

A REPORT OF THE CSIS
DEFENSE-INDUSTRIAL
INITIATIVES GROUP

U.S. Department of Defense Contract Spending and the Supporting Industrial Base

Project Directors

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Guy Ben-Ari

Authors

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David Morrow
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Contributors

Roy Levy
Joshua Mathew
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September 2012



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Cover photo credits: *top left*: Littoral Combat Ship *Coronado* at the Austal USA assembly bay, U.S. Navy/Austal USA; *top right*: worker examines an F-35 Lightning II Joint Strike Fighter model at the Arnold Engineering Development Center, Arnold Air Force Base, TN, U.S. Air Force/David Housch; *bottom left*: Aerospace Testing Alliance engineer aligns a projectile with a laser at the Arnold Engineering Development Center's large Hypervelocity Ballistic Range G facility at Arnold Air Force Base, TN, U.S. Air Force/Rick Goodfriend; *bottom right*: KBR Theater Transportation Mission Recovery senior mechanic cuts into a test vehicle using a "mini Jaws of Life" tool during a training session at Balad Air Base, Iraq, U.S. Air Force/Master Sgt. Heather Cabral.

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1. Introduction and Methodology

This report analyzes contract obligations for products, services, and research and development (R&D) by the U.S. Department of Defense (DoD), overall and by its key components (Air Force, Navy, Army and civilian agencies). It thereby seeks to provide an in-depth assessment of the trends currently driving more than half of all federal contract dollars. The report also includes findings on the industrial base supporting DoD in its missions.

The timeframe analyzed extends from 1990 to 2011, and the Federal Procurement Data System (FPDS) is the primary source of data on government contract obligations in this report. In a change from previous reports, FPDS data for DoD are now available from 2000 to 2004, which makes the CSIS research team no longer dependent on Department of Defense Form 350 (DD350) data. Numbers will differ from previous reports due to a change in constant dollars (all dollar figures in this report are in Fiscal Year 2011 dollars and all years are fiscal years) and to continual updates of back-year data in FPDS. However, this difference is never greater than \$10 billion between years.

The first section of this report presents an overview of defense contract obligations. In the second section, the contract obligations data are divided into three categories: products, services, and research and development (R&D). (Note that these categories were derived from the official Product and Service Codes and do not necessarily match DoD appropriations. In addition, FPDS defines R&D as a “service,” but this report provides separate totals and analysis for R&D.) Next, the report presents data on contract obligations by the three military departments. In addition, this report includes a category titled “Other DoD,” consisting of defense agencies and other entities within DoD (such as the Defense Logistics Agency, Missile Defense Agency, Defense Threat Reduction Agency, U.S. Special Operations Command, etc.). The report then analyzes trends by three key contract characteristics: level of competition, type of funding mechanism, and type of contract vehicle. Lastly, the report analyzes the industrial base supporting DoD. It lists the top 20 contractors in 2001 and 2011 and notes the differences and similarities between the two years. Further detail into the industrial base supporting DoD is provided via separate top 20 contractors lists for products, services, and R&D contracts. Lastly, to present a more in-depth picture of the supply side for the years 2000 to 2011, contract awards are broken down into four contractor size categories: small, medium, large, and the “Big 6” defense contractors (Lockheed Martin, Boeing, Northrop Grumman, General Dynamics, Raytheon, and BAE Systems).

To capture the major types of DoD service activities, CSIS grouped the hundreds of government service codes (each representing a specific type of services activity) into broad categories. Grouping these service activities into service areas allows for analysis of broader trends among similar activities with overlapping industrial bases. Six service areas were defined, and they are presented here with their respective FPDS product/service codes (PSCs):

- **Research & development (R&D)**—Elements of service code A.
- **Equipment-related services (ERS)**—Elements of service codes J, K, N, P, V, and W.
- **Facility-Related Services & Construction (FRS&C) services**—All of service codes E, F, M, S, X, Y, and Z, and elements of service code P.
- **Information and communications technology (ICT) services**—All of service codes D, H, and L, and elements of service codes J, K, N, and W.
- **Professional, administrative, management services (PAMS)**—All of service codes B, C, R, T, and U, and elements of service codes A, H, and V.
- **Medical services**—All of service codes G and Q.

To analyze the breakdown of competitors in the DoD contracts market, the CSIS team assigned each contractor in the database to one of four size categories: small, medium, large, and Big 6. Any organization designated as small by the FPDS database—according to the criteria established by the

federal government—was categorized as such for the purposes of this report. Note that an organization may be identified as small for one set of contract actions but not for another as it may meet the criteria for being a small business in certain contract actions and not in others. Companies with annual revenue of more than \$3 billion are classified as large. This classification is made based on their revenue in 2011 or in the last prior year for which revenue data were available. A joint venture between two or more organizations is treated as a single separate entity and those with a large parent were also defined as large. Companies that are neither small nor large are classified as medium. The Big 6 category includes Lockheed Martin, Boeing, Northrop Grumman, General Dynamics, Raytheon, and BAE Systems.

To analyze better the companies in the federal services market, the study team made significant efforts to consolidate data related to subsidiary companies and merged companies with their parent companies. For example, while a company's subsidiaries and predecessor companies are listed separately in FPDS, they are combined into a single entry in the CSIS services database. The assignment of contractor revenue is done on an annual basis, and a merger must be completed by the end of March to be consolidated for that given fiscal year. This enabled the study team to analyze more accurately the industrial base supporting DoD, the number of players in it, and their level of activity.

Over the past years, the study team applied a systematic approach to these contractor roll ups. FPDS uses hundreds of thousands of DUNS codes from Dun and Bradstreet to identify service providers, but it does not consistently provide parent company codes. Supplementing our past efforts to find known large companies, the CSIS research team studied and classified all DUNS numbers associated with more than \$500 million of contract revenue in any single year between 2000 and 2010. A small number of these codes involved classified or miscellaneous foreign entities, but the vast majority were identifiable. This approach allowed the CSIS research team to roll up a number of joint ventures, universities, and companies that are large players in the DoD contracts market. These efforts were supplemented with use of the contractor consolidation done by Bloomberg Government, which provides consolidated lists of DUNS numbers for major contractors and regularly updates their lists to account for mergers and acquisitions. The study team cross referenced its work with Bloomberg Government for all DUNS numbers with more than \$500 million in revenue and for all contractors that appear on the top 20 lists. Due to differences in classification methodology, our totals will not match those of Bloomberg Government. Bloomberg Government does not keep separate records for back years, and thus a merger that occurred in 2010 would be reflected in the data for all previous years. For that reason, conflicts between the two systems often required detailed study and were only undertaken for those DUNS numbers with at least \$500 million in obligations in a given year.

FPDS is the only comprehensive data source of government contracting activity and is more than adequate for any analysis that is focused on trends and order-of-magnitude comparisons. However, like any data source, it has its limitations. As a result, the analysis presented in this report incurs five notable restrictions:

- First, contracts awarded as part of supplemental packages are not separately classified in FPDS or this report. As a result, this report does not distinguish between contracts funded by the DoD base budget and those funded by supplemental appropriations.
- Second, the analysis only covers contracts funded by and contracted through DoD. In 2010, for example, there were \$4.7 billion worth of contract dollars funded by DoD and contracted through other agencies; almost 80 percent of these were contracted through the General Services Administration (GSA).
- Third, FPDS focuses on prime contracts, and recently released subcontract data are incomplete and only available for the recent past. Therefore, only prime contract data are included in this report.
- Fourth, reporting regulations only require that unclassified contracts be included in FPDS. The CSIS research team interprets this to mean that few, if any, classified contracts are in the

database. For DoD, this omits a substantial amount of total contract obligations, perhaps as much as 10 percent. Such omissions are most noticeable in R&D contracts.

- Finally, it should be noted that classifications of contracts differs between FPDS and individual companies. For example, some contracts that a company may consider as services are labeled as products in FPDS and vice versa. This may cause some discrepancies between companies' reports and those of the federal government.

While the above methodology applies to all of the data in this report, additional methodology notes that are specific to some sections (e.g., competition, share of market by contractor size) are presented in those sections.

2. Overall Contract Spending

Top Line DoD Contract Spending, 1990–2011

Figure 2-1 presents total DoD spending from 1990 to 2011 as well as total dollars spent on defense contracts. Contract spending is tracked in FY 2011 dollar amounts by the lower portions of the bars, corresponding with the left-hand y-axis, and as a percentage of total DoD outlays by the line at the top of the graph, corresponding with the right-hand y-axis. The upper portions of the bars represent noncontract DoD spending in FY 2011 dollar amounts, including funding for personnel, organic construction, and maintenance, etc.

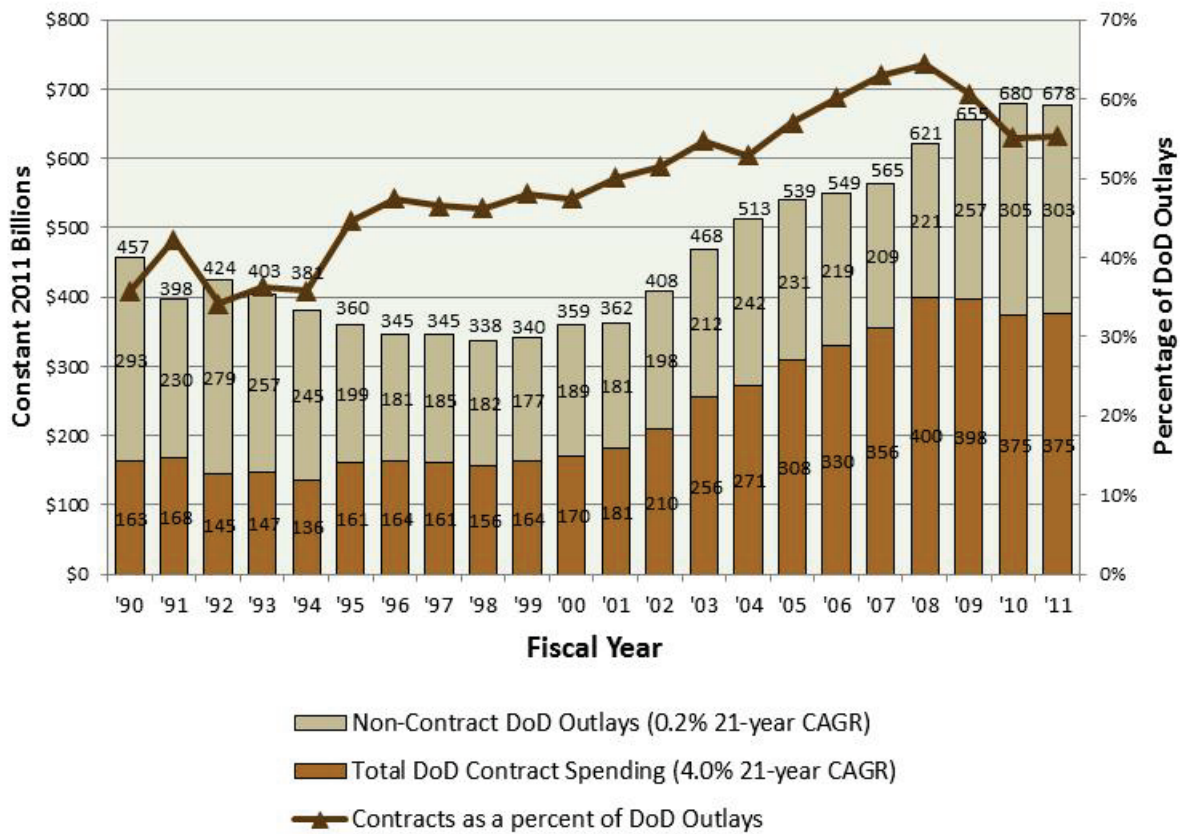
Between 2001 and 2011, dollars obligated to contract awards by DoD more than doubled, and contract spending outpaced growth in other DoD outlays.¹ This growth was predominantly in products and services, which experienced a 21-year compound annual growth rate (CAGR) of 8.4 percent and 9.4 percent, respectively, compared to the R&D category's 5.4 percent annual growth. Contract spending relative to DoD outlays reversed sharply beginning in 2008, but largely as a result of other DoD outlays increasing rapidly rather than of the comparatively small but sustained decline in contract spending. In terms of average annual growth, the increase in DoD contract spending since 1990 far outpaced that of other DoD outlays. Between 1990 and 2011, other outlays grew by only 0.2 percent per year, while contract spending grew by 4.0 percent. This difference was also striking during the post-9/11 period. Over the last 11 years, contract spending grew by 7.4 percent annually, while other outlays increased at 4.4 percent per year.

In the years 2008 to 2011 there was a profound shift in DoD contract spending. While absolute obligations for defense services contracts declined by \$25 billion and dropped from 64 percent of total DoD acquisition outlays to 55 percent, noncontract defense spending increased by \$71 billion and increased from 36 percent of DoD acquisition outlays to 45 percent. Therefore, as DoD contracts spending decreased at an annual average of 2.1 percent in total value, its noncontract acquisitions increased by an 11.1 percent CAGR for the same period.

Given that there was no significant change in overall DoD contract spending between 2010 and 2011, it is possible that an equilibrium in the ratio between DoD contracts spending and other spending has been reached. This kind of steady relationship for DoD spending, split between contracts and other accounts, has not been seen since the years 1995 to 2001, although the current level of spending and percentage of contract spending was much higher in 2010 to 2011 than in those years. However, anticipated reductions in defense spending beginning in 2012 will likely affect all DoD outlays in the coming years.

¹ Note that in 1991 (following the Persian Gulf War) the report counts only gross spending, rather than the smaller net spending number that is offset by foreign receipts.

Figure 2-1. Top Line DoD Contract Obligations, 1990–2011 (in FY 2011 dollars)



Note: Dollar figures may not sum to total due to rounding.

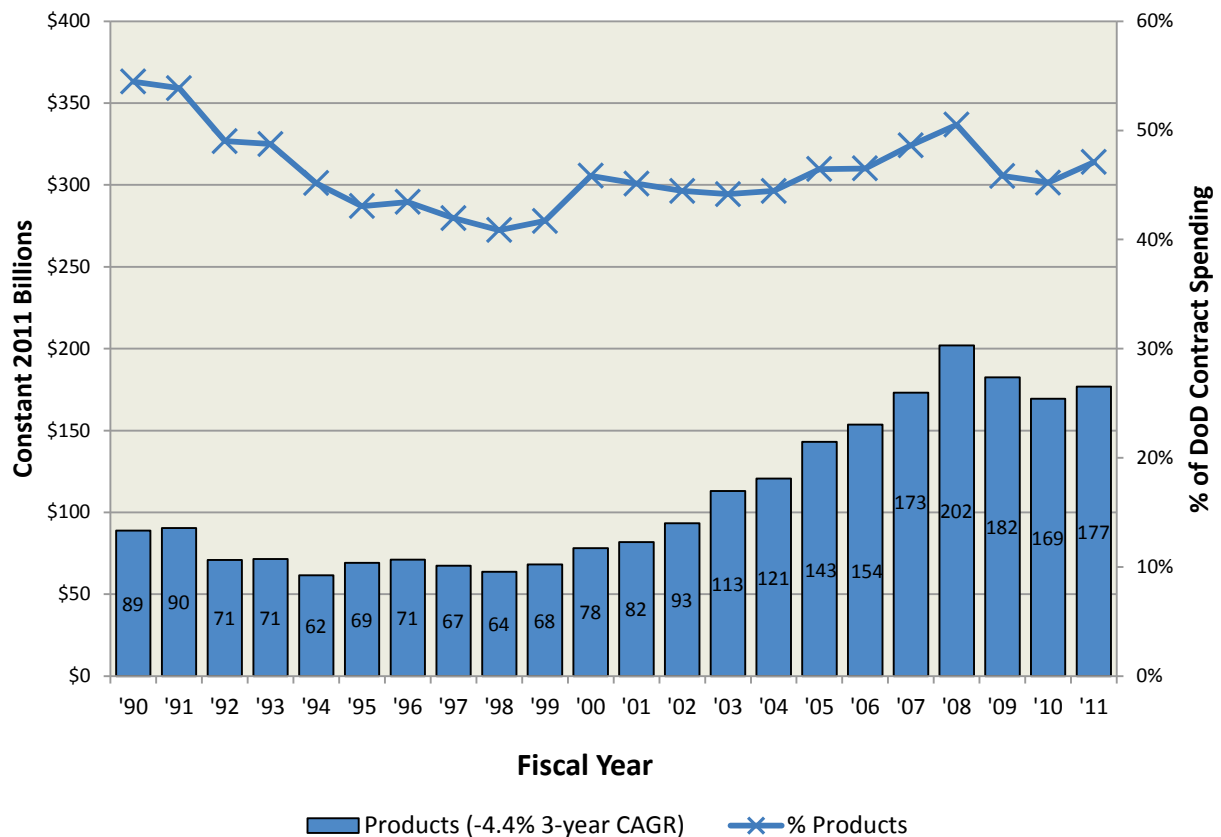
Source: FPDS; CSIS analysis.

DoD Contract Obligations for Products, 1990–2011

Figure 2-2 presents DoD obligations for product-related contracts, which is a subset of the DoD contract obligations data from the previous figure. The bars linked to the data on the left-hand y-axis track the total FY 2011 dollars obligated, while the line tracks these obligations as a percentage of total DoD contract obligations.

Prior to 2001, DoD obligations for products as a percentage of total DoD contract obligations had been declining steadily to a low of 42 percent. After this period of stagnation, and due to a large extent to the demands of contingency operations in Iraq and Afghanistan, DoD obligations for products began growing from slightly under \$100 billion in 2002 to a peak of \$202 billion by 2008. Despite this strong growth, however, DoD obligations for products managed only to keep pace with the rate of growth in overall contract obligations. Aside from an obligations spike in 2008, DoD obligations for products have remained between 44 percent and 50 percent of total DoD contract obligations over the past decade. However, from 2008 to 2011, DoD obligations for products decreased in absolute value by an average of 4.4 percent annually, but between 2010 and 2011 alone it rose from \$169 billion to \$177 billion (from 45 percent to 47 percent of contract obligations) due primarily to a rise in Navy obligations for fixed- and rotary-wing aircraft, submarines, and destroyers.

Figure 2-2. DoD Contract Obligations for Products, 1990–2011 (in FY 2011 dollars)



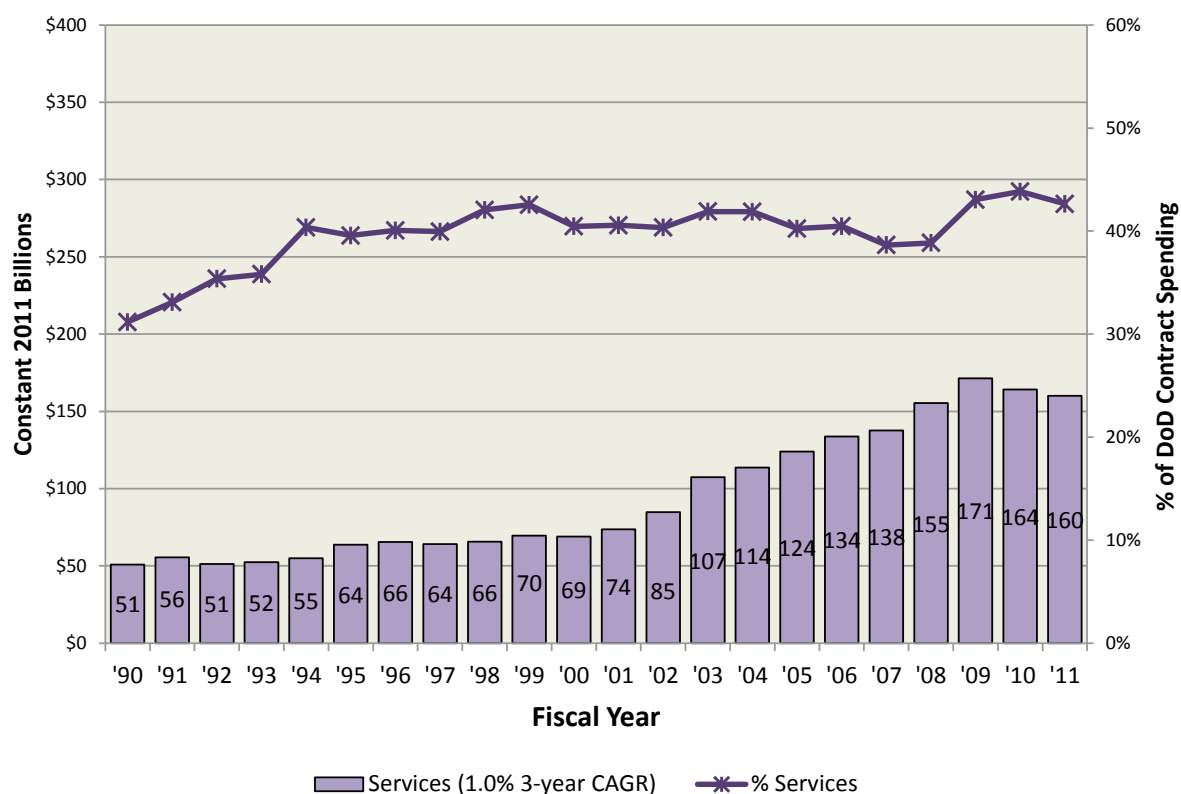
Source: FPDS; CSIS analysis.

DoD Contract Obligations for Services, 1990–2011

Figure 2-3 presents the second subset of the total DoD contract obligations data: obligations for services contracts. Again, the bars present the data in FY 2011 dollars linked to the left-hand y-axis, while the line presents these obligations as a percentage of total DoD obligations for contracts, linked to the right-hand y-axis. (Note that the services category does not include R&D contract obligations, other than obligations for R&D management and support services.)

Dollars obligated on services contracts grew steadily throughout the 1990s and remained at a level of 40 to 42 percent of total DoD contract obligations until falling to 39 percent in 2007. Between 2008 and 2011, the level of defense obligations for services contracts grew very little, rising by only 1 percent per year. Yet, due to decreases in contract obligations for products, the relative dollar share of services contracts rose from 39 percent of total DoD obligations to 43 percent. However, unlike DoD contract obligations for products, there was a slight decrease in obligations for services between 2010 and 2011. It is too soon to tell if this trend will continue in 2012.

Figure 2-3. DoD Contract Obligations for Services, 1990–2011 (in FY 2011 dollars)



Source: FPDS; CSIS analysis.

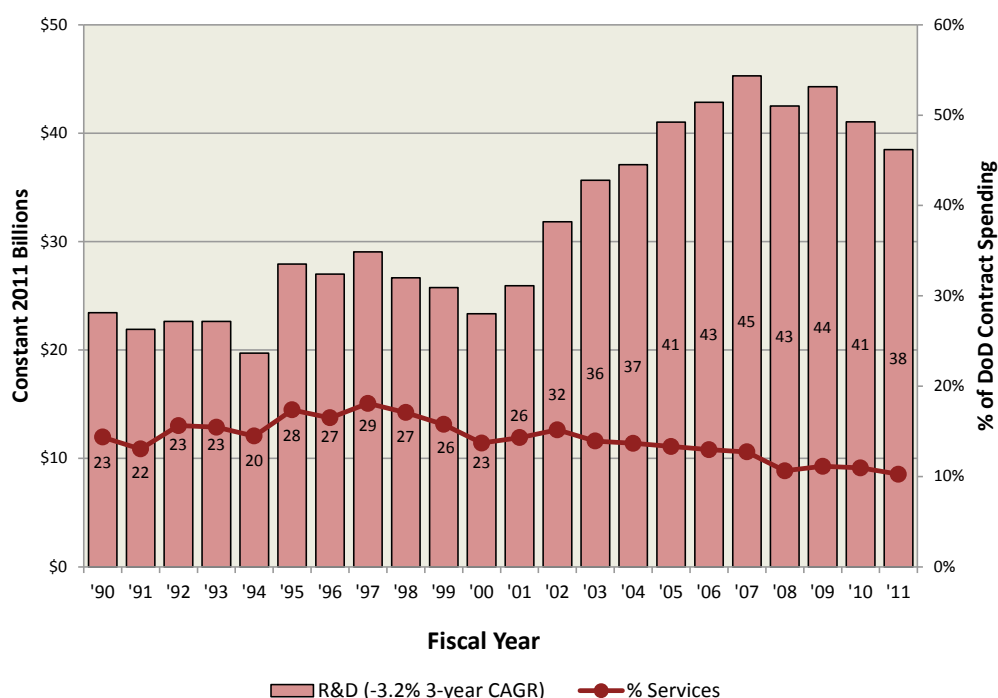
DoD Contract Obligations for R&D, 1990–2011

In Figure 2-4, the third subset of total DoD contract obligations—obligations for R&D contracts—is presented, following the same conventions as the previous two figures. The R&D data presented in this report refer to contract dollars classified using an R&D product or service code rather than all funds from DoD’s RDT&E account. In addition, much of DoD’s R&D activity is classified, and since FPDS does not include classified or in-house obligations data, these efforts are not included in the data presented here. As a result, defense R&D obligations represented here is much lower than overall obligations for this category (which totaled some \$77 billion in 2011).

Historically, when defense budgets increased, obligations for defense R&D also increased. Consistent with this trend, defense dollars obligated to R&D contracts increased significantly from 2000 through 2008, growing at a rate of 7.8 percent annually for that period. However, as a percentage of total defense contract dollars obligated, R&D fell relative to products and services throughout the late 1990s and the 2000s, dropping to a low of 11 percent of total DoD contract obligations in 2008. For the period 2008 to 2011, DoD obligations for R&D contracts continued to decline significantly, losing an average of 3.2 percent of value per year and resulting in an absolute decrease from \$42.5 billion to \$38.5 billion.

The trend in defense R&D contract obligations has potentially negative implications for product and process improvements in the wake of recent contingency operations. Historically, the benefits of R&D are realized during a drawdown of forces, as the majority of R&D investment is made during buildups. With the ratio of investment in R&D to the rest of defense contract obligations lower over the past 21 years than in previous decades, the benefits to R&D investments that will be reaped from a drawdown in the coming years will be fewer. This seems increasingly likely to be the case given that obligations for R&D contracts continued to decrease after U.S. forces withdrew from Iraq.

Figure 2-4. DoD Contract Obligations for R&D, 1990–2011 (in FY 2011 dollars)



Note: The y-axis scale differs in this chart from the other charts in this section due to the lower dollar amounts for R&D.
Source: FPDS; CSIS analysis.

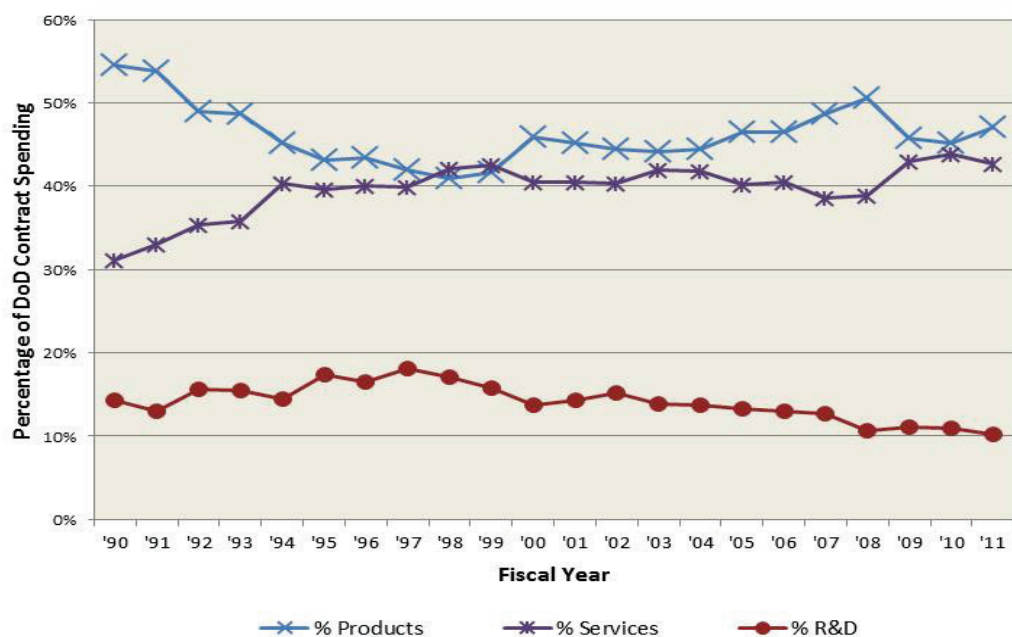
DoD Contract Obligations by Category in Percentage Terms, 1990–2011

Assembled from the previous three figures, the lines in Figure 2-5 track the changes in the composition of DoD contract obligations among products, services, and R&D contract dollars. Each line tracks the percentage of total DoD contract dollars awarded in each category in the period 1990 to 2011.

Comparing the relative levels of defense obligations in each of the three categories, clear shifts in priorities are evident following the end of the Cold War and following U.S. troop withdrawal from Iraq. These shifts are most pronounced in contract obligations for products and services. Reductions in both military and civilian personnel after the Cold War led to an increase in outsourcing to continue providing many services, while obligations for products decreased with the smaller force structure. The relative shares of product and services obligations converged in 1998 and 1999, with the former decreasing and the latter increasing. After this point, products edged up over services, and the gap widened with the initiation of Operation Iraqi Freedom in 2003. The relative shares of services and products appeared to begin converging again after 2008, as absolute levels of obligations declined sharply for products while obligations for services remained relatively stable. However, FY 2011, the most recent fiscal year, saw a sharp increase in product obligations (mostly by the Navy) and a small decrease in services obligations that widened this gap.

The data for recent years show the degree to which operations in Afghanistan and Iraq independently influenced DoD obligations. While contract dollars for products decreased significantly during U.S. troop withdrawal from Iraq in 2009 and 2010, the sudden increase in 2011 may be a one-time adjustment or may mark the end of the resulting “peace dividend.” Obligations for services, however, declined more slowly than that on products after 2009 and continued to decrease in 2011. A similar trend was seen post–Cold War/post–Gulf War, as products obligations decreased at an average of 1.3 percent annually while services obligations increased by 3.3 percent from 1990 to 2000. One explanation might be that in the wake of major operations, obligations for products decreases more abruptly while obligations for services declines more slowly. This is due, perhaps, to the longer-term nature of demand for services contracts, as opposed to contracts for products (e.g., fuel, munitions), which are more easily terminated (or not renewed) at the end of a conflict, when demand also ends or is reduced.

Figure 2-5. DoD Contract Obligations by Category in Percentage Terms, 1990–2011 (in FY 2011 dollars)



Source: FPDS; CSIS analysis.

3. Contract Obligations by DoD Component

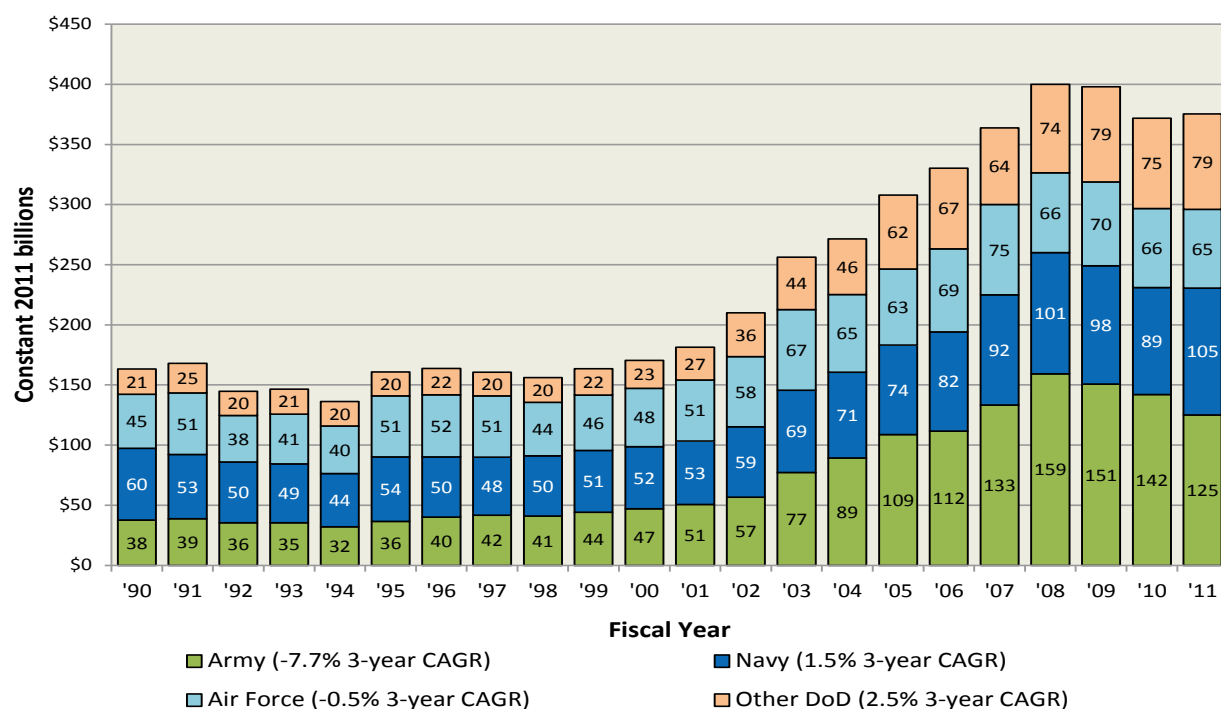
DoD Contract Obligations by Component, 1990–2011

In Figure 3-1, the total DoD contract obligations for each year, presented in the aggregate in Figure 2-1, are broken down by each military department's share of the total. The Army, Navy, and Air Force are individually presented, and the remaining DoD components are combined into the category of Other DoD and their obligations are aggregated.

In the past decade, trends in contract obligations by the key DoD components are visibly tied to operations in Iraq and Afghanistan. Until 2002, each of these components' contract obligations was relatively flat. This changed rapidly after 9/11, with the greatest increases occurring in the Army: 139 percent total growth from 2002 to 2010 at an annual rate of 7 percent. Growth in the Other DoD category (111 percent total increase from 2002 to 2010) was driven primarily by the Defense Logistics Agency (DLA) and, to a lesser extent, by the Tricare Management Agency (TMA). Obligations by the Navy grew somewhat more slowly, rising 54 percent from 2002 to 2010, followed by the Air Force at 14 percent growth during this period.

From 2008 to 2011, due to the drawdown in Iraq and increased fiscal austerity measures, the relative component shares of DoD contract obligations underwent a major shift. This affected the Army most of all, and its overall contract obligations decreased at an average of 7.7 percent per year between 2008 and 2011. Air Force obligations decreased only slightly at 0.5 percent per year on average, while Navy contract obligations increased by 1.5 percent annually. The category of Other DoD grew in value by a yearly average of 2.5 percent during the past three years, largely driven by obligations by the U.S. Transportation Command (USTRANSCOM), TMA, and the Defense Information System Agency (DISA).

Figure 3-1. DoD Contract Obligations by Component, 1990–2011 (in FY 2011 dollars)



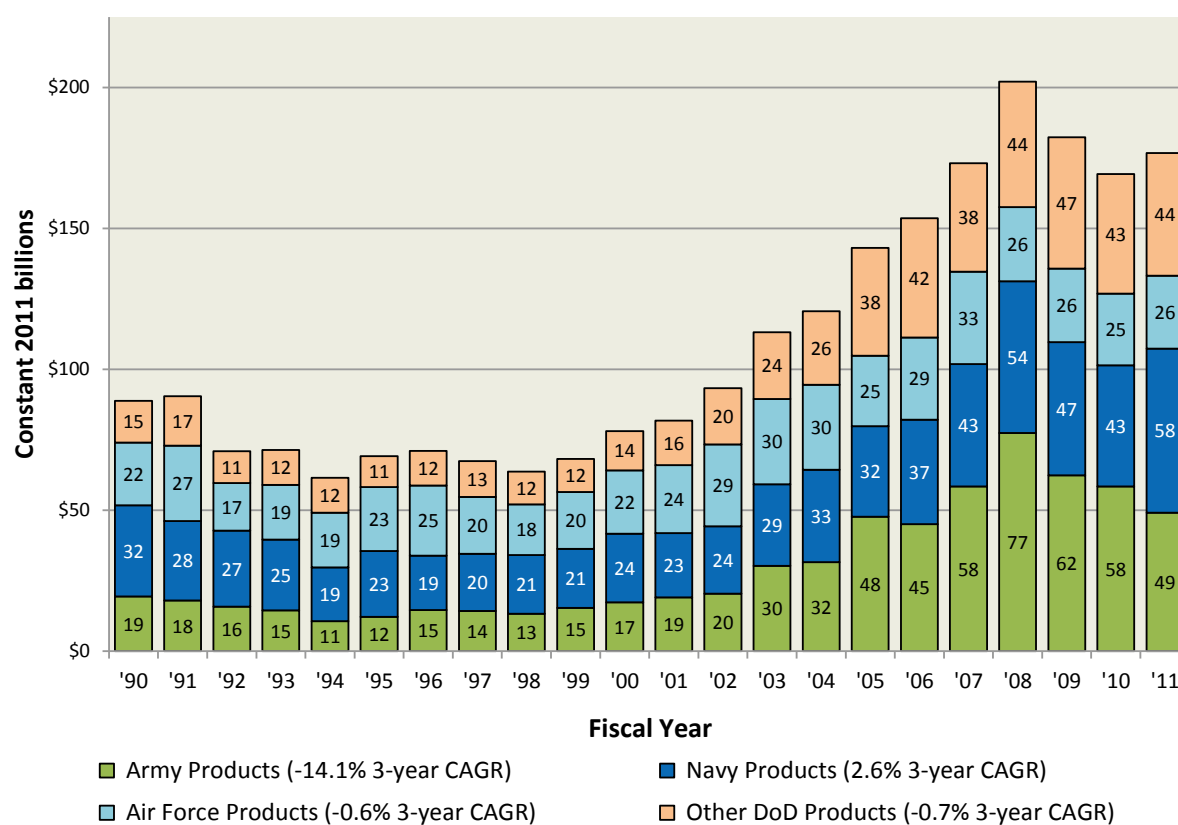
Source: FPDS; CSIS analysis.

DoD Contract Obligations for Products by Component, 1990–2011

Breaking down the data on product-related obligations (Figure 2-2) by individual DoD department yields the trends illustrated in Figure 3-2. Each bar segment represents a DoD component's obligations for products.

After a decline between 1991 and 1999, obligations for products by all DoD entities combined increased by 12.6 percent annually between 2000 and 2008. This growth was largely driven by the Army (20.5 percent CAGR between 2000 and 2008) and Other DoD category (with a CAGR of 15.6 percent for the same period). Obligations for products contracts by the Army over the eight years of combat operations in Iraq and Afghanistan between 2002 and 2010 grew slightly faster at 14 percent per year, while the Navy grew at 7.6 percent annually and the category of Other DoD entities increased their obligations by 10 percent annually, driven largely by fuel contracts from the DLA. During the withdrawal of U.S. forces in Iraq from FY 2008 to 2011, Army products obligations decreased precipitously by an average of 14.1 percent per year, pulling down overall DoD obligations for products. Air Force obligations for products contracts also decreased, but only slightly, at 0.6 percent per year on average, while the category of Other DoD decreased at the same rate. Navy obligations rose slightly (2.6 percent three-year CAGR) during this time, but this was largely due to a \$15 billion increase between 2010 and 2011. Much of this sudden increase in products contract obligations is accounted for by growth in a handful of product codes: fixed- and rotary-wing aircraft, submarines, and destroyers. Collectively, the dollar values associated with these product codes increased from \$11.6 billion in 2010 to \$23.3 billion in 2011. Prior to that increase, between 2008 and 2010, Navy obligations decreased nearly 20 percent in total value.

Figure 3-2. DoD Contract Obligations for Products by Component, 1990–2011 (in FY 2011 dollars)



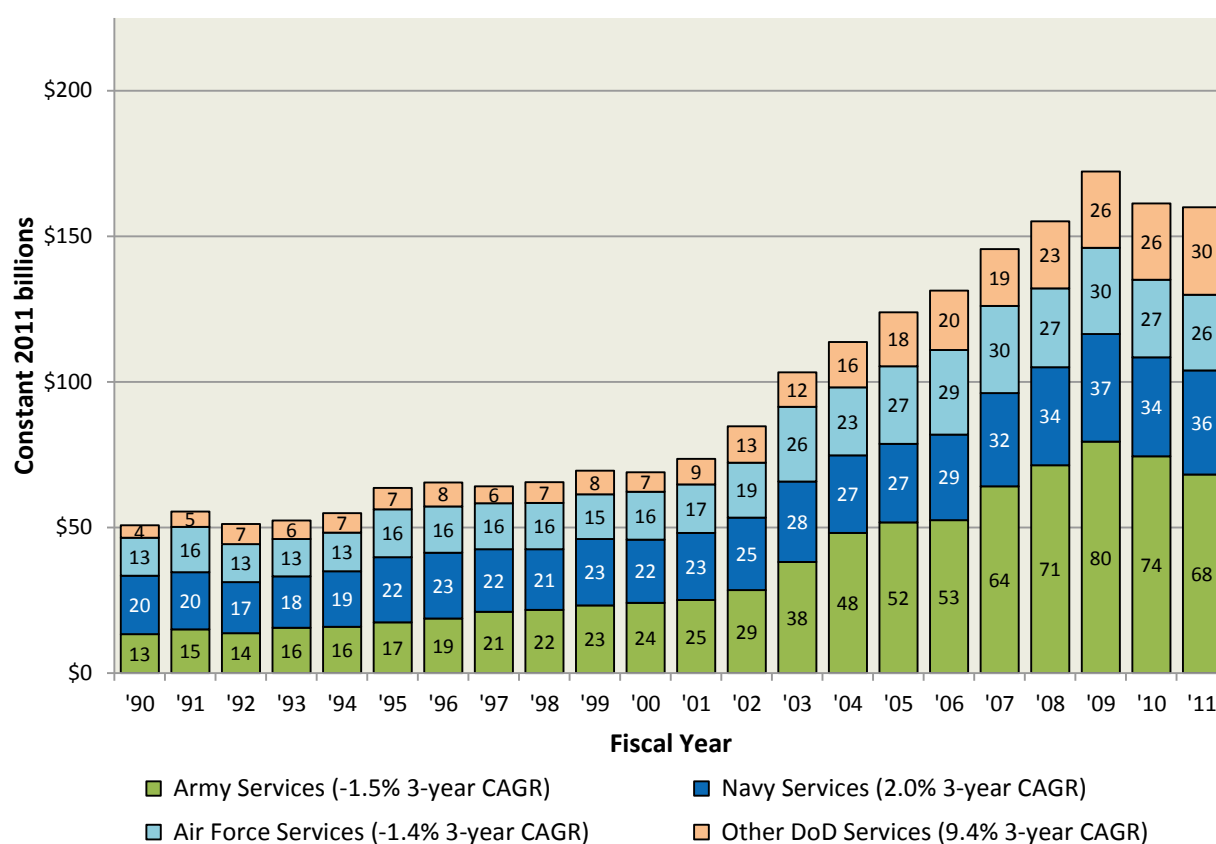
Source: FPDS; CSIS analysis.

DoD Contract Obligations for Services by Component, 1990–2011

In Figure 3-3, DoD contract obligations for services are broken down by DoD component.

Obligations for services across the various DoD components grew faster than obligations for products from 1990 to 2011, particularly between 2002 and 2010. The primary drivers of this growth were the same as for the growth in products obligations: the Army and the category of Other DoD. Between 2002 and 2010, the Army's obligations for contracts for services grew at nearly 13 percent per year, compared to its 8 percent growth over the 1990 to 2011 period. In the last three years, the Army's obligations for services contracts declined at an average of 1.5 percent annually, while the Air Force's obligations decreased at a similar rate, pulling down overall DoD services obligations. Navy obligations for services in the last four years were at a 20-year high, fluctuating between \$34 and \$37 billion each year.

Figure 3-3. DoD Contract Obligations for Services by Component, 1990–2011 (in FY 2011 dollars)



Source: FPDS; CSIS analysis.

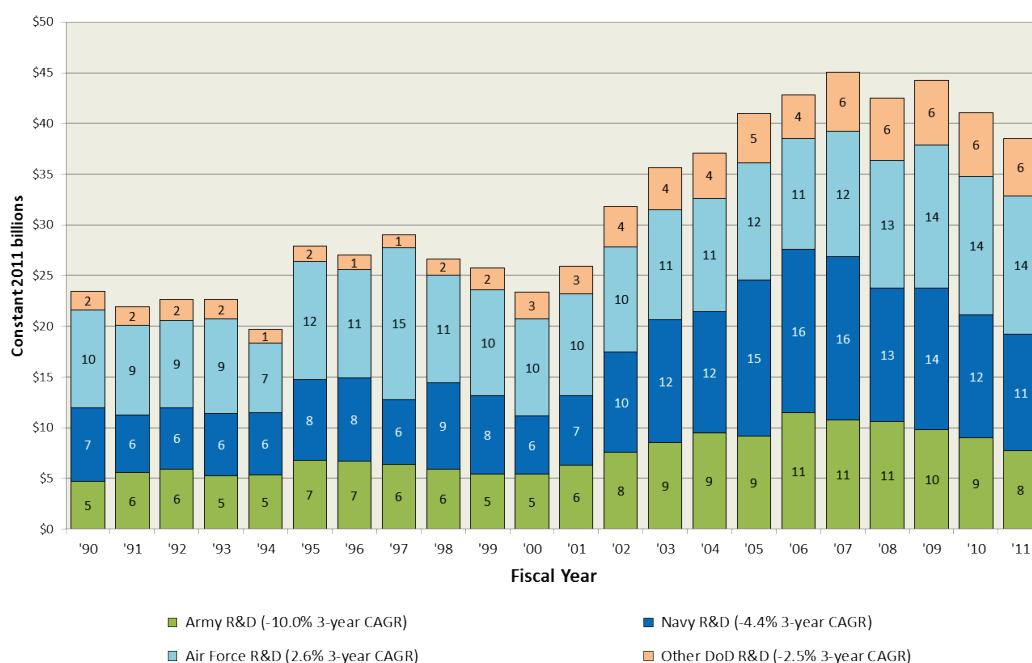
DoD Contract Obligations for R&D by Component, 1990–2011

Figure 3-4 breaks down DoD total obligations, by component, for R&D-related contracts, which was presented for all of DoD in Figure 2-4. Note that the data used in this report include only unclassified R&D contracts.

Within the R&D category, there was little growth in dollars obligated by each of the DoD entities between 1990 and 2011. The strongest growth rate during this period was for the nonmilitary components of DoD at 5.6 percent, followed by the Army at 2.4 percent, the Navy at 2.2 percent, and only 1.7 percent from the Air Force. Most of this growth occurred post-9/11, with DoD components other than the military departments increasing their R&D contract dollars by 6.2 percent per year from 2002 to 2010, the Air Force increasing obligations by 3.4 percent annually, followed by the Navy at 2.6 percent, and the Army trailing at a 2.2 percent CAGR. Note that according to one source, the Air Force had the majority of classified R&D programs (by value) in FPDS and accounted for approximately \$12 billion of the \$18 billion contracted for these programs in 2009.² Those contract obligations are not reported in FPDS and therefore are not reflected in these data.

In the past three years (2008–2011), a marked decrease in R&D contract obligations occurred in each of the key DoD components except for the Air Force. During this period, R&D contract obligations by the Army decreased by an annual average of 10 percent each year, while those of the Navy declined at more than 4 percent annually and the category of Other DoD decreased by 2.5 percent. Only the Air Force increased its obligations for R&D contracts during this time, by a 2.6 percent CAGR.

Figure 3-4. DoD Contract Obligations for R&D by Component, 1990–2011 (in FY 2011 dollars)



Note: The y-axis scale differs in this chart from the other charts in this section due to the lower dollar amounts for R&D.
Source: FPDS; CSIS analysis.

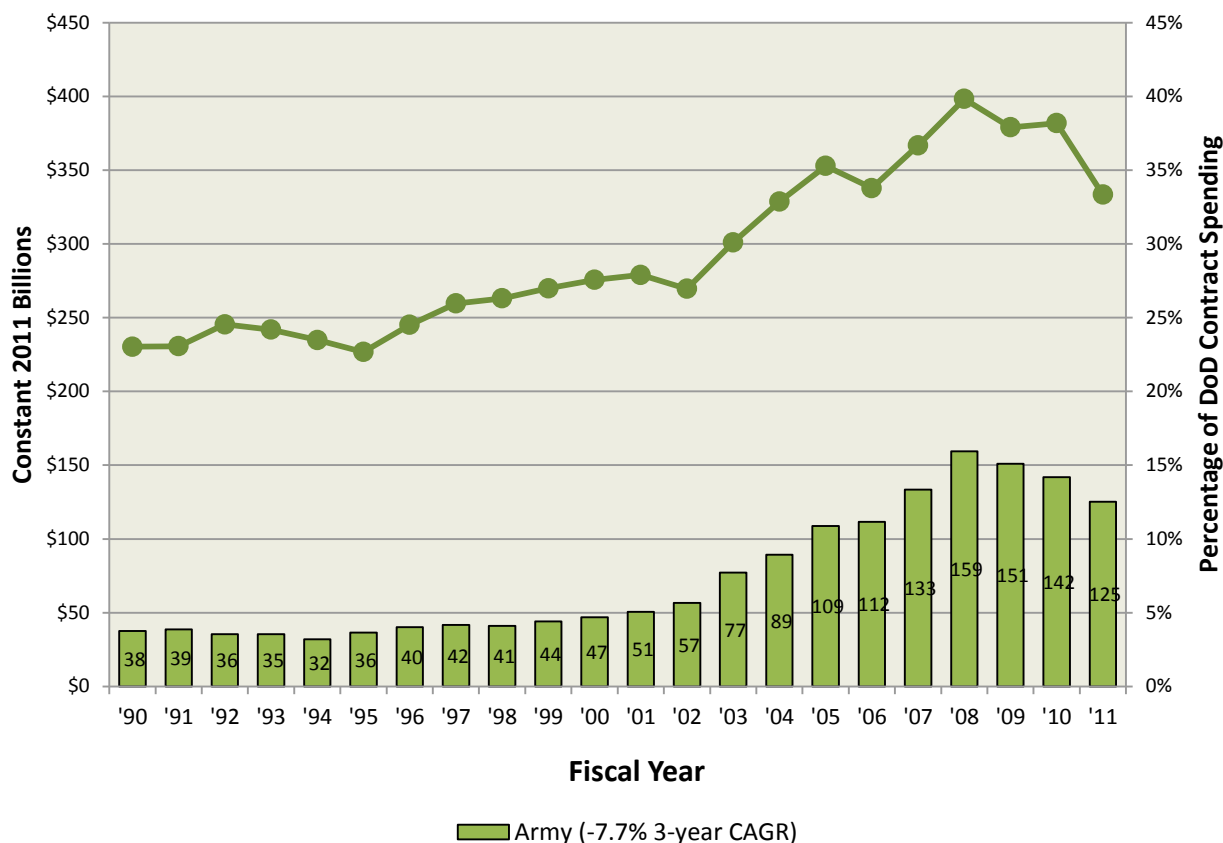
² Todd Harrison, “Classified Funding in the FY 2010 Defense Budget Request,” Center for Strategic and Budgetary Assessments, August 12, 2009, <http://www.csbaonline.org/publications/2009/08/classified-funding-in-the-fy-2010-defense-budget-request/>.

Army Contract Obligations, 1990–2011

The Army's total obligations for contracts for the years 1990 to 2011 are displayed in FY 2011 dollar amounts in the bars and on the left-hand y-axis in Figure 3-5 below. The line above the bars tracks Army contract obligations as a percentage of total DoD dollars obligated on contracts and is linked to the data on the right-hand y-axis.

Army contract obligations have grown substantially over the past decade. During the 1990s, the Army accounted for between 23 and 25 percent of total DoD contract obligations. Beginning in FY 2002, this share grew rapidly, reaching 40 percent of total DoD contract obligations by 2008. Growth in Army contract obligations averaged over 9 percent per year since 1999 and is almost entirely attributable to Army operations in Afghanistan and Iraq. However, following the withdrawal of U.S. forces from Iraq, Army contract obligations dropped from 38 percent of total DoD contract obligations in 2009 to 33 percent in 2011, an average 7.7 percent yearly decrease in the total value of Army contract obligations during this time period.

Figure 3-5. Army Contract Obligations, 1990–2011 (in FY 2011 dollars)



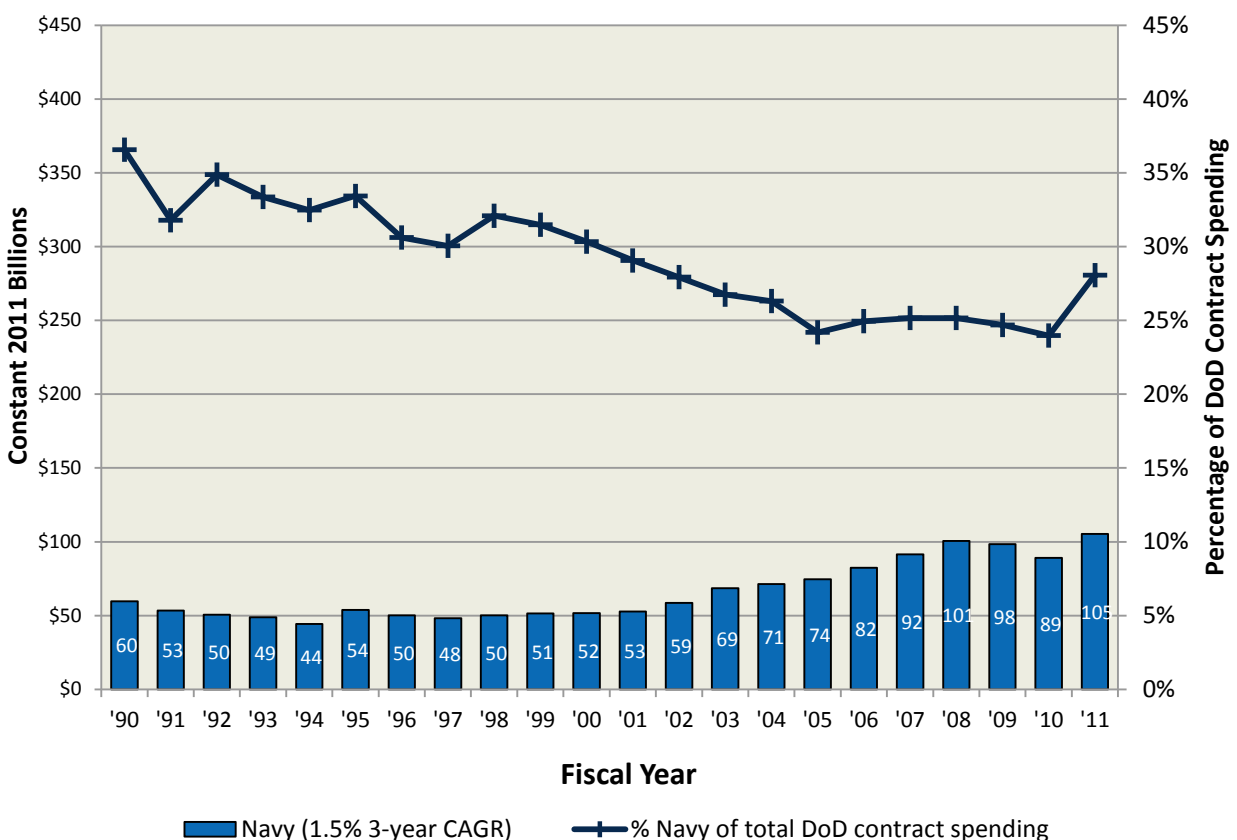
Source: FPDS; CSIS analysis.

Navy Contract Obligations, 1990–2011

Figure 3-6 below displays the aggregate Navy contract obligations for each year from 1990 to 2011. The bars are tied to the FY 2011 dollar amounts on the left-hand y-axis, and the line tracks the percentage of DoD contract obligations accounted for by the Navy, as displayed on the right-hand y-axis.

Navy contract obligations followed an opposite trend to that of the Army. Since 1990, the Navy's contract obligations as a percentage of DoD-wide obligations fell from nearly 37 percent to only 25 percent, where they remained until 2009, despite a considerable increase in dollars obligated, and then started to decrease further. This relative decline occurred despite increased obligations by the Marine Corps (which is included in the Navy budget) due to the wars in Iraq and Afghanistan. For the years 2008 to 2011, Navy obligations increased at an average of 1.5 percent per year, raising its share of overall contract dollars obligated by DoD during this time from 25 percent to 28 percent (as Army obligations declined). The greatest driver of growth in the Navy account during the past years was products, without which Navy obligations would have continued their decline from 2008. As described in Figure 3-2 earlier in this report, the increase in Navy product obligations between 2010 and 2011, which accounted for \$12 billion of the growth in Navy contract obligations overall between these years, resulted from sudden increases in products contract obligations related to the acquisition of fixed- and rotary-wing aircraft, submarines, and destroyers.

Figure 3-6. Navy Contract Obligations, 1990–2011 (in FY 2011 dollars)



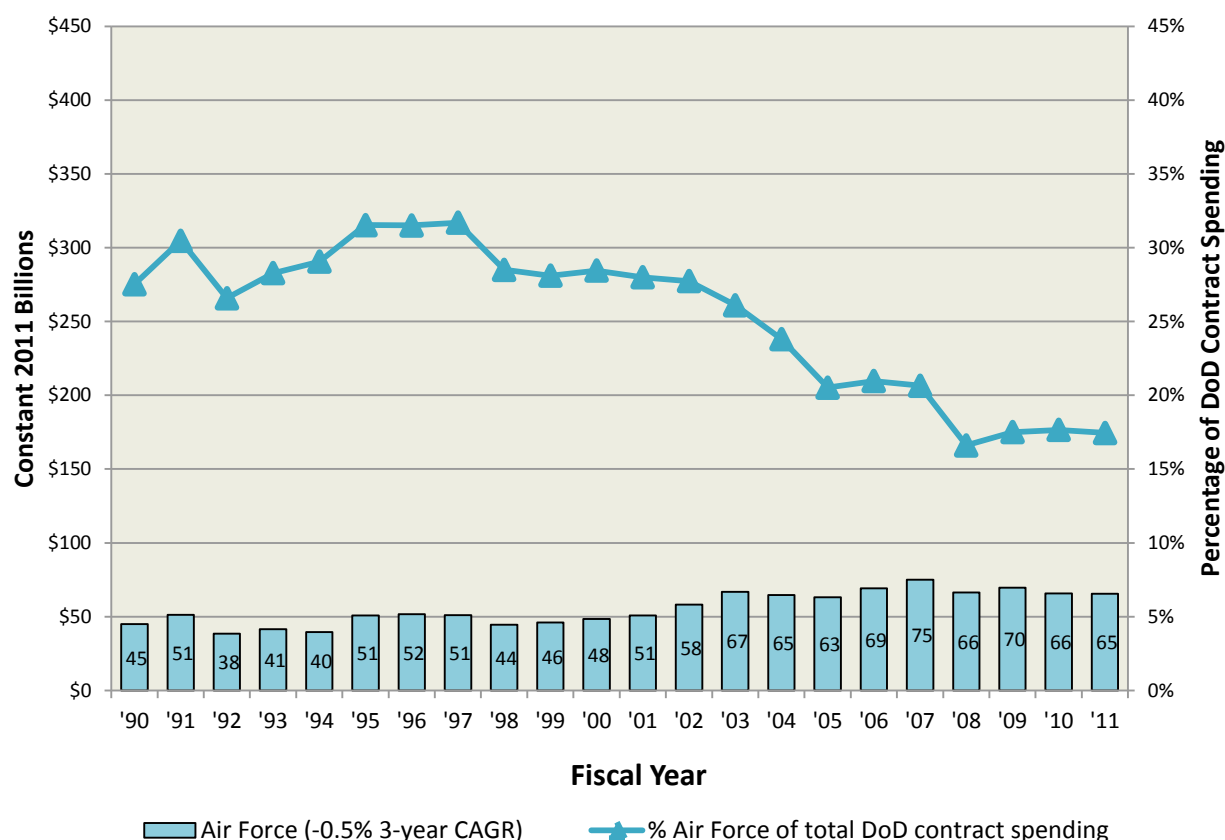
Source: FPDS; CSIS analysis.

Air Force Contract Obligations, 1990–2011

Total contract obligations for the Air Force are presented in Figure 3-7 in both FY 2011 dollar amounts (represented by the bars tied to the data on the left-hand y-axis) and as a percentage of total DoD obligations for contracts (represented by the line tied to the data on the right-hand y-axis).

The Air Force's share of DoD-wide contract obligations declined steeply during the past decade, even as the number of contract dollars it awarded remained flat or increased. In fact, Air Force contract obligations as a percentage of DoD obligations recently dropped to an all-time low since its founding in 1947, even though its absolute share of contract dollar obligations increased over 32 percent between 2001 and 2011 alone. Unprecedentedly, the Air Force fell behind even the category of Other DoD in its relative share of DoD contract obligations in 2010 and continued its decline in 2011. For the period 2008 to 2011, Air Force contract obligations decreased at 0.5 percent per year on average, maintaining its 17 percent share of total DoD contract obligations. It should again be noted that classified projects account for a considerable share of Air Force contract obligations, but this is not captured in FPDS.³

Figure 3-7. Air Force Contract Obligations, 1990–2011 (in FY 2011 dollars)



Source: FPDS; CSIS analysis.

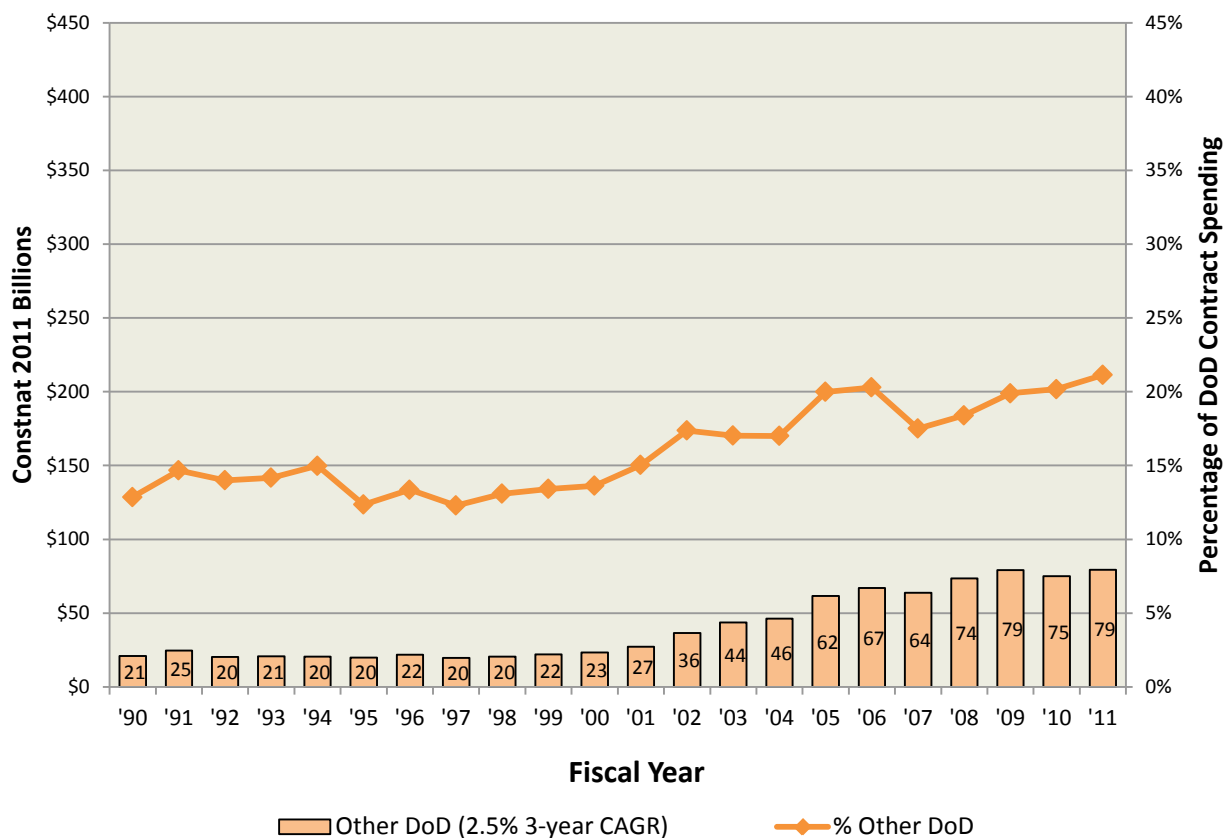
³ Ibid.

Other DoD Components Contract Obligations, 1990–2011

Total contract obligations by all other DoD entities, aggregated in the Other DoD category, are presented in Figure 3-8. As in the previous three figures, the data are expressed in absolute dollar amounts, represented by the bars and the left-hand y-axis, and as a percentage of overall DoD contract obligations, represented by the line and the right-hand y-axis.

As previously discussed, obligations by civilian DoD components saw very little growth between 1990 and 2000, then increased substantially as of 2001. The sharp increase in obligations by the Defense Logistics Agency in support of operations in Iraq and Afghanistan was the key driver of growth in the Other DoD category from 2002 to 2009. In the latter years of the period analyzed, the Tricare Management Agency, the Defense Information Security Agency, and the Missile Defense Agency significantly contributed to growth in the category of Other DoD. As a result, total obligations for contracts by DoD components other than the military departments almost tripled in value within the past decade. Over the period 2008 to 2011, growth in obligations in the Other DoD category slowed to a compound average rate of 2.5 percent per year compared to its 6.5 percent CAGR for the entire period analyzed.

Figure 3-8. Other DoD Components Contract Obligations, 1990–2011 (in FY 2011 dollars)



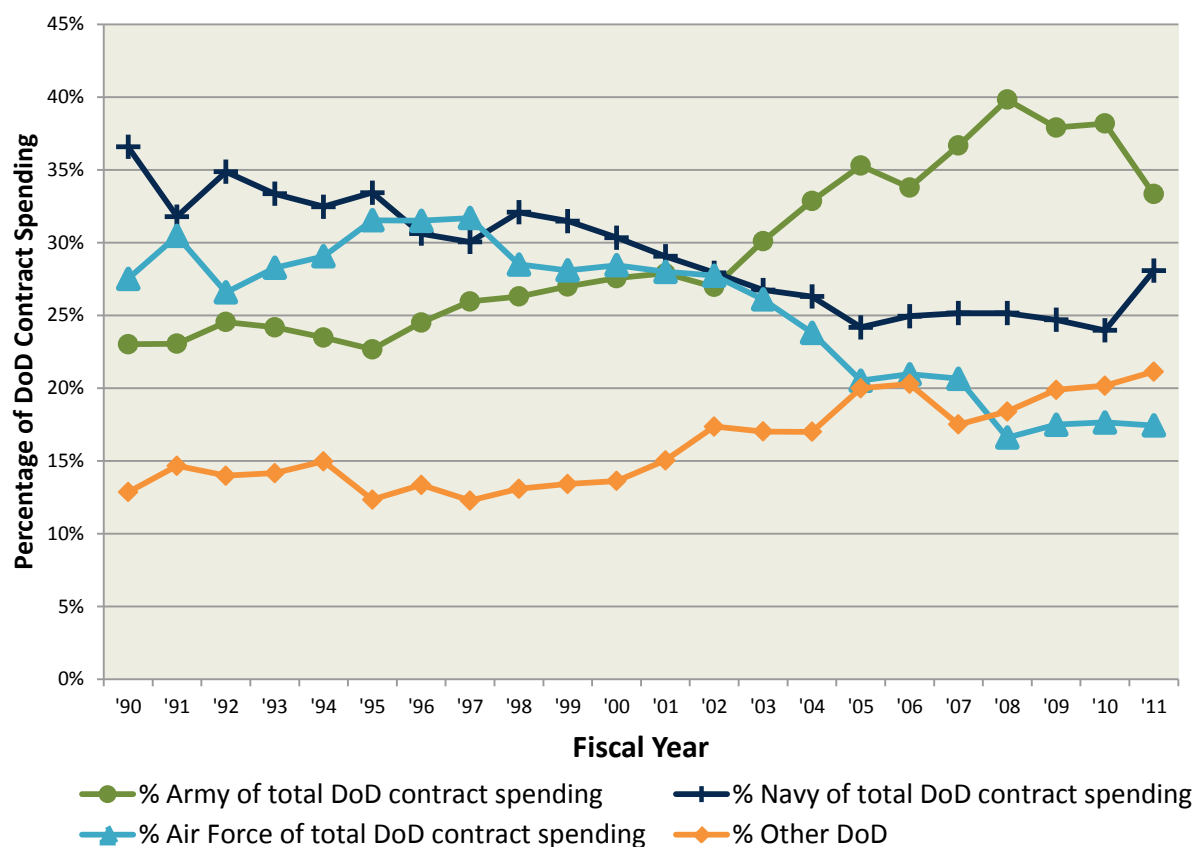
Source: FPDS; CSIS analysis.

Share of DoD Total Contract Obligations by Component, 1990–2011

To show the relative shares of total DoD contract obligations by the individual DoD departments from 1990 to 2010, the percentage lines from the previous four figures are grouped together in Figure 3-9. All values represented in the graph are expressed in percentage of total DoD contract obligations for each year.

Driven by operations in Iraq and Afghanistan, the Army's contract obligations grew rapidly post-2001 to claim the largest share of defense contract dollars (40 percent at its peak in 2008 compared to 27 percent in 2001). However, with U.S. troops withdrawn from Iraq, the Army's share plunged from 38 percent in 2010 to 34 percent in 2011. The Navy's share of defense contract dollars held mostly steady after 2004 at 25 percent, following a long decline from 1990 levels. In the last two years observed, Navy contract obligations surged from 24 percent to 28 percent due to both decreasing Army obligations and a surge in Navy contract obligations. In an unprecedented occurrence, the Air Force dropped to the lowest share of defense contract obligations in 2008 at nearly 17 percent and, after a rise to 18 percent in 2009 and 2010, returned to 17 percent in 2011. However, this share does not reflect the Air Force's contract obligations for classified projects. Furthermore, the decline in Air Force and Navy shares of DoD contract dollars obligated was absolute gains observed in both of these accounts over the past decade. Meanwhile, the collective share of the category of all Other DoD entities rose to its highest point at 21 percent of DoD contract obligations in 2011, surpassing its previous peak in 2006.

Figure 3-9. Share of DoD Contract Obligations by Component, 1990–2011 (in FY 2011 dollars)



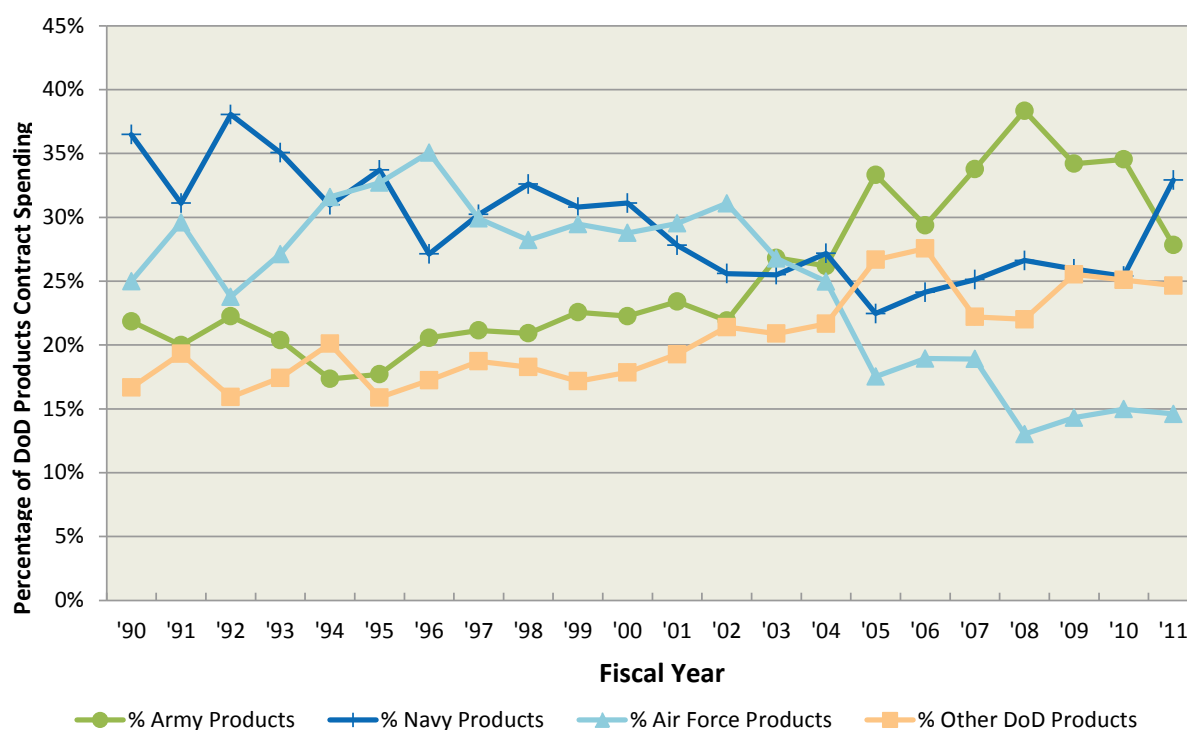
Source: FPDS; CSIS analysis.

Share of DoD Contract Obligations for Products by Component, 1990–2011

Figure 3-10 displays the relative shares of DoD obligations for products contracts for each major DoD component from 1990 to 2011. All values represented in the graph are expressed in percentages of total DoD obligations for product contracts for each year.

Over the last decade observed, the Army grew to account for the majority of DoD obligations for products while the Air Force's share declined considerably. From 23 percent of total DoD obligations for products in 2001, the Army's share increased to a peak of 38 percent in 2008. Meanwhile, the Air Force's share of DoD product obligations decreased from nearly 30 percent in 2001 to its lowest point of the decade at 13 percent in 2008. The Navy's share of DoD obligations for products remained stable by comparison, fluctuating between 24 percent and 28 percent for most of the decade. The category of Other DoD, meanwhile, generally increased its share, growing from just over 19 percent of DoD product obligations in 2001 to nearly 25 percent by 2011. However, the category of Other DoD fluctuated greatly: between 2004 and 2006, its share of product obligations increased from 21 percent to almost 27 percent; and between 2007 and 2008, it decreased to 22 percent of DoD product obligations. The last three years observed saw additional shifts in trends, as the share of DoD product obligations accounted for by the Navy increased sharply to nearly 33 percent in 2011 and the category of Other DoD declined to 25 percent in 2011. The Army's share continued to decrease from 34.5 percent in 2008 to 28 percent in 2011.

Figure 3-10. Share of DoD Products Contract Obligations by Component, 1990–2011 (in FY 2011 dollars)



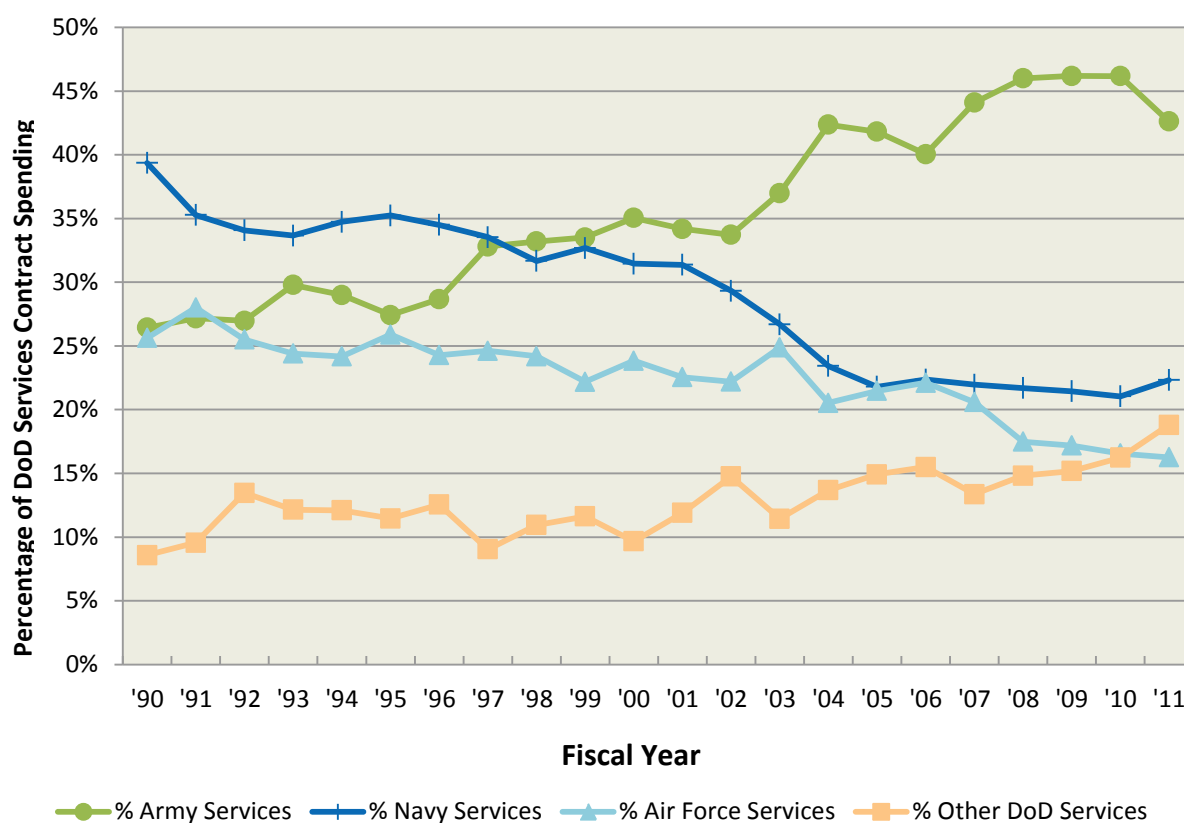
Source: FPDS; CSIS analysis.

Share of DoD Contract Obligations for Services by Component, 1990–2011

Figure 3-11 below compares the individual DoD components' levels of obligations for services contracts as percentages of total DoD obligations for services contracts during the period 1990 to 2011.

Over the last decade observed, the level of Army obligations for services grew at the fastest rate while the Air Force's and Navy's relative obligations levels decreased dramatically. At the end of 2001, the Army accounted for 34 percent of DoD obligations for services contracts, the Navy accounted for 31 percent, the Air Force for 22 percent, and the category of Other DoD for 12 percent. By 2008, at the height of DoD contract obligations in Iraq and Afghanistan, these numbers had diverged greatly, with the Army accounting for 46 percent of DoD obligations for services contracts, the Navy accounting for 22 percent, the Air Force for 17 percent, and the category of Other DoD for 15 percent. Over the last three years, the Army's share of total DoD obligations for services contracts began to decline, reaching 43 percent by 2011, while the Navy's share remained nearly constant and ended 2011 at 22 percent of DoD services contract obligations overall. The relative obligations for services contracts by the Air Force continued a decline begun in 2005, reaching 16 percent in 2011. The category of Other DoD continued a growth trend begun in 2007, surpassing the Air Force in 2010 and reaching 19 percent in 2011.

Figure 3-11. Share of DoD Services Contract Obligations by Component, 1990–2011 (in FY 2011 dollars)



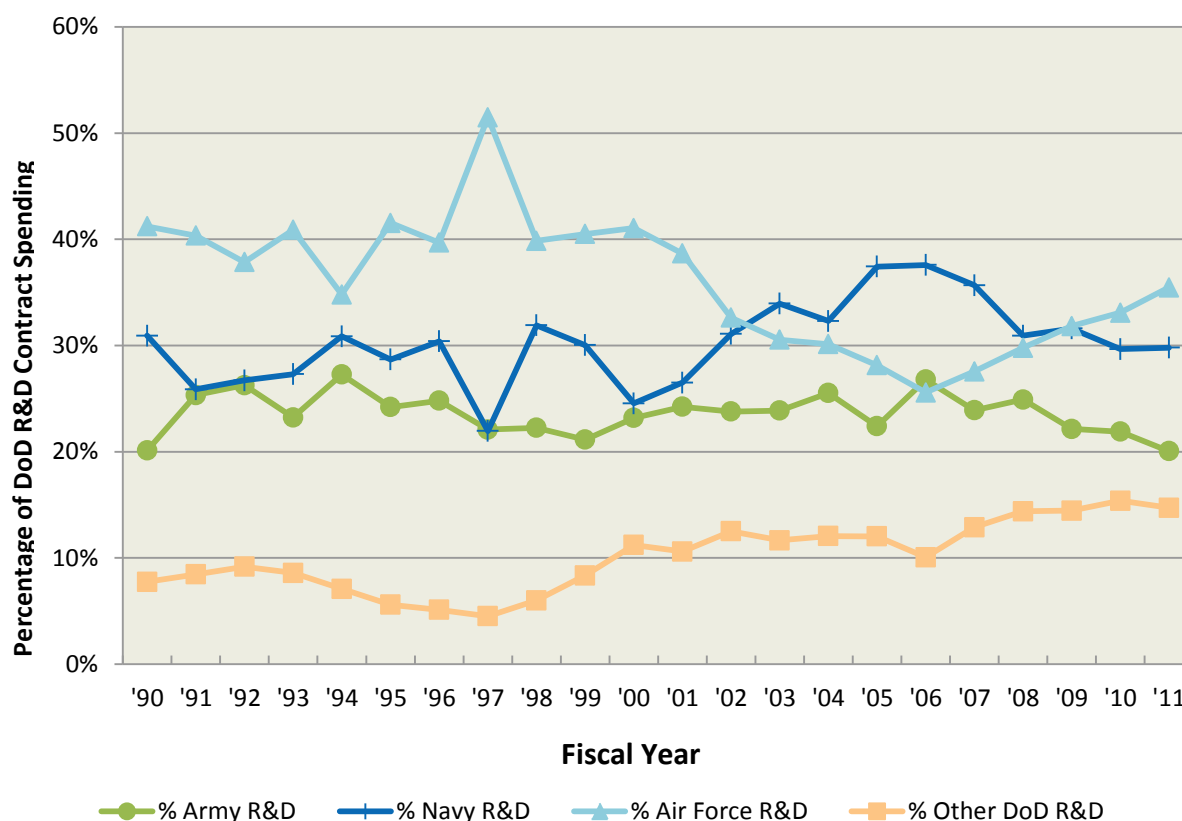
Source: FPDS; CSIS analysis.

Share of DoD Contract Obligations for R&D by Component, 1990–2011

Figure 3-12 presents the levels of each DoD component's obligations for R&D contracts as percentages of total DoD obligations for R&D contracts.

Between 1990 and 2001, the Air Force was the largest spender on R&D contracts within DoD, with the Navy the second largest. In 2001, the Navy obligated 26.5 percent of all defense R&D contract dollars, compared to the Air Force's 38.7 percent. By 2006, this situation had reversed itself, and the Navy accounted for 37.6 percent of total DoD contract dollars for R&D services, compared to the Air Force's 25.6 percent share. However, after 2006, these trends again began to reverse, and by 2011 the Navy accounted for 30 percent of DoD contract dollars paid for R&D services, while the Air Force accounted for 35.5 percent. The share of DoD R&D contract dollars obligated by the Army on R&D services held fairly constant until 2006, although its share declined from 27 percent to 20 percent in 2011. Meanwhile, the category of Other DoD gradually increased its relative share from 10.6 percent of all DoD contract dollars for R&D in 2001 to nearly 15 percent in 2011.

Figure 3-12. Share of DoD R&D Contract Obligations by Component, 1990–2011 (in FY 2011 dollars)



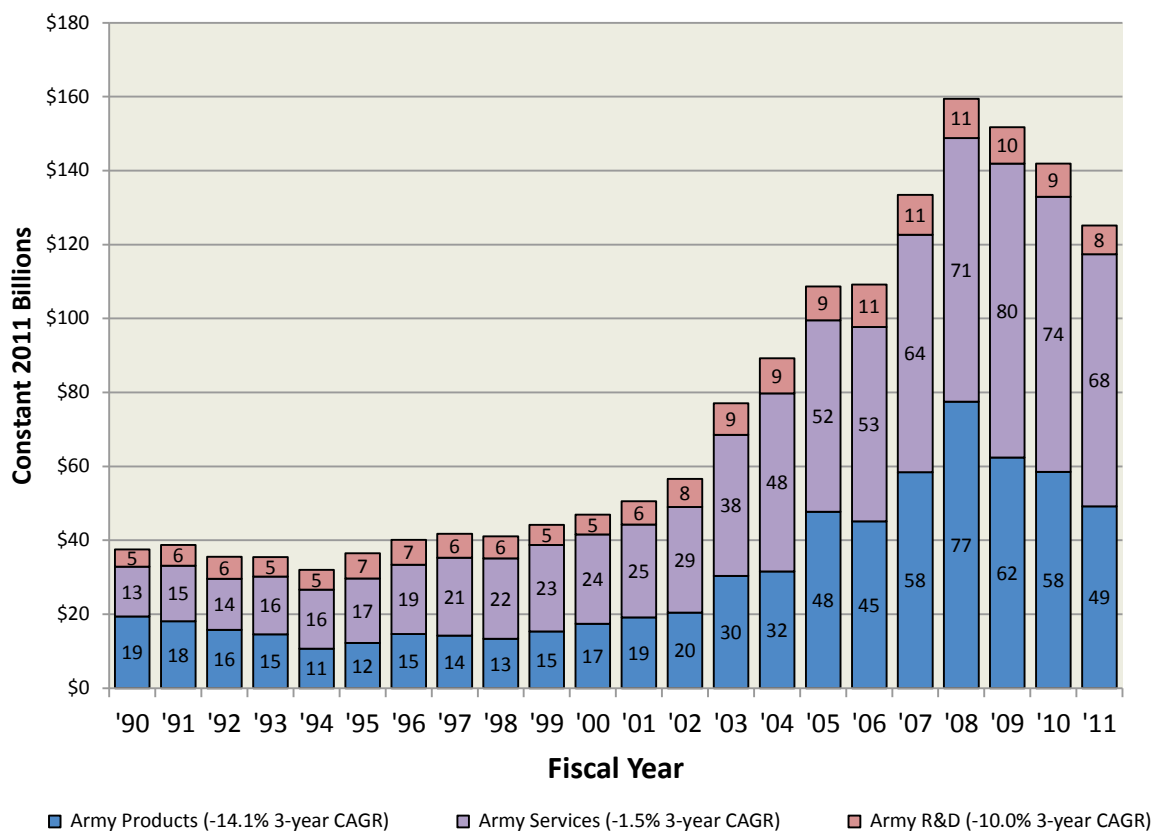
Source: FPDS; CSIS analysis.

Army Contract Obligations by Category, 1990–2011

Figure 3-13 breaks down Army contract obligations data, originally presented in aggregate form in Figure 3-5, into the three categories of products, services, and R&D obligations.

Between 1990 and 2010, Army obligations for contracts for services increased more rapidly year-on-year than its obligations for contracts for products. Army obligations for services actually exceeded obligations for products in every year except 2008, while accounting for between 45 and 53 percent of all Army contract obligations every year in the post-9/11 timeframe. Nevertheless, over the past 13 years, the rate of increase in Army obligations for products slightly exceeded that of services, with products obligations growing by 10.2 percent per year and services obligations growing by 9.4 percent annually during this period. This is likely explained by an increase in the need for spare parts and materiel to replace and replenish equipment lost or damaged during operations in Iraq and Afghanistan. Within the period 2008 to 2011, during the drawdown of U.S. forces in Iraq, Army obligations for products fell far more rapidly than obligations for services, with the former decreasing at 14.1 percent annually compared to the latter's 1.5 percent annual average decrease. Army obligations for R&D also declined sharply, decreasing by an average of 10 percent annually during these three years.

Figure 3-13. Army Contract Obligations by Category, 1990–2011 (in FY 2011 dollars)



Note: The “unlabeled” category, which totals less than \$1 billion a year, was excluded from the figure.

Source: FPDS; CSIS analysis.

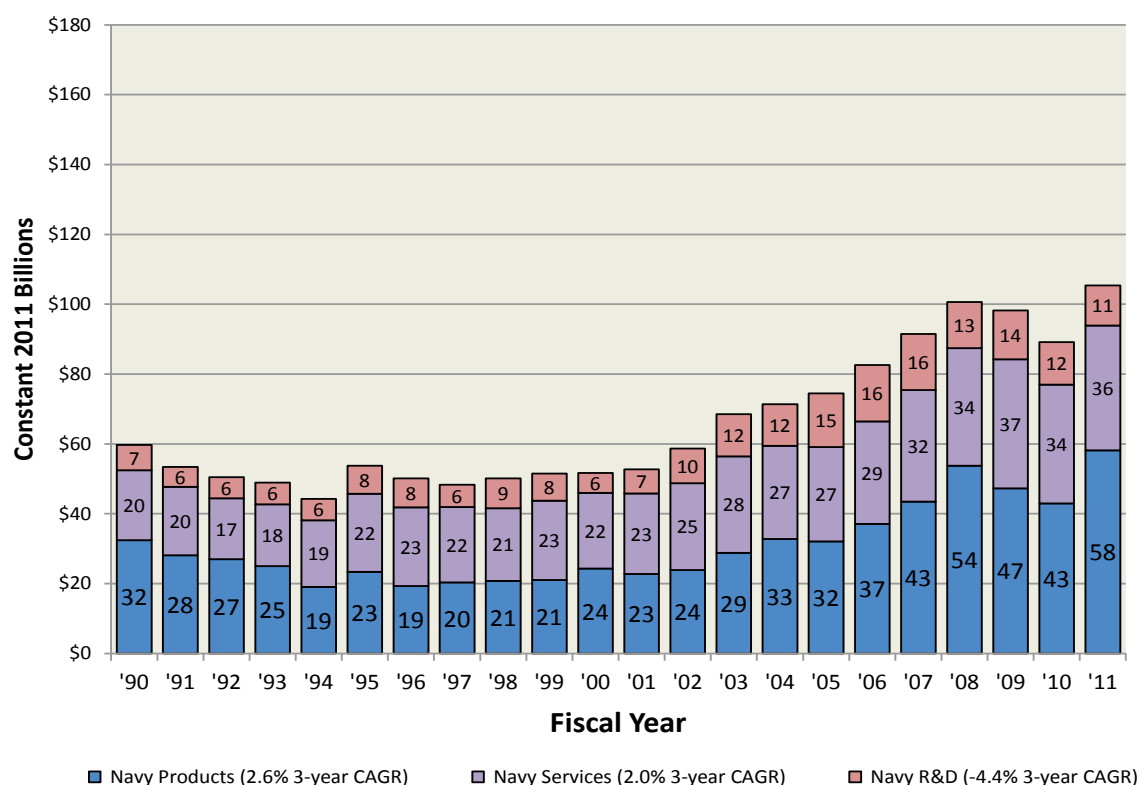
Navy Contract Obligations by Category, 1990–2011

In Figure 3-14, the data for total Navy contract obligations, presented earlier in Figure 3-6, are broken down into products, services, and R&D.

Trends in Navy contract obligations from 1990 to 2011 moved in an opposite direction to those of the Army. For nearly every year in this time period, Navy obligations for products contracts matched or exceeded its obligations for services contracts. This gap is especially noticeable after the commencement of U.S. military operations in Iraq and Afghanistan, when Navy contract obligations for services consistently remained below 40 percent of overall Navy contract obligations. Navy obligations for R&D accelerated significantly between 1999 and 2010 relative to the other military services, growing at an annual rate of 6.9 percent compared to the Army’s 4.8 percent and the Air Force’s 2.6 percent growth rates. During the years 2008 to 2011, Navy obligations for products increased moderately, supported by a sudden increase in obligations of \$15 billion in 2010 after a three-year period of decline. During the same period, Navy obligations for services contracts increased by 2 percent annually, and obligations for R&D declined by an annual average of 4.4 percent.

Between 2010 and 2011, the Navy increased obligations for products contracts sharply (growing nearly 35 percent in absolute value), while its increase on services contracts was much smaller (growing only 6 percent). A large portion of the increase in Navy product contract obligations was in a handful of product codes: fixed- and rotary-wing aircraft, submarines, and destroyers. Collectively, the dollar values associated with these product codes increased from \$11.6 billion in 2010 to \$23.3 billion in 2011. Indeed, the top Navy PSC codes valued at over \$1 billion doubled from \$20.8 billion to \$40.1 billion from 2010 to 2011, accounting for more than half of Navy product obligations in this period.

Figure 3-14. Navy Contract Obligations by Category, 1990–2011 (in FY 2011 dollars)



Note: The “unlabeled” category, which totals less than \$1 billion a year, was excluded from the figure.

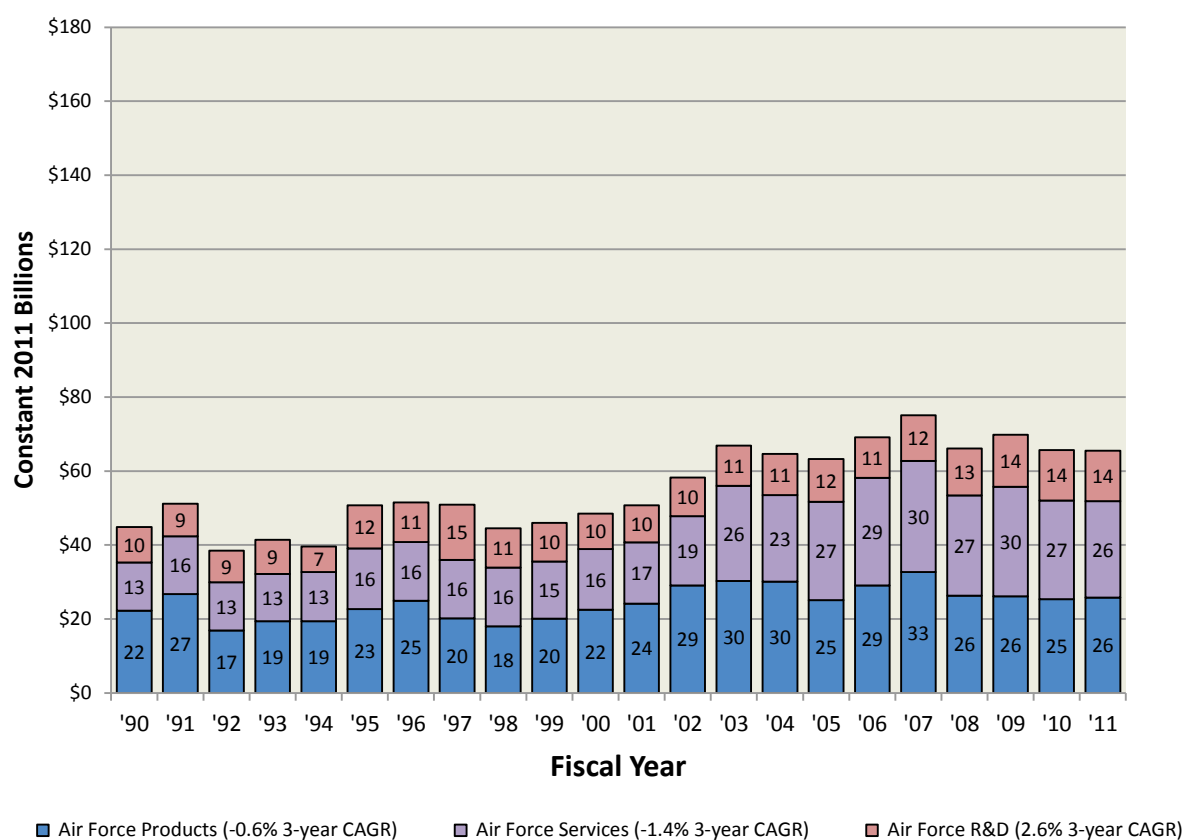
Source: FPDS; CSIS analysis.

Air Force Contract Obligations by Category, 1990–2011

Figure 3-15 presents Air Force obligations for contracts related to products, services, and R&D.

In every category of obligations, the Air Force experienced slower growth than either the Army or the Navy over the last 21 years. In products, the Air Force has seen less than 1 percent growth per year, and R&D has grown under 2 percent annually since 1990. With the initiation of military operations in Iraq and Afghanistan, however, most Air Force contract obligations categories increased slightly compared to the 21-year CAGR; R&D grew 3.7 percent annually and services grew 5 percent, although products shrunk 1.6 percent year-on-year after 2001. However, these numbers do not reflect any growth in obligations for classified projects. In the last three years, overall Air Force contract obligations declined again, with obligations for services decreasing by 1.4 percent annually and on products by almost 1 percent annually. Unclassified R&D contract obligations remained constant at \$14 billion per year.

Figure 3-15. Air Force Contract Obligations by Category, 1990–2011 (in FY 2011 dollars)



Note: The “unlabeled” category, which totals less than \$1 billion a year, was excluded from the figure.

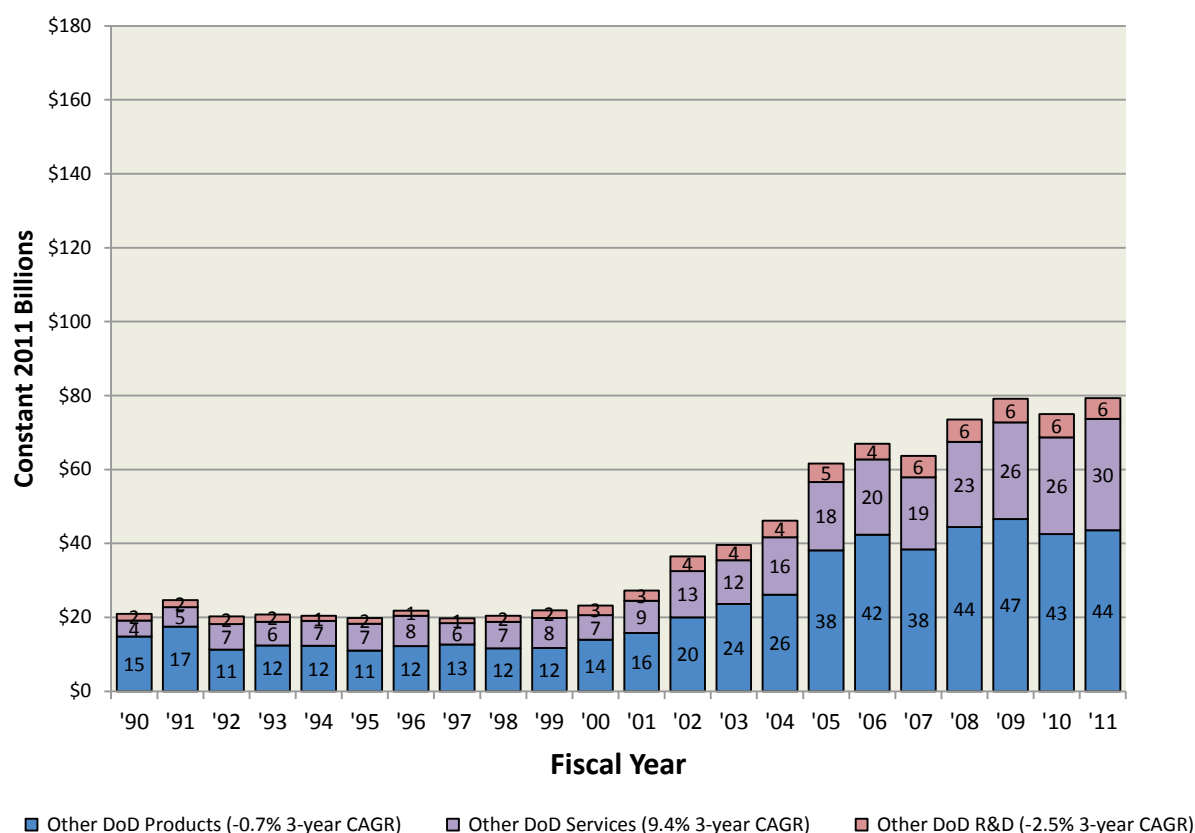
Source: FPDS; CSIS analysis.

Other DoD Contract Obligations by Category, 1990–2011

Obligations for contracts by all other DoD agencies, presented previously in Figure 3-8, are broken down into obligations for products, services, and R&D-related contracts in Figure 3-16 below.

The most significant changes in contract obligations over the period analyzed occurred in the Other DoD category, with positive CAGRs for all years from 1990 to 2011. Products saw the slowest annual increase (5.5 percent) while services and R&D saw compound annual growth rates of 9.6 and 5.6 percent, respectively. Growth in services contracting for the category of Other DoD picked up in the last few years, compared to declining obligations for products and stagnant change in obligations for R&D. Between 2008 and 2011, the services category for Other DoD grew at 9.4 percent annually (nearly as swiftly as it had for the entire period analyzed). Meanwhile, R&D obligations fell by 2.5 percent per year between 2008 and 2011, and product obligations declined by 0.7 percent per year, on average.

Figure 3-16. Other DoD Contract Obligations by Category, 1990–2011 (in FY 2011 dollars)



Note: The “unlabeled” category, which totals less than \$1 billion a year, was excluded from the figure.

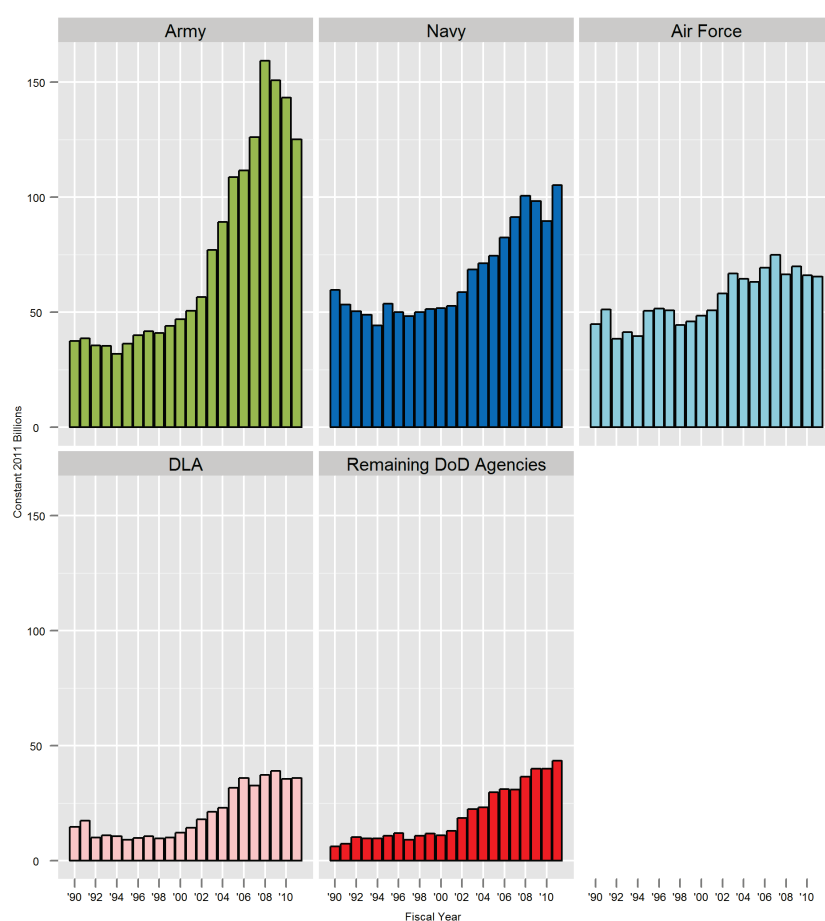
Source: FPDS; CSIS analysis.

Overall Contract Obligations by Other DoD Components, 1990–2011

Figures 3-17 and 3-18 below highlight the individual components within the Other DoD category with the highest levels of overall contract dollar obligations for the period 1990 to 2011.

In Figure 3-17, contract obligations by the Defense Logistics Agency (DLA) are displayed alongside that of the Army, Navy, and Air Force. DLA is separated from all other components within the Other DoD category due to its relatively high level of obligations for the period observed (more than three times the next largest component in the category of Other DoD in any given year). From 2000 to 2011, DLA grew at over 10 percent per year, on average, from \$12.3 billion to \$36 billion, with much of this growth driven by fuel purchases for U.S. troops in Iraq and Afghanistan. Indeed, within the last three years, as U.S. forces withdrew from Iraq, DLA obligations decreased by an average of 1.2 percent annually from \$37.3 billion in 2008 to \$36 billion in 2011.

Figure 3-17. Overall Contract Obligations for Top Four DoD Components, 1990–2011 (in FY 2011 dollars)

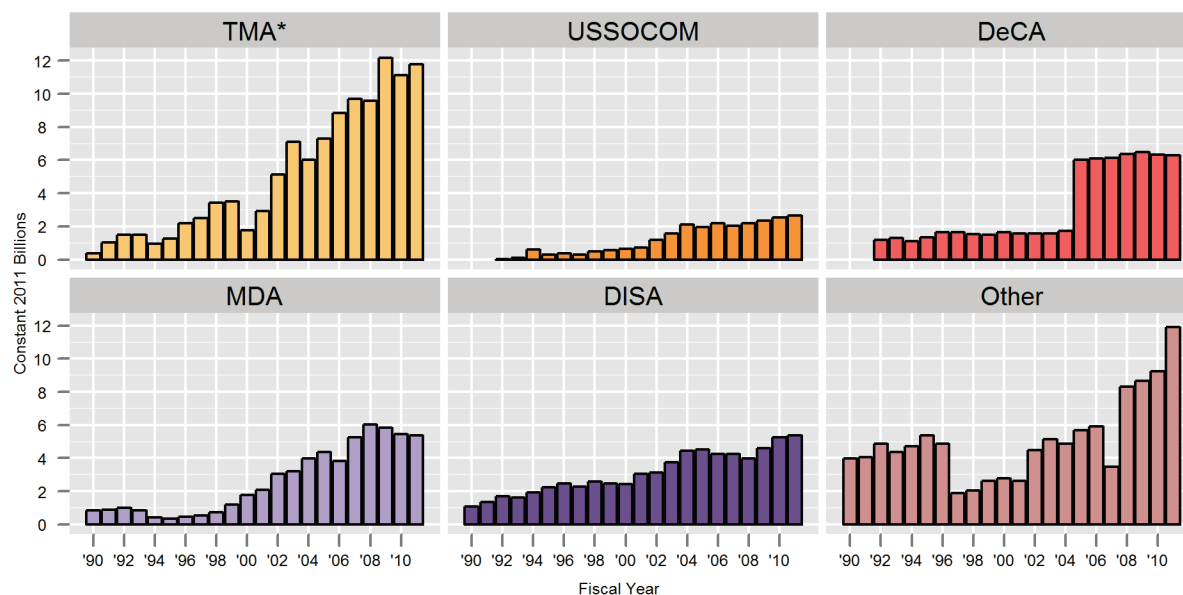


Source: FPDS, CSIS analysis.

Figure 3-18 below breaks out the remaining DoD agencies in the Other DoD category from the preceding figure into its largest individual elements by overall contract obligations level.

Of all components in the category of Other DoD besides DLA, the Tricare Management Agency (TMA) had the strongest growth in its contract obligations over the last decade, increasing at an average rate of more than 18 percent per year and increasing from \$1.8 billion in 2000 to \$11.8 billion in 2011. This growth in obligations is tied to the increase in the costs of medical care and insurance related to U.S. operations in Iraq and Afghanistan. Contract obligations by U.S. Special Operations Command (USSOCOM) grew at an annual average of 14 percent from 2000 through 2011 and increased from \$0.6 billion to \$2.5 billion. Growth in overall contract obligations for USSOCOM has also been strong in the years 2008 to 2011, with average annual growth of 6.5 percent per year and reaching \$2.2 billion. The Missile Defense Agency (MDA) also experienced strong growth in the past decade, averaging 13 percent growth per year and increasing in absolute terms from \$1.8 billion to \$5.4 billion from 2000 to 2011. The Defense Information Systems Agency (DISA) grew its contract obligations at an average rate of 7.4 percent per year between 2000 and 2011, increasing from just over \$3 billion to \$5.4 billion. Obligations by DISA increased further between 2008 and 2011, from \$4 billion to \$5.4 billion, at a yearly average rate of 10.7 percent. Contract obligations by the Defense Commissary Agency (DeCA) increased sharply between 2004 and 2005, from \$1.7 billion to \$6 billion, and remained at this level through 2011. This growth is a result of a change in policy to contract out more commissary functions to further professionalize the armed forces. In the “Other” category, the two periods of obligations increases (1990 to 1996 and 2008 to 2011) can be explained by growth in contracting by the U.S. Army Corps of Engineers (USACE) Civil Program in the former period and that of USTRANSCOM in the latter period. After 1996, the USACE contract obligations were absorbed into the Army account, and in 2008 the USTRANSCOM contract obligations began to be reported as an independent entity (its contract obligations had previously been included under the accounts of various military services and DoD components).

Figure 3-18. Overall Contract Obligations by Components in Other DoD, 1990–2011 (in FY 2011 dollars)



* TMA also includes the Office of the Civilian Health and Medical Program of the Uniformed Services.

Source: FPDS; CSIS analysis.

4. DoD Contract Characteristics

Defense Contract Obligations by Competition, 1990–2011

To determine levels of competitiveness in contract awards, this report uses FPDS data on the number of offers received from distinct entities before a contract is awarded. Contracts awarded after receiving multiple offers are deemed the most competitive, followed by those awarded after a single offer and contracts awarded under no competition. Note that in Figure 4-1 below, unlabeled contracts are those that are either unlabeled in FPDS or those that were determined by CSIS analysis to be erroneously labeled (for example, if the contract is designated as competed and there are zero bidders, or if it is designated as noncompeted and there are several bidders). In keeping with previous CSIS reports, classification does not include the Fair Opportunity / Limited Sources column. Due to contradictions between that column and the Extent Completed column, IDV contracts may be classified differently in this report than in government publications.

In Figure 4-1, total DoD contract obligations (presented earlier in Figure 2-1) are broken into four broad categories: competition with multiple offers, competition with a single offer, no competition, and unlabeled contracts.

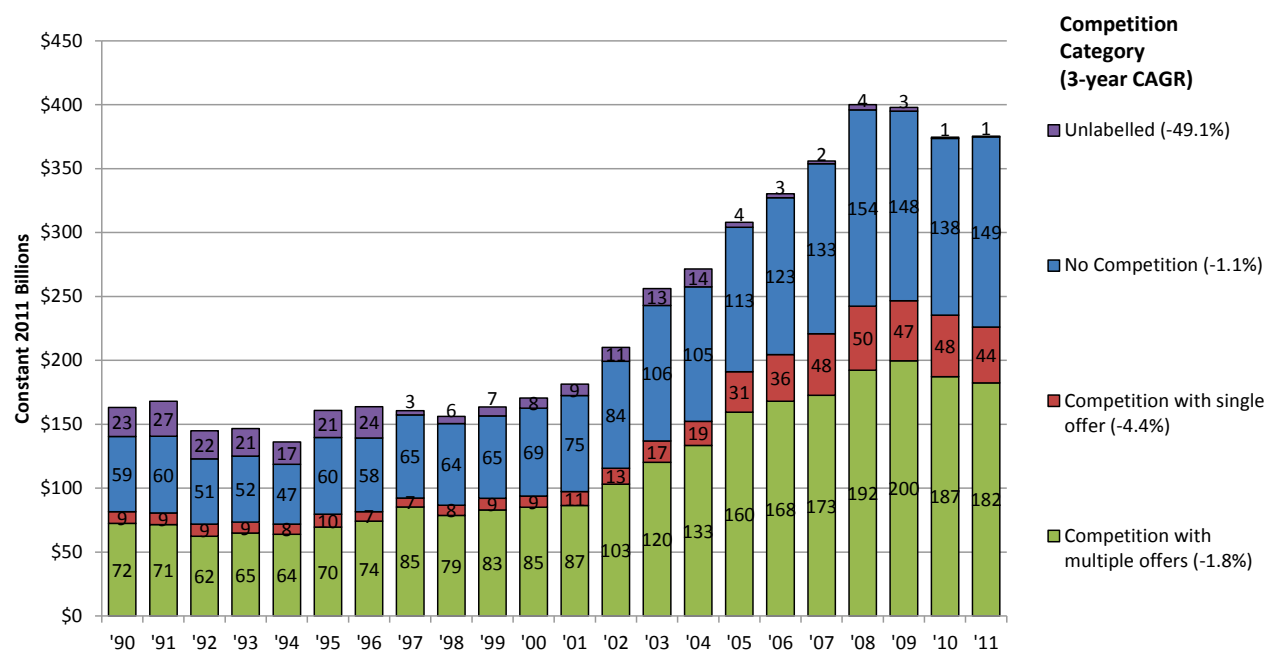
Competition in DoD contracting was stable between 1990 and 1996, with between 42 and 47 percent of obligations going to contracts that were competed and received multiple offers, and between 34 and 38 percent going to contracts that were not competed. From 1997 through 2001, the shares for both competition with multiple offers and no competition increased by approximately 5 percent; this was primarily a result of a decrease in unlabeled contracts. As a result, this change may merely reflect better reporting rather than a change in contracting practice. Also notable is the period from 1997 to 2000, when contracts labeled “No Competition” (Unlabeled Exception) represented the vast majority of No Competition contract value; this data deficiency was corrected starting in 2001.

From 2000 through 2011, DoD contract dollars awarded with no competition and with competition with multiple offers have both increased at a 7 percent annual growth rate. The share of contracts that had no competition declined from a high of 41.5 percent in 2001 to 36.9 percent in 2010, but increased again to 39.6 percent in 2011. Meanwhile, competition with multiple offers, which accounted for 50 percent of contract value in 2010, fell to 48.6 percent in 2011.

Competitively awarded contracts receiving only a single offer increased from \$9 billion in 2000 to \$44 billion in 2011. This is down from \$48 billion in 2010, but overall, competitions receiving only a single offer have increased at a 15.1 percent annual growth rate since 2000. Looking at the 2008 to 2011 downturn period, however, competition with a single offer declined at nearly two and a half times the rate of competition with multiple offers (-4.4 percent versus -1.8 percent annual growth, respectively). Nonetheless, competition with a single offer accounted for 11.7 percent of contract dollars in 2011, which should be of concern to those in and out of government advocating for greater use of competition. Factors contributing to this trend might include:

- Contracts written such that only one company can meet the requirements, or such that one company has a significant and obvious advantage;
- Regulatory hurdles faced by non-heritage defense contractors;
- Inadequate efforts to bring commercial firms into the defense contracting world;
- Competitions where incumbent advantage scares away potential competitors.

Figure 4-1. Defense Contract Obligations by Competition, 1990–2011 (in FY 2011 dollars)



Note: Data on Fair Opportunity/Limited Sources are not included; as a result, totals may vary from those listed in government publications.

Source: FPDS; CSIS analysis.

Defense Contract Obligations by Funding Mechanism, 1990–2011

Figure 4-2 presents trends in the choice of funding mechanism for DoD contract dollars. Funding mechanisms, or the conditions under which the government pays its obligations, are divided here into the following categories: cost reimbursement, fixed price, time and materials (a form of cost based contract distinguishable from cost reimbursement by the responsibilities assumed by the customer and the contractor), and “combination” (a mix of cost and fixed price).

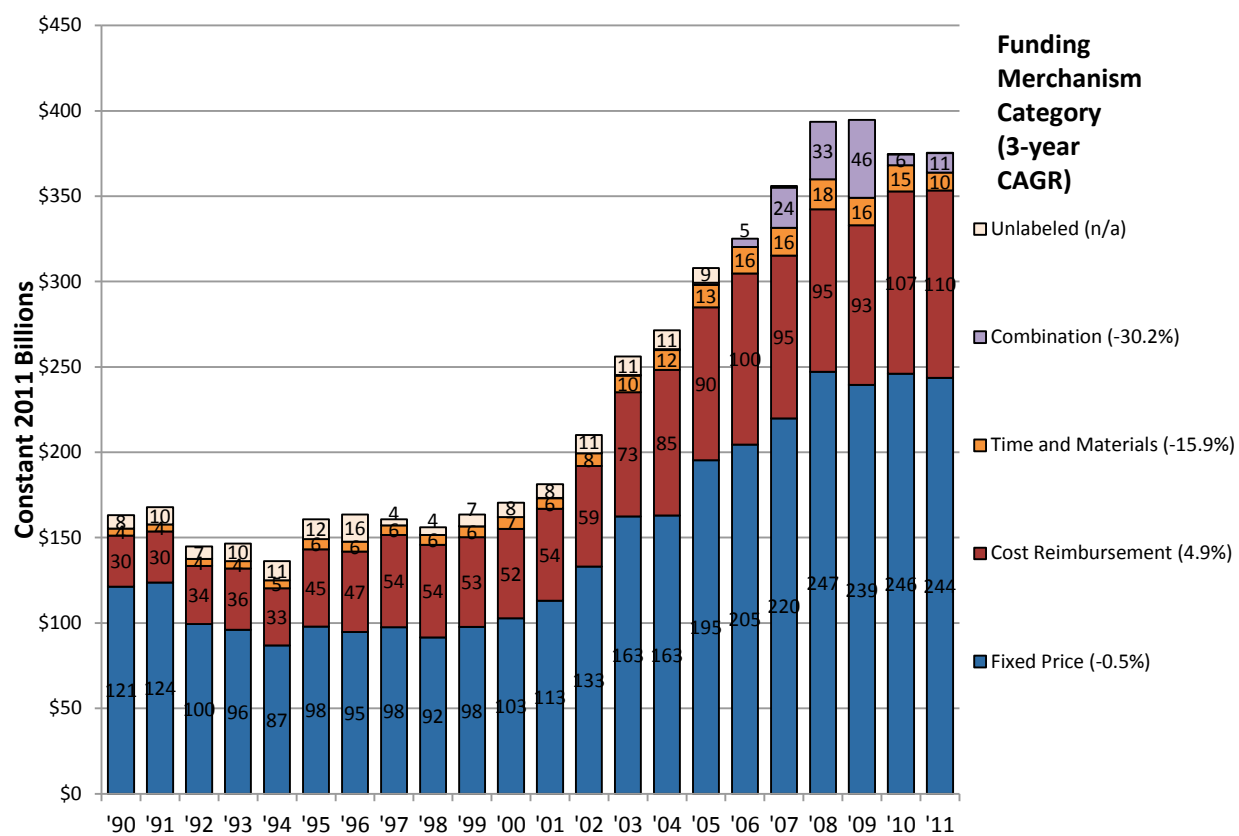
The 1990s saw a significant increase in the use of cost reimbursement contracts, at the expense of fixed price contracts. Cost reimbursement contracts, which accounted for only 18.4 percent of DoD contract dollars in 1990, rose to a high of 34.7 percent in 1998, while fixed price contracts, which accounted for 74.3 percent of DoD contract dollars in 1990, dropped to 58.7 percent in 1998. This trend began to reverse itself in 1999, but the shares of fixed price and cost reimbursement contracts have not returned to their 1990 levels.

The data for 2000 to 2011 reveal additional interesting trends. Fixed price contracts grew at an 8.2 percent annual growth rate for 2000 to 2011, compared to 7 percent for cost reimbursement. For the years 2008 to 2011, the change is even more pronounced: the total value of fixed price contracts decreased slightly (-0.5 percent annual growth rate), compared to a 4.9 percent annual growth rate for cost reimbursement contracts. This change is driven by a \$2 billion decrease in fixed price contract value between 2010 and 2011, in parallel to a \$3 billion increase in cost reimbursement contract value.

Within the fixed price category, there was an \$11 billion decline in basic Fixed price, along with increases of \$6 billion and \$2 billion in Fixed price Incentive and Fixed price with Economic Price Adjustment. In the cost reimbursement category, Cost Plus Award Fee contracting declined by \$7 billion between 2000 and 2011, countered by increases of \$6 billion and \$3 billion in Cost Plus Fixed Fee and Cost Plus Incentive, respectively. The increased use of incentive fees is consistent with recent government-wide contracting policy, but the relative shift from fixed price to cost plus is not.

While contracts labeled Combination, which include elements of both cost-based and fixed price contracts, declined significantly in 2009 and 2010, their value nearly doubled between 2010 and 2011, from \$6.3 billion to \$11.4 billion. This is of concern because with combination contracts, it is impossible to determine how many dollars are awarded on a fixed price or cost basis. For example, in the \$11.4 billion awarded in 2011, it is possible that \$9 billion was awarded on a cost basis and \$2.4 billion was awarded on a fixed price basis, which would significantly affect the trend lines for the two categories. This category bears watching in FY 2012 to see if this rise was a one-year anomaly or the start of a trend.

Figure 4-2. Defense Contract Obligations by Funding Mechanism, 1990–2011 (in FY 2011 dollars)



Source: FPDS; CSIS analysis.

Defense Contract Obligations by Vehicle, 1990–2011

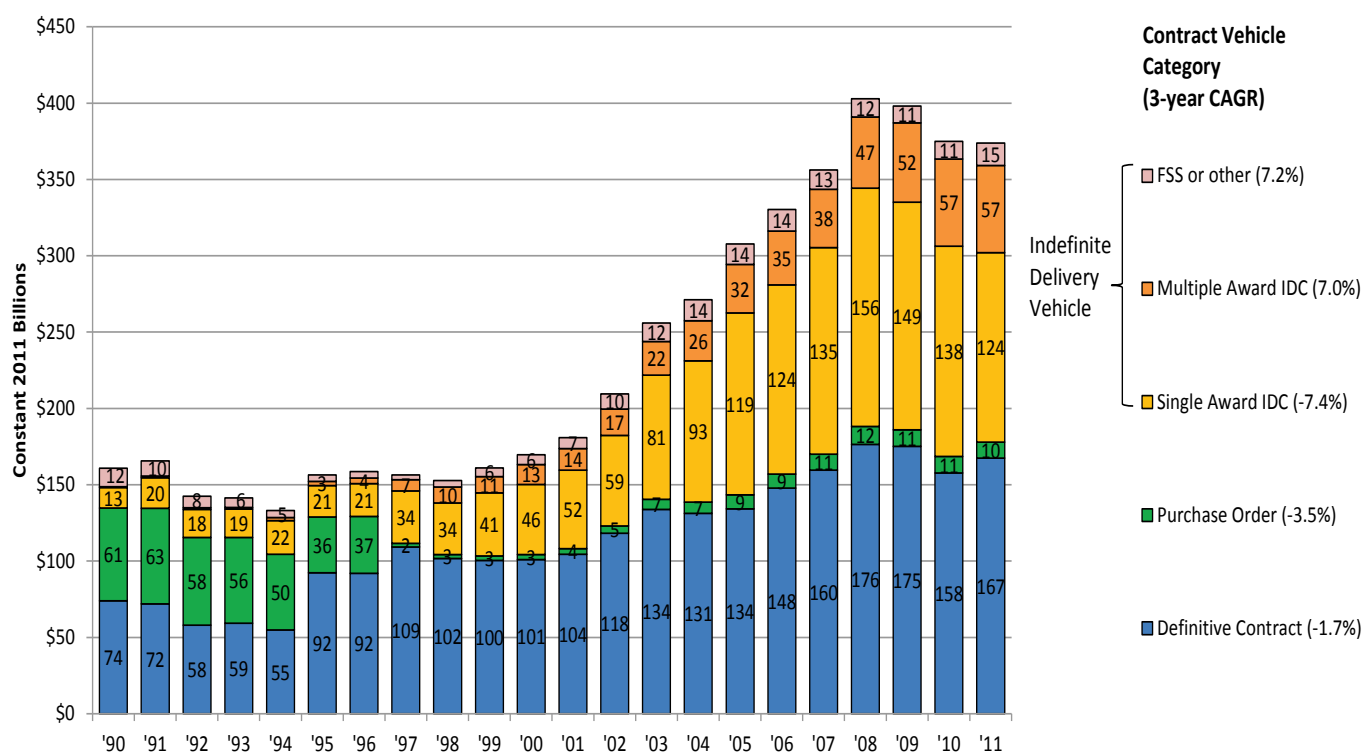
In Figure 4-3, total DoD contract obligations are broken out by contract vehicles. The Indefinite Delivery Vehicles (IDV) category is further broken out into Federal Supply Schedule (FSS), Multiple Award Independent Delivery Contracts (IDCs), and Single Award IDCs. Purchase Orders and Definitive Contracts form separate categories.

The key trend for DoD contract vehicles in the 1990s was the rapid decline in the use of purchase orders. Claiming a 36 to 40 percent share of total DoD contract value from 1990 to 1994, purchase orders fell to below 23 percent in 1995 and 1996 and to below 1.5 percent in 1997. Since then, purchase orders have not exceeded 3 percent of total DoD contract value. In 1997, definitive contracts accounted for over two-thirds of overall DoD contract value, with IDVs (primarily Single Award IDCs) taking up most of the remainder. The share going to definitive contracts declined for the rest of the 1990s, but remained over 61 percent in 1999.

From 2000 onward, IDVs gradually overtook definitive contracts as the majority of DoD contract value. Definitive contracts and IDVs held 59.3 and 38.9 percent shares, respectively, of overall DoD contract value in 2000, compared to 42.1 percent for definitive contracts and 55.1 percent for IDVs in 2010. This trend reversed somewhat in 2011, as the share of overall DoD contract value going to IDVs dropped to 52.4 percent, while the share going to definitive contracts rose to 44.8 percent. This change was driven by an increase of \$9 billion in definitive contracts in 2011, along with a \$10 billion drop in IDVs. Specifically, a \$14 billion drop in Single Award IDC was paralleled by a \$4 billion rise in FSS contracts.

In the years 2000 to 2011, definitive contracts had a 4.7 percent annual growth rate, compared to 10.4 percent for IDVs. Within IDVs, Multiple Award IDCs grew the fastest (14.4 percent annual growth rate), followed by Single Award IDCs (9.5 percent annual growth rate) and FSS contracts (7.8 percent annual growth rate). For 2008 to 2011, overall IDVs (-3.0 percent annual growth rate) declined at almost twice the rate of definitive contracts (-1.7 percent annual growth rate). This change was driven by a large decrease in Single Award IDC value (-7.4 percent annual growth), along with a significant slowing of the growth in Multiple Award IDCs (7.0 percent annual growth rate).

Figure 4-3. Defense Contract Obligations by Vehicle, 1990–2011 (in FY 2011 dollars)



Note: The “unlabeled IDV” category, which totals less than \$3 billion per year, was excluded from the figure. Total obligations vary from other figures by up to \$3.5 billion due to differences in download date and variation between USAspending.gov and FPDS.gov.

Source: FPDS; CSIS analysis.

5. The Industrial Base Supporting DoD

Top 20 DoD Contractors, 2001 and 2011

DoD relies heavily on the private sector for the equipment and services needed to meet national security requirements. Firms supporting DoD vary significantly, ranging from large publicly traded firms to small privately held companies; from firms that generate a significant share of their revenue from DoD contract work to companies whose share of revenue from defense contracts is but a fraction of overall operations. As the security environment changes over time, so does the composition of firms contracting with DoD. This chapter surveys the industrial base supporting DoD over the past 10 years. The focus is on the top 20 DoD contractors (i.e., those taking the largest shares of total DoD contract dollars) and on the breakdown of the industrial base into small, medium, and large companies.

In 2001 DoD contract obligations reached some \$181 billion awarded to some 46,000 contractors. In 2011, DoD contract awards totaled \$375 billion and included slightly over 110,000 contractors. Table 5-1 shows the top 20 DoD contractors for 2001 and 2011. The top 5 contractors are identified in a separate cadre. Values are expressed in millions of FY 2011 dollars.

Total contract awards for the top 20 DoD contractors increased from \$77 billion in 2001 to \$163 billion in 2011. While contract revenue for the top 20 companies more than doubled, their share of the total DoD contract awards remained constant at 43 percent in 2001 and 2011. The share of the next top 15 contractors increased from 13 percent of total DoD awards in 2001 to 17 percent of the total in 2011.

The composition and ranking of the top 5 DoD contractors remained nearly intact. The only noticeable change between 2001 and 2011 is the result of an acquisition: in late 2001 Northrop Grumman (seventh) acquired Newport News Shipbuilding (third). The combined company, Northrop Grumman Corporation, became the third-largest defense contractor, a rank it held until early 2010. In 2011 Northrop Grumman spun off its shipbuilding business, the combined Newport News and Gulf Cost Shipbuilding, into a new company, Huntington Ingalls Industries (HII). Following the spinoff, Northrop Grumman dropped to fifth place on the top 20 list.

A more substantial shift in the composition and market share over the past 10 years occurred among companies ranked 6 to 20. The number and market share of health care contractors, which increased from two in 2001 to three in 2011, and their market share rose from 1 percent to over 3 percent of total DoD contract awards. In absolute terms, contract values for health care firms more than tripled, in real terms, between 2001 and 2011. If the top three health care firms in 2011 were combined, their dollar awards would total over \$9 billion, and they would be ranked sixth on the list. This highlights the sharp growth in DoD health care expenses from an industrial base perspective. It also illustrates a key challenge for defense policymakers grappling with a defense budget drawdown: spiraling health care costs.

The data seem to refute that the same defense firms are gaining an ever-larger share of the market. In the past decade, the top 5 defense contractors actually lost market share, and of the firms in places 6 to 20, defense contract dollars went to different contractors over time.

Table 5-1. Top 20 DoD Contractors, 2001 and 2011

Rank	Top 20 Contractors in 2001	Obligations in 2011 Millions	Top 20 Contractors in 2011	Obligations in 2011 Millions
1	Lockheed Martin	\$17,993	Lockheed Martin	\$35,760
2	Boeing	\$14,770	Boeing	\$20,485
3	Newport News Shipbuilding	\$7,241	General Dynamics	\$17,984
4	General Dynamics	\$7,062	Raytheon	\$13,572
5	Raytheon	\$6,258	Northrop Grumman	\$11,881
Total for Top 5		\$53,325		\$99,683
6	United Technologies	\$3,841	BAE Systems	\$7,352
7	Northrop Grumman	\$3,158	United Technologies	\$6,873
8	SAIC	\$2,316	L3 Communications	\$6,832
9	Litton Industries	\$2,082	Huntington Ingalls Industries	\$5,482
10	TRW	\$2,028	SAIC	\$5,270
11	General Electric	\$1,874	Oshkosh	\$4,741
12	Textron	\$1,608	ITT	\$3,549
13	Health Net	\$1,173	Humana	\$3,439
14	Computer Sciences Corp.	\$1,072	TriWest Healthcare	\$3,093
15	ITT	\$1,005	Health Net	\$2,963
16	Bechtel	\$973	Computer Sciences Corp.	\$2,953
17	Exxon Mobil	\$821	Dyncorp International	\$2,867
18	BAE Systems	\$748	Fluor	\$2,722
19	TriWest Healthcare	\$692	Bell-Boeing Joint Project Office	\$2,666
20	Oshkosh	\$692	Booz Allen Hamilton	\$2,613
Total for Top 20		\$77,408		\$163,100
Total for DoD		\$181,351		\$375,317

*Joint Venture.

Source: FPDS; CSIS analysis.

Top 20 DoD Contractors for Products, 2001 and 2011

Table 5-2 presents the top 20 contractors taking the largest shares of DoD dollars obligated on product-related contracts in 2001 and 2011.

In 2001 DoD contract awards for products reached \$81 billion and were spread over some 18,500 contractors. In 2011 product-related contract awards totaled \$176 billion and were spread over some 56,000 contractors. The top 5 DoD contractors saw their combined defense-product market share decline 4 percent, from 40 percent in 2001 to 36 percent in 2011. In contrast, the next top 15 contractors gained market share, up 5 percent from 17 in 2001 to 22 percent in 2011. Interestingly, the top 20 contractors' share of the market for products remained stable at 58 percent.

Among the top 5 in 2011, United Technologies became the fifth-largest contractor and General Dynamics surpassed Raytheon to become the third-largest contractor. Newport News Shipbuilding, the third-largest contractor in 2001, is now part of Huntington Ingalls Industries (HII), ranked sixth in 2011.

The list for positions 6 to 20 has been more dynamic. BAE Systems grew its defense business and acquired United Defense and Stewart & Stevenson (ranked 15 and 13 in 2001), among others, to reach eighth place in 2011. The effects of the U.S. drawdown from Iraq are also visible in the makeup of the top defense products contractors in 2011. In 2009 there were three oil companies in the top 20 list (Shell Oil, British Petroleum, and Bahrain Petroleum), and these accounted for 3 percent of total DoD product-related contract awards. Two years later, in 2011, only British Petroleum remained on the list, with less than 1 percent of total DoD product-related contract awards.

Table 5-2. Top 20 DoD Contractors for Products, 2001 and 2011

Rank	Top 20 Contractors in 2001	Obligations in 2011 Millions	Top 20 Contractors in 2011	Obligations in 2011 Millions
1	Boeing	\$10,130	Lockheed Martin	\$22,171
2	Lockheed Martin	\$9,696	Boeing	\$14,467
3	Newport News Shipbuilding	\$5,005	General Dynamics	\$13,946
4	Raytheon	\$4,037	Raytheon	\$8,004
5	General Dynamics	\$3,823	United Technologies	\$5,331
Total for Top 5		\$32,691		\$63,920
6	United Technologies	\$2,766	Huntington Ingalls Industries	\$5,154
7	General Electric	\$1,796	Oshkosh	\$4,709
8	Litton Industries	\$1,665	BAE Systems	\$4,462
9	Northrop Grumman	\$1,443	Northrop Grumman	\$3,422
10	Textron	\$1,421	L3 Communications	\$3,197
11	Exxon Mobil	\$821	Bell-Boeing Joint Project Office*	\$2,612
12	Royal Dutch Shell	\$673	Textron	\$2,264
13	Stewart & Stevenson	\$521	General Electric	\$2,126
14	Oshkosh	\$517	Supreme Group	\$2,032
15	United Defense Industries	\$511	General Atomics	\$1,461
16	Longbow LLC	\$497	Navistar	\$1,389
17	Cardinal Health	\$491	Alliant Tech Systems	\$1,385
18	Alliant Tech Systems	\$417	AmerisourceBergen	\$1,371
19	Dell	\$393	Austal	\$1,365
20	Motorola	\$389	BP	\$1,260
Total for Top 20		\$47,012		\$102,129
Total for Products		\$81,837		\$176,781

*Joint Venture.

Source: FPDS; CSIS analysis.

Top 20 DoD Contractors for Services, 2001 and 2011

The top 20 contractors providing services to DoD in 2001 and 2011 are listed, in descending order of total service contract value expressed in millions of FY 2010 dollars, in Table 5-3.

In 2001 DoD service contract awards reached almost \$74 billion and were spread over some 24,000 contractors. In 2011 service-related contract awards totaled \$160 billion, 42 percent of total DoD contract awards and were spread over some 47,500 contractors. The top 5 DoD contractors maintained a 13 percent market share in 2001 and 2011. The next top 15 increased their market share from 15 percent in 2001 to 23 percent in 2011. The combined market share of the top 20 DoD service contractors increased by 7 percent, from 29 percent in 2001 to 36 percent in 2011.

There have been significant changes in the structure and market share of the top defense service contractors, and many contractors on the 2001 list were not on the 2011 list. Health care service providers made significant gains between 2001 and 2011. In 2001 the combined three health care services providers, Human (#18), TriWest Healthcare (#11), and Health Net (#8), accounted for 3 percent of total DoD service contract awards. By 2011, their combined market share had doubled. In dollar value, service contract awards for DoD health care providers more than tripled over the past 10 years, from \$2.3 billion to \$9.5 billion. The gains in market share are reflected in the ranking of these firms among the top 20 DoD service contractors. In 2011 Human became the fourth-largest services contractor by market share, up from fifth place in 2009 and eighteenth place in 2001. TriWest Healthcare and Health Net also gained ground, rising to the sixth and seventh places respectively.

Other noteworthy changes among the top 5 service contractors are Raytheon and Northrop Grumman. In 2001, Raytheon ranked third on the top 20 list with 2.4 percent share of total DoD service contract awards. In 2011, the company dropped to the twelfth place, and its market share declined to 1.7 percent. By contrast, Northrop Grumman's share of the services market tripled between 2001 and 2011 (from 1 to 3 percent), and the company is now the second-largest DoD services contractor. The shifts in market share for both Raytheon and Northrop Grumman are in part a result of strategic decisions made by their leadership: Raytheon moved out of the services business, while Northrop pushed to make services a core business. As DoD shifts its focus from operations (Iraq and Afghanistan) to modernization and reset, there are likely to be more changes in the composition of the industrial base. Particularly, some firms will focus more on defense (choosing a handful of core business areas in the defense market), while others will work to increase their commercial portfolio, especially in the aerospace sector.

One critical caveat is that the FPDS does not necessarily classify services obligations in the same manner that corporations do. For example, a close analysis by the study team found \$2.7 billion in six maintenance, upgrade, and logistics support contracts awarded to one company that were classified in FPDS as products. This raises an important question: when acquisition policymakers discuss contracts using FPDS data, do they mean to include all operations and maintenance contracts as service contracts? If they do, then they are underestimating the total value of service contracts due to categorization issues.

Table 5-3. Top 20 DoD Contractors for Services, 2001 and 2011

Rank	Top 20 Contractors in 2001	Obligations in 2011 Millions	Top 20 Contractors in 2011	Obligations in 2011 Millions
1	Lockheed Martin	\$3,021	Lockheed Martin	\$5,588
2	Newport News Shipbuilding	\$2,236	Northrop Grumman	\$4,634
3	Raytheon	\$1,743	SAIC	\$3,894
4	General Dynamics	\$1,462	Humana	\$3,439
5	SAIC	\$1,344	L3 Communications	\$3,224
Total for Top 5		\$9,806		\$20,780
6	Boeing	\$1,316	TriWest Healthcare	\$3,093
7	TRW	\$1,308	Health Net	\$2,963
8	Health Net	\$1,173	Dyncorp International	\$2,861
9	Northrop Grumman	\$991	Computer Sciences Corp.	\$2,817
10	Computer Sciences Corp.	\$769	General Dynamics	\$2,741
11	TriWest Healthcare	\$692	Fluor	\$2,715
12	Bechtel	\$670	Raytheon	\$2,704
13	Dyncorp International	\$661	ITT	\$2,605
14	Halliburton	\$556	BAE Systems	\$2,412
15	URS	\$550	KBR	\$2,250
16	BAE Systems	\$546	Boeing	\$2,036
17	MCI/Worldcom	\$501	CACI	\$1,926
18	Humana	\$500	Hewlett-Packard	\$1,746
19	Jacobs Engineering Group	\$493	URS	\$1,731
20	ITT	\$473	Bechtel	\$1,544
Total for Top 20		\$21,006		\$56,925
Total for Services		\$73,569		\$160,037

*Joint Venture.

Source: FPDS; CSIS analysis.

Top 20 DoD Contractors for R&D, 2001 and 2011

The top 20 defense contractors for R&D are listed in Table 5-4. All conventions used in the previous three tables apply to this table as well.

In 2001, DoD expenditures on R&D contracts totaled \$26 billion and were spread over some 3,000 contractors. In 2011, R&D contract awards increased to \$38 billion and were spread over some 6,000 contractors. The top 20 R&D contractors combined gained 7 percent market share between 2001 and 2011, from 67 percent to 74 percent. The top 5 DoD R&D contractors increased their market share by 6 percent, from 46 in 2001 to 52 percent in 2011. The next top 15 gained a 10 percent market share, from 20 percent in 2001 to 30 percent of total DoD R&D contract awards in 2011.

Among the top 5, Northrop Grumman's share of total DoD R&D contract awards increased dramatically, from 3 to 10 percent between 2001 and 2011. Raytheon, who ranked eleventh in 2001 with a market share of just under 2 percent, is now the fourth-largest R&D contractor, accounting for over 7 percent of total DoD R&D work.

It is noteworthy that some 15 companies represented in the 2001 R&D top 20 remained in the 2011 R&D top 20. This takes into account Northrop Grumman's acquisition of TRW and General Dynamic's acquisition of Spectrum Astro. It is also worth noting that 5 of the top 20 (MIT, Aerospace Corp., Johns Hopkins Applied Physics Lab, MITRE, and Battelle) are either nonprofit contractors, university-affiliated research centers, or federally funded R&D centers and, thus, are not part of the same corporate-industrial complex reflected in other charts. Finally, classified contracts are particularly common for R&D work and are not included in FPDS. As a result, the contract value and relative ranking for organizations that do significant amounts of classified work are likely understated.

Table 5-4. Top 20 DoD Contractors for R&D, 1999 and 2009

Rank	Top 20 Contractors in 2001	Obligations in 2011 Millions	Top 20 Contractors in 2011	Obligations in 2011 Millions
1	Lockheed Martin	\$5,277	Lockheed Martin	\$8,002
2	Boeing	\$3,324	Boeing	\$3,982
3	General Dynamics	\$1,777	Northrop Grumman	\$3,825
4	United Technologies	\$958	Raytheon	\$2,864
5	Northrop Grumman	\$723	General Dynamics	\$1,297
Total for Top 5		\$12,059		\$19,970
6	Boeing / UTC Joint Venture	\$659	Booz Allen Hamilton	\$1,048
7	SAIC	\$641	MIT	\$947
8	Aerospace Corp.	\$553	United Technologies	\$903
9	TRW	\$533	Aerospace Corp.	\$886
10	MITRE	\$524	SAIC	\$835
11	Raytheon	\$478	Johns Hopkins University	\$727
12	MIT	\$433	Wyle Laboratories	\$527
13	Computer Sciences Corp.	\$290	JVYS*	\$481
14	Rockwell Collins	\$227	BAE Systems	\$479
15	ITT	\$212	L3 Communications	\$411
16	Johns Hopkins University	\$181	ITT	\$339
17	Oshkosh	\$171	MITRE	\$330
18	Textron	\$148	CACI	\$293
19	Spectrum Astro	\$117	Navmar	\$248
20	Institute for Defense Analyses	\$114	Battelle	\$221
Total for Top 20		17,477		\$28,646
Total for R&D		25,939		38,499

*Joint Venture.

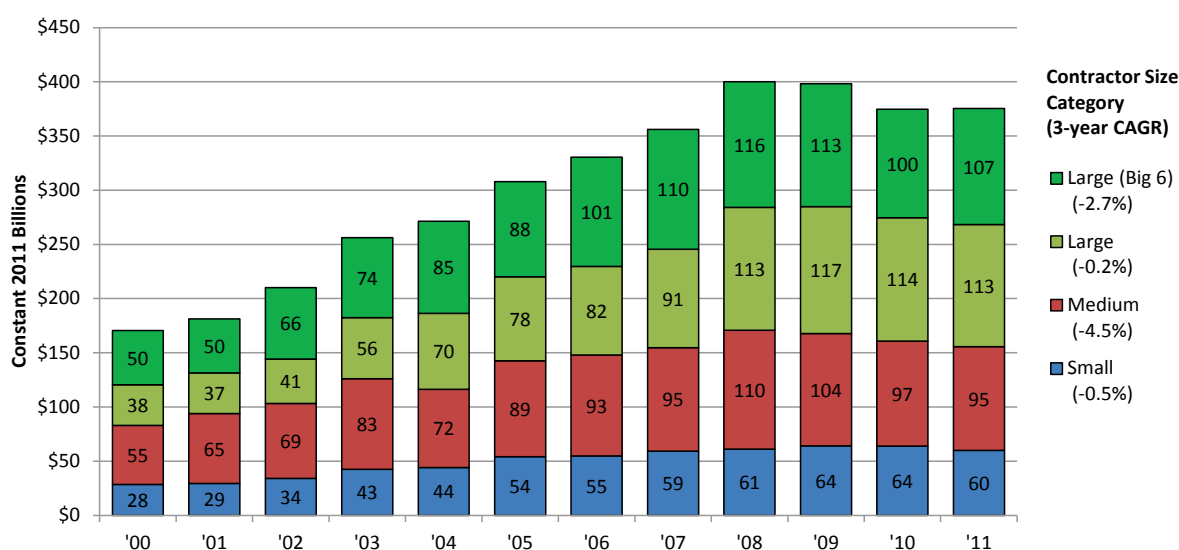
Source: FPDS; CSIS analysis.

Defense Contract Obligations by Contractor Size, 2000–2011

Figure 5-1 illustrates the changes in distribution of all DoD contract dollars across contractors classified by their relative sizes: small, medium, and large. In this report, any organization designated as small by the FPDS database—according to the criteria established by the federal government—was categorized as such. The threshold for a company to be considered “large” is \$3 billion in total annual revenue. To provide greater granularity in this analysis, the large category is further broken out into the “Big 6” contractors (Lockheed, Boeing, General Dynamics, Raytheon, Northrop Grumman, and BAE Systems) and the rest of the large (greater than \$3 billion in total annual revenue) contractors. Companies not designated as either small or large are considered “medium.” Contracts awarded to subsidiaries are rolled into their parent contractors’ data; thus, those contractors are not distinguished separately. This breakdown is not meant to reflect the federal standard for small business set asides and varies from those rules in two critical ways. First, if FPDS reports that a small business has been acquired by a large business, CSIS classifies dollars obligated to that company as going to a larger contractor. Second, this report includes all contracts and does not exclude waived contracts (e.g., overseas contracts).

A continuing area of concern for policymakers is the market share captured by small, medium, and large companies. In DoD contracting, a combination of growth in the market share of large contractors and small-business set-aside programs put pressure on mid-tier contractors, who have lost significant market share from a high of 35.6 percent in 2001 to a low of 25.4 percent in 2011. During the 2008 to 2011 period, the contract value awarded to mid-tier firms has declined (–4.5 percent annual growth rate) faster than the value awarded to all other contractor size categories. The Big 6 have also shown the most significant fluctuation in market share during the current downturn; from 29 percent in 2008, the share of contract value going to the Big 6 declined to 26.7 percent in 2010, with the gains split between other large contractors and small contractors. This trend was reversed somewhat in 2011, with the share of DoD contract dollars awarded to the Big 6 increasing to 28.5 percent.

Figure 5-1. DoD Contract Obligations by Contractor Size, 2000–2011 (in FY 2011 dollars)



Note: This figure uses different criteria than those required by federal small business regulations and thus varies from government publications.

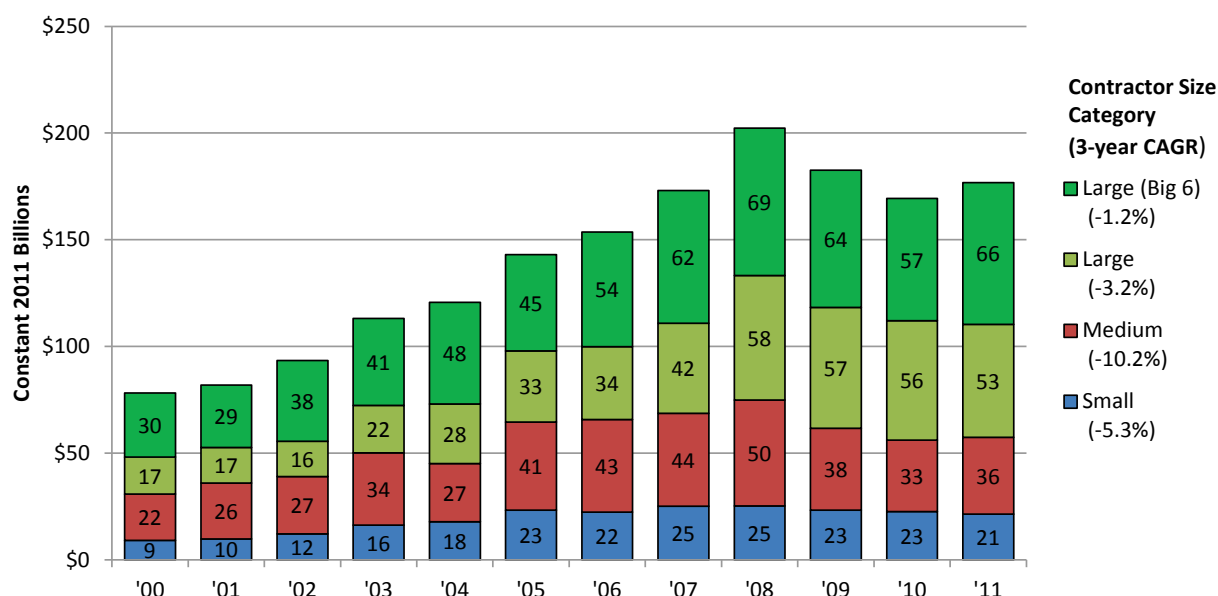
Source: FPDS; CSIS analysis.

Defense Contract Obligations for Products by Contractor Size, 2000–2011

The distribution of DoD contract dollars across defense product providers from 2000 through 2011 is illustrated in Figure 5-2. This is a subset of the data present in Figure 5-1. Contractors are classified by the same conventions as in the previous figure.

The squeeze on mid-tier contractors is particularly evident in contract awards for products. From 2008 to 2011, medium-sized contractors (-10.2 percent annual growth rate) have declined at over twice the rate of large contractors (-3.2 percent annual growth rate) and nearly twice the rate of the Big 6 (-1.2 percent annual growth rate). Small contractors have also been hit hard during the current downturn (-5.3 percent annual growth rate). In 2011, however, the share of contract value going to mid-tier contractors actually increased slightly, though that increase is dwarfed by the surge in Big 6 market share (to 37.6 percent, up from 33.8 percent in 2010). Most of that increase came at the expense of other large firms (29.9 percent market share in 2011, from 33.1 percent in 2010), although the market share of small contractors also declined (from a 14.2 percent share in 2010 to 11.9 percent in 2011).

Figure 5-2. DoD Contract Obligations for Products by Contractor Size, 2000–2011 (in FY 2011 dollars)



Note: This figure uses different criteria than those required by federal small business regulations and thus varies from government publications.

Source: FPDS; CSIS analysis.

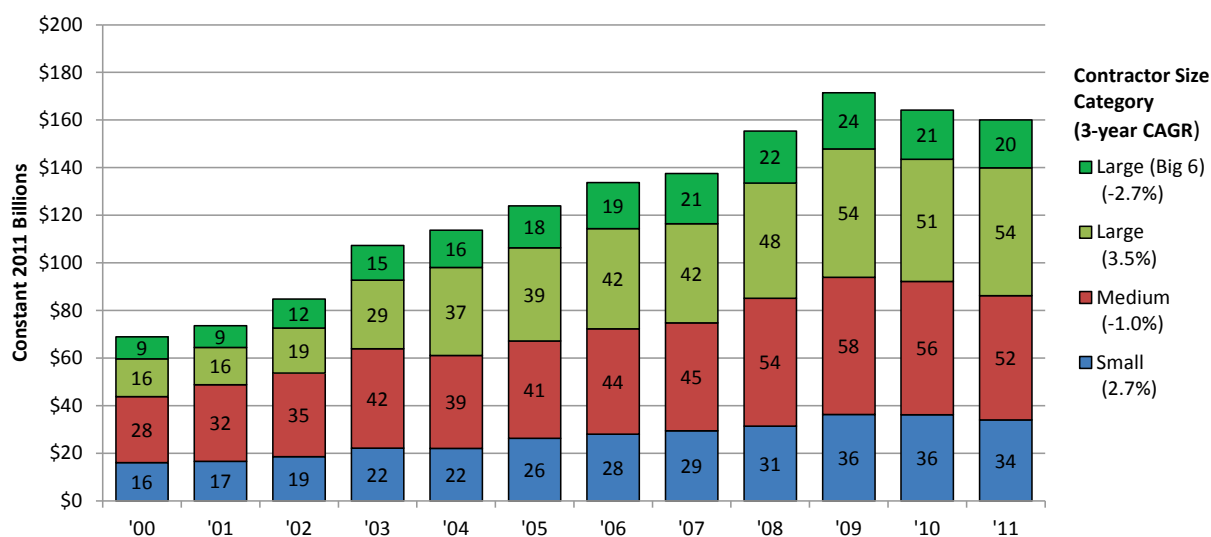
Defense Contract Obligations for Services by Contractor Size, 2000–2011

Figure 5-3 presents the change in distribution of service-providing defense contractors by size for 2000 through 2011, using the same conventions as in the previous two figures.

The share of contract value going to small and Big 6 firms has changed little between 2000 and 2011, with the former accounting for some 12 to 13 percent of the market and the latter around 21 to 23 percent. Mid-tier firms have lost significant market share, however, dropping from 40.2 percent in 2000 to 32.6 percent in 2011; most of the difference has been picked up by large firms, which have risen from a 23.0 percent market share in 2000 to 33.6 percent in 2011. This trend is reflected in the annual growth rates between 2000 and 2011: contract value going to large firms grew at an 11.7 percent annual growth rate for the period, compared to only 5.9 percent for medium-sized firms (the lowest of the four size categories).

Mid-tier contract value remained mostly static during the 2008 to 2011 period (-1.0 percent annual growth rate), though small (2.7 percent annual growth rate) and large (3.5 percent annual growth rate) contractors continued to see growth in services contract value over the same period. Meanwhile, the Big 6 have been hit hardest (-2.7 percent annual growth rate) during the current downturn, though the market share going to the Big 6 remained unchanged between 2010 and 2011. Mid-sized firms saw a decline in market share (32.6 percent in 2011, compared to 34.1 percent in 2010), while the share going to large firms increased from 31.3 percent in 2010 to 33.6 percent in 2011.

Figure 5-3. DoD Contract Obligations for Services by Contractor Size, 2000–2011 (in FY 2011 dollars)



Note: This figure uses different criteria than those required by federal small business regulations and thus varies from government publications.

Source: FPDS; CSIS analysis.

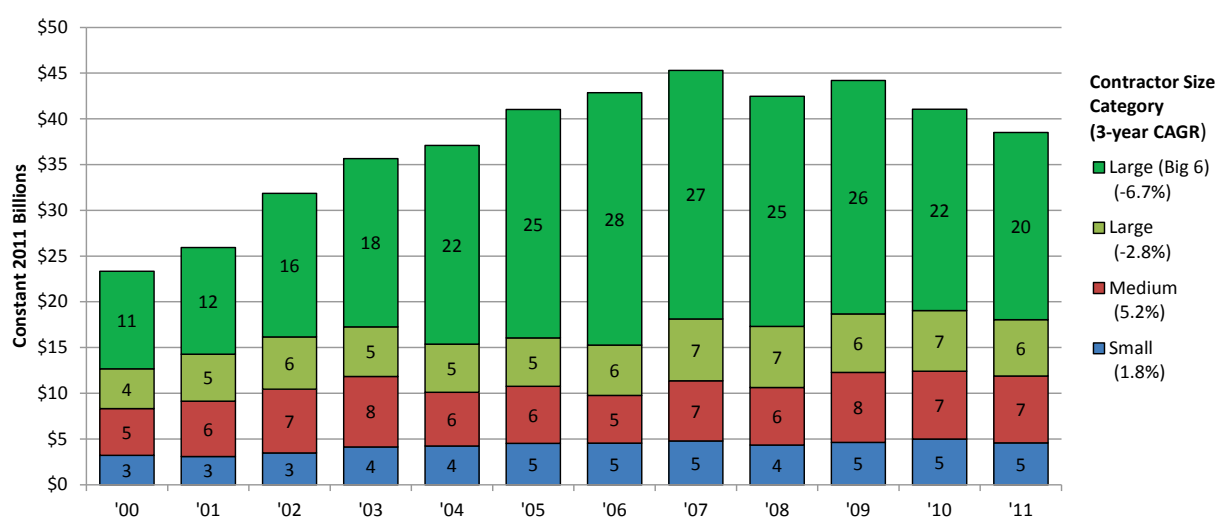
Defense Contract Obligations for R&D by Contractor Size, 2000–2011

Figure 5-4 shows changes in R&D contract value awards for 2000 through 2011. This is a subset of the data presented in Figure 5-1.

The share of contract value going to small firms has remained mostly constant between 2000 and 2011; by contrast, both medium-sized and large firms saw significant declines in R&D market share in the first half of the decade, only to rebound and recover to near their previous shares. Big 6 firms saw the opposite trend, increasing their market share dramatically (from 45.8 percent in 2000 to a high of 64.1 percent in 2006) and then declining for the rest of the period, although their share in 2011 (53.1 percent) represents significant growth from 2000.

In contrast to products and services, the mid-tier has grown (5.2 percent annual growth rate), relative to the other size categories during the current downturn (2008–2011). Large companies declined (-2.8 percent annual growth rate), but the decline in contract value awarded to the Big 6 from 2008 to 2011 has been more than twice as large (-6.7 percent annual growth rate). Market shares shifted little between 2010 and 2011, but looking back to 2008, the Big 6 have lost market share (53.1 percent in 2011, compared to 58.7 percent in 2008). Medium-sized companies have been the primary beneficiary (19.0 percent market share in 2011, up from 15.6 percent in 2008), though small businesses have also increased their share of R&D contract award value (11.9 percent in 2011, compared to 10.1 percent in 2008).

Figure 5-4. DoD Contract Obligations for R&D by Contractor Size, 2000–2011 (in FY 2011 dollars)



Note: This figure uses different criteria than those required by federal small business regulations and thus varies from government publications.

Source: FPDS; CSIS analysis.

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