



Congressional Budget Office

Testimony

**Statement of
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Long-Term Implications of the Department of Defense's Fiscal Year 2010 Budget Submission

**before the
Committee on Armed Services
U.S. House of Representatives**

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Mr. Chairman, Congressman McKeon, and Members of the Committee, I appreciate the opportunity to appear before you today to discuss the long-term implications of the fiscal year 2010 budget submission for the Department of Defense (DoD). Decisions about national defense made today—whether they involve numbers of personnel, military compensation, or weapon systems—can have long-lasting effects on the composition of the nation’s armed forces and the budgetary resources needed to support them.

Over the past seven years, the Congressional Budget Office (CBO) has published a series of reports about its projections of the resources that could be required over the long term (typically two decades) to carry out the nation’s defense plans.¹ Those projections differ from CBO’s baseline, under which discretionary defense spending grows at the rate of inflation without reference to DoD’s plans.²

This testimony is the latest installment in CBO’s analyses of DoD’s budget requests. It concerns CBO’s preliminary projections for fiscal years 2011 through 2028. Those projections are based in part on the President’s 2010 budget request and budget justification materials the Administration provided to the Congress with that request.³ Among the other sources CBO consulted to supplement its analysis were DoD press releases and briefing materials and the Secretary of Defense’s announcement in April 2009 of changes to the nation’s defense plans.⁴ For its analyses of past budget requests, CBO has drawn from information in DoD’s Future Years Defense Program (FYDP), which typically is submitted to the Congress with the President’s annual budget request.⁵ This year, however, the Administration did not submit a FYDP, which would have covered the years 2011 through 2015.

CBO projects that carrying out the plans proposed in the President’s 2010 budget request, excluding overseas contingency operations (in general, overseas military operations against hostile forces—currently consisting of the wars in Iraq and Afghanistan and military actions elsewhere to combat terrorism), would require defense resources averaging \$567 billion annually (in constant 2010 dollars) from 2011 to 2028 (see Figure 1 on page 16 and Table 1 on page 21).⁶ That amount is

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1. The first of those Congressional Budget Office reports, *The Long-Term Implications of Current Defense Plans*, appeared in January 2003. Each year since then, CBO has published summary and detailed updates (the latter in annotated briefing format); all are available online: www.cbo.gov.
 2. Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2009 to 2019* (January 2009).
 3. Department of Defense, “DoD [2010 Budget] Request,” www.defenselink.mil/comptroller/Budget2010.html.
 4. Department of Defense, “Defense Budget Recommendation Statement” (as prepared for delivery by Secretary of Defense Robert M. Gates, April 6, 2009), www.defenselink.mil/speeches/speech.aspx?speechid=1341.
 5. The FYDP is a database that comprises a historical record of defense forces and funding as well as DoD’s plans for future programs. The historical portion shows costs, forces, and personnel levels since 1962. The plan portion presents DoD’s program budgets (estimates of funding needed for the next five or six years, based on the department’s current plans for all of its programs).
 6. In this analysis, CBO measures inflation by the implicit price deflator for gross domestic product, which measures overall prices among final goods and services in the U.S. economy.

about 6 percent more than the \$534 billion in total obligational authority (TOA) the Administration requested in its regular 2010 budget, which is the portion of the budget that excludes funding for overseas contingency operations.⁷ Four main factors account for the higher resources required in the long term:

- The likelihood of continued real growth in pay and benefits for DoD's military and civilian personnel;
- The projected increases in the costs of operation and maintenance (O&M) for aging equipment as well as for newer, more complex equipment;
- DoD's plans to develop and field advanced weapon systems to replace many of today's military systems that are nearing the end of their service lives; and
- Investments in new capabilities, such as advanced intelligence, surveillance, and reconnaissance systems, to meet emerging security threats.

Supplemental and emergency appropriations to fund overseas contingency operations totaled \$164 billion in 2007 (\$173 billion in constant 2010 dollars), or 27 percent of total budget authority for DoD that year.⁸ In 2008, those appropriations peaked at \$180 billion (\$185 billion in constant 2010 dollars), again 27 percent of total DoD funding. In 2009, those appropriations dropped to \$146 billion (\$147 billion in constant 2010 dollars), or 22 percent of DoD's appropriations.

This year, the Administration has requested a full year of anticipated appropriations for those operations along with its regular defense budget request. In June 2009, the U.S. military had deployed 172,000 service members to the Iraq theater and 59,000 to the Afghanistan theater. The Administration's request of \$130 billion for 2010 would support a smaller total number: 100,000 service members in Iraq and 68,000 in Afghanistan.⁹ CBO does not have access to DoD's estimates of costs for overseas contingency operations in 2011 or later that would have been contained in the 2010 FYDP.¹⁰

The long-term demand for defense resources could be larger than CBO's base projections. CBO has developed a scenario under which, consistent with the Status of Forces Agreement signed by the governments of Iraq and the United States in

7. All funding in CBO's projection is calculated as TOA, most of which is for annual appropriations sought by the department. Budget authority differs from TOA in that it includes the effects of certain receipts, permanent spending in certain trust funds and other accounts, and certain payments to the military retirement fund. In recent years, the difference between TOA and budget authority in subfunction 051 of the federal budget (Department of Defense, Military), which funds DoD, been \$2 billion or less.

8. These figures represent discretionary appropriations in federal budget subfunction 051.

9. Department of Defense, *Fiscal Year 2010 Budget Request: Summary Justification* (May 2009), www.defenselink.mil/comptroller/defbudget/fy2010/fy2010_SSJ.pdf.

10. The Administration submitted a "placeholder estimate," however, in the President's 2010 budget request of \$50 billion per year from 2011 to 2014. See Office of Management and Budget, *Updated Summary Tables: Budget of the U.S. Government, Fiscal Year 2010* (May 2009), Table S-12, www.whitehouse.gov/omb/budget/fy2010/assets/summary.pdf.

November 2008, all U.S. troops would be withdrawn from Iraq by December 31, 2011. The total number of U.S. military personnel deployed worldwide would decline to 30,000 starting in fiscal year 2013, although those troops would be in unspecified locations and not necessarily in Iraq or Afghanistan.¹¹ CBO estimates that supporting that number of deployed service members would require recurring annual appropriations of about \$20 billion in 2010 dollars. CBO refers to those costs as “contingency unbudgeted costs.”

Other factors also could increase defense spending above CBO’s base projections. CBO designates “total unbudgeted costs” as the sum of contingency unbudgeted costs as well as other costs that are excluded from the projection of the regular defense budget. There could be higher costs for developing and purchasing new weapon systems; CBO’s analysis of unbudgeted costs assumes the same percentage cost growth, on average, that has been observed in the past.¹² In addition, as has been true historically, medical costs could rise more rapidly than anticipated. When it estimates unbudgeted costs, CBO assumes that DoD’s medical costs per capita will increase during fiscal year 2010 at the rates outlined in the department’s annual inflation guidance memorandum.¹³ For fiscal years 2011 and beyond, CBO assumes that per capita medical costs will increase 30 percent faster than the rates used in the base case.¹⁴ The inclusion of total unbudgeted costs increases the projection to an annual average of \$624 billion through 2028, or 17 percent more than the regular funding requested for 2010 (see Figure 1). Some 38 percent of the total unbudgeted costs between 2013 and 2028 are associated with overseas contingency operations.

11. Congressional Budget Office, *The Budget and Economic Outlook: An Update* (August 2009), pp. 21–26.

12. See Mark V. Arena and others, *Historical Cost Growth of Completed Weapon System Programs*, TR-343-AF (prepared by RAND Corporation for the United States Air Force, 2006), www.rand.org/pubs/technical_reports/2006/RAND_TR343.pdf; and Obaid Younossi and others, *Is Weapon System Cost Growth Increasing? A Quantitative Assessment of Completed and Ongoing Programs*, MG-588-AF (prepared by RAND Corporation for the United States Air Force, 2007), www.rand.org/pubs/monographs/2007/RAND_MG588.pdf.

13. DoD anticipates that medical costs will escalate more rapidly than general inflation. In the most recent programming guidance, the DoD comptroller promulgated inflation rates for 2010 of 7 percent for private-sector medical care purchased by the Defense Health Program (DHP), 10.1 percent for DHP pharmacy outlays, and 6.2 percent for other outlays by the DHP (mostly for in-house care provided at military medical treatment facilities). See Department of Defense, “Inflation Guidance-Fiscal Year (FY) 2010 President’s Budget” (memorandum from the Under Secretary of Defense [Comptroller], February 13, 2009), www.ncca.navy.mil/services/PB2010_Inflation_Guidance_Feb_13_2009.pdf.

14. For the justification for the 30 percent acceleration in costs, see Congressional Budget Office, *Growth in Medical Spending by the Department of Defense* (September 2003), p. 14.

Under DoD's current plans and CBO's projections, defense spending would steadily decline as a share of U.S. gross domestic product (GDP).¹⁵ That share dropped from an annual average of 5.6 percent in the 1980s to 3.8 percent in the 1990s and rose again above 4 percent starting in 2008 with supplemental and emergency funding included.¹⁶ If DoD's current plans were executed, defense spending would fall to 3.2 percent of GDP in 2015 and to 2.6 percent of GDP by 2028. Spending would be higher with unbudgeted costs included, but it would still decline to 3.8 percent of GDP in 2015 and to 3.1 percent of GDP by 2028 (see Figure 2 on page 17).

The remainder of this testimony describes in more detail CBO's projections of funding for operation and support (O&S) accounts and for investment accounts. O&S accounts include the appropriation titles for military personnel, O&M, and various revolving funds.¹⁷ I highlight causes of increases in those accounts over the past decade, some of which CBO projects will continue to grow for the next decade or two. Investment accounts are for developing, testing, and purchasing weapon systems and other equipment. I discuss possible budgetary effects of recent announcements by the Secretary of Defense concerning the restructuring or termination of several major defense acquisition programs.

Projections of Funding for Operation and Support

The 2010 regular budget request (excluding overseas contingency operations) includes \$188 billion, or 35 percent of the total budget, for O&M and \$136 billion, or 25 percent of the total, for military personnel (see Table 1).

Between 1980 and 2001, O&M costs per active-duty service member increased steadily by about \$2,200 per year (in constant 2010 dollars). O&M costs have fluctuated above that trend since 2002 because the wars in Iraq and Afghanistan have required large amounts of O&M funding but more modest increases in active end strength (the number of active military personnel as of the last day of the fiscal year).¹⁸ Those funds supported U.S. military forces in the Iraq and Afghanistan theaters, providing food, housing, and contracted security; fuel, spare parts, and

15. CBO's estimate of future GDP growth is based on continuing the series presented in *The Budget and Economic Outlook: An Update*.

16. Defense spending here is measured by the actual disbursements (outlays) from the Treasury that arise from funding for defense programs.

17. For its analysis, CBO treats the revolving funds as part of the O&M appropriation. The revolving funds generate receipts from fees charged to the military services and defense agencies. DoD also requested direct appropriations for the following funds in 2010: the National Defense Sealift Fund, the Defense Commissary Agency, Defense Coalition Support, and the Army's and Air Force's working capital funds.

18. The Army's active-duty end strength increased by 13 percent, from 480,000 in 2001 to 544,000 in 2008. The supplemental and emergency appropriations for Army O&M in 2008 totaled twice the amount in the regular budget for that year.

maintenance for military equipment; transportation of personnel and equipment to and from the theater; and other services. CBO's projections of the regular defense budget through 2028 include O&M funding that exceeds the prewar trend line by \$12,000 to \$15,000 per service member per year. Additional O&M funding would be required to support overseas contingency operations; CBO estimates that contingency unbudgeted costs would converge to \$9,000 per service member annually in 2014 and beyond.

Important Influences on the Costs of Operation and Support

For its projections, CBO divided O&S funding into functional categories used by DoD's program analysts:¹⁹

- *Operating forces*—combat and support units assigned to combatant commands;
- *Medical*—medical personnel, military medical treatment facilities (MTFs), purchased care, pharmaceuticals, and medical accrual charges;²⁰
- *Bases, installations, and infrastructure*—installations for military forces, communications and information infrastructure, central benefit programs for DoD personnel, and miscellaneous activities;
- *Command and intelligence*—operational headquarters, command-and-control systems, and intelligence collection;
- *Central training*—training at central locations away from service members' duty stations;
- *Central logistics*—depot-level maintenance, supplies, and transportation of materiel; and
- *Headquarters and administration*—acquisition infrastructure, science and technology programs, central personnel administration, and departmental management.

CBO assumes that all costs other than those for military and civilian pay and the two categories labeled “operating forces” and “medical” grow at the rate of general inflation (see Figure 3 on page 18 and Table 2 on page 22). Projected funding for operating forces exhibits real growth because as weapon systems age, their O&M costs increase as well. Moreover, new generations of weapon systems are likely to be more complex and more expensive to operate and maintain than the systems they replace.²¹

19. The definitions that follow are adapted from Ronald E. Porten, Daniel L. Cuda, and Arthur C. Yengling, *DoD Force and Infrastructure Categories: A FYDP-Based Conceptual Model of Department of Defense Programs and Resources* (Alexandria, Va.: Institute for Defense Analyses, September 2002).

20. Accrual payments for the cost of providing health care to certain military retirees are distributed among all of the O&S functional categories in the defense budget. To provide a comprehensive estimate of DoD's medical costs, CBO consolidated all such payments in the medical category.

21. Congressional Budget Office, *The Effects of Aging on the Costs of Operating and Maintaining Military Equipment* (August 2001).

Medical costs also have grown faster than other O&M-funded activities in the past, and DoD anticipates growth in per capita medical spending for in-house and purchased care. However, DoD anticipates that pharmaceutical funding per capita will experience a one-time decrease of about 11 percent from 2009 to 2010, due largely to a recent federal regulation that applies federal ceiling prices to pharmaceuticals covered by DoD's TRICARE system and purchased through its retail pharmacy network.²² CBO's projection incorporates that reduction for 2010. After 2010, for the base projection CBO assumed that DoD's medical costs would grow at rates similar to those experienced elsewhere in the economy. It used projections of national health expenditures produced annually by the Centers for Medicare and Medicaid Services as the basis for those assumptions.²³

CBO projects continued real growth in military and civilian pay. In November 2003, the Congress passed a permanent law that indexed the annual increase in basic military pay to the percentage increase in the Bureau of Labor Statistics' employment cost index (ECI) for wages and salaries in private industry.²⁴ The ECI grew more rapidly than the GDP deflator in all years but two from 1981 to 2009; CBO projects that pattern will continue between 2010 and 2028 and that growth of the ECI will exceed growth of the GDP deflator by an average of 1.4 percentage points per year. Furthermore, in 20 of the past 28 years the annual pay raise for federal civilians has been set equal to (and, in one year, above) the percentage increase in basic military pay.²⁵ Assuming that pay raises for federal civilians continue to keep pace with those for military personnel, CBO projects continued real growth in pay for both groups.

22. Manufacturers receive payment for the sale of drugs to federal agencies or under Medicaid as long as the prices they charge four government agencies (DoD, the Department of Veterans Affairs, the Public Health Service, and the Coast Guard) for brand-name drugs are no higher than the federal ceiling prices, which are computed as a fixed percentage of the previous year's average price paid to manufacturers by wholesalers. See Congressional Budget Office, *Prices for Brand-Name Drugs Under Selected Federal Programs* (June 2005), p. 8.

23. CBO derived its estimates for the growth of funding for DoD medical care from the hospital care, physician and clinical services, and pharmaceuticals portions of "National Health Expenditure Projections," www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2008.pdf, published by the Centers for Medicare and Medicaid Services. Those projections extend only to 2018, and CBO assumed that growth would slow after that date, eventually reaching a rate in 2033 that is 1 percentage point higher than the growth of per capita GDP.

24. Section 602 of the NDAA for fiscal year 2004 (P.L. 108-136, 117 Stat. 1498, amending 37 U.S.C. 1009). See Department of Labor, Bureau of Labor Statistics, "Employment Cost Trends: Data Usage," www.bls.gov/ncs/usage.htm; and Charles A. Henning, *Military Pay and Benefits: Key Questions and Answers*, CRS RL33446 (Congressional Research Service, updated October 31, 2008), www.policyarchive.org/bitstream/handle/10207/20192/RL33446_20081031.pdf?sequence=3.

25. In three other years, 2000, 2001 and 2007, the pay raise for civilian employees was set equal to the across-the-board increase in basic military pay, but the Congress enacted additional military pay raises tied to seniority. Thus, the average military pay raise exceeded the civilian pay raise in those three years.

CBO's projections reflect several developments over the past decade that provided new or enhanced military benefits:

- *Changes to the REDUX retirement system.* The immediate annuity paid to military personnel who retire after 20 years of active service increased from 40 percent to 50 percent of a service member's "high-three" basic pay, and the system now provides full (rather than partial) cost-of-living adjustments each year.²⁶
- *Establishment of TRICARE for Life.* Expanded health care coverage is now available for Medicare-eligible military retirees and their families, paying most of what would have been the retiree's out-of-pocket cost shares under Medicare as well as funding space-available care for retirees at MTFs.²⁷
- *Elimination of the Social Security Offset for the Survivor's Benefit Plan.* The retirement annuity for surviving spouses who participate in the plan and attain age 62 increased from 35 percent to 55 percent of the deceased service member's retirement pay.²⁸
- *Changes in the Rules Regarding Concurrent Receipt.* Several classes of retired military personnel are now permitted to receive military retirement pay without any offset for compensation from the Department of Veterans Affairs for a service-connected disability.²⁹
- *Provision of Early Receipt of Retirement Pay by Some Reservists.* The age at which retired members of the reserve components can receive retirement pay was lowered to less than age 60 in some cases and is based on the accumulation of periods of active duty during the member's military career.³⁰

In addition to those new benefits, the Congress has enacted real increases in basic military pay that affect the pay of active service members and their future retirement

26. The basic pay that determines an active-duty service member's retirement annuity is computed as the average of the 36 highest months of basic pay in the service member's career. The retirement changes were enacted in the National Defense Authorization Act for Fiscal Year 2000 (NDAA, Public Law 106-65, 113 Stat. 512) and affected service members who retired beginning in 2006.

27. TRICARE for Life was enacted in the NDAA for fiscal year 2000. The program is funded on an accrual basis, with payments into the Medicare-Eligible Retiree Health Care Fund charged against the military personnel accounts.

28. That change was enacted in the NDAA for fiscal year 2005 (P.L. 108-375, section 644, 118 Stat. 1960, 10 U.S.C. 1451).

29. The rules for concurrent receipt have been relaxed successively in the Bob Stump NDAA for fiscal year 2003 (P.L. 107-314, section 636, 116 Stat. 2574, 10 U.S.C. 1413a, as amended by section 642 of the NDAA for fiscal year 2004, P.L. 108-136, 117 Stat. 1566) and in the NDAA for fiscal year 2008 (P.L. 110-181, section 641, 122 Stat. 156).

30. That change was enacted in the NDAA for fiscal year 2008 (P.L. 110-181, section 647, 122 Stat. 160, 10 U.S.C. 12731).

annuities. DoD funds military retirement on an accrual basis, with payments into the Military Retirement Fund charged against the military personnel accounts. Higher basic pay today leads to higher projections of future retirement annuities, in turn requiring larger contributions today from the military personnel accounts into the retirement fund.³¹

Military Compensation

In early 1980s, several relatively large increases in military pay were enacted that purportedly equalized the pay scales for military personnel and the civilian workforce. However, many observers assert that since 1982 a gap has developed between basic military pay and civilian wages and salaries. The Congress has passed several measures in an effort to close that gap.

Pay Comparability. Up to 2003, the annual increase in basic military pay had been loosely linked to the percentage increase in the General Schedule pay scale under the Federal Employees Pay Comparability Act of 1990.³² In November 2003, the Congress enacted a permanent law requiring that annual increases in basic pay from 2007 forward be indexed to the ECI. That law also stipulated that the pay increases for 2004, 2005, and 2006 exceed the increase in the ECI by one-half of 1 percentage point.³³ With the 2008 and 2009 pay increases, which also exceeded the percentage increase in the ECI, the pay gap, which in 1998 and 1999 reached 13.5 percent, was reduced to 2.9 percent (the percentage by which the cumulative increase in military basic pay since 1982 fell short of the cumulative increase in the ECI for wages and salaries in private industry; see Figure 4 on page 19).

The pay gap as conventionally measured might not provide the best information on the adequacy of military compensation. First, the broad sample of civilian workers included in the survey used to produce the ECI consists of people who are, on average, older than military personnel and more likely to have college degrees. Since 1980, the pay of college-educated workers has risen faster than that of high school graduates in the civilian sector. Also, the pay of older civilian workers generally has grown faster than that of younger workers.

Basic pay for enlisted personnel closely matches the 50th percentile (median) earnings for civilian counterparts of comparable age and education. With cash allowances

31. Those calculations are revisited each year by DoD's Office of the Actuary, most recently in "Valuation of the Military Retirement System: September 30, 2007" (December 2008), www.defenselink.mil/actuary/valbook2007.pdf.

32. An exception was the "pay table reform" that provided additional increases in basic military pay tied to seniority during calendar years 2000 and 2001.

33. Section 602 of the NDAA for fiscal year 2004 (P.L. 108-136, 117 Stat. 1498, amending 37 U.S.C. 1009).

included, pay for the average enlisted member in 2006 matched the 75th percentile of civilian earnings, exceeding DoD's stated goal of paying at the 70th percentile.³⁴

The pay gap calculation focuses on one part of military compensation—basic pay—and ignores changes in other pay components. Regular military compensation (RMC) is a broader measure that, in addition to basic pay, includes housing and food allowances, which are not subject to the federal income tax. In addition to raising basic pay in 2000, DoD requested and lawmakers authorized a restructuring of housing allowances that eliminated out-of-pocket expenses typically paid by service members (those payments had averaged about 20 percent of housing costs).³⁵ Other changes were made as well: Allowance rates were more closely linked to increases in local housing prices, and service members were given “rate protection” from any declines in those prices.

With RMC substituted for basic pay in the comparison, annual increases in military compensation outpaced the corresponding increases in the ECI for 8 of the 10 years between 2000 and 2009. The pay gap recomputed using RMC reveals a pay surplus after 2002, standing at 10.3 percent as of January 1, 2009 (the percentage by which the cumulative increase in RMC since 1982 exceeded the cumulative increase in the ECI for wages and salaries in private industry; see Figure 4).

Ultimately, the best barometer of the effectiveness of DoD's compensation system is how well the military attracts and retains high-quality, skilled personnel. Overall, in recent years DoD has met its goals in recruiting and retaining active-duty members (perhaps because military compensation compares favorably with civilian options), notwithstanding the prospect of deployment to Iraq or Afghanistan.³⁶

Many of the same considerations apply to DoD's civilian personnel. DoD's 2010 budget calls for employing 745,000 full-time-equivalent civilians who would earn \$70 billion in compensation in that year. Of that sum, \$56 billion would be paid from the O&M appropriation.³⁷ The same pressures that real increases (above general

34. The percentile comparisons were reported in Congressional Budget Office, *Evaluating Military Compensation* (June 2007). DoD's goal of paying at the 70th percentile was first stated in Department of Defense, *Report of the Ninth Quadrennial Review of Military Compensation* (2002), <http://prhome.defense.gov/qrmc/Vol1/Pref.pdf>.

35. Those changes were enacted in the NDAA for fiscal year 2001 (P.L. 106-398, section 605, 114 Stat. 1654A-147, 37 U.S.C. 403).

36. Congressional Budget Office, *Recruiting, Retention, and Future Levels of Military Personnel* (October 2006).

37. See the “Green Book,” namely, Department of Defense, *National Defense Budget Estimates for FY 2010* (June 2009), Tables 6-1, 6-2, and 7-5, www.defenselink.mil/comptroller/defbudget/fy2010/Green_Book_Final.pdf. (The remaining civilians would be paid from other appropriation titles: For instance, civilians in military laboratories might be paid from the appropriation for research, development, test, and evaluation; civilians in acquisition programs offices might be paid from the procurement appropriation.)

inflation) in military compensation exert on the military personnel appropriation are reinforced by real increases in civilian compensation in the O&M (and other) appropriations, both contributing to the real increases in funding required for operation and support.

Unbudgeted Pay Increases. CBO's base projection assumes that military and civilian pay raises from 2011 forward will be set equal to the percentage increase in the ECI.³⁸ Among other factors, CBO's analysis of unbudgeted costs attempts to quantify the impact on future defense budgets if military and civilian pay raises above the ECI continue to be enacted. In particular, CBO's analysis assumes that military personnel and federal civilians will receive pay raises in 2011 through 2015 that equal its projection of the percentage increase in the ECI plus a premium of 0.5 percentage points. Funding those five years of larger pay raises would require an additional \$2.8 billion in the military personnel appropriation and \$2.3 billion in the O&M appropriation (to fund higher civilian salaries) by 2015. Although pay raises are assumed to revert to the ECI after 2015, the funding necessary to sustain the larger pay raises assumed from 2011 through 2015 would continue to compound in future years, requiring \$3.6 billion in the military personnel appropriation and \$2.8 billion in the O&M appropriation by 2028.

Projections of Funding for Investment

The 2010 regular budget request for investment (excluding overseas contingency operations) includes \$109 billion, or 20 percent of the total defense budget, for procurement; it also includes \$79 billion, or 15 percent of the total, for research, development, test, and evaluation (RDT&E, see Table 1). CBO's projection of \$126 billion in procurement funding for 2020 is \$21 billion below CBO's earlier projection that was based on the 2009 FYDP; CBO's projection of \$187 billion in total investment funding for 2020 is \$25 billion below its earlier projection (see Figure 5 on page 20, particularly the gap between this year's projection and the solid black line representing last year's projection, which was made on the basis of the 2009 FYDP).³⁹ The new,

38. DoD's 2010 budget requested a military raise of 2.9 percent and assumed a 2.0 percent raise for civilian employees (see Department of Defense, *Fiscal Year 2010 Budget Request: Summary Justification*). The 2010 NDAA authorizes a military pay raise of 3.4 percent to take effect on January 1, 2010 (Public Law 111-84, Section 601, enacted October 28, 2009). The corresponding pay raise for federal civilian employees has not yet been enacted. The version of the Financial Services and General Government Appropriations Act for 2010 passed by the House (H.R. 3170) would provide a raise of 2.0 percent for federal civilian employees, as requested by the Administration, whereas the Senate version (S. 1432) would provide a raise of 2.9 percent. CBO's base projection assumes raises of 2.9 percent for military personnel and 2.0 percent for civilians, as in DoD's budget request; CBO's estimate of unbudgeted costs assumes larger raises of 3.4 percent in 2010 for military personnel and civilians.

39. See Congressional Budget Office, *Long-Term Implications of the Fiscal Year 2009 Future Years Defense Program* (January 2009).

smaller projections incorporate recently announced changes to DoD's investment plans.

Basis of Projections

The Secretary of Defense announced several major changes to DoD's investment plans before the formal release of the 2010 budget.⁴⁰ Although additional details were provided in the budget request and in subsequent press releases and briefing materials, the Administration did not submit a FYDP (which would have contained projected funding and other program information through 2015) with its 2010 budget request. Nor did it submit year-end (December 2008) Selected Acquisition Reports (SARs), which would have provided cost, schedule, and funding data (including the estimated out-year funding requirements) to reflect the program of record for each major defense acquisition program.

In the absence of information typically available in a FYDP, CBO relied on the President's 2010 budget request, with its accompanying budget justification materials, and other sources (including the previous year's FYDP and SARs, to the extent they are still applicable) to project investment resources through what would have been the FYDP years (2011 through 2015) and further out, to 2028 (see Table 3 on page 23).

Important Influences on Projections of the Costs of Investment

This section provides four examples of changes in DoD's investment plans that CBO was largely able to anticipate and thus build into its projection of the 2010 defense budget. Those four changes affect the number of brigade combat teams (BCTs) in the active Army, the Future Combat Systems (FCS) program, the Airborne Laser (ABL) program, and sea- and land-based missile defense in Europe.

DoD's Plans to Lower the Target Number of BCTs in the Active Army from 48 to 45.

According to the 2009 FYDP, DoD planned to expand the active Army from 42 to 48 combat brigades by 2013 (as well as 28 BCTs in the Army National Guard). In its 2009 edition of *Budget Options*, CBO noted that the active Army would probably be unable to identify 23,000 additional soldiers (beyond those already identified) to fully populate 6 new brigades under the current cap on total Army personnel.⁴¹ In April 2009, the Secretary of Defense proposed curtailing the number of BCTs at 45 (versus 48) as a means to ensure that deployed units are fully staffed and to end the routine use of "stop loss" (the practice of involuntarily retaining deployed soldiers past the end of their enlistment or reenlistment contracts, until after their units return to the United States). The Secretary also proposed maintaining the active Army's planned end strength at 547,000. CBO estimates that by holding that end strength,

40. Department of Defense, "Defense Budget Recommendation Statement."

41. Congressional Budget Office, *Budget Options, Volume 2* (August 2009), Option 050-1, p. 6.

DoD can avoid requesting as much as \$16 billion over the next five years in budget authority that would be required for the permanent expansion.⁴²

DoD's Plans to Cancel the Manned-Vehicles Portion of the Army's FCS Program.

The FCS program had been planned to encompass eight new models of manned combat vehicles as well as new unmanned aerial and ground vehicles, sensors, and munitions. All of those components would be linked by advanced communications networks into an integrated combat system. In January 2009, CBO projected (on the basis of the 2009 FYDP) that the Army's FCS program would cost \$60 billion over the next 10 years; "spinning out" technology enhancements to all of the Army's infantry BCTs would cost \$10 billion; the upgrades and purchase of combat vehicles would cost \$28 billion. The combined 10-year cost of those related programs would have been \$98 billion.

The Secretary announced in April 2009 that DoD would cancel the manned-vehicle portion of the FCS program. The department would then reevaluate that component and restart it at some unspecified time in the future. Further details concerning the revised FCS program, including funding estimates and delivery schedules for the various components, will most likely not be available until DoD submits its 2011 budget (and associated FYDP) in February 2010. As a substitute for the FCS plan that would have procured about 300 new vehicles per year, CBO analyzed a plan under which the Army would upgrade its existing Abrams tanks, Bradley fighting vehicles, and M109 self-propelled howitzers and also purchase new Stryker wheeled vehicles. CBO estimates those upgrades and new purchases of an average of 770 vehicles per year would cost a total of \$43 billion between 2010 and 2019. In addition, CBO estimated a cost of \$37 billion over the same 10-year period to spin out improved communications and other systems for all 73 of the Army's active and National Guard BCTs.⁴³ All together, the program assumed in CBO's projections would cost about \$18 billion less over the next 10 years than the plan in the 2009 FYDP. (The Secretary's announcement concerning FCS left open the possibility of restarting the Army's program to

42. The Secretary of Defense also announced a temporary increase in active Army end strength from 547,000 to 569,000 through fiscal year 2012 for the purpose of "[ensuring] that our deployed units are properly manned, and not to create new combat formations" (see Department of Defense, "DoD News Briefing with Secretary Gates and Chairman, Joint Chiefs of Staff Adm. Michael Mullen" [news transcript, July 20, 2009], www.defenselink.mil/transcripts/transcript.aspx?transcriptid=4447). The Secretary indicated that the increase in end strength for fiscal years 2009 and 2010 could be achieved without requesting any additional budget authority. Subsequently, the Office of Management and Budget identified a requirement for about \$1 billion in 2010 to train 15,000 additional new soldiers, and recommended that those funds be reprogrammed from various accounts, including about \$700 million originally slated to purchase MRAP and High Mobility Multipurpose Wheeled Vehicles (HMMWVs) (see Megan Scully, "Obama submits plan to pay for troops," *Government Executive*, August 14, 2009, <http://www.govexec.com/dailyfed/0809/081409cdpm1.htm>). The proposed source for funding in 2011 and 2012 remains to be determined.

43. Congressional Budget Office, *Budget Options, Volume 2* (August 2009), Option 050-4, p. 10; *An Analysis of the Army's Transformation Programs and Possible Alternatives* (June 2009); and *The Army's Future Combat Systems Program and Alternatives* (August 2006).

develop new types of manned combat vehicles; CBO's estimates did not include any development or procurement costs for that program.)

DoD's Plans to Cancel the Second ABL Aircraft and Restructure the Program as a Research and Development Effort. The ABL program, managed by the Missile Defense Agency, has been working to develop a system to destroy enemy ballistic missiles during their boost phase—the few minutes after launch before a missile's rocket motors burn out—by means of a high-energy chemical laser carried on modified Boeing 747 aircraft. Under previous plans, a successful test of the first ABL against a missile in flight would have been followed by development of a second prototype and, eventually, by the fielding of seven aircraft for operational use. Citing problems with technology and cost as well as doubts about the operational roles envisioned for the ABL, DoD announced that plans for the second aircraft would be shelved and that the program would be shifted to a research and development effort.

CBO is currently examining the operational effectiveness and potential costs of purchasing and operating of a fleet of ABL aircraft. The analysis will explore such factors as how well the ABL's lasers and optics will perform in combat, the number of aircraft needed to keep a single ABL on station around the clock, the vulnerability of the ABL to enemy action, and the potential need for additional support such as fighter protection and aerial refueling.

CBO's projection assumed that the shoot-down test for the first ABL aircraft, which was originally scheduled for 2009, would be completed in 2010 but that none of the seven subsequent ABL aircraft would be built. CBO also assumed that the Missile Defense Agency would maintain an ongoing research and development effort costing \$300 million per year in 2010 dollars. CBO estimates that those changes to the ABL program would yield net savings in budget authority of \$2.4 billion over the next five years (2010–2014) and \$8.6 billion between 2010 and 2019 (in 2010 dollars). The Secretary's announcement left open the possibility that a second or later ABL aircraft could be procured, depending on the outcome of the shoot-down test and subsequent research and development efforts; CBO's estimate does not include any funding for those aircraft.

DoD's Plans to Change Ground-Based Missile Defense Systems. In April 2009 the Secretary of Defense announced plans to freeze the current number of ground-based interceptors in Alaska as part of the ground-based midcourse missile defense system that is intended to defend the United States against limited ballistic missile attacks from North Korea or Iran. The plan would continue funding for research and development to improve the nation's ability to defend against long-range ballistic missiles. DoD also announced plans to upgrade six Navy Aegis warships to perform the ballistic missile defense mission at a total cost of \$200 million. Moreover, President Obama announced on September 17, 2009, the cancellation of the previous Administration's plans to field a high-resolution tracking radar in the Czech Republic and to deploy

10 ground-based interceptor missiles in permanent silos in Poland.⁴⁴ In its place, the President proposed a four-phase plan. Phase One would rely on Block IA of the SM-3 missile, which would be deployed on existing Aegis warships.⁴⁵ Phase One also would base an AN/TPY-2 radar in Europe to provide early detection and tracking of ballistic missiles if launched toward the United States. Phase Two would entail both sea- and land-based deployment of a more capable Block IB version of the SM-3 missile; Phases Three and Four would involve Block IIA and Block IIB missiles that are still under development. (Each block represents a major upgrade in capability from its predecessor.)

In a report published in February 2009, CBO discussed three alternatives to the previous Administration's plans for ballistic-missile defense in Europe.⁴⁶ Two of the three are similar to the current Administration's revised plans. One alternative would use SM-3 missiles deployed on Aegis warships operating at three locations around Europe, supported by two forward-based tracking radar stations; another alternative would rely on land-based SM-3 missiles operating from mobile launchers located at two U.S. bases in Europe (Ramstein Air Base in Germany and Incirlik Air Base in Turkey), supported by two transportable radar units. The Administration's new plan blends elements of these two options and encompasses both sea- and land-based deployment of SM-3 missiles.

For a sea-based concept, maintaining continuous coverage in three locations would require a total of nine ships (for each ship deployed, another would be undergoing maintenance and a third would be in use for training). At least three different variations of the sea-based concept are possible. If the Navy were to procure nine Arleigh Burke-class destroyers for the mission, the total cost would be about \$19 billion. A second approach would perform the same mission with less costly ships. For example, littoral combat ships cost about \$560 million each; a specially developed Aegis module consisting of a version of the AN/SPY-1 radar and vertical launch system cells would add about \$90 million per ship, CBO estimates. The total cost for nine such ships would be about \$6 billion. As a third alternative, rather than building new ships dedicated to the missile defense mission, and consistent with the announcement by the Secretary of Defense in April 2009, the Navy could upgrade existing warships (or proposed warships that would have been built to perform other missions) to provide missile defense. The fiscal year 2010 request for \$200 million to convert six warships

44. The White House, "Fact Sheet on U.S. Missile Defense Policy: A 'Phased, Adaptive Approach' for Missile Defense in Europe" (press release prepared by the Office of the Press Secretary, September 17, 2009), www.whitehouse.gov/the_press_office/FACT-SHEET-US-Missile-Defense-Policy-A-Phased-Adaptive-Approach-for-Missile-Defense-in-Europe/.

45. On February 21, 2008, a modified SM-3 Block IA missile fired from the Aegis cruiser U.S.S. *Lake Erie* (CG-70) destroyed a military satellite that was in a deteriorating orbit and carrying the toxic chemical hydrazine. See Jim Garamone, "Lake Erie Satellite Shot" (Pearl Harbor, Hawaii: American Forces Press Service) www.lake-erie.navy.mil/Site%20Pages/Events_Satellite%20shot.aspx.

46. Congressional Budget Office, *Options for Deploying Missile Defense in Europe* (February 2009).

may be viewed as a first installment in pursuing the latter approach; the total cost for nine ships would be about \$300 million. In that case, however, the Navy would forgo the possibility of deploying those ships to other locations in the world where they could perform other missions.

In January 2009 (on the basis of the 2009 FYDP), CBO projected that total investment costs for missile defense would be at least \$10 billion per year, peaking at \$17 billion in 2018; unbudgeted costs could add another \$4 billion annually.⁴⁷ The Secretary announced in April 2009 that the ABL program would be limited to a single aircraft, that no additional ground-based interceptors would be deployed in Alaska, and that the Multiple Kill Vehicle program would be terminated. With those and other changes, the 2010 request for the Missile Defense Agency would be \$1.4 billion smaller than the amount provided in 2009.⁴⁸ Incorporating those changes, CBO now projects that total investment costs for missile defense would average about \$8 billion annually through 2028, peaking at about \$10 billion in 2014. The total savings, averaging \$2 billion per year, include the specific savings from restructuring the ABL program as described above.

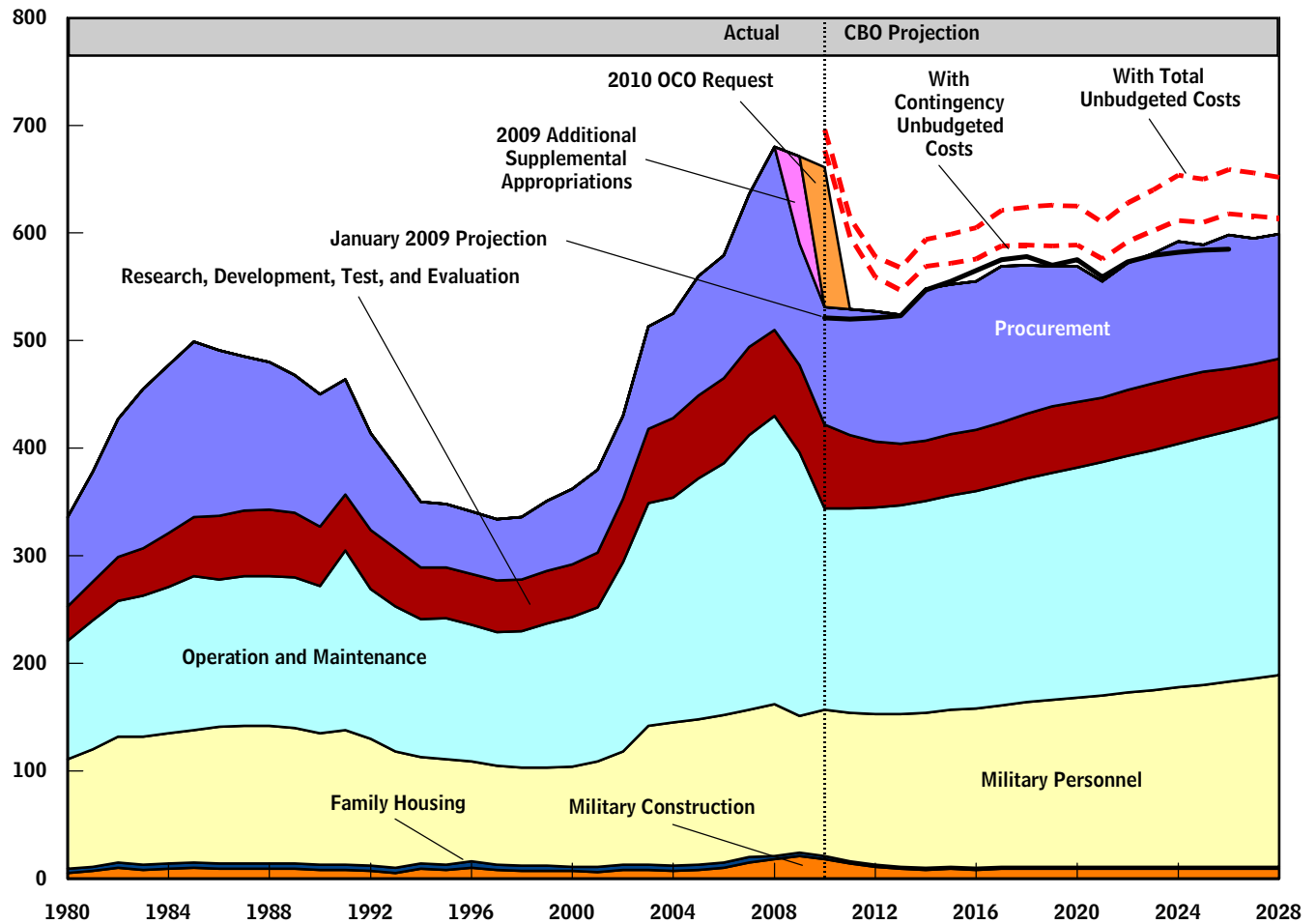
47. Congressional Budget Office, *Long-Term Implications of the Fiscal Year 2009 Future Years Defense Program*.

48. Department of Defense, "Defense Budget Recommendation Statement."

Figure 1.

Past and Projected Resources for Defense

(Billions of 2010 dollars)



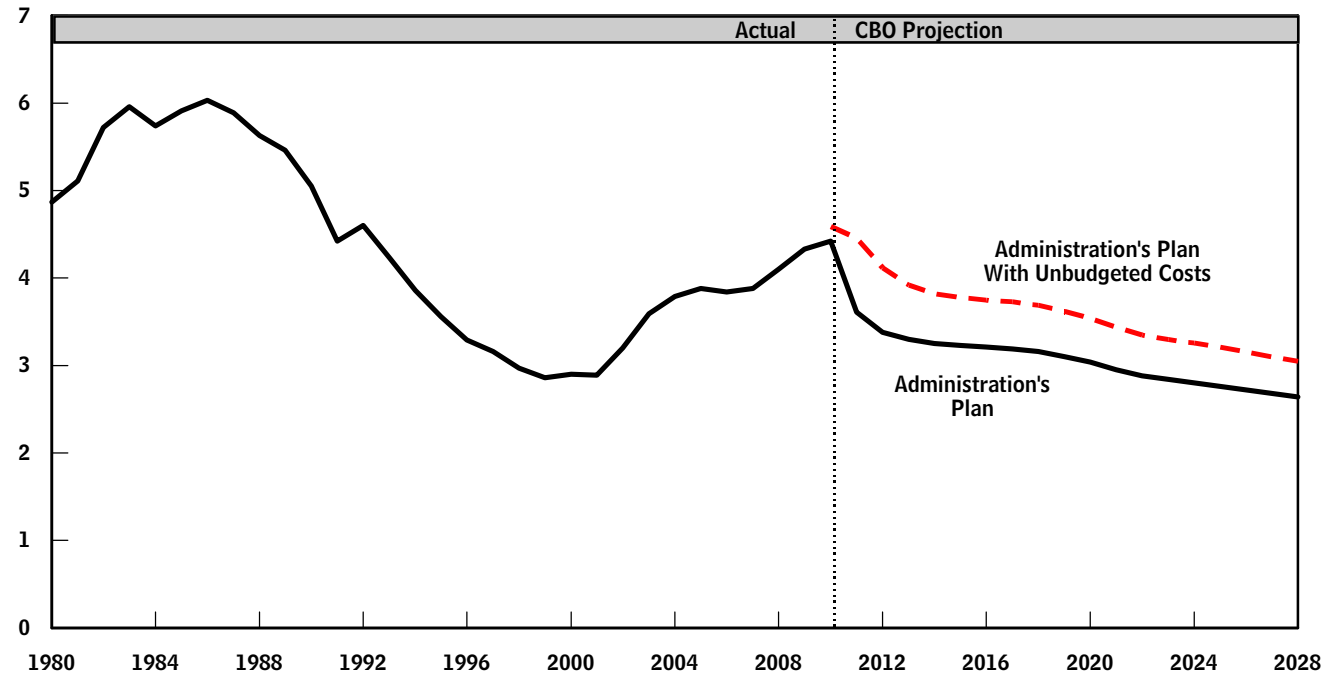
Source: Congressional Budget Office.

Note: OCO = Overseas Contingency Operations.

Figure 2.

Defense Resources as a Percentage of Gross Domestic Product

(Percent)

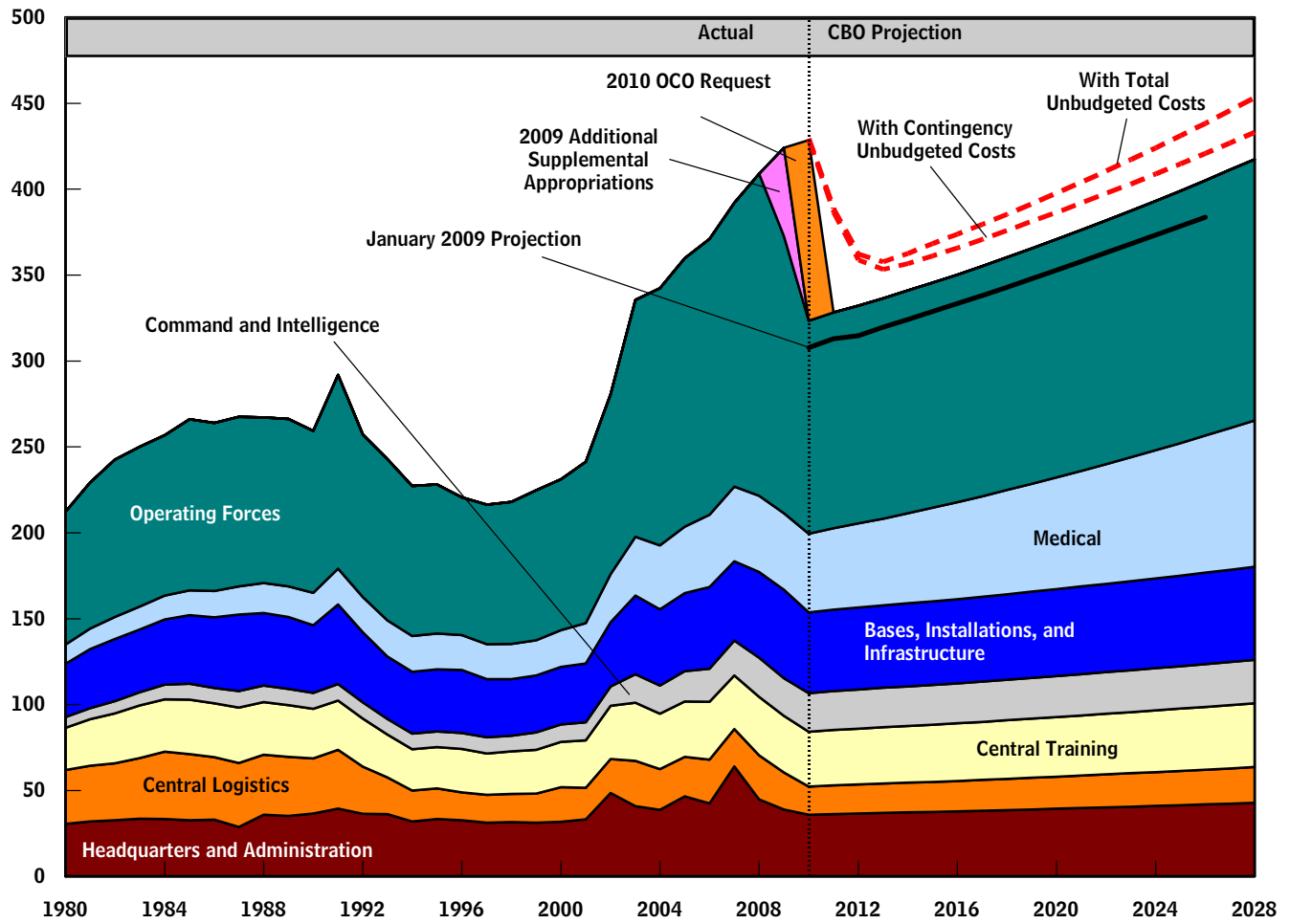


Source: Congressional Budget Office.

Figure 3.

Past and Projected Resources for Operation and Support

(Billions of 2010 dollars)



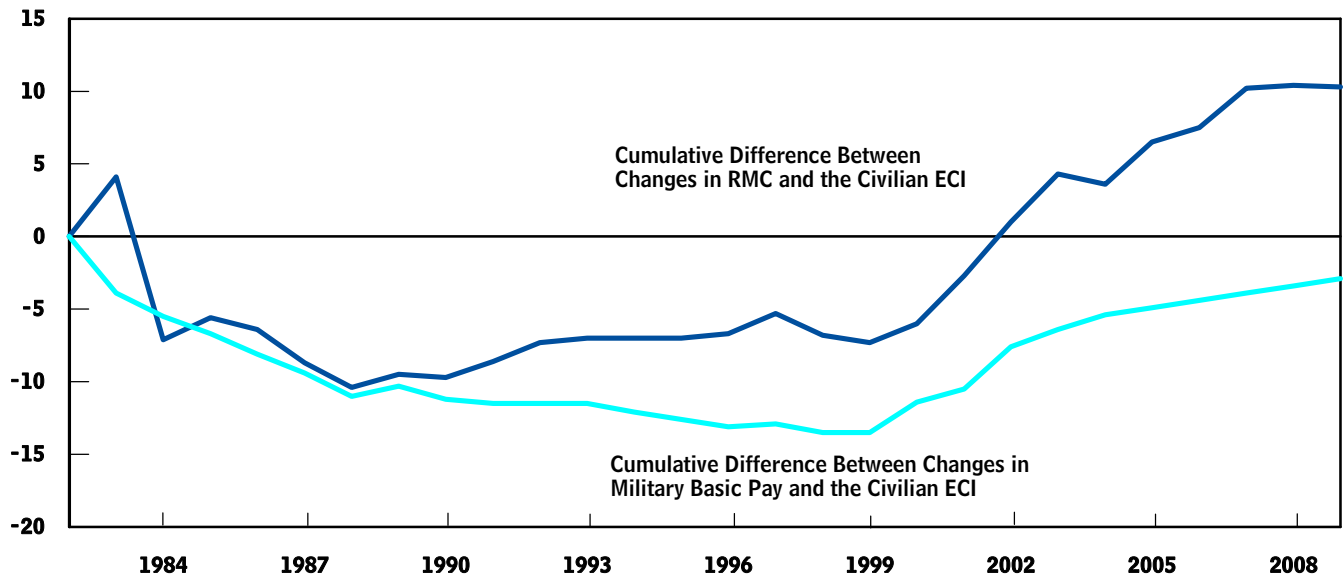
Source: Congressional Budget Office.

Note: OCO = Overseas Contingency Operations.

Figure 4.

Differences Between Military and Private-Sector Pay Raises Since 1982

(Percent)



Source: Congressional Budget Office based on data from the Department of Defense and the Department of Labor.

Note: RMC = regular military compensation (basic pay, allowances for housing and subsistence, and the federal tax advantage that occurs because those allowances are not taxed); ECI = employment cost index for wages and salaries in private industry.

Table 1.**Past and Projected Resources for Defense in Selected Years**

(Billions of 2010 dollars)

	Actual 2009	Requested 2010	Projected			Average	
			2013	2020	2028	2010-2013	2014-2028
Procurement	113	109	120	126	116	117	127
Research, Development, Test, and Evaluation	81	79	57	61	54	66	59
Subtotal, Investment	194	187	177	187	169	183	186
Operation and Maintenance	245	188	194	214	240	191	217
Military Personnel	127	136	142	157	178	139	160
Subtotal, Operation and Support	373	324	336	371	417	330	377
Other	28	23	11	11	13	14	12
Total, Regular Defense Budget	595	534	525	568	598	528	574
Additional Supplemental and Emergency Funding	74 ^a	130	n.a.	n.a.	n.a.	n.a.	n.a.
Total Including Additional Funding	669	664	525	570	599	527	575
Total Including Unbudgeted Costs	n.a.	681^b	568	627	659	612	631

Source: Congressional Budget Office.

Note: n.a. = not applicable.

- a. This figure excludes \$74 billion in other supplemental and emergency funding allocated among the appropriation titles listed above.
- b. This figure includes \$17 billion that the Administration has not requested but that CBO projects could be needed.

Table 2.**Past and Projected Resources for Operation and Support in Selected Years**

(Billions of 2010 dollars)

	Actual	Requested	Projected			Average	
	2009	2010	2013	2020	2028	2010–2013	2014–2028
Operating Forces	161	124	128	139	152	126	140
Medical	44	46	50	65	85	48	68
Bases, Installations, and Infrastructure	52	47	48	51	54	48	51
Command and Intelligence	22	22	23	24	25	23	24
Central Training	33	32	33	35	37	32	35
Central Logistics	21	16	17	19	21	17	19
Headquarters and Administration	39	36	37	39	43	36	40
Total Operation and Support, Regular Defense Budget	373	324	336	371	417	330	377
Additional Supplemental and Emergency Funding	47 ^a	105	n.a.	n.a.	n.a.	n.a.	n.a.
Total, Including Additional Funding	420	429	336	371	417	330	377
Total Including Unbudgeted Costs	n.a.	430^b	358	398	453	385	406

Source: Congressional Budget Office.

Note: n.a. = not applicable.

a. This figure excludes \$64 billion in other supplemental and emergency funding allocated among the categories listed above.

b. This figure includes \$1 billion that the Administration has not requested but that CBO projects could be needed.

Table 3.**Past and Projected Resources for Defense Investment in Selected Years**

(Billions of 2010 dollars)

	Actual 2009	Requested 2010	Projected			Average	
			2013	2020	2028	2010–2013	2014–2028
Ground Combat	10	7	7	13	5	7	10
Ships	15	16	21	25	24	19	25
Aircraft	29	26	31	20	24	29	24
Missiles and Munitions	4	4	5	2	3	4	3
Missile Defense	1	1	2	4	2	1	3
C4ISR	5	9	9	6	3	9	7
Other Procurement	48	46	45	56	55	48	56
Research, Development, Test, and Evaluation	81	79	57	61	54	66	59
Total Investment, Regular Defense Budget	194	187	177	187	169	183	186
Additional Supplemental and Emergency Funding	25 ^a	23	n.a.	n.a.	n.a.	n.a.	n.a.
Total, Including Additional Funding	219	210	177	187	169	183	186
Total, Including Unbudgeted Costs	n.a.	227 ^b	199	217	193	213	214

Source: Congressional Budget Office.

Note: n.a. = not applicable; C4ISR = command, control, communications, computers, intelligence, surveillance, and reconnaissance.

a. This figure excludes \$6 billion in other supplemental and emergency funding allocated among the categories listed above.

b. This figure includes \$17 billion that the Administration has not requested but that CBO projects could be needed.