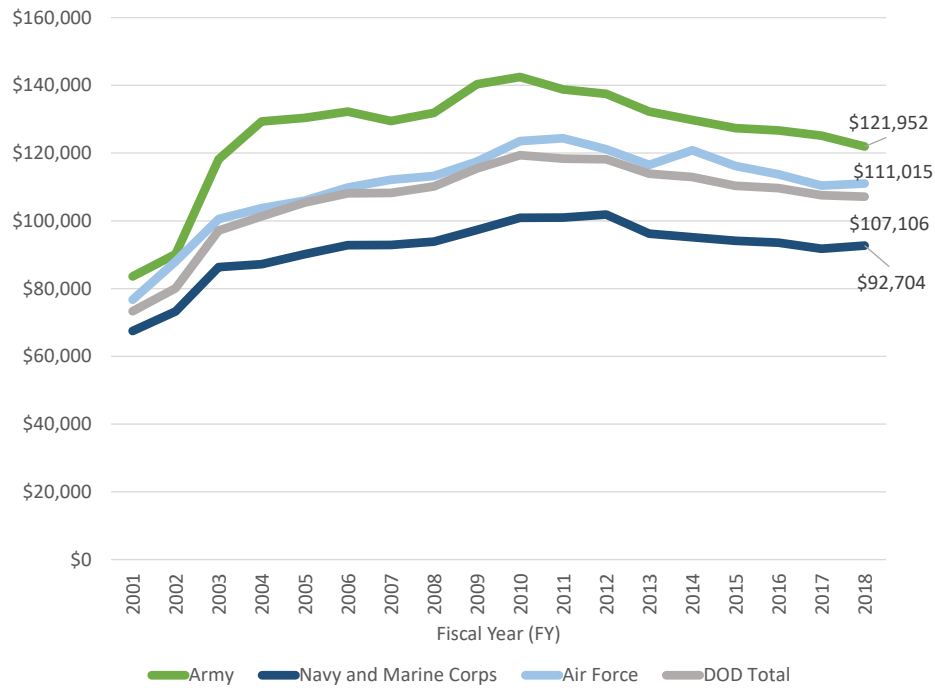
Cost Trends

The average cost per servicemember to DoD as a whole and for each of the military departments has decreased since the recent highs in the FY 2010–FY 2011 timeframe. In the PB 2018, DoD's average MILPERS costs per servicemember would be $107,106, with additional costs in other parts of the defense budget to finance the Defense Health Program and other benefits as discussed above. This is about a 10 percent decline in MILPERS funding per servicemember from FY 2010. This pattern of declining MILPERS costs per servicemember is repeated within the military departments (see Figure 4-12). While still the highest of the military departments, the Army's MILPERS cost per active-duty servicemember has declined the most, by 14.5 percent, since the recent high of $142,471 in FY 2010.

Across DoD as a whole, the total pays and allowances for officers and enlisted personnel has remained relatively constant since FY 2012. Total MILPERS pays and allowances for officers averaged $148,758 per officer annually, while total MILPERS pays and allowances for enlisted personnel averaged $75,631 per enlisted servicemember annually (see Figure 4-13). These

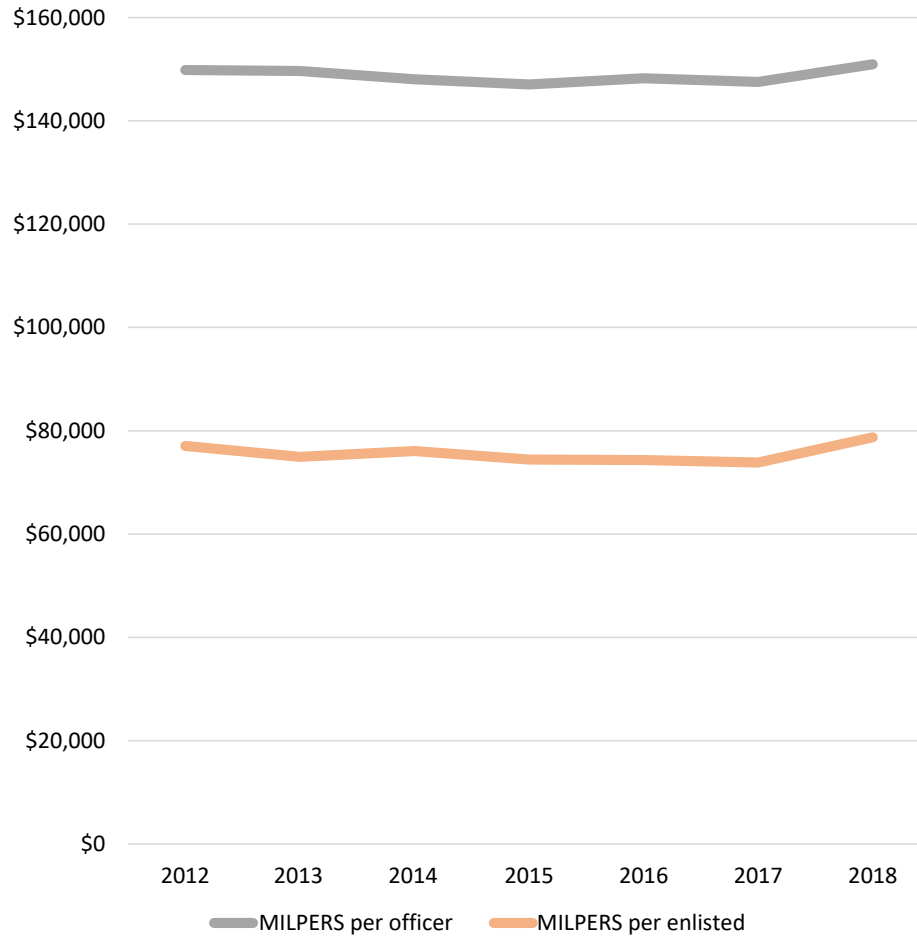
totals can be seen as the MILPERS portion of the present-day compensation cost to DoD per officer or enlisted servicemember. The totals include a range of cash and in-kind compensation as well as current payments for future benefits, such as retirement accrual benefits, but do not include benefits paid for in other areas of the budget, such as the Defense Health Program, the commissary subsidy, or current payments for future TRICARE for life benefits, as discussed above.

FIGURE 4-12: TRENDS IN MILPERS COST PER ACTIVE-DUTY SERVICEMEMBER, DOD TOTAL AND BY MILITARY DEPARTMENT, FY01–FY18



Source: OUSD (Comptroller), FY 2018 Greenbook, Table 6-8, "DoD Budget Authority by Public Law Title (FY 1948 to FY 2018)," Table 6-19, "Army Budget Authority by Public Law Title (FY 1948 to FY 2018)," Table 6-20, "Navy Budget Authority by Public Law Title (FY 1948 to FY 2018)," Table 6-21, "Air Force Budget Authority by Public Law Title (FY 1948 to FY 2018)," and Table 7-5, "Department of Defense Manpower." Analysis by CSBA.

FIGURE 4-13: MILPERS PAYS AND ALLOWANCES FOR OFFICERS AND ENLISTED PERSONNEL, FY12–FY18



Source: DoD budget data from VisualDOD. Analysis in Tableau. Pays and allowances include basic pay, the basic allowance for housing, the basic allowance for subsistence, retired pay accrual, allowances, special and incentive pays, Thrift Savings Plan matching contributions, and DoD's payment of social security tax on behalf of servicemembers. Numbers of officers and enlisted personnel are from Defense Manpower Data Center reports of active-duty military personnel by rank and grade, updated monthly, which are available at https://www.dmdc.osd.mil/appj/dwp/dwp_reports.jsp.

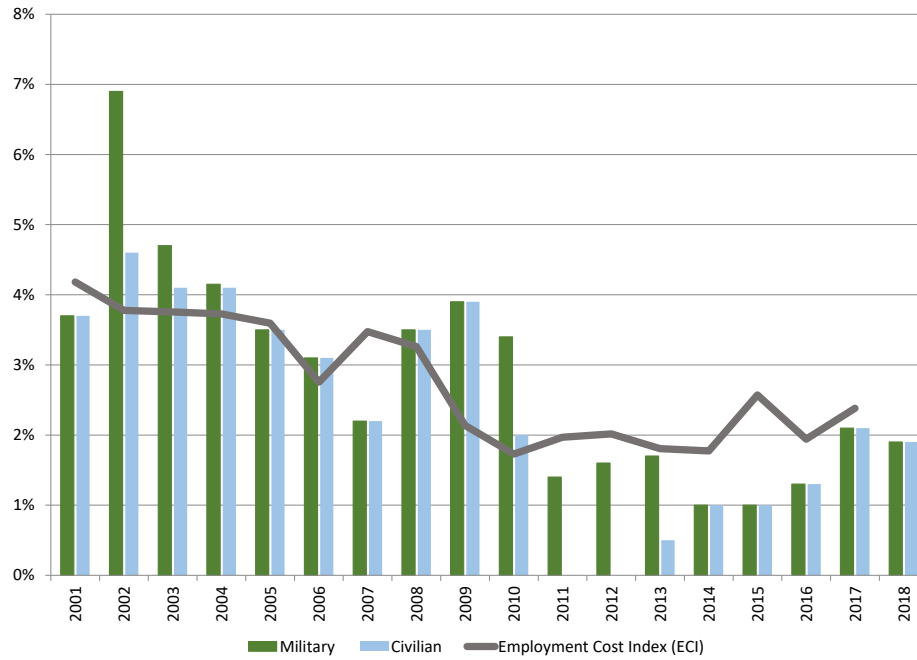
Changes to Pay and Benefits

As in past years, the PB 2018 proposes changes to military pay and benefits in order to reduce cost growth.

The Trump administration has proposed a basic pay increase of 2.1 percent, the same amount that Congress provided for in FY 2017, instead of the 2.4 percent that would match the nationwide Employment Compensation Index (ECI), as mandated under current law. However, in the FY 2018 NDAA, the HASC included a larger pay increase of 2.4 percent. The SASC funded a pay increase of 2.1 percent, in line with the administration's proposal. Congress has historically raised military pay to or above the ECI benchmark (see Figure 4-14). For FY 2017, the

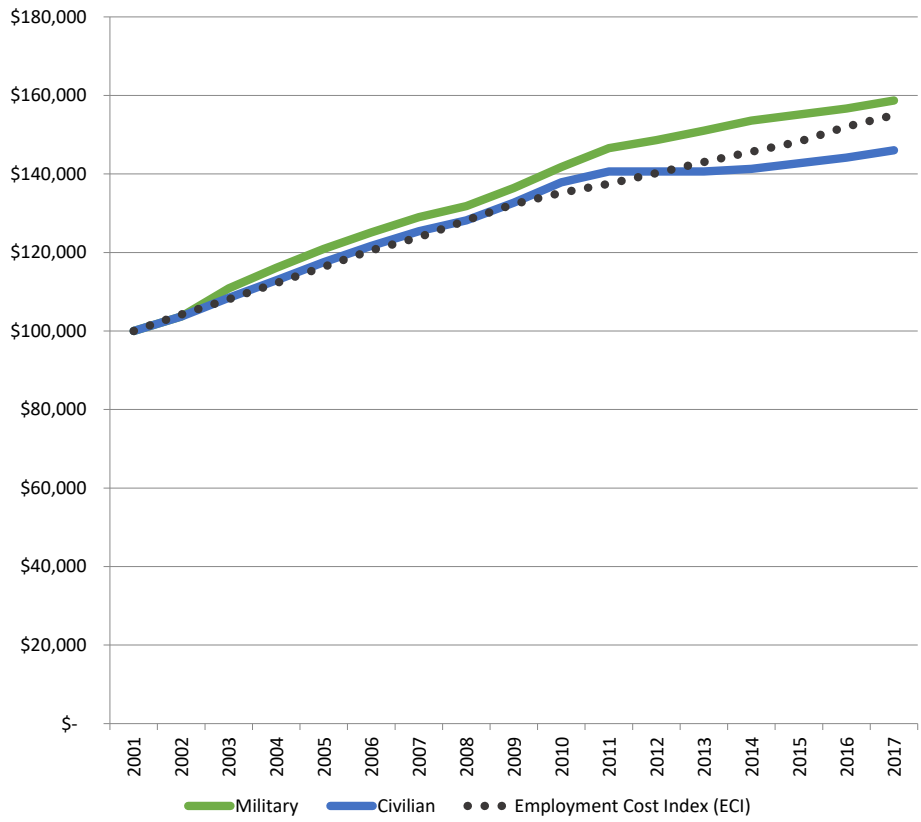
Obama administration requested a military pay raise of 1.6 percent, and Congress raised military pay by the ECI benchmark of 2.1 percent. Since FY 2001, military pay has grown faster overall than the ECI, while DoD civilian pay has lagged (see Figure 4-15).

FIGURE 4-14: MILITARY AND DOD CIVILIAN PAY INCREASES AS COMPARED TO THE ECI, FY01–FY18



Source: OUSD (Comptroller), FY 2018 Greenbook, Table 5-12, "Military and Civilian Pay Increases Since 1945 (1945 to 2022)." ECI annual increases are calculated from Bureau of Labor Statistics, *Employment Cost Index Historical Listing*, Volume III (April 2017), available at https://www.bls.gov/web/eci/echistrynaics.pdf.

FIGURE 4-15: COMPARATIVE GROWTH OF $100,000 WITH MILITARY, CIVILIAN, AND ECI RATE INCREASES, FY01–FY17



Source: OUSD (Comptroller), FY 2018 Greenbook, Table 5-12, "Military and Civilian Pay Increases Since 1945 (1945 to 2022)." ECI annual increases are calculated from Bureau of Labor Statistics, *Employment Cost Index Historical Listing*, Volume III.

Congress enacted major changes to the military retirement system in the FY 2016 NDAA. Following the recommendation of the congressionally mandated Military Compensation and Retirement Modernization commission, Congress added a 401(k)-like benefit, creating a blended retirement system.[50] The blended retirement system reduces the defined benefit pension for new servicemembers in order to provide all servicemembers some retirement benefits via a Thrift Savings Plan, the government version of a 401(k). New servicemembers who enlist after January 1, 2018 will receive a lower defined-benefit pension upon retirement after at least 20 years of service. Instead of a 2.5 percent multiplier of the average of the highest three years of pay, the retirement benefit multiplier for new servicemembers will be 2 percent. In addition, all servicemembers will receive a 1 percent salary contribution to a

50 Benjamin Bryant et al., *Report of the Military Compensation and Retirement Modernization Commission*, Final Report (Washington, DC: Military Compensation and Retirement Modernization Commission, January 2015), available at https://www.ngaus.org/sites/default/files/MCRMC%202015_0.pdf.

Thrift Savings Plan, and DoD will match servicemembers' contributions up to 5 percent. For example, if a servicemember contributes 3 percent of their pay to the Thrift Savings Plan, DoD will contribute 1 percent of their pay automatically and match the additional 2 percent, for a total DoD contribution of 3 percent. DoD's contributions vest to servicemembers after 3 years of service. The blended system also includes continuation pay bonuses between the 8th and 12th year of service, and the option to take retirement befits as a lump sum rather than a monthly payment. Current servicemembers who have served less than 12 years as of January 1, 2018, can opt into the new system if they wish. All other current servicemembers are grandfathered into the old plan.

This shift to a blended retirement system reduces the all-or-nothing character of the previous retirement system and ensures that all servicemembers will receive at least some retirement benefit, although the defined-benefit element is still the larger element of the expected retirement benefit for those who serve at least 20 years. It is very similar to the "Redux" reduction in retirement benefits enacted in the 1980s, which also reduced the retirement benefit multiplier from 2.5 percent to 2 percent. However, the "Redux" plan was made optional before the first tranche of servicemembers who entered under it retired.[51] For the FY 2018 NDAA, DoD is asking Congress to alter the Thrift Savings Plan contribution statutory language to allow DoD to continue to contribute automatic and matching funds to servicemembers after their 26th year of service. Neither the House nor the SASC version of the FY 2018 NDAA includes a corresponding provision.[52]

Congress also enacted major changes to the existing TRICARE health plans in the FY 2017 NDAA. TRICARE plans will be consolidated into Prime—much like an HMO plan, and the new Select, which will replace the current Standard and Extra PPO-style plans. Although Congress has typically been reluctant to increase the proportion of healthcare costs that are borne by current beneficiaries, Congress raised annual enrollment fees for new military retirees who elect to continue their TRICARE coverage and made various adjustments to the cost-sharing and total out-of-pocket caps.[53] In the PB 2018, DoD is proposing to end the grandfathering of the lower TRICARE annual enrollment fees for current military retirees and tier TRICARE co-pays according to whether care is received at a military treatment facility, in-network, or out-of-network in order to control costs and encourage the use of military treatment facilities. Active-duty family members and their families, medically retired servicemembers and their families, and survivors of servicemembers who died on active duty would continue to receive

51 Kristy N. Kamarck, *Military Retirement: Background and Recent Developments* (Washington, DC: CRS, February 27, 2017), available at https://fas.org/sgp/crs/misc/RL34751.pdf.

52 *National Defense Authorization Act for Fiscal Year 2018* (NDAA), H.R. 2810, 115th Congress (as Reported in House, July 6, 2017); and *NDAA for Fiscal Year 2018*, S. 1519, 115th Congress (as Placed on Senate Calendar, July 10, 2017).

53 For a detailed rundown of military personnel issues addressed in the FY 2017 NDAA, see Kristy N. Kamarck, Don J. Jansen, Lawrence Kapp, R. Chuck Mason, and Barbara Salazar Torreon, *FY 2017 National Defense Authorization Act: Selected Military Personnel Issues* (Washington, DC: CRS, January 23, 2017,) available at https://fas.org/sgp/crs/natsec/R44577.pdf.

care at no out-of-pocket cost.[54] The House version of the FY 2018 NDAA does not contain DoD's proposed TRICARE change, while the SASC version would end the grandfathering of current military retirees.[55]

In the FY 2016 NDAA, Congress raised pharmacy co-pays by $3 and indexed future co-pay increases to changes in retiree pay, but Congress rejected tying future co-pay increases to drug costs in the FY 2017 NDAA. In the PB 2018, DoD is requesting higher pharmacy co-pays and shifting the co-pays to further encourage generic and mail-order prescriptions.[56] While the House version of the FY 2018 NDAA does not include any pharmacy co-pay changes, the SASC version includes pharmacy co-pay increases slightly above the administration's proposal.[57]

Non-Uniformed Personnel

Civilian Personnel

In addition to the total force of 1,314,000 active-duty servicemembers and 815,000 Reserve-component servicemembers, the PB 2018 defense budget requests funding for 771,000 DoD civilians, of which 740,000 are DoD direct hires. DoD civilian direct hires would make up 27 percent of the overall federal civilian employee workforce in FY 2018.[58] In general, the number of DoD civilians directly employed by DoD has tended to move in concert with the size of the active-duty force (see Figure 4-16). The overall ratio of active-duty DoD employees to civilian DoD employees has fluctuated between 2.14:1 and 1.88:1 over the past 30 years. However, the ratio has fallen steadily since 2004 as DoD has either more rapidly added civilians than active-duty forces or more rapidly shrunk the size of the active-duty workforce compared to the civilian workforce (see Figure 4-17). The ratio of active-duty personnel to civilian DoD direct employees also varies across the military departments.

Overall, since 2000, the Air Force has had the lowest ratio of active-duty to civilian personnel, with about two active-duty personnel for each civilian employee, followed by the Army, with 2.2. The Navy has maintained an average ratio of 2.7 active-duty personnel for each civilian employee since 2000, driven in part by the flat-force structure pyramid of the Marine Corps.

54 OUSD (Comptroller)/CFO, *Department of Defense Fiscal Year 2018 Budget Request: Defense Budget Overview* (Washington, DC: DoD, May 2017), pp. 5-8–5-10, available at http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2018/fy2018_Budget_Request_Overview_Book.pdf.

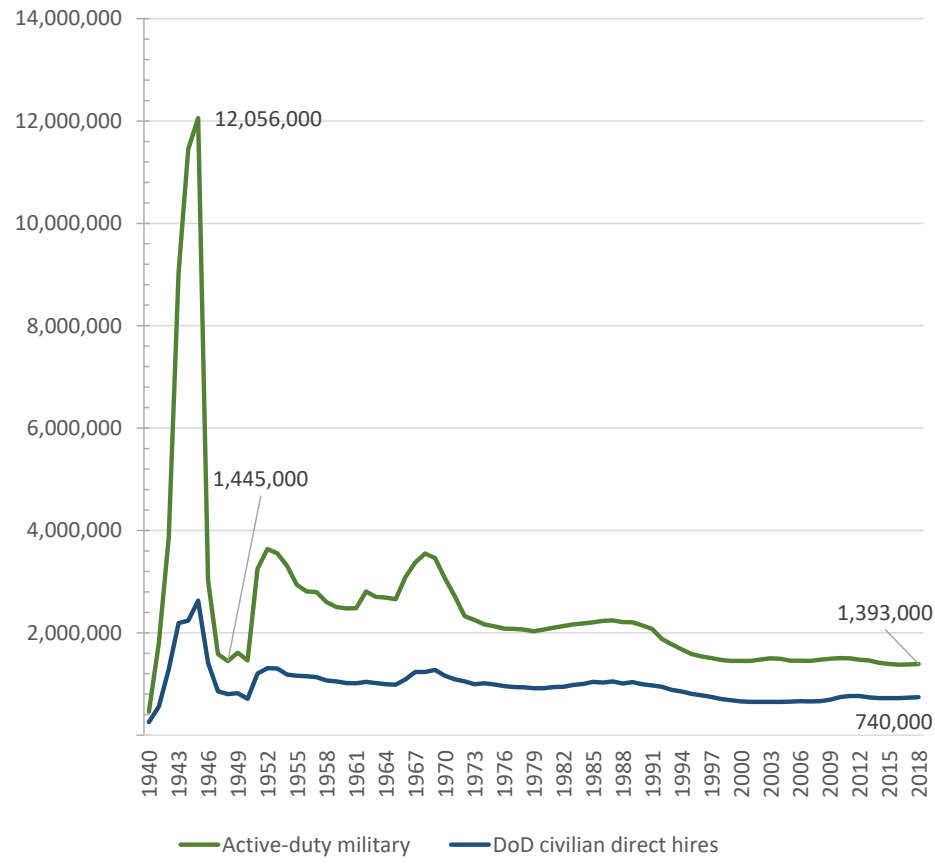
55 *NDAA for Fiscal Year 2018*, H.R. 2810 (July 6, 2017); *NDAA for Fiscal Year 2018*, S. 1519 (July 10, 2017), Section 707.

56 OUSD (Comptroller)/CFO, *Department of Defense Fiscal Year 2018 Budget Request*, p. 5-11.

57 *NDAA for Fiscal Year 2018*, H.R. 2810 (July 6, 2017); *NDAA for Fiscal Year 2018*, S. 1519 (July 10, 2017), Section 706.

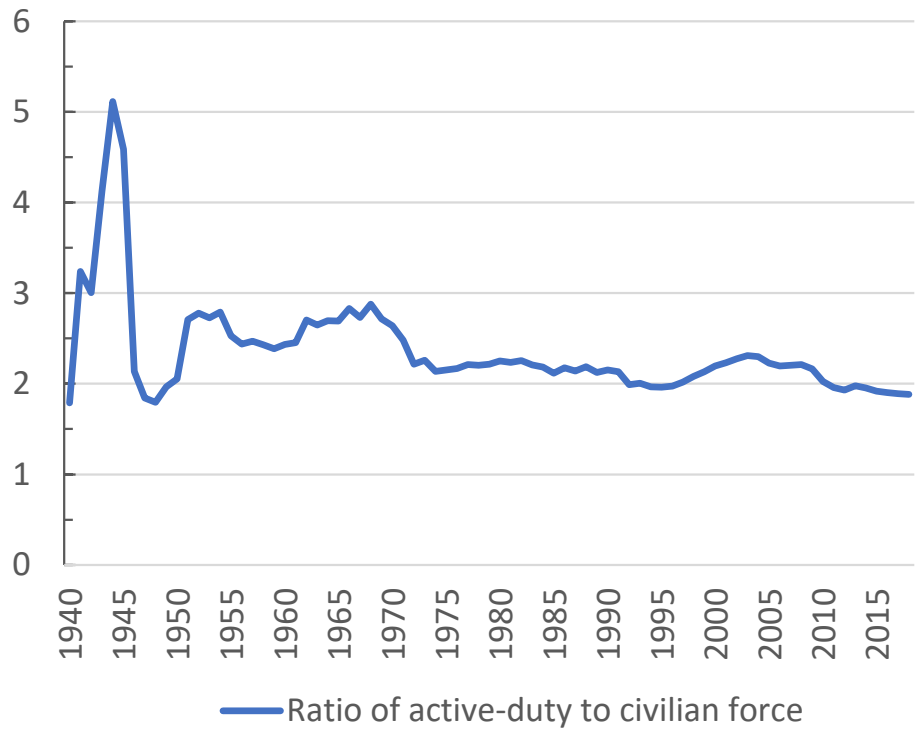
58 OUSD (Comptroller), *National Defense Budget Estimates for FY 2018*, Table 7-6, "U.S. Labor Force."

FIGURE 4-16: TOTAL DOD CIVILIAN DIRECT HIRES AND TOTAL ACTIVE-DUTY FORCE, FY40–FY18



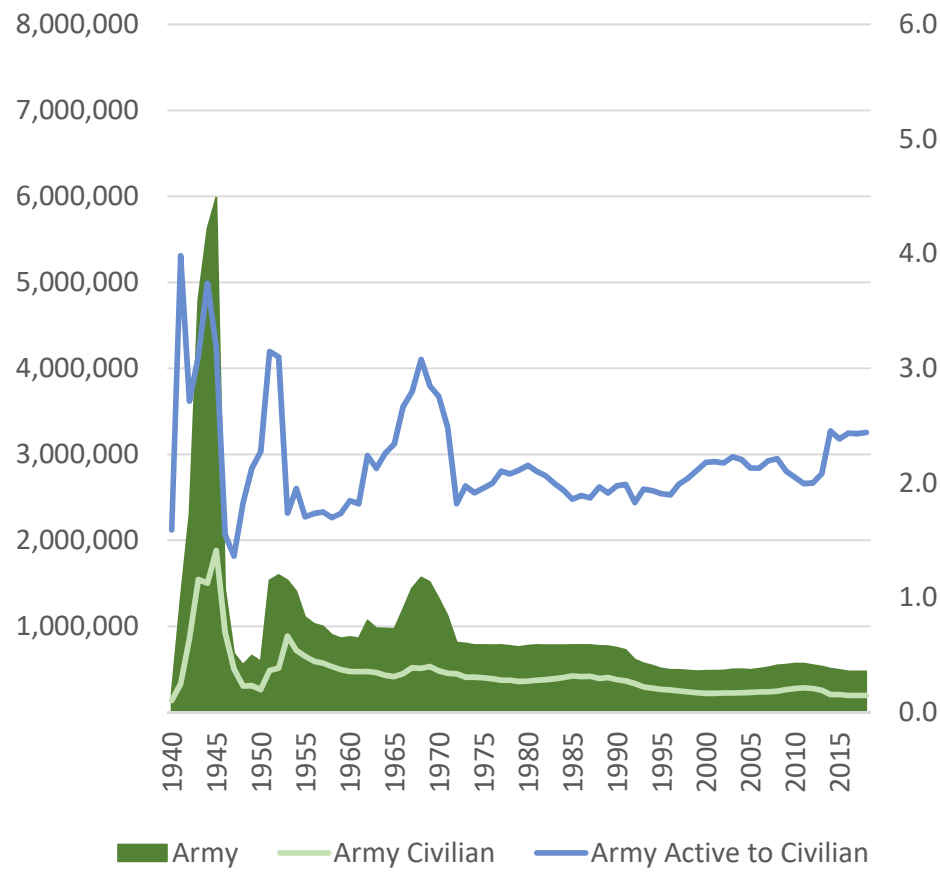
Source: OUSD (Comptroller), FY 2018 Greenbook, Table 7-6, "U.S. Labor Force."

FIGURE 4-17: RATIO OF ACTIVE-DUTY TO CIVILIAN DOD PERSONNEL, FY40–FY18



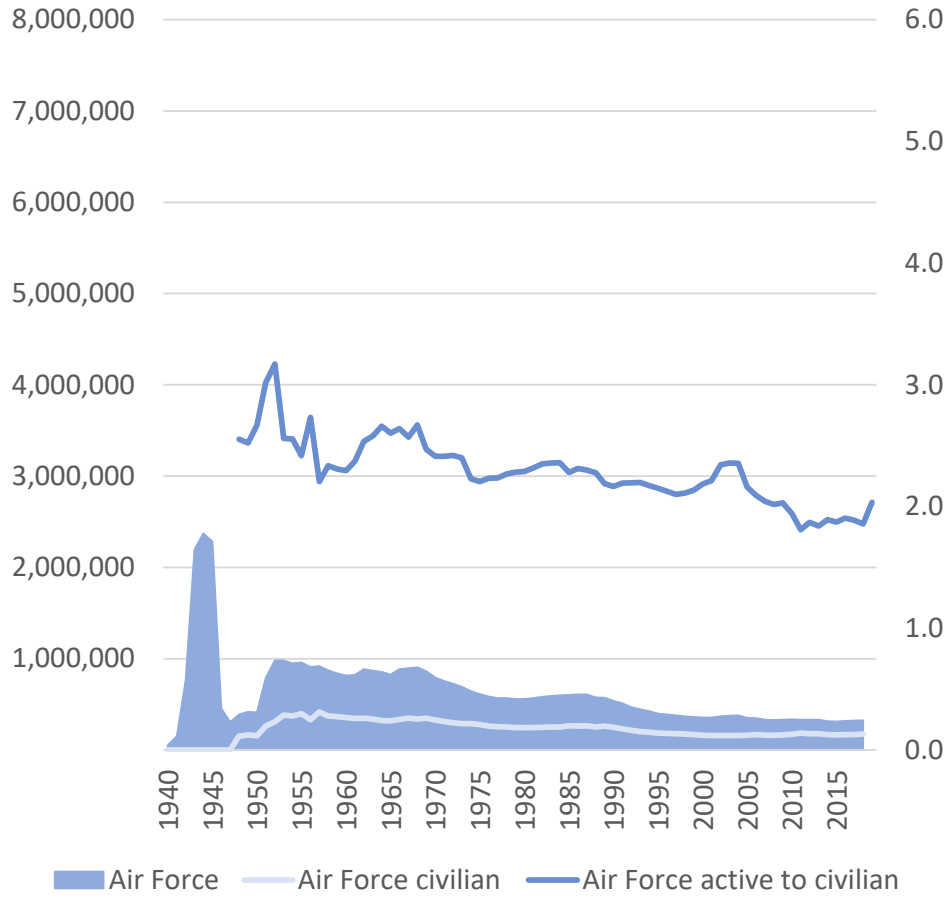
Source: OUSD (Comptroller), FY 2018 Greenbook, Table 7-6, "U.S. Labor Force."

FIGURE 4-18: RATIO OF ARMY ACTIVE-DUTY TO CIVILIAN DOD PERSONNEL, FY40–FY18



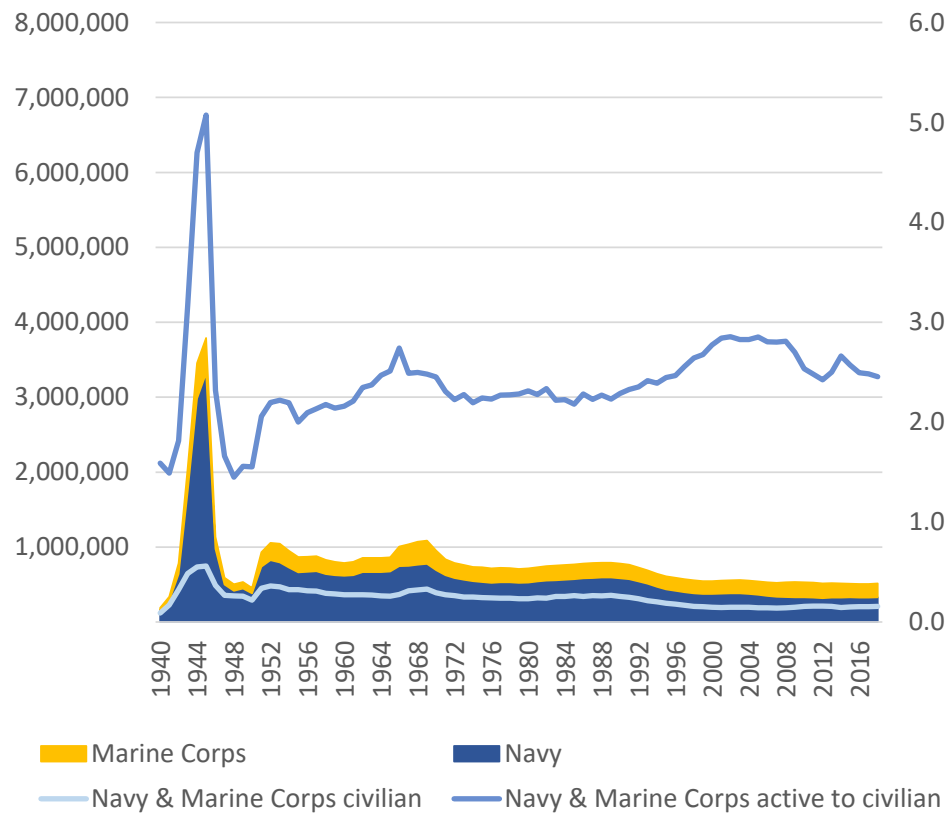
Source: OUSD (Comptroller), FY 2018 Greenbook, Table 7-5, "Department of Defense Manpower."

FIGURE 4-19: RATIO OF AIR FORCE ACTIVE-DUTY TO CIVILIAN DOD PERSONNEL, FY40–FY18



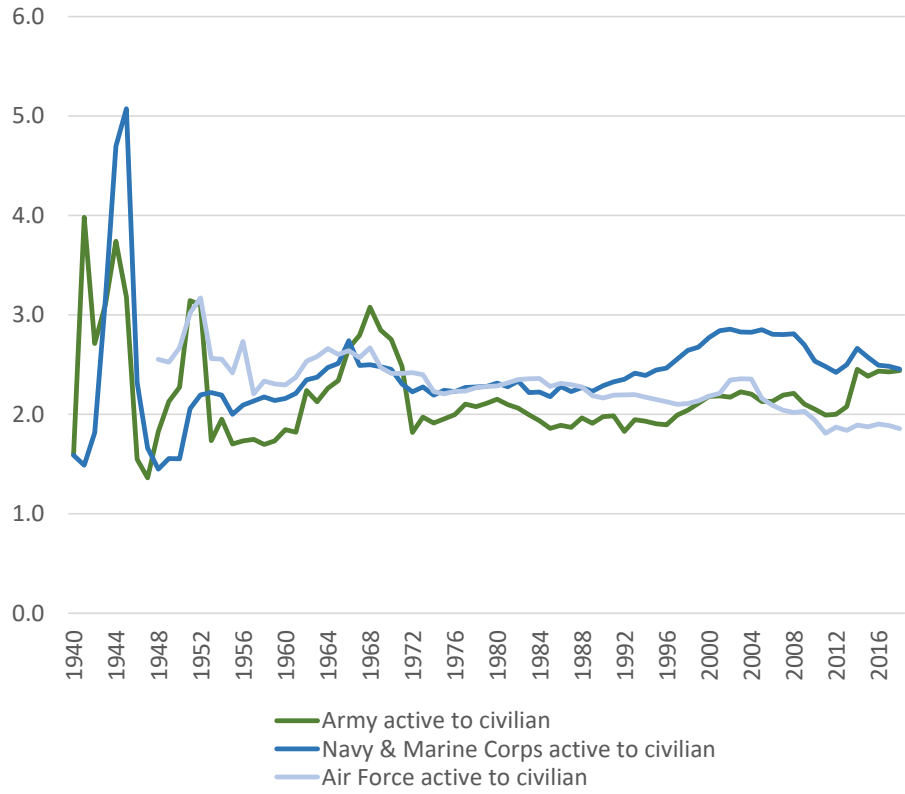
Source: OUSD (Comptroller), FY 2018 Greenbook, Table 7-5, "Department of Defense Manpower."

FIGURE 4-20: RATIO OF NAVY & MARINE CORPS ACTIVE-DUTY TO CIVILIAN DOD PERSONNEL, FY40–FY18



Source: OUSD (Comptroller), FY 2018 Greenbook, Table 7-5, "Department of Defense Manpower."

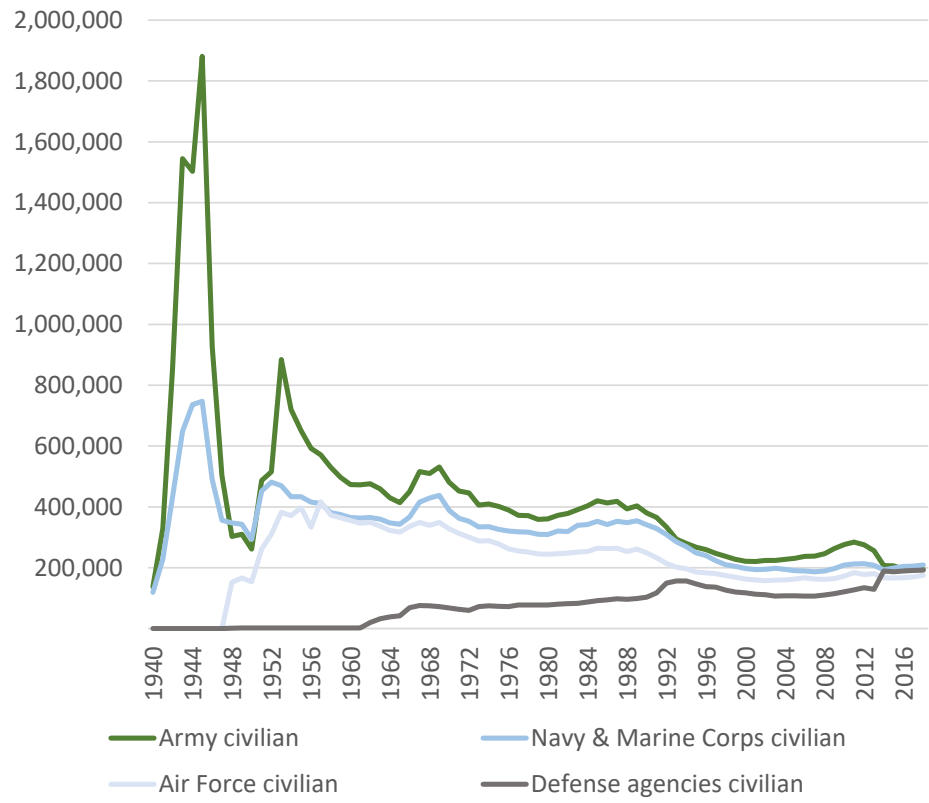
FIGURE 4-21: RATIO OF ACTIVE-DUTY TO CIVILIAN DOD PERSONNEL BY MILITARY DEPARTMENT, FY40–FY18



Source: OUSD (Comptroller), FY 2018 Greenbook, Table 7-5, "Department of Defense Manpower."

The Navy, Air Force, Army, and the collective set of defense agencies each has approximately 200,000 civilians as of FY 2017. The number of civilian DoD employees within each military department and the total of the civilians affiliated with the defense agencies converged sharply between FY 2013 and FY 2014, when the Army lost 49,000 civilians, the Navy lost 15,000, and the Air Force lost 13,000, while the defense agencies collectively added 60,000. This apparent reshuffling may have been driven by the government shutdown at the start of FY 2013 and the FY 2013 sequester, which resulted in eleven unpaid furlough days for DoD civilians (see Figure 4-22).

FIGURE 4-22: DOD CIVILIAN EMPLOYEES BY MILITARY DEPARTMENT, FY40–FY18



Source: OUSD (Comptroller), FY 2018 Greenbook, Table 7-5, "Department of Defense Manpower."

Contractor Personnel

In addition to civil servants, DoD also employs thousands of contractor personnel to staff DoD offices. DoD also contracts with various private firms for services ranging from contingency logistics to grounds maintenance. As of FY 2015, about 44 percent, or $75 billion, of DoD's total contracting obligations went toward various service contracts.[59] However, there is very little reliable data describing the scale of DoD's contractor workforce. In 2015, the Congressional Budget Office (CBO), responding to an inquiry by Sen. Chris Van Hollen (D-MD), could not identify "any comprehensive information about the size of the federal government's contracted workforce."[60]

59 Schwartz, Sargent, Nelson, and Coral, *Defense Acquisitions: How and Where DoD Spends and Reports Its Contracting Dollars*, pp. 5–6.

60 Douglas W. Elmendorf, director of CBO, "Re: Federal Contracts and the Contracted Workforce," Letter to Sen. Chris Van Hollen, March 11, 2015, available at https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/reports/49931-FederalContracts.pdf.

Balancing the Military, Civilian, and Contractor Workforce

Achieving the right size and distribution of the Pentagon's activities across the active-duty, activated Reserve, civilian and contractor workforce, and contracted services has been a perennial challenge for DoD. In general, the two major arguments have centered around, first, what proportion of supporting activities should be performed by uniformed servicemembers rather than civilian employees or contracted out—with a goal of raising the proportion of the uniformed workforce performing combat duties instead of support functions—and, second, whether DoD can save money or improve efficiency by shifting the tasks performed to a different element of the overall Pentagon workforce or simplifying and eliminating some tasks. A 2015 CBO analysis found wide divergences between the Services in whether military servicemembers, civilian employees, or contractors filled positions that the Pentagon had classified as "commercial." For example, the Army had uniformed personnel occupying just 10 percent of positions related to computing and information services, while the Navy, Air Force, and Marine Corps had uniformed personnel occupying 32 percent, 37 percent, and 42 percent of these roles, respectively.[61] The same CBO report analyzed the relative cost of the average individual military and civilian employee in specific support occupations and found that the uniformed servicemember had a total cost to the federal government of $135,200 annually, while the civilian was $39,200 cheaper at a total annualized cost of $96,000. However, this cost disparity was largely due to the annualized cost of the military servicemember's VA and medical disability benefits. For DoD, the civilian's annualized cost was slightly more than the annualized cost of the uniformed servicemember in that occupation, at $106,100 compared to $103,400.[62]

Congress has periodically legislated on DoD's workforce mix via the NDAA. In the FY 2013 NDAA, Congress required the Pentagon to create an efficiencies plan to ensure that the civilian employee and contractor workforces were "appropriately sized to support and execute the National Military Strategy, taking into account military personnel and force structure levels." This efficiency plan was also required to save money equal to that saved by reductions to military personnel base pay due to end-strength reductions.[63] However, this workforce plan and savings requirement was repealed four years later by the FY 2017 NDAA, which instead mandated an annual report on the management of the civilian workforce and limited the performance of civilian functions by military personnel.[64] The House amendment to the Senate version of the FY 2017 NDAA attempted to mandate a report that on the structure

61 CBO, *Replacing Military Personnel in Support Positions with Civilian Employees* (Washington, DC: CBO, December 2015), p. 13, available at https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/reports/51012-Military_Civilian_Report.pdf.

62 CBO, *Replacing Military Personnel*, p. 15. The civilian employee is more expensive to DoD than to the federal government as a whole due to the government's collection of tax revenues on the individual's salary.

63 *NDAA for Fiscal Year 2013*, P.L. 112-239, 112th Congress (January 2, 2013), Section 955.

64 *NDAA for Fiscal Year 2017*, P.L. 114-328, 114th Congress (December 23, 2016), Sections 914, 915, 1101, and 1102.

and number of both civilians and contractors within DoD.[65] However, this provision was not included in the text of the final bill to the conference committee.

The HASC's version of the FY 2018 NDAA includes a provision adding the civilian workforce to a FY 2017 NDAA-mandated report on the Pentagon's organizational and management goals, to include eliminating or consolidating unnecessary or redundant functions in DoD, efforts to delayer or reorganize headquarters functions, and force management and shaping goals.[66] The SASC's version would mandate a report on the numbers of detailed and contracted personnel in the Office of the Secretary of Defense and the Service secretary offices and include them in the limitations on the total number of personnel employed in those offices.[67]

65 *NDAA for Fiscal Year 2017*, S. 2943, Engrossed Amendment House, 114th Congress (July 7, 2016), Section 1112.

66 *NDAA for Fiscal Year 2018*, H.R. 2810 (July 6, 2017), Section 904. Section 904 amends Section 912 of the *NDAA for Fiscal Year 2017* (P.L. 114-328).

67 *NDAA for Fiscal Year 2018*, S. 1519 (July 10, 2017), Section 912.

CHAPTER 5

Research, Development, Test and Evaluation

Overview

The U.S. military faces substantial challenges in maintaining its current technological and operational advantages. In testimony before the SASC, Chairman of the Joint Chiefs of Staff Joseph Dunford highlighted Russia and China's sustained investments in high-technology forces and anti-access concepts of warfighting designed to counter U.S. ability to project power and undermine U.S. ability to meet its treaty obligations to allies. Russian and Chinese investment in long-range conventional strike and power projection, hypersonic weapons, cruise missiles, ballistic missiles, air defense systems, 5th generation fighters, and undersea anti-access technologies increasingly constrains the ability of the United States to project power in war and reduces allied confidence in U.S. security guarantees in peace. Corresponding Russian and Chinese investments in space, cyber, and electronic warfare capabilities challenge U.S. dominance in the electromagnetic spectrum.[68]

Secretary of Defense Mattis highlighted the growing contestation of every warfighting domain by these high-end capabilities in testimony about the FY 2018 defense budget before the SASC.[69] Space is no longer a sanctuary, and cyberspace is contested. In the traditional warfighting domains, advanced integrated air defense systems and the spread of 5th generation fighters challenge U.S. air dominance, while the spread of precision strike systems and the development of undersea warfare capabilities threaten U.S. freedom of operation at sea. On land, long-range air-to-surface and surface-to-surface missiles, advanced armored vehicles and anti-tank weapons, and sophisticated electronic warfare systems have severely eroded

68 General Joseph Dunford, chairman of the Joint Chiefs of Staff, "Department of Defense Budget Posture Hearing," SASC, June 13, 2017.

69 Secretary of Defense Mattis, "Department of Defense Budget Posture Hearing," SASC, June 13, 2017.

U.S. force overmatch.[70] Testimony before the SASC by the secretaries (or acting secretaries) and the chiefs of each of the Services on the FY 2018 defense budget request echoed these concerns.[71] In addition to the new challenges posed by great power competitors, the rapid pace of technological innovation and dissemination to both state and non-state actors will challenge the U.S. military's slow-paced acquisition tempo and risks eroding U.S. military technological advantages over time.[72]

RDT&E funding is the pathway by which the U.S. military explores new technologies and capabilities and develops them into weapons systems and platforms. Maintaining the U.S. military's current technological advantages and adapting to future challenges requires RDT&E efforts that are robust, targeted at the correct operational problems, and nimble enough to be responsive to shifts in the technological and security landscapes.

2018 Request

Investment in increased capacity and lethality are the second priority of the Pentagon's PB 2018 budget request behind restoring the readiness of the current force.[73] RDT&E is correspondingly a major area of focus, with requested funds substantially higher than those appropriated in FY 2017 or anticipated for FY 2018 in the PB 2017 budget request. In the PB 2018 request, the Trump administration asked for a total of $83.3 billion in RDT&E funds, with $82.7 billion in the base discretionary budget and an additional $622 million in OCO funding. This is $9.3 billion (or 11.2 percent) more than was appropriated in FY 2017 and $8.2 billion (or 10.8 percent) more than anticipated for FY 2018 in the PB 2017 request (see Figure 5-1). Per Secretary Mattis, this emphasis on RDT&E investments will continue in PB 2019 and beyond. Secretary Mattis' memorandum on DoD budget guidance called for the National Defense Strategy (NDS), now underway, to "determine an approach to enhancing the lethality of the force against high-end competitors." The PB 2019, informed by the results of the NDS, will "include critical investments in advanced technologies."[74]

70 Ibid.

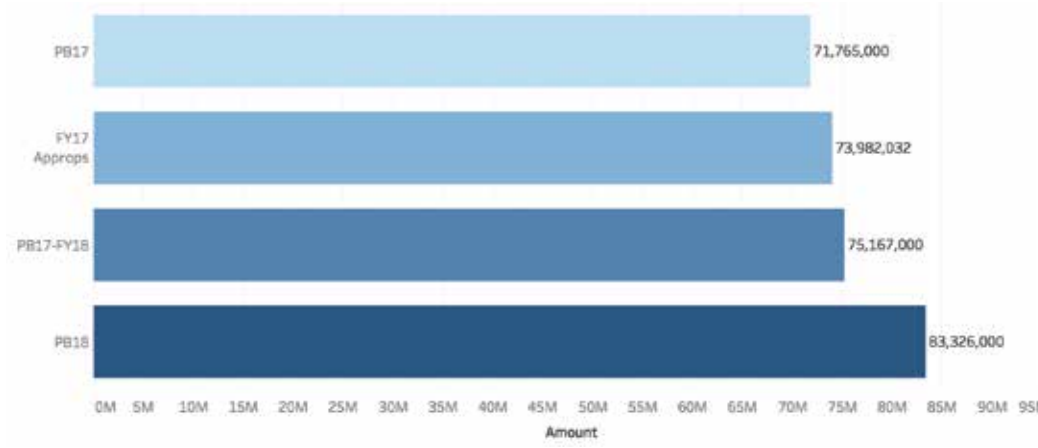
71 For PB18 hearings, see Robert M. Speer, acting secretary of the Army, and General Mark A. Milley, chief of staff of the Army, "Army Posture Hearing," SASC, May 25, 2017; Heather A. Wilson, secretary of the Air Force, and General David L. Goldfein, chief of staff of the Air Force, "Air Force Posture Hearing," SASC, June 6, 2017; Sean J. Stackley, acting secretary of the Navy, "Navy Posture Hearing," SASC, June 15, 2017; Admiral John M. Richardson, chief of Naval Operations, "Navy Posture Hearing," SASC, June 15, 2017; and General Robert B. Neller, commandant of the Marine Corps, "Navy Posture Hearing," SASC, June 15, 2017.

72 Ibid.

73 Secretary of Defense Mattis, "Department of Defense Budget Posture Hearing," June 13, 2017.

74 Secretary of Defense Mattis, "Implementation Guidance for Budget Directives in the National Security Presidential Memorandum on Rebuilding the U.S. Armed Forces," January 31, 2017.

FIGURE 5-1: TOPLINE RDT&E PB18 REQUEST, AS COMPARED TO PB17 AND FY17 APPROPRIATIONS

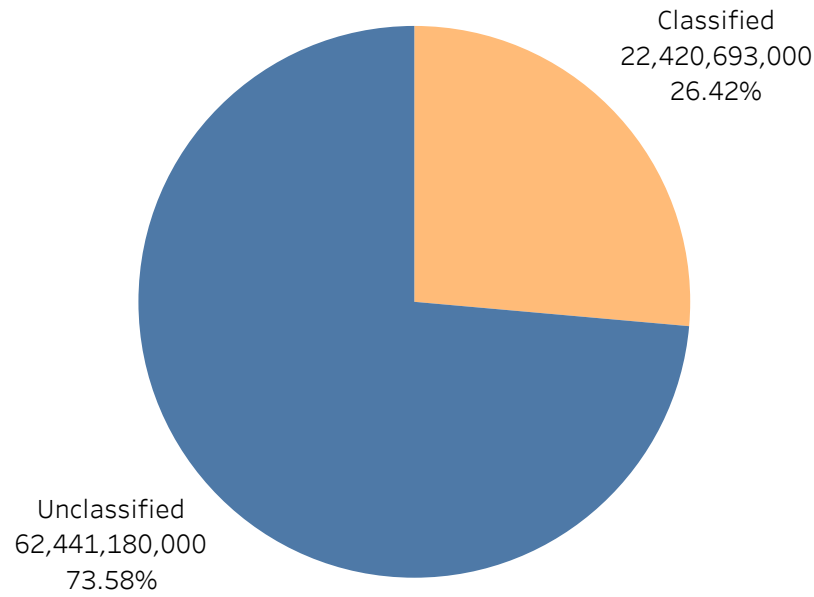


Source: OMB, Budget Analysis Branch, *Public Budget Database: Budget of the United States Government, Fiscal Year 2018, Budget Authority* (Washington, DC: OMB, May 2017), available at https://www.gpo.gov/fdsys/pkg/BUDGET-2017-DB/xls/BUDGET-2017-DB-1.xls. Analysis in Tableau.

Note: Dollars in thousands.

Overall, RDT&E funding, at $83.3 billion, accounts for 13 percent of DoD's discretionary budget request for FY 2018. $22.4 billion (or 27 percent) is for classified RDT&E programs (see Figure 5-2).

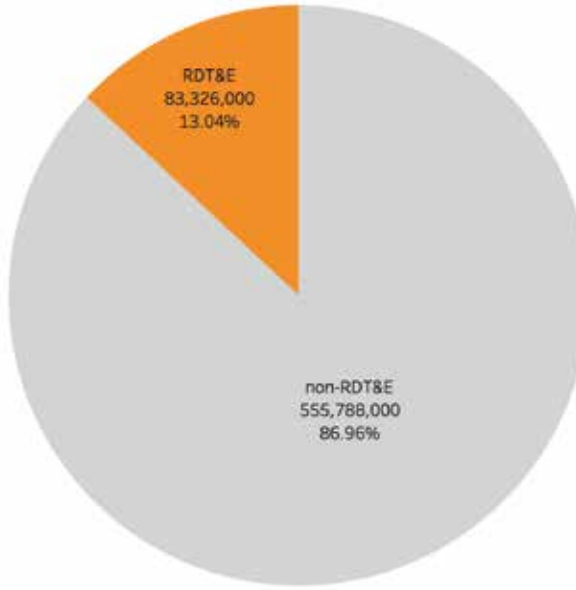
FIGURE 5-2: FY18 RDT&E REQUEST BY CLASSIFIED AND UNCLASSIFIED CATEGORIES



Source: DoD budget data from VisualDOD. Analysis in Tableau.

RDT&E funds are not evenly distributed across the Services. Including classified funds, RDT&E accounts for 19 percent of the Air Force's overall budget. Excluding classified programs, RDT&E still accounts for 19 percent of the Air Force's "blue" (i.e., non-classified) budget. RDT&E also accounts for 19 percent of the total RDT&E budget, although the DoD-wide funds don't contain any military personnel expenses. RDT&E is a much smaller fraction of the Navy's budget, at 10 percent, and the Army's budget, at just 6 percent (see Figure 5-3 and Figure 5-4).

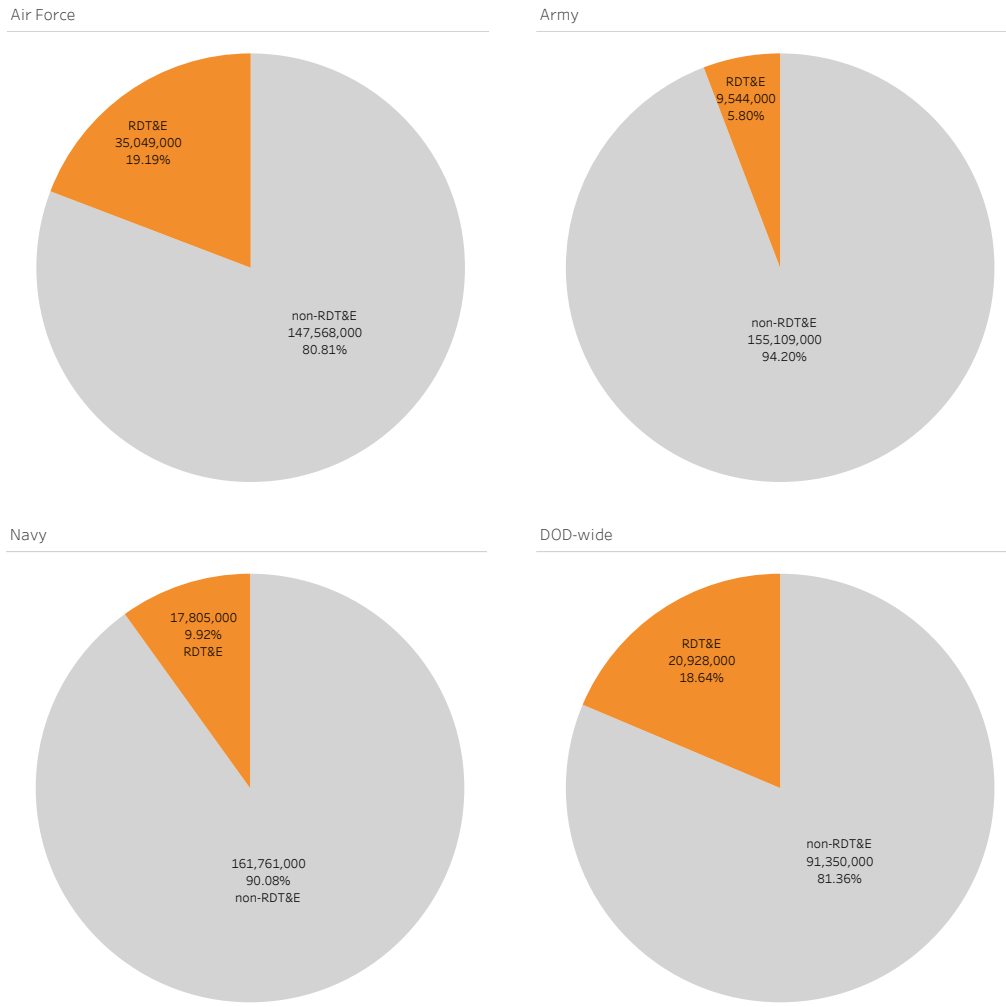
FIGURE 5-3: FY18 REQUEST FOR RDT&E FUNDING OVERALL



Source: OMB, Public Budget Database FY18. Analysis in Tableau.

Note: Dollars in thousands.

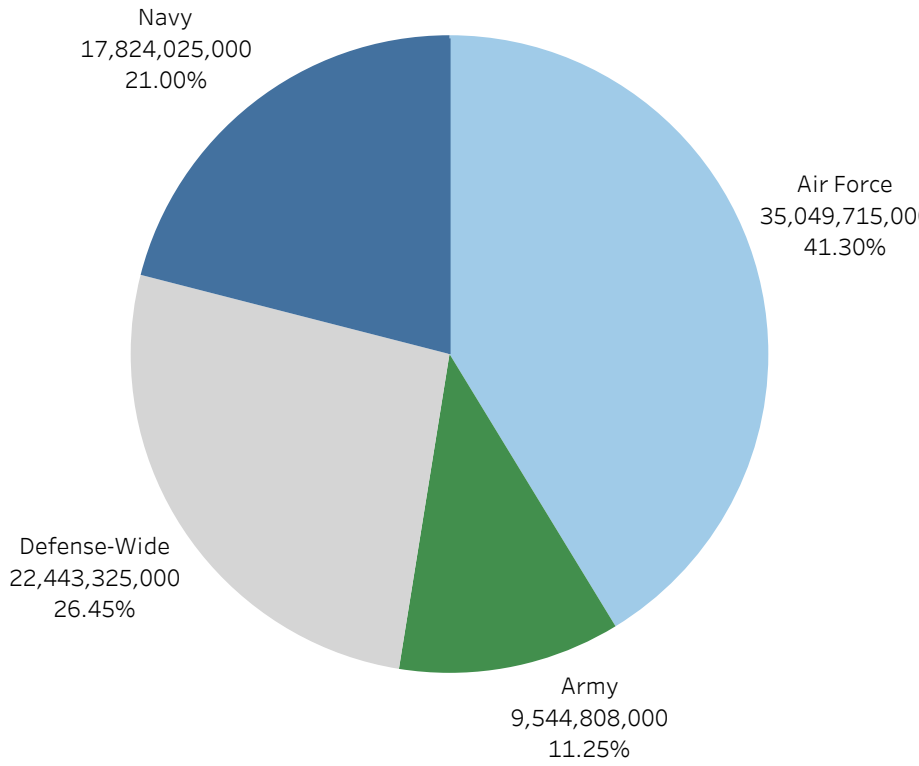
FIGURE 5-4: FY18 REQUEST FOR RDT&E FUNDING BY MILITARY DEPARTMENT



Source: OMB, Public Budget Database FY18. Analysis in Tableau.

Note: Dollars in thousands.

FIGURE 5-5: FY18 RDT&E FUNDING REQUESTED BY MILITARY DEPARTMENT



Source: DoD budget data from VisualDOD. Analysis in Tableau.

Within the Services, the Army has requested $9.5 billion for FY 2018. This is some $850 million (or 9.7 percent) more than was appropriated in FY 2017. The Army's RDT&E budget is by far the smallest of the Services in both relative and absolute terms. Without any new major systems in development, the bulk of the Army's RDT&E efforts "prioritize incremental upgrades of existing systems."[75] As described in joint written testimony by Lt. General John M. Murray, deputy chief of staff for the Army, G-8; Lt. General Joseph Anderson, deputy chief of staff for the Army, G-3/5/7; Maj. General Robert M. Dyess Jr., acting director, Army Capabilities Integration Center; and Brigadier General Robert L. Marion, deputy for Acquisitions and System Management, Office of the Assistant Secretary of the Army for Acquisitions, Logistics and Technology before the SASC Airland Subcommittee, "The Army will begin new developmental programs only if required to close an extremely high risk

75 Assistant Secretary of the Army (Financial Management and Comptroller), *FY 2018 President's Budget Highlights* (Washington, DC: U.S. Army, May 23, 2017), p. 28, available at https://www.asafm.army.mil/documents/BudgetMaterial/fy2018/pbhl.pdf.

gap."[76] However, despite this predominant focus on incremental upgrades, there are Army RDT&E efforts to develop new capabilities, with a focus on assured precision navigation and timing, secure communication, active protection for ground vehicles, cyber and electronic warfare, and ground-based fires and short-range air defenses to grow the capability to operate in A2/AD environments.[77]

The Navy and Marine Corps requested $17.8 billion, which is $211 million or 1.2 percent more than was appropriated in FY 2017. Much of the Navy's RDT&E funding focuses on major new systems currently in development, like the Columbia-class ballistic missile submarine, but the PB 2018 request also funds new future capability investments in long-range missiles, hypervelocity projectiles and defenses, electromagnetic capabilities, and unmanned vehicles including unmanned underwater vehicles (UUVs).[78]

The Air Force requested a total of $35 billion. This amount is $6.8 billion (or 24.2 percent) greater than the FY 2017 appropriations. Much of the Air Force's RDT&E request similarly focuses on major systems currently in development—predominantly the B-21 next-generation bomber; the struggling GPS III Next Generation Operational Control System (OCX), which has experienced continuing schedule delays and cost increases even after the program was restructured following its 2016 critical Nunn-McCurdy breach; and the new nuclear long-range stand-off (LRSO) weapon—but also includes boosts to research in hypersonic vehicles, directed-energy weapons, unmanned or autonomous vehicles, and nanotechnology.[79]

Because the Air Force's budget is traditionally the pass-through for classified funding, about 43 percent of the Air Force's FY 2018 RDT&E request, or $15 billion, is classified. However, the other military departments and DoD-wide funds also include some proportion of classified funds. Although none approaches the Air Force's proportion, about 19 percent of the DoD-wide RDT&E request and 16 percent of the Navy's request would fund classified programs (see Figure 5-7). Defense-wide programs requested $20.9 billion, an increase of $1.4 billion (or 7 percent) from the FY 2017 appropriations.

The FY 2018 request for RDT&E funds is $8.2 billion higher than the PB 2017 plan for RDT&E funding in FY 2018. Proportionally, the biggest beneficiary from this increased focus on RDT&E is the Army, whose FY 2018 request is $1.6 billion (or 21 percent) larger than the projected FY 2018 request was in the PB 2017. The Air Force is the largest absolute

76 Lt. General John M. Murray, Lt. General Joseph Anderson, Maj. General Robert M. Dyess Jr., and Brigadier General Robert L. Marion, "Army Modernization," Testimony before the SASC, Airland Subcommittee, March 22, 2017.

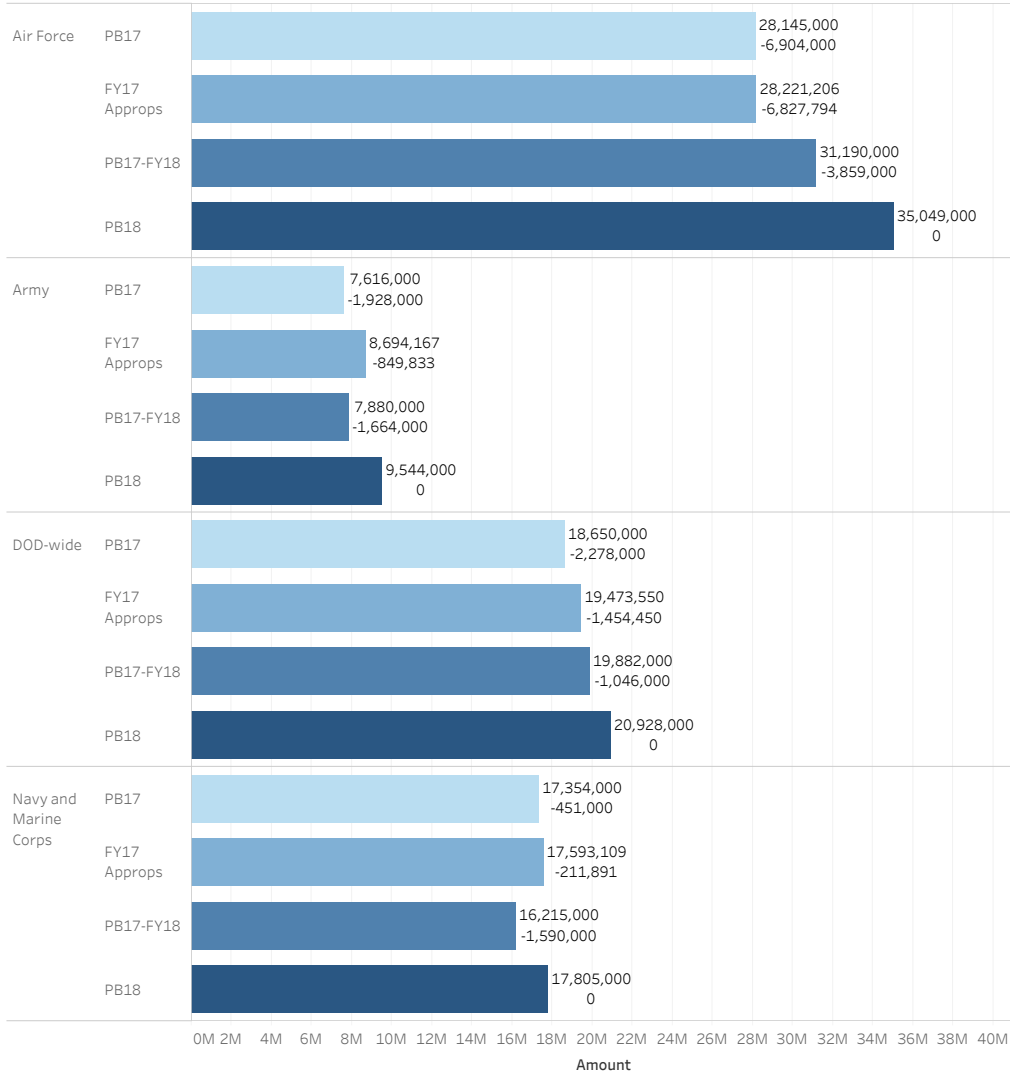
77 OUSD (Comptroller)/CFO, *Department of Defense Fiscal Year 2018 Budget Request: Defense Budget Overview* (Washington, DC: DoD, May 2017), pp. 7-9–7-10, http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2018/fy2018_Budget_Request_Overview_Book.pdf.

78 Speer and Milley, "Army Posture Hearing," May 25, 2017; Wilson and Goldfein, "Air Force Posture Hearing," June 6, 2017; Stackley, "Navy Posture Hearing," June 15, 2017; Richardson, "Navy Posture Hearing," June 15, 2017; Neller, "Navy Posture Hearing," June 15, 2017.

79 Wilson and Goldfein, "Air Force Posture Hearing," June 6, 2017.

beneficiary, with an RDT&E request about $3 billion larger. Including classified funding, the Air Force's request is $3.8 billion (or 12.4 percent) larger. The Navy and defense-wide programs saw an increase of $1.6 billion (or 9.8 percent) and $1 billion (or 5.3 percent) respectively (see Figure 5-6).

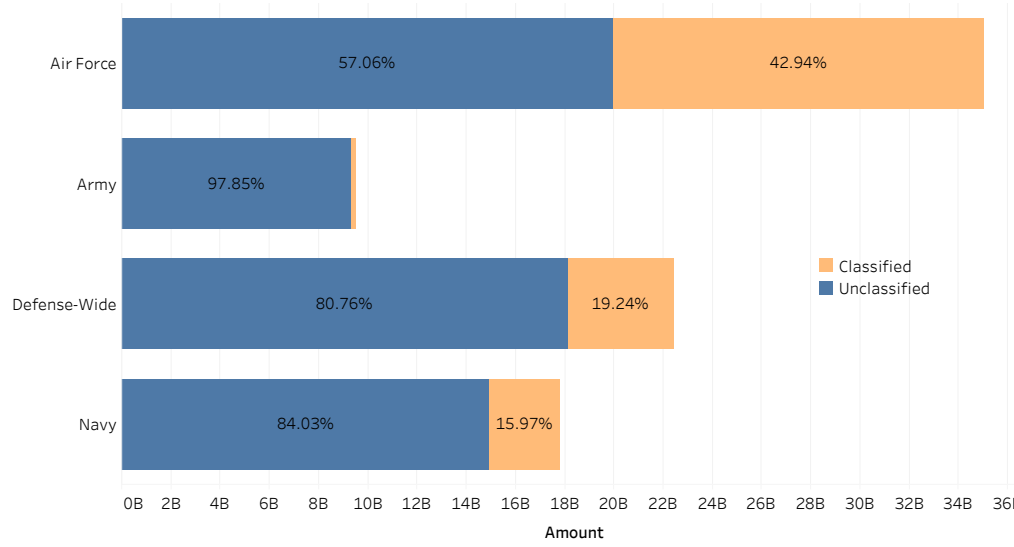
FIGURE 5-6: TOPLINE RDT&E PB18 REQUEST BY SERVICE, AS COMPARED TO PB17 AND FY17 APPROPRIATIONS



Source: OMB, Public Budget Database FY18. Analysis in Tableau.

Note: Dollars in thousands.

FIGURE 5-7: FY18 TOTAL CLASSIFIED AND UNCLASSIFIED RDT&E FUNDING REQUESTED, BY MILITARY DEPARTMENT



Source: DoD budget data from VisualDOD. Analysis in Tableau.

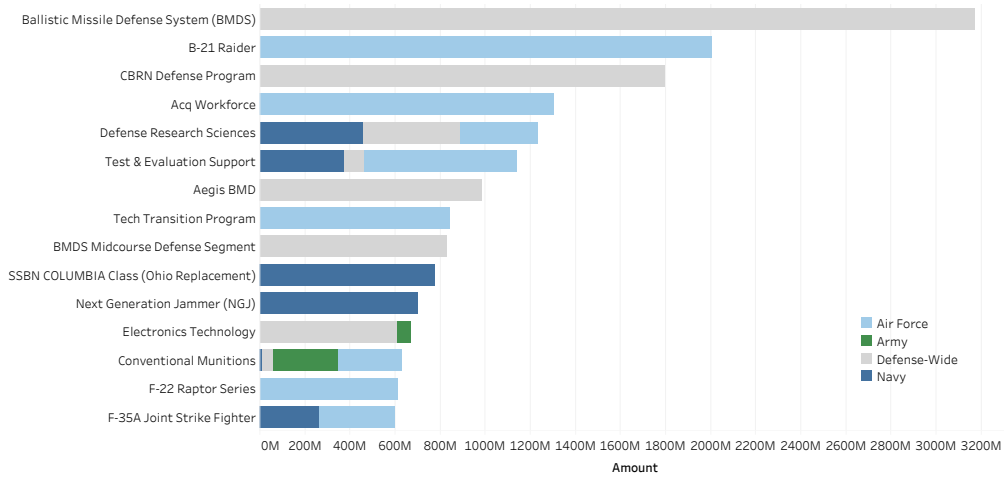
Functionally, the PB 2018 RDT&E request continues many of the investments that were the centerpiece of the Third Offset Strategy. This approach was championed by former Deputy Secretary of Defense Bob Work, who remained in his position until July 2017 and played a central role in formulating the FY 2018 budget. Key RDT&E investments in these Third Offset capabilities, including high-speed strike and laser weapons, leap-ahead improvements in turbine engines, and electronic warfare, aim to ensure U.S. ability to project power in the face of the A2/AD capabilities and strategies employed by potential adversaries that currently challenge U.S. military advantages. The PB 2018 request would also increase funding for the Strategic Capabilities Office (SCO) to $1.2 billion, or 25 percent more than the $902 million requested in FY 2017 and more than double the $519 million appropriated in FY 2016. Some publicly acknowledged SCO efforts include adapting existing missiles to shoot across domains; broadening their potential set of targets; pairing manned ships and planes with expendable unmanned platforms; adapting current Army and Navy guns with new projectiles to effectively turn them into hypervelocity guns; and leveraging commercial technologies, like sensors, processors, and network technologies, to add new capabilities to existing systems.[80]

The PB 2018 request makes a handful of significant adjustments to specific RDT&E programs as compared to the PB 2017 plan for FY 2018. The largest single increase is for classified programs, which see $2.2 billion more in requested funding. Programs to turn promising technologies from demonstration to prototype to working system also receive

80 OUSD (Comptroller)/CFO, *Department of Defense Fiscal Year 2018 Budget Request: Defense Budget Overview*, pp. 3-7–3-9.

substantial investment in PB 2018, principally new funding for advanced innovative technologies ($631 million) and technology transition ($345 million). The Air Force also moved forward funding for a 6th generation air dominance fighter ($282 million), while PB 2018 also increases funding for ballistic missile defense systems ($233 million), accelerates the future ground-based strategic deterrent replacement for the Minuteman III ICBM ($238 million), and boosts chemical, biological, radiological and nuclear defense (CBRN) research ($323 million). The B-21 Raider needed $163 million less funding in FY 2018 than anticipated, but otherwise continues the PB 2017 funding profile in the PB 2018 request. Additionally, several systems currently in development have experienced cost growth and/or schedule slip, necessitating higher FY 2018 funding levels, including the GPS III Ground Control Segment, which experienced a critical Nunn-McCurdy breach in 2016 ($258 million), the F-35A ($110 million), and the Navy's next-generation jammer ($79 million) and DDG-1000 Zumwalt-class destroyer ($121 million).

FIGURE 5-8: 15 LARGEST PROGRAMS IN FY18 RDT&E REQUEST



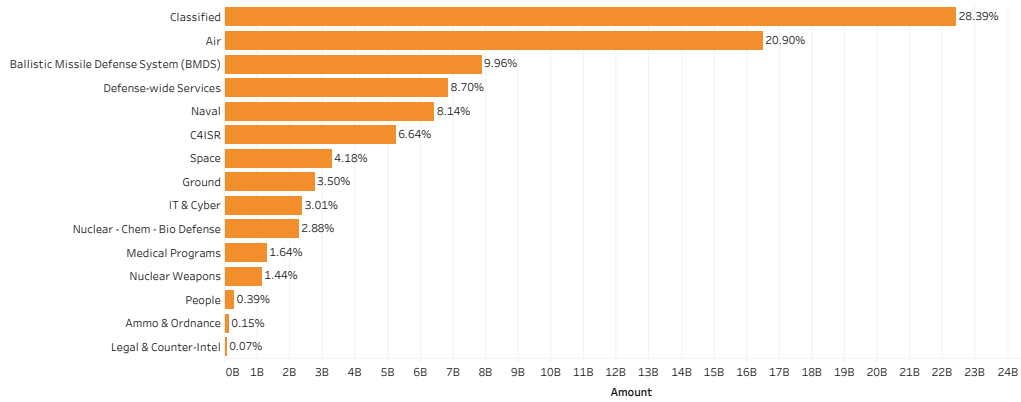
Source: DoD budget data from VisualDOD. Analysis in Tableau.

By segment, the largest single area of RDT&E funding in the FY 2018 RDT&E request is classified programs at $22.4 billion, or 29 percent of the total RDT&E request. Air programs, with a requested $16.5 billion, make up 21 percent; ballistic missile programs, with a requested $7.8 billion, make up 10 percent; and naval programs, with a requested $6.5 billion, make up 8 percent. Requested RDT&E funding for ground-related programs is just $2.8 billion, or 3.5 percent of the total RDT&E funding requested in FY 2018 (see Figure 5-9).

As compared to the PB 2017 FYDP (FY 2017–FY 2021), the overall PB 2018 FYDP (FY 2018–FY 2022) RDT&E funding portfolio includes substantially more funding for air (13 to 19 percent more, depending on the specific fiscal year within the FYDP), ballistic missile defense (12 to 25 percent more), C4ISR programs (12 to 24 percent more), classified programs (12 to

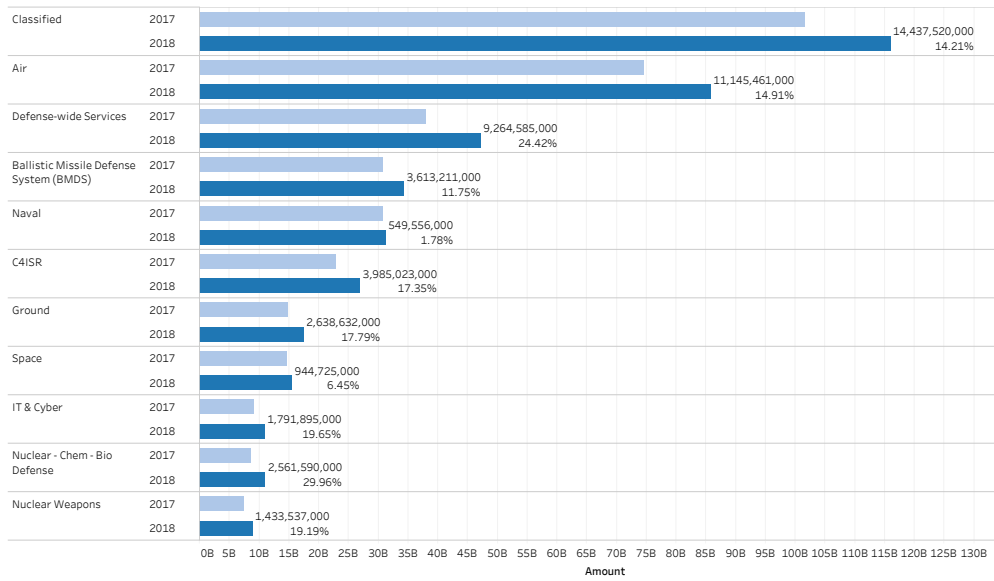
14 percent more), ground (16 to 31 percent more), IT and cyber (16 to 24 percent more), and nuclear chemical and biological weapons defense (29 percent more), as well as modestly more on naval programs (1 to 13 percent more). Spending on nuclear weapons and space largely remains consistent with the PB 2017 plan (see Figure 5-10).

FIGURE 5-9: FY18 REQUESTED RDT&E FUNDING BY SEGMENT



Source: DoD budget data from VisualDOD. Analysis in Tableau.

FIGURE 5-10: PB18 RDT&E REQUEST ACROSS THE FYDP BY SEGMENT, COMPARED TO THE PB17 FYDP



Source: DoD budget data from VisualDOD. Analysis in Tableau.

RDT&E Details

RDT&E funding falls into seven budget activities. The later stages of RDT&E efforts are more tightly integrated into the acquisition process:

6.1 Basic research funds unclassified research, often at universities and other non-governmental organizations, and precedes any system-specific research.

6.2 Applied research funds aim to translate promising basic research into broad military needs by developing useful materials, devices, systems, or methods preceding specific systems. Applied research RDT&E efforts can be funded as part of the materiel solution analysis portion of the acquisitions process, which evaluates potential solutions and the trade space for addressing a capability gap, including a formal analysis of alternatives. After the materiel solution analysis phase, programs are evaluated at Milestone A of the acquisitions process.

6.3 Advanced technology development efforts develop and integrate subsystems or components into system prototypes for field experiments and tests in order to demonstrate technological feasibility and assess operability and producibility. This RDT&E budget activity most often funds efforts in the technology maturation and risk reduction phase of the acquisition process following Milestone A. This phase develops and demonstrates prototype designs to reduce technical risk, validates designs and cost estimates, selects appropriate technologies for a full system, and develops key performance benchmarks for the system. RDT&E efforts in this budget activity do not necessarily lead to development or procurement of systems, but should have the goal of moving into the next RDT&E phase within five years.

6.4 Advanced component development and prototypes efforts evaluate integrated technologies or representative prototype systems in a realistic operating environment and assess the maturity, performance, or cost-reduction potential. The emphasis is on demonstrating component and subsystem maturity before integration into major and complex systems, often including risk reduction initiatives. This RDT&E budget activity also occurs in the technology maturation and risk reduction phase of the acquisition process. Programs are evaluated for their technological and programmatic maturity and readiness to move into the subsequent step of the acquisitions process at the Milestone B review.

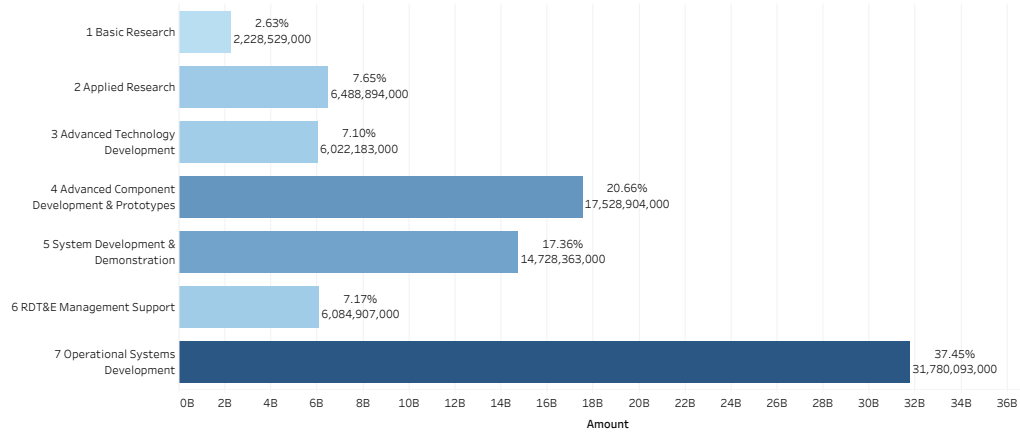
6.5 System development and demonstration efforts encompass the shift from evaluating components of a system to evaluating the integrated system after the program has been determined technologically and programmatically mature enough to move into the engineering & manufacturing development (EMD) phase at the Milestone B review. The EMD phase aims to finalize the integrated system's design and capabilities, and to demonstrate the production process before low-rate initial production.

6.6 RDT&E management support funds RDT&E facilities, test ranges, and the operating costs of test systems.

6.7 Operational systems development funds are for upgrading systems that have been fielded or that have been approved for full-rate production following the Milestone C review of the EMD phase.

Across DoD, funding for the operational systems development budget activity makes up the largest share of RDT&E funding requested in FY 2018 at $31.7 billion, or 40 percent of total RDT&E funding. Most of this funding, $20.5 billion or 65 percent, is classified, making up 92 percent of the classified RDT&E funding. The advanced components and prototypes budget activity for systems in the earlier stages of development, between acquisition Milestones A and B, makes up $17.5 billion, or 22.5 percent of total RDT&E funding in FY 2018. Systems in the EMD phase, between Milestones B and C, account for $14.7 billion (or 19 percent) (see Figure 5-11).

FIGURE 5-11: PB18 RDT&E FUNDING BY BUDGET ACTIVITY

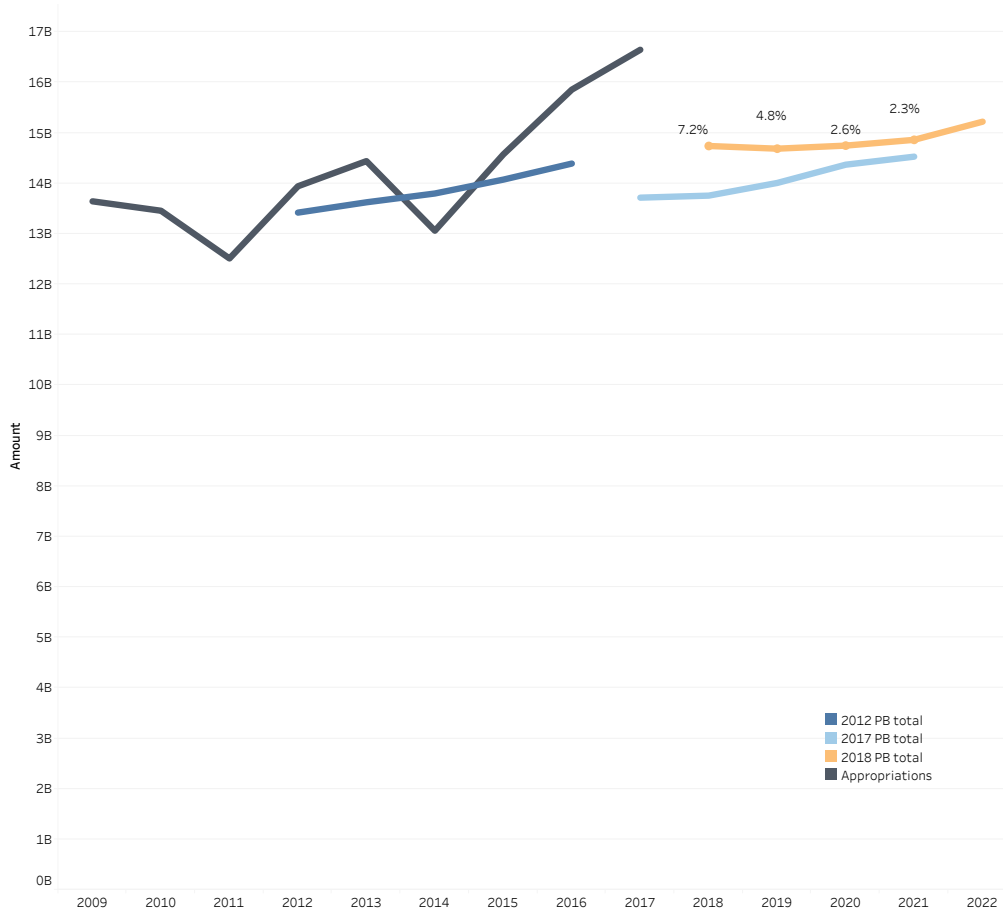


Source: DoD budget data from VisualDOD. Analysis in Tableau.

6.1, 6.2, and 6.3: Science & Technology

The first three RDT&E budget activities (6.1, basic research, 6.2 applied research, and 6.3, advanced technology development) are collectively described as the science & technology portfolio. The PB 2018 budget largely maintains the PB 2017 budget investment in the science & technology portfolio of RDT&E. It keeps funding levels for basic science the same and adds about $450–530 million each year in applied research, predominantly in nuclear, chemical, and biological weapons defense. It also makes modest increases in advanced technology development (see Figure 5-12).

FIGURE 5-12: TOTAL PB18 RDT&E REQUEST FOR BA 1-3, COMPARED TO PB17



Source: DoD budget data from VisualDOD. Analysis in Tableau.

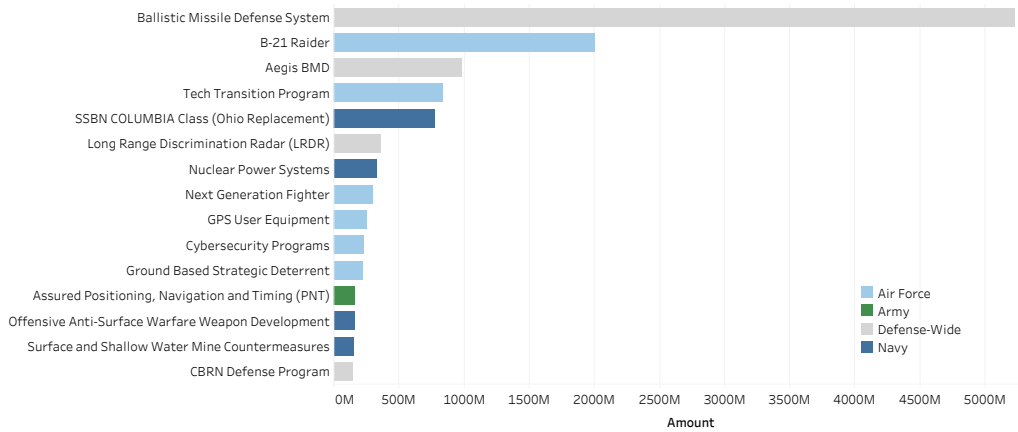
6.4: Advanced Component Development and Prototypes

RDT&E budget activity 6.4, advanced component development and prototypes, funds programs that are in earlier stages of development; transitioning from laboratory to practical use; and evaluating prototypes, components, and subsystems. Programs in this stage of acquisitions contain technologies or systems that are undergoing technological maturation and risk reduction and are being evaluated for potential to move into the EMD phase after the Milestone B decision. As such, RDT&E efforts in this budget activity fund both large programs at early stages of development and a wide array of technological efforts.

In the FY 2018 request, the largest advanced component development and prototyping efforts are various ballistic missile defense (BMD) programs ($5.2 billion); the B-21 Raider stealth bomber ($2 billion); the Aegis BMD system ($1 billion); the doubling of funding for a tech transition program to demonstrate, prototype, and experiment with promising technologies

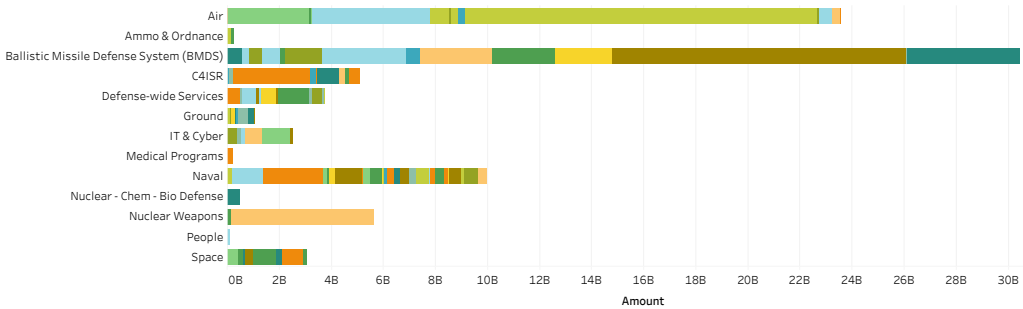
to speed their transition to acquisition programs or operational use ($840 million); and the Columbia-class SSBN ($776 million) (see Figure 5-13). Examining PB 2018 funding across the FYDP by domain or segment reveals a strong concentration of programs in the RDT&E pipeline for the air domain. Just two programs—the B-21 Raider and the as-yet-undefined Next Generation Fighter—account for 77 percent of total funding for air programs in the RDT&E 6.4 budget. By contrast, the largest single program in the naval segment, the Columbia-class SSBN, accounts for just 23 percent of that category's funding (see Figure 5-14). Overall, the PB 2018 anticipates 6.4 funding to rise from 15 to 24 percent more than projected in the PB 2017, depending on the fiscal year. It will reach $19.6 billion by FY 2022, some $5 billion more than appropriated in FY 2017. This planned increase will be driven by growing spending on the B-21, the Next Generation Fighter, the Ground Based Strategic Deterrent (GBSD), protected C3, and BMD programs, which together will account for 55 percent of RDT&E 6.4 funding by FY 2022.

FIGURE 5-13: FY18 LARGEST ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPING PROGRAMS



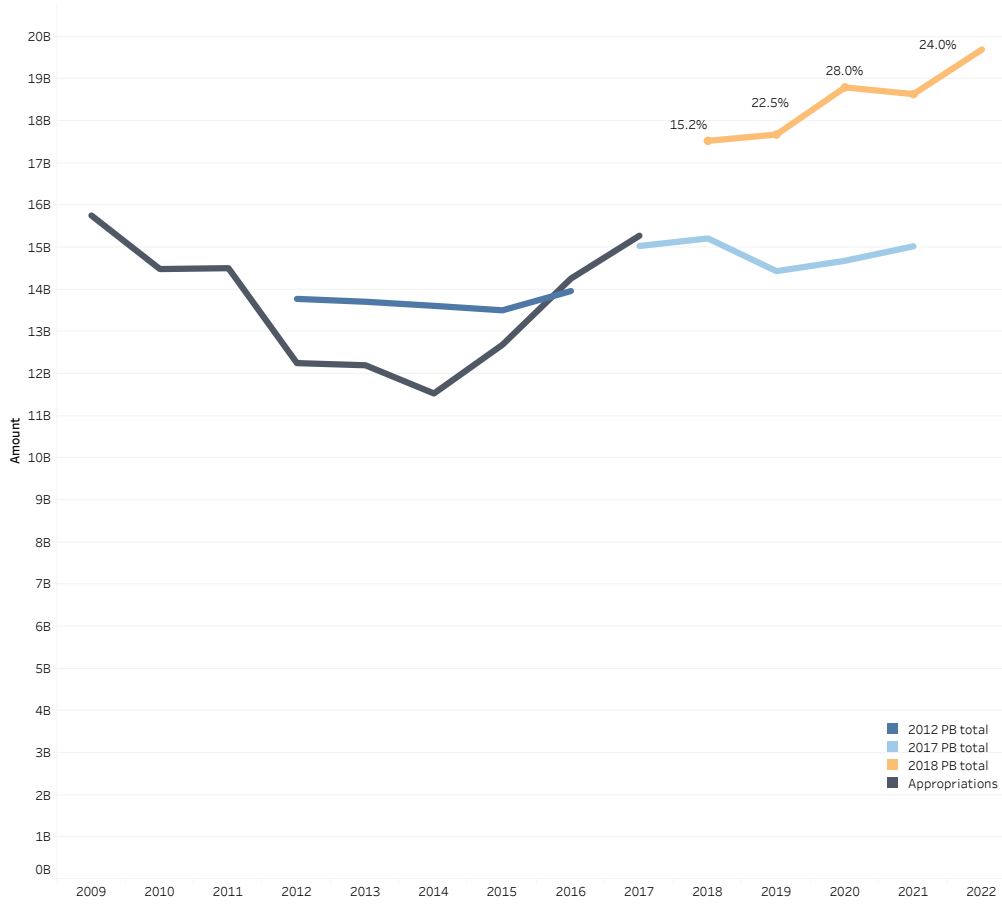
Source: DoD budget data from VisualDOD. Analysis in Tableau.

FIGURE 5-14: PB18 BA 6.4 FUNDING BY SEGMENT AND PROGRAM



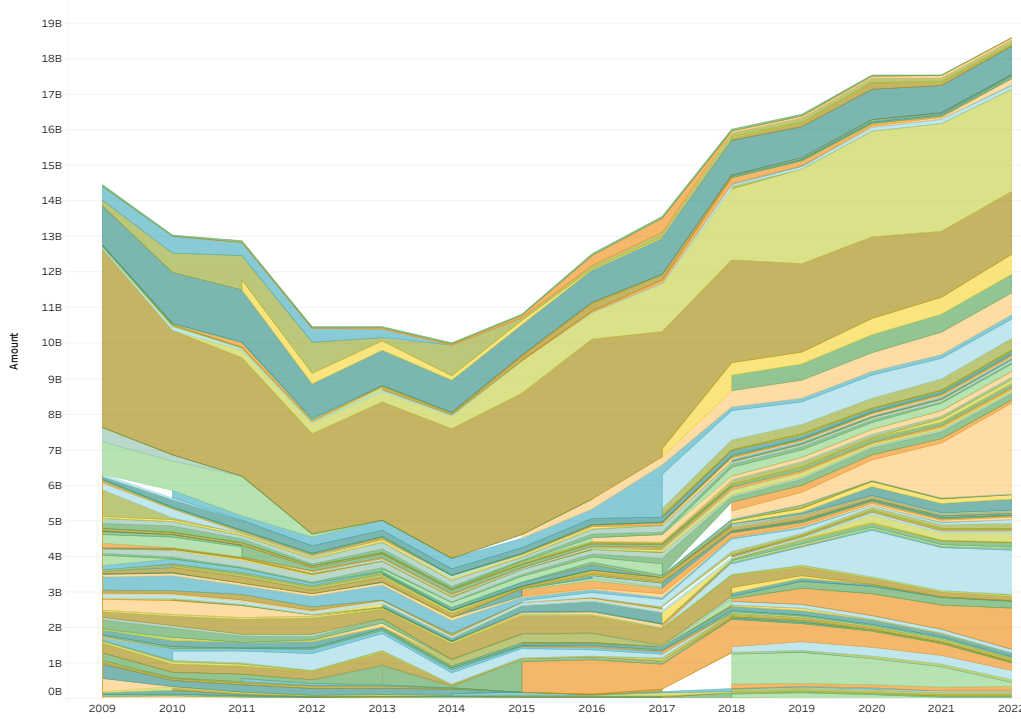
Source: DoD budget data from VisualDOD. Analysis in Tableau.

FIGURE 5-15: RDT&E BA 6.4 FUNDING IN PB18, COMPARED TO PB17



Source: DoD budget data from VisualDOD. Analysis in Tableau.

FIGURE 5-16: RDT&E 6.4 PROGRAMS, FY09–FY22 (PROJECTED)

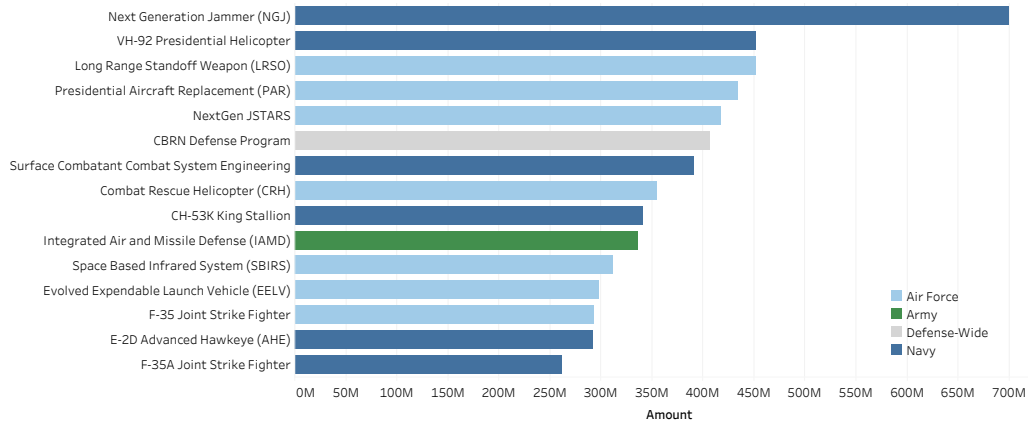


Source: DoD budget data from VisualDOD. Analysis in Tableau.

6.5: System Development and Demonstration

Evaluating the Services' RDT&E funding for RDT&E budget activity 6.5, system development and demonstration, illustrates what programs and systems should be available within ten years and what technologies are mature. Within the FY 2018 request, the preponderance of effort is for systems that have been underway for some time, with the exception of the LRSO and the Army's devotion of additional resources to integrated air and missile defense research (see Figure 5-17).

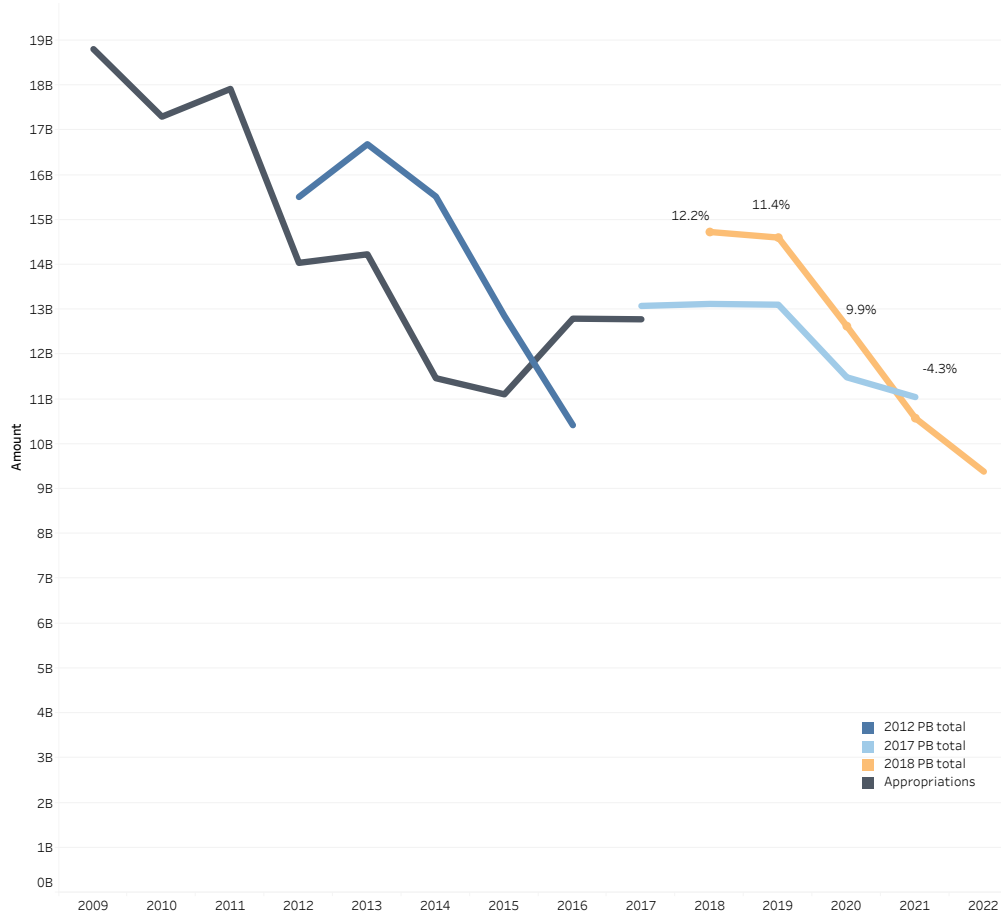
FIGURE 5-17: FY18 LARGEST SYSTEM DEVELOPMENT & DEMONSTRATION PROGRAMS



Source: DoD budget data from VisualDOD. Analysis in Tableau.

Looking at total funding across the full FYDP from FY 2018 through FY 2022 allows a fuller view of the systems that are moving through the acquisition pipeline and their relative scale of funding. The Trump administration's PB 2018 RDT&E largely continues the Obama administration's PB 2017 efforts within the system development and demonstration budget activity of RDT&E funds, which is for programs that are in the EMD stage after Milestone B but before the Milestone C decision to move forward with initial low-rate production, with only a modest increase in funding (see Figure 5-18).

FIGURE 5-18: RDT&E BA 6.5 FUNDING IN PB18, AS COMPARED TO PAST BUDGETS



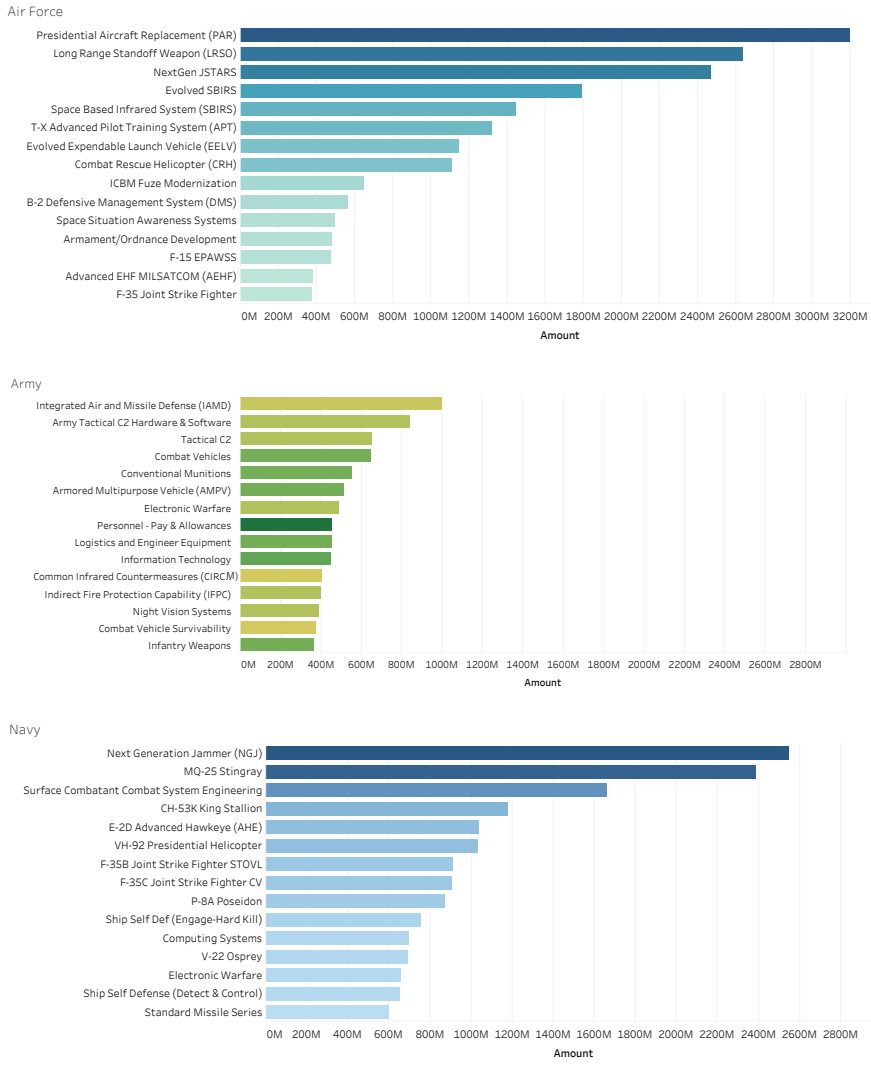
Source: DoD budget data from VisualDOD. Analysis in Tableau.

Within the Air Force, system development and demonstration funds are concentrated in air, nuclear, and space programs, including the presidential aircraft replacement, development costs for a new T-X trainer aircraft, B-2 improvements, the nuclear LRSO and ongoing efforts to replace the ICBM fuzes, various elements of the Space-Based Infrared satellite system (SBIRS), the Advanced Extremely High Frequency (AEHF) satellite, and space situational awareness systems. For the Navy, the largest programs include the continuing effort of the next-generation jammer; sustained focus on nearly mature or existing naval aviation platforms including the F-35, the CH-53K, the P-8 Poseidon, and the E-2D Hawkeye; and ongoing work on surface combatant engineering and ship self-defense. The largest new area of effort is the MQ-25 unmanned tanker/ISR aircraft, to which the Navy will devote $2.4 billion in 6.5 funds over the FYDP.

The Army's efforts, lacking major procurement programs underway, offer more nimbleness to the changing security environment and the challenges posed by the growth and spread of A2/AD capabilities, as well as the increasing need to operate in a contested, high-end

ground combat environment. Major investment areas include integrated air and missile defense, indirect fire protection capability (IFPC), tactical command and control systems, electronic warfare, ground vehicles, armored multi-purpose vehicles, and combat vehicle survivability (see Figure 5-19).

FIGURE 5-19: PB18 LARGEST SYSTEM DEVELOPMENT RDT&E PROGRAMS FY18–FY22 (PROJECTED)



Source: DoD budget data from VisualDOD. Analysis in Tableau.

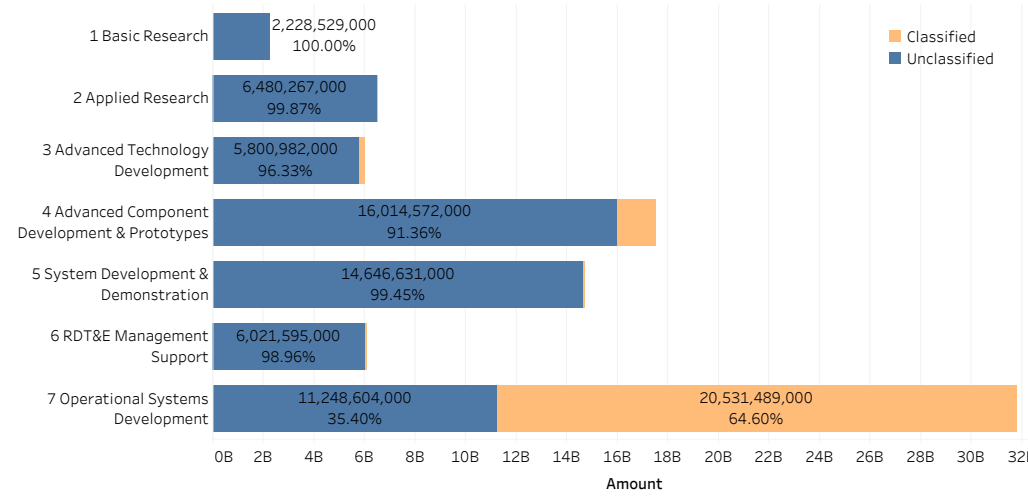
6.6: RDT&E Management Support

The RDT&E management support budget activity funds RDT&E facilities, test ranges, and the operating costs of test systems. The PB 2018 requests $6.1 billion for RDT&E management support in FY 2018, amounting to 7 percent of the total RDT&E request. This is a $1.5 billion increase from the $4.5 billion requested in FY 2017, due predominantly to shifting the costs of some civilian personnel in the acquisition workforce from the O&M account to the 6.6 budget activity of RDT&E.

6.7: Operational System Development

This RDT&E budget activity funds upgrades to systems that are currently in production or that exist in the force. It is the area of the RDT&E budget that receives the most funding. At a requested $31.7 billion in FY 2018, 6.7 efforts for extant or in-production systems would represent about 40 percent of the overall DoD RDT&E budget. In the FY 2018 request, $20.5 billion (or 65 percent) would go to classified programs. BA 7 is where the vast majority—92 percent—of classified RDT&E funding is allocated (see Figure 5-20).

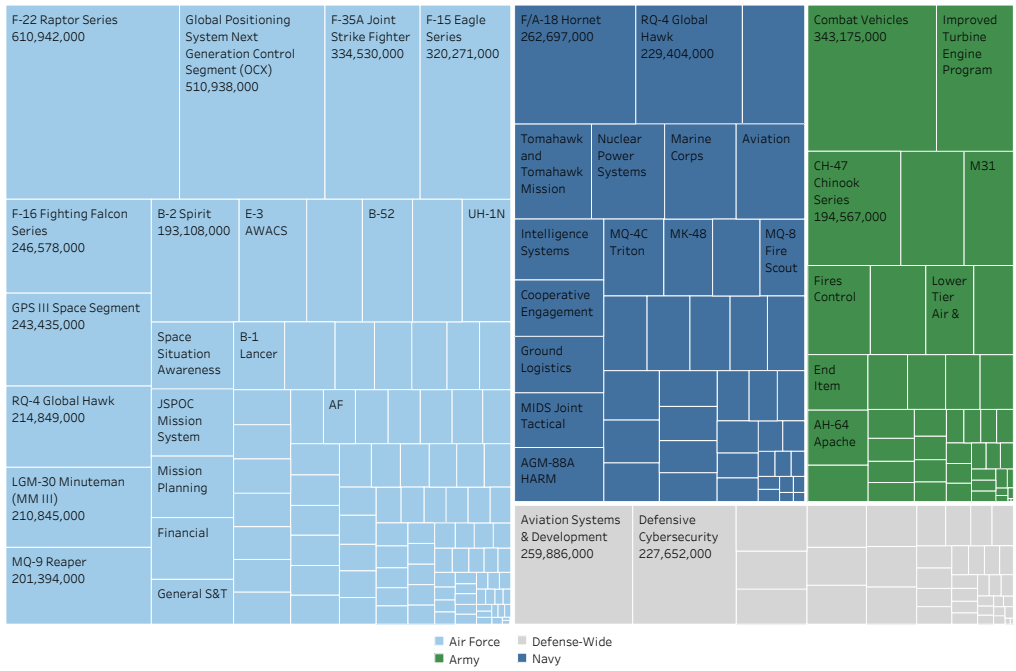
FIGURE 5-20: CLASSIFIED AND UNCLASSIFIED FUNDING IN RDT&E BUDGET ACTIVITIES, PB18



Source: DoD budget data from VisualDOD. Analysis in Tableau.

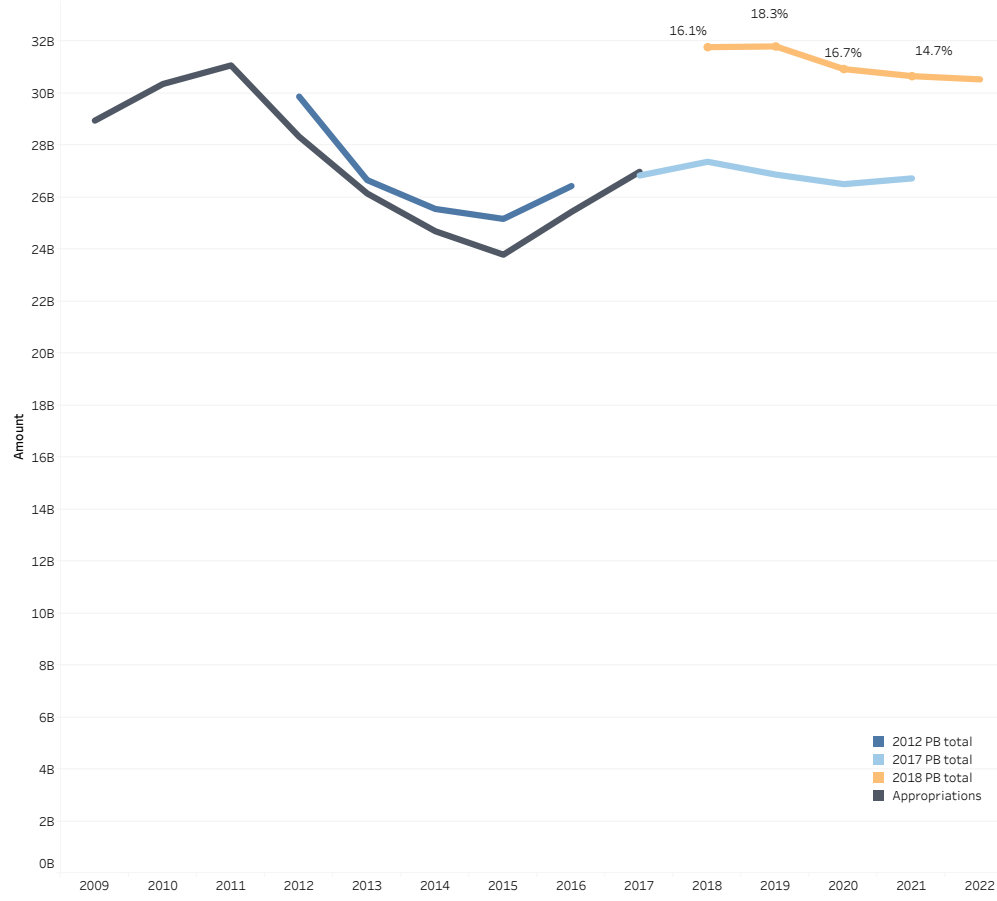
The remaining $11.2 billion of non-classified funding requested in 6.7 is scattered among DoD's existing programs, with substantial investments in current combat aircraft, principally the F-22 Raptor, the B-2 Spirit bomber, the F-15 Eagle, and the F-35; space systems, including GPS III OCX and the space segment; the Minuteman III ICBM; the MQ-9 Reaper and RQ-9 Global Hawk UAVs; and improvements to current guided missiles, aircraft propulsion, and ground vehicles (see Figure 5-21). Overall, PB 2018 anticipates RDT&E funding for operational systems development to rise by 15 to 18 percent more annually than projected in the PB 2017, depending on the fiscal year. From current levels, funding will still decline slightly to $30.5 billion by FY 2022, some $3.5 billion more than appropriated in FY 2017 (see Figure 5-22).

FIGURE 5-21: FY18 RDT&E BA 7 OPERATIONAL SYSTEM DEVELOPMENT FUNDING



Source: DoD budget data from VisualDOD. Analysis in Tableau.

FIGURE 5-22: RDT&E BA 7 FUNDING IN PB18, AS COMPARED TO PAST BUDGETS

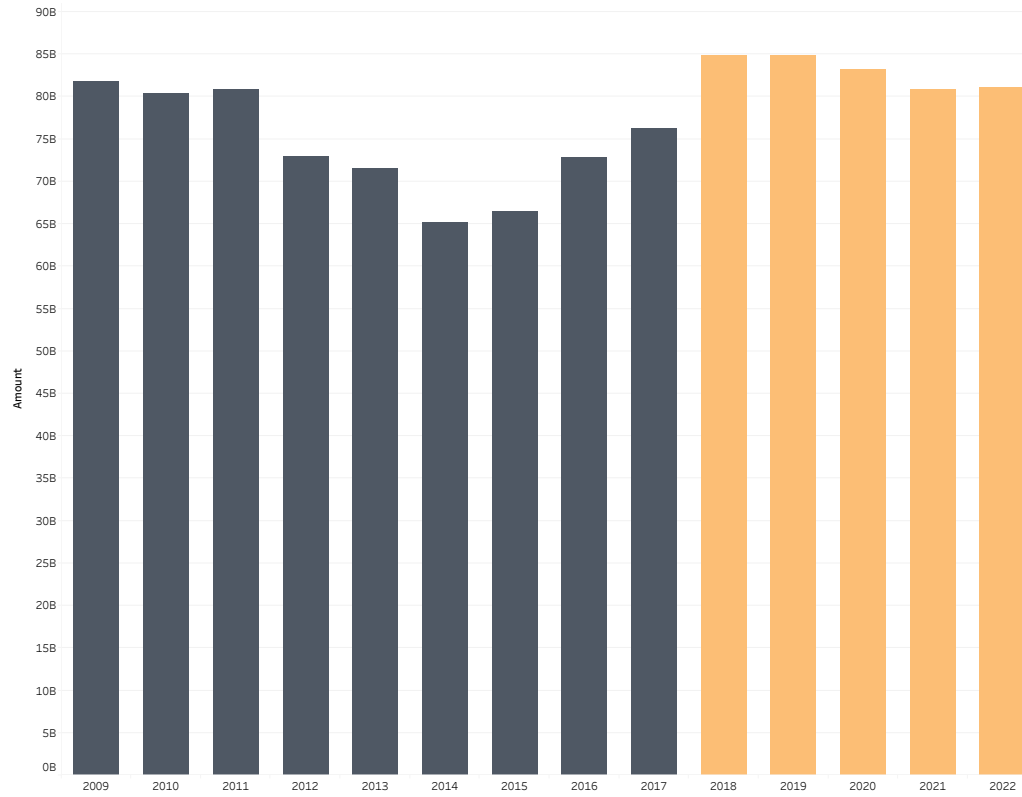


Source: DoD budget data from VisualDOD. Analysis in Tableau.

Trends

Since a recent peak of $81.7 billion in FY 2009, RDT&E funding declined rapidly to just $65 billion in FY 2014, falling from 16 percent of the total defense budget to 11 percent. However, over the past three years RDT&E funding has risen steadily to $76.2 billion in the FY 2017 appropriations. The FY 2018 request would bring RDT&E funding to $84.8 billion, the highest it has been within the past decade (see Figure 5-23).

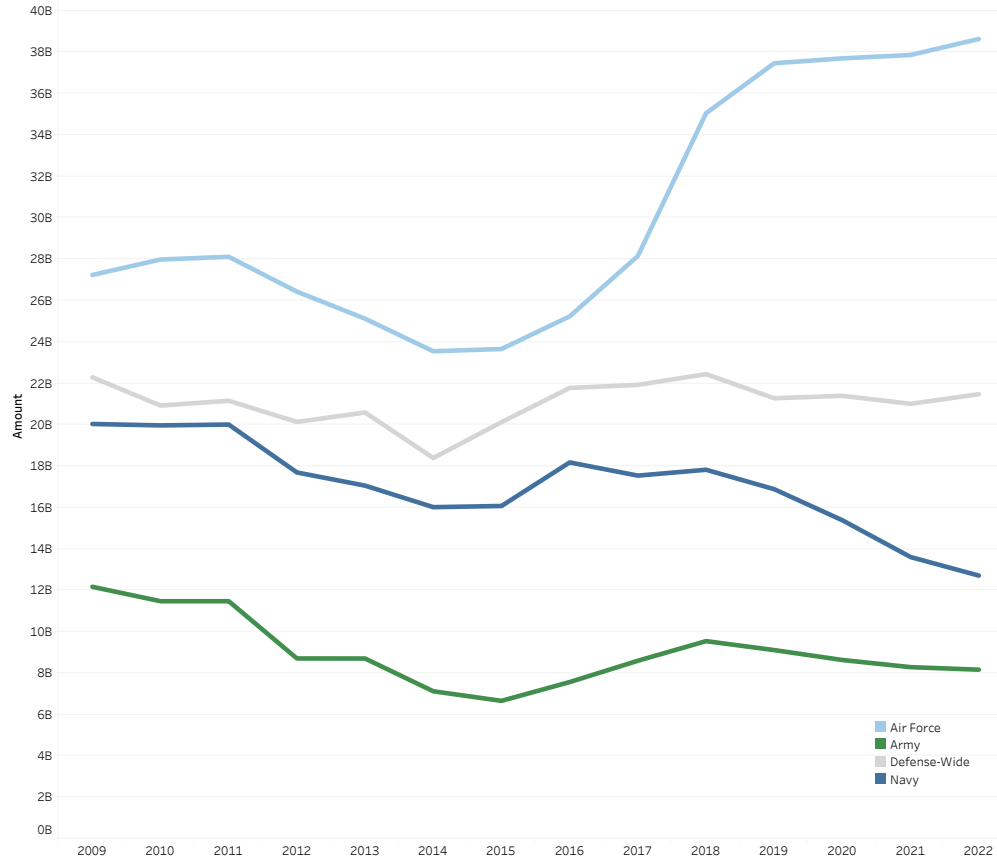
FIGURE 5-23: RDT&E FUNDING HISTORY AND PB18 REQUEST



Source: DoD budget data from VisualDOD. Analysis in Tableau.

In accordance with this overall trend, funding for each of the Service's RDT&E portfolios declined rapidly between FY 2009 and FY 2014. Excluding classified programs, the Army's RDT&E funding fell most sharply over that time frame, from a peak of $12 billion in FY 2009 to a low of $6.5 billion in FY 2015, a drop-off of nearly 50 percent. Similarly, the Navy's RDT&E funding fell from $17.2 billion in FY 2009 to a low of $12 billion in FY 2014, a decline of 29 percent. DoD-wide RDT&E funding experienced a shallower decline, from $17.5 to $14.6 billion, a decline of 16.5 percent. Finally, the Air Force's "blue", or actual, RDT&E dropped from $17.2 billion to a low of $12.5 billion in FY 2015, a decline of 27.5 percent. Since their respective low points in FY 2014 or FY 2015, each the Services has seen steady growth in its overall RDT&E funding as successive budgets have tried to protect long-term modernization funding. However, with the exception of DoD-wide RDT&E, funding for each of the Services remains $500 million to $3 billion below the prior highs. The PB 2018 RDT&E request accelerates this restoration of RDT&E funding, but does not make up for the foregone investments and time to develop new technologies and capabilities and modernize the current force.

FIGURE 5-24: RDT&E FUNDING HISTORY AND PB18 REQUEST BY SERVICE, EXCLUDING CLASSIFIED PROGRAMS



Source: DoD budget data from VisualDOD. Analysis in Tableau.

CHAPTER 6

Procurement

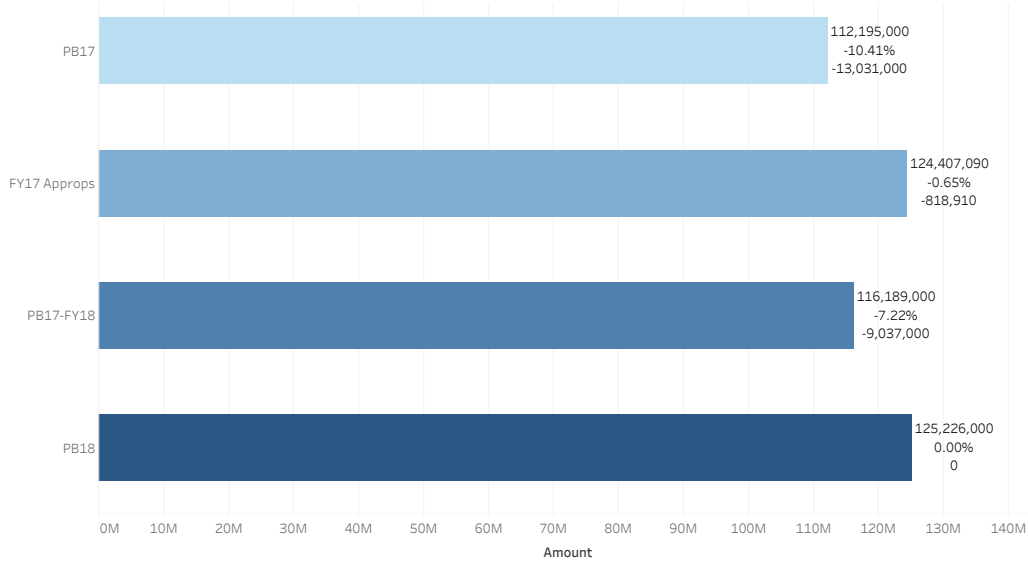
Overview

Although increased capacity and lethality are the second priority of the Pentagon's PB 2018 budget request behind restoring the readiness of the current force, funding for procurement increases far less than for RDT&E and O&M accounts in real terms.[81] In the PB 2018 request, the Trump administration asked for a total of $125.2 billion in procurement funds, with $115 billion in the base discretionary budget and an additional $10.2 billion in OCO. This is $9.04 billion (or 7.8 percent) more than anticipated for FY 2018 in the PB 2017 request. However, the PB 2018 request is only 0.65 percent larger than what Congress appropriated for procurement in FY 2017, an increase of $819 million (see Figure 6-1). Per Secretary Mattis' memorandum on DoD budget guidance, the NDS currently being developed will include a new force-sizing construct that will "inform our targets for future force structure growth." Accordingly, PB 2019, driven by the results of the NDS, will contain "ramps to grow the force quickly but responsibly."[82] This phased approach to increasing the size of the military means that any substantial growth in procurement funding over prior years' budgets will occur in the PB 2019 budget request at the earliest, rather than in PB 2018.

81 Secretary of Defense Mattis, "Department of Defense Budget Posture Hearing," SASC, June 13, 2017.

82 Secretary of Defense Mattis, "Implementation Guidance for Budget Directives in the National Security Presidential Memorandum on Rebuilding the U.S. Armed Forces," January 31, 2017.

FIGURE 6-1: PB18 PROCUREMENT REQUEST, AS COMPARED TO PB17 AND FY17 APPROPRIATIONS



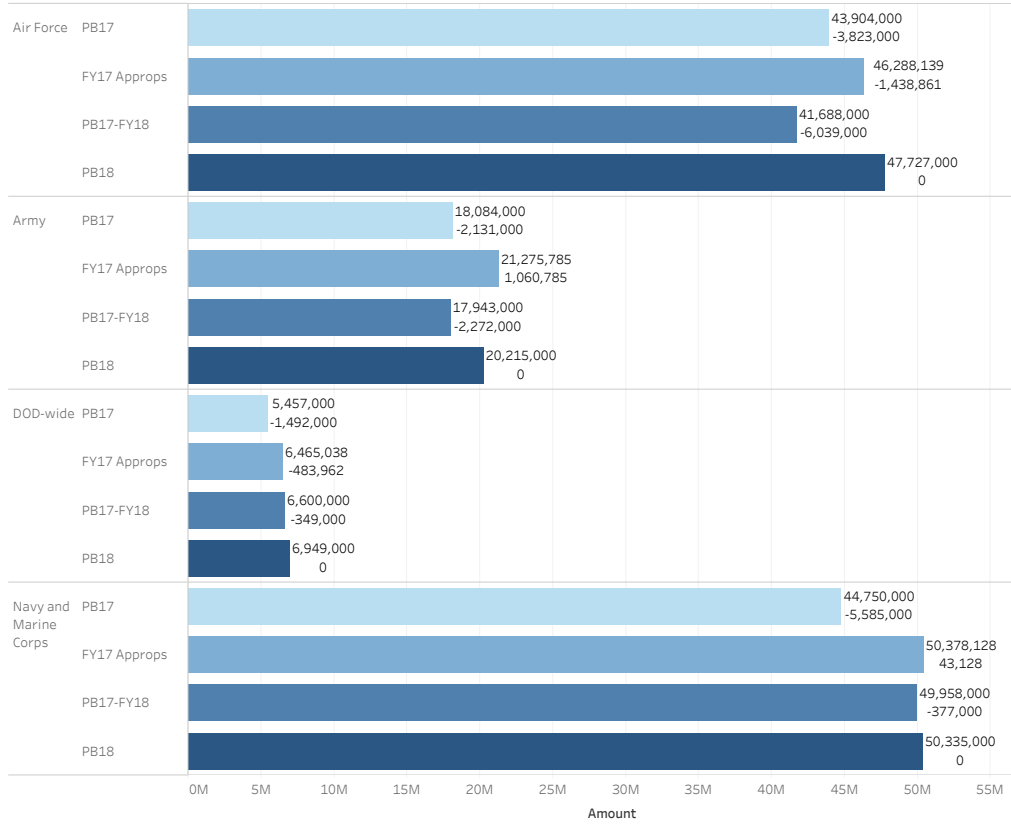
Source: OMB, Budget Analysis Branch, *Public Budget Database: Budget of the United States Government, Fiscal Year 2018, Budget Authority* (Washington, DC: OMB, May 2017), available at https://www.gpo.gov/fdsys/pkg/BUDGET-2017-DB/xls/BUDGET-2017-DB-1.xls. Analysis in Tableau.

Note: Dollars in thousands.

2018 Request

Procurement funding, at $125.2 billion, accounts for 19.6 percent of DoD's discretionary budget request for FY 2018. The FY 2018 request for procurement funds is $9 billion higher than the PB 2017 projection for procurement funding in FY 2018, an increase of 7.8 percent. The biggest beneficiary from this requested increase, compared to the PB 2017 plan for FY 2017, is the Air Force. The Air Force's FY 2018 request is $6 billion (or 14.5 percent) larger than the projected FY 2018 request was in the PB 2017. The Army's FY 2018 procurement request is $2.3 billion larger than the PB 2017 projected, an increase of 12.7 percent. By contrast, the Navy and DoD-wide procurement PB 2018 requests were only slightly larger than those projected in the PB 2017. The Navy requested an additional $377 million, an increase of 0.75 percent, while DoD-wide programs requested an additional $350 million, a 5.3 percent increase (see Figure 6-2).

FIGURE 6-2: TOPLINE PB18 PROCUREMENT REQUEST BY SERVICE, AS COMPARED TO PB17 AND FY17 APPROPRIATIONS



Source: OMB, Public Budget Database FY18. Analysis in Tableau.

Note: Dollars in thousands.

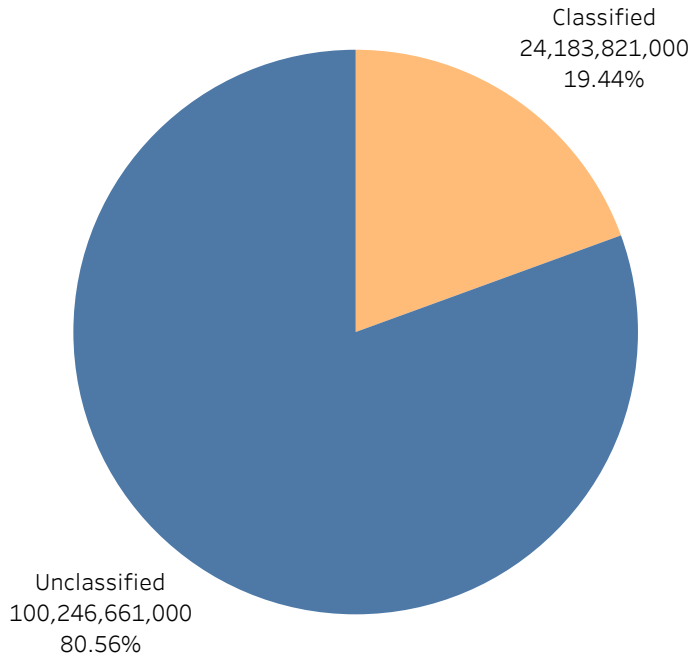
The overall PB 2018 procurement request is more modest when compared with the amount appropriated by Congress for FY 2017. The PB 2018 request for $125.2 billion for procurement is just 0.65 percent more than the $124.4 billion appropriated for FY 2017, resulting in near-flat growth in real terms. This is also reflected in the Service's procurement requests. Compared to the FY 2017 appropriations, only the Air Force and DoD-wide accounts would see real increases to procurement funding, while the Army and Navy would see decreases.

The Air Force requested a total of $47.7 billion in procurement funding for FY 2018. This amount is 3.1 percent, or $1.4 billion, more than the $46.3 billion appropriated in FY 2017. DoD-wide procurement would also see modest growth. At $6.9 billion, the DoD-wide procurement request is 7.5 percent greater than the $6.5 billion enacted in FY 2017. The Army's request for $20.2 billion in FY 2018 is actually $1.1 billion less than the $21.3 billion appropriated in FY 2017, or 5 percent lower. The Navy's FY 2018 request for $50.3 billion is $43 million lower than its FY 2017 appropriations for an effective flatline.[83]

Of the total $125.2 billion requested in FY 2018, $24.2 billion (or 19 percent) is for classified procurement programs (see Figure 6-3). This is an increase of $1 billion over the funding appropriated for classified procurement programs in FY 2017. Classified programs represent the single largest category of procurement funding requested in FY 2018. Because the Air Force's budget is traditionally the pass-through for classified funding, about 45 percent of the Air Force's FY 2018 procurement request, or $21.8 billion, is classified. However, the other military departments and DoD-wide funds also include some proportion of classified funds. Although none approaches the Air Force's proportion, about 24 percent of the DoD-wide procurement request and 2 percent of the Navy's request would fund classified programs (see Figure 6-4).

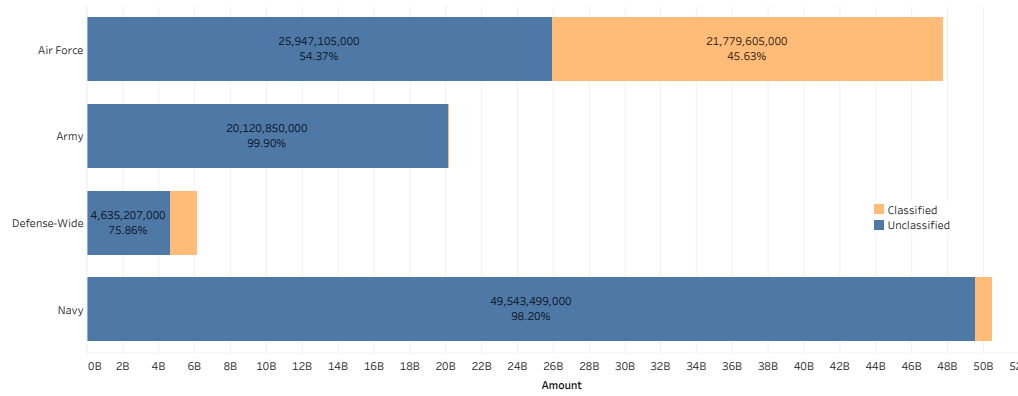
83 OMB, Budget Analysis Branch, *Public Budget Database: Budget of the United States Government, Fiscal Year 2018, Budget Authority* (Washington, DC: OMB, May 2017), available at https://www.gpo.gov/fdsys/pkg/BUDGET-2017-DB/xls/BUDGET-2017-DB-1.xls. Analysis in Tableau.

FIGURE 6-3: CLASSIFIED AND UNCLASSIFIED PROCUREMENT FUNDED REQUESTED IN FY18



Source: DoD budget data from VisualDOD. Analysis in Tableau.

FIGURE 6-4: FY18 REQUEST FOR CLASSIFIED AND UNCLASSIFIED PROCUREMENT BY DEPARTMENT



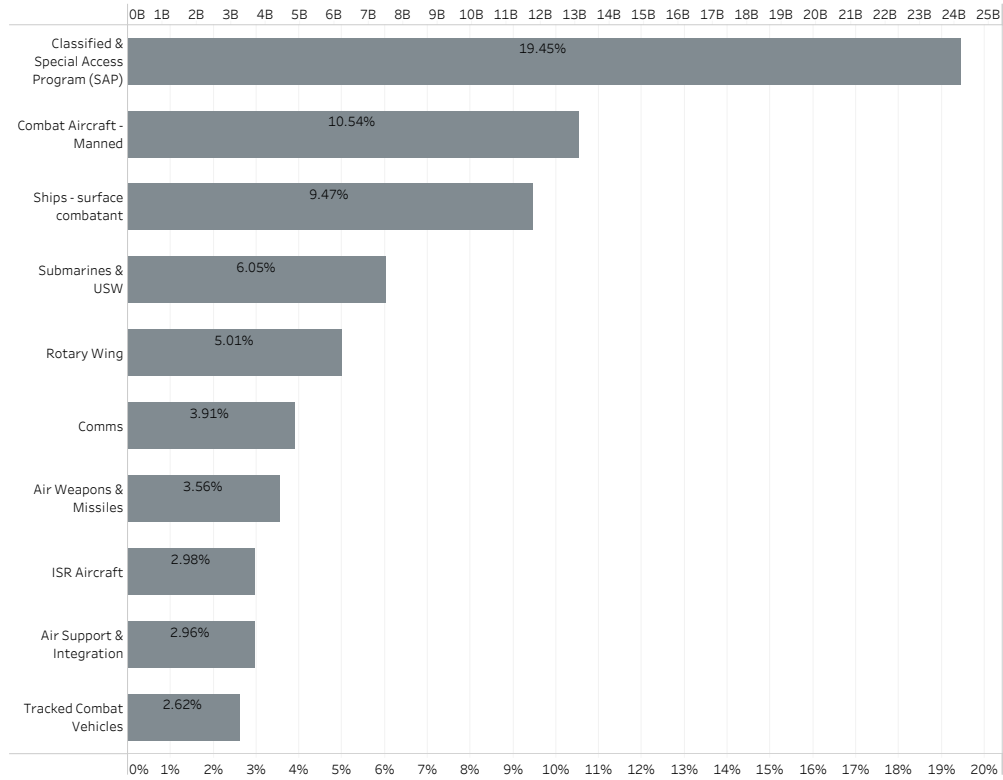
Source: DoD budget data from VisualDOD. Analysis in Tableau.

After classified programs, manned combat aircraft make up the next largest category of requested procurement funding in FY 2018 at $13.5 billion, or 10.5 percent of the total procurement budget. Combat aircraft are followed by surface combatant ships at $11.7 billion, or 9.5 percent; submarines and undersea warfare programs at $7.5 billion, or 6 percent; rotary wing systems at $6.2 billion, or 5 percent; and communications systems at $4.8 billion, or 3.9 percent (see Figure 6-5).

Overall, the F-35 Lightning is the most expensive procurement program currently underway, accounting for 7.4 percent of the total procurement funding requested for FY 2018 at a cost of $9.1 billion. This will purchase 70 F-35s: 46 F-35As for the Air Force at a cost of $5.4 billion, and four F-35Cs for the Navy along with 20 F-35Bs for the Marine Corps at a cost of $3.7 billion. The next most expensive programs are the *Virginia*-class submarine at $5.4 billion in FY 2018 for two submarines, $4.4 billion for partial funding of the *Ford*-class carrier, and $4.1 billion for two DDG-51 *Burke*-class destroyers, followed by $2.5 billion for 15 KC-46A Pegasus refueling tankers and $2.3 billion for 14 F/A-18 Hornets. The largest single Army program, the M1 Abrams modernization, is the 15th-largest procurement program in FY 2018 at $1.1 billion, or 0.9 percent of the total FY 2018 procurement request (see Figure 6-6).

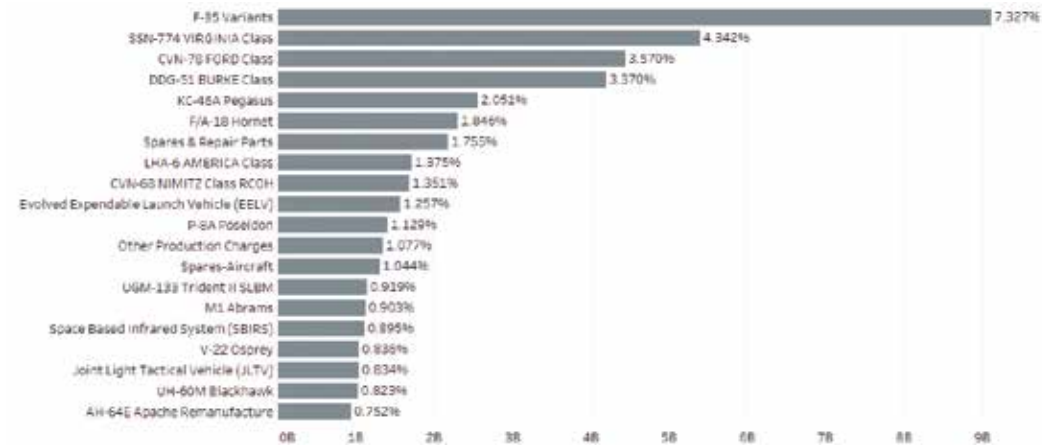
Following Secretary Mattis' directive to postpone a serious defense buildup until after the NDS and the incorporation of the NDS results into the PB 2019 request, the PB 2018 largely tracks the procurement levels anticipated by the Obama administration's PB 2017 budget in FY 2019, FY 2020, and FY 2021 (see Figure 6-7). However, even at this presumably lower level of anticipated procurement funding, looking across the PB 2018 FYDP provides insights into what the major procurement programs are likely to be. With this caveat, the six largest programs described above will continue to be the largest six procurement programs across the five years encompassed by the FYDP, from FY 2018 to FY 2022. Across this time frame, the PB 2018 anticipates spending $51.4 billion on F-35 variants. The Air Force anticipates purchasing 250 F-35As, rising to a production rate of 54 aircraft annually by FY 2021. The Marine Corps will purchase 102 F-35Bs, while the Navy will purchase 77 F-35Cs, rising from four in FY 2018 to 24 by FY 2021. Lacking additional shipbuilding funding, the Navy's anticipated shipbuilding within the FYDP is effectively a re-run of the FY 2017 shipbuilding plan at $30.2 billion for *Virginia*-class submarines, procuring ten over the FYDP at a rate of two per year; $21.4 billion for DDG-51 *Burke*-class destroyers, procuring ten over the FYDP at a rate of two per year; and $13.6 billion for one *Ford*-class carrier and advance procurement funding for the next ship. The PB 2018 also pencils in the Navy spending $13.9 billion on 80 F/A-18 E/F Hornets and the Air Force spending $14.3 billion on 75 KC-46A Pegasus refueling tankers, procuring at a steady rate of 15 annually across the FYDP (see Figure 6-8).

FIGURE 6-5: FY18 REQUESTED PROCUREMENT FUNDING BY CATEGORY



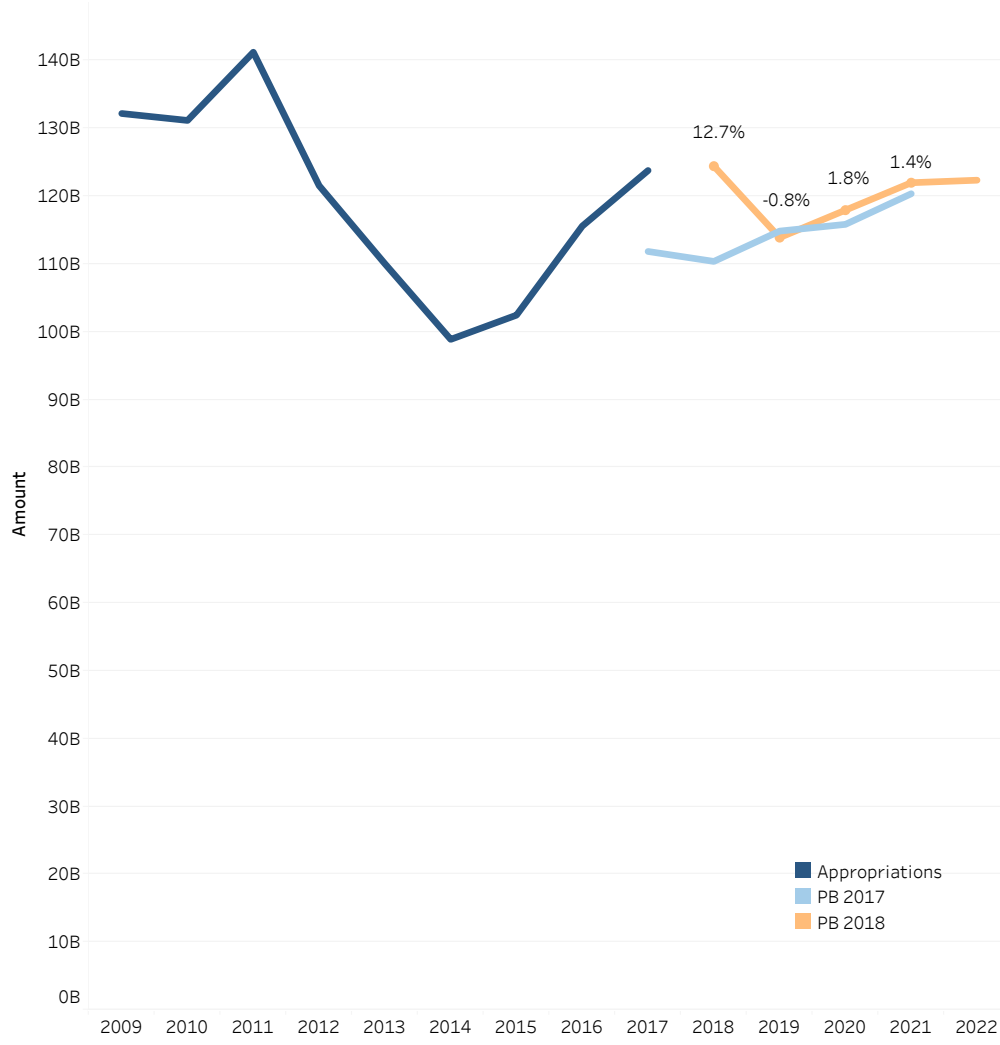
Source: DoD budget data from VisualDOD. Analysis in Tableau.

FIGURE 6-6: LARGEST PROCUREMENT PROGRAMS IN FY18



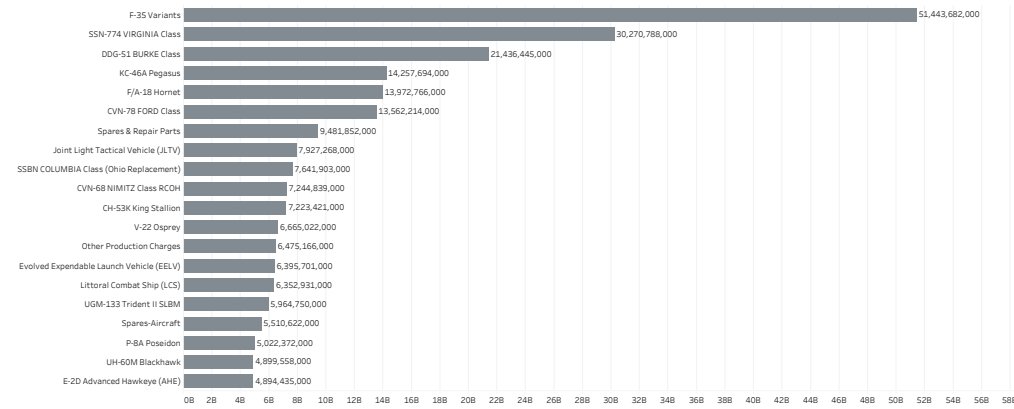
Source: DoD budget data from VisualDOD. Analysis in Tableau.

FIGURE 6-7: PROCUREMENT FUNDING IN PB18 AS COMPARED TO PB17 AND APPROPRIATED FUNDING



Source: DoD budget data from VisualDOD. Analysis in Tableau.

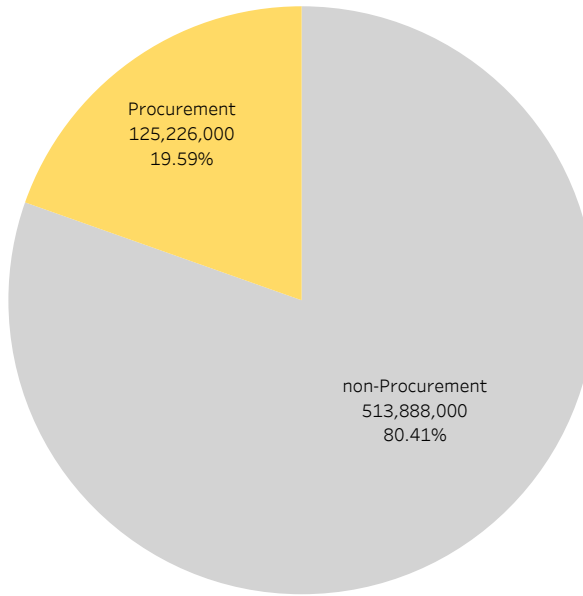
FIGURE 6-8: LARGEST PROCUREMENT PROGRAMS FY18-FY22



Source: DoD budget data from VisualDOD. Analysis in Tableau.

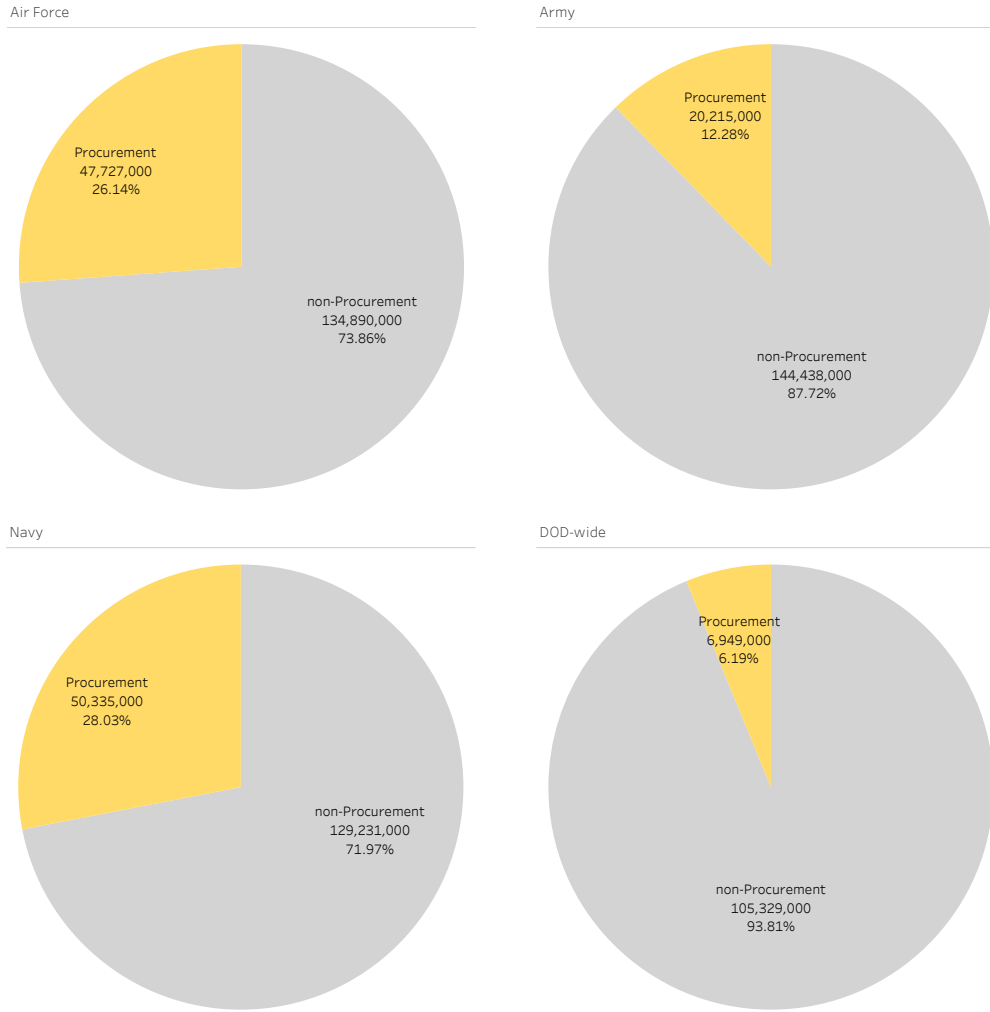
Procurement funds are not evenly distributed across the Services. Procurement accounts for 26 percent of the Air Force's overall budget request for FY 2018 at $47.7 billion and 28 percent of the Navy's budget request at $50.3 billion. Procurement is a much smaller fraction of the Army's budget at just 12.3 percent, or $20.2 billion. Procurement also comprises 6 percent of DoD-wide funding (see Figure 6-9 and Figure 6-10). As capital-intensive Services, the Air Force and Navy account for 38 percent and 40 percent of the total FY 2018 procurement request, respectively. The Army's procurement programs make up 16 percent of the overall DoD procurement profile, while DoD-wide procurement programs make up 5.5 percent (see Figure 6-11). However, because the Air Force is the traditional pass-through for classified programs, the large proportion of classified funding distorts the apparent level of the "blue," or actual, Air Force budget. Excluding classified funding, the Navy accounts for half of the total procurement request. The Air Force's procurement budget is much smaller at $25.9 billion, or 26 percent of the non-classified procurement total, while the Army's share of $20.2 billion is 20 percent of that total. Non-classified defense-wide procurement funding, primarily for missile defense programs and IT and communications equipment, accounts for $4.6 billion (or 5 percent) (see Figure 6-12).

FIGURE 6-9: FY18 REQUEST FOR PROCUREMENT FUNDING OVERALL



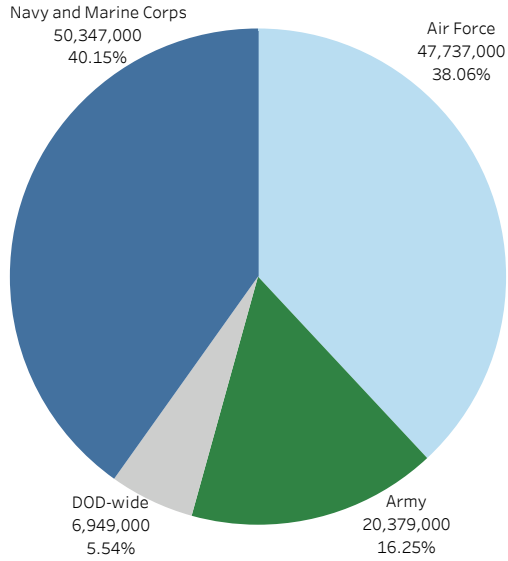
Source: OMB, Public Budget Database FY18. Analysis in Tableau.
Note: Dollars in thousands.

FIGURE 6-10: FY18 REQUEST FOR PROCUREMENT FUNDING BY MILITARY DEPARTMENT, AS A SHARE OF EACH DEPARTMENT'S OVERALL REQUEST



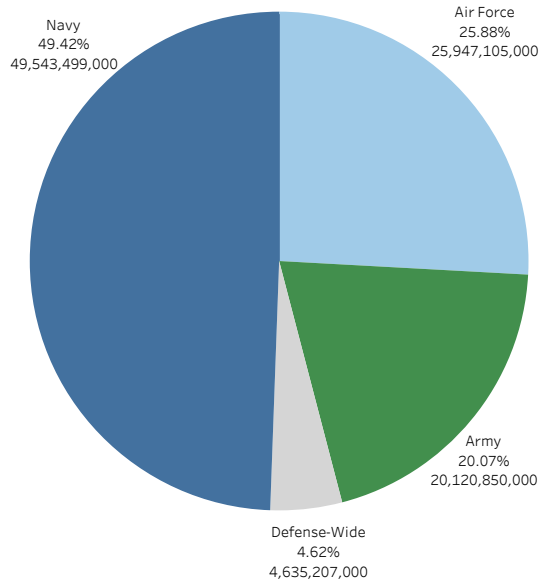
Source: OMB, Public Budget Database FY18. Analysis in Tableau.
Note: Dollars in thousands.

FIGURE 6-11: FY18 PROCUREMENT FUNDING REQUESTED BY MILITARY DEPARTMENT, INCLUDING CLASSIFIED PROGRAMS



Source: OMB, Public Budget Database FY18. Analysis in Tableau.
Note: Dollars in thousands.

FIGURE 6-12: FY18 PROCUREMENT FUNDING REQUESTED BY MILITARY DEPARTMENT, EXCLUDING CLASSIFIED PROGRAMS



Source: DoD budget data from VisualDOD. Analysis in Tableau.

Service Procurement Details

Air Force

Excluding classified programs, the Air Force's FY 2018 procurement request totals $25.9 billion, an increase of $1 billion over the amounts appropriated in FY 2017 and $1.7 billion more than the PB 2017 anticipated for FY 2018 (see Figure 6-13).

This additional procurement funding is predominantly in the Missile Procurement, Ammunition, and Other Procurement accounts, with $487 million, $702 million, and $591 million in additional funding, respectively, compared to the PB 2017 projections for FY 2018. Aircraft procurement sees $271 million more than expected in the PB 2017. However, the PB 2018 request for space procurement is $349 million lower than the FY 2018 funding levels anticipated in the PB 2017, driven by postponement of the GPS III space vehicle from FY 2018 to FY 2019 and despite additional funding for the SBIRS (see Figure 6-14).

The largest Air Force programs are the F-35A Lightning Joint Strike Fighter, which accounts for 21 percent of the Air Force's total FY 2018 procurement request, followed by the KC-46A Pegasus refueling tanker, the Evolved Expendable Launch Vehicle (EELV), other production charges, aircraft spares, and the SBIRS. Overall, space systems account for $3.2 billion of the Air Force's unclassified procurement request for FY 2018, while C4ISR systems account for $1.6 billion (see Figure 6-15).

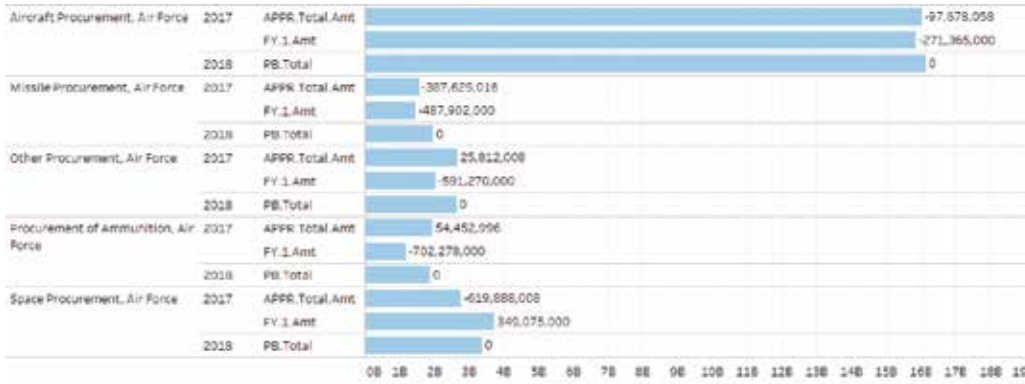
Due to falling production costs, the PB 2018 Air Force request would fund 46 F-35A Lightnings for $5.32 billion, two more than the 44 that PB 2017 anticipated purchasing in FY 2018 for $5.38 billion. Similarly, the FY 2018 request would fund 15 KC-46A Pegasus refueling tankers for $2.55 billion, well below the $3.04 billion that the PB 2017 anticipated would be necessary for the same number of planes. The Air Force will apply these savings, as well as the additional funding requested, to increasing procurement of spares and repair equipment by over 60 percent in an effort to boost reliability. The Air Force request would also fund modifications and upgrades to much of its existing fleet, including the F-22 Raptor, F-15 Eagle, and F-16 Falcon fighters; the EC-130H Compass Call electronic warfare plane; the HC/MC-130 Hercules family of cargo and special forces planes; and the C-130J Super Hercules cargo plane.

The Air Force, like the other Services, also requests funding to dramatically increase its stockpiles of advanced munitions. In FY 2018, the Air Force requests $441 million to procure 360 Joint Air-Surface Standoff Missiles–Extended Range (JASSM-ER); $371 million for 4,579 Small-Diameter Bombs, a three-fold funding increase over the PB 2017 plan; and $329 million for 399 Hellfire missiles, an eight-fold increase over the PB 2017 funding projection for FY 2018.

FIGURE 6-13: AIR FORCE PROCUREMENT REQUEST IN PB18 AS COMPARED TO FY17 APPROPRIATIONS AND PB17 FY18 PROJECTION

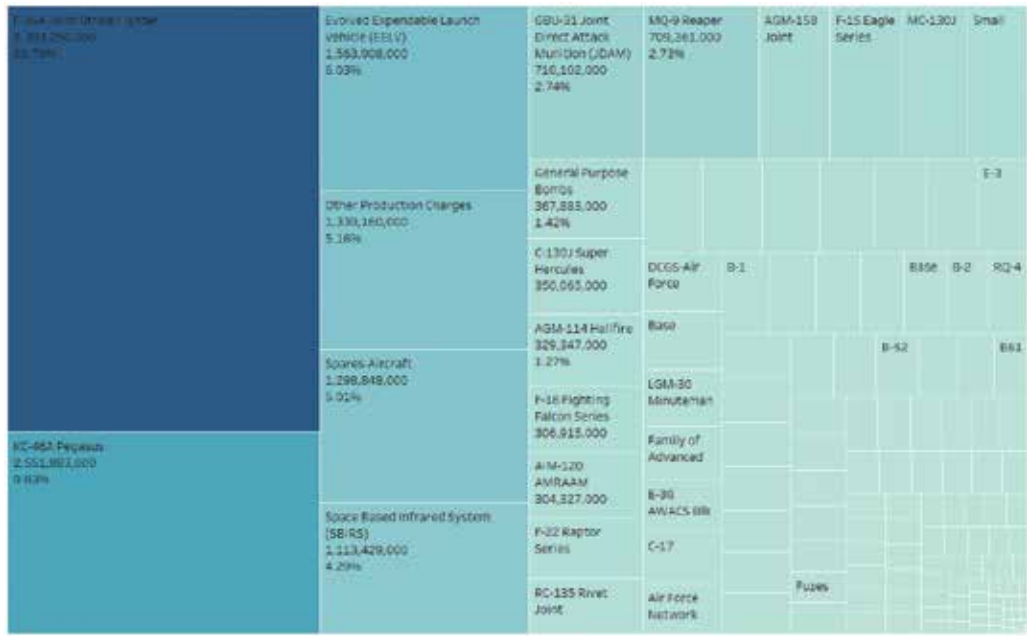
Source: DoD budget data from VisualDOD. Analysis in Tableau.

FIGURE 6-14: AIR FORCE PB18 PROCUREMENT REQUEST BY ACCOUNT, AS COMPARED TO FY17 APPROPRIATIONS AND PB17 FY18 PROJECTIONS



Source: DoD budget data from VisualDOD. Analysis in Tableau.

FIGURE 6-15: FY18 AIR FORCE PROCUREMENT PROGRAMS



Source: DoD budget data from VisualDOD. Analysis in Tableau.

Army

Excluding classified programs, the Army's FY 2018 procurement request totals $20.2 billion, an increase of $410 million over the amounts appropriated in FY 2017 and $2.4 billion more than the PB 2017 anticipated for FY 2018 (see Figure 6-16).

This additional procurement funding is predominantly in the missile procurement and ammunition accounts, which see increases of $1.2 billion and $420 million, respectively, compared to the PB 2017 projections for FY 2018. The wheeled and tracked combat vehicle account also sees $671 million more than expected compared to the PB 2017 projections. Compared to the PB 2017 projection for FY 2018, the aircraft procurement and other procurement accounts show little change (see Figure 6-17). Overall, communications and electronics equipment is the single largest sub-category within the Army's FY 2018 procurement request at $4 billion, or 20 percent of the total. Tracked vehicles are the second largest sub-category at $3.4 billion (or 17 percent), followed by aircraft at $2.9 billion, missiles at $2.3 billion, and ammunition at $1.5 billion.

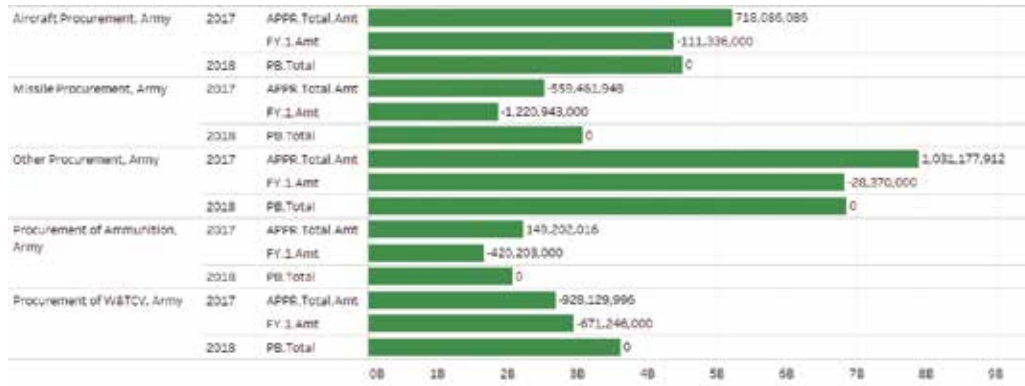
According to Army budget materials, the top 10 Army modernization priorities are, in order, air and missile defense; long-range fires; remedying the munitions shortfall; improving the mobility, lethality, and protection of Brigade Combat Teams; active protection systems; assured Precision, Navigation, and Timing (PNT); electronic warfare and signals intelligence;

offensive and defensive cyber; assured communications; and vertical lift.[84] By funding levels, the largest Army programs in FY 2018 are the M1A1 Abrams, the UH-60M Blackhawk, remanufacture of the AH-64E Apache helicopter, the Paladin Integrated Management artillery system, the Joint Light Tactical Vehicle, and the M31 Guided Multiple Launch Rocket System (GMLRS) (see Figure 6-18).

FIGURE 6-16: ARMY PROCUREMENT REQUEST IN PB18 AS COMPARED TO FY17 APPROPRIATIONS AND PB17 FY18 PROJECTION

Source: DoD budget data from VisualDOD. Analysis in Tableau.

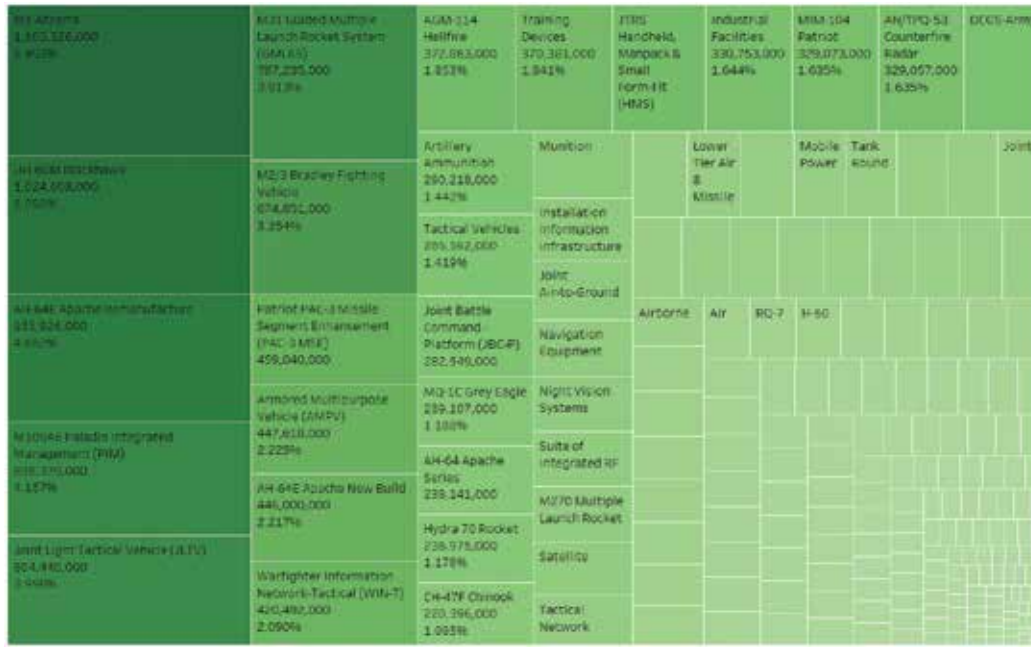
FIGURE 6-17: ARMY PB18 PROCUREMENT REQUEST BY ACCOUNT, AS COMPARED TO FY17 APPROPRIATIONS AND PB17 FY18 PROJECTIONS



Source: DoD budget data from VisualDOD. Analysis in Tableau.

84 Thomas A. Horlander, "Army FY 2018 Budget Overview," U.S. Army briefing, May 2017, slide 10, available at http://www.nationalguard.mil/Portals/31/Documents/PersonalStaff/LegislativeLiaison/FY2018/fy2018-army-budget-overview-060817.pdf.

FIGURE 6-18: FY18 ARMY PROCUREMENT PROGRAMS



Source: DoD budget data from VisualDOD. Analysis in Tableau.

The PB 2018 largely continues the Joint Light Tactical Vehicle program, increases the AH-64E Apache helicopter new build program, continues the Apache remanufacture program, and puts additional funding toward M1 Abrams upgrades. The PB 2018 continues the PB 2017's planned procurement of Joint Light Tactical Vehicles with a planned procurement of 2,110 in FY 2018 at a cost of $804 million, a slight reduction of 110 vehicles from the 2,220 anticipated in FY 2018. Following congressional approval of a Multi-Year Procurement strategy for the AH-64E Apache remanufacture in the FY 2017 NDAA, the Pentagon agreed to a contract with Boeing that will reportedly yield approximately 10 percent cost savings for the 244 aircraft in the base contract, produced at a rate of between 48 and 50 annually.[85] The PB 2018 procurement request includes $936 million for the Apache remanufacture, some $146 million below the amount anticipated in the PB 2017. It also requests $446 million to purchase 13 new-build AH-64E Apaches. Compared to the PB 2017 projected funding levels in FY 2018, the PB 2018 request more than doubles requested funding for the M1 Abrams tank modifications and upgrades, with over half (or $582 million) of the overall request of $1.1 billion coming in OCO. These M1 Abrams modifications would include additional networking capabilities and improvements to electrical power generation capabilities. $139 million in OCO funding would add Active Protection Systems to 87 tanks. Other Abrams

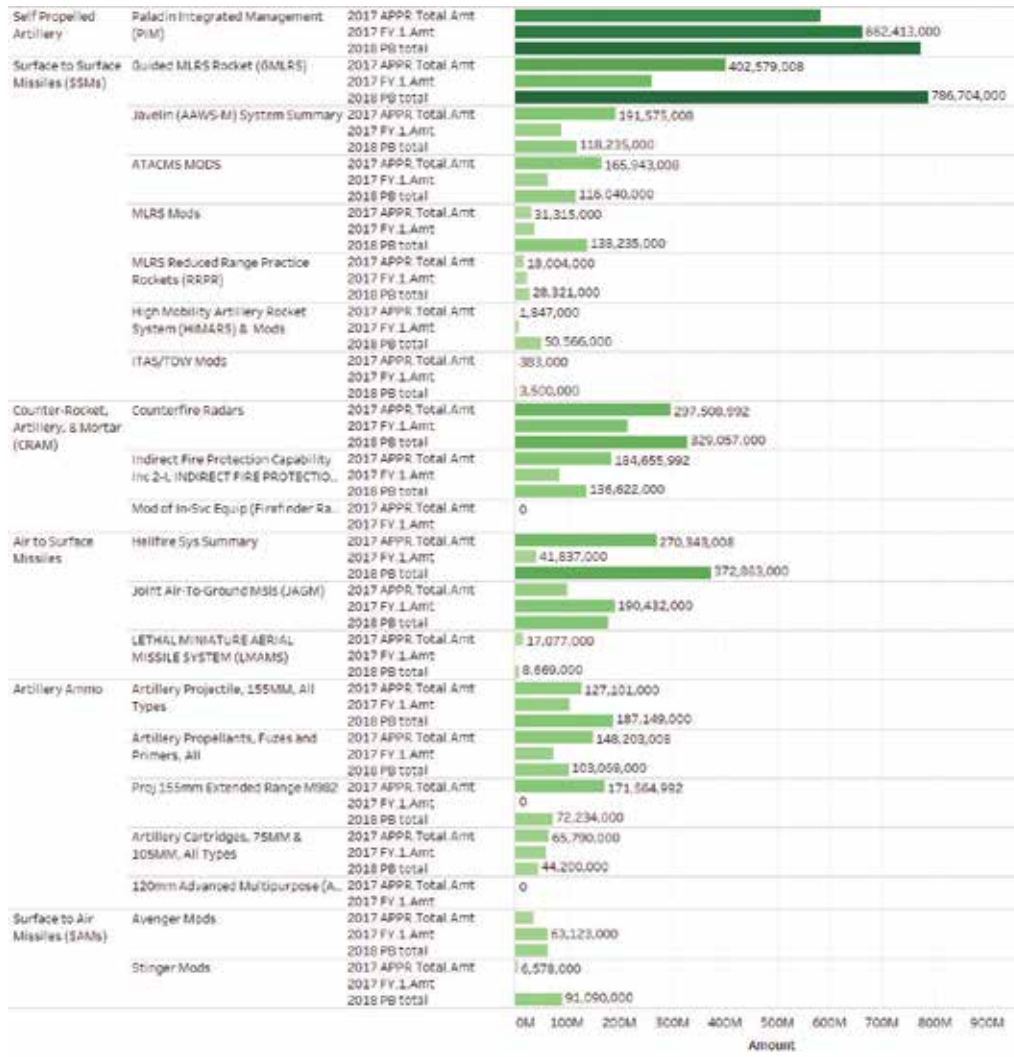
85 Jen Judson, "Boeing, US Army Make Multibillion, Multiyear AH-64E Deal Official," *Defense News*, March 22, 2017, available at https://www.defensenews.com/land/2017/03/23/boeing-us-army-make-multibillion-multiyear-ah-64e-deal-official/.

upgrades would improve the computers, night vision capabilities, the transmissions, and the front and side armor of 20 tanks for $275 million in requested base funding and of an additional 36 tanks for a requested $443 million in OCO funding. However, these upgrades would have little to no impact on the M1 Abrams' lethality and limited impact on their mobility or survivability in the face of adversary capabilities.

The Army requested increased funding for a variety of air and missile defense capabilities and artillery systems as part of a shift toward a more contested battle against potential peer-adversaries, described as Multi-Domain Battle. The Army increased FY 2018 funding for the IFPC to $136 million and for the AN/TPQ-53 improved mobile long-range counter-fire radars to $329 million. The IFPC Increment 2 system will be the first to use the Army's new plug-and-play Integrated Air and Missile Defense Battle Control System (IBCS) currently in development. The PB 2018 also maintains the PB 2017 projected FY 2018 funding levels for Patriot vehicle and PAC-3 Missile Segment enhancements, the short-range Stinger man-portable air defense (MANPAD) system, and the Avenger Air Defense System. For artillery capabilities, the Army upped the requested funding in FY 2018 for the self-propelled Paladin artillery piece to $772 million and added $50.5 million for preparing to re-start the High Mobility Artillery Rocket System (HIMARS) production line in FY 2019. This funding would support the future procurement of 32 HIMARS and 32 Multiple Launch Rocket System (MLRS) launchers.

Like the other Services, the Army requested funding to dramatically increase their stockpiles of munitions in FY 2018. The Army is requesting $1.2 billion for surface-to-surface missiles, $560 million for air-to-surface missiles, and $154 million for surface-to-air missiles—more than doubling requested funding for each category of munitions compared to the PB 2017 projection for FY 2018. In particular, the Army PB 2018 request includes $786 million for the GMLRS, nearly double the $402 million appropriated in FY 2017 and nearly three times more than the $261 projected for FY 2018. This would procure 6,000 rockets, maximizing the current production capacity. It also increases procurement of Hellfire missiles to 3,925 at a cost of $372 million, continuing the higher procurement rate begun in FY 2017 (see Figure 6-19).

FIGURE 6-19: SELECTED ARMY ARTILLERY, AIR AND MISSILE DEFENSE, AND MISSILE PROCUREMENT PROGRAM REQUESTS IN FY18, AS COMPARED TO FY17 APPROPRIATIONS AND PB17 FY18 PROJECTION



Source: DoD budget data from VisualDOD. Analysis in Tableau.

Navy

Excluding classified programs, the Navy's FY 2018 procurement request totals $49.5 billion, an increase of just $377 million over the amount appropriated in FY 2017 and $3.6 billion more than the PB 2017 anticipated for FY 2018 (see Figure 6-20).

One major force structure goal of the Trump administration is increasing the size of the fleet to a 355-ship Navy, a target endorsed by senior Navy leaders in the 2016 force structure

assessment.[86] Compared with the previous force structure assessment, the future Navy will place a greater emphasis on undersea operations and organic missile defense for the fleet. It increases the attack submarine requirement to 66 from 48, increases the large surface combatant requirement to 104 from 88, increases a planned four additional amphibious ships to 38, and adds a carrier to bring the total to 12. However, building a 355-ship Navy will require substantially more funding. CBO estimates that a 355-ship Navy would cost an average of $26.6 billion annually in shipbuilding funding, about $5.5 billion more than the average annual cost of the FY 2017 shipbuilding plan. Under the FY 2017 shipbuilding plan, the Navy would reach a maximum battle force of 313 ships by FY 2025. CSBA's recommendation for a 340-ship naval fleet architecture comprised of forward-deployed deterrence forces and a maneuver force for delivering sustained combat power has a similar emphasis on undersea capabilities and amphibious ships, but with a greater focus on naval strike forces, including the future frigate, a new class of small carriers, and a more robust combat logistics force. Building CSBA's recommended fleet architecture would require an estimated $23.6 billion annually in shipbuilding funds, about 20 percent more than the average annual cost of the FY 2017 shipbuilding plan.[87]

The Navy's FY 2018 shipbuilding request totals $20 billion. With the exception of the procurement of a second Littoral Combat Ship (LCS) in FY 2018, announced weeks after the PB 2018 release, the Navy's PB 2018 shipbuilding and conversion request hews to the FY 2017 shipbuilding plan levels. The Navy's FY 2018 shipbuilding request would fund nine new ships, including the procurement of one *Ford*-class aircraft carrier, two *Virginia*-class attack submarines, two LCSs, two expeditionary fast transports, one expeditionary sea base, one amphibious transport dock (LPD), two DDG-51 *Burke*-class destroyers, and one DDG-1000 *Zumwalt*-class destroyer. The $20 billion requested for shipbuilding in FY 2018 is still $1.1 billion lower than the actual amount appropriated in FY 2017. The Navy will pay for the late addition of the second LCS by delaying the overhaul and nuclear refueling of the aircraft carrier USS *Jon C. Stennis* by ten months, pushing the cost into FY 2019, and re-allocating $100 million from improvements to F/A-18E/F fighters.[88]

At a requested $15.1 billion in FY 2018, the Navy's aircraft procurement account also sees real declines compared to both the PB 2017 projection ($538 million less) and FY 2017 appropriations ($1.6 billion less). The Navy's PB 2018 request aligns with the PB 2017 projections, requesting funding for 20 F-35Bs; 14 F/A-18E/F fighters; five E-2D Hawkeye early warning aircraft; two KC-130J air refueling tankers; four CH-53K King Stallion heavy lift helicopters,

86 U.S. Navy, *2016 Navy Force Structure Assessment (FSA): Executive Summary* (Washington, DC: U.S. Navy, December 14, 2016), available at https://news.usni.org/2016/12/16/document-summary-navys-new-force-structure-assessment.

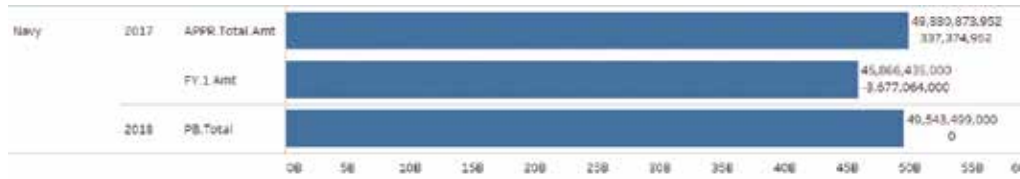
87 Bryan Clark, Peter Haynes, Bryan McGrath, Craig Hooper, Jesse Sloman, and Timothy A. Walton, *Restoring American Seapower: A New Fleet Architecture for the United States Navy* (Washington, DC: Center for Strategic and Budgetary Assessments, 2017).

88 Anthony Capaccio, "Navy Finds $500 Million for a Second Littoral Combat Ship in '18," *Bloomberg News*, June 19, 2017, available at https://www.bloomberg.com/news/articles/2017-06-19/navy-finds-500-million-for-a-second-littoral-combat-ship-in-18.

which were approved to enter low-rate initial production after suffering developmental cost increases; six MV-22 Osprey tilt-rotor helicopters; four RQ-21A Blackjack UAVs; and three MQ-4C Triton UAVs.[89] The PB 2018 request reduces the anticipated request for AH-1Z light utility helicopters by five (to 22), funds zero MQ-8C Firescout UAVs instead of two, and adds an additional P-8 Poseidon anti-submarine aircraft to bring the FY 2018 request to seven.

Overall, surface combatants are the largest sub-category within the Navy's FY 2018 procurement request at $11.7 billion, amounting to 24 percent of the Navy's total procurement. Submarines and UUVs are the second largest category at $7.4 billion, followed by manned combat aircraft at $6 billion, or 15 percent and 12 percent of requested Navy procurement, respectively. Although the FY 2018 request does not make large changes to the Navy's overall procurement funding levels, it does add $608 million for spares and repair parts for a total of $2.1 billion, part of the Pentagon-wide effort to improve system maintenance and readiness.

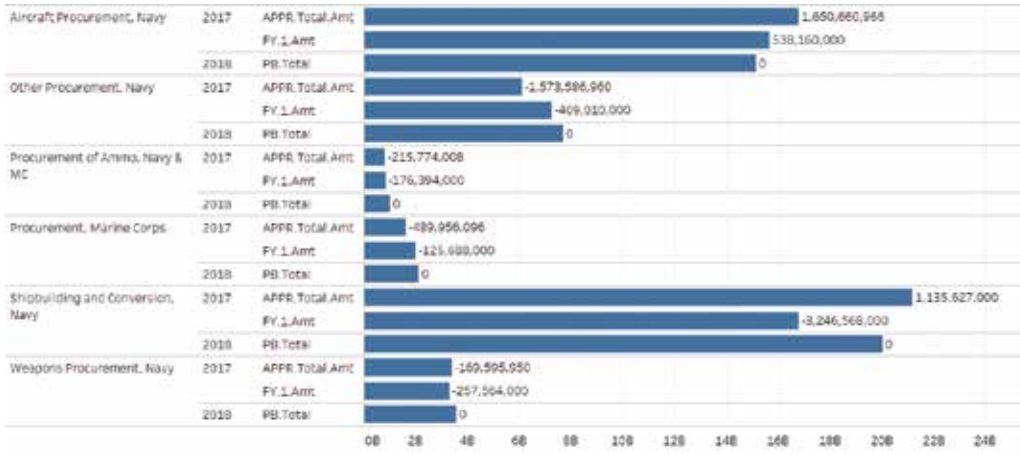
FIGURE 6-20: NAVY PROCUREMENT REQUEST IN PB18 AS COMPARED TO FY17 APPROPRIATIONS AND PB17 FY18 PROJECTION



Source: DoD budget data from VisualDOD. Analysis in Tableau.

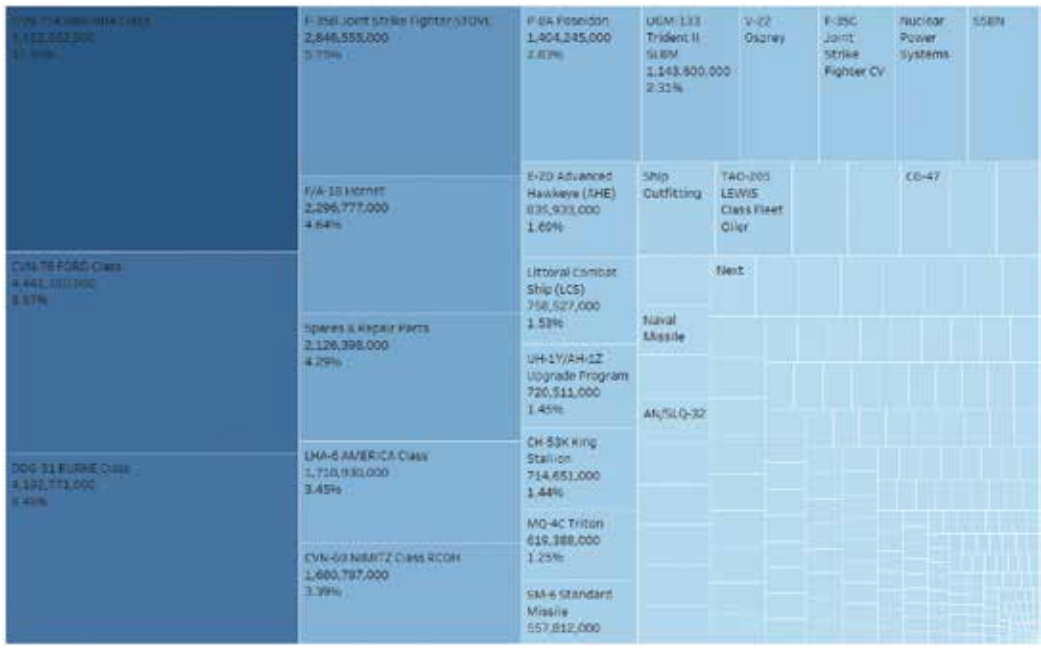
89 Justin Doubleday, "CH-53K Helicopter Approved to Enter Production," *Inside Defense*, April 4, 2017, available at https://insidedefense.com/insider/ch-53k-helicopter-approved-enter-production%C2%A0.

FIGURE 6-21: NAVY PB18 PROCUREMENT REQUEST BY ACCOUNT, AS COMPARED TO FY17 APPROPRIATIONS AND PB17 FY18 PROJECTIONS



Source: DoD budget data from VisualDOD. Analysis in Tableau.

FIGURE 6-22: FY18 NAVY PROCUREMENT PROGRAMS



Source: DoD budget data from VisualDOD. Analysis in Tableau.

Unfunded Requirements

The Services have also requested an additional $21.3 billion in procurement items in their FY 2018 unfunded requirements lists.

The Air Force has requested an additional $5.9 billion in procurement, which includes about $3.8 billion for additional aircraft, $1.3 billion in other procurement, and $564 million for ground vehicle recapitalization. Major requested increases include 14 additional F-35A fighters at a cost of $1.7 billion, three additional KC-46A tankers at a cost of $600 million, and either four or eight additional MC-130J special mission planes at a cost of either $400 or $800 million.[90]

At just under $9 billion, the Army's request for additional procurement funding is the largest. It asks for approximately $2.1 billion to fund munitions and munitions systems including 75 ATACMS, 147 Patriot MSE missiles, and additional GMLRS production capacity. The Army also requested an additional $4.9 billion in modernization funding, which would include $2.5 billion for "mobility, lethality and protection of BCTs [Brigade Combat Teams]," to include recapitalization of 29 Abrams tanks, 33 Bradley fighting vehicles, and 35 HERCULES (Heavy Equipment Recovery Combat Utility Lift and Evacuation System) recovery vehicles, and $1.1 billion for vertical lift, which would fund nine additional AH-64E Apaches and nine new CH-47F Chinooks.[91]

The Navy's FY 2018 unfunded priority list asks for an additional $3.5 billion for the Navy and $3 million for the Marine Corps, with a combined request for an additional $3.2 billion in aircraft procurement. The largest increases for the Marine Corps are $617 million for an additional four F-35Bs, $290 million for two MV-22B Ospreys, $356 million for an additional four KC-130J refueling tankers, and $288 million for an additional two CH-53K King Stallion heavy lift helicopters. The Navy's biggest requested adds for aviation are $1 billion for six P-8 Poseidon maritime patrol aircraft, $739 million for an additional ten F/A-18E/F fighters, $540 million for four additional F-35Cs, and $392 million for four additional CVM-22B Ospreys. And, the Navy and the Marine Corps each requested $312 million for five additional ship-to-shore connectors.[92]

90 "Air Force Unfunded Priority List, FY 2018," U.S. Air Force, June 2017, p .5, available at http://www.airforcemag.com/DRArchive/Documents/2017/USAF%202018%20Unfunded%20Priorities%20List.pdf. Procurement of additional MC-130Js is listed twice: once for an additional four aircraft, and once for an additional eight aircraft.

91 "FY18 CSA UFR List," U.S. Army, June 2017, available at http://www.ndia.org/-/media/sites/ndia/policy/documents/digest/5june17/fy18-army-unfunded-priorities.ashx.

92 "Navy's Fiscal Year 2018 Unfunded Priorities List," U.S. Navy, May 23, 2017, available at https://news.usni.org/2017/06/02/document-navys-fy-2018-unfunded-priorities-list; and "Fiscal Year 2018 Marine Corps Unfunded Priority List," U.S. Marine Corps, May 25, 2017, available at https://news.usni.org/2017/06/09/document-marine-corps-fy-2018-unfunded-priorities-list.

Congressional Action

As part of substantially higher top-line defense funding levels, both the HASC and SASC have authorized tens of billions more in procurement funding in their versions of the FY 2018 NDAA. The HASC, marking to a $621 billion topline or $18 billion more than the administration's request for $603 billion in overall national defense funding, authorized an additional $15 billion, approximately, in procurement funding. The HASC procurement increases included $7.5 billion more for the Army, $3.7 billion more for the Air Force, and $3.2 billion more for the Navy. This additional funding, in large part following the priorities of the Services' unfunded priorities list, would fund an additional 17 F-35s, eight more F/A-18 E/F fighters, four more V-22 tilt-rotor Ospreys, eight more AH 64E Apaches, eight more CH-47 Chinooks, four additional KC-130J and two additional KC-41A refueling tankers, upgrades to 29 more Abrams tanks, 33 more Bradley fighting vehicles, 35 more HERCULES recovery vehicles, additional Stryker hull upgrades, and 373 additional Javelin missiles. HASC additions also accelerated efforts to increase the size of the fleet, adding one DDG-51 destroyer, two LCSs, one LPD-30 amphibious transport dock ship, and one expeditionary transfer dock, as well as five of the ship-to-shore connectors requested in the unfunded priority list.

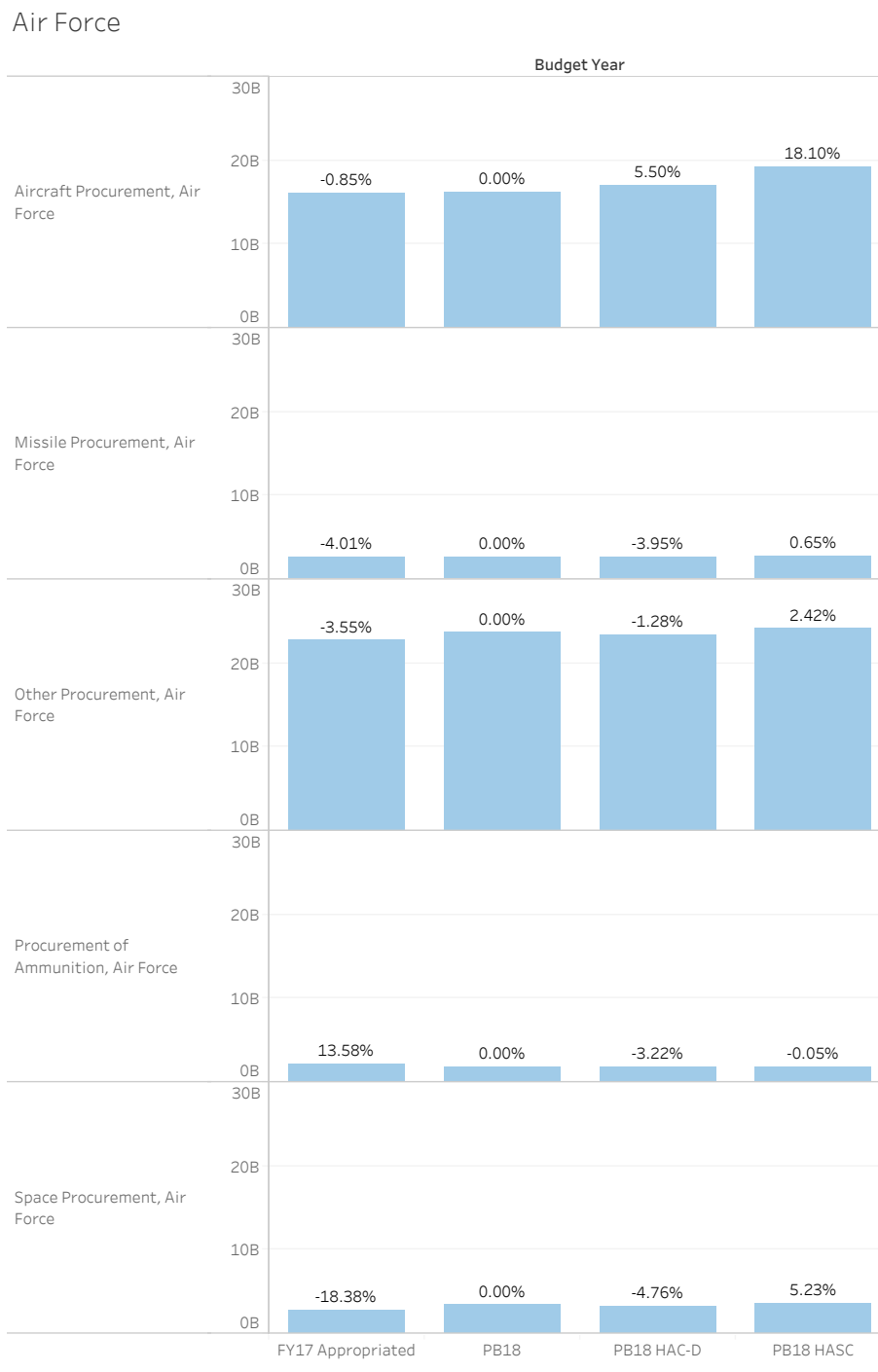
The SASC similarly increased the overall procurement funding level for FY 2018, adding approximately $24.4 billion, marking to an overall topline of $640 billion. Although the Army was the largest beneficiary of the HASC's procurement largess, the Navy received the most additional funding from SASC, or $11.3 billion, for a total Navy procurement authorization of $61 billion. The Army's procurement funding was increased by $6.7 billion, while the Air Force received an additional $5.7 billion. SASC's major procurement additions included $3.1 billion for 24 more F-35 fighters—$1.8 billion more for 14 F-35As, $526 million for four F-35Bs, and $800 million for six F-35Cs—meeting the Air Force and Marine Corps' unfunded requests and exceeding the Navy's unfunded request by two planes. SASC also added $771 million for space systems and $2.9 billion for two additional KC-46A Pegasus tankers, in line with the HASC addition. The additional SASC Army procurement authorizations were broadly in line with the HASC adds, funding $2.2 billion for Army ground vehicles including more rapid M1 Abrams, Stryker, and Bradley upgrades. For the Navy, SASC added $5 billion for shipbuilding, but with some unusual flexibility as to how the Navy chooses to allocate it. SASC authorized an additional $1.9 billion for one additional DDG-51 destroyer and some advance procurement funds for future ships; $450 million for either an additional *Virginia*-class attack submarine or initiatives to expand the submarine industrial base; and $1 billion for either the first ship of the future amphibious ship class (LX(R)) or an LPD-30 amphibious dock transport ship, one expeditionary transfer dock, and five additional ship-to-shore connectors.

Although the House Appropriations Committee, Defense Subcommittee's (HAC-D) overall defense bill is consistent with the $621 billion for national defense negotiated with the HASC, the subcommittee took a novel approach. The bulk of the HAC-D appropriations bill makes adjustments to the administration's PB 2018 levels. However, it also includes $28.6 billion for a "National Defense Restoration Fund," allocated by appropriations title. The secretary of defense is empowered to authorize these funds to "high priority" defense items with a 15-day notice period to Congress—a highly unusual waiving of congressional oversight prerogatives and an illustration of the urgent appetite from many in Congress for increased defense spending. This broad fund also allows considerable flexibility should final appropriations levels come in between the administration's request and the higher HASC or SASC figures. This fund adds an additional $18.6 billion for procurement, with $12.6 billion in the base budget and an additional $6 billion in OCO funds.

The Senate Appropriations Committee, Defense Subcommittee (SAC-D) has not yet marked up a FY 2018 defense appropriations bill. However, the topline national defense figure will be $551 billion, in line with the current BCA caps and far below the $603 billion sought by the Trump administration or the $621 billion and $640 billion levels marked to by the HASC and SASC, respectively.[93]

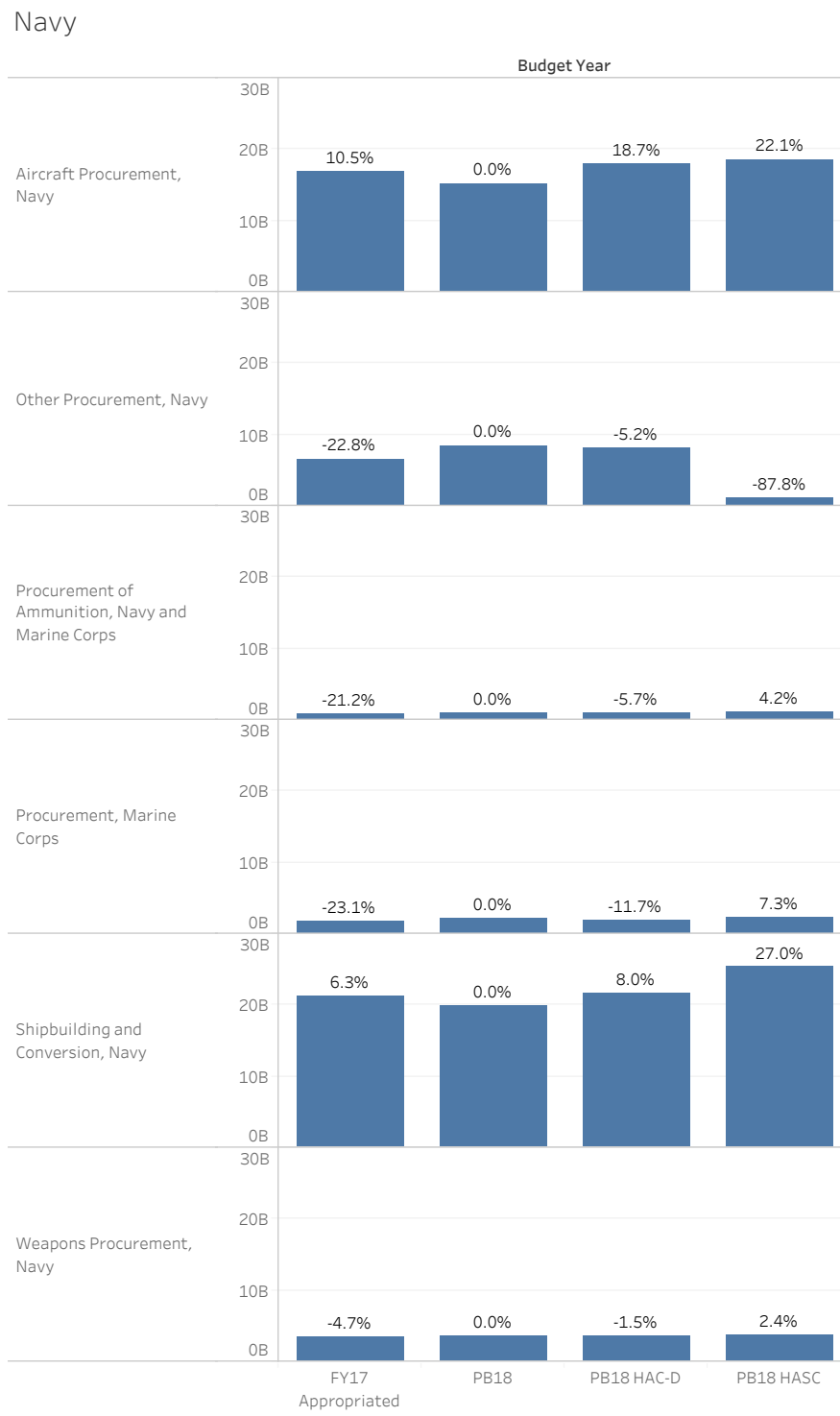
93 John M. Donnelly, "Analysis: Senators Writing Placeholder Defense Money Bill," *CQ Roll Call*, July 24, 2017, available at http://www.rollcall.com/news/policy/analysis-senators-writing-placeholder-defense-money-bill.

FIGURE 6-23: CONGRESSIONAL ACTION ON THE PB18 PROCUREMENT REQUEST, BY ACCOUNT AND SERVICE



Army


Budget Year
Aircraft Procurement, Army
30B
20B
10B
0B
10.68%
0.00%
3.55%
30.01%
Missile Procurement, Army
-10.72%
0.00%
1.99%
45.64%
Other Procurement, Army
15.57%
0.00%
-2.01%
31.03%
Procurement of Ammunition, Army
7.24%
0.00%
-3.22%
43.87%
Procurement of Weapons and Tracked Combat Vehicles, Army
-25.68%
0.00%
31.32%
42.06%
FY17 Appropriated
PB18
PB18 HAC-D
PB18 HASC

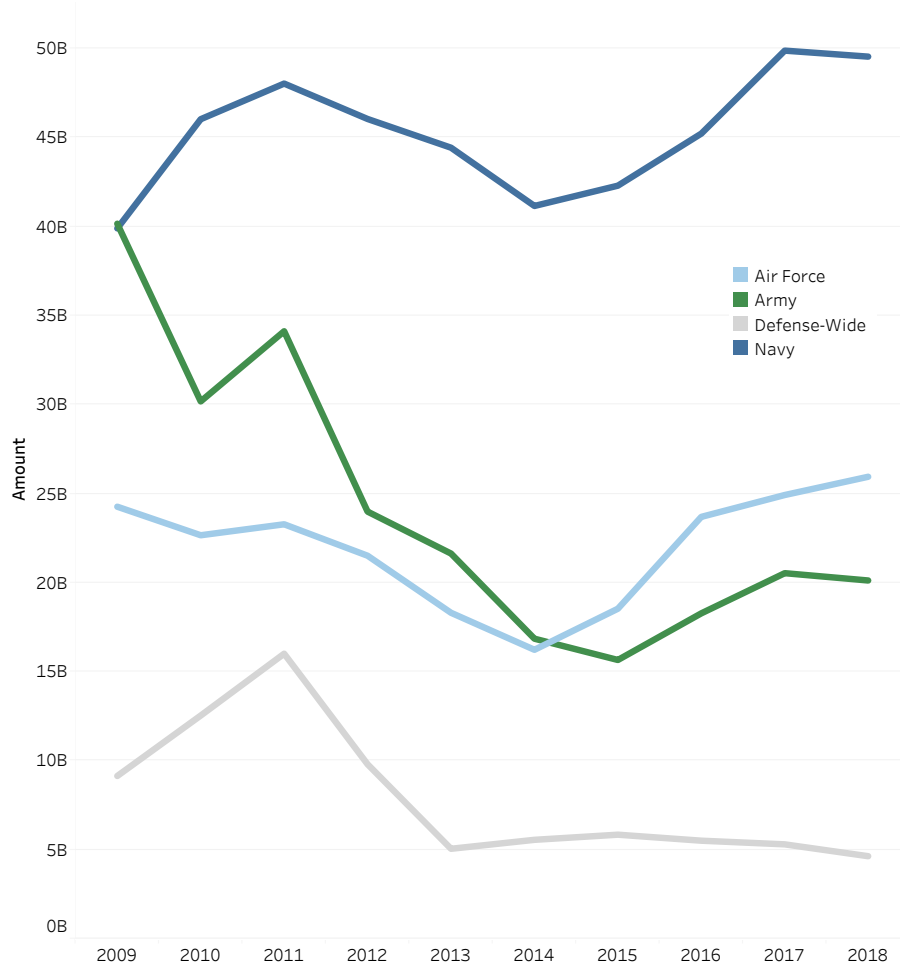


Source: DoD budget data from VisualDOD. Analysis in Tableau.

Trends

Since a recent peak of $141.2 billion in FY 2011, procurement funding declined rapidly (by about 40 percent over four years) to a recent low of $98.8 billion in FY 2014. Procurement funding has recovered by about half of that decline, with appropriations for procurement at $123.7 billion for FY 2017. The FY 2018 budget request for $125.2 billion would be a 0.65 percent increase. However, the Services have seen very different relative changes in their procurement totals. Excluding classified funding, the Navy's procurement funding peaked at $48 billion in FY 2011 and declined by $6.8 billion to a low of $41.2 billion in FY 2014, a 14 percent decline. However, the Navy's procurement funding recovered rapidly, reaching $49.8 billion in FY 2017. The Air Force's "blue" procurement funding suffered a similar, though steeper, dip and recovery, declining from $24.2 billion in FY 2009 to $16.2 billion in FY 2014, a decline of $8 billion or 33 percent, before recovering to $24.9 billion in FY 2017. By contrast, the Army's procurement funding declined from $40 billion in FY 2009 at the peak of the war in Iraq and the MRAP procurement effort to a low of just $15.6 billion in FY 2015—a decline of more than 60 percent. Since that low, the Army's procurement funding has hovered around $20 billion, or about half its prior levels. Defense-wide procurement for non-classified programs has similarly dropped from a high of $16 billion in FY 2011 to a relatively consistent level of around $5 billion since FY 2013 (see Figure 6-24). By contrast, classified procurement funding rose steadily between FY 2009 and FY 2013, reaching $20.6 billion. After a sequester-driven dip in FY 2014 and FY 2015, classified procurement spending rapidly recovered and has continued to grow, reaching $23.1 billion in FY 2017.

FIGURE 6-24: TRENDS IN UNCLASSIFIED APPROPRIATION FUNDING BY SERVICE, FY09–FY18 (PROJECTED)



Source: DoD budget data from VisualDOD. Analysis in Tableau.

CHAPTER 7

Operation and Maintenance

Overview

Readiness is the most immediate challenge the Pentagon faces, and it was the stated focus of the March FY 2017 budget amendment submitted by the Trump administration. It is broadly agreed that U.S. forces are experiencing what is often termed a "readiness crisis." Joint Chiefs of Staff Chairman Dunford described the military overall and each of the Services as experiencing significant readiness problems.[94] Secretary Mattis testified that the lower level of defense funding due to the caps imposed by the BCA of 2011 and the budgetary uncertainty experienced by the Pentagon have resulted in "a steady erosion of military readiness."[95] For example, Commandant Robert B. Neller stated in testimony in 2016 that the Marine Corps was unable to meet its mission and training requirements because it lacked enough airplanes due to backlogs and capacity limitations at repair depots, as well as spare parts issues.[96] The PB 2018 budget has promised to improve, although not fully rectify, these readiness problems.

It is, however, very difficult to define readiness, let alone how it should be measured and improved. The DoD defines readiness as "the ability of military forces to fight and meet the demands of assigned missions."[97] Yet DoD also refers to readiness in an operational sense, defining it as "the capability of a unit/formation, ship, weapon system, or equipment to

94 Chairman of the Joint Chiefs of Staff Dunford, testimony before the House Armed Services Committee (HASC), June 12, 2017, available at http://docs.house.gov/meetings/AS/AS00/20170612/106090/HHRG-115-AS00-Wstate-DunfordJ-20170612.pdf.

95 Secretary of Defense Mattis, testimony before the HASC, June 12, 2017, available at http://docs.house.gov/meetings/AS/AS00/20170612/106090/HHRG-115-AS00-Wstate-DunfordJ-20170612.pdf.

96 General Robert Neller, commandant of the Marine Corps, testimony before the House Appropriations Defense Subcommittee on the Navy and Marine Corps FY17 Budget Request, March 1, 2016, available at http://docs.house.gov/meetings/AP/AP02/20160301/104529/HHRG-114-AP02-Wstate-RichardsonR-20160301.pdf.

97 DoD, *DoD Dictionary of Military and Associated Terms* (Washington, DC: DoD, 2017), p. 193.

perform the missions or functions for which it is organized or designed."[98] Readiness can also be seen as a three-legged stool, resting on the size, training, and equipping of the force. Each of these legs can have a temporal component. For example, equipping the force entails both ensuring that existing equipment is in good repair, as well as procuring the right mix of equipment (in both capabilities and numbers) for the future. The March 2017 request for additional FY 2017 appropriations focused on "near-term readiness (i.e., maintenance, spare parts, training time, peacetime flying hours, munitions, etc.)."[99]

The March 2017 request for additional appropriations included $7.2 billion in base O&M, focused on operating forces and operational training, and $3.6 billion in OCO O&M funding, focused on the fight against ISIS and the conflict in Afghanistan. Congress appropriated a total of $8.4 billion in additional O&M funding, $2.3 billion below the requested additional funding, directing the majority of the increase to Navy and DoD-wide O&M (see Table 7-1).

TABLE 7-1: MARCH 2017 REQUEST FOR ADDITIONAL O&M FUNDING AND FY 2017 ADDITIONAL APPROPRIATIONS

	March 2017 Request	Additional Appropriations	Delta
Air Force	$2,620	$1,704	-$916
Army	$2,931	$1,701	-$1,230
DoD-wide	$2,969	$3,037	$68
Navy and Marine Corps	$2,281	$2,031	-$250
Total	$10,801	$8,473	-$2,328

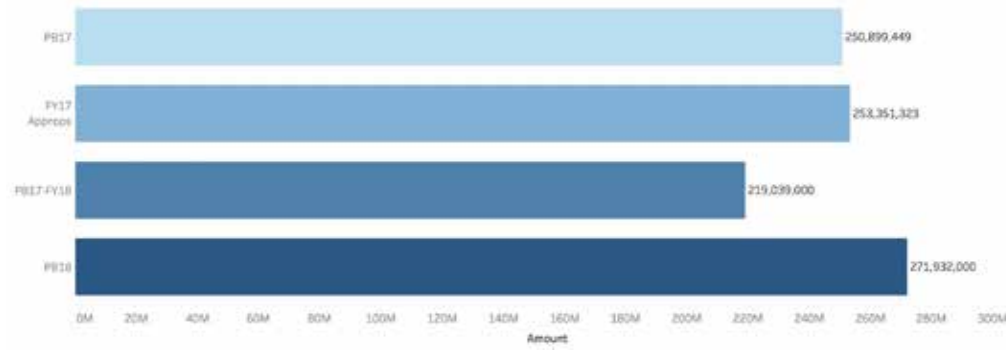
Source: OUSD (Comptroller)/CFO, "Request for Additional FY 2017 Appropriations," Table 9, "Total (Base + OCO) Funding by Military Department and Appropriations Title"; CSBA analysis of additional appropriations provided in H.R. 244/P.L. 115-31, "Consolidated Appropriations Act 2017."

Note: Dollars in millions.

98 Ibid., p. 174.

99 OUSD (Comptroller)/CFO, "Request for Additional FY 2017 Appropriations," briefing, DoD, March 16, 2017, available at http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2017/marchAmendment/FY2017_Budget_Request.pdf.

FIGURE 7-1: PB18 O&M REQUEST, AS COMPARED TO PB17 AND FY17 APPROPRIATIONS



Source: OMB, Budget Analysis Branch, *Public Budget Database: Budget of the United States Government, Fiscal Year 2018, Budget Authority* (Washington, DC: OMB, May 2017), available at https://www.gpo.gov/fdsys/pkg/BUDGET-2017-DB/xls/BUDGET-2017-DB-1.xls. Analysis in Tableau.

Note: Dollars in thousands.

2018 Request

In the PB 2018 request, the Trump administration asked for a total of $271.9 billion in O&M funds, with $223.3 billion in the base discretionary budget and $48.6 billion in the OCO account. Congress appropriated a total of $253.3 billion for O&M in FY 2017, an increase of $1.5 billion over the total PB 2017 request of $251.8 billion. The PB 2018 total O&M request is $19.6 billion more than the final FY 2017 appropriation of $253.4 billion, an increase of 7.7 percent (see Figure 7-1).

The FY 2018 request for $271.9 billion in O&M funds is $18.5 billion higher than the $253.3 billion appropriated for O&M in FY 2017, an overall increase of 7.3 percent. For the base defense budget, the PB 2018 request of $222.3 billion is $23.9 billion more than Congress appropriated in FY 2017, an increase of 12 percent. In OCO, the PB 2018 request of $48.6 billion is actually $5.6 billion less than the $54.3 billion Congress appropriated in FY 2017, a decline of 10 percent. Congress appropriated relatively more funding in the OCO O&M accounts in FY 2017 in response to the November 2016 and March 2017 requests. The November 2016 request for $5.8 billion in additional OCO appropriations to support the war in Afghanistan and defeat ISIS included $5.1 billion in O&M funding. In response, Congress appropriated an additional $4.6 billion in O&M funding in OCO in the December continuing resolution.[100] The March 2017 Trump administration request for an additional $30 billion, described as a "readiness supplemental," included $10.8 billion in O&M funding split between $7.2 billion in the base budget and $3.6 billion in OCO. Bound by the BCA caps on base defense spending, and unable to reach an agreement on increasing the BCA caps

100 H.R. 2028, *Further Continuing and Security Assistant Appropriations Act*, enacted December 12, 2016, P.L. 114-254.

above adjustments made by the November 2015 Balanced Budget Act deal, Congress added $8.4 billion to the OCO O&M accounts in the final FY 2017 appropriations bill.[101]

The PB 2018 request is $53.1 billion, or 24 percent, more than anticipated for FY 2018 in the PB 2017 request. However, this large disparity is mostly due to the exclusion of any placeholder OCO funds for FY 2018 and beyond in the PB 2017. In the base budget, the PB 2018 requests $223.3 billion for O&M, an increase of $4.3 billion, or 2 percent, over the anticipated O&M funding levels for FY 2018 in PB 2017. The PB 2018 request for $48.6 billion in OCO O&M funding is $3.6 billion more than the $45 billion requested in FY 2017, an increase of 8 percent (see Figure 7-2).

FIGURE 7-2: TOPLINE PB18 BASE AND OCO O&M REQUESTS, AS COMPARED TO PB17 AND FY17 APPROPRIATIONS

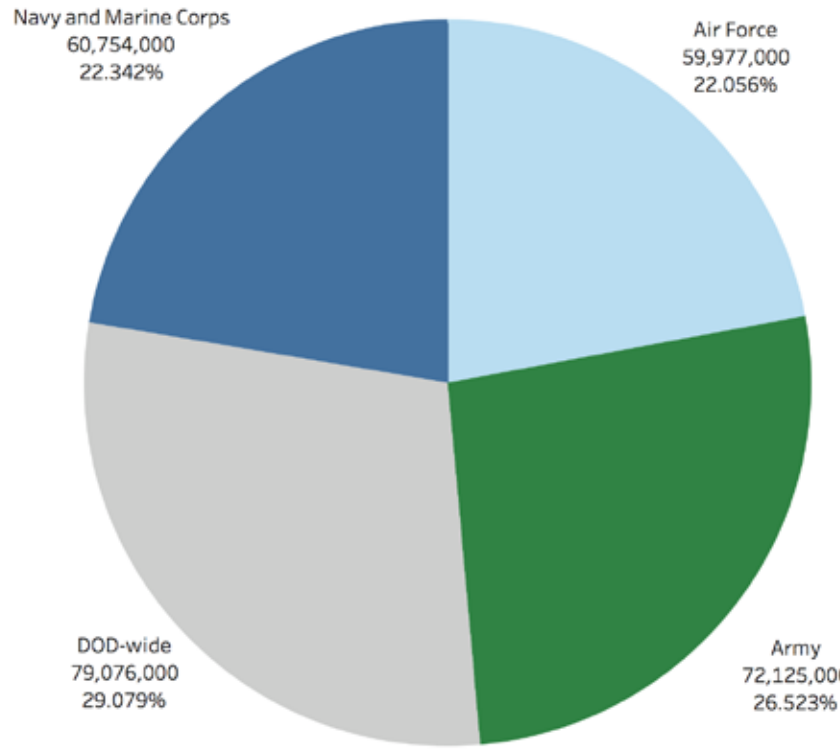
Source: OMB, Public Budget Database FY18 and FY17 appropriations data from Visual DOD. Analysis in Tableau.

Note: Dollars in billions.

101 H.R. 244, *Consolidated Appropriations Act 2017*, enacted May 4, 2017, P.L. 115-31.

Within the Services, DoD-wide O&M accounts are the largest element of O&M spending. At a requested $79 billion for O&M in PB 2018, DoD-wide O&M accounts would receive more funding than those of the Army, Navy, or Air Force (see Figure 7-3).

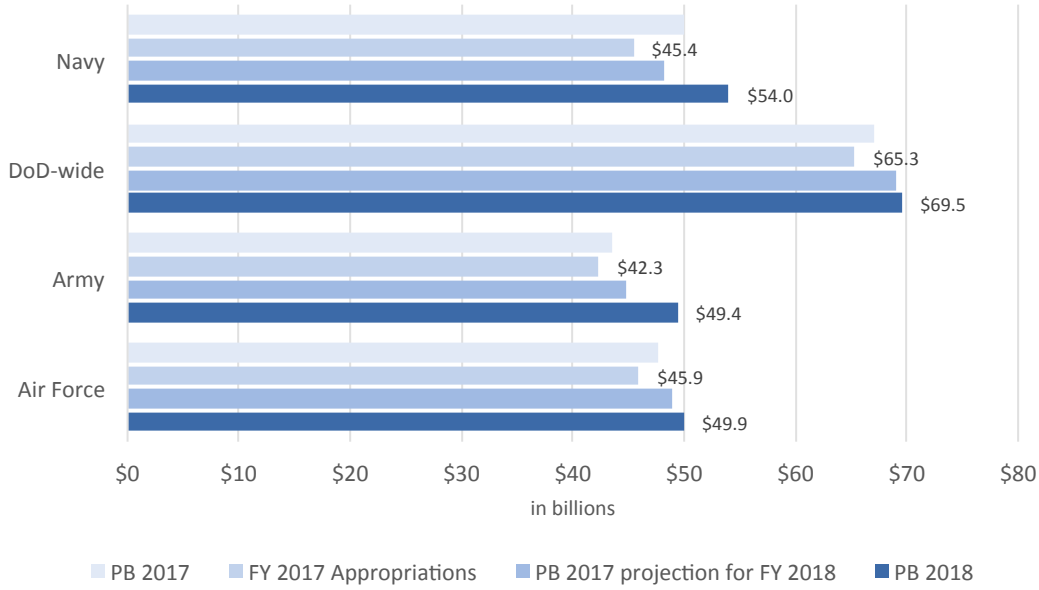
FIGURE 7-3: FY18 O&M FUNDING REQUESTED BY MILITARY DEPARTMENT



Source: OMB, Public Budget Database FY18. Analysis in Tableau.
Note: Dollars in thousands.

DoD-wide programs are also the greatest beneficiary of the additional $18.5 billion in O&M funds requested over the FY 2017 appropriations of $253.3 billion. The PB 2018 requests a total of $77.9 billion for DoD-wide O&M, $9.1 billion more than the $68.8 billion appropriated in FY 2017—a 13.2 percent increase. The PB 2018 request asked for $72.3 billion in O&M for the Army, an increase of $3.8 billion or 5.5 percent over the final FY 2017 appropriations of $68.6 billion, and $61 billion for the Navy, also an increase of $3.8 billion or 6.6 percent over the final FY 2017 appropriations of $57.3 billion. The Air Force PB 2018 O&M request was for $60.3 billion, an increase of $1.6 billion or 2.7 percent over the final FY 2017 appropriations of $58.7.

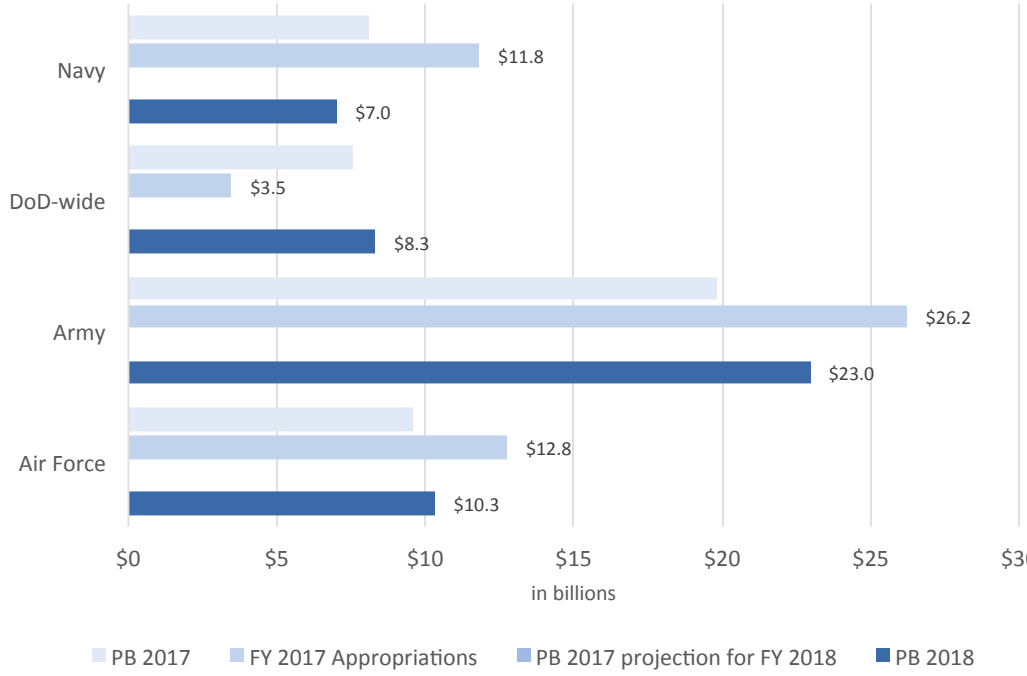
FIGURE 7-4: PB18 BASE O&M REQUEST BY SERVICE, AS COMPARED TO PB17 AND FY17 APPROPRIATIONS



Source: OMB, Public Budget Database FY18 and FY17 appropriations data from Visual DOD. Analysis in Tableau.

Note: Dollars in billions.

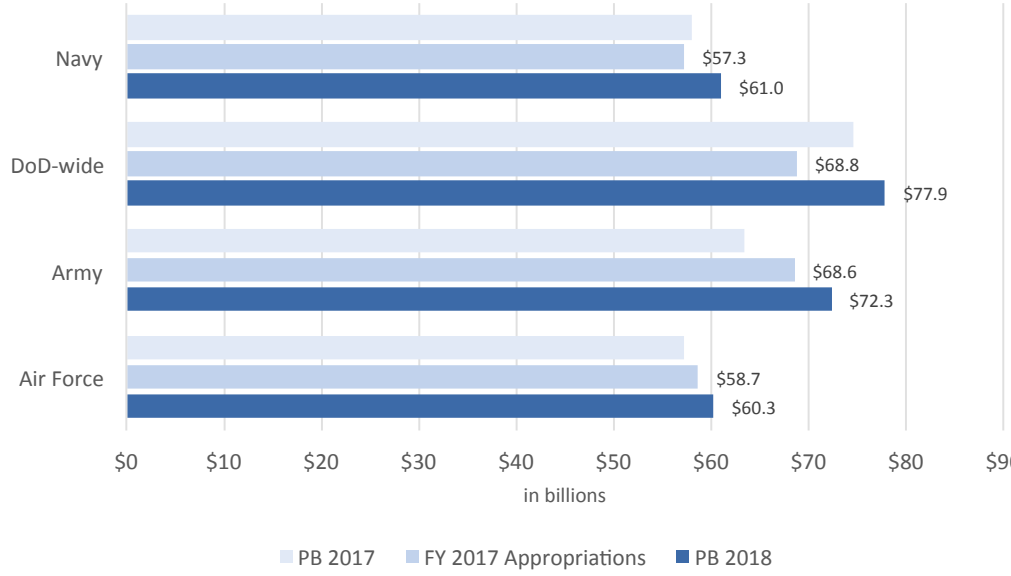
FIGURE 7-5: PB18 OCO O&M REQUEST BY SERVICE, AS COMPARED TO PB17 AND FY17 APPROPRIATIONS



Source: OMB, Public Budget Database FY18 and FY17 appropriations data from Visual DOD. Analysis in Tableau.

Note: Dollars in billions.

FIGURE 7-6: TOTAL PB18 O&M REQUEST BY SERVICE, AS COMPARED TO PB17 AND FY17 APPROPRIATIONS

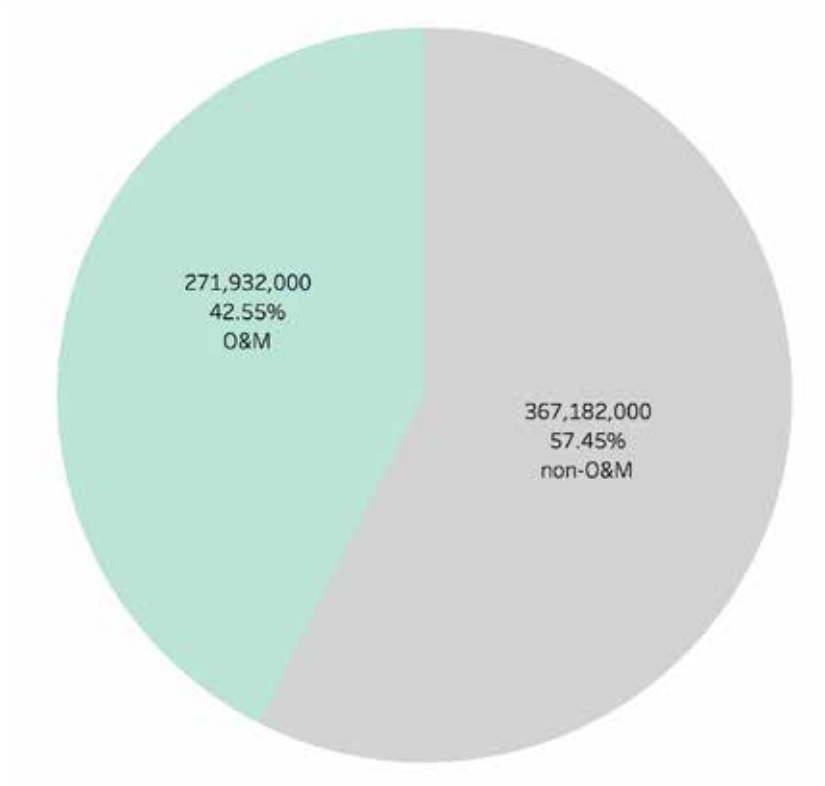


Source: OMB, Public Budget Database FY18 and FY17 appropriations data from Visual DOD. Analysis in Tableau.

Note: Dollars in billions.

Overall O&M funding, at $271.9 billion, accounts for 42.6 percent of DoD's discretionary budget request for FY 2018. O&M accounts for 32.8 percent of the Air Force's overall FY 2018 budget request at nearly $60 billion and 33.8 percent of the Navy's budget request at $60.8 billion. O&M is a much larger fraction of the Army's budget at 43.8 percent, or $72.1 billion. O&M also comprises a whopping 70.4 percent of DoD-wide funding at $79.1 billion (see Figure 7-7 and Figure 7-8.). The total FY 2018 O&M request is fairly evenly spread across the Services. The Air Force and Navy account for 22.1 percent and 22.3 percent, respectively, of the overall DoD O&M profile. The Army's O&M programs make up 26.5 percent, whereas DoD-wide O&M programs are at 29.1 percent (see Figure 7-3).

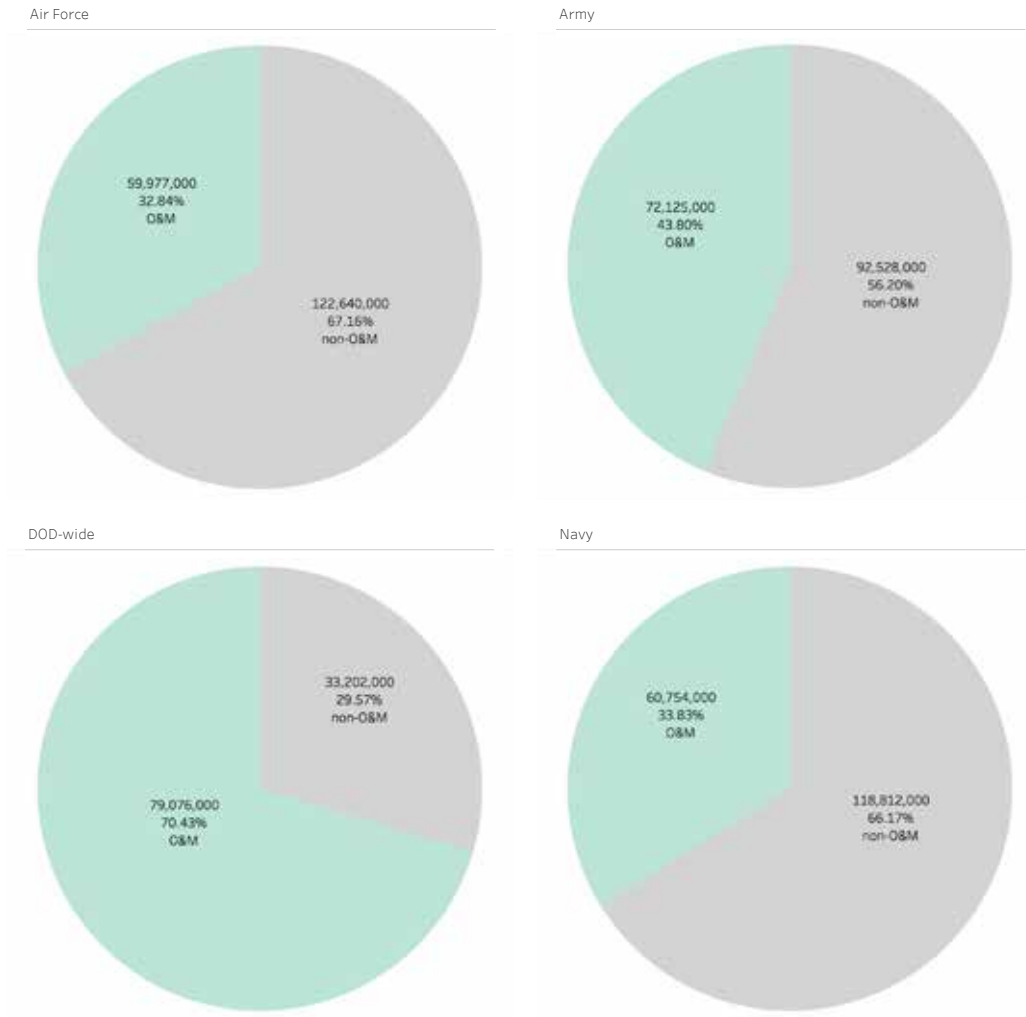
FIGURE 7-7: FY18 REQUEST FOR O&M FUNDING OVERALL



Source: OMB, Public Budget Database FY18. Analysis in Tableau.

Note: Dollars in thousands.

FIGURE 7-8: FY18 REQUEST FOR O&M FUNDING BY MILITARY DEPARTMENT, AS A SHARE OF EACH DEPARTMENT'S OVERALL REQUEST



Source: OMB, Public Budget Database FY18. Analysis in Tableau.
Note: Dollars in thousands.Details

Details

O&M is the funding that DoD runs on. It falls into four major budget activities:

1. **Operating forces** funds day-to-day ground, air, and ship operations; combat installations; combat support elements; and combat readiness training and support;

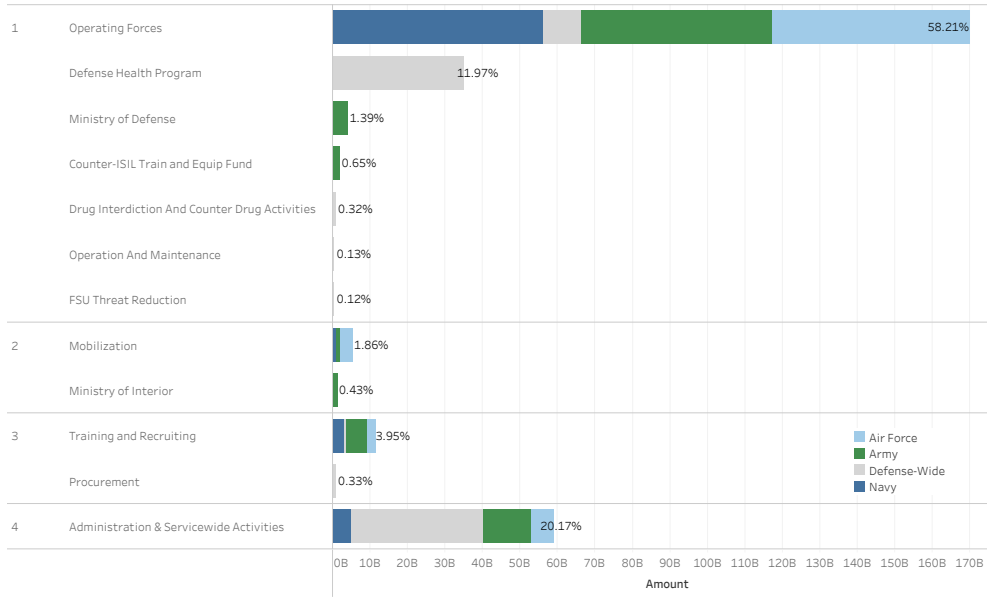
2. **Mobilization** funds the deployment of forces, including forward presence, sealift, airlift, prepositioning, and other mobility efforts;

3. **Training and recruiting** funds the Services' recruitment of new servicemembers and non-deployment related training, such as flight training or specialized skills training; and

4. Administration and service-wide activities funds administration, logistics, communications, security, and other support functions.

O&M additionally funds the Defense Health Program, which is funded in the DoD-wide accounts. O&M accounts also provide funding to support the Afghan Ministry of Defense and Ministry of Interior and the Counter-ISIL Train and Equip Fund.

FIGURE 7-9: PB18 O&M REQUEST BY BUDGET ACTIVITY



Source: VisualDOD data. Analysis in Tableau.

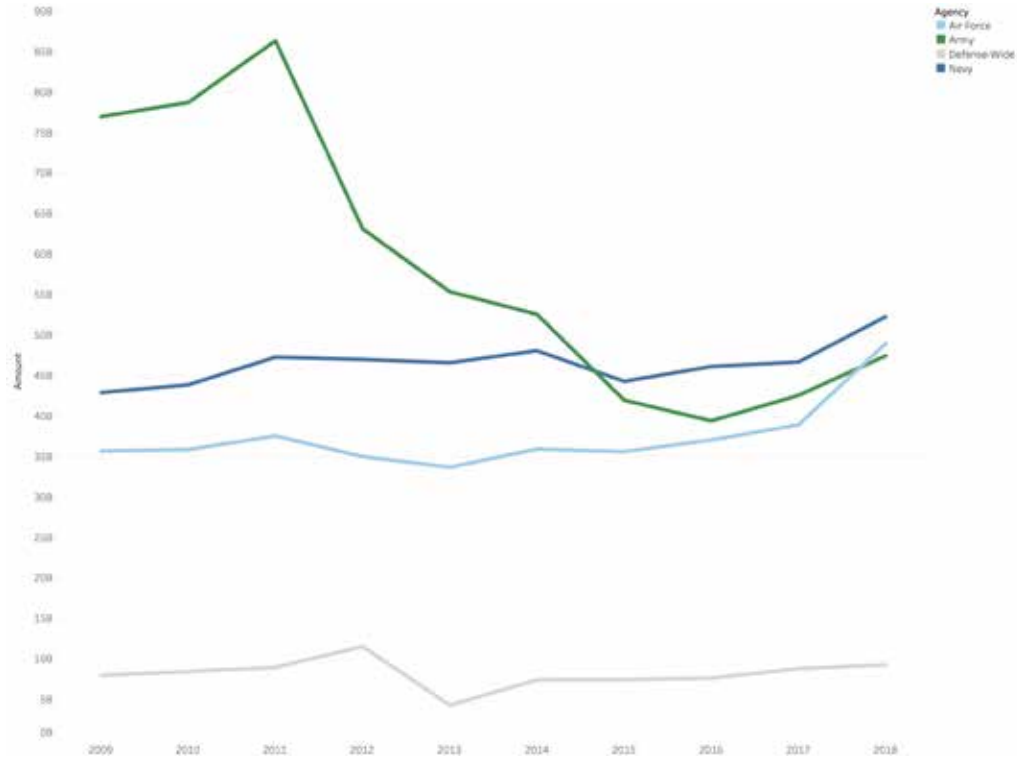
Operating Forces

Funding in the operating forces budget activity is what enables the day-to-day combat activities of the force. Operating forces funding peaked in FY 2011 at $180 billion, falling steadily to $129.3 billion in FY 2015. Since the FY 2015 low, operating forces funding has risen slowly to the $137 billion appropriated in FY 2017. PB 2018 would increase funding for operating forces by $22 billion to $158 billion—a 16 percent jump. Overall, operating forces accounts for 58 percent of the PB 2018 O&M request. In PB 2018, $32 billion or 20 percent of the operating forces request would be for OCO accounts.

Within the operating forces budget activity, the funding trends of the Services have varied sharply. Most notably, the Army's operating forces funding fell by more than 50 percent, dropping from $86 billion in FY 2011 to a low of $39.4 billion in FY 2016, reflecting the rapid drawdown of Army forces from Iraq and Afghanistan. Congress appropriated an additional $3.2 billion in FY 2017, reaching $42.6 billion. The PB 2018 request asks for $47.5 billion, an increase of $4.9 billion or 11.5 percent. By contrast, the Air Force's operating forces funding

remained between $33.5 and $37.5 billion in inflation-adjusted dollars from FY 2009 through FY 2016, reflecting a more consistent operational tempo (OPTEMPO). The PB 2018 asks for $48.9 billion for Air Force operating forces, a sizeable 25 percent increase of $10 billion over the FY 2017 appropriations. Similarly, the Navy's operating forces funding fluctuated between $42.9 billion to $48 billion between FY 2009 and FY 2017, reflecting a consistently high OPTEMPO. The PB 2018 request asks for $52.3 billion, an increase of $5.6 billion or 12 percent over the $46.7 appropriated in FY 2017. The PB 2018 requests $9.3 billion for special operations activities, accounted for in DoD-wide O&M funding (see Figure 7-10).

FIGURE 7-10: OPERATING FORCES FUNDING HISTORY BY SERVICE



Source: VisualDOD data. Analysis in Tableau.

Within the PB 2018 operating forces budget activity in O&M, the largest costs are for base operations support ($25 billion); contractor logistics and system support ($9.9 billion); ship depot maintenance ($9.6 billion); facilities sustainment, restoration, and modernization ($8.3 billion); and special operations operating forces ($8.3 billion).

Within the Air Force, the largest single element of the requested operating forces O&M funding is for contractor logistics and system support at $9.9 billion. This new appropriations title is a FY 2018 restructuring and consolidation of the Air Force's weapon system sustainment. This funding title includes contractor logistics support and performance-based logistics programs,

but excludes depot maintenance. The next largest is base support ($8 billion), which contains the operating costs of the Air Force's installations. This includes a variety of expenses, including facility maintenance contracts; civilian personnel salaries; airfield operations; morale, welfare, and recreation costs; supply logistics; and command support. At $6.2 billion, funding for flying hours, which covers pilot combat flying skills, experience hours, and mission-specific training, is the next largest element. The major cost drivers are fuel, accounting for about 45 percent of costs, followed by Air Force-managed sustainment costs at about 40 percent and Defense Logistics Agency (DLA)-managed sustainment at about 15 percent. Depot equipment maintenance ($4.8 billion); facilities sustainment, restoration, and modernization ($3.9 billion); and aircraft operations ($3.2 billion) are also major cost elements within the Air Force's operating forces budget activity. The largest category of Air Force operating forces costs in the PB 2018 request is, unsurprisingly, air operations at a total of $19.2 billion, followed by air depot and maintenance expense at $14.7 billion, then air support and integration at $11.9 billion, and trailed by headquarters expenses at $1.5 billion (see Figure 7-11 and Figure 7-12).

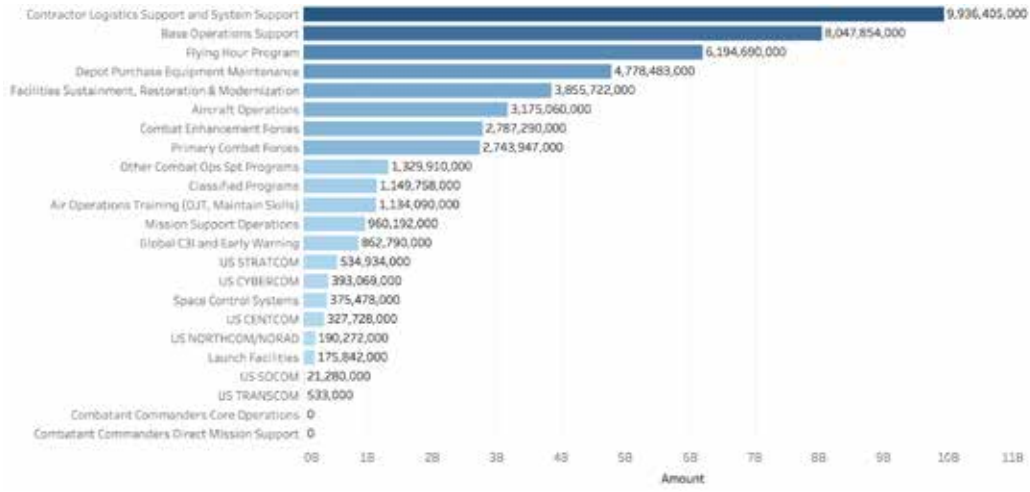
The Army's largest PB 2018 operating forces request is for base operations support ($9.9 billion). Like the Air Force, this funding title pays for the operation and maintenance of the Army's installations. The next largest operating forces funding request is for force readiness operations support ($7.6 billion), which funds the operation of training ranges, the issuing of Army clothing and equipment, and the operation of communication and tactical intelligence systems; it also covers civilian personnel costs associated with supporting the readiness of land forces. Additional activities, at $6.1 billion in PB 2018, is OCO funding for day-to-day operations in theatre in support of Operation Freedom's Sentinel in Afghanistan ($4.8 billion), Operation Inherent Resolve against ISIS ($1.3 billion), and the European Reassurance Initiative ($126 million). Facilities sustainment, restoration, and modernization ($4.8 billion), followed by maneuver units ($3.1 billion) and aviation assets ($2.8 billion) are the other largest Army appropriations titles within operating forces. The largest category of Army operating forces costs in the PB 2018 request are for ground operations at $26.6 billion in FY 2018, ground support and integration at $17.1 billion, and air operations at $2.8 billion. The Army's O&M account is also the pass-through for support for the Afghan ministries of defense and interior (funded at $3.8 billion and $1.2 billion in PB 2018, respectively) as well as for the Counter-ISIL Train and Equip Fund (funded at $1.8 billion in PB 2018) (see Figure 7-13 and Figure 7-14).

For the Navy, the largest operating forces appropriations title request is for ship maintenance ($9.7 billion). This would fund ship depot maintenance, including five overhauls to restore ships to baseline conditions, two planned incremental availabilities for deep maintenance, and 54 selected restricted availabilities for specific repairs to sustain a given ship between overhauls. The major costs within this appropriations title are the compensation of the depots' civilian personnel and contracted maintenance. As it does for the other Services, the PB 2018 request for base operations support ($7 billion) funds the continued operation and maintenance of the Navy's installations. The next largest appropriations title is mission and other flight operations ($6.5 billion), which funds all naval tactical air and anti-submarine forces, flying hours to meet readiness metrics, and air transportation needs in support of missions.

This is followed by mission and other ship operations ($4.9 billion), which supports ship OPTEMPO, fleet and unit training, and operational support to naval forces. Other significant appropriations titles within operating forces are ship depot operations support ($2.2 billion) and combat support forces ($2.2 billion). Overall, naval operations is the largest category of spending within the operating forces budget activity at $15.9 billion, followed by naval depots and maintenance at $14.9 billion, air operations at $8.8 billion, ground support and integration at $4.8 billion, and communications at $2.3 billion (see Figure 7-15 and Figure 7-16).

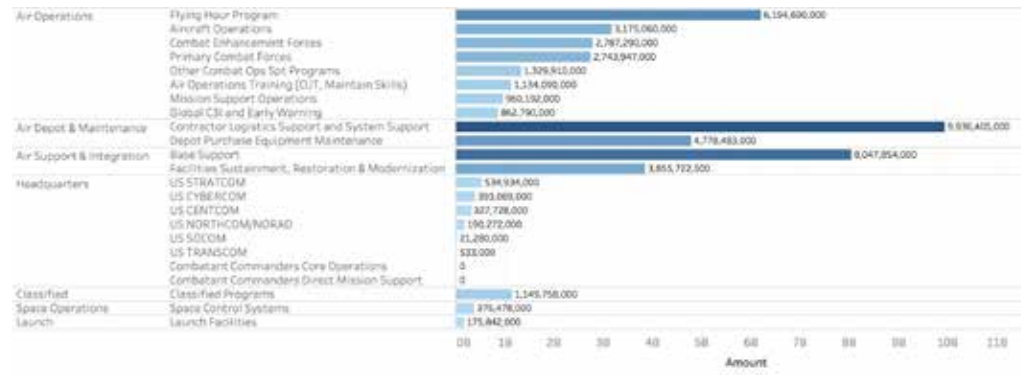
The defense-wide operating forces budget activity includes funding not only for the Defense Health Program, but also special forces operations. In PB 2018, DoD-wide funding requested for operating forces includes $8.3 billion for Special Operations Command (SOCOM) and $1 billion for the Joint Chiefs of Staff.

FIGURE 7-11: AIR FORCE APPROPRIATIONS TITLES WITHIN OPERATING FORCES, PB18



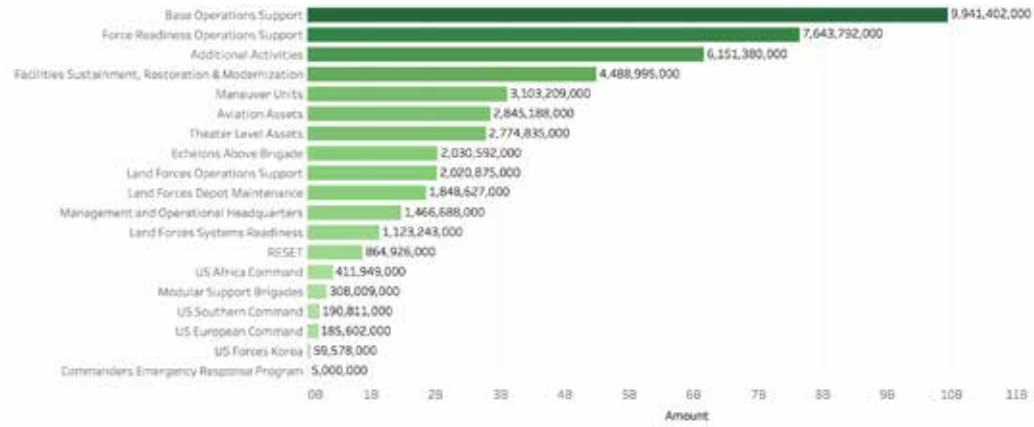
Source: VisualDOD data. Analysis in Tableau.

FIGURE 7-12: MAJOR CATEGORIES OF OPERATING FORCES FUNDING, AIR FORCE



Source: VisualDOD data. Analysis in Tableau.

FIGURE 7-13: ARMY APPROPRIATIONS TITLES WITHIN OPERATING FORCES, PB18

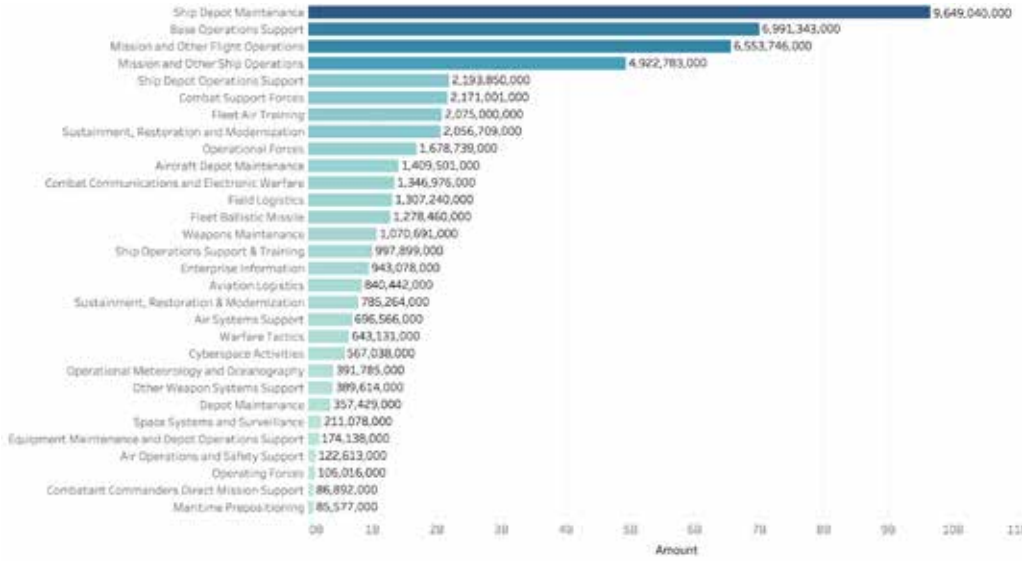


Source: VisualDOD data. Analysis in Tableau.

FIGURE 7-14: MAJOR CATEGORIES OF OPERATING FORCES FUNDING, ARMY

Source: VisualDOD data. Analysis in Tableau.

FIGURE 7-15: NAVY APPROPRIATIONS TITLES WITHIN OPERATING FORCES, PB18



Source: VisualDOD data. Analysis in Tableau.

FIGURE 7-16: MAJOR CATEGORIES OF OPERATING FORCES FUNDING, NAVY

Source: VisualDOD data. Analysis in Tableau.

Mobilization

The mobilization budget activity funds the deployment for forces, airlift, sealift, and prepositioning. By far the largest element is for airlift operations at a requested $3 billion in PB 2018. About half of airlift operations, or $1.4 billion, would be funded in OCO.

FIGURE 7-17: PB18 MOBILIZATION REQUEST BY SERVICE

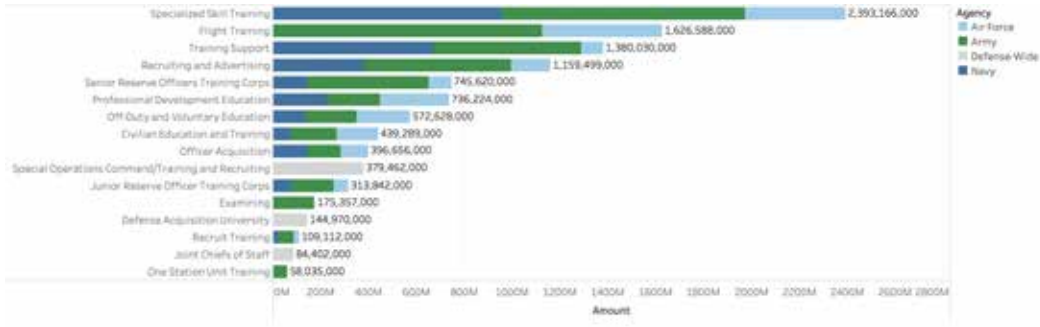
Source: VisualDOD data. Analysis in Tableau.

Training and Recruiting

The training and recruiting budget activity funds the Services' efforts to recruit and train enlisted servicemembers and officers. At $2.4 billion in PB 2018, specialized skill training is the largest element, followed by flight training at $1.6 billion and training support at $1.4 billion. Specialized skill training does not include operational training in preparation for a deployment. The budget also includes a requested $736 million for professional development education and $573 million for off-duty and voluntary education.

Recruiting and advertising would receive $1.16 billion in the PB 2018. The Army requested $614 million, while the Navy requested $379 million, and the Air Force requested $167 million. In FY 2017, the Army's accessions goal was 68,000 (with an increase of 6,000 active duty within the fiscal year due to the higher FY 2017 end-strength authorization), the Navy's was 45,546, and the Air Force's was 31,000. PB 2018 also includes $313 million for Junior Reserve Officer Training Corps and $746 million for Senior Reserve Officer Training Corps. Recruit training is a comparative bargain at a requested $109 million in FY 2018 (see Figure 7-18).

FIGURE 7-18: PB18 TRAINING AND RECRUITING REQUEST BY SERVICE



Source: VisualDOD data. Analysis in Tableau.

Administration and Service-wide Activities

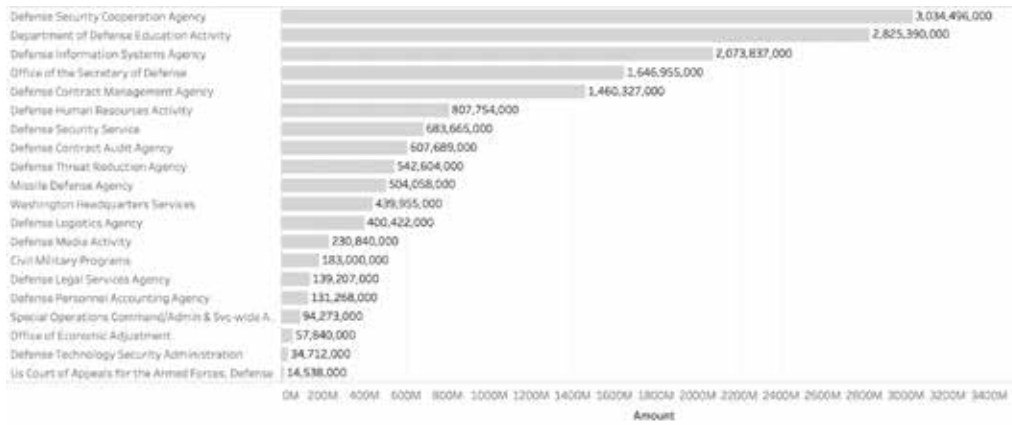
The PB 2018 asks for $54.8 billion for the fourth O&M budget activity, administration and service-wide activities. This budget activity primarily funds the operating expenses of the DoD agencies and the administrative and service-wide costs of the Services. Excluding classified funding, the PB 2018 requests $4.2 billion for the Air Force, $9.7 billion for the Army, and $4.1 billion for the Navy (see Figure 7-19). PB 2018 also requests $15.9 billion for the costs of DoD headquarters and agencies. This total includes $3 billion for the Defense Security Cooperation Agency, which leads DoD security cooperation and partnership efforts with ally and partner nations; $2.8 billion for the Department of Defense Education Activity, which runs pre-Kindergarten through Grade 12 schools for DoD dependents; $2 billion for the Defense Information Systems Agency, which provides IT and communications support for DoD elements and the White House; $1.6 billion for the Office of the Secretary of Defense; and $1.5 billion for the Defense Contract Management Agency (see Figure 7-20).

This budget activity is also the pass-through for the operating expenses for classified programs and activities for both the Services and Special Operations Command. At $20.8 billion in the PB 2018 request, classified programs make up 38 percent of the funding requested in the administration and service-wide budget activity in O&M.

FIGURE 7-19: PB18 ADMINISTRATION AND SERVICE-WIDE REQUEST BY SERVICE, EXCLUDING CLASSIFIED FUNDING

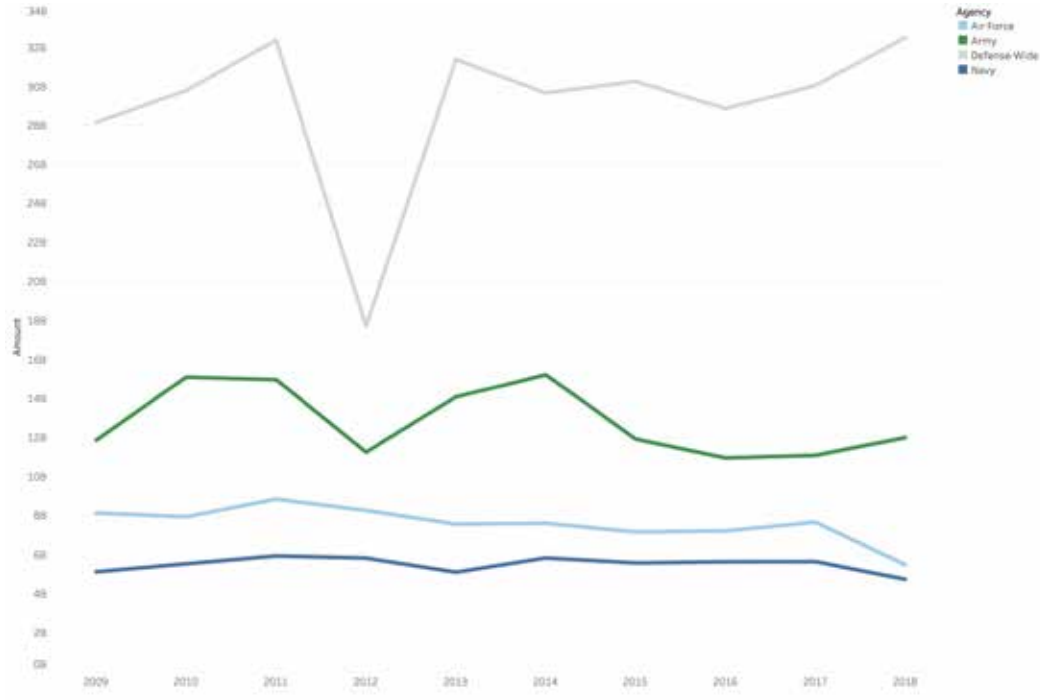
Source: VisualDOD data. Analysis in Tableau.

FIGURE 7-20: DOD-WIDE ADMINISTRATION AND SERVICE-WIDE FUNDING, EXCLUDING CLASSIFIED FUNDING



Source: VisualDOD data. Analysis in Tableau.

FIGURE 7-21: ADMINISTRATION AND SERVICE-WIDE FUNDING HISTORY BY SERVICE



Source: VisualDOD data. Analysis in Tableau.

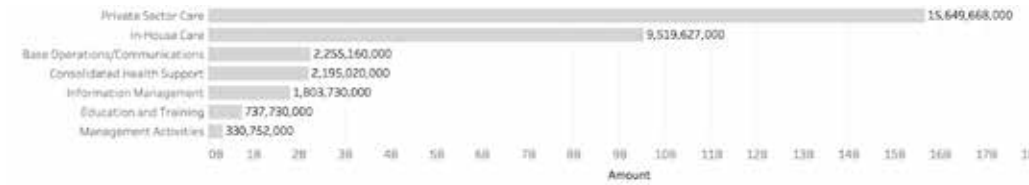
Defense Health Program

The Defense Health Program (DHP), which pays for most medical care provided to servicemembers and DoD beneficiaries, is funded in the DoD-wide portion of O&M. The O&M portion of the DHP request in FY 2018 is $32.5 billion. The largest cost component is private sector care ($15.6 billion), which pays for health care from private entities through the military healthcare insurance programs, primarily TRICARE, TRICARE Overseas, and TRICARE Reserve Select. In-house care, which covers the costs of the military Medical Treatment Facilities, is the next largest component at $9.5 billion. Other DHP elements are base operations/communications ($2.3 billion), which covers the maintenance and operational costs of military medical installations and facilities, and consolidated health support ($2.2 billion), which includes military medical exams during or before service, military medical laboratories, public and occupational health efforts, veterinary services, and other military medical and preparedness activities (see Figure 7-22). These categories also include $822 million in RDT&E and $413 million in procurement elsewhere in the budget.

The overall DoD health care spending is termed the "unified medical budget." In FY 2016, the most recent year for which overall funding costs for the unified medical budget are available, the DoD health care system paid for the care of an estimated 9.4 million beneficiaries, including 1.4 million servicemembers; 1.8 million active-duty family members; 170,000

activated Guard or Reserve members; 710,000 Guard or Reserve family members; 3.2 million retirees age 64 or younger and their dependents; and 2.2 million retirees 65 and older and their dependents.[102] That year, the unified medical budget totaled $51.5 billion. That figure includes $17.6 billion in direct care, $14.7 billion in private sector care, $8.4 billion in military personnel costs, $10.4 billion in accrual payments for the TRICARE for Life Medicare wrap-around program for retirees, and $630 million in military construction costs.

FIGURE 7-22: PB18 DEFENSE HEALTH PROGRAM O&M REQUEST



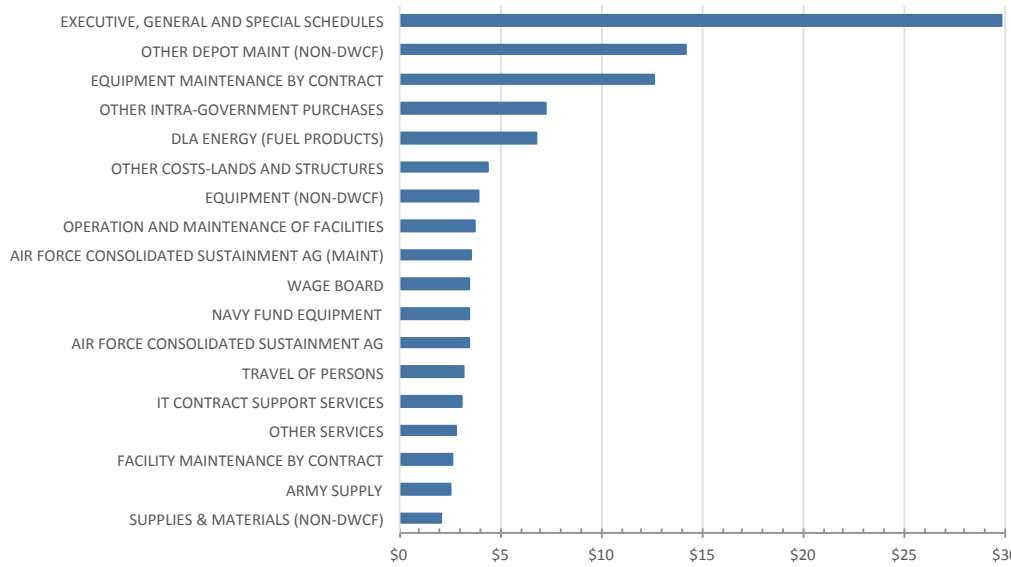
Source: VisualDOD data. Analysis in Tableau.

What does O&M funding purchase?

Within the base PB 2018 O&M request, the largest single category of O&M expenditures is for other purchases at $82 billion, followed by civilian personnel compensation at $34.4 billion, defense working capital fund supplies and materials at $17 billion, and other fund purchases at $16.3 billion. The largest costs overall are for non-wage board civilian pay ($29.8 billion), other depot maintenance that is not paid for by the defense working capital funds ($14.2 billion), contracts for equipment maintenance ($12.6 billion), other intra-governmental purchases ($7.2 billion), fuel purchased from the Defense Logistics Agency—Energy ($6.7 billion), other costs associated with lands and structures ($4.3 billion), the cost of equipment not paid for by the defense working capital funds ($3.8 billion), the operation and maintenance of facilities ($3.7 billion), Air Force consolidated sustainment ($3.5 billion), and wage board civilian pay ($3.5 billion).

102 Office of the Assistant Secretary of Defense (Health Affairs) (OASD[HA]), *Evaluation of the TRICARE Program: Fiscal Year 2017 Report to Congress* (Washington, DC: Defense Health Agency [DHA], May 2017), available at https://health.mil/Military-Health-Topics/Access-Cost-Quality-and-Safety/Health-Care-Program-Evaluation/Annual-Evaluation-of-the-TRICARE-Program.

FIGURE 7-23: PB 2018 LARGEST O&M COST ELEMENTS



Source: Service and Defense-wide Justification Books for FY18.[103]

Note: Dollars in billions.

OCO

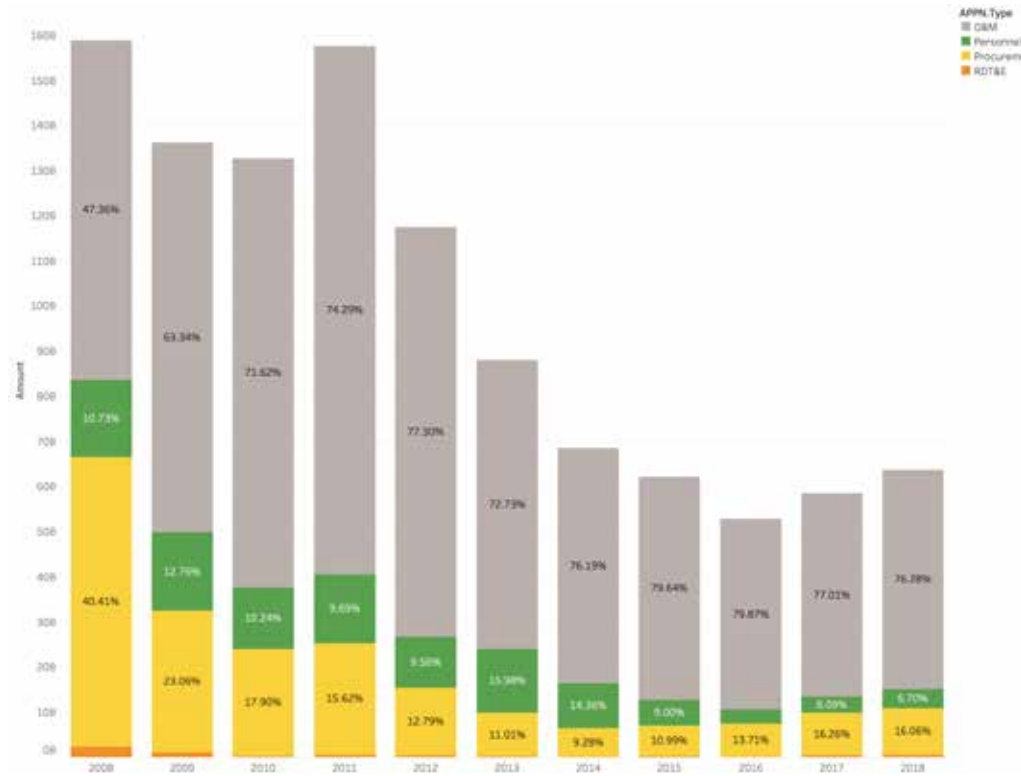
O&M is the most significant element of OCO funding in PB 2018. At $48.6 billion, the OCO O&M request is 76 percent of the total OCO request, far above the $10.2 billion requested for procurement, the $4.3 billion requested for personnel, and the $611 million requested for RDT&E. The O&M proportion of the OCO request has remained between 72 and 80 percent since FY 2010, even as the overall OCO request amount has declined (see Figure 7-24).

OCO accounts for 17.9 percent of DoD's total $271 billion O&M request in PB 2018, a figure that has stabilized after declining from a high of 36.9 percent in FY 2011. The Army remains dependent on OCO for about 30 percent of its O&M funding, a higher proportion than the other Services. In PB 2018, that amounts to $22.9 billion, $5.1 billion more than appropriated

103 U.S. Air Force, Exhibit OP-32, "Appropriation Summary of Price/Program Growth," in *Fiscal Year (FY) 2018 Budget Estimates, Operation and Maintenance, Air Force*, Volume I (Washington, DC: U.S. Air Force, May 2017), available at http://www.saffm.hq.af.mil/Portals/84/documents/Air%20Force%20Operation%20and%20Maintenance%20Vol%20I%20FY18.pdf?ver=2017-05-23-154654-623; U.S. Army, Exhibit OP-32, "Appropriation Summary of Price/Program Growth," in *Fiscal Year (FY) 2018 Budget Estimates, Operation and Maintenance, Army,* Volume I (Washington, DC: U.S. Army, May 2017), available at https://www.asafm.army.mil/documents/BudgetMaterial/fy2018/oma-v1.pdf; U.S. Navy, Exhibit OP-32, "Appropriation Summary of Price/Program Growth," in *Fiscal Year (FY) 2018 Budget Estimates, Operation and Maintenance, Navy*, Volume I (Washington, DC: U.S. Navy, May 2017), available at http://www.secnav.navy.mil/fmc/fmb/Documents/18pres/OMN_Vol1_book.pdf; OUSD, Comptroller, Exhibit OP-32A, "Summary," in *Fiscal Year (FY) 2018 President's Budget, Operation and Maintenance, Defense-wide*, Volume I (Washington, DC: DoD, May 2017), available at http://comptroller.defense.gov/Portals/45/Documents/defbudget/FY2018/budget_justification/pdfs/01_Operation_and_Maintenance/O_M_VOL_1_PART_1/Volume_I_Part_I.pdf.

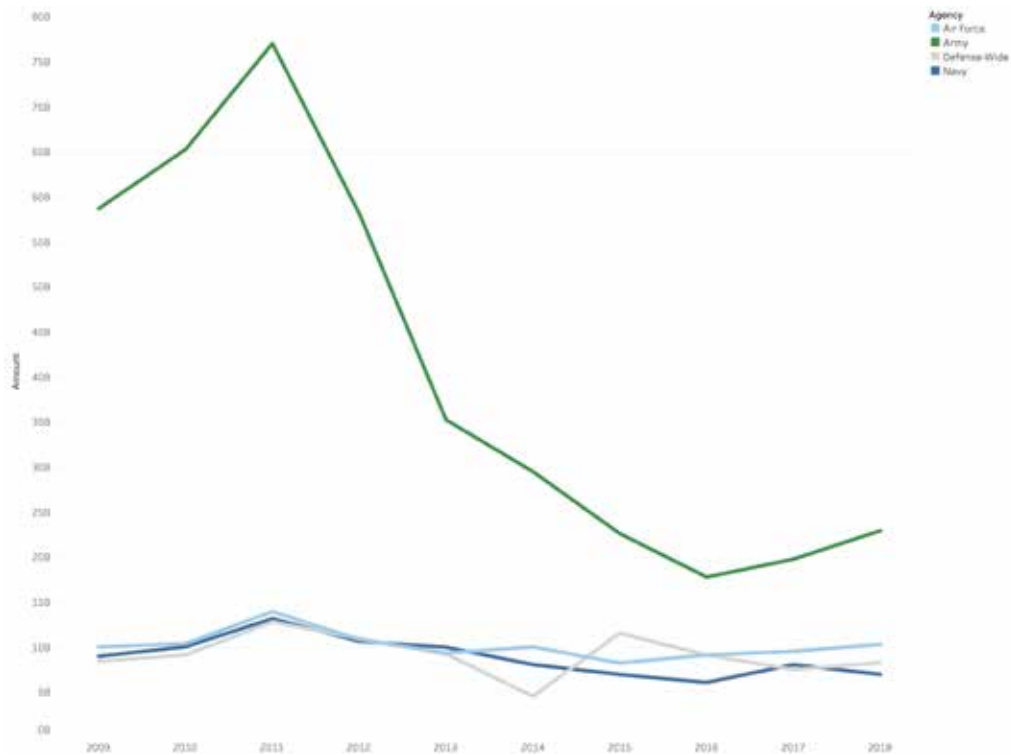
in FY 2016. Although the Army's overall OCO O&M request has declined substantially since its peak of $77 billion in FY 2011, it remains approximately twice as high as the OCO O&M requests of the other Services. $10.3 billion, or 17 percent of the Air Force's $72.3 billion PB 2018 O&M request, is for OCO funds. $7 billion, or 11.5 percent of the Navy's $61 billion O&M request, is for OCO funds. At $8.3 billion, OCO funds also make up 10.7 percent of the $77.9 billion in O&M funding requested for defense-wide activities (see Figure 7-24 and Figure 7-25).

FIGURE 7-24: OCO REQUESTS BY APPROPRIATION TITLE, FY08–FY18



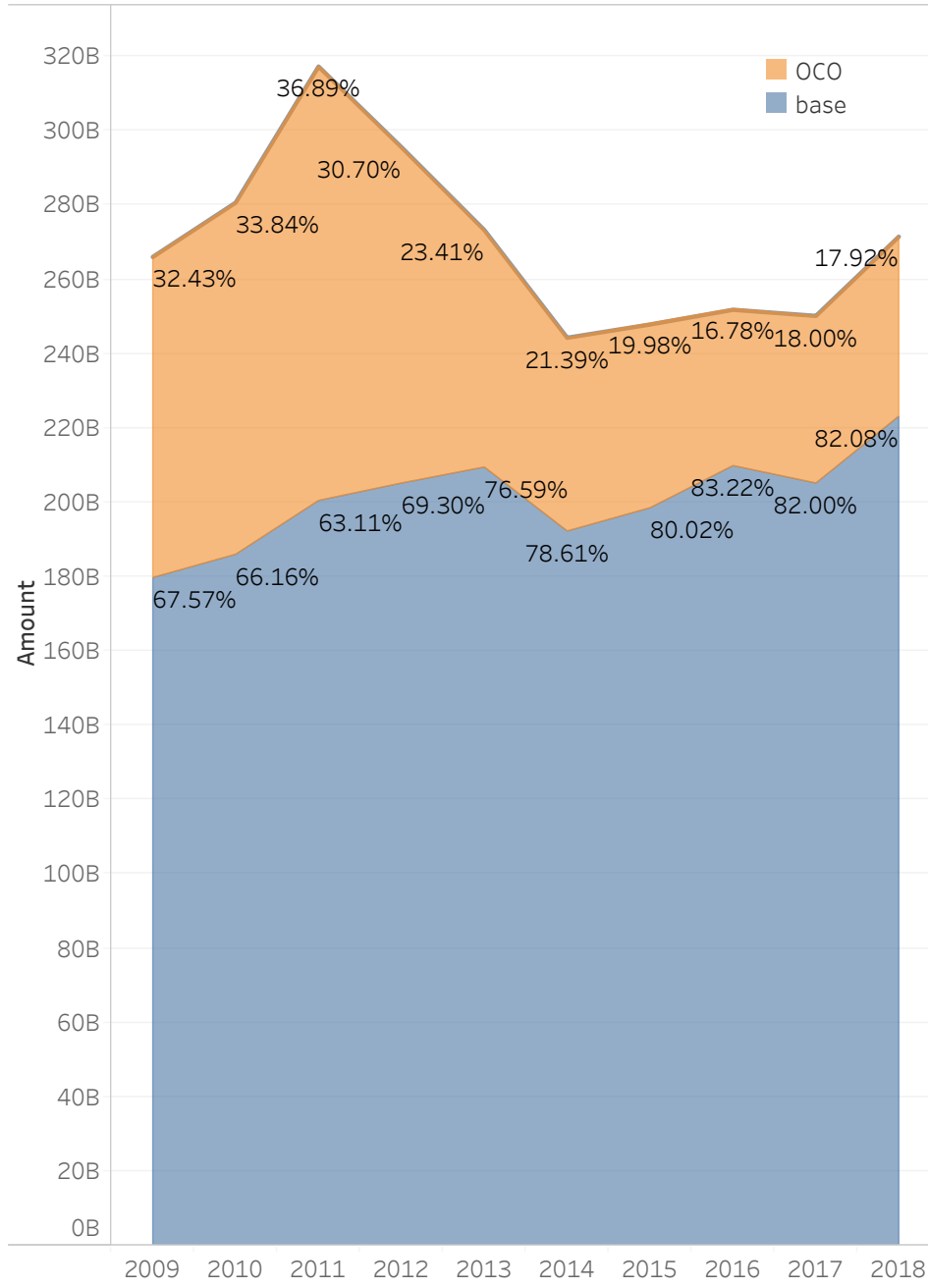
Source: VisualDOD data. Analysis in Tableau.

FIGURE 7-25: OCO O&M REQUESTS BY SERVICE, FY09–FY18



Source: VisualDOD data. Analysis in Tableau.

FIGURE 7-26: BASE AND OCO O&M REQUESTS, FY09–FY18



Source: VisualDOD data. Analysis in Tableau.

Readiness

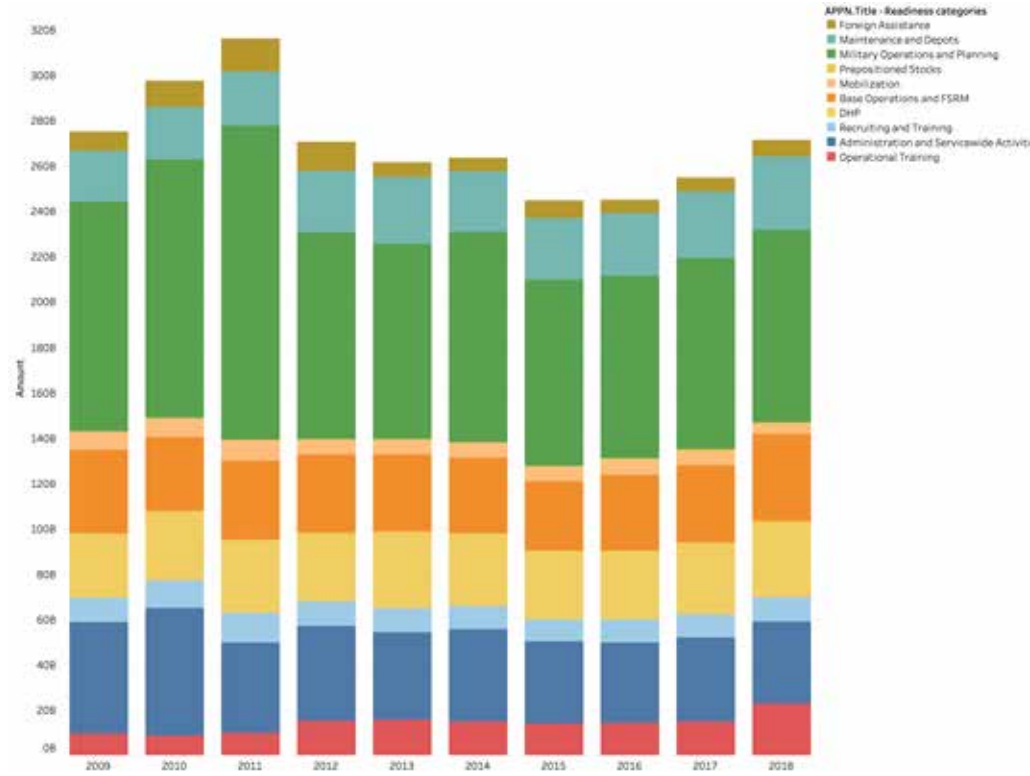
In an attempt to identify the areas within the O&M budget that directly support readiness, this section groups the appropriations titles within the operations and maintenance accounts into categories according to the types of functions they support. Although all of these categories (with the exception of foreign assistance) may have some impact on readiness, this section focuses on the following categories as the primary contributors to short-term readiness recovery:

- **Operational training** includes funding for training that is directly related to operations or deployment, found in the operating forces budget activity;
- **Maintenance and depots** captures funding related to depot maintenance and the costs of maintaining and repairing platforms, weapons systems, and equipment, predominantly in the operating forces budget activity; and
- **Prepositioned stocks** includes funds for the advance positioning of equipment that would be used in a contingency, also found in the mobilization budget activity.

Other analytical categories capture military operations and planning as well as mobilization. The remaining categories—base operations and facility sustainment, restoration and modernization, recruiting and training, administrative and service-wide activities, and the DHP—constitute the ongoing routine operations and maintenance costs of the military. As such, they contribute to a more broadly defined general readiness rather than directly impacting operational readiness. Finally, foreign assistance affects the readiness of foreign partners, but not U.S. forces.

Figure 7-26 breaks down the PB 2018 request and previous years' appropriations funding along these ten O&M categories. The PB 2018 requested $32.3 billion for maintenance and depots, $22.9 billion for operational training, and $564 million for pre-positioned stocks, as well as $85.1 billion for military operations and planning and $4.6 billion for mobilization. In categories more loosely related to readiness and operations, the PB 2018 requested $38.5 billion for base operations and facility sustainment, restoration, and modernization; $36.2 billion for administration and service-wide activities; $33.4 billion for the DHP; $10.8 billion for recruiting and training; and $7.1 billion for foreign assistance.

FIGURE 7-27: FY09–FY17 APPROPRIATIONS AND PB18 O&M REQUEST BY READINESS CATEGORY



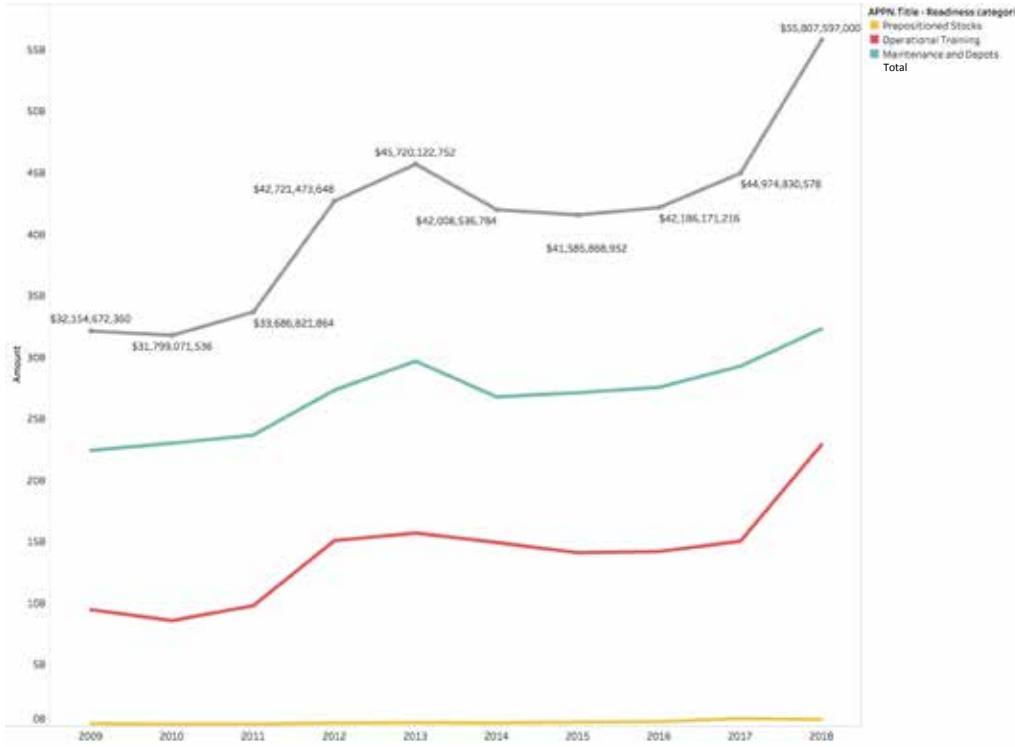
Source: VisualDOD data. Analysis in Tableau.

Overall readiness funding (comprising the maintenance and depots, operational training, and pre-positioned stocks categories) has fluctuated, reaching a peak of $45.7 billion in FY 2013 despite the sequester before falling by $2.2 billion in FY 2015. Compared to the FY 2017 appropriations of $45 billion, PB 2018 would add $10.8 billion to these readiness categories, an increase of 24 percent (see Figure 7-27).

Readiness funding for the Army fell from a peak of $18.3 billion in FY 2012 to a low of $13.5 billion in FY 2016, a decline of 26.2 percent, or 5.4 percent annually. Over the same time period, the Air Force's readiness funding grew from $11.8 billion in FY 2012 to $15.4 billion in FY 2017, an annual growth rate of 5.5 percent. Similarly, the Navy's readiness funding grew from $12.6 billion in FY 2012 to $15.7 billion in FY 2017 despite a dip following FY 2013, reflecting an annual growth rate of 4.4 percent (see Figure 7-28). Overall, the Air Force would see the largest increase in readiness funding in the PB 2018 request, with an additional $5.4 billion for operational training (a nearly three-fold increase) and $1.2 billion more for maintenance and depots (an 8.6 percent increase). The Navy would see the next-largest increase, with an additional $545 million for operational training (an increase of 21.6 percent) and $1.9 billion for maintenance and depots (an increase of 14.2 percent). The Army would

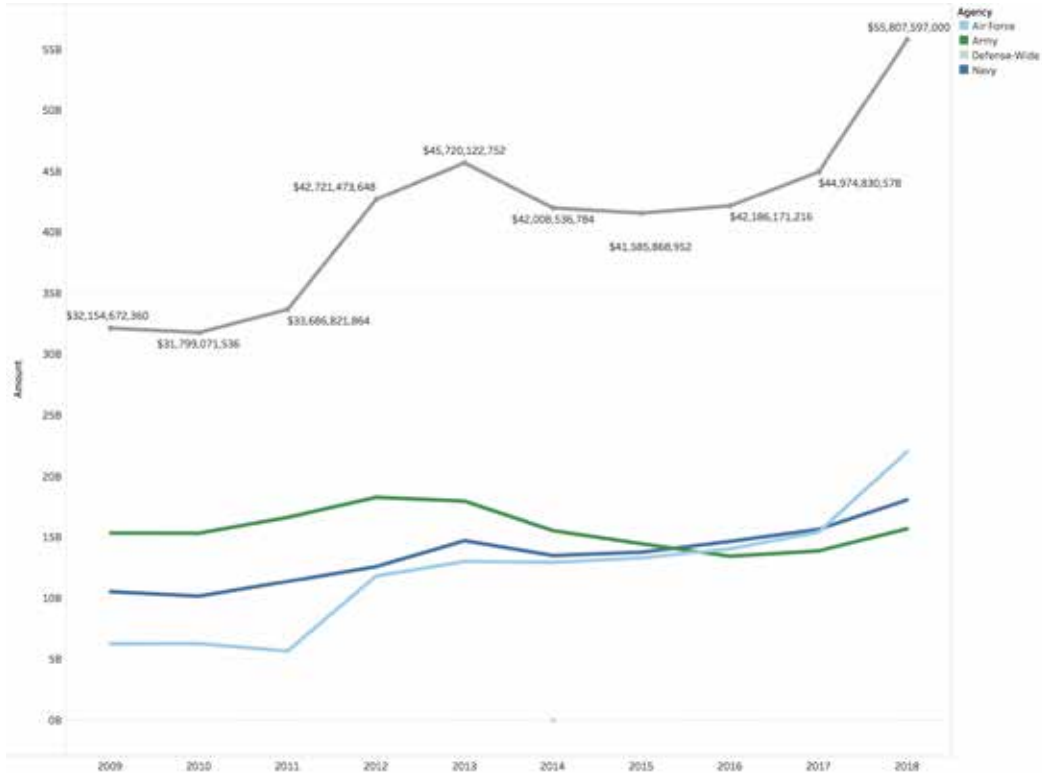
receive the smallest readiness plus-up, heavily focused on operational training, with an additional $1.9 billion (a 17.5 percent increase), with just an additional $11 million in increased funding for maintenance and depots (see Figure 7-29).

FIGURE 7-28: MILITARY READINESS APPROPRIATIONS AND PB18 REQUEST, BY CATEGORY AND TOTAL



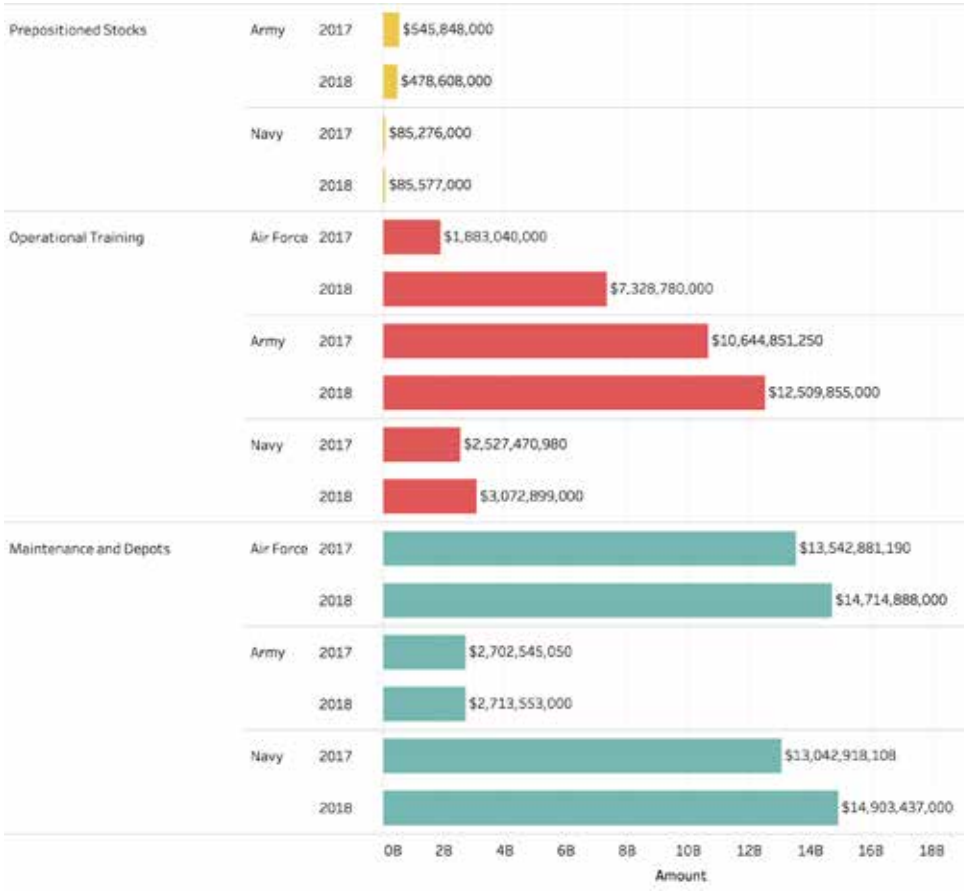
Source: VisualDOD data. Analysis in Tableau.

FIGURE 7-29: MILITARY READINESS APPROPRIATIONS AND PB18 REQUEST, BY SERVICE AND TOTAL



Source: VisualDOD data. Analysis in Tableau.

FIGURE 7-30: PB18 ADDITIONS TO READINESS FUNDING, BY SERVICE AND CATEGORY

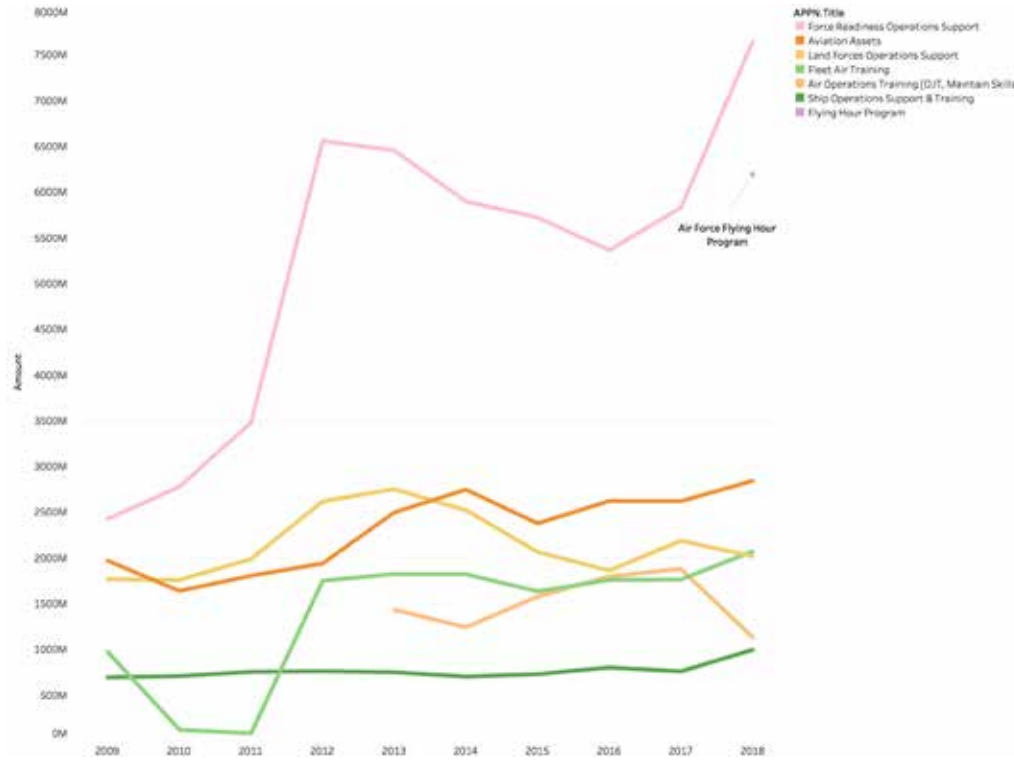


Source: VisualDOD data. Analysis in Tableau.

Within the operational training readiness category, the Army's force readiness operations support receives the largest funding request for FY 2018 at $7.6 billion, a 31 percent increase over the FY 2017 appropriations. Navy ship operations support and training and fleet air training, on the other hand, have remained relatively constant since FY 2009, with modest increases in the PB 2018 request (see Figure 7-31). The Air Force's Flying Hour Program is a new appropriations title in FY 2018, reflecting the consolidation of the flying hour-related elements of numerous appropriations titles associated with operating forces into a single title.[104]

104 U.S. Air Force, "SAG 11Y, Flying Hour Program" in *FY 2018 Budget Estimates, Operation and Maintenance, Air Force*, p. 162.

FIGURE 7-31: OPERATIONAL TRAINING APPROPRIATIONS AND PB18 REQUEST, BY APPROPRIATIONS TITLE

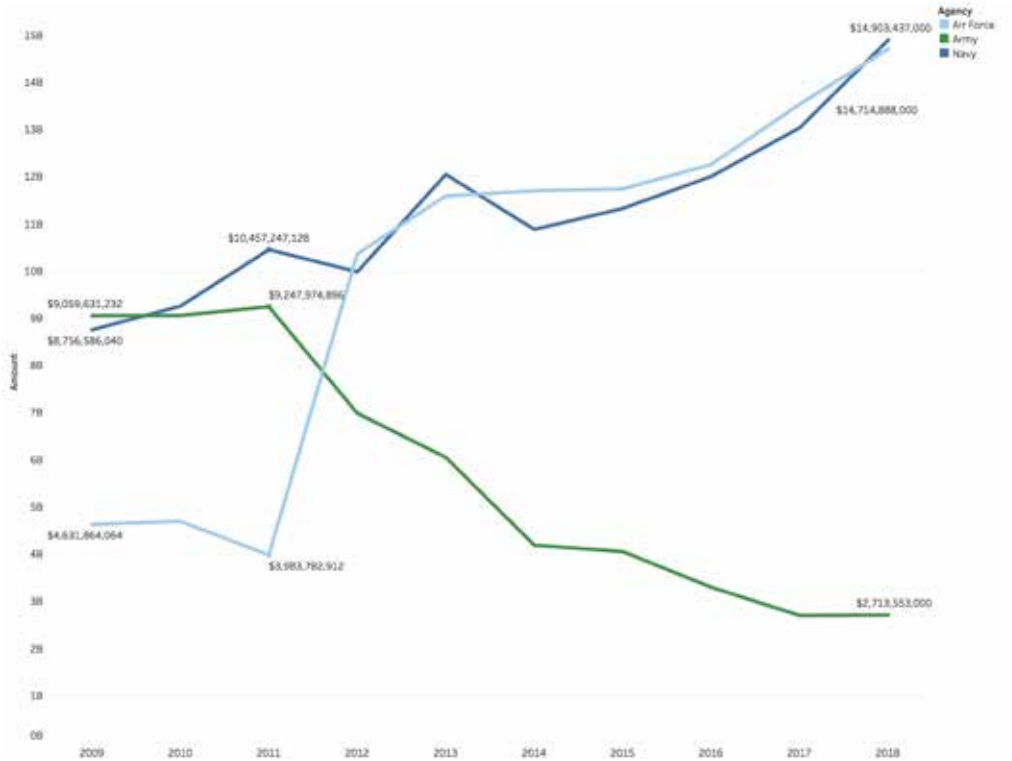


Source: VisualDOD data. Analysis in Tableau.

Overall, while the maintenance and depot readiness category has seen steady moderate increases in funding for the Air Force and the Navy, it has experienced a two-thirds decline in funding for the Army since FY 2011. The decline in the Army's maintenance and depot funding can be seen in most of its appropriations titles. RESET, an effort to reset and rehabilitate the Army's equipment after the wars in Iraq and Afghanistan and funded in OCO, had an average request of $7.9 billion from FY 2009 until FY 2011, only to fall precipitously to just under $4 billion in FY 2012. The Air Force's depot maintenance category appears to plummet from a peak of $13.5 billion in FY 2017 to just $357 million in PB 2018. However, this actually reflects a reorganization of the Air Force's depot maintenance program into two new appropriations titles, contractor logistics support ($9.9 billion) and depot purchase equipment maintenance ($4.8 billion), for an actual increase of $1.2 billion. Navy ship depot maintenance has grown steadily since FY 2009, rising from a low of $4.6 billion to a peak of $9.6 billion in FY 2018. However, increases to ship depot maintenance may have come at the cost of reduced maintenance and depot funding for Navy and Marine Corps aircraft. Through FY 2017, appropriations for Navy aircraft depot maintenance remained below the FY 2011 high point of $1.6 billion (see Figure 7-32). Although this is a very preliminary analysis, these upward trends in maintenance and depot funding for the Air Force and Navy, combined with

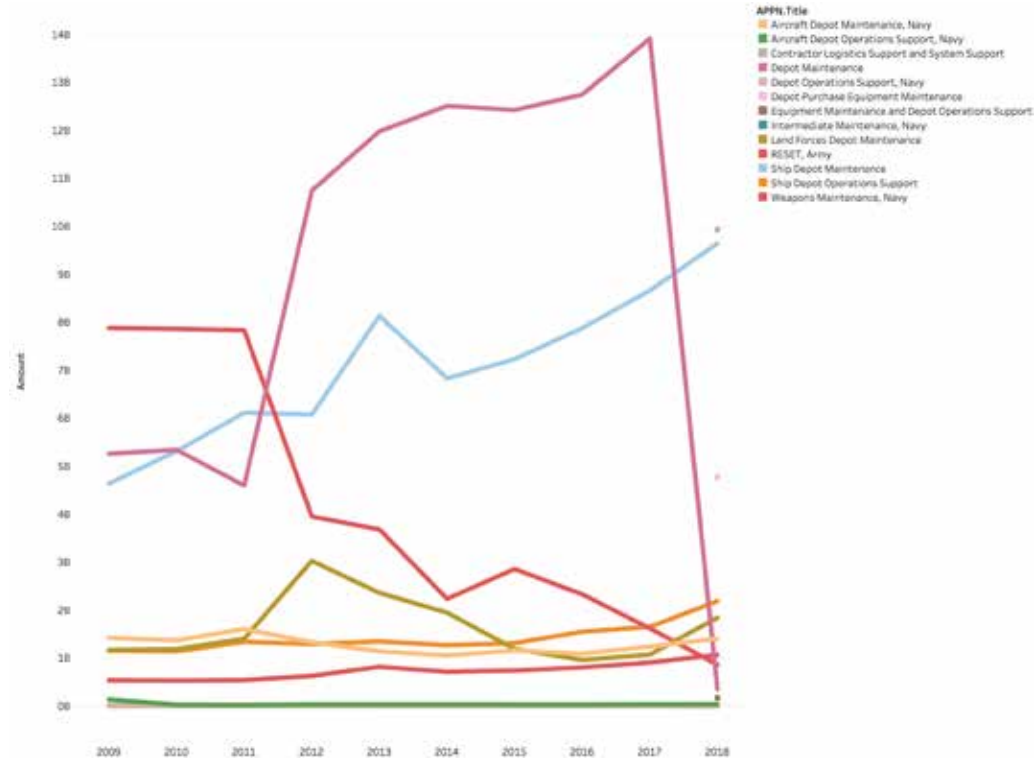
the continuing poor state of equipment readiness, prompt questions into potentially escalating maintenance costs for aged and run-down platforms, the costs of deferred maintenance, the accuracy of the Services' future maintenance cost estimations, and how much funding and depot availability would be required to actually restore the Services to an acceptable state of readiness.

FIGURE 7-32: MAINTENANCE AND DEPOT APPROPRIATIONS AND PB18 REQUEST, BY SERVICE



Source: VisualDOD data. Analysis in Tableau.

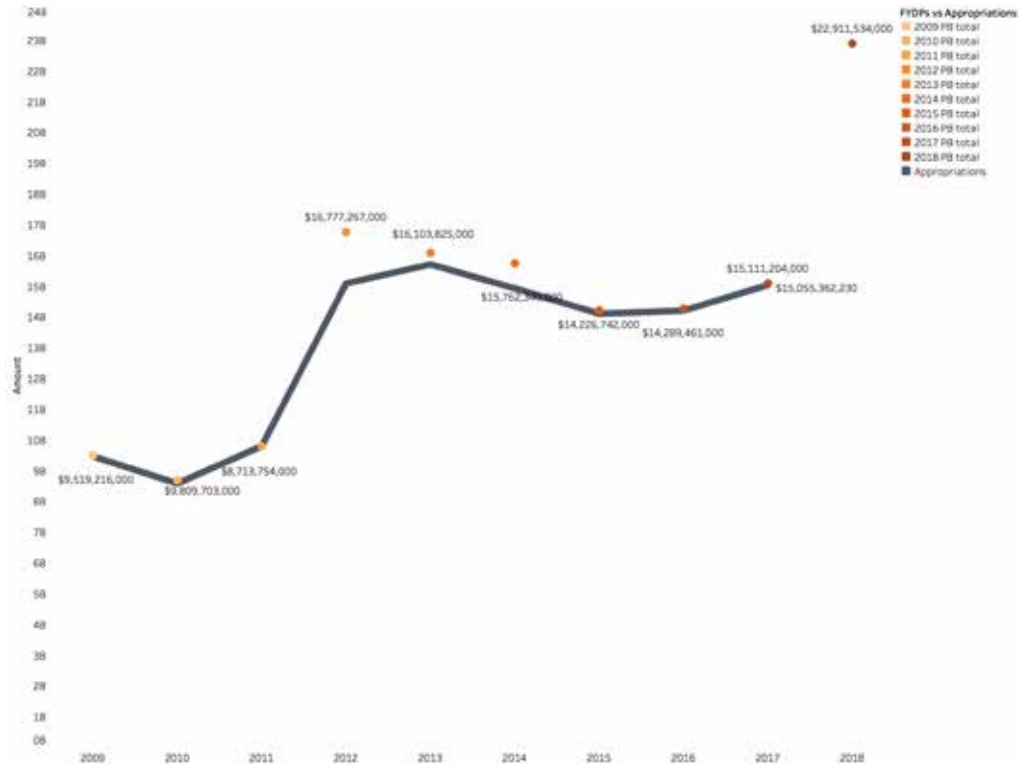
FIGURE 7-33: MAINTENANCE AND DEPOT APPROPRIATIONS AND PB18 REQUEST, BY APPROPRIATIONS TITLE



Source: VisualDOD data. Analysis in Tableau.

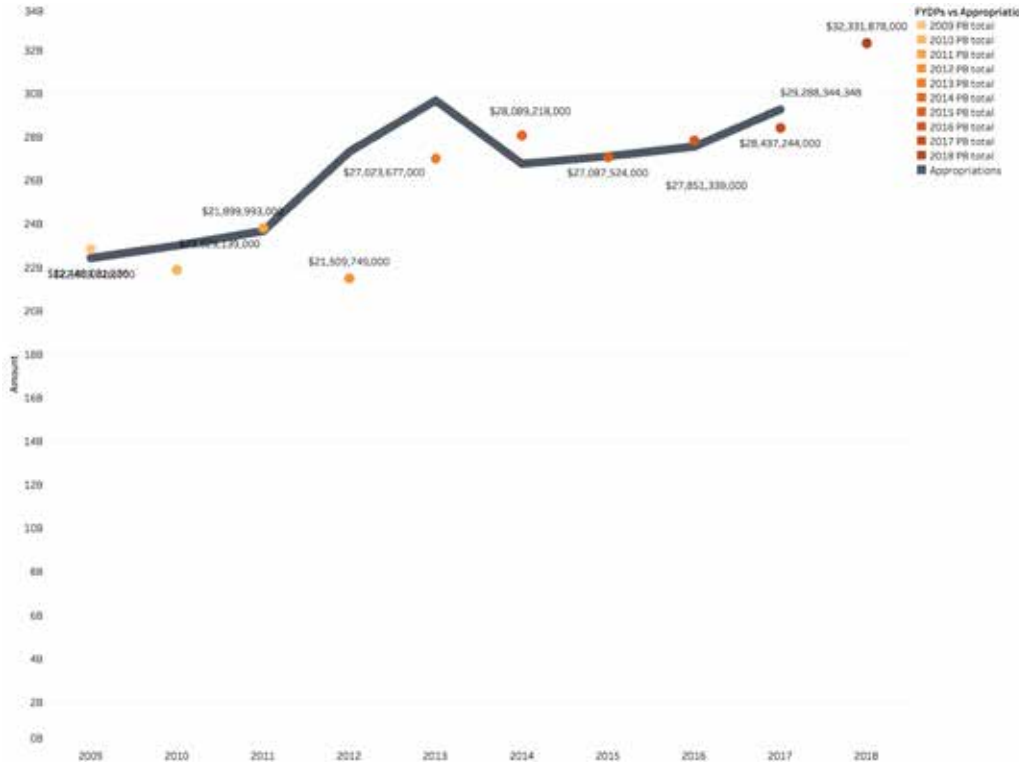
Although Congress has been unable to remove the limits imposed by the BCA, it has largely fully funded the amounts requested for operational training and maintenance and depots. For operational training, Congress fully funded the Pentagon's request in every year between FY 2009 and FY 2017, with the exceptions of FY 2012, FY 2013, and FY 2014, appropriating $1.7 billion, $377 million, and $816 million below the requested amounts those years, respectively. Much of the delta in FY 2012 was due to a smaller-than-requested increase for the Army, likely due to the drawdown in Iraq and Afghanistan. Congress has also met or exceeded the Pentagon's requests for maintenance and depot funding for each year between FY 2009 and FY 2016, with the exception of a slight underfunding in FY 2012. In FY 2012 and FY 2013, Congress actually appropriated substantially more funds than requested (see Figure 7-33 and Figure 7-34).

FIGURE 7-34: HISTORY OF REQUESTS AND APPROPRIATIONS FOR OPERATIONAL TRAINING



Source: VisualDOD data. Analysis in Tableau.

FIGURE 7-35: HISTORY OF REQUESTS AND APPROPRIATIONS FOR MAINTENANCE AND DEPOTS



Source: VisualDOD data. Analysis in Tableau.

CHAPTER 8

Other Defense Spending

Overview

In addition to the major appropriations titles of military personnel, RDT&E, procurement, and O&M, the DoD budget also contains a handful of smaller appropriations titles: MILCON, family housing, and revolving and management funds. DoD also receives mandatory appropriations for the accrual payments for concurrent receipt of military retirement and Veterans Affairs (VA) benefits for some VA beneficiaries.

Funding for DoD is about 95 percent of total national defense funding. In OMB terms, national defense funding is budget function 050. Within that, funding for DoD is budget subfunction 051. Funding for the nuclear weapons activities of DOE is budget subfunction 053, entitled atomic energy defense activities, while budget subfunction 054 captures other defense-related activities. The limitations on defense discretionary appropriations imposed by the BCA of 2011 apply to the national defense budget function 050 as a whole. All other discretionary federal spending falls under the parallel cap on non-defense discretionary spending.

In addition to the three constituent elements of the national defense budget function, there are other elements of federal spending related to national security that fall within the non-defense category, rather than in the national defense budget function. For example, the Department of State and the Department of Homeland Security, which includes the Coast Guard, are part of the non-defense category. Veterans' benefits and international affairs funding are major federal budget elements that are not considered part of the national defense budget.

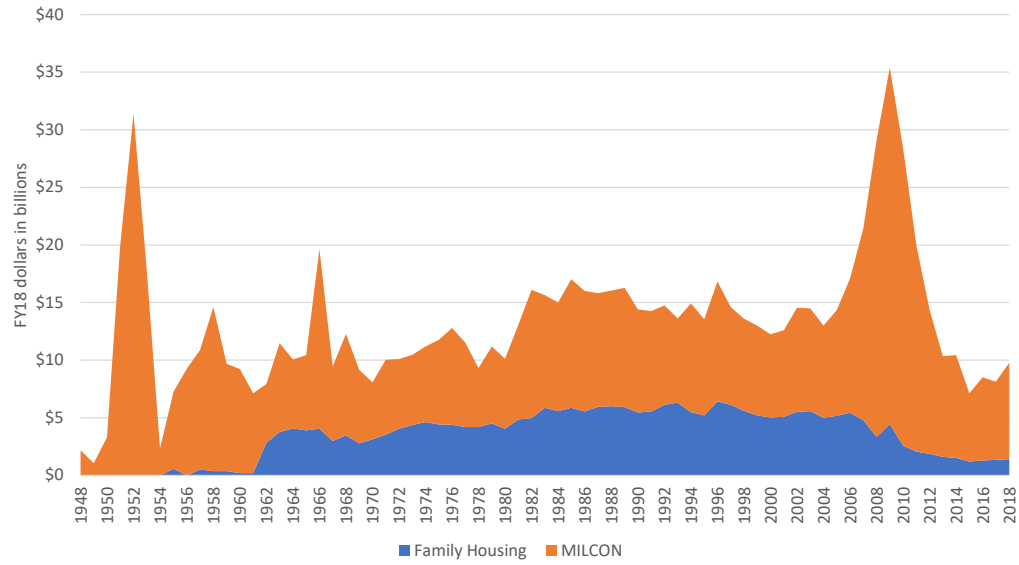
Other Funding Within the DoD Budget

Military Construction and Family Housing

MILCON and family housing are a part of DoD's budget but are authorized in the Military Construction and Veterans Affairs bill instead of in the NDAA. In FY 2018, DoD is requesting $8.4 billion in the base budget for military construction and an additional $638 million in OCO funding, for a total of $9 billion. This figure is about $2.4 billion more than the FY 2017 appropriations of $6.6 billion, for an increase of 36 percent. DoD is also requesting $1.4 billion for family housing, an increase of $156 million or 12 percent over the $1.3 billion appropriated in FY 2017. Military construction funds support the ongoing maintenance and renovation of military real property including buildings, structures, and infrastructure like runways and roads. In addition to paying for DoD servicemembers to obtain housing by renting or purchasing private housing stock through the Basic Allowance for Housing (part of the military personnel appropriations title), DoD operates family housing on base, in barracks, and in areas where there is insufficient private housing stock.

Funding for military construction has fluctuated wildly since FY 1948. Higher levels of MILCON funding in recent years were partially driven by the FY 2005 Base Realignment and Closure (BRAC) round. DoD has proposed conducting another BRAC round to divest excess infrastructure in its budget every year between FY 2013 and FY 2018 (after the completion of the FY 2005 BRAC), citing excess capacity in the current and projected force structure levels, but these proposals have met sharp resistance from Congress.

FIGURE 8-1: MILCON AND FAMILY HOUSING APPROPRIATIONS AND PB18 REQUEST



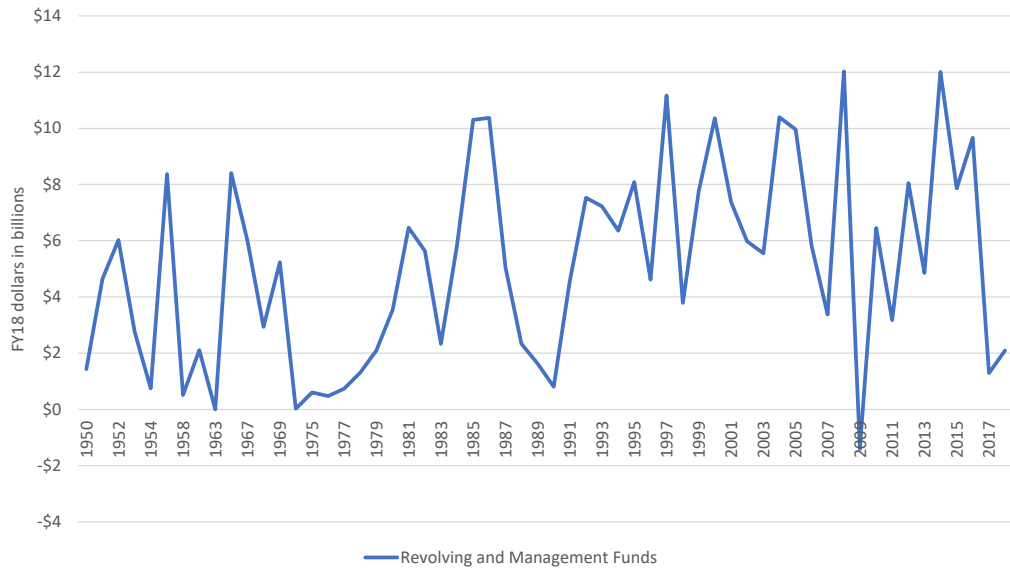
Source: OUSD (Comptroller), *National Defense Budget Estimates for FY 2018*, FY 2018 Greenbook (Washington, DC: DoD, June 2017), Table 6-8, "Department of Defense Budget Authority by Public Law Title," available at http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2018/FY18_Green_Book.pdf.

Revolving and Management Funds

The Department of Defense operates a number of revolving and management funds. These funds effectively operate as self-funded lines of credit. Frequently, they offer services utilized by the military Services that are organized and run at the DoD-wide level for efficiency; this includes energy, supply chain management, telecom acquisitions, and funds to support financial services. They receive appropriated funds as necessary, but they also charge the Services for the goods or services that they provide. For example, the Defense Logistics Agency—Energy is responsible for procuring, storing, managing, and distributing fuels and other energy products to the Services, which then purchase the energy from their own O&M accounts. Other DoD-wide revolving funds support the various elements of the Defense Logistics Agency, the Defense Finance and Accounting Service, and the Defense Information Systems Agency. The Navy, Army, and Air Force also operate their own working capital funds, principally for supply management and maintenance. Many of these funds are operated as internal revolving or working capital funds that require appropriations on initial startup or in cases where costs are much higher than expected, requiring top-up funding; as a result, the funding profile of this appropriations title is highly erratic. Additionally, Congress may remove money from the funds' balances in a rescission action.

In FY 2018, DoD requested $2.2 billion in revolving and management funds, $1 billion more than the $1.2 billion appropriated in FY 2017.

FIGURE 8-2: REVOLVING AND MANAGEMENT FUNDS APPROPRIATIONS, RECISSIONS, AND PB18 REQUEST



Source: OUSD (Comptroller), *National Defense Budget Estimates for FY 2018*, FY 2018 Greenbook (Washington, DC: DoD, June 2017), Table 6-8, "Department of Defense Budget Authority by Public Law Title," available at http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2018/FY18_Green_Book.pdf.

Mandatory Spending

In addition to the discretionary spending outlined in the majority of these briefs, DoD needs mandatory funding, principally for the concurrent receipt accrual payments to the Military Retirement Fund. Congress allowed the concurrent receipt of both military retirement pay and VA disability compensation pay for some disabled military retirees in the FY 2003 NDAA.[105] As a result, DoD now needs additional military retirement accrual payments to finance the retirement benefits of this eligible pool of beneficiaries. Because Congress appropriates this money automatically (hence the mandatory designation), it does not appear in DoD's budget documents. However, it is still counted as part of national defense spending. In PB 2018, the estimated accrual payment is $7.5 billion.

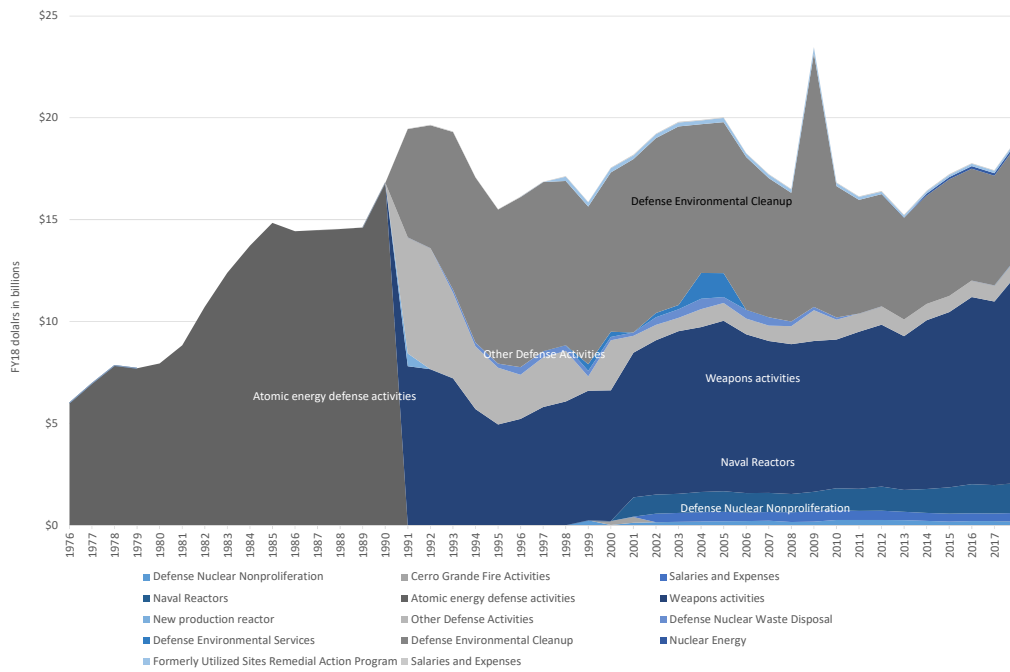
105 Kristy N. Kamarck, *Concurrent Receipt: Background and Issues for Congress* (Washington, DC: CRS, January 18, 2017).

Defense-related Spending Outside the DoD Budget

Atomic Energy Defense Activities

The FY 2018 budget requests a total of $21.8 billion in discretionary funding for nuclear weapons-related work in budget subfunction 053. The major elements in this total are $5.3 billion for environmental remediation of former defense sites, $816 million for other defense activities, and $10.2 billion for the National Nuclear Security Administration (NNSA). Within the NNSA, the largest funding elements are for nuclear weapons activities ($10.2 billion); nuclear non-proliferation efforts ($1.8 billion); Naval Reactors, which is the sole authority over the Navy's nuclear reactors for propulsion ($1.5 billion); and salaries and expenses ($419 million). The PB 2018 request also includes $1.2 billion in mandatory funding in budget subfunction 053, mostly for occupational illness payments to former nuclear weapons employees.

FIGURE 8-3: ATOMIC ENERGY DEFENSE ACTIVITIES APPROPRIATIONS AND PB18 REQUEST



Source: OMB, Budget Analysis Branch, *Budget of the United States Government Fiscal Year 2018: Public Budget Database, Budget Authority* (Washington, DC: OMB, May 2017), available at https://www.whitehouse.gov/sites/default/files/omb/budget/fy2018/assets/budauth.xls.

Other Defense-Related Funding

Budget subfunction 054, other defense-related activities, is the final element of national defense funding. This budget subfunction includes some activities of the FBI ($5.1 billion); the Department of Homeland Security, including the National Protection and Programs Directorate, which focuses on threats to physical and cyber infrastructure ($1.5 billion); the Coast Guard ($340 million); the Federal Emergency Management Agency ($96 million); the intelligence community management account ($532 million); and the operation of the Selective Service System ($23 million). It also includes the CIA's retirement and disability fund ($514 million). Those other defense-related activities total $7.9 billion in discretionary spending and $564 million in mandatory spending in the FY 2018 request.[106]

Other National Security Spending

In addition to the national defense 050 budget function, funding for veterans' benefits and services and Treasury payments of unfunded military retirement liabilities could also be considered defense-related. For FY 2018, the total Department of Veterans Affairs budget request was $183 billion, of which $104.1 billion was requested for mandatory benefit programs and $70.7 billion for the Veterans Health Administration. There are also numerous smaller programs serving veterans throughout the federal government, such as funds for veterans training in the Department of Labor ($50 million).[107] The unfunded military retirement government liability was created at the beginning of FY 1985 when the government shifted from a system of paying for military retirement as benefits paid out to retirees to an accrual system of contributions paid to the Military Retirement Fund to finance the future retirements of current servicemembers. The Department of Defense began paying accrual payments into the Military Retirement Fund, while the government as a whole (through the Department of the Treasury) assumed the responsibility of paying for the retirements of those servicemembers who began their service before the accrual system was adopted.[108] In FY 2017, the government will pay an estimated $83.8 billion into the retirement fund to cover the unfunded retirement payouts to retired servicemembers and $7.5 billion to cover the additional concurrent receipt of military retirement and VA disability benefits, in addition to the DoD portion discussed above.[109]

106 OMB, Budget Analysis Branch, *Budget of the United States Government Fiscal Year 2018: Public Budget Database, Budget Authority* (Washington, DC: OMB, May 2017),. See Table 25.1, "Budget Authority and Outlays by Function, Category, and Program," available at https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/25_1.xls.

107 OMB, Public Budget Database FY18.

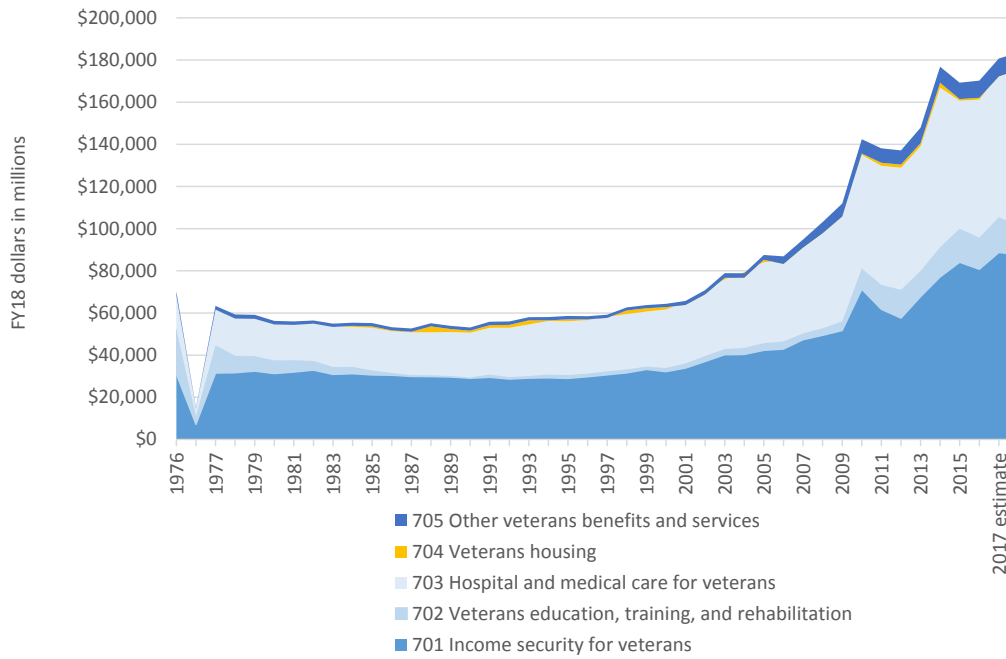
108 Kamarck, *Military Retirement: Background and Recent Developments*.

109 OMB, "Other Defense—Civil Programs," in *United States Government, Fiscal Year 2018* (Washington, DC: U.S. GPO, 2016), p. 1020, available at https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/civ.pdf.

Funding for veterans' benefits has grown rapidly in the past two decades, rising from $64.4 billion in FY 2000 (in FY 2018 dollars) to a requested $183.5 billion in PB 2018. This growth in costs is due to a larger pool of eligible veterans, the aging of veterans from previous wars, more complex and disabling injuries from the conflicts in Iraq and Afghanistan, and the expansion of veterans benefits to include a wider pool of beneficiaries (see Figure 8-3).

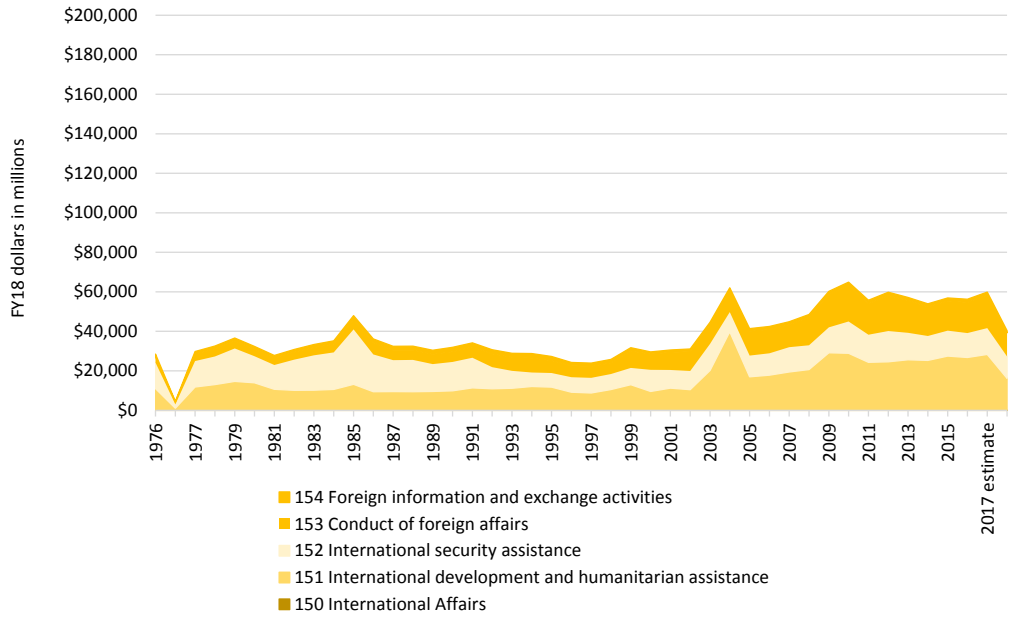
Spending on international affairs could also be considered part of our nation's broader national security spending (see Figure 8-4). However, although funding for both veterans' benefits and services and international affairs has grown over the past two decades, they still represent a much smaller proportion of federal spending than the national defense budget (see Figure 8-5).

FIGURE 8-4: VETERANS BENEFITS AND SERVICES APPROPRIATIONS AND PB18 REQUEST



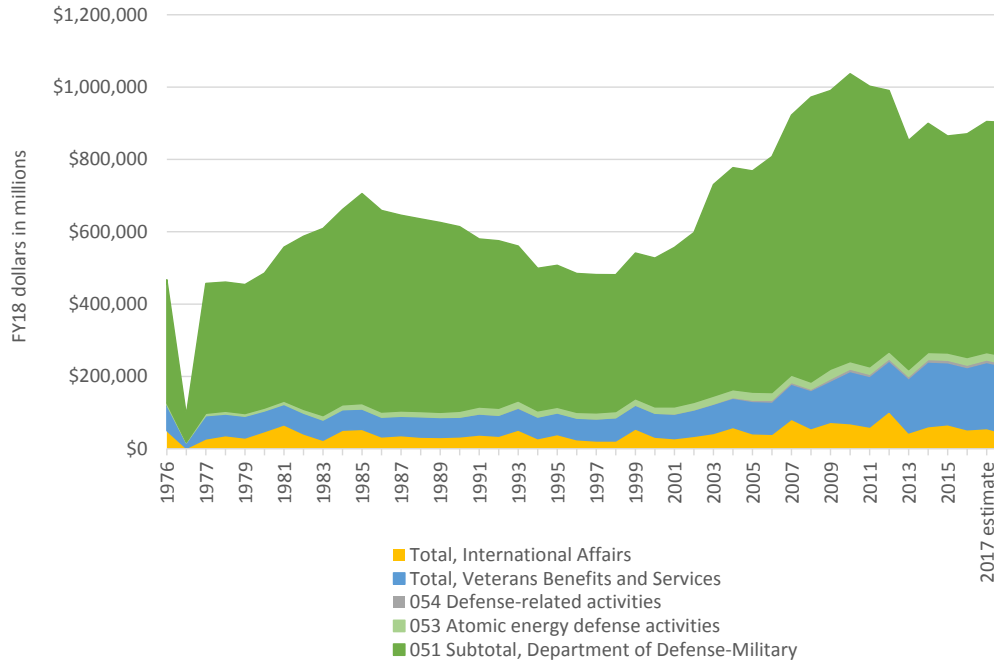
Source: OMB, Public Budget Database FY18, Table 5.1, "Budget Authority by Function and Subfunction: 1976–2022," available at https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/hist05z1.xls.

FIGURE 8-5: INTERNATIONAL AFFAIRS APPROPRIATIONS AND PB18 REQUEST



Source: OMB, Public Budget Database FY18, Table 5.1, "Budget Authority by Function and Subfunction: 1976–2022," available at https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/hist05z1.xls.

FIGURE 8-6: TOTAL NATIONAL DEFENSE, VETERANS BENEFITS AND SERVICES, AND INTERNATIONAL AFFAIRS APPROPRIATIONS AND PB18 REQUEST



Source: OMB, Public Budget Database FY18, Table 5.1, "Budget Authority by Function and Subfunction: 1976–2022," available at https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/hist05z1.xls.

CHAPTER 9

How Much is Enough?

Defense Spending in Historical Context: A New Reagan-esque Buildup?

Shifts in the international security environment, as well as calls by the Trump administration for a "historic" defense increase, have led analysts, congressional leaders, and senior Pentagon officials to hope for or expect a defense buildup commensurate with the Reagan-era buildup of FY 1979–FY 1985. Secretary Mattis and HASC Chairman Thornberry have called for, at a minimum, sustained 5 percent annual increases to the defense budget above the FY 2018 request.[110] JCS Chairman Dunford stated in testimony that the capabilities to support the forthcoming NDS would require the defense budget to grow by between 3 and 7 percent annually through FY 2023. Even so, this increased level of funding would not allow the military to increase the size of the force.[111] Analysts are banking on 4–6 percent annual growth in procurement funding, down from more aggressive expectations of high single-digit or low double-digit growth espoused shortly after the election in 2016.[112] Although there are some important parallels between the early 1980s and today, there are also some critical differences that make an equivalent defense buildup less likely to occur.

First, defense spending is shaped by the perceived demands of our national security in a shifting and challenging international security environment filtered through political considerations; it should not be an arbitrary round number or percent of GDP. The Reagan-era buildup occurred against the background of broad bipartisan perception of an increasingly unfavorable U.S. position in its bipolar strategic competition with the USSR. By contrast, national security

110 Joe Gould, "Thornberry Wins Pledge to Grow DoD Budgets, But Will It Stick?" *Defense News*, June 27, 2017, available at https://www.defensenews.com/congress/budget/2017/06/27/thornberry-wins-pledge-to-grow-dod-budgets-but-will-it-stick/.

111 Tony Bertuca, "Dunford: DoD Needs Between 3 Percent and 7 Percent Growth Annually," *Inside Defense*, September 26, 2017, available at https://insidedefense.com/daily-news/dunford-dod-needs-between-3-percent-and-7-percent-growth-annually.

112 This defense investor sentiment was relayed in email newsletters from Capital Alpha Partners.

practitioners and policymakers have only recently begun to recognize the current shift from the unipolar security environment of the post-Cold War era to an era of renewed competition with Russia and China, as well as other challenges to the U.S.-led international order, and there is as yet no consensus on its key features.[113]

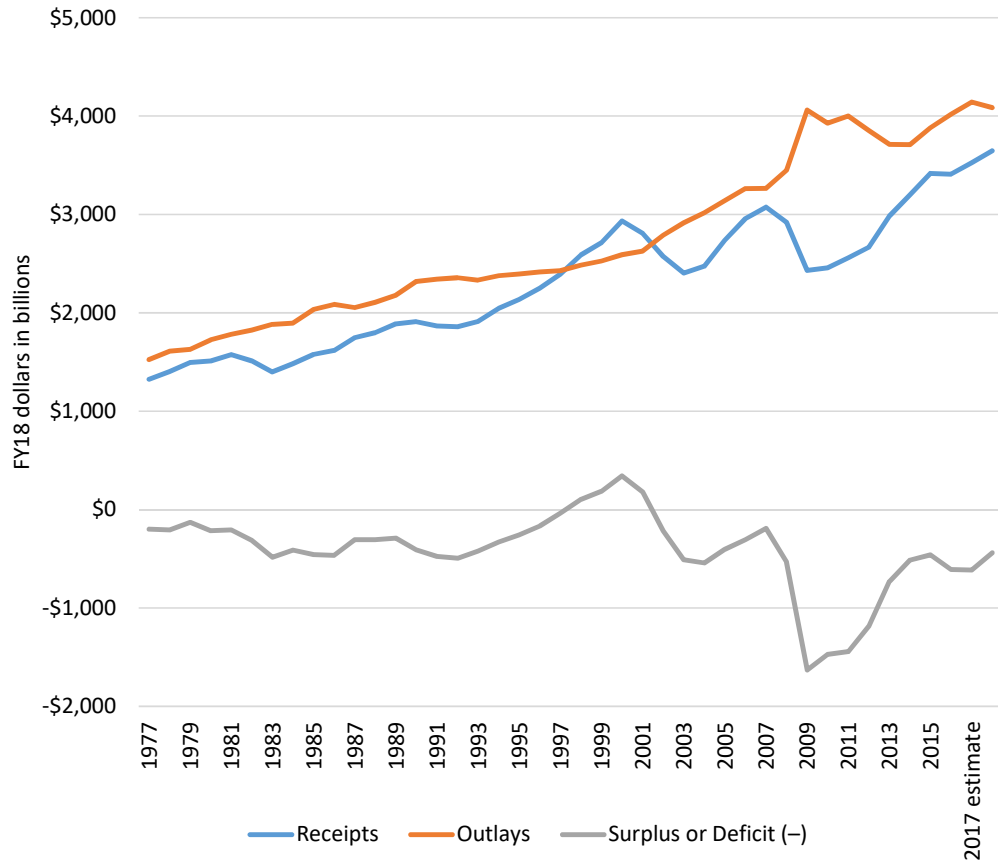
Accordingly, there is not yet a shared understanding of the types of military strategies and capabilities that will be most important to the United States in this increasingly challenging environment. Decisions about what investments in military capabilities may be needed (for example, a more robust U.S. military and allied presence in Eastern Europe with heavy brigades, ground-based fires, greater airpower, and capabilities to operate in a high-end contested combat environment) or the appropriate balance between high- and low-end capabilities in the Air Force and Navy, and therefore the level of defense spending that may be required, should be grounded in a clear vision of the international security environment, U.S. objectives, and the role of our allies and partners. Additionally, this epochal shift in the international security environment demands a corresponding focus on longer-term thinking about U.S. strategy, capabilities, and defense budgets. Such long-term thinking must contend with the tyranny of immediacy imposed by national security crises, domestic political calculations, and near-term bureaucratic victories in the budget process.

Secondly, the contemporary defense spending budgetary landscape is very different than it was during the Reagan-era buildup. The rapidly increasing defense budgets of FY 1979–FY 1985 were financed predominantly through deficit spending, as the Reagan administration cut taxes in 1981, decreasing revenues in both absolute and relative terms (see Figure 9-1).[114] The rapid growth of the deficit and rising outlays led to the enactment of the Gramm-Rudman-Hollings Balanced Budget Act of 1985. This law, the grandfather of the current BCA of 2011, imposed caps on overall discretionary spending levels in an attempt to reduce the federal deficit. The Gramm-Rudman-Hollings Act effectively halted the Reagan administration's defense buildup, and defense spending contracted rapidly after the FY 1985 high-water mark. By contrast, the contemporary BCA is already in force, and has placed caps on defense and non-defense spending through FY 2021 that are enforced by the sequester mechanism borrowed from the Gramm-Rudman-Hollings Act, smothering a prospective defense buildup. Although Congress has reached a bipartisan deal to amend the defense caps each year since FY 2013, the average amount of so-called sequester relief has been $18 billion in FY 2018 dollars, reflecting the narrow boundaries for compromise between the fiscal hawks, mainline Republicans, and Democrats. Without an agreement to substantially raise or eliminate the BCA caps, any growth in defense spending will be far below a comparable buildup in either total amounts or rate of growth.

113 For an excellent overview of the evolving national security analysis of shifts in the international strategic landscape and security environment over the past several years, see Ronald O'Rourke, *A Shift in the International Security Environment: Potential Implications for Defense*, R43838 (Washington, DC: CRS, August 16, 2017), Appendix A, "Articles on Shift to New International Security Environment."

114 The 1981 tax cuts were enacted by the Economic Recovery Tax Act of 1981, P.L. 97-34.

FIGURE 9-1: FEDERAL RECEIPTS, OUTLAYS, AND SURPLUS OR DEFICIT, FY77–FY18



Source: OMB, *Historical Tables, Budget of the United States Government, Fiscal Year 2018* (Washington, DC: Government Printing Office, 2017), Table 1.3, "Summary of Receipts, Outlays, and Surpluses or Deficits (-) in Current Dollars, Constant (FY 2009) Dollars, and as Percentages of GDP: 1940–2022," available at https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/hist01z3.xls. Calculations by CSBA.

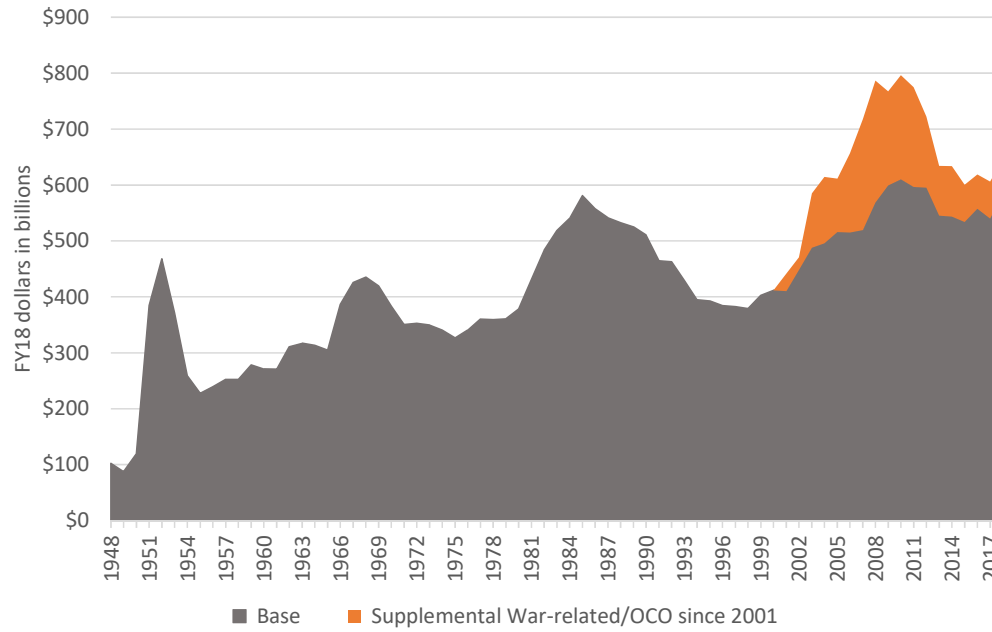
Third, total DoD budgets have exceeded those of the Reagan-era defense buildup since FY 2003, prompting some to ask why even higher defense spending is justified and what we're collectively getting from our national spending on defense. In an annual Gallup survey for 2017, 31 percent of Americans surveyed felt that the U.S. was spending "too much" on defense.[115] The FY 2018 DoD budget request of $647 billion (including base, OCO, and mandatory spending) is $65 billion, or 11 percent, more than the $581 billion defense budget at the peak of the Reagan buildup. Even excluding OCO funding, the base defense budget request still matches or exceeds the average funding levels of the Reagan-era buildup after adjusting for inflation. The FY 2018 base budget request of $582 billion (including both discretionary and mandatory spending) is slightly higher than the peak of the Reagan buildup of

115 Gallup News, "Military and National Defense," polling conducted February 1–5, 2017, available at http://news.gallup.com/poll/1666/military-national-defense.aspx.

$581 billion in FY 1985 and $59 billion, or 11 percent, more than the average DoD budget of $523 billion during the Reagan administration.

DoD's largest total budget, at $796 billion, was in FY 2010 during the height of the wars in Iraq and Afghanistan. It included $610 billion in base defense spending—$29 billion more than the $581 billon at the peak of the Reagan-era buildup—as well as an additional $186 billion in OCO funding. Defense spending declined rapidly following the drawdown of deployed forces in Iraq and Afghanistan and the imposition of caps on base discretionary defense spending by the BCA of 2011. Despite the decline, total national defense funding at the bottom of the drawdown in FY 2015 was $628.9 billion, $32 billion more than the $596.9 billion spent on national defense during the peak of the Reagan-era defense buildup after adjusting for inflation. The base defense budget in FY 2015, at $534 billion, was $11 billion or 2 percent more than the average base defense budget level during the Reagan-era buildup, although it remained below the peak base budget of $581 billion in FY 1985 by $47 billion (see Figure 9-2).

FIGURE 9-2: TOTAL DOD BASE AND OCO SPENDING, FY48–FY18

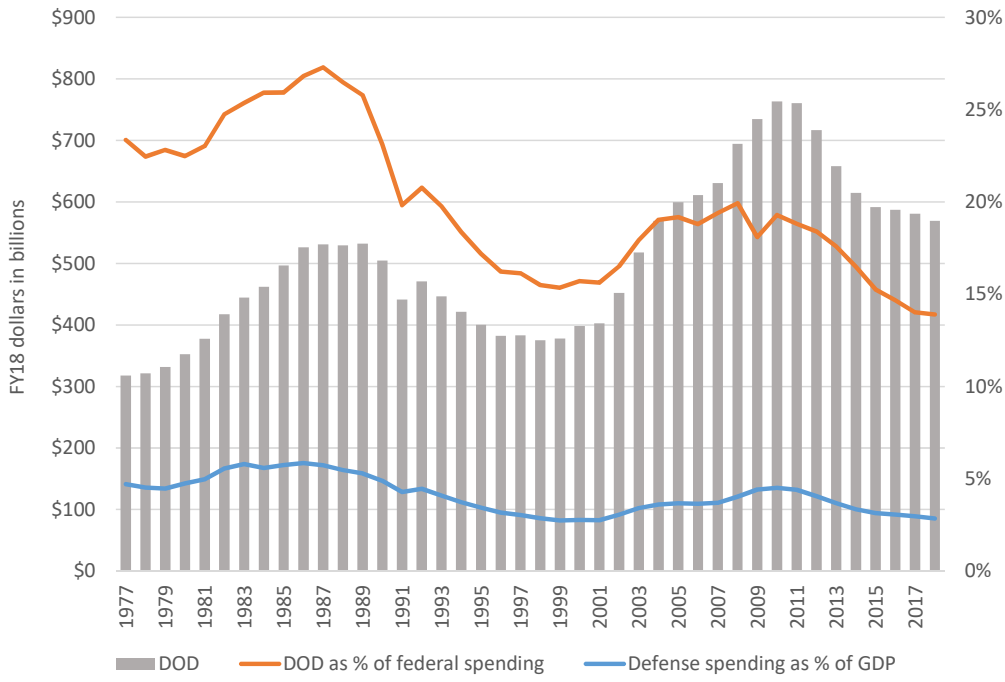


Source: OUSD (Comptroller), *National Defense Budget Estimates for FY 2018*, FY 2018 Greenbook (Washington, DC: DoD, June 2017). Calculations by CSBA.

Overall, the share of defense spending as a percentage of GDP has declined steadily since the end of the Korean War. The U.S. national GDP grew from $2.27 trillion in FY 1948 to an estimated $20 trillion in FY 2018 in constant dollars—a cumulative annual growth rate (CAGR) of 3.2 percent. Over the same time period, defense spending has risen from $102 billion in FY 1948 to a requested $646 billion in FY 2018 for a CAGR of 2.7 percent (see Figure 9-4 and Figure 9-5). Although total defense spending over the past 15 years has reached historic highs in absolute terms, it represents a historically low percentage of GDP. Although not useful for gauging the necessity of defense spending, defense spending as a percentage of GDP or as a percentage of overall federal spending can be a useful yardstick in discussing the relative affordability of spending on defense—or any other federal program. Spending a lower percentage of GDP on defense indicates that national security consumes a relatively small proportion of overall national economic activity, compared to the FY1979–FY 1985 defense buildup. Similarly, defense spending's relatively low share of federal spending in historical terms indicates that more money could be allocated to defense if the political will to do so existed.

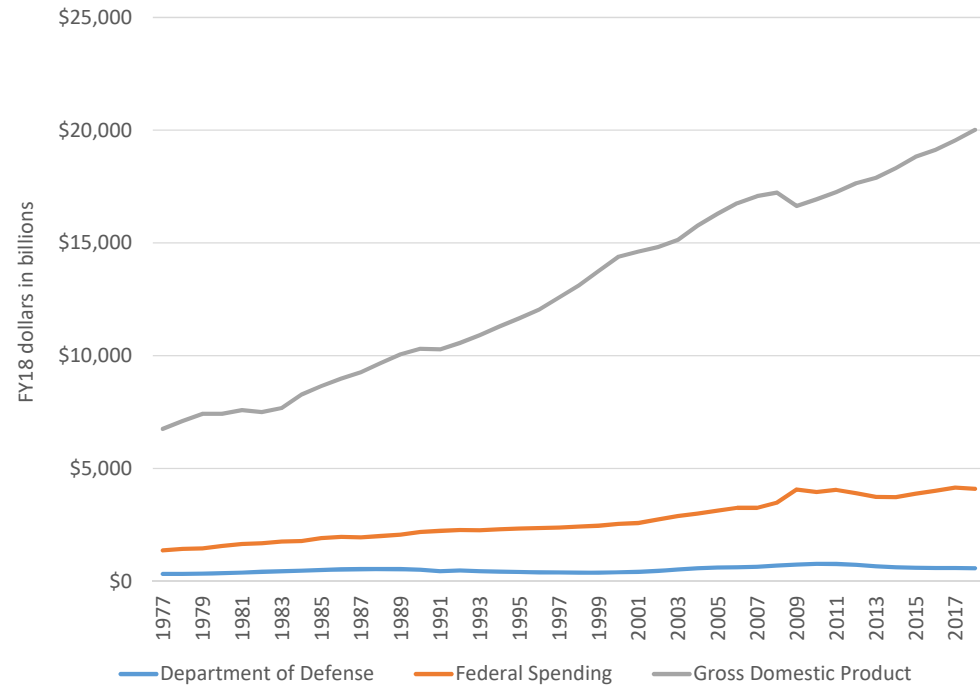
Funding for DoD peaked at 30 percent of federal spending in FY 1983–FY 1985, when it was equivalent to 6.7 percent of GDP (see Figure 9-3). In FY 2017, defense outlays were $581 billion, higher than outlays during the peak of the FY 1979–FY1985 buildup, but defense spending was a much lower 14 percent of federal spending and 3 percent of GDP. From an overall affordability perspective, the nation could increase spending on national defense considerably in dollar terms, while remaining below past proportions of defense spending as a share of GDP or federal spending. Spending the equivalent of 6.7 percent of GDP on the Department of Defense in FY 2018 would result in a DoD budget of $1,341 billion, while allocating 30 percent of federal spending to the DoD would result in a budget of $1,228 billion. This would be an increase of $459 to $534 billion over the total FY 2018 DoD request of $647 billion.

FIGURE 9-3: DEFENSE SPENDING IN ABSOLUTE AND RELATIVE TERMS, FY77–FY18



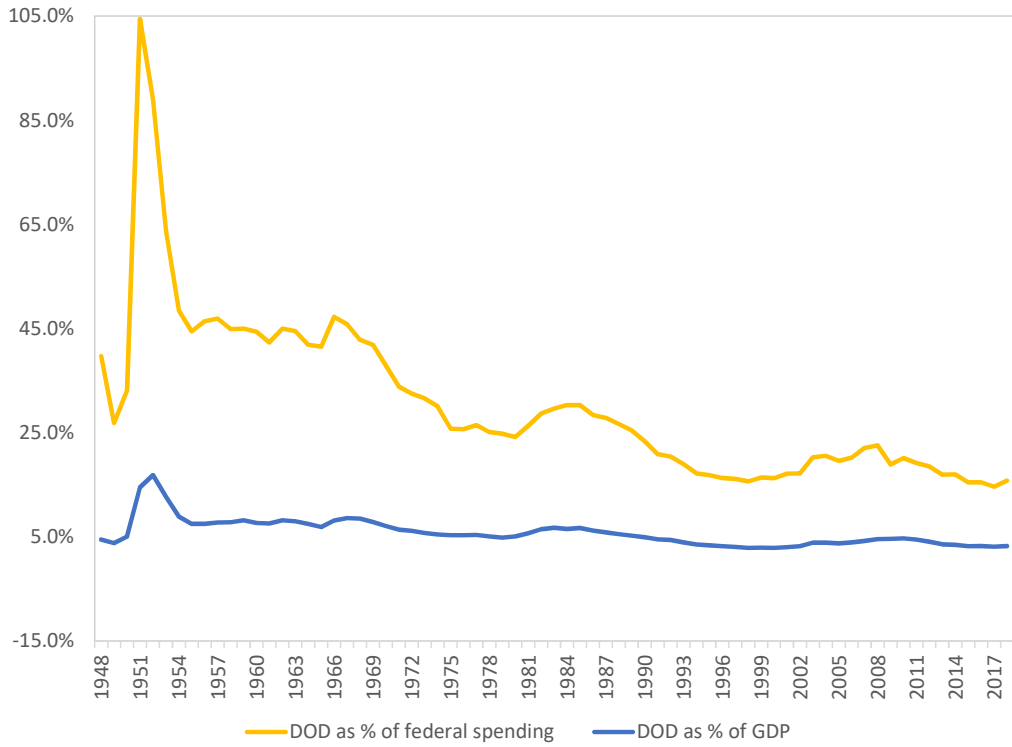
Source: OUSD, FY 2018 Greenbook. Calculations by CSBA.

FIGURE 9-4: GDP, FEDERAL SPENDING, AND DOD BUDGETS



Source: OUSD, FY 2018 Greenbook. Calculations by CSBA.

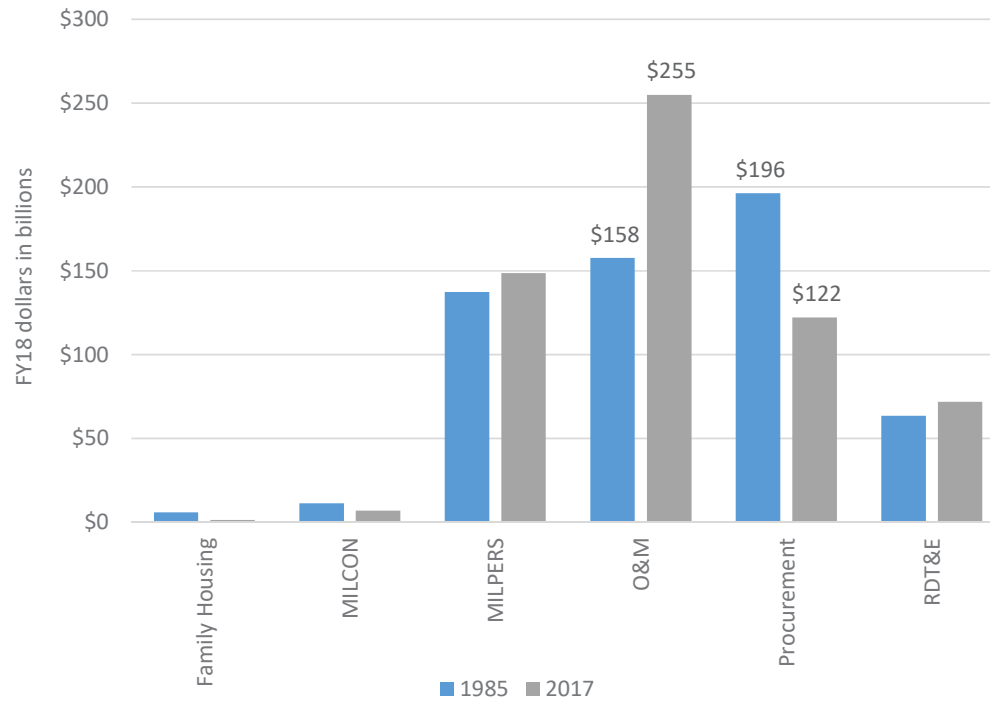
FIGURE 9-5: DOD BUDGETS AS A PERCENTAGE OF FEDERAL SPENDING AND GDP



Source: OUSD, FY 2018 Greenbook. Calculations by CSBA.

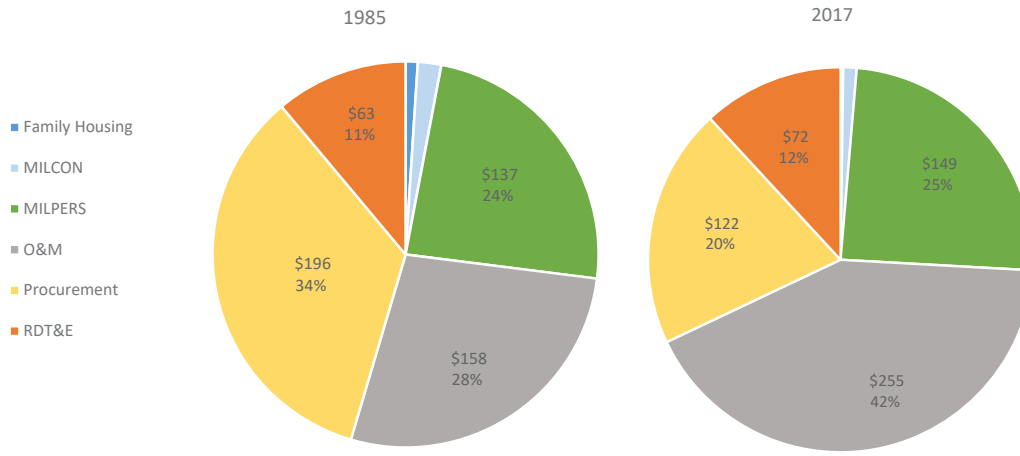
Beyond the topline figures, a dollar of defense funding in the 1980s was spent much differently than a dollar of the defense budget today. Accordingly, even an equivalent expenditure would not yield an equivalent force structure. At the peak of the Reagan-era defense buildup in FY 1985, the Pentagon was spending 34 percent of its budget on procurement and 11 percent on RDT&E, for a total of 45 percent on what is often termed "modernization." By contrast, modernization only received 32 percent of defense spending in FY 2017, with procurement accounting for 20 percent and RDT&E 12 percent. After adjusting for inflation, procurement spending was $196 billion in FY 1985, but just $122 billion in FY 2017—38 percent less (see Figure 9-6 and Figure 9-7).

FIGURE 9-6: DEFENSE SPENDING BY APPROPRIATIONS TITLE, FY85 AND FY17, IN FY18 DOLLARS



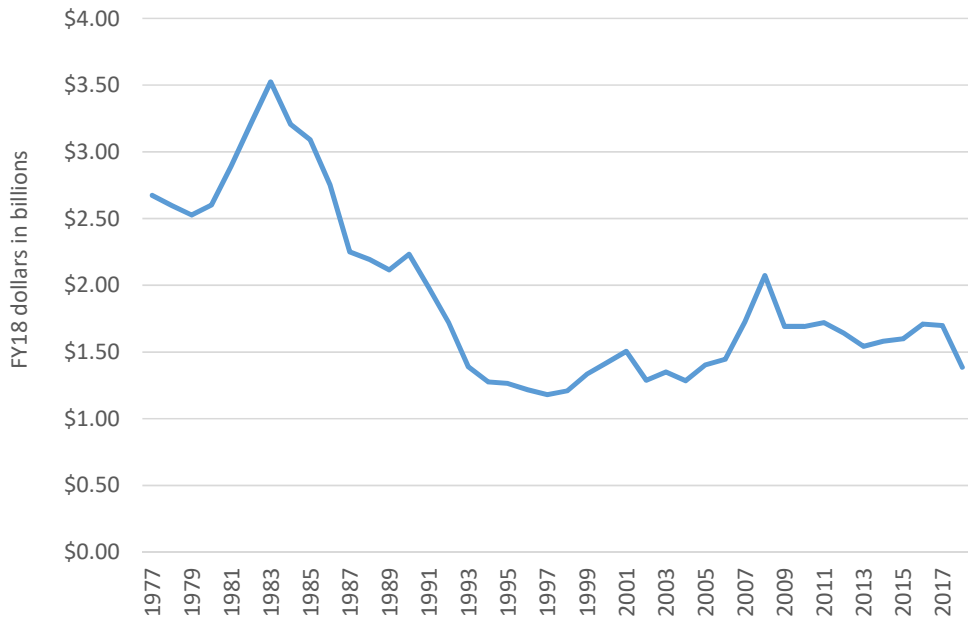
Source: OUSD, FY 2018 Greenbook. Calculations by CSBA.

FIGURE 9-7: COMPOSITION OF DEFENSE BUDGET IN FY85 AND FY17 BY APPROPRIATIONS TITLE



Source: OUSD, FY 2018 Greenbook. Calculations by CSBA.
Note: FY18 dollars in billions.

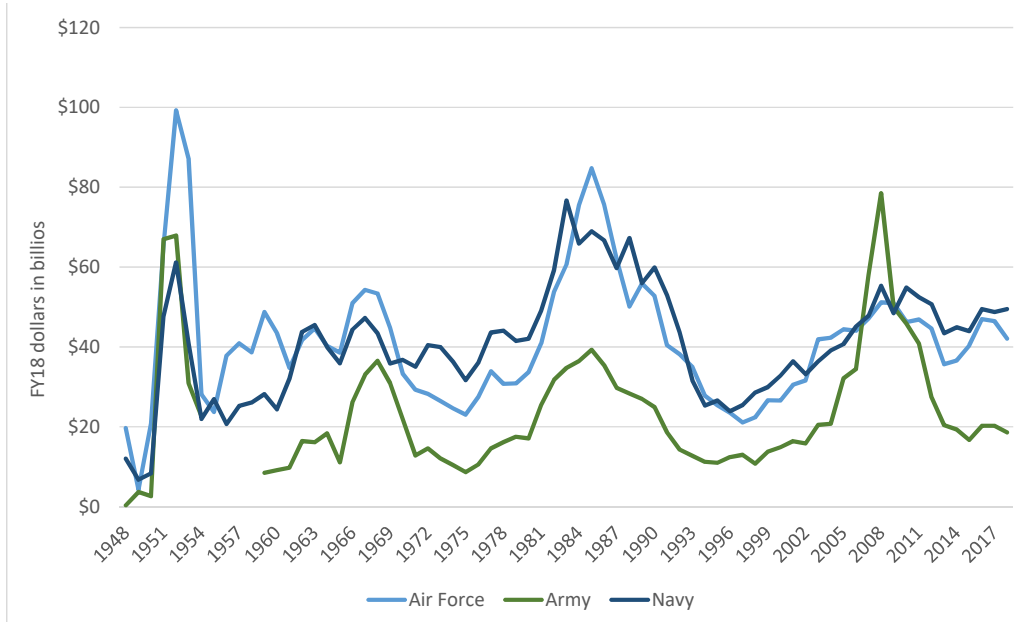
FIGURE 9-8: RATIO OF PROCUREMENT VS RDT&E FUNDING



Source: OUSD, FY 2018 Greenbook. Calculations by CSBA.

With the exception of the Army's procurement spike during the Iraq and Afghanistan wars, principally for Mine-Resistant All-Purpose (MRAP) vehicles, Service procurement in the 2000s and 2010s was far below the Reagan-era average. From FY 1979 to FY 1992, Air Force procurement averaged $53.9 billion in FY 2018 dollars, whereas Navy procurement averaged $57.8 billion. Between FY 2003 and FY 2017, the Air Force's procurement averaged $44.4 billion, $9.5 billion less annually than during the FY 1979–FY 1992 period; the Navy's procurement averaged $46.8 billion, $11 billion less annually. This decade and a half of missing procurement is a major reason why the military is still relying on Reagan-era systems for the bulk of the currently fielded force structure, and why it faces difficult tradeoffs between maintaining and modernizing older equipment and purchasing new systems with the same scarce dollar.

FIGURE 9-9: PROCUREMENT FUNDING BY SERVICE

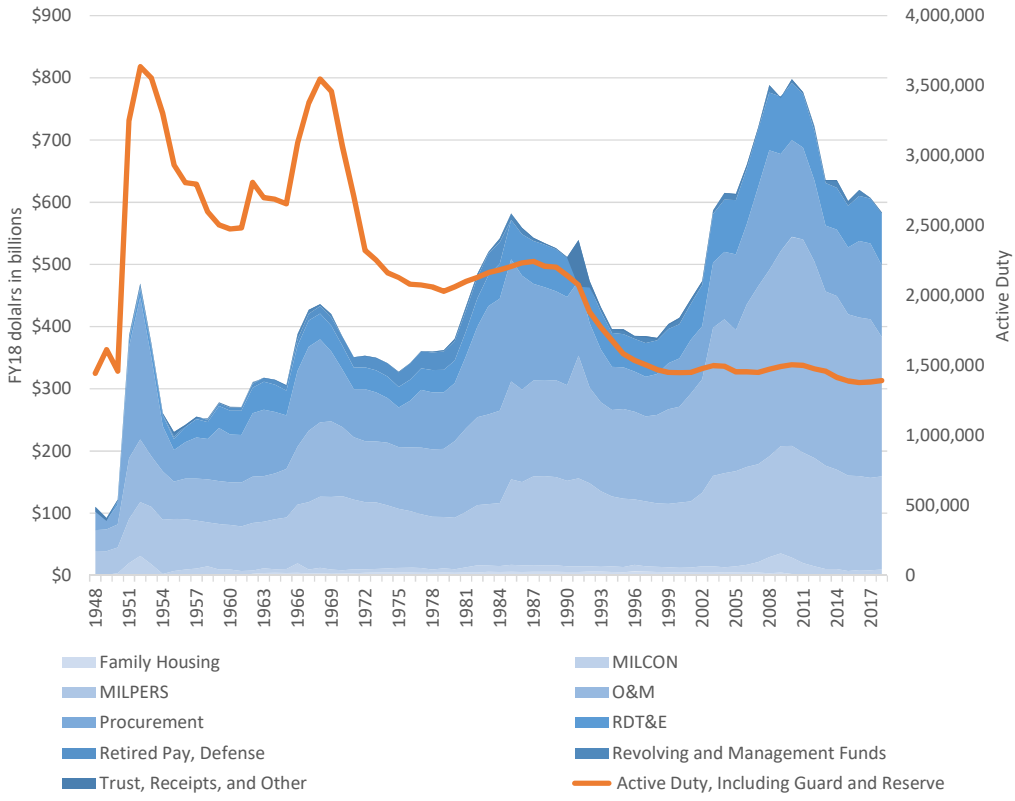


Source: OUSD, FY 2018 Greenbook. Calculations by CSBA.

Procurement and RDT&E has increasingly been crowded out by long-term increases in O&M costs. A dollar of defense spending in FY 2018 buys less force structure than a dollar of defense spending did in FY 1983. Putting it another way, it has become costlier to maintain the same size force over time. Although modern systems are more capable than their predecessors, quantity is still required to perform many missions. This issue is highlighted by the strain that low ship numbers and high operational tempo have put on the surface Navy. Similarly, U.S. combat air forces face maintenance and readiness challenges caused by a smaller, aging fleet and a high operational tempo.

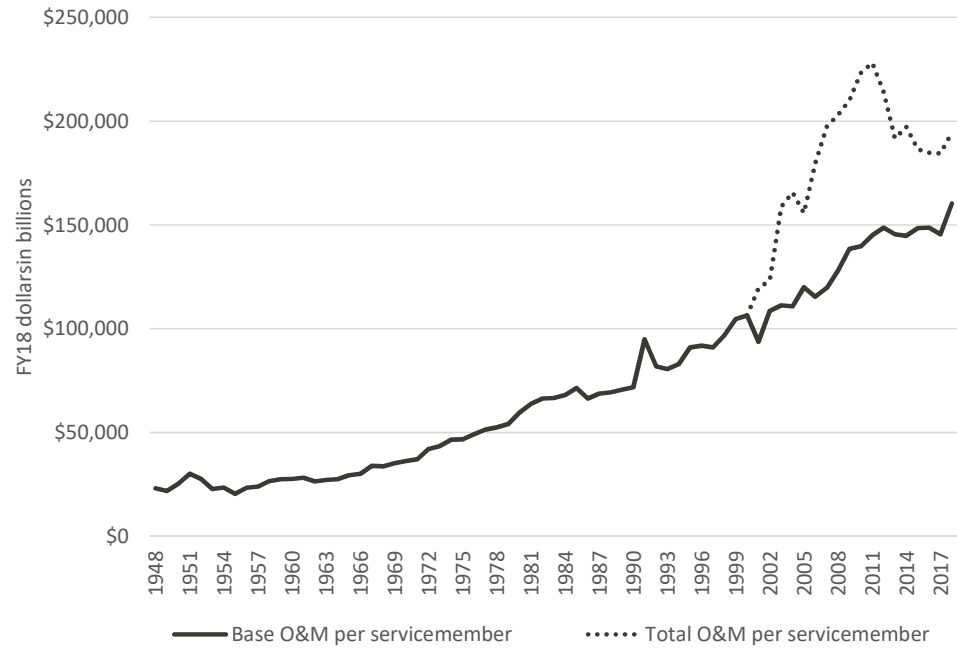
Spending on O&M and military personnel costs has grown in both real terms and as a percentage of the defense budget, even as the number of active duty personnel has trended downward since the 1970s (see Figure 9-10). Since FY 1948, base budget O&M has grown by 2.7 percent annually over inflation. Since FY 2000, base budget O&M has grown by a CAGR of 2.1 percent, growing from $106,380 per active-duty servicemember to $160,284 in FY 2018. Factoring O&M into war funding, total O&M has grown by a CAGR of 3.2 percent over inflation to $194,544 per active-duty servicemember (see Figure 9-11). Similarly, the amount of military personnel funding per active-duty servicemember or activated reservist has grown steadily as pay and benefits have increased. DoD now budgets $107,106 in military personnel funding for each active-duty servicemember, a cumulative increase of 2.2 percent annually from $72,212 in FY 2000 (see Figure 9-12).

FIGURE 9-10: DEFENSE SPENDING BY APPROPRIATIONS TITLE AND ACTIVE-DUTY SERVICEMEMBERS



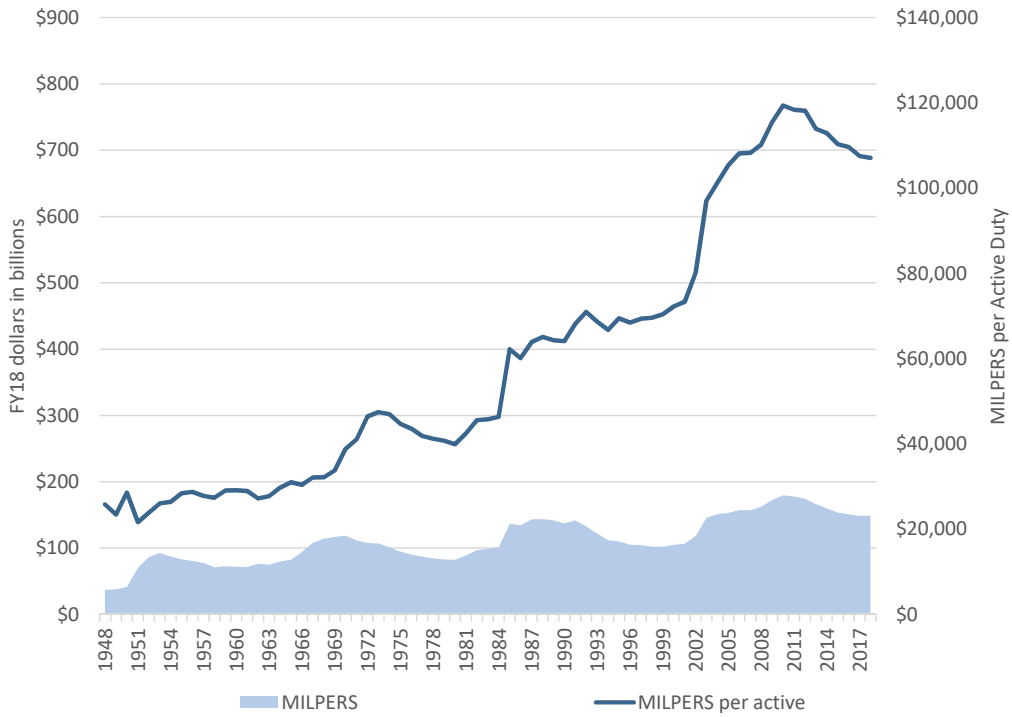
Source: OUSD, FY 2018 Greenbook. Calculations by CSBA.

FIGURE 9-11: O&M FUNDING PER ACTIVE-DUTY SERVICEMEMBER



Source: OUSD, FY 2018 Greenbook. Calculations by CSBA.

FIGURE 9-12: MILITARY PERSONNEL FUNDING AND MILITARY PERSONNEL FUNDING PER ACTIVE-DUTY SERVICEMEMBER

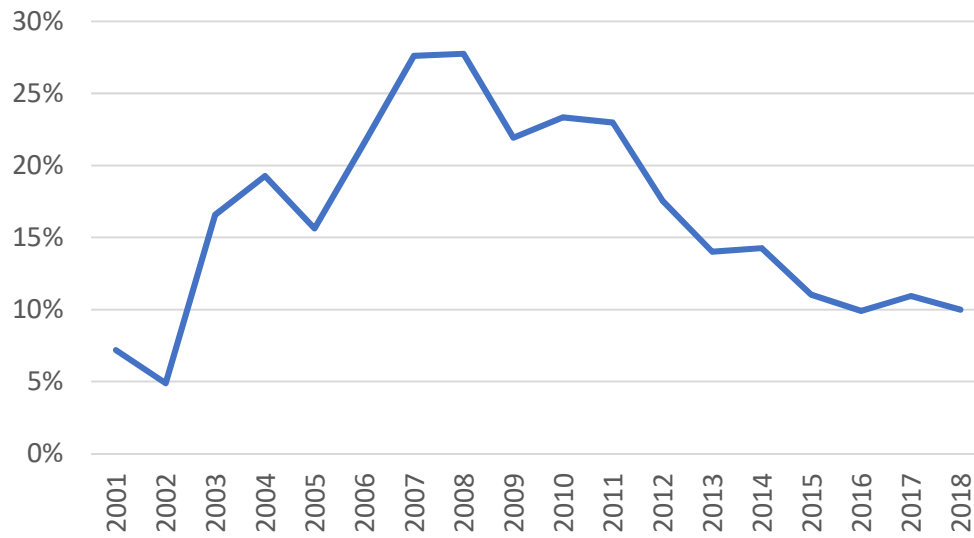


Source: OUSD, FY 2018 Greenbook. Calculations by CSBA.

A final major difference between defense spending today and the FY 1979–FY 1985 defense buildup is the modern invention of OCO funding, which has become an essential component of the overall DoD budget. After the enactment of the BCA of 2011 and the imposition of caps on base discretionary national defense funding, but not on "emergency" funding, OCO has functioned as a safety valve for the overall DoD budget. At $64.6 billion, the FY 2018 request for funding of ongoing military operations is about 10 percent of the total DoD request for $647 billion. The overall level of OCO funding has declined by two-thirds between the FY 2008 peak of $218 billion and the FY 2015 level of $66 billion, but has remained consistent at between $61.2 and $66.2 billion since then. Overall, war funding comprises a much smaller share of the total DoD budget than it did during the height of the wars in Iraq and Afghanistan. In FY 2007 and FY 2008, war funding accounted for 28 percent of the total discretionary DoD budget, but it has stabilized at about 10 percent of total discretionary DoD funding since FY 2015 (see Figure 9-13). The Services rely on OCO funding to different degrees. OCO makes up 17 percent of the Army's total FY 2018 budget request, higher than any of the other Services, but a decline from FY 2007, when OCO made up 49 percent of the Army's total budget. OCO accounts for 10 percent of the Air Force's FY 2018 request, a relatively steady proportion since FY 2012. The Navy is the Service that is least reliant on OCO funding; it accounts for just 5 percent of the Navy's FY 2018 request, down from 16 percent

in FY 2007. Nine percent of FY 2018 defense-wide spending is for OCO funds, down from 36 percent in FY 2008 (see Figure 9-14). According to estimates by the Government Accountability Office (GAO) and senior defense officials, approximately $20–30 billion of expenses properly considered base budget expenses are funded out of the OCO accounts. GAO has recommended that DoD revise the outdated 2010 OMB criteria for determining which defense costs can properly be considered OCO, potentially limiting the amount of base budget costs that can be funded via OCO.[116] However, shifting the full $20–30 billion enduring costs currently paid for through OCO back to the base budget would strain base Service budgets further.

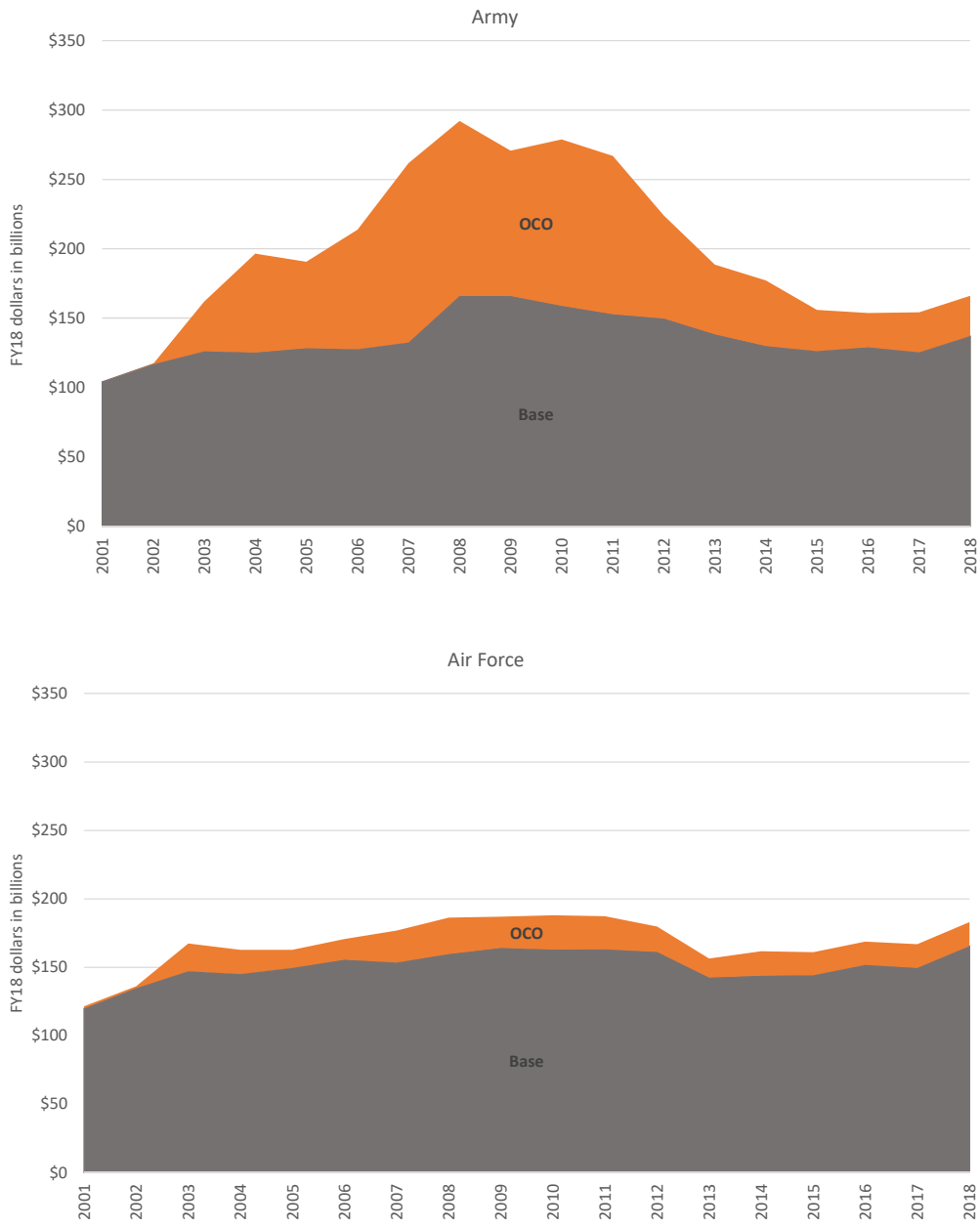
FIGURE 9-13: OCO AS A PROPORTION OF TOTAL DISCRETIONARY DOD BUDGET

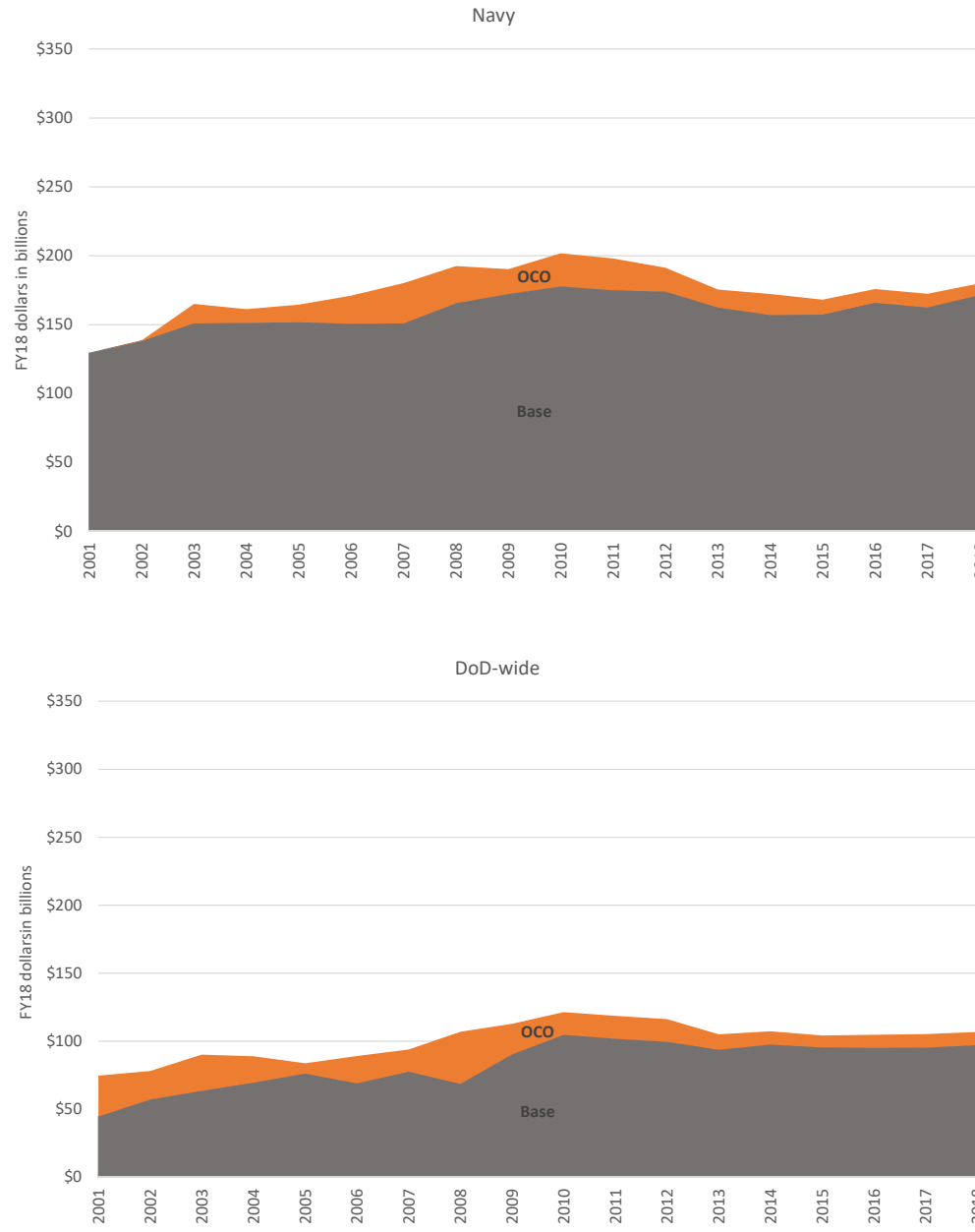


Source: OUSD, FY 2018 Greenbook. Calculations by CSBA.

116 Government Accountability Office (GAO), *Overseas Contingency Operations: OMB and DoD Should Revise the Criteria for Determining Eligible Costs and Identify the Costs Likely to Endure Long Term,* GAO-17-68, report to congressional requesters (Washington, DC: GAO, January 2017), available at http://www.gao.gov/assets/690/682158.pdf.

FIGURE 9-14: OCO AS A PROPORTION OF SERVICE BUDGETS





Source: OMB, *Historical Tables, Budget of the United States Government, Fiscal Year 2018*, Table 1.3. Calculations by CSBA.

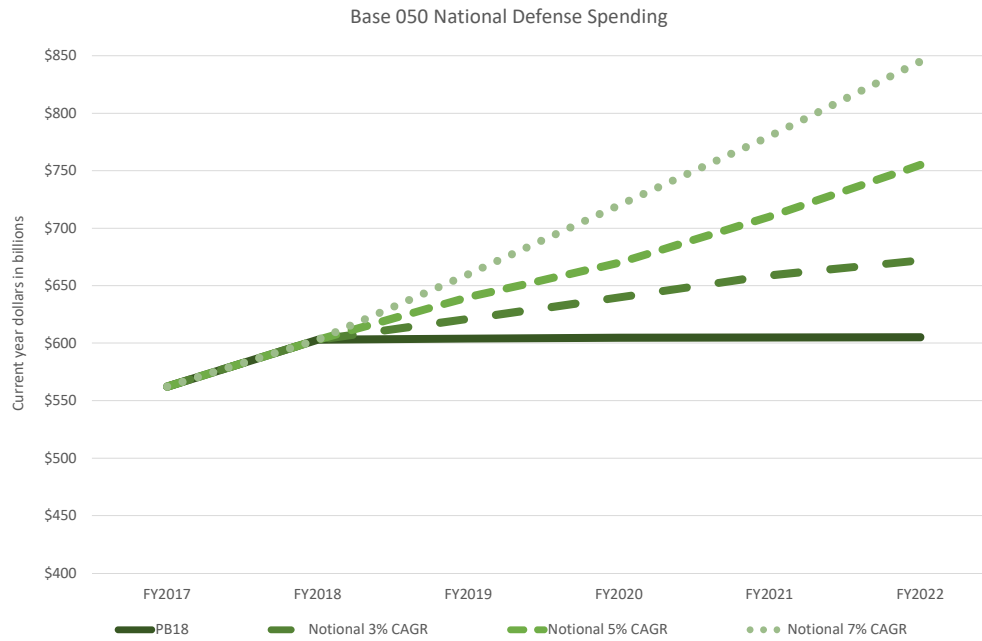
One of the most difficult balancing acts in the coming years will be between sustaining current operations while investing in the capabilities and technologies needed to deter, and if necessary fight and win, future wars. Key military challenges and competitions—predominantly countering Russian and Chinese anti-access and area-denial (A2/AD) capabilities, but including the proliferation of precision-strike capabilities and the contestation of space and the electromagnetic spectrum—will play an important role in shaping warfare in the coming decades, particularly in how the military fights and what capabilities DoD will need to invest in. Maintaining the ability to operate in an environment where adversaries are capable of launching dense salvos of precision-guided weapons requires a shift away from expensive long-range interceptors and toward both kinetic and non-kinetic short-range air and missile defense systems, battle management and fire control systems, as well as electronic warfare systems to deceive and degrade adversary capabilities. A2/AD capabilities will put a premium on being able to operate and deliver strikes over longer ranges. Developing networked cross-domain sensing, targeting, and striking capabilities across the joint force will require investment in C4ISR, electronic warfare, sensors, and long-range strike weapons. Operating in more highly contested environments, much different from the largely permissive environments of the past decade and a half of conflict, places a premium on systems that are either low-observable (for high-value systems) or unmanned expendable systems.[117] At the same time, many of the missions U.S. forces conduct today, and are likely to continue conducting in the future, occur in more permissive environments where these advanced capabilities may not be needed, sparking discussion on the right high-low mix of capabilities. Additionally, today's military is facing capacity challenges, with the current operational tempo straining the Services. However, adding additional end strength, planes, and ships to relieve the operational tempo burdens would also require substantial additional funding.

Senior Pentagon and military leaders, including Secretary Mattis, General Dunford, and the chiefs and vice chiefs of staff of each of the military Services have forcefully argued for more defense spending beyond FY 2018 in order to invest in the military capacity and capabilities needed now and for the future. Just as important, they have emphasized that the Pentagon

117 For discussion of strategic approaches in the evolving international security landscape and future military operational challenges, concepts, and capabilities, see selected recent CSBA reports: *Preserving the Balance: A U.S. Eurasia Defense Strategy*, by Andrew F. Krepinevich; *Avoiding a Strategy of Bluff: The Crisis of American Military Primacy*, by Hal Brands and Eric Edelman; *Dealing with Allies in Decline: Alliance Management and U.S. Strategy in an Era of Global Power Shifts*, by Hal Brands, and *Extended Deterrence in the Second Nuclear Age*, by Evan Montgomery. For discussions of future military competitions and U.S. operational concepts and capabilities, see *Restoring American Seapower: A New Fleet Architecture for the U.S. Navy*, by Bryan Clark et al.; *Wining the Salvo Competition: Rebalancing America's Air and Missile Defenses*, by Mark Gunzinger and Bryan Clark; *Trends in Air-to-Air Combat: Implications for Future Air Superiority*, by John Stillion; *Winning the Airwaves: Regaining America's Dominance in the Electromagnetic Spectrum*, by Bryan Clark and Mark Gunzinger; *What it Takes to Win: Succeeding in 21st Century Battle Network Competitions*, by John Stillion and Bryan Clark; and *Toward a New Offset Strategy: Exploiting U.S. Long-Term Advantages to Restore U.S. Global Power Projection Capability*, by Robert Martinage.

needs stable, predictable, long-term funding.[118] At a 3 percent CAGR, base national defense spending would reach about $670 billion in FY 2022. At 5 percent, it would reach about $755 billion, and at 7 percent, it would reach $845 billion. Those spending levels would be between 20 and 50 percent higher than the FY 2017 levels. Notably, General Dunford testified that 3–7 percent annual growth would be sufficient for necessary capability investments, but insufficient to increase the Services' force structure or end strength. The extant tensions between investing in capacity today vs. high-end capabilities for tomorrow will only grow more acute if Congress is unable to bridge their sharp differences on fiscal policy and defense and non-defense spending to eliminate the BCA caps. Although it invests in improved readiness via increased training funding, maintenance funding, and healthier spare parts stockpiles and amps up investments in RDT&E, the FY 2018 budget continues to straddle this divide, postponing anticipated investments in capacity until FY 2019 and beyond.

FIGURE 9-15: NOTIONAL 3%, 5%, AND 7% ANNUAL INCREASES IN DEFENSE SPENDING ABOVE FY18 REQUEST LEVELS



Source: OMB, FY18 Budget, "Table 25.1, Net Budget Authority by Function, Category and Program." Calculations by CSBA.

118 General Daniel Allyn, vice chief of staff United States Army; Admiral William Fm. Moran, vice chief of Naval Operations; General Glenn Walters, assistant commandant of the Marine Corps; and General Stephen W. Wilson, vice chief of staff of the Air Force, "Current State of Readiness of the U.S. Armed Forces," Statements before the Senate Armed Services Committee, Subcommittee on Readiness and Management, February 8, 2017; and General Mark Milley, chief of staff United States Army; Admiral John M. Richardson, chief of Naval Operations; General Robert B. Neller, commandant of the Marine Corps; and General David L. Goldfein, chief of staff of the Air Force, "Impacts of a Year-Long Continuing Resolution," Statements before the House Armed Services Committee, April 5, 2017.

LIST OF ACRONYMS

A2/AD	anti-access/area denial
AEHF	Advanced Extremely High Frequency
BA	Budget Activity
BCA	Budget Control Act of 2011
BCT	Brigade Combat Team
BMD	ballistic missile defense
BRAC	Base Realignment and Closure
C3	command, control, and communications
C4ISR	command, control, communications, computers, intelligence, surveillance, and reconnaissance
CAGR	compound annual growth rate
CBO	Congressional Budget Office
CBRN	chemical, biological, radiological, and nuclear
CIA	Central Intelligence Agency
CSBA	Center for Strategic and Budgetary Assessments
DHP	Defense Health Program
DLA	Defense Logistics Agency
DoD	Department of Defense
DOE	Department of Energy
ECI	Employment Compensation Index
EELV	Evolved Expendable Launch Vehicle
FY	fiscal year
FYDP	Future Years Defense Program
GBSD	Ground-Based Strategic Deterrent
GDP	gross domestic product
GMLRS	Guided Multiple Launch Rocket System
HAC-D	House Appropriations Committee, Defense Subcomittee
HASC	House Armed Services Committee
HERCULES	Heavy Equipment Recovery Combat Utility Lift and Evacuation System
HIMARS	High Mobility Artillery Rocket System
HMO	health maintenance organization
IBCS	Integrated Air and Missile Defense Battle Control System
ICBM	intercontinential ballistic missile
IFPC	Indirect Fire Protection Capability
ISIS	Islamic State of Iraq and Syria

LIST OF ACRONYMS

ISR	Intelligence, surveillance, and reconaissance
JASSM-ER	Joint Air-Surface Standoff Missiles - Extended Range
LCS	Littoral Combat Ship
LRSO	long-range stand-off cruise missile
LX(R)	future amphibious ship class
MANPAD	man-portable air defense
MILCON	military construction
MILPERS	military personnel
MLRS	Multiple Launch Rocket System
MRAP	Mine-Resistant All-Purpose
NDAA	National Defense Authorization Act
NDS	National Defense Strategy
NNSA	National Nuclear Security Administration
O&M	operations and maintenance
OCO	Overseas Contingency Operations
OCX	GPS III Next Generation Operational Control System
OMB	Office of Management and Budget
OPTEMPO	operational tempo
PB	President's Budget
PNT	position, navigation, and timing
PPO	preferred provider organization
RDT&E	research, development, testing, and evaluation
SAC-D	Senate Appropriations Committee, Defense Subcommitee
SASC	Senate Armed Services Committee
SBIRS	Space-Based Infrared Radar System
SCO	Strategic Capabilities Office
SOCOM	Special Operations Command
SSBN	nuclear ballistic missile submarine
UAV	unmanned aerial vehicle
UUV	unmanned underwater vehicle
VA	Veterans Affairs

CSBA
Center for Strategic and Budgetary Assessments

1667 K Street, NW, Suite 900
Washington, DC 20006
Tel. 202-331-7990 • Fax 202-331-8019
www.csbaonline.org