
Analysis of the FY 2009 Defense Budget Request

Steven M. Kosiak



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by

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Center for Strategic and Budgetary Assessments

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1667 K Street, NW
Suite 900
Washington, DC 20006
(202) 331-7990
<http://www.csbaonline.org>

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EXECUTIVE SUMMARY

The Bush Administration has requested \$518.3 billion to cover the peacetime costs of the Department of Defense (DoD) in fiscal year (FY) 2009. In addition to this funding in DoD's "base" budget, the request includes \$70 billion to cover costs associated with the wars in Iraq and Afghanistan (what the Bush Administration calls the Global War on Terror, or GWOT). Taken together, under the new plan DoD is projected to receive some \$588.3 billion in FY 2009.

The administration's FY 2009 request also includes \$22.8 billion for Department of Energy (DoE) and other non-DoD defense activities. Thus, altogether, the FY 2009 request includes \$611.1 billion for National Defense.

The request for DoD's base budget (i.e., the budget exclusive of war costs) amounts to nominal increase of about 7.5 percent from the level of funding approved by Congress for FY 2008. In real (inflation-adjusted) terms, the increase would be some 5 percent. This would bring the DoD base budget to its highest level ever, in real terms.

The *total* request for DoD (i.e., the base budget plus war funding) is slightly (about 1 percent) higher in real terms than the budget approved by Congress for FY 2008. It is below the level provided for FY 2007. However, as the administration acknowledges, its \$70 billion request for war funding represents only a down-payment on next-year's war costs—additional funding will eventually need to be provided to cover costs for the full year. It is possible (perhaps even likely) that when the administration eventually amends its request to include full-year funding for the wars in Iraq and Afghanistan, the *total* defense budget for FY 2009 will end up exceeding both the FY 2007 and FY 2008 defense budgets. This would make it the largest defense budget since the end of World War II. Even without such an amendment, the total request for FY 2009 would surpass the peak years of the Korean and Vietnam Wars by, respectively, some \$145 billion and \$215 billion dollars (in FY 2009 dollars).

Although defense spending is presently at historically very high levels, as a share of the economy it is at relatively low levels. At the height of the Korean and Vietnam Wars, for example, defense spending absorbed, respectively, about 14.2 and 9.4 percent of gross domestic product (GDP). By comparison, for FY 2009, defense is likely to account for under 5 percent of GDP.

HOW MUCH IS ENOUGH?

There is considerable uncertainty concerning the amount of funding needed to cover the cost of the ongoing military operations in Iraq and Afghanistan. It is similarly unclear how much funding would be needed to fully implement the Services' long-term force structure, readiness and modernization plans. However, because of cost growth in weapons acquisition programs, as well as military personnel and operations and maintenance (O&M) activities, it is likely that implementing those plans would require spending substantially more on defense than proposed by the administration. Moreover, because of changing demographics, rising health care costs and other factors it may prove difficult to sustain such high defense spending levels.

At the same time, despite its high costs, DoD's current plan may fall short of meeting US security requirements—given the likelihood that the kinds of challenges faced by the US military will change significantly in coming years. On the other hand, it might be possible to meet US security requirements adequately at budget levels lower than would be needed to fully execute the administration's current plan—by adopting a scaled-back and more transformation-oriented defense plan. In other words, the ability of the US military to effectively meet future national security challenges is likely to have more to do with how wisely we spend our defense dollars, than on how much we spend.

HIGHLIGHTS OF THE ADMINISTRATION'S BUDGET PROPOSAL

- Since 2001, Congress has approved a total of about \$691 billion for the GWOT, including about \$646 billion for DoD and \$45 billion for other departments and agencies (primarily for foreign assistance). This total includes \$87 billion of the \$189 billion the administration requested for the GWOT for FY 2008—the remaining \$102 billion included in the FY 2008 GWOT request is still pending before Congress. In addition, as already noted, the administration has requested \$70 billion as a down-payment on FY 2009 war costs.
- The administration's latest plan continues to move ahead with the increase in Army and Marine Corps end strength announced last year. Under that plan, the two Services will be expanded to, respectively, 547,000 and 202,000 active duty personnel. Implementing these increases could cost some \$100 billion over the next five years. The administration argues that these increases in end strength are necessary if the US military is to sustain the ongoing deployments in Iraq and Afghanistan, and be prepared for future contingencies elsewhere in world that might require similarly large and long-term deployments. Critics note, among other things, that reaching these higher end strength targets may require accepting lower-quality recruits and that, in any event, these additional troops may arrive after the United States begins to draw down its forces in Iraq and Afghanistan, making them too late to relieve the pressure on military personal caused by the current deployments.
- The FY 2009 request would provide some \$180 billion for operations and maintenance (O&M) activities in DoD's base budget. This level is quite high by historical standards, and should be adequate to cover normal peacetime O&M funding requirements. It is less clear whether the O&M funding levels projected for later years of the administration's plan would be adequate.
- The FY 2009 request includes \$129 billion in DoD's base budget for military personnel. This would be sufficient to fund average pay raises of 3.4 percent. In recent years, the Navy, Air Force and Marine Corps have, for the most part, been able to meet their recruitment and retention goals. By contrast, while the Army has been able to meet its overall retention goals, it has had difficulty reaching its recruitment targets. In 2005 it fell short of meeting its quantitative goals. In 2006 and 2007, the Army achieved its quantitative goals, but only because it lowered its quality standards for recruits. Recruitment problems are likely to be exacerbated as a result of the administration's decision to expand the size of the Army and Marine Corps.

- The administration's FY 2009 request includes funding to move ahead with a broad range of new weapons programs. Under the new plan, funding for procurement in DoD's base budget would rise from \$99 billion in FY 2008 to \$104.2 billion in FY 2009, an increase of some 3 percent in real terms. This would mark nearly a doubling of procurement funding since FY 1997, when such funding reached its post-Cold War low point. On a per-troop basis (i.e., adjusted for changes in the size of the military's force structure), the FY 2009 procurement budget would approximate the level reached in FY 1985, historically the peak year for DoD procurement. Under the new Future Years Defense Program (FYDP), funding for procurement is projected to reach \$115.6 billion in FY 2013, representing a real increase of 11 percent from the level requested for FY 2009.
- Under the administration's FY 2009 request, R&D funding in DoD's base budget would increase from this year's level by about 2 percent in real terms, reaching a record high of \$79.6 billion. However, between FY 2009 and FY 2013, the latest plan projects a 20 percent real decline in R&D funding. Thus, to a large extent, the increase in procurement funding, projected in the latest plan to occur over the next five years, would be financed by shifting funding into procurement from the Service's R&D accounts. Such a shift in resources—which would be historically unprecedented—may prove difficult to achieve. In addition, the projected increase in procurement funding included in the latest plan may be undermined by cost growth in military personnel and O&M activities.
- The administration's FY 2009 budget request includes \$66.3 billion for homeland security. About \$32.8 billion of this request is allocated to the Department of Homeland Security (the Department would also receive some \$17.7 billion for non-homeland security missions, such as maritime safety). The remaining funding would be divided among the Departments of Defense (\$17.6 billion), Health and Human Services (\$4.6 billion), Justice (\$3.8 billion), Energy (\$1.9 billion), and more than two dozen other departments and agencies. The FY 2009 request for homeland security represents about a 5 percent real increase from the level provided for FY 2008. Whether this level of funding is adequate is unclear. Funding for homeland security has grown dramatically since FY 2001. On the other hand, given the enormous challenges related to homeland security that the United States faces, further substantial increases may be needed.
- The high levels of funding projected in the current plan may not be sustainable over the long run. The long-term federal budget picture has dramatically worsened over the past seven years. In early 2001, the Congressional Budget Office (CBO) projected a 10-year surplus of about \$5.6 trillion over the FY 2002-11 period. By contrast, CBO's baseline estimate now projects surpluses totaling only \$274 billion over the next decade (FY 2009-18). The dramatic change in the government's fiscal outlook has resulted from the enactment of large tax cuts, increases in defense and homeland security spending, the addition of the Medicare prescription drug benefit, and other factors. Unfortunately, it is likely that the outlook will deteriorate still further in coming years. According to CBO, enactment of the President's proposed FY 2008 budget would push total federal deficits to some \$717 billion over the FY 2009-18 period. Using different, and perhaps more realistic, assumptions about federal spending and revenue, others project that deficit totals could reach some \$3-4 trillion over the coming decade.

I. OVERVIEW

The Bush Administration has requested \$518.3 billion to cover the peacetime costs of the Department of Defense (DoD) in fiscal year (FY) 2009.¹ In addition to this funding in DoD's "base" budget, the request includes \$70 billion to cover costs associated with the wars in Iraq and Afghanistan (what the Bush Administration calls the Global War on Terror, or GWOT). Taken together, under the new plan DoD is projected to receive some \$588.3 billion in FY 2009.

The administration's FY 2009 request also includes \$22.8 billion for Department of Energy and other non-DoD defense activities. Thus, altogether, the FY 2009 request includes \$611.1 billion for National Defense.

The request for DoD's base budget (i.e., the budget exclusive of war costs) amounts to nominal increase of about 7.5 percent from the level of funding approved by Congress for FY 2008. In real (inflation-adjusted) terms, the increase would be some 5 percent.² This would bring the DoD base budget to its highest level ever, in real terms.³

The *total* request for DoD (i.e., the base budget plus war funding) is slightly (about 1 percent) higher in real terms than the budget approved by Congress for 2008. It is below the level provided for FY 2007. However, as the administration acknowledges, its \$70 billion request for war funding represents only a down-payment on next-year's war costs—additional funding will eventually need to be provided to cover costs for the full year. It is possible (perhaps even likely) that when the administration eventually amends its request to include full-year funding for the wars in Iraq and Afghanistan the *total* defense budget for FY 2009 will end up exceeding both the FY 2007 and FY 2008 defense budgets. This would make it the largest defense budget since the end of World War II (see Figure 1).⁴ Even without such an amendment, the total request for FY 2009 would surpass the peak years of the Korean and Vietnam Wars by, respectively, some \$145 billion and \$215 billion dollars (in FY 2009 dollars).

The current high levels of funding for defense are the product of a dramatic buildup that began—in earnest—after the terrorist attacks of September 11, 2001. The FY 2009 defense budget

¹ This is the *total* amount of funding projected to be provided for DoD's base budget in FY 2009, as estimated by the Office of Management and Budget (OMB). This total includes \$515.4 billion in DoD *discretionary* budget authority (which excludes a small amount of mandatory funding).

² Unless otherwise noted, all funding changes cited in this analysis are expressed in real terms and were derived using the Office of Management and Budget's (OMB's) gross domestic product (GDP) deflator.

³ Using DoD's own deflators (rather than the GDP deflator) would show a more modest rate of growth in funding for defense historically, and place the FY 2009 request somewhat below the level of funding provided in the mid-1980s. This is because, relative to the GDP deflator, DoD's deflators tend to understate growth in personnel costs.

⁴ Whether FY 2007, FY 2008 or FY 2009 will end up having the highest defense budget will depend on how much money is ultimately provided for military operations in each of those years. The answer to that question will not be known until Congress completes action on the administration's FY 2008 supplemental request (it has so far approved \$87 billion of the administration's \$189 billion request) and the administration submits (and Congress acts on) an amended request to cover the full-year cost of military operations in FY 2009.

request is about 62 percent higher in real terms than the 2000 defense budget. Nor is this growth due simply—or even primarily—to the cost of military operations. The base defense budget has also grown dramatically over the past eight years. The 2009 request for the base defense budget is some 43 percent higher than the FY 2000 defense budget.

Although defense spending is presently at historically very high levels, as a share of the economy it is at relatively low levels. At the height of the Korean and Vietnam Wars, for example, defense spending absorbed, respectively, about 14.2 and 9.4 percent of gross domestic product (GDP). By comparison, for FY 2009, defense is likely to account for under 5 percent of GDP.⁵ Defense has declined as a share of GDP even as it has increased in dollar terms because, over time, the US economy has grown faster than defense spending—the US economy is today, for example, some six-times larger than it was during the Korean War and three-times larger than during the Vietnam War.

TOPLINE PROJECTIONS FOR FY 2010 AND BEYOND

For the four years after FY 2009, the administration's latest Future Years Defense Program (FYDP) projects a slight decline in DoD's base budget. After rising some 43 percent over the FY 2001-09 period, under this plan, between FY 2010 and FY 2013 DoD's base budget would be cut by about 1.5 percent in real terms. Thus, the administration is proposing that the defense buildup begun after the terrorist attacks of September 2001 should come to an end in FY 2019.

Whether the current buildup will, in fact, soon end will depend on the decisions of the next administration and Congress. Given the need to address the long-term problem of increasing federal deficits—driven largely by the retirement of the baby boomer generation and, especially, continued growth in health care costs—there is good reason to believe that a future administration and Congress will, indeed, move in this direction. However, living within declining, or even relatively flat, defense budgets in coming years would require making a range of difficult choices concerning DoD's plans and priorities.

Analysis by the Center for Strategic and Budgetary Assessment (CSBA), the Congressional Budget Office (CBO) and others suggests that executing the current defense plan would require, over the long term, increasing DoD's budget well above the level included in the FY 2009 request.⁶ CBO, for example, has estimated that—assuming historical rates of cost growth in operations and support costs, and weapons acquisition programs—DoD's base budget would, over roughly the next five years, have to be increased by some \$50 billion above the amount requested for FY 2009, and sustained at that level through 2025.⁷ Additional funding of tens of billions of dollars a year will also likely be needed to cover the cost of military operations over the long run.

⁵ Based on the administration's FY 2009 request as it stands today (i.e., including only partial funding for military operations) defense spending would account for about 4.4 percent of GDP. However, the share of GDP allocated to defense could approach 5 percent if the amount of war funding provided for the year reaches the level requested for FY 2008.

⁶ See, for example, Steven M. Kosiak, *Matching Resources With Requirements: Options for Modernizing the US Air Force* (Washington, DC: CSBA, 2004), and Adam Talaber, *Long-Term Implications of Current Defense Plans: Summary Update for Fiscal Year 2008* (Washington, DC: CBO, December 2007).

⁷ Talaber, *Long-Term Implications of Current Defense Plan: Summary Update for Fiscal Year 2008*, p. 2.

Making DoD's long-term plans affordable within relatively flat budgets would require enacting some major cuts in DoD's modernization programs, reductions in force structure, or a combination of both approaches. Fortunately, there may be some modernization programs in the existing plan that could be scaled back substantially without seriously undermining the US military's effectiveness. It may also be possible to prudently cut certain elements of force structure, such as the number of Air Force short-range fighter wings. On the other hand, so long as the US military remains heavily engaged in military operations it is difficult to imagine cutting the size of US ground forces—and, indeed, current plans envision an expansion of those forces—and the US military may be under-investing in some weapon systems, such as long-range strike aircraft (e.g., manned or unmanned bombers).

In any event, these difficult choices—if they are made at all—will have to be made by a future administration and Congress. As has generally been true (with a few exceptions) of its past requests, the Bush Administration's latest proposal avoids any major cuts in modernization programs. Moreover, consistent with last year's plan, it continues to call for increases in Army and Marine Corps end strength.

GWOT FUNDING

Since 2001, Congress has approved a total of about \$691 billion for the GWOT, including about \$646 billion for DoD and \$45 billion for other departments and agencies (primarily for foreign assistance). This total includes \$87 billion of the \$189 billion the administration requested for the GWOT for FY 2008.⁸ The administration has requested \$70 billion to cover the cost of military operations in FY 2009. As noted earlier, at some point, additional funding beyond this \$70 billion will have to be provided to cover war-related costs for the full year.

The war in Iraq, which accounts for about 80 percent of DoD's annual war-related funding requirements, has turned out to be far more costly than originally anticipated by the Bush Administration. This is primarily because the administration incorrectly assumed that it would be possible to bring the vast majority of US troops home soon after the brief initial, conventional, phase of Operation Iraqi Freedom (OIF) ended. Adjusted for differences in the number of troops deployed and the duration of the conflict (i.e., on a per-troop/day basis), this war has also proven to be much more costly than other recent military operations (e.g., the 1991 Gulf War and operations in the Balkans). The explanation for this cost growth is not entirely clear.⁹

Part of the explanation may be that, increasingly, war-related funding measures appear to include funding for some programs that are, at best, only indirectly related to the ongoing

⁸ At present, it is unclear how much of the \$102 billion balance for FY 2008 Congress will provide. But at some point, probably this spring, Congress will need to approve at least some additional funding. The total cost of military operations in FY 2008 will clearly exceed \$87 billion.

⁹ For a discussion of war-related funding issues, see Steven M. Kosiak, "The Global War on Terror (GWOT): Costs, Cost Growth and Estimating Funding Requirements," testimony before the Senate Budget Committee, February 6, 2007, and Steven M. Kosiak, "The Cost and Funding of the Global War on Terror," testimony before the House Budget Committee, January 18, 2007.

military operations in Iraq and Afghanistan. This fact also makes it difficult to discern how seriously to take the topline projections for DoD's base budget included in the latest FYDP. It is possible that—when funding provided through emergency appropriations ostensibly intended to cover war costs are included—substantially more funding will be provided for the US military's peacetime force structure, readiness and modernization programs and activities than is suggested in the in the FY 2009 request and the FY 2009-13 FYDP.

END STRENGTH INCREASE

The administration's latest budget includes funding to continue the planned increases in Army and Marine Corps end strength announced last year. That plan calls for increasing the *permanent* active duty end strength of the Army and Marine Corps to, respectively, 547,000 and 202,000 troops. These represent increases of 65,000 and 27,000 troops from previously authorized permanent end strength levels for the two Services.¹⁰ Compared to today's levels, however, the increase will be substantially smaller than these figures suggest, since the Army and Marine Corps have, for several years, already been operating (under temporary authority) above their permanent end strength targets.¹¹ Implementing these increases will cost some \$100 billion over the next five years.

The administration and others argue that these increases in end strength are necessary if the US military is to sustain the ongoing deployments in Iraq and Afghanistan, and be prepared for future contingencies elsewhere in world that might require similarly large and long-term deployments. Critics note, among other things, that reaching these higher end strength targets could require accepting lower-quality recruits and that, in any event, these additional troops may arrive too late to relieve the pressure on military personal caused by the current deployments in Iraq and Afghanistan.

Current plans also call for making modest reductions in the end strength of the Navy and the Air Force over the next few years. These cuts will offset much of the increase projected for the Army and Marine Corps. The net effect of these changes will be to leave the US military with an active duty end strength of about 1.39 million personnel by around 2013, only slightly above today's level.

WEAPONS PROGRAMS

The administration's FY 2009 request includes funding to move ahead with a broad range of new weapons programs. Among other things, it would fund the purchase of F-35, F-22, F/A-18 and V-22 aircraft. It would also provide substantial funding for the Army's Future Combat System (FCS) and for Navy shipbuilding.

¹⁰ Under the Army's new plan, the end strength of the Army National Guard and Reserve would also be increased by about 9,200 troops.

¹¹ At the end of FY 2007, the Army and Marine Corps were operating above their permanent end strength targets by, respectively, about 40,000 and 11,000 personnel. This means that, compared to today's actual levels, the end strength increases proposed by the administration would expand the two Services by, respectively, 25,000 and 16,000 troops.

Overall, under the new budget plan, funding for procurement in DoD's base budget (i.e., excluding GWOT-related procurement) would rise from \$99 billion in FY 2008 to \$104.2 billion in FY 2009, a slight (3 percent) real increase. This would mark nearly a doubling of procurement funding since FY 1997, when such funding reached its post-Cold War low point. Although total procurement funding would remain below the record levels of the 1980s, on a per troop basis (i.e., adjusted for changes in the size of the military's force structure), the FY 2009 procurement budget would approximate the level reached in FY 1985, historically the peak year for DoD procurement.

Although procurement funding in DoD's FY 2009 base budget would grow under the request, the increase is about \$6.4 billion below the level projected for FY 2009 in last year's plan. Conversely, the latest request includes more funding for military personnel, operations and maintenance (O&M) activities, military construction, and research and development (R&D) programs, than projected in last year's plan. This "migration" of funds from procurement to these other accounts does not bode well for DoD's long-term modernization plans—which project a further 10 percent real increase in procurement funding through FY 2013.

Such migration—driven in large part by higher than anticipated increases in personnel and O&M costs (especially health care)—frequently caused DoD to miss its targets for procurement funding during the Clinton Administration. If the projected increases in funding for procurement cannot be reached over the next five years, substantial cuts to some modernization programs will have to be made.

Under the FY 2009 request, R&D funding in DoD's base budget would grow from about \$76.5 billion to \$79.6 billion, a real increase of about 2 percent. This would bring DoD's R&D budget to its highest level ever, in real terms. Conversely, under the latest plan, funding for R&D would be cut deeply—by 20 percent—over the FY 2010-13 period. This reduction would, in turn, permit a shift of resources from R&D into procurement. However, history suggests that future R&D funding requirements are likely to be higher than currently anticipated, rendering such a transfer doubtful and further diminishing the prospects that DoD's projected boost in procurement funding will materialize.

TRANSFORMATION

During the 2000 presidential campaign, then-candidate George W. Bush argued that the US military must be transformed to counter effectively the very different kinds of challenges projected to emerge over the next several decades as a result of the ongoing "Revolution in Military Affairs" (RMA). He also suggested that transforming the US military would require not only investing in new kinds of capabilities, but also reducing investments in some traditional types of forces and weapons programs. Likewise, in the 2001 Quadrennial Defense Review (QDR), the administration stated that continuing a "business as usual approach" in DoD was not a viable option, and cautioned that "without change the current defense program will only

become more expensive to maintain over time and will forfeit many of the opportunities available to the United States today.”¹²

In the 2006 QDR, the administration once again stressed the importance of transforming the US military. The document concluded that “although the US military maintains considerable advantages in traditional forms of warfare, this realm is not the only, or even the most likely, one” in which adversaries will challenge the United States in the future.¹³ Instead, the QDR pointed to the emergence of asymmetric threats, including irregular, catastrophic and disruptive challenges.¹⁴ According to the 2006 QDR, US military “capabilities and forces will be reoriented over time to reflect” a focus on these new challenges, and will build “upon the transformational changes already underway.”¹⁵

Over the past seven years, the Bush Administration has increased DoD’s investment in a number of transformational capabilities. Among other things, it has moved ahead with plans to convert four Trident ballistic missile submarines to carry conventional Tomahawk cruise missiles, and has accelerated and expanded the acquisition of some unmanned systems. It has also pushed ahead with a wide variety of programs and initiatives related to improving C4ISR (command, control, communications, computers, intelligence, surveillance and reconnaissance) and precision-strike capabilities. In addition, as part of the 2006 QDR, the administration announced plans to increase the number of special operations forces (SOF) battalions, and to accelerate the fielding of a new long-range strike system to 2018, nearly two decades earlier than the 2037 timeframe projected in earlier DoD plans.

Unfortunately, the administration’s transformation efforts to date appear to have fallen short in a number of important respects. The administration has decided to move ahead with the vast majority of the acquisition programs included in the Services’ long-range plans—most of which were also projected in the last, pre-9/11, Clinton Administration defense plan. Perhaps most questionable is the decision to purchase 2,443 F-35 Joint Strike Fighters (JSF) over the next several decades. Although it almost certainly makes sense to buy some number of these aircraft, the current plan—projected to cost about \$300 billion—seems excessive.

In particular, this focus on relatively short-range tactical fighters seems at odds with recent experience in Afghanistan, Iraq and elsewhere, which suggests that, in the future, the US military may often have difficulty securing access to forward air bases.¹⁶ Moreover, the decision to

¹² *2001 Quadrennial Defense Review Report* (Washington, DC: DoD, September 30, 2001), p. 16.

¹³ *2006 Quadrennial Defense Review Report* (Washington, DC: DoD, February 6, 2006), p. 19.

¹⁴ Irregular warfare refers to, for example, counterinsurgency missions (such as the ongoing wars in Iraq and Afghanistan); catastrophic, the possible use of weapons of mass destruction against the United States by terrorists, and similar threats; and, disruptive, the possible emergence of a peer or near-peer competitor in the future that could challenge US military superiority.

¹⁵ *2006 QDR*, p. 41.

¹⁶ The growing proliferation of submarines, mines and anti-ship missiles among potential adversaries is also raising questions about the ability of carrier-based short-range fighters to operate effectively in forward areas. See, Christopher J. Bowie, *The Anti-Access Threat and Theater Air Bases* (Washington, DC: CSBA, 2002).

forego cuts in this program calls into serious doubt DoD's commitment to fielding a new bomber beginning in 2018. Because of the high cost and momentum behind the F-35 and many other traditional weapons programs, it may prove difficult, if not impossible, for DoD to find sufficient funding to develop (let alone procure and field) a new bomber, as well as other transformational systems and forces, in coming years.

HOMELAND SECURITY

The Bush Administration's FY 2009 budget request includes \$66.3 billion for homeland security. About \$32.8 billion of this request is allocated to the Department of Homeland Security (DHS). (The Department would also receive some \$17.7 billion for non-homeland security missions, such as maritime safety.) Another \$17.6 billion would be provided to DoD for its homeland security-related programs and activities. The remaining funding would be divided between the Departments of Health and Human Services (\$4.6 billion), Justice (\$3.8 billion), State (\$2.5 billion), Energy (\$1.9 billion), and more than two dozen other departments and agencies.

The FY 2009 request for homeland security represents about a 5 percent real increase from the level of funding provided for FY 2008. The request would allocate funding to a broad range of programs and activities related to homeland security, including intelligence and warning (\$766 million), border and transportation security (\$25.7 billion), domestic counterterrorism (\$5.4 billion), protecting critical infrastructure and key assets (\$20.2 billion), defending against catastrophic threats (\$9.1 billion), emergency preparedness and response (\$5 billion), and other programs (\$199 million).

SETTING THE TOPLINE FOR DEFENSE

The substantial increases in funding for defense that would be needed to implement DoD's existing plans may not be sustainable over the long term. In the aftermath of the terrorist attacks of September 11, 2001, defense spending has become a higher priority for most Americans, especially as it relates to homeland security and the war on terrorism, but it is still far from the only priority. Over the long term, the defense mission will have to compete with other priorities, including cutting taxes, reducing the federal debt, ensuring the health and durability of Social Security and Medicare, and providing greater resources for education, health research and other domestic programs.

The long-term federal budget picture has dramatically worsened over the past seven years. In early 2001, CBO projected a 10-year surplus of about \$5.6 trillion over the FY 2002-11 period.¹⁷ By contrast, CBO's baseline estimate now projects surpluses totaling only \$274 billion over the next decade (FY 2009-18).¹⁸ The change in the government's fiscal outlook has resulted from the enactment of large tax cuts, the expansion of Medicare (to include a prescription drug benefit), increased defense and homeland security spending, and other factors.

¹⁷ CBO, *The Budget and Fiscal Outlook: Fiscal Years 2002-2011* (Washington, DC: CBO, January 2001), p. 2.

¹⁸ Peter R. Orszag, Director of CBO, "Analysis of the Presidents FY 2009 Budget Request," letter to the Honorable Robert C. Byrd, Chairman, Senate Appropriations Committee, March 3, 2008, p. 11.

Unfortunately, it is likely that the outlook will deteriorate still further in coming years. In its most recent budget request, the administration has proposed making permanent a number of tax cuts enacted over the past seven years (rather than having them expire in 2010, as they would under current law). At the same time it is proposing further increases in funding for defense and homeland security. According to CBO, enactment of the President's proposed budget would push total federal deficits to some \$717 billion over the FY 2009-18 period¹⁹

Worse yet, this estimate almost certainly understates the actual cost of the administration's proposals. Among other things, the CBO estimate of the President's proposed budget does not include future costs associated with the war in Iraq and other military operations, or the cost of extending relief from the Alternative Minimum Tax (AMT).²⁰ The administration's plan also assumes that spending on domestic discretionary programs will be cut substantially. Projections based on more realistic assumptions about revenue and spending suggest that total deficits could total some \$3-4 trillion or more over the next 10 years.²¹

As bad as the deficit picture appears to be for the coming decade, the outlook for the years beyond 2018 is far worse. The Bush Administration's own budget documents project that the federal government will run deficits continuously after around 2020 and that the size of the deficit will grow to some 10.9 percent of GDP by 2080.²² However, the administration's projections incorporate a number of optimistic and, if history is any guide, probably unrealistic assumptions about future revenue and spending levels.

In 2007, the Center on Budget and Policy Priorities (CBPP) released a study of the long-term fiscal outlook that incorporated more realistic assumptions.²³ This assessment, which was based primarily on data and projections contained in Congressional Budget Office (CBO) analyses, concluded that if current budget policies are continued federal deficits will grow dramatically from about 2 percent of GDP in 2017 to 7 percent of GDP in 2030 and 20 percent of GDP in 2050.²⁴ These estimates are very similar to the projections made by the Government

¹⁹ Ibid.

²⁰ Since, unlike the regular income tax code, the AMT is not indexed to inflation, unless relief is provided the number of taxpayers that would be subject to the AMT would grow from about two million today to some 39 million by 2012. There is strong bipartisan support for reforming the AMT.

²¹ For example, according to CBO, the combination of increasing discretionary spending at the rate of growth of GDP and reforming the AMT would increase deficit totals for the decade projected in its baseline estimate by \$2.6 trillion. CBO, *The Budget and Economic Outlook: Fiscal Years 2008 to 2018* (Washington, DC: CBO, January 2008), p. 12.

²² OMB, *Fiscal Year 2009 Budget of the US Government, Analytical Perspectives*, p. 188.

²³ Richard Kogan, Matt Fiedler, Aviva Aron-Dine, and James Horney, "The Long-Term Fiscal Outlook is Bleak: Restoring Fiscal Sustainability Will Require Major Changes to Programs, Revenues, and the Nations Health Care System," CBPP, January 29, 2007.

²⁴ Ibid., p. 2.

Accountability Office (GAO) in a report it also released in 2007.²⁵ If anything, the GAO report suggests that the long-term fiscal outlook may be even bleaker than the CBPP analysis indicates.²⁶

By far the most important contributors to the projected worsening of the fiscal outlook are rising Medicare and Medicaid costs. Although some of this cost growth is driven by the projected expansion of the elderly population resulting from the retirement of the baby boomer generation, the bulk of it is projected to occur because of continued growth in per capita health care costs. Specifically, costs per beneficiary are projected to grow, as they have historically—at an annual rate 2-3 percent faster than the US economy. This growth is caused by essentially the same factors—such as increased technology utilization—that have led to roughly the same rates of per capita cost growth in the broader US healthcare system (e.g., among private health insurance plans), and are projected to continue to drive those costs in coming decades. As a result, efforts to solve the long-term fiscal crisis confronting the United States will have to focus, first and foremost, on reforming the US health care system.

Notwithstanding the priority that clearly needs to be placed on better controlling health care costs, addressing effectively the country's long-term fiscal challenge will also likely mean both raising taxes and cutting spending in some other areas—or at least slowing the rate of growth in spending in other areas. This does not, of course, *prove* that the substantial increases in funding that would be needed to implement the Services' plans over the long term will not be forthcoming. It does, however, suggest that sustaining such increases could be difficult, and will require making hard choices between defense and other important priorities over the coming decade and beyond.

HOW MUCH IS ENOUGH?

As noted earlier, there is considerable uncertainty concerning the amount of funding needed to cover the cost of the ongoing military operations in Iraq and Afghanistan. It is similarly unclear how much funding would be needed to fully implement the Services' long-term force structure, readiness and modernization plans. However, history strongly suggests that implementing those plans would require increasing spending on defense well above the levels projected in the administration's latest plan. Moreover, because of changing demographics, and especially continued growth in per capita health care costs, as well as other factors, it may prove difficult to sustain such high defense spending levels.

At the same time, despite its high costs, DoD's current plan may fall short of meeting US security requirements—given the likelihood that the kinds of challenges faced by the US military will change significantly over the coming years. On the other hand, it might be possible to meet

²⁵ David M. Walker, Comptroller General of the United States, "Long-Term Budget Outlook: Deficits Matter—Saving Our Future Requires Tough Choices Today," Statement before the House Budget Committee, January 23, 2007, p. 7.

²⁶ The GAO analysis examined two scenarios. In its 'baseline extended' scenario, it projected that the federal deficit would reach 6 percent of GDP by 2030 and 18 percent of GDP by 2050. In the second, more pessimistic, scenario, it projected that deficits would reach 14 percent of GDP by 2030 and 20 percent of GDP by about 2036. *Ibid.*

US security requirements adequately at budget levels lower than would be needed to fully execute the administration's current plan—by adopting a scaled-back and more transformation-oriented defense plan. In other words, the ability of the US military to effectively meet future national security challenges is likely to have more to do with how wisely we spend our defense dollars, than on how much we spend.

II. THE ADMINISTRATION'S BUDGET REQUEST

The following section provides a brief analysis of how major funding categories and programs would fare under the administration's FY 2009 budget request.

OPERATIONS AND MAINTENANCE

The O&M budget covers the costs of purchasing fuel, spare parts and many other items associated with carrying out training activities, as well as real-world operations in Iraq, Afghanistan and elsewhere. As such, the readiness of the US military to fight effectively on short notice is largely dependent on the provision of adequate funding in this account. In addition, the O&M budget covers the cost of many programs less immediately related to near-term readiness, such as military health care, base operations and other support, or "infrastructure," activities. These costs include the salaries of most civilian DoD personnel, who perform many of DoD's infrastructure functions.

The FY 2009 request for DoD's base budget would provide some \$180.4 billion for O&M. This level is very high by historical standards, and should be adequate to cover normal peacetime O&M funding requirements. The administration's request works out to about \$130,000 per active duty troop. This is twice as much as DoD provided per troop in FY 1990, the year the United States began sending forces to the Persian Gulf in preparation for Operation Desert Storm in 1991, and one-third more than in FY 2000, just prior to the successful US invasion of Afghanistan in 2001-02.

As noted earlier, the administration's FY 2009 request also includes \$70 billion in war-related funding. This amount would be sufficient to cover the cost of military operations in Iraq and Afghanistan for only part of the year. The administration has stated that, sometime this spring, it will submit a supplemental request sufficient to cover those costs for the full year. It is unclear how much funding will ultimately be requested for military operations in FY 2009. However, the history of the past few years suggests that the administration could easily end up asking for twice as much as it has so far, and perhaps considerably more. As in past years, the largest portion of that funding will likely be allocated to O&M. Among other things, O&M funds are used to cover the cost of extra fuel and spare parts consumed in these operations, as well as many other costs associated with supplying, sustaining and otherwise supporting deployed US forces.

Although some elements of the Air Force and Navy have been stressed substantially over the past few years—such as the Air Force's tanker and transport fleets—overall, these two Services appear today to be operating relatively close to their traditional peacetime operational tempo (OPTEMEPO) levels (measured, for example, in terms of aircraft flying hours and ship steaming days). By comparison, Army and Marine Corps units, which account for the vast majority of the forces deployed in and around Iraq and Afghanistan and represent the bulk of the US military's counter-insurgency capabilities, are currently operating under far greater stress. For example,

Army combat vehicles in Iraq and Afghanistan are reportedly being operated at five times their normal, peacetime rate.²⁷

Notwithstanding the high tempo at which US forces are operated in Iraq and Afghanistan, and the resulting wear and tear on equipment, US Army and the Marine Corps units deployed in those countries appear to remain highly effective. It also appears that Congress has, in recent years, generally been providing funding sufficient to cover the cost of these operations, including required equipment maintenance and repair activities.²⁸ That said, the full impact of recent and ongoing military operations on the readiness of the US Army and Marine Corps, in terms of equipment mission-capable rates and other traditional indicators, is difficult to assess based on publicly available data. Among other things, it is unclear whether—even if adequate funding is provided—the Services have sufficient maintenance and repair capacity to keep up with the demands created by the operations in Iraq and Afghanistan, or, if they do not, at what point this deficiency will be felt among deployed units.

In addition to the potential impact of military operations on equipment mission-capable rates and other readiness indicators, as well as DoD's funding requirements, a major challenge confronting DoD is the steady, and seemingly unstoppable, cost growth that has affected its *peacetime* O&M funding requirements. The amount of funding provided to DoD to cover the cost of peacetime O&M activities has grown significantly on a per-troop basis for at least the past 50 years. As noted above, the administration's FY 2009 base budget request would bring peacetime O&M funding per active duty troop to twice the level provided in FY 1990. Due to data limitations, it is impossible to fully ascertain the causes of this cost growth.

Improvements in peacetime readiness levels—at least as measured by traditional indicators such as equipment mission-capable rates, flying hours and steaming days—do not appear to explain much, if any, of this cost growth. For the most part there has been little change in these measures over the past two decades.²⁹ Some observers have pointed to cost growth in a variety of non-traditional activities (sometimes referred to as “non-defense” defense programs) funded through the O&M budget, such as environmental cleanup and weapons dismantlement aid to the states of the former Soviet Union, to explain the increase in O&M funding. However, most of that growth ended by the mid-1990s, and those activities, in any case, account for only a small fraction of O&M costs.

²⁷ Frances Lussier, *Replacing and Repairing Equipment Used in Iraq and Afghanistan: The Army's Reset Program* (Washington, DC: CBO, September 2007), p. 5.

²⁸ In 2006-07, the Army and the Marine Corps (the two Services most heavily involved in military operations) estimated that they would require about \$15 billion annually to cover war-related equipment replacement and repair costs, plus comparable levels of funding for at least two years after hostilities had ended. DoD overall was provided about \$19 billion for reconstitution (i.e., “reset”) in FY 2006 and \$36 billion in FY 2007, and the FY 2008 request (which Congress has so far only partially funded) includes \$46 billion for reconstitution.

²⁹ It is possible that traditional measures do not capture some important improvements associated with today's higher levels of O&M funding (e.g., advances in communications and sensor capabilities generated by O&M spending on computer software). However, it is difficult to quantify such improvements.

One relatively easily identifiable area that has contributed substantially to cost growth in DoD's O&M budget over the past decade-and-a-half is military health care. Despite the fact that the US military's active duty end strength was cut by about one-third after the end of the Cold War, DoD funding for health care increased from about \$19 billion (FY 2009 dollars) in FY 1990 to \$39 billion in FY 2008.³⁰ Put another way, on a per troop basis, military health care costs have more than tripled since FY 1990. This growth was due partly to increases in the cost of providing medical services, partly to the fact that the overall beneficiary population (which includes military retirees and dependents, as well as active duty troops) declined much more modestly than did the size of the force structure, and partly due to the expansion of health care benefits.

Other areas that seem to have contributed to the growth in DoD's O&M budget, to varying degrees, include pay increases for DoD civilian personnel and cost growth in other infrastructure-related functions such as installation support, headquarters and administration, central (i.e., non-unit) training, personnel support, and recruiting.

Given the difficulty of precisely determining the cause of past cost growth in DoD's O&M budget, not surprisingly, it is difficult to project future funding requirements with much confidence. Overall, however, it is probably safe to assume that costs will continue to increase. Among the areas most likely to experience significant cost growth are the following:

- **Military Health Care.** Health care costs for the civilian population are projected to grow well above the rate of inflation over the next decade, and there is little reason to believe that the military's health care costs will grow any more slowly. If anything, historical precedent would seem to suggest that these costs will increase more rapidly. CBO estimates that funding for military health care will grow from about \$39 billion (FY 2009 dollars) in FY 2008 to \$70-80 billion in FY 2025.³¹ Based on CBO data, it appears that, under the current plan, military health care activities funded through the O&M budget (i.e., the Defense Health Program) would grow from about \$21 billion (FY 2009 dollars) in FY 2008 to \$38-48 billion in FY 2025.³²
- **Equipment Maintenance and Repair.** Through most of the 1990s, the age of the Services' weapons inventory increased only modestly, despite the fact that relatively few weapons were purchased during the decade. This is because the Services bought large quantities of new weapon systems in the 1980s, and then in the 1990s cut force structure by about one-third, with the oldest equipment generally being retired first. However, the buildup of the 1980s is now receding further into the past, and most of the planned force structure cuts were completed by the middle of the 1990s. As a result, the average age of most major weapon

³⁰ Talaber, *The Long-Term Implications of Current Defense Plans: Summary Update for Fiscal Year 2008*, p. 8. CSBA has converted these estimates into FY 2009 dollars. O&M funding currently covers over half of military health care costs.

³¹ Ibid.

³² This estimate was derived by the author based on CBO projections of cost growth in three different categories of military health care funding: pharmaceuticals; purchased care and contracts; and direct care and other. Ibid. Funding for other military health care activities is provided through the Services' military personnel accounts.

systems is projected to increase substantially over the next decade. To date, the aging of the Services' weapons inventory does not seem to have resulted in a substantial increase in operations and maintenance costs.³³ However, as the aging of the force accelerates in coming years, age-related O&M costs could grow significantly. According to CBO, by 2022, cost growth associated with operating older equipment could cause annual O&M funding requirements to increase by as much as \$14 billion.³⁴ Moreover, replacing aging weapons with newer systems may, at best, only partially offset this cost growth, since the greater complexity of some new weapon systems can also lead to higher O&M costs.³⁵ In addition, as noted earlier, Army and Marine Corps equipment has undergone a great deal of extra wear and tear as a result of the ongoing military operations in Iraq and Afghanistan. This could result in further O&M cost growth. However, currently DoD is receiving substantial additional funding in special GWOT appropriations to cover costs associated with overhauling and replacing military equipment used in those operations.

- **Facilities Maintenance and Repair.** It is widely believed that DoD operates an excessive number of military bases. In an attempt to address this problem, for the first time in a decade the United States has begun implementing a new round of military base closures. As a result of the 2005 Base Realignment and Closure (BRAC) process, the US military will close some 22 major bases (representing about 7 percent of its basing network) over the next five years.³⁶ Over the long term, these closures are projected to yield savings of \$4.2 billion a year. In the near term, however, these closures will cost more money than they will save.³⁷ Moreover, over the long term it seems likely that, even with these base closures, DoD will need to increase substantially its funding for facilities upkeep and construction.³⁸ This is because DoD appears to have spent too little over the past decade or more on maintaining, repairing and constructing military bases, housing and other facilities.

If DoD were able to manage its infrastructure-related functions (e.g., bases, logistics, health care and similar activities) more efficiently, it might be possible to reduce the rate of O&M cost growth in the future. In addition to closing unneeded bases, proposals aimed at reducing

³³ Greg Kiley, *The Effects of Equipment Aging on the Costs of Operating and Maintaining Military Equipment* (Washington, DC: CBO, August 2001), p. 8.

³⁴ CBO, "The Long-Term Implications of Current Defense Plans: Detailed Update for Fiscal Year 2005," February 2004, p. 6.

³⁵ Perrot and Kiley, *The Long-Term Implications of Current Defense Plans*, p. 21.

³⁶ Under the BRAC process, the president appointed an independent commission that recommend—based on advice from the Services, as well as its own analysis—the closure of certain bases. The president subsequently approved the commission's recommendations. Since Congress did not—within 45 days of the president's approval—pass a joint resolution rejecting the proposed closures, the recommendations then became law.

³⁷ The up-front costs associated with closing military bases include, for example, environmental cleanup costs and the cost of transferring certain facilities and capabilities that DoD still requires from bases slated for closure to other bases.

³⁸ Funding for maintaining and repairing military facilities is found in the O&M budget, as well as the Military Construction and Family Housing budgets, while construction funding is provided through the latter two accounts.

infrastructure-related O&M costs include making greater use of “competitive sourcing” (allowing private sector contractors to compete for maintenance, repair and other work currently performed at public sector facilities) and adopting a range of “best practices” used in the private sector. However, while it may make sense to pursue such initiatives, if history is any guide, the best that is likely to be achieved is some slowing of the rate of cost growth in O&M, rather than actual reductions in funding requirements.

As a result of legislation enacted in 2003, DoD has also received authority to reform and reorganize the way it manages its civilian workforce. The changes include: reducing the time required to hire new personnel; replacing the General Schedule (GS) system for determining pay levels with one that gives managers greater discretion to tie pay to performance; and making it easier to fire civilian workers.³⁹ Although some observers expect the new National Security Personnel System (NSPS) to help DoD save money, as in the case of other proposed efficiency initiatives, it is unclear whether these changes will yield significant savings over the long term. Moreover, DoD’s proposals for implementing the NSPS have been challenged by government employee unions, and it is unclear precisely what form the NSPS will ultimately take.

If O&M costs do continue to grow, and the overall DoD budget is not increased in a substantial and sustained way, it will probably prove impossible to boost procurement funding significantly. During the Clinton Administration, O&M cost growth was a key factor in delaying projected increases in the procurement accounts. For much of that period, the Clinton Administration submitted budgets which projected significant increases in procurement funding two or more years down the road. But each year, O&M costs proved to be higher than anticipated, forcing the administration to divert funding to the O&M accounts and push back the projected upturn in procurement funding. In more recent years, projected increases in procurement funding have been slowed by a combination of continued O&M cost growth, and high rates of growth in military personnel costs and R&D funding requirements.

Historically, O&M costs per troop have consistently and persistently increased at an average annual rate of about 3 percent in real terms. By comparison, under the administration’s latest plan, total funding for O&M is projected to grow at a real average annual rate of less than half a percent over the FY 2010-13 period—despite the fact that the size of the US military is projected to increase slightly over these years. If more funding is needed to cover higher O&M costs, as in the past, DoD’s procurement accounts may end up being used as the bill payers. The only way to avoid such migration out of procurement and into O&M might be to increase the overall DoD budget by more than currently projected, make offsetting cuts in other parts of the defense budget, such as R&D funding, or reduce the size of the military.

MILITARY PERSONNEL

The effectiveness of the US military depends critically on its ability to attract and retain quality military personnel. As demonstrated by its performance in recent conflicts, the quality of the US

³⁹ Critics have raised concerns that the new system, among other things, does not adequately protect civilian employees from the possibility of being subjected to unwarranted or arbitrary discipline.

military today is very high. Maintaining such a force in the future must be a central goal of US defense planning.⁴⁰

The FY 2009 request for DoD's base budget includes \$129 billion for military personnel. This would be sufficient to fund average pay raises of 3.4 percent. Total compensation for the average active duty service member currently (FY 2009) amounts to some \$120,000 a year. Military compensation includes a variety of different elements, funded through a number of different DoD and Department of Veterans Affairs' (VA) accounts. About 85 percent of these costs are covered by DoD, and 15 percent by the VA.

Cash compensation—which includes basic pay, the basic allowance for housing and the basic allowance for subsistence, plus bonuses and other special pays and incentives—accounts for about 45 percent of military compensation for the average active duty service member. Non-cash benefits include health care for military personnel and their families, and military retirees and their dependents; military retirement pay; military housing (for personnel and dependents living on-base); and veterans' and other benefits. Combined, non-cash benefits account for about 55 percent of military compensation.

Compensation for military personnel has increased substantially over the past decade-and-a-half, and especially since the late 1990s. These increases are due to a variety of changes instituted in the last two years of the Clinton Administration, or initiated, reinforced, or expanded under the Bush Administration. Overall compensation per active duty service member (exclusive of veterans' benefits) grew by about \$24,000 (fiscal year 2009 dollars), or 33 percent in real terms, between 1999 and 2005. More than half of this \$24,000 increase (58 percent) was allocated to improvements in non-cash benefits, especially deferred benefits. Improvements in retiree benefits (e.g., the introduction of the Tricare For Life program and increases in pension payments) accounted for about three-quarters of the increase in non-cash benefits (and 43 percent of the overall increase in compensation) provided over this period.

Cash compensation for active duty service members increased in real terms by some 25 percent between FY 1999 and FY 2005.⁴¹ Raises in basic pay and the basic allowance for housing accounted for almost all of this growth. Across-the-board increases accounted for about 90 of the growth in cash and non-cash benefits that occurred between FY 1999 and FY 2005. Targeted increases directed at particular classes of personnel (e.g., those with special skills or in particular occupations) accounted for only some 10 percent of the growth in compensation. Military compensation has continued to grow faster than the economy's overall inflation rate for the past several years.

⁴⁰ For a discussion of military compensation issues, see Steven M. Kosiak, *Military Compensation: Requirements, Options and Trends* (Washington, DC:CSBA, February 2005).

⁴¹ The jump in pay was, in part, a result of language included in the FY 2000 defense authorization act which required that pay raises provided over the FY 2000-06 period be at least one-half a percentage point above the employment cost index (ECI), a measure of wage growth in the overall economy.

It is difficult to compare the salaries of military personnel and civilian workers. Unlike most civilian workers, military personnel frequently are deployed overseas away from their families, for extended periods of time, and are often asked to risk their lives in the service of their country. Comparing compensation levels is also made difficult by the fact that military personnel receive greater non-cash benefits than civilian workers generally receive.

Notwithstanding the complexities inherent in comparing military and civilian pay, however, the best available evidence suggests that active duty military personnel are, overall, adequately compensated. According to an analysis by the CBO, the average active duty service member today receives higher pay than 75 percent of all civilian workers of the same age and education level.⁴²

A better measure of the adequacy of military compensation levels may be the Services' success at attracting and retaining quality personnel. The Army, Navy and Air Force each failed to meet their active duty recruitment goals once or twice over the FY 1998-99 period, and several of the Services failed to meet their overall retention goals in one or more years during the FY 1999-2001 period. In each year since then, however, the Navy, Air Force and Marine Corps have been able to meet their active duty recruitment targets (in terms of both quantity and quality) and retention goals.

The picture is more complex, and less positive, for the Army. Notwithstanding the very high operational tempo Army personnel have experienced over the past few years as a result of US military operations in Afghanistan, Iraq and elsewhere, the Army has continued to meet its overall retention goals. However, since FY 2005, the Army has fallen short in its recruitment efforts. In FY 2005, the active Army missed its recruitment goal by 8 percent, or 6,400 personnel. It also experienced a modest decline in quality—failing to meet its 90 percent benchmark for recruits with high school degrees for the first time since FY 1983. In FY 2006, it was able to meet its quantitative recruitment goal, but suffered a greater drop in quality—with the share of recruits with high school degrees falling from 87 percent (FY 2005) to 81 percent. Although it once again met its quantitative target in FY 2007, it suffered a further drop in quality—with only 79 percent of last year's active duty recruits having high school degrees.⁴³ In addition, while the Army has generally met its *overall* retention goals in recent years, there is some evidence that those efforts have fallen short in certain categories of personnel.⁴⁴

The administration's decision, made last year, to expand the active duty Army by 65,000 troops will place additional pressure on the Service's recruitment efforts in coming years. It may be impossible for the Army to reach its new end strength targets without still further relaxing its

⁴² Carla Tighe Murray, *Evaluating Military Compensation* (Washington, DC: CBO, June 2007), p. 14.

⁴³ Another indication that Army recruit quality may have declined in recent years has been the Service's increasing use of "moral character" waivers and health waivers, as well as its decision to increase the maximum age allowed for new recruits from 35 to 42 years.

⁴⁴ See, for example, the discussion of Army officer retention in Government Accountability Office (GAO), *Military Personnel: Strategic Plan Needed to Address Army's Emerging Officer Accession and Retention Challenges* (Washington, DC: Government Printing Office, January 2007), p. 25.

quality standards, perhaps substantially. Although the Marine Corps has, to date, been better able to meet its quality benchmarks, increasing its end strength by 27,000 troops, as called for under the latest plan, may require that it too begin to accept lower quality recruits.

It may be necessary to provide sizeable additional pay raises in the future—depending, in part, on how events unfold in Iraq and Afghanistan—if the Army and Marine Corps are to complete their planned expansions. In general, however, the problem for the Services does not appear to be that too little money is available, or that overall compensation levels are too low. Instead, the main problem seems to be that its current personnel system and pay structure does not allow the Services to sufficiently differentiate pay levels among military personnel who differ in terms of skills, occupations and other characteristics. As a result, they have consistently experienced retention shortfalls among certain classes of military personnel and particular occupational specialties.

In general, research indicates that improvements in compensation that provide relatively immediate and easily recognized benefits (such as increases in basic pay), and especially those that are targeted to the classes of individuals the Services most need to keep, and reward performance, rather than time in service, are the most cost effective. Despite these findings, most of the increase in military compensation provided in recent years has been provided in an across-the-board fashion, and directed to improvements in non-cash, and especially non-cash deferred, benefits.

Making greater use of cash compensation, especially bonuses, and relatively less use of non-cash, and particularly non-cash deferred, compensation, would likely improve the cost-effectiveness of the Services' recruitment and retention efforts.⁴⁵ Conversely, the failure to direct future increases in pay and benefits in this way could lead to the worst of both worlds: much higher levels of spending on military compensation, and an inability to meet the Services' personnel requirements.

The large increases in military compensation implemented over the past decade have clearly helped the Services with their efforts to maintain sufficient numbers of quality personnel during a period of intense military operations. However, these increases have also come at a very high price in budgetary terms. Between FY 1999 and FY 2005, total DoD funding for military pay and benefits (which is provided primarily through military personnel appropriations, but also through DoD's O&M and family housing accounts) grew from about \$120 billion (FY 2009 dollars) to \$150 billion—with most of this growth occurring in the military personnel accounts and DoD's health care program.⁴⁶

During the Clinton years, higher than anticipated growth in O&M costs frequently prevented DoD from increasing procurement funding as rapidly as its plans projected. In more recent years, an equal or greater problem has been the growth in military personnel costs. If steps are not taken

⁴⁵ See, for example, Carla Tighe Murray, *Evaluating Military Compensation*, pp. 27-29.

⁴⁶ Kosiak, *Military Compensation: Requirements, Options and Trends*, pp. 64-65. These figures have been converted from FY 2005 to FY 2009 dollars.

to better control cost-growth in this area, in the future military personnel costs are likely to increasingly “crowd out” projected boosts in procurement funding. Future funding requirements for military personnel can be only very roughly and tentatively estimated. However, even making relatively conservative assumptions about cost growth in the various components of military compensation, it appears likely that those funding requirements will grow substantially. CBO estimates that military personnel appropriations are likely to increase at a real average annual rate of about 1.5 percent between FY 2008 and FY 2025.⁴⁷ This would increase funding in this account to some \$163 billion by 2025 (FY 2009 dollars).⁴⁸

FORCE STRUCTURE

In the 2001 QDR, the Bush Administration decided to maintain essentially the same force structure (e.g., numbers of Army divisions, Navy carrier strike groups and Air Force fighter wings) adopted by the Clinton Administration. However, over the past several years a number of significant changes affecting both the structure and size of the US military have been initiated.

In 2004, the Bush Administration announced plans to restructure the Army. Prior to this initiative, the Army’s active duty forces were organized around 10 divisions, each of which consisted of three combat brigades, plus three separate brigades and regiments—for a total of 33 combat brigades. Under the Army’s new plan, a fourth brigade was to be created out of each division—increasing the total number of combat brigades to 42. These Brigade Combat Teams (BCTs) were also to be manned and equipped so that they could operate independently more effectively. The extra troops needed for these BCTs were to be provided by shifting personnel from missions and functions for which the Army currently has excess capability (e.g., field artillery and air defense) and by making other changes—rather than by increasing Army end strength. Under the Army’s plan, the Army National Guard was to be similarly reorganized into 28 modular brigades.

The Army claims that this restructuring would increase by 46 percent the readily available combat power it can deploy to military operations,⁴⁹ and thus substantially improve its ability to sustain large-scale military operations, such as those in Iraq. But others have raised questions about whether, or by how much, the Army’s “modularity” plans will actually improve its ability to sustain such operations.⁵⁰ DoD has estimated that this restructuring of the Army will cost some \$48 billion to implement over the FY 2005-11 period, with much of this cost stemming

⁴⁷ Talaber, *Long-Term Implications of Current Defense Plans: Summary Update for Fiscal Year 2008*, p. 3.

⁴⁸ *Ibid.* CSBA converted this figure from FY 2008 to FY 2009 dollars. The level of growth would be substantially greater if personnel benefits provided through DoD’s O&M and family housing accounts were included.

⁴⁹ *2006 QDR*, p. 43.

⁵⁰ CBO has concluded, for example, that although the number of brigades will be substantially increased under the initiative, the Army’s combat forces (measured in terms of maneuver units, such as armor and infantry companies) would be increased by only 5-19 percent, at most—and possibly not at all. Adam Talaber, *Options for Restructuring the Army* (Washington, DC: CBO, May 2005), p. 8.

from the need to buy equipment for the additional brigades. However, this estimate may substantially understate the cost of the effort.⁵¹

As noted earlier, last year the administration announced plans to increase the size of the Army and Marine Corps by, respectively, some 65,000 and 27,000 active duty troops.⁵² According to the administration, this expansion will allow it to increase the number of BCTs in the active Army from 42 to 48, and expand the Marine Corps from 2.5 to 3 active Marine Expeditionary Forces (MEFs). The administration claims that, by expanding the rotation base, this increase in the size of the Army and Marine Corps will further improve the ability of the United States to sustain large-scale ground-force deployments. However, since this expansion will take some five years to complete, in the case of Iraq (depending on how long and in what numbers US forces remain in the country), it may be a case of “too little, too late.” Moreover, as discussed in the preceding section of this report, it may only be possible to implement this expansion if the Army and Marine Corps accept a decline in troop quality. Thus, the United States could ultimately end up with larger but, unit-for-unit, somewhat less capable ground forces. This planned increase in the size of the Army and Marine Corps has added about \$100 billion to the cost of DoD’s plans over the next five years.⁵³

In contrast to the case with the Army and Marine Corps, the end strength of the Navy and the Air Force has been cut significantly over the past several years, and existing plans project further reductions. By the end of FY 2009, the Navy’s active duty end strength is projected to reach 325,000. This is some 48,000 personnel below its FY 2000 total. Likewise, between FY 2000 and FY 2009, the Air Force’s active duty end strength is projected to have declined to 317,000 personnel, a reduction of some 39,000. These cuts, which equate to reductions of 11-13 percent for the two Services, have been accompanied by some reductions in force structure. For example, under current plans the Navy’s battle force fleet will consist of 286 ships and submarines, including 11 aircraft carriers, at the end of FY 2009, compared to 292 ships and submarines, including 12 aircraft carriers, in FY 2004.

By cutting their end strength, the Navy and the Air Force hope to achieve savings in personnel and O&M costs that will allow them to adequately fund their modernization plans. Viewed from a long-term perspective, DoD’s past modernization plans have often been financed in part by cuts in the size of the military. The result has been that although the US military has become smaller over time, it has nevertheless become progressively more capable. The new weapon systems included in current Navy and Air Force modernization plans typically cost twice as much, or more, to acquire than the systems they are replacing. They are also, presumably, far more capable. As such, it may be neither feasible, nor necessary, to replace existing weapon

⁵¹ Sharon Pickup and Janet St. Laurent, “Force Structure: Preliminary Observations on Army Plans to Implement and Fund Modular Forces,” Testimony before the Subcommittee on Tactical Air and Land Forces, Committee on Armed Services, US House of Representatives, March 16, 2005, p. 2.

⁵² Under the Army’s new plan, the end strength of the Army National Guard and Reserve would also be increased by a total of about 9,200 troops.

⁵³ CBO, “Estimated Cost of the Administration’s Proposal to Increase the Army’s and Marine Corps’s Personnel Levels,” April 16, 2007, p. 1.

systems on a one-for-one basis. In other cases, it may be possible to maintain, or even expand, the Services' force structure, while cutting personnel levels by shifting to different types of weapon systems.⁵⁴

In theory, the same logic that has driven the Navy and Air Force to look for ways to substitute capital (i.e., weapon systems) for people, should also apply in the case of ground forces. However, counterinsurgency and stability operations, by their nature, tend to be very labor-intensive military operations. Thus, to the extent that the ability to carry out these types of large-scale operations remains the focus of Army and Marine Corps plans, force structure discussions and debates are likely to focus on whether, or how much, to expand the size of these Services—with end strength cuts “off the table.” On the other hand, in the case of the Navy and Air Force, significant additional tradeoffs of this kind may be possible in the near term. Indeed, as noted above, the Navy and Air Force, at least, already appear to be moving, at least tentatively, in this direction. If, at some point in the future, Army and Marine Corps planning begins to focus on more conventional types of military operations (and less on large-scale counterinsurgency and stability operations), it may be appropriate for these Services, as well, to consider cuts in end strength.

RESEARCH AND DEVELOPMENT

At \$79.6 billion, the level of funding included for R&D in the administration's base budget request for FY 2009 marks a 2 percent real increase from this year's level, and record high.⁵⁵ The request is \$40.9 billion, or 65 percent higher in real terms, than the amount provided in FY 2000 and 31 percent more than was provided in FY 1987, the Cold War peak for defense R&D. Under the administration's plan, funding for defense R&D would decline by 20 percent to about \$63.4 billion (FY 2009 dollars) in FY 2013. Robust funding for R&D is probably appropriate, given the need to transform the US military, and the likelihood that in the future the US military will face challenges that are significantly greater than and different from those it faces today. But whether funding for defense R&D needs to be as high as it is today, or whether the new R&D budget request emphasizes the most important priorities, is debatable. There is also some reason to question the realism of the future reductions in R&D funding projected in the current defense plan.

During the 2000 presidential campaign, then-candidate Bush argued that the US military must be transformed to counter effectively the very different kinds of challenges projected to emerge over the next several decades. The need to transform the US military remained a major theme in the 2006 QDR. However, while the FY 2009 budget request contains R&D funding for several programs widely believed to be important for transformation, overall, defense R&D funding still appears to be very much focused on traditional kinds of weapons programs. This is reflected in

⁵⁴ For example, it might be possible to maintain or even expand the Navy's force structure, measured in numbers of ships and submarines, while simultaneously reducing end strength, if the Service were to shift to a fleet composed largely of smaller and/or more automated (i.e., less labor-intensive) ships, such as the Littoral Combat Ship (LCS).

⁵⁵ DoD's FY 2008 base budget included about \$78.1 billion (FY 2009 dollars) in R&D funding. In addition, the administration's FY 2008 GWOT supplemental request (part of which is still pending in Congress) included about \$3 billion in R&D funding.

the allocation of funding both among DoD's various R&D budget activities, and among specific programs.

The DoD R&D budget is broken down into six different budget categories primarily reflecting different phases of the R&D process. The S&T budget includes programs in the three earliest phases of R&D.⁵⁶ The discovery and development of new technologies promising major leaps in military capability are most likely to be made in these early phases of R&D. As a result, many advocates of military transformation believe that S&T programs should be given a high priority. The administration's plan includes \$11.5 billion for S&T programs in FY 2009. This is \$1.4 billion less than was provided in FY 2008 and 3 percent less in real terms than was provided in FY 2000. This trend contrasts sharply with the large increases the administration has requested for R&D overall, or for specific programs, such as ballistic missile defense (BMD) and fighter development, over this same period.

Programs in the system development and demonstration (SDD) phase have been given the largest increases in funding since FY 2000. SDD is the last phase of R&D prior to production, as well as the most costly phase for most programs. Under the administration's plan, \$19.5 billion would be provided for SDD programs in FY 2009. This is a 5 percent real increase from FY 2008 and nearly 75 percent more than was provided in FY 2000.

During the 2000 presidential election, then-candidate Bush argued that the US military should modernize its military "selectively," but that the real goal should be to "move beyond marginal improvements—to replace existing programs with new technologies and strategies: to skip a generation of technology."⁵⁷ But the Bush Administration has not embraced this approach. Over the past six years, DoD has cancelled several major acquisition programs, including the \$11 billion Crusader artillery system, the \$9 billion Navy Area Missile Defense program and the \$38 billion Comanche helicopter program.⁵⁸ However, the administration has continued to move ahead with the vast majority of the major weapons platforms included in the plans it inherited from the Clinton Administration.

As noted earlier, studies by CBO, CSBA and others indicate that implementing DoD's long-term plans would require increasing DoD's budget far above currently projected levels, and sustaining those levels of funding for decades to come. And such increases may be unlikely given growing concerns about the size of the deficit and budgetary pressures associated with the pending retirement of the baby boomer generation. But the administration has failed to propose the kinds of significant cuts that will likely be necessary to make DoD's plans affordable over the long run. The continued high level of funding for SDD projected in DoD's latest plan essentially

⁵⁶ S&T programs consist of those funded through the Basic Research, Applied Research and Advanced Technology Development budget activities.

⁵⁷ George W. Bush, Speech on Defense Policy, The Citadel, Charleston, SC, September 23, 1999.

⁵⁸ Prior to the program's cancellation, DoD plans called for buying a total of 650 Comanche helicopters. A total of about \$8 billion had been spent on the program to date.

reflects the decision to move ahead with a wide range of weapon systems in DoD's acquisition pipeline, such as the F-35 fighter, the DDG 1000 destroyer and the FCS.

The administration and the Services claim that most SDD funding is focused on transformational systems, or are at least programs consistent with a sound transformation strategy. But at least some of the weapons programs being pushed into SDD appear ill-suited for the emerging security environment. As noted earlier, perhaps most questionable is the administration's decision to continue to move ahead with all three planned short-range tactical fighter programs—despite the fact that recent experience in Iraq, Afghanistan and elsewhere suggests that, in the future, the US military may often have difficulty obtaining access to forward bases.⁵⁹ Some might argue that the current defense plan also short-changes funding for the development of unmanned aerial vehicles (UAVs). The FY 2009 request includes \$376 million for the development of six different UAVs. This is only one-eighth as much as DoD is proposing for the continued development of its most costly manned aircraft program, the F-35.⁶⁰

The decision, announced in the 2006 QDR, to accelerate the fielding of a new, possibly unmanned, long-range strike system from the 2035 timeframe to 2018 marks a potentially important shift toward more transformational capabilities. However, as noted earlier, DoD's commitment to this program and accelerated schedule would have been more convincing had it been combined with some reductions—or at least future projected cuts—in one or more of the Services' short-range fighter programs.

Perhaps the greatest problem with the administration's decision to move ahead with so many costly traditional programs today is that it might make it impossible to increase funding for more transformational kinds of systems, such as a new long-range bomber, several years down the road, when their feasibility and potential is better proven and they are ready to be moved beyond the early stages of R&D. This is because the level of funding absorbed by traditional weapon systems entering SDD today will grow significantly over the next five years or more, as they move further through the SDD process and into production—potentially crowding out promising, emerging transformational programs.

The above discussion focuses primarily on the question of how appropriately R&D funding is allocated among various budget categories in the administration's FY 2009 request. An equally important question is whether the total funding level requested for R&D is appropriate. Robustly funding R&D probably makes sense, given the need to transform the US military, and the likelihood that the future challenges facing the US military will be significantly greater than—and different from—those it faces today. On the other hand, the level of funding requested by the administration may be higher than necessary to modernize or transform the US military adequately. As noted earlier, the requested level of funding for R&D is some 31 percent above

⁵⁹ See Barry D. Watts, *Long-Range Strike: Imperatives, Urgency and Options* (Washington, DC: Center for Strategic & Budgetary Assessments, April 2005).

⁶⁰ Another concern of some transformation advocates is that even the funding provided for UAVs is focused on the development of systems that are non-stealthy and, with the exception of Global Hawk, relatively short-range. Like manned fighters, short-range UAVs might prove ineffective in an anti-access environment.

the Cold War peak of FY 1987. But unlike FY 1987, when the United States faced—in the Soviet Union—a peer competitor that spent as much as \$50 billion a year on defense R&D, today no potential US adversary spends even close to that amount.

This does not necessarily mean that defense R&D funding should be reduced. To the extent that modernizing and transforming the US military represents a cost-effective means of improving US capabilities, especially capabilities to counter new kinds of threats, relatively high levels of spending on R&D may make sense, even if potential adversaries are not modernizing their own forces as rapidly as in the past. But the slower pace at which most potential adversaries appear to be modernizing their forces does at least raise questions about the need for such high levels of funding for defense R&D.

Perhaps more importantly, the high level of funding currently allocated to the *development* of new weapon systems appears to be undermining DoD's ability to increase substantially funding for the *procurement* of new weapon systems. During the Reagan buildup of FY 1980-85, nearly four-fifths of the funding added to weapons acquisition was allocated to procurement, with about one-fifth going to R&D. By contrast, over the FY 2000-09 period, some 45 percent of the funding added to weapons acquisition has been absorbed by R&D. As noted above, under the administration's latest plan, funding for defense R&D is projected to decline substantially over the next five years, with those savings essentially shifted into weapons procurement. According to the administration, this transfer of funding from R&D to procurement will be possible because the development of a number of major acquisition programs will be largely completed over the next few years.

Such a shift in funding may, indeed, be possible. However, depending on reductions in R&D to help finance a substantial portion of the future increases projected for weapons procurement may be risky for at least two reasons. First, new weapon systems tend to cost more to develop than assumed in DoD's plans, suggesting that the projected decline in R&D funding requirements may not materialize. Second, historically, DoD funding for R&D and procurement tend to move in the same direction—there has been no sustained period over the past 50 years during which R&D funding has been cut, while funding for procurement has been increased. Combined with likely increases in military personnel and O&M costs, the failure of DoD to hold down R&D funding requirements and costs could prove a major barrier to its plans to increase weapons procurement funding in coming years.

PROCUREMENT

The FY 2009 request for DoD's base budget includes \$104.2 billion for weapons procurement. This is a 3 percent real increase from FY 2008. Since FY 2000, procurement funding in DoD's base budget has grown by 52 percent in real terms. Under the administration's latest plan, funding for procurement is projected to increase to \$115.6 billion (FY 2009 dollars) by FY 2013.

The Bush Administration has scaled back a number of major acquisition programs over the past seven years. However, as discussed earlier, the administration has opted to move ahead with the vast majority of major weapons programs it inherited from the previous administration, and to keep the US military essentially the same size as projected under the last Clinton Administration

plan—making some cuts in Air Force and Navy personnel, but increasing the size of the Army and Marine Corps.

Estimates provided by CBO suggest that, assuming historical rates of cost growth in weapons programs, implementing the administration's current modernization plan might require increasing procurement funding to an average of some \$130 billion (FY 2009 dollars) annually over the FY 2011-25 period.⁶¹ Worse yet, as noted earlier, the plan's assumptions about O&M, military personnel and R&D funding requirements may be optimistic. If O&M and military personnel costs continue to grow, and DoD is unable to cut R&D as assumed in the current plan, DoD may find itself with little choice but to forgo the projected rise in procurement funding and use the money instead to cover these other costs.

In any case, the fact that implementing the administration's modernization plan might require increasing funding to \$130 billion a year does not necessarily mean that *adequately* modernizing US forces would require increases of this magnitude. The administration's current approach is one of several different possible approaches to modernization. At the most basic level, there are essentially three different means by which forces can be modernized:

- Existing current-generation systems (e.g., F-15 and F-16 fighters) can be replaced with next-generation weapon systems (e.g., the F-22 and F-35, respectively). Next-generation weapon systems are likely to display the most dramatic improvements in capabilities. However, they are also by far the most expensive systems to produce—typically costing at least twice as much as the systems they are intended to replace.
- Existing current-generation systems can be replaced with the latest versions of the same system (e.g., old F-16s replaced with the most current versions of the F-16 now being produced). Often these newer systems are far more capable than the earlier versions they would replace. These systems also tend to cost much less to produce than next-generation systems. For example, the Air Force version of the JSF appears likely to cost about 50 percent more than the latest F-16 Block 60 aircraft.⁶²
- Existing current-generation systems can be upgraded with new electronics and other equipment, and have their service lives extended. The cost of upgrade and modification efforts varies greatly, depending on how extensive the efforts are, but overall costs tend to be even less than the cost of buying new current-generation systems.

The administration's plan includes a mix of these different approaches. But it is heavily weighted toward the first approach: the acquisition of next-generation systems. Thus, not surprisingly, its funding requirements are very high. An approach that included the purchase of some next-generation weapon systems, but focused relatively more on the production of new current-

⁶¹ These estimates were derived by CSBA based on data provided in Talaber, *Long-Term Implications of Current Defense Plans: Summary Update for Fiscal Year 2008*, p. 14.

⁶² Steven M. Kosiak and Barry D. Watts, *US Fighter Modernization Plans: Near-Term Choices* (Washington, DC: Center for Strategic & Budgetary Assessments, 2007), p. 21.

generation systems, and upgrades of existing systems—perhaps similar to the skip-a-generation approach that was considered, but largely rejected, by the Bush Administration—might cost substantially less.⁶³

Another option would be to move ahead with procurement of the next-generation weapon systems called for under current plans, but to offset the high cost of these plans by making substantial cuts in the size of the force structure. This would be consistent with earlier decisions to tradeoff quantity for quality. This approach has been rejected for the foreseeable future in the case of the Army and Marine Corps. However, it may be feasible to make more significant cuts in Air Force and Navy force structure than the administration has so far proposed. As noted earlier, viewed from a long-term perspective, DoD's past modernization efforts have often been financed in part by cuts in the size of the military.

Still another option would be to combine cuts in next-generation weapons programs with force structure cuts. In this case, annual procurement funding requirements could fall well below the levels required to pay for the current plan. Finally, rather than modernizing the Services through buying more of the same types of weapon systems (whether current- or next-generation systems), DoD could focus more on buying new kinds of systems that could prove more cost effective. For example, rather than buying *both* a new long-range bomber and some 2,443 new short-range F-35 fighters, as currently planned, DoD might consider whether the new bombers—given their much larger payload capacity—could represent a cost-effective substitute for some number of these new fighters.

In short, there is no single right answer to the question of how much the United States must spend to modernize its military—rather, the answer depends on the kind and rate of modernization that is believed to be necessary. In turn, one's answers to those questions are likely to be influenced by views concerning a broad range of other, largely non-budgetary, issues, including: the strategy and missions of the US military; the pace of modernization among potential adversaries; changes in expected standards of performance for US forces; the nature and pace of advances in weapons platform design and propulsion, precision-guided munitions (PGMs), computers, sensors and communications technologies; and the impact and implications of the RMA. Reasonable minds can, and do, differ greatly on these questions. For example, some observers believe that the projected aging of the Services' inventories of aircraft, ships and other weapons platforms could greatly reduce the effectiveness of the US military, while others believe that even relatively old platforms can be kept highly effective through the incorporation of new electronics and PGMs.⁶⁴

Although the administration's most recent budget request does not include any major changes to the Services modernization plans, because of the various budgetary pressures noted earlier, it

⁶³ Although not generally adopted by the Bush Administration, the Army adopted something like this approach in the case of the Comanche helicopter program. Cancellation of the very costly next-generation Comanche program allowed the Army to greatly expand its procurement of current-generation helicopters.

⁶⁴ For a discussion of various views concerning modernization requirements, see Steven M. Kosiak, *Buying Tomorrow's Military: Options for Modernizing the Defense Capital Stock* (Washington, DC: Center for Strategic & Budgetary Assessments, 2001), pp. 24-30.

seems likely that the Services will be forced to scale back their modernization plans substantially in coming years. The real question appears to be whether these cuts will be proposed sooner rather than later, and whether they will result from a relatively comprehensive review or ad hoc decisions made in future years. While politically and bureaucratically easier, the latter approach is likely to be far less efficient in both strategic and budgetary terms.

MISSILE DEFENSE

The Bush Administration's FY 2009 defense budget request provides about \$9.43 billion for ballistic missile defense (BMD) programs. This includes \$9.34 billion provided through the Missile Defense Agency, \$41 million funded through the Army and \$55 million provided through the Joint Staff. The total is \$723 million more than was provided for BMD programs in FY 2008, and some \$4 billion above the level appropriated in the last Clinton Administration (FY 2001) budget.

The \$9.43 billion figure includes funding both for the development of national missile defense (NMD) systems, designed to protect the United States from strategic ballistic missile attack, and the development and deployment of theater missile defense (TMD) systems, intended to protect forward-deployed US forces against shorter-range ballistic missiles. The Bush Administration has not only significantly increased funding for BMD programs, over the past several years, it has also taken a different approach to allocating that funding.

Under the Clinton Administration, BMD efforts were focused on the development and near-term deployment of a variety of TMD systems, and the development and deployment (at some future date) of a limited NMD system. The Clinton Administration believed that the Anti-Ballistic Missile (ABM) Treaty—by which the United States and the Soviet Union (now Russia) agreed to limit the development and, especially, deployment of NMD systems—still had an important role to play in maintaining a stable nuclear balance between the United States and Russia, as well limiting the incentive for China to buildup its strategic nuclear forces. As a result, while its proposed NMD system conflicted with the ABM treaty in a number of ways, the Clinton Administration hoped to get around this problem by gaining Russian agreement to modify the treaty, rather than by withdrawing from it.

By comparison, President Bush has made the near-term deployment of an NMD system a more urgent priority. The administration withdrew the United States from the ABM Treaty at the end of 2001, on grounds that it would preclude the development and deployment of effective defensive systems. In 2005, the administration deployed a modest NMD capability, consisting of 8 ground-based interceptors (GBI) based in Alaska and 2 GBIs in California, to protect against a possible North Korean threat, and 9 sea-based interceptors aboard Navy Aegis (air defense) ships. By the end of 2007, DoD had increased the number of GBIs to 24 (21 in Alaska and 3 in California), and the number of sea-based interceptors to 21.⁶⁵ Over the longer term, the administration projects the development and deployment of a larger, layered NMD system that might include space-based interceptors as well.

⁶⁵ Missile Defense Agency (MDA), "FY 2009 Budget Estimate," February 2008, p. 3.

The administration's FY 2009 request for MDA programs includes \$2.08 billion for midcourse defenses, \$1.02 billion for terminal defenses, \$421 million for boost-phase defenses, and \$1.08 billion for BMD sensor programs.

Whatever the merits or shortcomings of the Bush Administration's approach to BMD on technical or strategic grounds, pursuing this course will likely require a substantial and sustained increase in funding. The cost of developing and deploying a multi-layered NMD system could be especially high. In January 2002, CBO estimated that developing, deploying and operating a single-site NMD system similar to the one proposed by the Clinton Administration would require spending \$23-25 billion through 2015, while a three-site system could cost \$56-64 billion.⁶⁶ Likewise, CBO estimated that a stand-alone sea-based system would cost \$43-55 billion and a space-based system might cost \$56-68 billion.⁶⁷ In 2004, CBO estimated that a boost-phase intercept (BPI) system designed to protect the United States against potential North Korean and Iranian threats would cost \$16-37 billion to acquire and operate for 20 years, while a space-based BPI system would cost \$27-78 billion.⁶⁸

The potentially high cost of pursuing a multi-layered NMD system does not necessarily mean that the administration's missile defense plans are unaffordable.⁶⁹ In the context of an annual defense budget of \$541 billion, exclusive of war costs, spending \$9.43 billion or even significantly more on BMD programs should be manageable. However, doing so may make it difficult for the administration to fund other new initiatives, including efforts aimed at transforming various elements of the US military.

⁶⁶ CBO, "Estimated Costs and Technical Characteristics of Selected National Missile Defense Systems," Letter to the Honorable Thomas A. Daschle, Majority Leader, United States Senate, January 31, 2002, p. 23.

⁶⁷ Ibid. CBO noted that the stand-alone sea-based system includes some elements common to the ground-based system. Thus simply adding together the estimates for the ground- and sea-based systems would overstate the total cost of buying and operating both systems.

⁶⁸ David Arthur and Robie Samanta Roy, *Alternatives for Boost-Phase Missile Defense* (Washington, DC: CBO, July 2004), p. ix.

⁶⁹ For a discussion of various ballistic missile defense systems (as well as anti-satellite, prompt-strike and other space-based weapons) and their associated costs, see, Steven M. Kosiak, *Arming the Heavens: A Preliminary Assessment of the Cost and Cost-Effectiveness of Space-Based Weapons* (Washington, DC: Center for Strategic & Budgetary Assessments, 2007).

MAJOR ACQUISITION PROGRAMS

(See Appendix, Table 5)

Air Force

The Air Force's FY 2009 base budget request includes \$28.1 billion for R&D and \$35.2 billion for procurement.

F-22: The FY 2009 budget request includes \$3.381 billion to complete the 60-aircraft multiyear procurement plan initiated in FY 2007, plus \$700 million for continued development of the aircraft. Designed to replace the Air Force's existing fleet of F-15 air superiority fighters, the F-22 is now intended to carry out ground attack missions as well. The current plan calls for procuring a total of 175 F-22s,⁷⁰ including (the last) 20 in FY 2009. However, in its most recent request, the Bush Administration did not include any funding to close down the F-22 production line after FY 2009. This may make it more likely that the next administration will decide to buy some number of additional F-22s in FY 2010 and beyond (Air Force officials argue that some 380 of the aircraft should be procured). Assuming 175 aircraft are ultimately purchased, the F-22 acquisition program—which has experienced significant cost growth—is now projected to cost a total of about \$65 billion.

F-35 Joint Strike Fighter: The proposed FY 2009 budget would provide \$6.7 billion for the F-35 program. In 2001, Lockheed Martin Corporation was selected over the Boeing Company in a competition to develop and produce the F-35. The program is intended to lead to the fielding of a family of fighter aircraft to be used by the Air Force, Navy and Marine Corps. Altogether, current plans call for procuring a total of some 2,443 F-35s, at a cost of about \$300 billion, between FY 2007 and FY 2034. This year's request includes \$1.524 billion in Air Force and \$1.533 billion in Navy R&D funding for the program. In addition, it includes \$1.861 billion for the procurement of eight Air Force versions of the aircraft and \$1.232 billion for eight Marine Corps Short Takeoff and Landing (STOVL) versions of the F-35. The first two F-35s were procured (by the Air Force) in FY 2007.

B-2: The administration is requesting \$682 million for the B-2 bomber program in FY 2009, primarily for the development and procurement of modifications and upgrades for the existing fleet of 20 aircraft.⁷¹ In the 2006 QDR, the administration announced that the Air Force would begin fielding a new long-range strike system in 2018. The Air Force has not yet selected a specific design for the new aircraft, or even decided general questions about its design and capabilities—such as whether it will be manned or unmanned, or conventional-only or nuclear-capable. Nor has it indicated how much funding will be needed to develop and procure the new system.

⁷⁰ A small number of additional F-22 aircraft have also been acquired with R&D funds.

⁷¹ A total of 21 B-2 bombers were produced. However, one aircraft crashed in February 2008.

C-17: The administration's request includes \$236 million to develop upgrades for the C-17 intercontinental-range cargo aircraft. It also includes \$699 million in procurement funding to cover the cost of support equipment and modifications. To date, the Air Force has procured a total of 190 C-17s. DoD officials have concluded that the current C-17 fleet is sufficient to meet the nation's airlift requirements as determined by the 2005 Mobility Capabilities Study. However, as in the case of the F-22, the administration did not include any funding in its latest request to close down the C-17 production line—leaving open the possibility that the next administration may decide to buy additional aircraft in coming years. Originally, the Air Force had hoped to buy a total of 210 C-17s and, in recent years, it has expressed a desire for as many as 222.

KC-X Aerial Refueling Tanker: The Air Force recently (March 2008) selected a team led by Northrop Grumman and the European Aeronautic Defense and Space (EADS) Company to produce a new tanker aircraft that would replace the Service's existing fleet of over 500 KC-135 and KC-10 tankers. The new aircraft, the KC-45, will be a derivative of the Airbus (i.e., EADS) A330 commercial airliner and will be capable of carrying cargo as well as fuel. The aircraft was selected by the Air Force over a derivative of the Boeing 767. The FY 2009 request would provide \$832 million in R&D funding for the program, plus \$62 million in procurement funding for long-lead items.

Space-Based Infrared System (SBIRS)-High: The FY 2009 budget request includes \$2.33 billion for the SBIRS-High program. The goal of this program is to field a constellation of satellites to provide improved warning of ballistic missile launches (replacing existing Defense Support Program satellites), as well as support national missile defense and intelligence collection efforts.

Navy

The Navy's FY 2009 base budget request includes \$19.3 billion for R&D and \$39.1 billion for procurement.

F/A-18E/F: The administration is requesting \$1.983 billion for the F/A-18E/F aircraft program in FY 2009, including \$71 million for continued development and \$1.911 billion to procure 23 aircraft. In production since FY 1997, the F/A-18E/F is a substantially changed derivative of the older A-D versions of the F/A-18, featuring, among other things, a longer fuselage and larger wings. Current plans call for the Navy to buy 494 of these carrier-based aircraft at a total cost of about \$46 billion. However, the total number of F/A-18E/Fs ultimately procured could be higher if the JSF were to develop technical problems, fail to meet its cost goals, or suffer significant slippage in its schedule.

E/A-18G: The FY 2009 budget includes \$1.781 billion for the E/A-18G program. This variant of the F/A-18E/F is intended to replace the EA-6B in the electronic warfare role. The request includes \$1.652 billion to procure 22 of these aircraft and \$129 million for continued R&D. Altogether, the Navy plans to buy 85 of these aircraft at a total cost of some \$8.7 billion.

V-22: The proposed budget would provide \$87 million in R&D funding for the V-22 tilt-rotor, vertical take-off and landing aircraft, plus \$2.22 billion in procurement funding to buy 30 Marine Corps (MV-22) versions of the aircraft and \$423 million for six Air Force versions of the aircraft

(CV-22). The V-22 program has suffered from some significant technical problems and cost growth in recent years. Ultimately, the Marine Corps plans to buy a total of 360 MV-22s, while the Air Force expects to buy 50 CV-22s, and the Navy plans to purchase 48 HV-22s. The MV-22 is intended to replace the Marine Corps' CH-46 and CH-53 helicopters. The CV-22 would be used for special operations forces (SOF) and the HV-22 would be used for search and rescue.

DDG 1000: The FY 2009 budget request includes \$2.554 billion to support the procurement of ships two and three of this new class of surface combatant (full funding for these ships is being provided incrementally over several years). The FY 2009 request also includes \$679 million in R&D funding. Unlike the DDG-51 guided-missile destroyer, which is focused primarily on the air defense mission, the DDG 1000—formerly the DD(X)—is intended to be a multi-mission combatant with a substantial land-attack capability. Current Navy plans call for buying a total of seven DDG 1000s. The Navy's goal is to reach a unit price of \$2.3 billion (FY 2008 dollars). However, CBO estimates that the average cost per ship will be about \$3.9 billion.⁷²

Littoral Combat Ship (LCS): The LCS is a new surface combatant intended to focus on the kinds of threats likely to be confronted in coastal waters, such as mines, diesel submarines and "swarming attacks" by small boats—with each ship capable of being equipped with different mission modules focused on different types of threats. Navy plans call for two industry teams to build competing designs of this new type of ship. The FY 2005 budget included funding for the first of these new ships. The proposed FY 2009 budget would provide \$920 million for the procurement of two LCSs, as well as \$371 million for continued R&D. The LCS is to be roughly the size of a frigate (i.e., around 3,000 tons) and much more affordable than the much larger (14,000-ton) DDG 1000. Under the current plan, the Navy would buy a total of 18 LCSs over the FY 2009-13 period, and some 55 altogether. CBO estimates that average unit procurement cost for the LCS will amount to \$390 million (excluding the cost of the mission modules).

SSN-774: The administration's FY 2009 request includes \$3.424 billion in procurement funding for one Virginia-class attack submarine, plus \$167 million for R&D. This class of submarines is being built jointly by General Dynamics-Electric Boat of Groton, CT, and Northrop Grumman's Newport News Shipbuilding (NGNN) of Newport News, VA. Under the administration's new defense plan, the Navy would buy one Virginia-class submarine a year through FY 2010, with the production rate increased to two boats per year in FY 2011 and beyond. Whether the Navy can reach this goal will depend in large part on how successful it is at achieving its cost goals for the SSN-774, as well as the DDG 1000, the LCS and other ships. Ultimately, the Navy hopes to be able to buy these submarines for an average of about \$2.3 billion (FY 2008 dollars) each, but CBO estimates that unit procurement costs will average some \$2.7 billion.

CVN-21: Under the administration's defense plan, \$262 million in R&D and \$3.927 billion in procurement funding would be provided in FY 2009 for the CVN-21 program. This includes

⁷² J. Michael Gilmore and Eric J. Labs, "The Navy's 2008 Shipbuilding Plan and Key Ship Programs," testimony before the Subcommittee on Seapower and Expeditionary Forces of the House Armed Services Committee, July 24, 2007. For a discussion of Navy plans for its surface fleet, see Robert O. Work, *Know When to Hold 'Em, Know When to Fold 'Em: A New Transformation Plan for the Navy's Surface Battle Line* (Washington, DC: Center for Strategic & Budgetary Assessments, 2007).

partial funding for construction of the lead ship of this new class of aircraft carrier (CVN-78), as well as funding to cover the cost of long-lead items for the second ship of this class (CVN-79). In 1998, the Navy decided to adopt an evolutionary approach to designing this new class of aircraft carrier. Under this plan, the first ship of this class will closely resemble existing Nimitz-class carriers, although succeeding ships might differ substantially from them. Altogether, these new aircraft carriers are projected to have average unit procurement costs of about \$10 billion (FY 2008 dollars).

T-AKE: This new class of dry cargo ship is intended to replace the existing refrigerated cargo and food stores ships (designated AFS class) and ammunition ships (designated AE class) in the Navy's mobile logistics fleet. The FY 2009 request includes \$962 million for the procurement of two T-AKE ships.

Army

The Army's FY 2009 base budget request includes \$10.5 billion for R&D and \$25.0 billion for procurement.

AH-64: The FY 2009 budget request would provide \$637 million for various upgrades to the Army's fleet of AH-64 Apache attack helicopters, plus \$198 million for continued R&D. These upgrades include the addition of Target Acquisition Designation Sight (TADS)/Pilot Night Vision Sensors (PNVS), as well as a variety of safety and reliability improvements. Specifically, the budget request would support the remanufacture of AH-64A helicopters to the more capable AH-64D (Longbow) configuration.

UH-60: The FY 2009 request includes \$1.063 billion for the procurement of 63 Blackhawk UH-60 utility helicopters, plus \$34 million for R&D. The Army's cancellation of the \$38 billion Comanche reconnaissance/attack helicopter program in 2004 freed up additional funding for a number of other Army helicopter programs, including the UH-60. By comparison, only 17 of these helicopters were procured in FY 2004, before the Comanche's cancellation.

CH-47: The Army is requesting \$444 million in FY 2009 to purchase six new CH-47F helicopters and remanufacture a number of additional aircraft. The CH-47F is used to transport troops, ammunition, and other supplies in support of combat operations. Altogether, current plans call for procuring 512 new and remanufactured CH-47s for various missions.

Stryker Family of Armored Vehicles: The Stryker program represents a key element in the Army's transformation plans. The Stryker is intended to provide a relatively light and easily deployable combat vehicle to bridge the gap between today's lethal, but relatively heavy forces, and the more capable and deployable systems being developed under the FCS program—which is expected to lead to the fielding of new capabilities starting around 2015. The FY 2009 request includes \$108 million for R&D and \$1.175 billion in procurement funding to buy 119 Stryker vehicles.

Future Combat Systems: Through the FCS program, the Army plans to develop a family of 14 combat vehicles and other systems, including UAVs and sensors, with which to equip the Army's "Future Force"—the Army projected for 2015 and beyond. This force is expected to be both more deployable than today's forces and more lethal and survivable than the interim forces

presently being procured. The FY 2009 budget request includes \$3.227 billion in R&D funding for the FCS program, plus \$331 million in advance procurement funding. This program has experienced significant cost growth and schedule delays in recent years. With costs projected to reach some \$161 billion or more, and substantial technical obstacles yet to be overcome, this program is coming under increasing scrutiny from members of Congress and others.⁷³

M-1 Tank: The budget request provides \$728 million to upgrade older M-1 Abrams tanks. Among other things, upgrades include improved frontal and side armor, a forward looking infrared sensor, and digitized communications.

MILITARY CONSTRUCTION AND FAMILY HOUSING

The administration is requesting \$21.2 billion for military construction and \$3.2 billion for family housing in DoD's FY 2009 base budget. The FY 2009 request for military construction marks a \$1 billion increase from the level provided in FY 2008. It also represents the highest level of funding for military construction since the early 1950s. Under the administration's defense plan, military construction funding is projected to decline after FY 2009. Nevertheless, it would remain at historically high levels through FY 2013.

The projected increases in military construction funding included in DoD's base budget are driven primarily by the 2005 base realignment and closure (BRAC) process. The previous BRAC rounds begun in 1988, 1991, 1993, and 1995 resulted in the closure of 97 major bases (equivalent to about 21 percent of DoD's domestic basing structure). The 2005 round identified 22 major bases for closure. Over the long term, base closures save money, but there are substantial upfront costs associated with the BRAC process related, among other things, to environmental cleanup and the need to reconstitute, at remaining bases, some capabilities existing at bases selected for closure. The FY 2009 request includes \$9.5 billion to cover BRAC costs.

The latest budget includes an increase of \$322 million in funding for military family housing in FY 2009, but projects a substantial reduction over the next five years. Under the new plan, DoD's family housing budget would fall to \$1.7 billion (FY 2009 dollars) by FY 2013.

DEPARTMENT OF ENERGY (DOE) DEFENSE ACTIVITIES

The administration's FY 2009 request would provide \$17.167 billion for atomic energy defense activities. This represents a \$796 million increase from FY 2008. The request includes \$6.6 billion for weapons activities and \$6.9 billion for defense environmental restoration, waste management and other activities. The request would also provide \$1.2 billion for non-proliferation programs and \$828 million to support naval nuclear reactor programs. About \$9.1 billion of the DoE budget would come under the purview of the National Nuclear Security Administration, which was established in the FY 2000 defense authorization act, among other things, to improve management and security at DoE weapons labs.

⁷³ This level of funding would be sufficient to equip about one-third of the active Army with the FCS.

III. CONCLUSION

The administration's FY 2009 defense budget request continues the buildup in funding for defense begun in the late 1990s and accelerated after the terrorist attacks of September 11, 2001. The request should be adequate to cover the FY 2009 costs of DoD's modernization plans, and peacetime manning and operations and support activities. Under the administration's plan, funding for defense, exclusive of war costs, is projected to decline slightly (by about 1.5 percent) in real terms over the FY 2010-13 period. However, by FY 2013 funding for defense (exclusive of war costs) would still be very high by historical standards—in real terms, about one percent above the level reached in FY 1985, the previous peacetime peak for the US defense budget.

Even defense budgets of this magnitude are unlikely to prove sufficient to pay for DoD's long-term force structure, modernization and readiness plans. If history is any guide, operations and support costs and DoD's modernization plans are likely to prove substantially more costly to execute than assumed by the administration. Studies conducted by CBO, CSBA and others suggest that fully implementing DoD's plans, over the long-term, could require increasing annual funding for defense by some \$50 billion or more beyond the levels called for in the administration's current plan.

On the other hand, sustaining even the level of funding increases projected for defense in the administration's latest budget will be difficult. The long-term federal budget picture has dramatically worsened over the past seven years. In early 2001, CBO projected a 10-year surplus of about \$5.6 trillion over the FY 2002-11 period. By contrast, CBO's baseline estimate now projects surpluses totaling only \$274 billion over the next decade (FY 2009-18). Unfortunately, it is likely that the outlook will deteriorate still further in coming years. In its latest request, the administration has proposed changes in taxes and spending that, if enacted, would result in deficits totaling some \$717 billion over the FY 2009-18 period. And, making more realistic assumptions about future war costs and other factors, it is quite possible that deficits over this period will total \$3-4 trillion. Moreover, the fiscal outlook is likely to deteriorate even more dramatically after the "baby boomer" generation begins retiring towards the end of the decade.

This means that in coming years pressure will grow for DoD to scale back its plans, including both major modernization efforts (e.g., the F-35, FCS and DDG 1000 programs) and force structure plans. There is good reason to believe that by adopting a scaled-back and more transformation-oriented defense plan the United States could avoid (or offset) much of the cost growth that is otherwise projected in DoD's plans by CBO and others, and still adequately meet its security requirements. However, so long as a large US military presence is required in Iraq or it is deemed necessary to maintain the capability to conduct such large-scale stability operations in the future, it will be difficult or impossible to make reductions in some programs and activities—especially in Army and Marine Corps force structure.

Alternatively, a decision could be made to address the ballooning budget deficit solely through reductions in domestic and entitlement (e.g., Social Security and Medicare) spending, or tax increases, leaving current defense plans unaffected. But such a choice would be politically difficult and, based on history, seems unlikely. In any case, whatever path is selected, effectively addressing the growing cost of DoD's plans and the growing size of the federal deficit will

require making some very hard decisions. And the sooner those decisions are made the less painful they will be to carry out. Unfortunately, in its most recent defense budget submission, the Bush Administration appears to have kicked these hard decisions further down the road to the next administration.

APPENDIX

Table 1	National Defense Budget Authority and Outlays
Graph 1	National Defense Budget Authority, FY 1946–2013
Table 2	National Defense Budget Authority, FY 1946–2013
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Table 1
National Defense Budget Authority and Outlays
(in billions of current dollars)

	<u>FY 80-</u>	<u>FY 85-</u>	<u>FY 90-</u>	<u>FY 95-</u>	<u>FY 98</u>	<u>FY 99</u>	<u>FY 00</u>	<u>FY 01</u>	<u>FY 02</u>	<u>FY 03</u>	<u>FY 04</u>	<u>FY 05</u>	<u>FY 06</u>	<u>FY 07</u>	<u>FY08**</u>	<u>FY 09^</u>	<u>FY 10</u>	<u>FY 11</u>	<u>FY 12</u>	<u>FY 13</u>	
Budget Authority																					
DoD (051)	140.7	286.8	291.0	255.7	258.3	278.4	290.3	318.7	344.9	437.7	470.9	483.9	536.5	603.0	670.5	588.3	527.0	533.1	542.4	552.7	
DoE & Other	3.2	7.9	10.3	10.7	12.8	13.9	13.7	16.2	17.1	18.3	19.6	21.9	23.4	22.9	22.7	22.8	22.8	23.1	22.8	22.9	
National Defense (050)	143.9	294.7	303.3	266.4	271.0	292.3	304.0	334.9	362.0	456.0	490.6	505.8	559.8	625.9	693.2	611.1	549.8	556.3	565.1	575.6	
<i>annual real change*</i>	NA	NA	NA	NA	NA	6.4%	2.0%	7.6%	6.1%	23.5%	4.8%	-0.1%	7.1%	8.9%	8.7%	-13.6%	-11.8%	-0.8%	-0.4%	-0.1%	
	<u>FY 80-</u>	<u>FY 85-</u>	<u>FY 90-</u>	<u>FY 95</u>	<u>FY 98</u>	<u>FY 99</u>	<u>FY 00</u>	<u>FY 01</u>	<u>FY 02</u>	<u>FY 03</u>	<u>FY 04</u>	<u>FY 05</u>	<u>FY 06</u>	<u>FY 07</u>	<u>FY08</u>	<u>FY 09</u>	<u>FY10</u>	<u>FY 11</u>	<u>FY 12</u>	<u>FY 13</u>	
Outlays																					
DoD (051)	130.9	245.1	289.7	259.4	255.8	261.2	281.1	290.2	331.9	387.2	436.5	474.1	499.3	529.8	583.1	651.2	566.7	537.7	540.9	549.3	
DoE & Other	3.1	7.6	9.6	12.7	12.4	13.6	13.3	14.7	16.6	17.6	19.4	21.2	22.5	22.7	24.2	23.9	23.7	23.0	22.7	22.9	
National Defense (050)	134.0	252.7	299.3	272.1	268.2	274.8	294.4	304.9	348.5	404.8	455.8	495.3	521.8	552.6	607.3	675.1	590.4	560.7	563.7	572.1	
<i>annual real change*</i>	NA	NA	NA	NA	NA	1.1%	5.0%	1.1%	12.2%	13.9%	9.8%	5.3%	2.0%	3.1%	7.8%	9.0%	-14.3%	-6.9%	-1.4%	-0.5%	

Source: CSBA, March 2008. Based on OMB and DoD data.

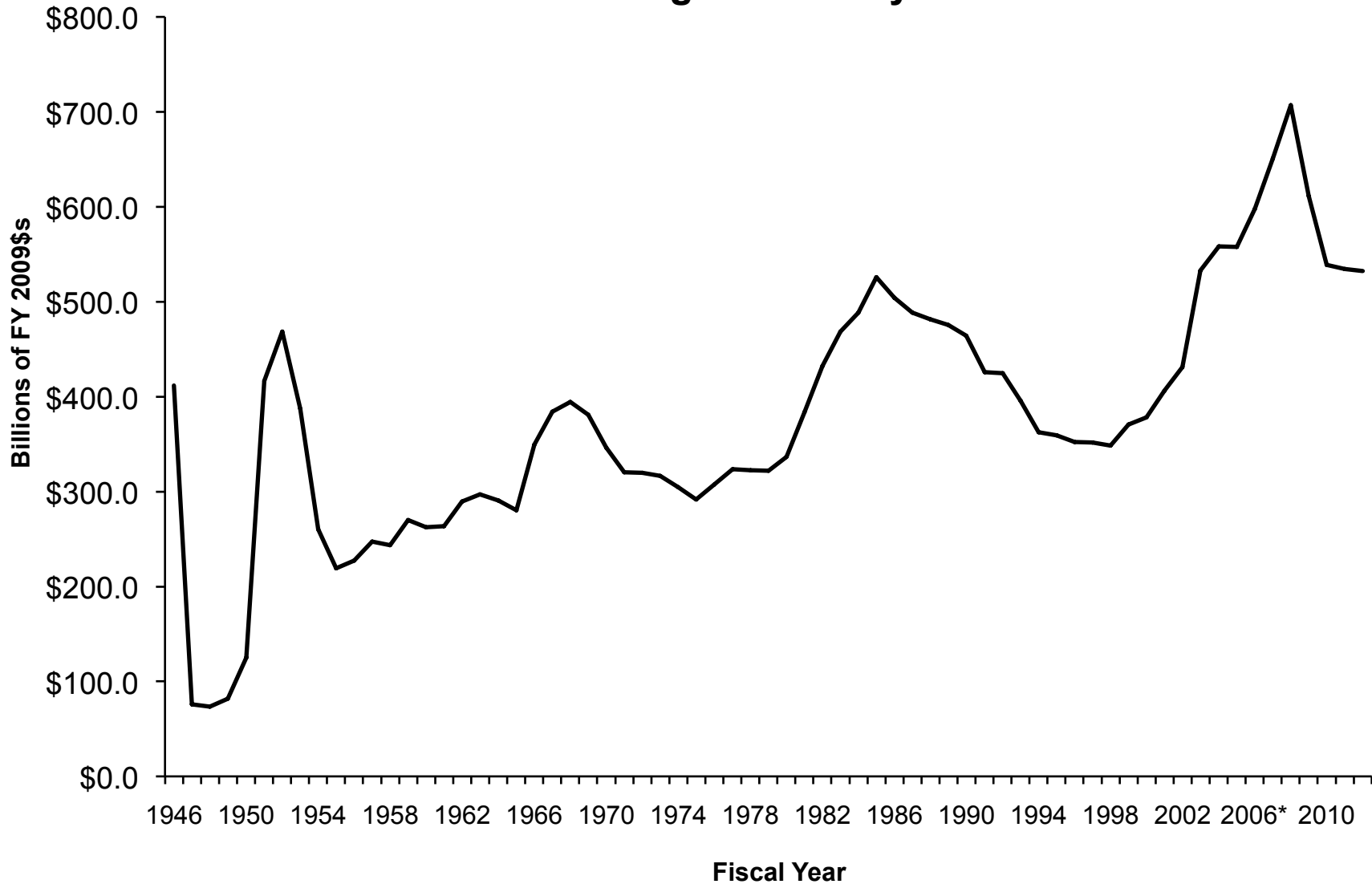
* Derived using GDP deflator.

** Assumes Congress will approve the full \$189 billion request for military operations (at press time, \$87 billion had been approved).

^ Includes \$70 billion request for military operations.

FY 2009 Dollars
Graph 1

National Defense Budget Authority FY 1946-2013



Source: CSBA, March 2008. Based on OMB. Assumes Derived using GDP deflator. Congress will approve the full \$189 billion FY 2008 request for military operations (at press time, \$87 billion had been approved). Includes \$70 billion FY 2009 request for military operations.

Table 2
National Defense (050) Budget Authority, FY 1946-FY 2013*
 (by fiscal year in billions of dollars)

	<i>Current Dollars</i>	<i>FY 2009 Dollars*</i>	<i>% real change</i>		<i>Current Dollars</i>	<i>FY 2009 Dollars</i>	<i>% real change</i>
1946	44.0	411.9		1980	143.9	336.8	4.6%
1947	9.0	76.0	(81.6%)	1981	180.0	383.8	14.0%
1948	9.5	73.5	(3.3%)	1982	216.5	432.2	12.6%
1949	10.9	81.9	11.5%	1983	245.0	468.4	8.4%
1950	16.5	125.3	52.9%	1984	265.2	488.8	4.4%
1951	57.8	416.8	232.8%	1985	294.7	526.1	7.6%
1952	67.5	468.4	12.4%	1986	289.1	504.5	(4.1%)
1953	56.9	387.5	(17.3%)	1987	287.4	488.8	(3.1%)
1954	38.7	260.6	(32.8%)	1988	292.0	481.4	(1.5%)
1955	32.9	219.4	(15.8%)	1989	299.6	475.4	(1.2%)
1956	35.0	227.6	3.7%	1990	303.3	464.0	(2.4%)
1957	39.4	247.1	8.6%	1991	288.9	426.0	(8.2%)
1958	40.0	243.5	(1.5%)	1992	295.1	424.5	(0.4%)
1959	45.1	269.9	10.9%	1993	281.1	395.4	(6.9%)
1960	44.3	262.3	(2.8%)	1994	263.3	362.6	(8.3%)
1961	45.1	263.4	0.4%	1995	266.4	359.3	(0.9%)
1962	50.2	289.5	9.9%	1996	266.2	352.2	(2.0%)
1963	52.1	297.1	2.6%	1997	270.4	351.6	(0.2%)
1964	51.6	290.6	(2.2%)	1998	271.0	348.3	(0.9%)
1965	50.6	280.1	(3.6%)	1999	292.3	370.7	6.4%
1966	64.4	349.4	24.7%	2000	304.0	378.0	2.0%
1967	73.1	384.0	9.9%	2001	334.7	406.5	7.6%
1968	77.8	394.7	2.8%	2002	362.0	431.4	6.1%
1969	78.5	380.8	(3.5%)	2003	456.0	532.7	23.5%
1970	75.3	346.6	(9.0%)	2004	490.6	558.5	4.8%
1971	72.7	320.2	(7.6%)	2005	505.8	557.9	(0.1%)
1972	76.4	319.6	(0.2%)	2006**	559.8	597.8	7.1%
1973	79.1	316.8	(0.9%)	2007	625.9	650.8	8.9%
1974	81.5	304.4	(3.9%)	2008***	693.2	707.2	8.7%
1975	86.2	291.8	(4.2%)	2009^	611.1	611.1	(13.6%)
1976	97.3	307.3	5.3%	2010	549.8	539.0	(11.8%)
1977	110.2	323.5	5.3%	2011	565.1	534.7	(0.8%)
1978	117.2	322.6	(0.3%)	2012	575.6	532.6	(0.4%)
1979	126.5	322.0	(0.2%)	2013	575.6	531.9	(0.1%)

Source: CSBA, March 2008. Based on OMB and DoD data.

* Derived using GDP deflator.

** Excludes \$57.3 billion included in OMB scoring attributable primarily to contract authority.

*** Assumes Congress will approve the full \$189 billion request for military operations.
 (at press time, \$87 billion had been approved).

^ Includes \$70 billion request for military operations.

Table 3
National Defense (050) Outlays, FY 1946-FY 2013*
 (by fiscal year in billions of dollars)

	<i>Current Dollars</i>	<i>FY 2009 Dollars*</i>	<i>% real change</i>		<i>Current Dollars</i>	<i>FY 2009 Dollars</i>	<i>% real change</i>
1946	42.7	399.6		1980	134.0	313.7	5.9%
1947	12.8	108.6	(72.8%)	1981	157.5	335.9	7.1%
1948	9.1	70.5	(35.1%)	1982	185.3	369.8	10.1%
1949	13.2	98.5	39.7%	1983	209.9	401.2	8.5%
1950	13.7	104.4	6.0%	1984	227.4	419.2	4.5%
1951	23.6	170.0	62.9%	1985	252.7	451.3	7.6%
1952	46.1	319.7	88.0%	1986	273.4	477.0	5.7%
1953	52.8	359.7	12.5%	1987	282.0	479.5	0.5%
1954	49.3	331.8	(7.8%)	1988	290.4	478.7	(0.2%)
1955	42.7	285.3	(14.0%)	1989	303.6	481.7	0.6%
1956	42.5	276.6	(3.0%)	1990	299.3	458.0	(4.9%)
1957	45.4	284.8	3.0%	1991	273.4	403.2	(12.0%)
1958	46.8	284.9	0.0%	1992	298.4	429.2	6.5%
1959	49.0	293.7	3.1%	1993	291.1	409.5	(4.6%)
1960	48.1	284.9	(3.0%)	1994	281.6	387.8	(5.3%)
1961	49.6	289.5	1.6%	1995	272.1	366.9	(5.4%)
1962	52.3	302.1	4.4%	1996	265.8	351.7	(4.2%)
1963	53.4	304.4	0.8%	1997	270.5	351.8	0.0%
1964	54.8	308.4	1.3%	1998	268.2	344.6	(2.0%)
1965	50.6	280.3	(9.1%)	1999	274.8	348.5	1.1%
1966	58.1	315.1	12.4%	2000	294.4	366.0	5.0%
1967	71.4	375.1	19.1%	2001	304.8	370.1	1.1%
1968	81.9	415.5	10.8%	2002	348.5	415.3	12.2%
1969	82.5	400.2	(3.7%)	2003	404.8	472.8	13.9%
1970	81.7	375.7	(6.1%)	2004	455.8	519.0	9.8%
1971	78.9	347.3	(7.6%)	2005	495.3	546.4	5.3%
1972	79.2	331.2	(4.6%)	2006	521.8	557.2	2.0%
1973	76.7	307.2	(7.2%)	2007	552.6	574.6	3.1%
1974	79.3	296.5	(3.5%)	2008	607.3	619.5	7.8%
1975	86.5	292.8	(1.2%)	2009	675.1	675.1	9.0%
1976	89.6	282.9	(3.4%)	2010	590.4	578.8	(14.3%)
1977	97.2	285.6	0.9%	2011	560.7	539.0	(6.9%)
1978	104.5	287.5	0.7%	2012	563.7	531.2	(1.4%)
1979	116.3	296.3	3.0%	2013	572.1	528.6	(0.5%)

Source: CSBA, March 2008. Based on OMB and DoD data.

* Derived using GDP deflator.

Table 4
Department of Defense (051) Budget Authority by Title
(in billions of dollars)

	<u>FY 80~</u>	<u>FY85~</u>	<u>FY 90~</u>	<u>FY 93</u>	<u>FY 94</u>	<u>FY 95</u>	<u>FY 96</u>	<u>FY 97</u>	<u>FY 98</u>	<u>FY 99</u>	<u>FY 00</u>	<u>FY 01</u>	<u>FY 02</u>	<u>FY 03</u>	<u>FY 04</u>	<u>FY 05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08*</u>	<u>FY09^</u>	<u>FY10</u>	<u>FY11</u>	<u>FY12</u>	<u>FY13</u>
Current Dollars																								
Personnel	41.1	67.8	78.9	76.0	71.4	71.6	69.8	70.3	69.8	70.6	73.8	76.9	87.0	109.1	116.1	121.3	128.5	131.8	137.1	128.9	132.3	137.8	143.0	147.9
O&M	46.4	77.8	88.4	89.1	88.6	93.7	93.6	92.3	97.2	104.9	108.7	125.2	133.2	178.3	189.8	179.2	213.5	240.2	257.1	180.4	182.1	187.8	190.8	197.8
Procurement	35.3	96.8	81.4	52.8	44.1	43.6	42.6	43.0	44.8	51.1	55.0	62.6	62.7	78.5	83.1	96.6	105.4	133.8	170.6	104.2	113.3	117.8	122.5	125.1
RDT&E	13.6	31.3	36.5	37.8	34.6	34.5	35.0	36.4	37.1	38.2	38.7	41.6	48.7	58.1	64.6	68.8	72.9	77.5	79.5	79.6	77.0	72.4	71.1	68.6
Military Construction	2.3	5.5	5.1	4.6	6.0	5.4	6.9	5.7	5.5	5.4	5.1	5.4	6.6	6.7	6.1	7.3	9.5	14.0	20.2	21.2	17.8	14.5	11.5	10.2
Family Housing	1.5	2.9	3.1	3.9	3.5	3.4	4.3	4.1	3.8	3.6	3.5	3.7	4.0	4.2	3.8	4.1	4.4	4.0	2.9	3.2	2.7	2.1	2.0	1.8
Other	0.5	4.7	-0.4	3.0	3.1	3.4	2.4	6.1	0.1	4.5	5.5	3.3	2.6	2.9	7.4	6.6	2.3	1.7	3.1	0.8	1.8	0.8	1.4	1.2
DoD	140.7	286.8	292.9	267.1	251.3	255.7	254.5	257.9	258.3	278.4	290.3	318.7	344.9	437.7	470.9	483.9	536.5	603.0	670.5	518.3	527.0	533.1	542.4	552.7
FY 2009 Dollars^^																								
Personnel	96.2	121.0	120.7	106.9	98.3	96.5	92.3	91.5	89.7	89.6	91.8	93.4	103.6	127.4	132.2	133.8	137.2	137.0	139.9	128.9	129.7	132.4	134.8	136.7
O&M	108.6	138.9	135.2	125.3	122.0	126.4	123.9	120.0	124.8	133.1	135.2	152.0	158.8	208.3	216.1	197.7	228.0	249.8	262.3	180.4	178.6	180.5	179.8	182.8
Procurement	82.6	172.9	124.5	74.3	60.8	58.9	56.4	55.9	57.6	64.8	68.3	76.0	74.8	91.7	94.6	106.6	112.5	139.1	174.1	104.2	111.1	113.2	115.4	115.6
RDT&E	31.7	55.9	55.8	53.1	47.6	46.6	46.3	47.3	47.7	48.5	48.1	50.5	58.1	67.9	73.5	75.9	77.8	80.6	81.1	79.6	75.5	69.6	67.0	63.4
Military Construction	5.4	9.9	7.8	6.4	8.3	7.3	9.1	7.4	7.0	6.9	6.3	6.6	7.9	7.8	6.9	8.0	10.2	14.5	20.6	21.2	17.5	13.9	10.8	9.4
Family Housing	3.6	5.2	4.8	5.5	4.8	4.6	5.6	5.4	4.9	4.6	4.4	4.5	4.8	4.9	4.4	4.5	4.7	4.2	2.9	3.2	2.6	2.0	1.9	1.7
Other	1.2	8.3	-0.6	4.2	4.3	4.6	3.2	7.9	0.1	5.7	6.8	4.0	3.1	3.3	8.4	7.3	2.4	1.7	3.2	0.8	1.7	0.7	1.3	1.1
DoD	329.3	512.1	448.2	375.8	346.0	344.8	336.8	335.5	331.9	353.1	361.0	387.0	411.0	511.3	536.1	533.8	572.8	627.0	684.0	518.3	516.7	512.5	511.1	510.7

Source: CSBA, March 2008. Based on OMB, DoD and Other data.

* Assumes Congress will approve the full \$189 billion request for military operations. At press time, \$87 billion had been approved.

^ Figures for FY 2009 and beyond exclude all GWOT funding.

^^ Derived using GDP deflator.

Table 5
FY 2009 Request for Selected Weapon Systems
(funding in millions of dollars)

	<u>Qty</u>	<u>Proc</u>	<u>R&D</u>	<u>Total</u>
<u>Tactical Aircraft</u>				
F-22A Fighter	20	3,381.2	700.3	4,081.5
F/A-18E/F Super Hornet	23	1,911.3	71.2	1,982.5
E/A-18G Super Hornet	22	1,651.6	128.9	1,780.5
F-35 Joint Strike Fighter (JSF)	16	3,671.6	3,056.7	6,728.3
<u>Other Aircraft</u>				
C-17 Cargo Aircraft		699.1	236.0	935.1
C-130	2	731.6	225.0	956.6
JPATS	68	322.5	0.0	322.5
E-2C Hawkeye	3	589.1	538.3	1,127.4
V-22 Osprey	36	2,643.7	87.4	2,731.1
KC-X		61.7	831.8	893.5
<u>Ships</u>				
Virginia Class Submarine	1	3,423.6	167.4	3,591.0
CVN-21 (carrier replacement prog.)		3,926.5	261.6	4,188.1
DDG 1000 Destroyer	1	2,553.7	678.9	3,232.6
Littoral Combat Ship (LCS)	2	920.0	371.0	1,291.0
Joint High Speed Vessel	2	344.8	14.9	359.7
LPD-17		103.2	1.0	104.2
CVN Refueling Complex Overhaul		628.0	0.0	628.0
T-AKE Dry Cargo Ship	2	962.4	0.0	962.4
<u>Missiles/Munitions</u>				
AMRAAM	428	441.5	62.8	504.3
JDAM	3,816	115.0	0.0	115.0
Small Diameter Bomb	2,612	133.2	144.7	277.9
JAVELIN	605	259.3	0.0	259.3
JSOW	260	240.3	13.0	253.3
High Mobility Artillery Rocket System	2,103	338.9	52.2	391.1
Tactical Tomahawk	207	281.1	14.2	295.3
Trident II	24	1,093.2	45.5	1,138.7
<u>Helicopters</u>				
AH-64D Longbow Apache		637.4	198.4	835.8
CH-47	16	1,167.7	9.9	1,177.6
Armed Recon. Helo.	28	438.8	135.7	574.5
Light Utility Helo.	36	224.5	0.0	224.5
MH-60R	31	1,185.8	70.3	1,256.1
MH-60S	18	549.7	47.3	597.0
UH-60 Blackhawk	63	1,063.1	33.9	1,097.0
<u>Combat Vehicles</u>				
Future Combat System		331.2	3,226.5	3,557.7
M1 Tank Upgrade Program	29	692.7	35.0	727.7
Stryker	119	1,175.0	108.0	1,283.0

Source: CSBA, March 2008. Based on DoD data.

Table 6
Department of Defense Budget by Service
(budget authority in billions of dollars)

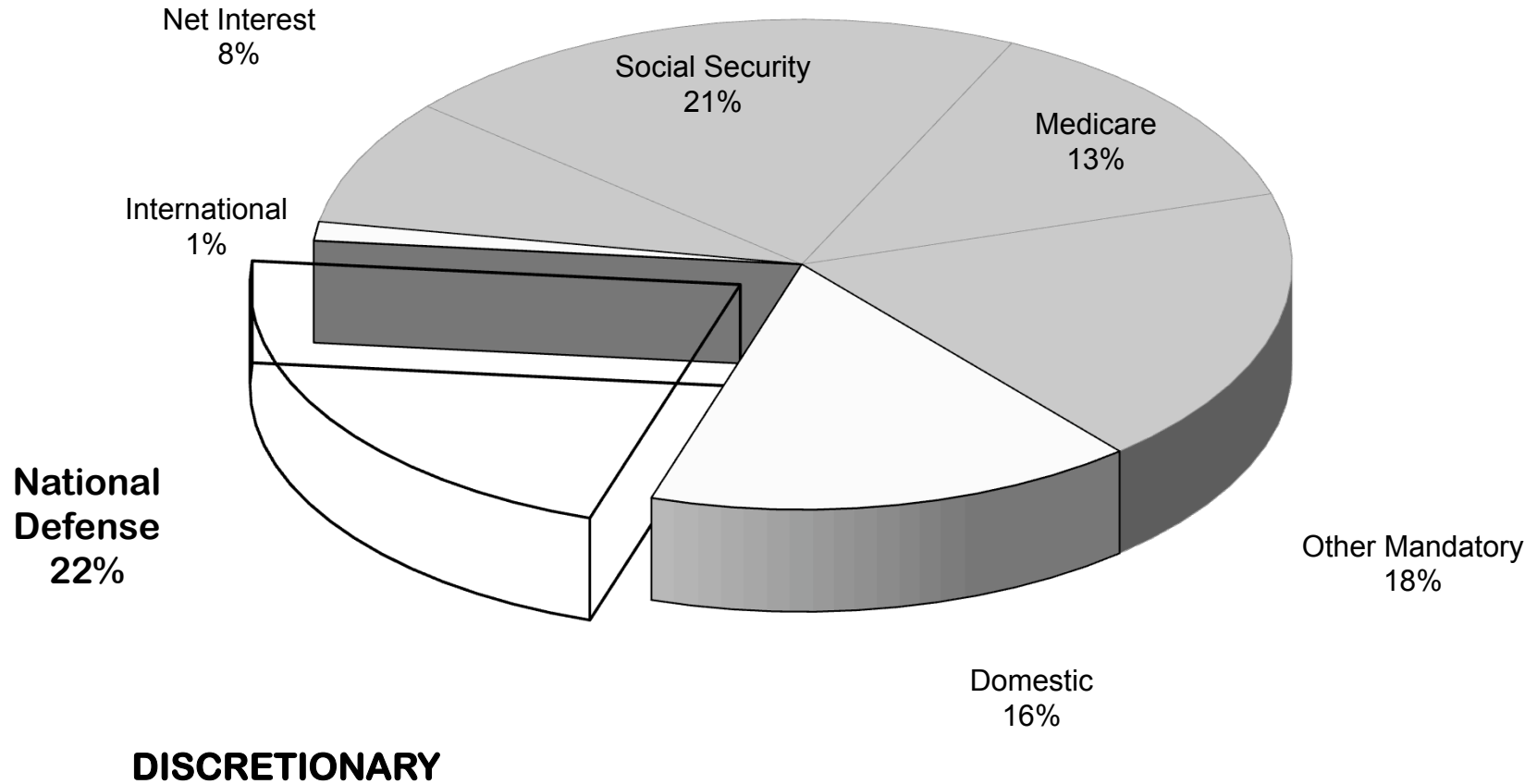
	<u>1980</u>	-	<u>1985</u>	-	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007*</u>	<u>2008*</u>	<u>2009*</u>
Army																								
Current \$	34.4		74.3		78.5	91.8	73.6	64.8	62.4	63.3	64.5	64.4	64.0	68.4	73.2	77.0	85.9	121.1	153.1	152.8	174.9	108.6	128.4	140.7
FY 2009\$	80.5		132.6		120.1	135.4	105.9	91.2	85.9	85.3	85.4	83.8	82.3	86.7	91.0	93.6	102.4	141.5	174.3	168.6	186.8	112.9	131.0	140.7
% of total	24%		26%		27%	29%	26%	24%	25%	25%	25%	25%	25%	25%	25%	25%	25%	28%	33%	31%	33%	25%	27%	27%
Navy																								
Current \$	47.2		99.0		100.0	103.5	90.3	83.2	78.1	76.9	80.1	79.6	80.7	84.0	88.8	95.5	102.4	124.1	124.3	133.7	143.8	126.1	139.1	149.3
FY 2009\$	110.6		176.8		153.0	152.6	129.9	117.0	107.5	103.8	106.0	103.5	103.7	106.6	110.4	116.0	122.0	144.9	141.5	147.4	153.5	131.2	141.9	149.3
% of total	34%		35%		34%	32%	31%	31%	31%	30%	31%	31%	31%	30%	31%	31%	30%	28%	26%	28%	27%	29%	29%	29%
Air Force																								
Current \$	41.7		99.4		92.9	91.3	82.3	79.1	74.6	73.9	73.0	73.2	76.3	81.9	83.1	89.5	100.2	125.2	125.5	127.9	141.7	128.3	134.3	143.9
FY 2009\$	97.7		177.5		142.1	134.6	118.4	111.3	102.7	99.7	96.6	95.2	98.0	103.9	103.2	108.8	119.4	146.3	142.9	141.1	151.3	133.4	137.0	143.9
% of total	30%		35%		32%	29%	29%	30%	30%	29%	29%	28%	30%	29%	29%	29%	29%	29%	27%	26%	26%	30%	28%	28%
Defense-wide																								
Current \$	17.3		14.1		21.7	32.8	40.8	40.0	36.3	41.6	36.9	40.8	37.6	44.3	45.52	47.9	57.1	67.4	68.1	71.5	76.1	70.1	77.7	81.6
FY 2009\$	41		25		33	48	59	56	50	56	49	53	48	56	57	58	68	79	78	79	81	73	79	82
% of total	12%		5%		7%	10%	14%	15%	14%	16%	15%	16%	15%	16%	16%	15%	17%	15%	14%	15%	14%	16%	16%	16%

Source: CSBA, March 2008. Based on DoD data.

* Figures for FY 2007-09 are for discretionary budget authority only, and exclude war-related funding.

**Graph 2
FY 2009
Federal Budget Request**

MANDATORY



Source: CSBA, March 2008, Based on OMB and CBO data.

Table 7
National Defense, Federal Spending and the Gross Domestic Product*
FY 1980-FY 2013
(outlays in billions of current dollars)

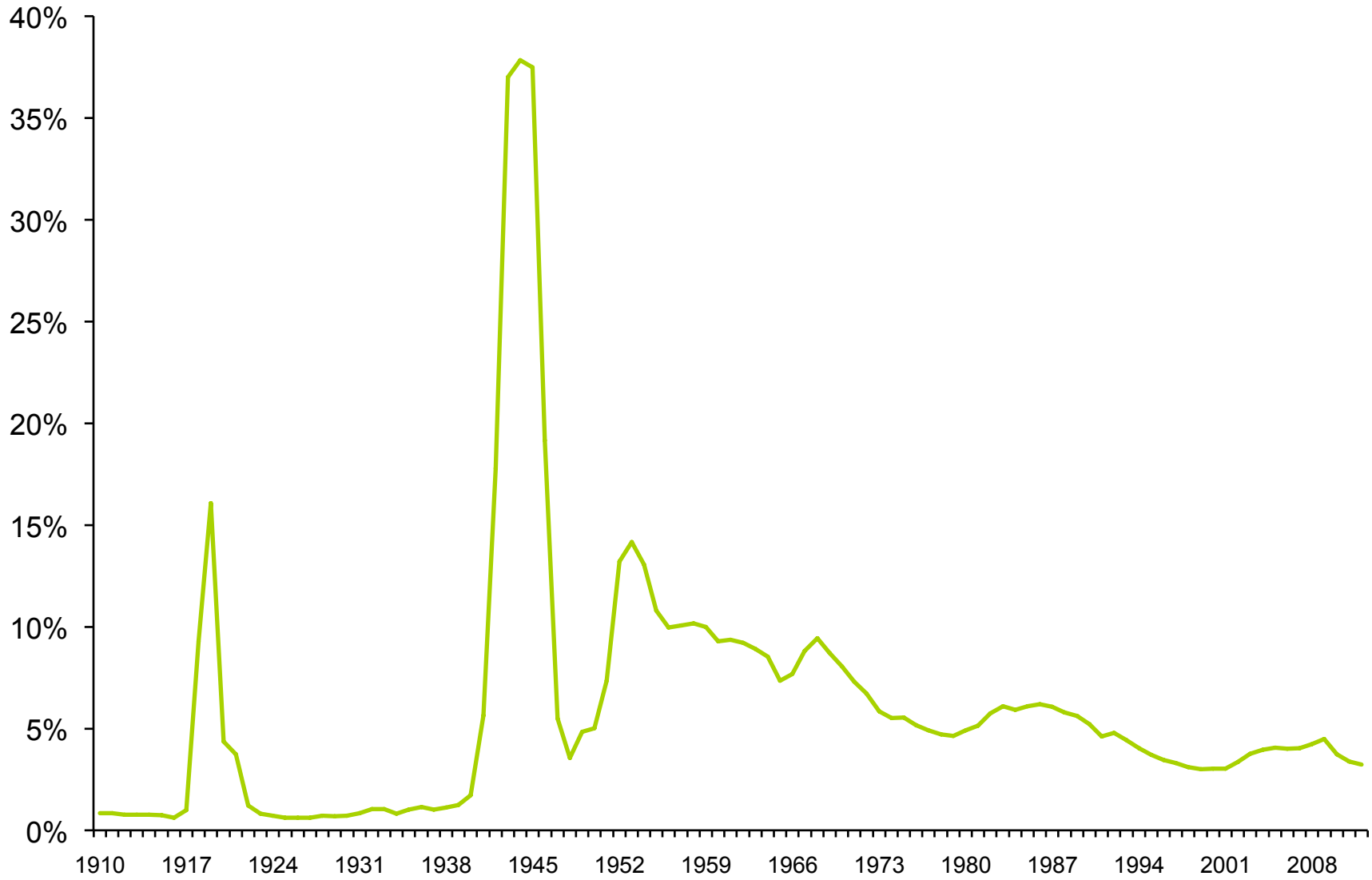
Fiscal Year	National Defense Outlays (050)	Federal Outlays	050 as % of Federal Outlays	GDP	050 as % of GDP
1980	134.0	590.9	22.7%	2,726.5	4.9%
1981	157.5	678.2	23.2%	3,054.7	5.2%
1982	185.3	745.7	24.8%	3,227.6	5.7%
1983	209.9	808.4	26.0%	3,440.7	6.1%
1984	227.4	851.9	26.7%	3,840.2	5.9%
1985	252.7	946.4	26.7%	4,141.5	6.1%
1986	273.4	990.4	27.6%	4,412.4	6.2%
1987	282.0	1,004.1	28.1%	4,647.1	6.1%
1988	290.4	1,064.5	27.3%	5,008.6	5.8%
1989	303.6	1,143.8	26.5%	5,400.5	5.6%
1990	299.3	1,253.1	23.9%	5,735.4	5.2%
1991	273.3	1,324.3	20.6%	5,935.1	4.6%
1992	298.4	1,381.6	21.6%	6,239.9	4.8%
1993	291.1	1,409.5	20.7%	6,575.5	4.4%
1994	281.6	1,461.9	19.3%	6,961.3	4.0%
1995	272.1	1,515.8	17.9%	7,325.8	3.7%
1996	265.8	1,560.5	17.0%	7,694.1	3.5%
1997	270.5	1,601.2	16.9%	8,182.4	3.3%
1998	268.5	1,652.6	16.2%	8,627.9	3.1%
1999	274.8	1,701.9	16.1%	9,125.3	3.0%
2000	294.4	1,789.2	16.5%	9,709.8	3.0%
2001	304.8	1,863.2	16.4%	10,058.0	3.0%
2002	348.5	2,011.2	17.3%	10,377.0	3.4%
2003	404.8	2,160.1	18.7%	10,808.6	3.7%
2004	455.8	2,293.0	19.9%	11,499.9	4.0%
2005	495.3	2,472.2	20.0%	12,237.9	4.0%
2006	521.8	2,655.4	19.7%	13,015.5	4.0%
2007	552.6	2,730.2	20.2%	13,667.5	4.0%
2008*	607.3	2,931.2	20.7%	14,311.5	4.2%
2009**	675.1	3,107.4	21.7%	15,027.0	4.5%
2010	590.4	3,091.3	19.1%	15,792.0	3.7%
2011	560.7	3,171.2	17.7%	16,580.2	3.4%
2012	563.7	3,221.8	17.5%	17,395.0	3.2%
2013	572.1	3,398.9	16.8%	18,243.3	3.1%

Source: CSBA, March 2008. Based on OMB and DoD data.

* Assumes Congress will approve the full \$189 billion request for military operations (at press time, \$87 billion had been approved).

** Includes \$70 billion request for military operations.

Graph 3
National Defense Outlays as a Share of GDP



Source: CSBA, March 2008