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Running With Scissors: *Defense Budget Cuts and Potential Industry Responses*

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Nearly everyone can relate to the experience of seeing a dangerous sequence of events unfold. A well-intentioned action is followed by a subtle misstep. Add in a measure of unpredictability, and quickly the sequence starts to diverge. In these situations, a reasonable person mentally fast-forwards to anticipate the possible outcome. It is that quick mind's eye picture that spurs action. It prompts intervention. Building on the analysis and recommendations presented in this article, the author makes the case that it is possible for both the U.S. Department of Defense and the U.S. defense industry to mitigate the dangerous downside risk of anticipated defense budget cuts.



Nearly everyone can relate to the experience of seeing a dangerous sequence of events begin to unfold. A well-intentioned action is followed by a subtle misstep. Add in a measure of unpredictability, and quickly the sequence starts to diverge. In these situations, a reasonable person mentally fast-forwards to anticipate the possible outcome. It is that quick mind's eye picture that spurs action. It prompts intervention.



As unexpected as it may appear, recent debates on the U.S. defense budget hold many of these same concerns. Reducing federal deficit spending is a well-intentioned action, but the method of achieving that objective is a source of great risk. A subtle misstep and the sequence of events could quickly accelerate—with the cascading effects growing beyond even the most diligent efforts to avoid a wildly negative outcome.

To help develop this thought, the following discussion addresses six key questions.

- Where are we in the sequence of events?
- What is likely to happen next?
- How will industry respond?
- What are the impacts on acquisition?
- Are specific scenarios already in motion?
- What can be done?

Within this context, the thesis of this article is simply stated. Even though current U.S. defense budgets remain strong, actions by the U.S. defense industry in response to anticipated spending cuts may result in increased risk, decreased readiness, and ultimately degradation of the nation's defense industry at large.

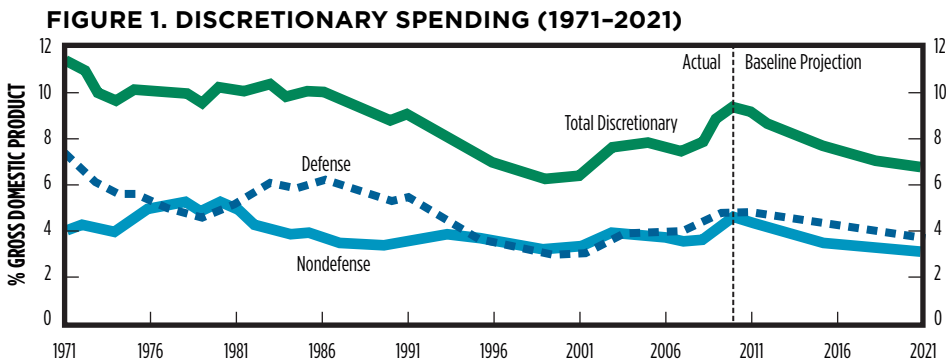
It is this potentially dangerous scenario that characterizes the current discussion of expected U.S. defense budget cuts. Intervention is possible. First, stop running—then slowly put down the scissors.

Where Are We in the Sequence of Events?

Current U.S. federal deficit spending is well documented—as is the rapidly increasing federal debt. In developing a baseline for the discussion of defense budget reductions, a short summary of past, current, and anticipated federal spending is useful and informative. To this end, the following section outlines the key issues of discretionary federal expenditures, defense spending, and military procurement budgets.

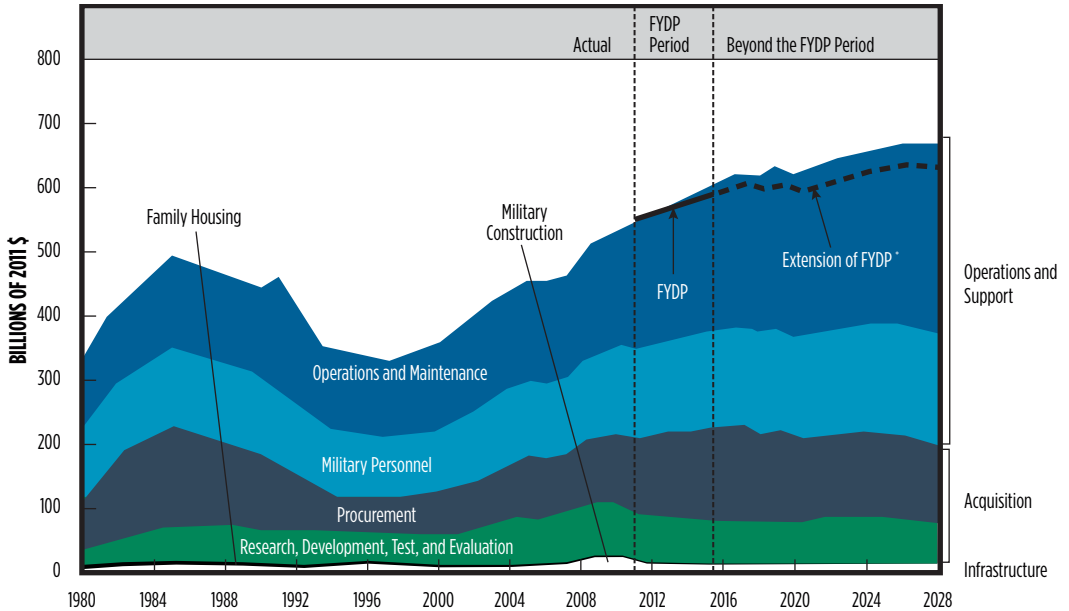
In 2010, defense expenditures accounted for slightly more than half of federal discretionary spending at \$689 billion, including the cost of overseas contingency operations (OCO) in Iraq and Afghanistan (Congressional Budget Office [CBO], 2011b, p. 69). The January 2011 baseline CBO data (Figure 1) predicted a decline in both defense and nondefense discretionary expenditures starting in 2010, and continuing through 2021 as a percentage of Gross Domestic Product (GDP). Based on this forecast, discretionary spending was anticipated to fall from 9.3 percent of total U.S. GDP in 2010 to 6.7 percent by 2021 (CBO, 2011b, p. 71).

Using January 2011 data for defense spending (Figure 1), the CBO forecasted base budget growth in 2011 dollars continuing through 2028 with an anticipated expenditures forecast using the current Future Years Defense Program (FYDP) data shown in Figure 2. The CBO analysis included forecasts for the five primary budget categories of defense spending: (a) military construction, (b) research, development, test, and evaluation, (c) procurement, (d) military personnel, and (e) operations and maintenance.



Source: Congressional Budget Office (as of January 2011).

FIGURE 2. COSTS OF DoD'S PLANS FOR ITS BASE BUDGET, BY APPROPRIATION CATEGORY

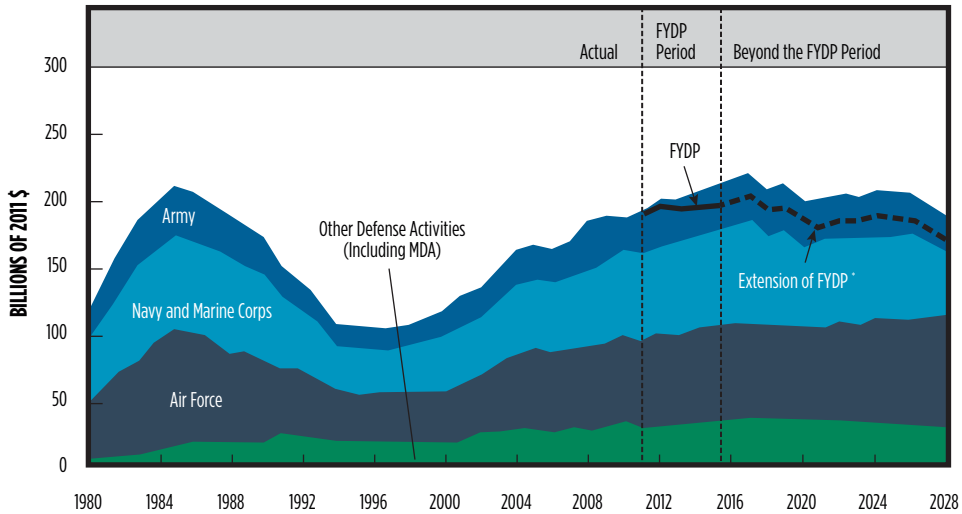


Notes. Adapted from "Reducing the Deficit: Spending and Revenue Options," published by the Congressional Budget Office, March 2011. Each category shows the CBO projection of the base budget, which incorporates costs that are consistent with the Department of Defense (DoD)'s past experience. The amounts shown for the FYDP and the extension of the FYDP are the totals for all categories. Base-budget data include supplemental funding prior to 2002. FYDP period = 2011 to 2015, the years for which DoD's plans are fully specified.

*The extension of the FYDP extends DoD's plans and uses DoD's estimates of costs if they are available and cost factors based on the broader U.S. economy if estimates by DoD are not available.

In February 2011, the CBO reported U.S. defense acquisition spending from 1980 and forecasted anticipated defense acquisition spending through 2028. According to the CBO, 2011 acquisition costs would account for 34 percent of total defense spending (excluding OCO costs). Based on the current FYDP, the CBO forecasted defense acquisition will grow from its 2011 level of \$189 billion to \$218 billion in 2017 before starting a modest decline (CBO, 2011b, p. 19) as indicated in Figure 3.

FIGURE 3. COSTS OF DoD'S BASE BUDGET ACQUISITION PLANS, BY DoD COMPONENT



Notes. Adapted from "Long-term Implications of the 2011 Future Years Defense Program," published by the Congressional Budget Office, February 2011. Each category shows the CBO projection of the base budget, which incorporates costs that are consistent with the Department of Defense (DoD)'s past experience. Base-budget data include supplemental funding prior to 2002. The amounts shown for the FYDP and the extension of the FYDP are the totals for all components. FYDP period = 2011 to 2015, the years for which the DoD's plans are fully specified. MDA = Missile Defense Agency.

*The extension of the FYDP extends DoD's plans and uses DoD's estimates of costs if they are available and cost factors based on the broader U.S. economy if estimates by DoD are not available.

Before completing this background discussion, it is important to note two additional considerations. First, from 2001 through 2011, almost \$1.2 trillion has been appropriated for the cost of overseas contingency operations. Significant uncertainty exists in forecasting future operational expenditures; for purposes of the following discussion, OCO funding is not included unless specifically noted. Second, as experienced in 2011, the fiscal year federal budget may not receive timely approval by the U.S. Congress. In this case, through a series of continuing resolutions, defense spending is limited to prior-year funding levels. In recent statements, former Secretary of Defense Robert Gates warned that the

impact of continuing resolutions “may soon turn into a crisis” (Gates, 2011). For this discussion, the anticipated effects are not included unless specifically noted.

By starting with this summary of federal discretionary spending, it is now possible to better characterize defense acquisition spending in the context of future budget reductions. This serves to answer the opening question—where are we in the sequence of events?



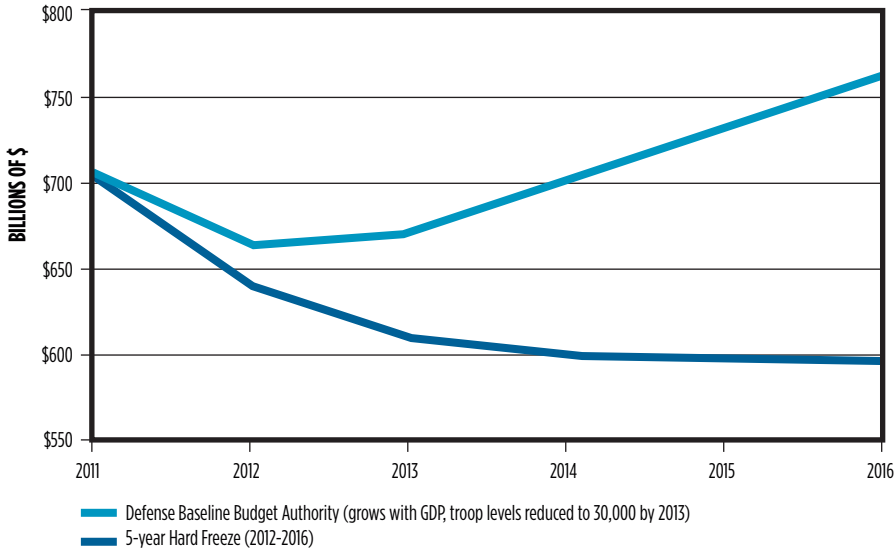
What is Likely to Happen Next?

Building on the federal expenditure summary presented in the previous section, the following discussion summarizes a set of budget reviews and policy opinions affecting the U.S. federal budget. In particular, this outline compares recommendations from recent congressional committees, federal agencies, and think-tank organizations.

In November of 2010, former Senate Budget Committee Chairman Pete Domenici and former White House budget director Alice Rivlin led a bipartisan study to deliver a set of broad recommendations that addressed federal spending as well as government revenues. The goal

of their recommendation was to balance the federal budget by 2014 and stabilize the national debt below 60 percent of GDP by 2020. As part of the strategy, defense spending would be frozen at current levels for 5 years and then capped at the GDP growth rate. In further detail, savings would come from reductions in military force structure, acquisition, intelligence operations, personnel costs, and current efficiency efforts already underway. Shown in Figure 4, the net effect of these decisions would reduce defense spending to approximately 3 percent of U.S. GDP by 2020 (Domenici & Rivlin, 2010).

FIGURE 4. DEFENSE DISCRETIONARY BUDGET AUTHORITY: BASELINE v. BIPARTISAN PLAN



In December of 2010, a team led by Senator Alan Simpson and former White House Chief of Staff Erskine Bowles presented their recommendations. The team developed a set of actions to generate approximately \$4 trillion in deficit reductions through 2020. Their strategy focused on balancing the federal budget by 2015 and reducing the federal debt to 60 percent of GDP by 2023, and 40 percent by 2035. Beginning in 2012, all discretionary spending would be capped at 2011 levels. Defense spend-



FIGURE 5. DISCRETIONARY SPENDING LEVELS (2012-2020)

Commission Proposal	2012	2013	2014	2015	2016	2017	2018	2019	2020	2012-2015	2012-2020
Total	1,098*	1,043	1,050	1,061	1,072	1,084	1,095	1,106	1,117	4,251	9,724
Security	688*	654	658	665	672	679	686	693	700	2,664	6,095
Non-security	410*	389	393	396	400	405	409	413	417	1,587	3,630
President's Request	1,180	1,196	1,229	1,266	1,293	1,324	1,359	1,397	1,442	4,872	11,686
CBO baseline	1,143	1,164	1,191	1,222	1,257	1,290	1,323	1,357	1,390	4,720	11,337
Dollar amount below President	84*	153	179	205	221	240	264	291	325	622	1,963
Percentage below President's request	7.1%	12.8%	14.6%	16.2%	17.1%	18.1%	19.4%	20.8%	22.5%	12.8%	16.8%
Outlay savings	60	113	152	183	205	226	247	272	302	508	1,760

* Note: Levels will be set by the current Congress rather than the statutory caps; the 2012 levels will be at or below the final 2011 levels. \$1,098 represents a 12-month Continuing Resolution as a default, but the actual number could differ significantly.

ing would be combined with other categories of related discretionary spending to be managed and reduced as a broader category of security spending (National Commission, 2010) shown in Figure 5.

In March 2011, the CBO released a set of 105 options to help guide the discussion of deficit reduction through potential changes to federal spending and revenue policies. Options addressed both mandatory as well as discretionary spending with significant detail devoted to federal revenue and tax policy. On defense expenditures, the CBO developed three potential scenarios beginning in 2012: (a) limit growth in defense spending to 1.4 percent per year to realize a reduction of \$286 billion by 2021, (b) freeze defense spending at 2011 levels to generate \$611 billion in savings by 2021, and (c) reduce defense spending by 1 percent annually from 2011 levels to achieve \$862 billion in reductions by 2021. Looking at options that focus specifically on acquisition programs, the CBO outlined potential reductions of \$38 billion by 2016 through cancellations, deferrals, and force reductions (CBO, 2011a).

Next, turning to the think-tank groups, a wide range of assessments and recommendations exists. The Center for Strategic and International Studies echoed the concerns raised in the prior sections and argued that the coming decline in defense spending will require a much more involved strategic threat assessment to establish military funding priorities (Berteau, 2009). The Center for Strategic Budgetary Assessments emphasized the need for the U.S. Department of Defense to respond to the upcoming levels of budget austerity by “accepting some risks and divesting of lower priority programs and capabilities” (Harrison, 2011). As expected, additional recommendations spanned the range of conservative, moderate, and liberal advocacy consistent with groups such as the Cato Institute, Heritage Foundation, Brookings Institute, Teal Group, and the Center for American Progress.

From this brief summary, contemporary thinking points to a consensus that current levels of federal spending are not sustainable. In particular, there is a consistent emphasis on the need to curb discretionary spending—defense expenditures in particular. This forms the response to the second key question—what is likely to happen next?

How Will Industry Respond?

In an uncertain environment, industry is likely to respond by reducing investments, diversifying its market base, and restructuring its business operations.

First, when at risk of declining future demand, business can respond quickly by reducing investment in two categories: capital expenditures and research and development. These actions are often viewed by investors as positive near-term strategies since cost avoidance is typically realized on the company's balance sheet as improved operating margins and/or dividends are returned to shareholders. Unfortunately, severe reductions in either capital investment or company-funded research and development are not sustainable in a competitive business environment. The long-term negative impact is felt by both the company and its customers.

Reasonable levels of capital investment are necessary to sustain the infrastructure and systems required for manufacturing and operating activities. In most cases, gaining efficiencies and realizing cost savings require increasing levels of capital investment. The business case for these investments requires significant long-term returns to justify the expenditures. In an uncertain environment, the business case rationale often does not support increasing investment. Moreover, capital expenditures become more difficult to justify, and less capital is invested in the business. In the case of ongoing production, this scenario results in increasing cost pressure as facilities and equipment continue to age, and support systems are not updated with improved processes or technology.

Similar to capital investment, company-funded research and development is likely to decline. While the impact of capital investment is more visible, the impact of research and development is less tangible. With confidence in anticipated demand and future requirements, industry invests in the development of technologies to compete for upcoming contracts. Absent that future opportunity, businesses will not emphasize research and development over other, more pressing financial needs. This may result in a near-term benefit to the industry as resources are applied in other areas, but the long-term impact to technology development can be severe. With declining investment, future capabilities will require longer development timelines. Longer timelines introduce both cost and performance risk. Viewed together, these factors combine to

form a growing disincentive to launch new programs that require significant advances in research and development. Much like reductions in capital investment, the cycle quickly begins to develop into a strongly negative feedback loop.

Second, industry will likely respond by aggressively seeking to diversify both its customer and product base. While the leading U.S. defense companies are involved with contracts that span across Service branches, much of the defense industry is focused on providing specific capabilities, systems, and technologies that serve a very narrow customer group. For those companies, the downside risk is significant as budget cuts take place. To counter this, companies will seek to diversify across Service branches as well as outside of the Defense Department, and into other areas such as the State Department and Homeland Security. However, the most likely diversification opportunity lies in competing for potential Foreign Military Sales (FMS). As U.S. military forces draw down from current combat operations, the stated objective is to develop the capacity of foreign governments to provide for their own security and defense. This marks a clear opportunity for the U.S. defense industry to diversify its customer base through FMS.

In an environment of declining defense spending, U.S. industry will also seek to diversify its products and services offerings. As demand has grown quickly over the past decade, some defense companies have developed into providers of specialized products or services. This pattern is neither unnatural nor unhealthy in the short-term, but it does introduce sizeable downside risk as demand begins to decline. One example of this pattern is the result of rapid growth in demand for unmanned systems. While many providers have maintained a broad set of capabilities for aircraft, ground, and underwater systems, the demand for specific capabilities has narrowed the market base. In addition, during a period of increasing demand, some companies across the defense industry have struggled to leverage opportunities to capture services and support contracts while quickly expanding to meet production contracts. Declining production demand will free-up capacity that could be applied toward future services and support opportunities.

Third, the U.S. defense industry will look to restructure itself as defense budgets decline. During the industry downturn in the early 1990s after the collapse of the Soviet Union, the U.S. defense industry saw a number of large-scale consolidations. Northrop merged with Grumman

Aerospace, Lockheed with Martin Marietta, and Boeing with McDonnell Douglas. Other companies divested some of their core operations such as General Dynamics' divestiture of its military aircraft business to Lockheed Martin. Others such as Raytheon purchased lower tier companies including Hughes and E-Systems to build a much broader business portfolio centered around systems technology. This particular industry response will be fueled by the recent economic recovery leaving companies with sizeable cash reserves.

As described in this section, industry is likely to react to anticipated reductions in defense spending by reducing investment, diversifying its business base, and restructuring its operations. This characterizes the response to the third question—how will industry respond?

What Are the Impacts on Acquisition?

The impact of anticipated reductions in U.S. defense spending will be seen in acquisition scope, structure, and competition.

First, the scope of acquisition will change. Driven by high operational tempo during the past 10 years, U.S. military acquisition has focused on satisfying the needs of the ongoing conflicts in Iraq and Afghanistan. New weapon systems have been developed and deployed such as the unmanned Predator drone and the Mine-Resistant Ambush Protected vehicle. Declining budgets will shift the focus of defense acquisition away from new capabilities to more modest upgrades and derivatives of weapon systems within the current U.S. military inventory. Support and services contracts will transition to organic resources as U.S. forces draw down from their current deployments. However, the most severe acquisition impacts are likely to come from program deferrals through reduced production rates, reductions through decreased unit quantities, and—in the extreme case—program terminations.

Second, the structure of acquisition will change. Expanding defense budgets have accommodated a wide range of acquisition structures, from single-year fixed-price contracts for combat support and supplies to large scale cost-reimbursable development programs. As defense budgets decline, pressures will increase to reduce acquisition costs by restructuring existing contracts. Multiyear contracts will transition

to single-year, cost-plus contracts will convert to fixed-price, and block quantity purchases will reissue as individual unit quantity contracts with priced options. While this approach is likely to meet the near-term goal of reducing current year acquisition costs, the net effect will likely drive increasing unit costs. This scenario risks sparking the dangerous iteration loop experienced in recent years where budget pressures force reductions in quantities and/or production rates, which in turn drive higher unit costs. History has been particularly unkind to programs caught in this acquisition scenario.

Third, the competition for acquisition will change. During the recent environment of increasing demand, the limiting constraint has often been industry capacity. For U.S. defense companies, this has created a very attractive advantage where demand in many cases exceeded supply. However, as demand declines, the result will likely be improved pricing for the U.S. military as companies begin to trade operating margins for continued revenues. This pattern will be particularly strong in product classes requiring high fixed costs and significant capital investments such as aircraft and shipbuilding. In some cases, the growing pressures will result in companies divesting unprofitable operations or even choosing to close down certain business lines. Compounding this effect, global defense budgets are also expected to decline. As international demand decreases, foreign competition for U.S. military acquisition will intensify. EADS, BAE, and others will increase their already growing search for opportunities in the U.S. defense market.

So for acquisition, three areas of impact are most likely: scope, structure, and competition. These categories help address the fourth question—what are the impacts on acquisition?

Are Specific Scenarios Already in Motion?

Applying the concepts developed throughout the previous sections, it is now possible to develop a case study using the top largest U.S. defense companies: Lockheed Martin, Boeing Defense, Northrop Grumman, General Dynamics, and Raytheon. To establish a baseline comparison, the following discussion uses data compiled from U.S. Securities and Exchange Commission 10-K Reports for the 2001 to 2010 reporting periods, summarized in Figure 6.

**FIGURE 6. U.S. SECURITIES & EXCHANGE COMMISSION 10-K REPORTS
(2001-2010 REPORTING PERIODS)**

		2001	2002	2003
General Dynamics				
Annual Revenue	\$B,USD	\$23.990	\$26.578	\$31.824
Annual Operating Earnings	\$B,USD	\$0.833	\$1.158	\$2.019
Annual Operating Margin	% Annual Revenue	3.5%	4.4%	6.3%
Capital Expenditure	% Annual Revenue	~	2.5%	2.2%
Research & Development	% Annual Revenue	~	~	~
Boeing (Defense)				
Annual Revenue	\$B,USD	\$22.815	\$24.957	\$27.361
Annual Operating Earnings	\$B,USD	\$1.965	\$2.009	\$0.766
Annual Operating Margin	% Annual Revenue	8.6%	8.0%	2.8%
Capital Expenditure	% Annual Revenue	2.6%	2.2%	1.4%
Research & Development	% Annual Revenue	2.3%	2.0%	2.1%
Northrop Grumman				
Annual Revenue	\$B,USD	\$13.558	\$17.206	\$26.206
Annual Operating Earnings	\$B,USD	\$1.004	\$1.391	\$1.538
Annual Operating Margin	% Annual Revenue	7.4%	8.1%	5.9%
Capital Expenditure	% Annual Revenue	2.9%	3.1%	2.4%
Research & Development	% Annual Revenue	2.5%	1.6%	1.6%
General Dynamics				
Annual Revenue	\$B,USD	\$12.163	\$13.829	\$16.617
Annual Operating Earnings	\$B,USD	\$1.485	\$1.582	\$1.467
Annual Operating Margin	% Annual Revenue	12.2%	11.4%	8.8%
Capital Expenditure	% Annual Revenue	2.9%	1.9%	1.3%
Research & Development	% Annual Revenue	1.7%	1.8%	1.7%
Raytheon				
Annual Revenue	\$B,USD	\$16.867	\$16.760	\$18.109
Annual Operating Earnings	\$B,USD	\$0.759	\$1.754	\$1.316
Annual Operating Margin	% Annual Revenue	4.5%	10.5%	7.3%
Capital Expenditure	% Annual Revenue	2.7%	2.7%	2.4%
Research & Development	% Annual Revenue	2.7%	2.7%	2.7%

2004	2005	2006	2007	2008	2009	2010
<i>General Dynamics continued</i>						
\$35.526	\$37.213	\$39.620	\$41.862	\$42.731	\$45.189	\$45.803
\$2.089	\$2.986	\$3.953	\$4.527	\$5.131	\$4.466	\$4.097
5.9%	8.0%	10.0%	10.8%	12.0%	9.9%	8.9%
2.2%	2.3%	2.3%	2.2%	2.2%	1.9%	1.8%
-	1.7%	1.6%	1.6%	1.6%	1.6%	1.4%
<i>Boeing (Defense) continued</i>						
\$30.465	\$30.791	\$32.439	\$32.080	\$32.047	\$33.661	\$31.943
\$2.925	\$3.890	\$3.032	\$3.440	\$3.232	\$3.299	\$2.875
9.6%	12.6%	9.3%	10.7%	10.1%	9.8%	9.0%
0.7%	1.4%	1.0%	0.7%	0.8%	0.8%	0.7%
1.8%	1.9%	1.7%	1.7%	1.9%	2.3%	2.4%
<i>Northrop Grumman continued</i>						
\$29.853	\$30.721	\$30.148	\$32.018	\$33.887	\$33.755	\$34.757
\$2.006	\$2.178	\$2.454	\$3.006	-\$0.111	\$2.483	\$3.070
6.7%	7.1%	8.1%	9.4%	-0.3%	7.4%	8.8%
2.3%	2.7%	2.4%	2.1%	2.0%	1.9%	2.2%
1.7%	1.7%	1.9%	1.7%	1.7%	1.8%	1.7%
<i>General Dynamics continued</i>						
\$19.178	\$21.244	\$24.063	\$27.240	\$29.300	\$31.981	\$32.466
\$1.941	\$2.197	\$2.625	\$3.113	\$3.653	\$3.675	\$3.945
10.1%	10.3%	10.9%	11.4%	12.5%	11.5%	12.2%
1.4%	1.2%	1.4%	1.7%	1.7%	1.2%	1.1%
1.7%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
<i>Raytheon continued</i>						
\$20.245	\$21.894	\$20.291	\$21.301	\$23.174	\$24.881	\$25.183
\$1.388	\$1.687	\$1.840	\$2.328	\$2.596	\$3.042	\$2.607
6.9%	7.7%	9.1%	10.9%	11.2%	12.2%	10.4%
1.8%	1.4%	1.4%	1.5%	1.3%	1.1%	1.3%
2.4%	2.0%	2.3%	2.4%	2.2%	2.3%	2.5%

FIGURE 7. REVENUES OF TOP U.S. DEFENSE FIRMS OVER LAST DECADE

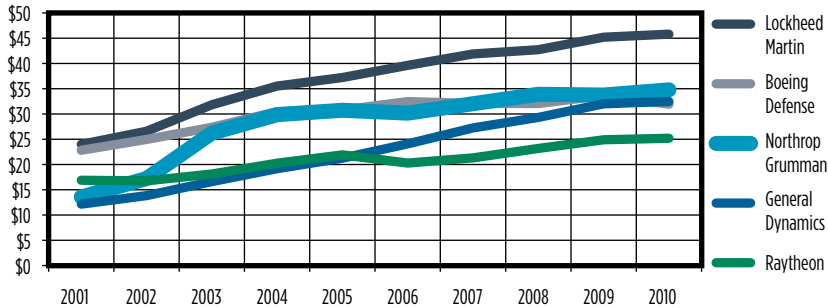
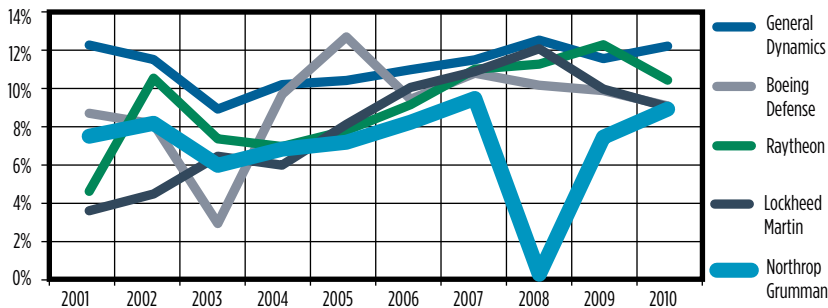


FIGURE 8. COMPARISON OF ANNUAL OPERATING MARGINS OF TOP U.S. DEFENSE FIRMS OVER LAST DECADE



Looking first at revenues in Figure 7, each of the top U.S. Defense firms experienced significant sales growth during the last decade. In particular, General Dynamics and Northrop Grumman saw annual revenues more than double.

In contrast to the steady increase in annual revenues, a comparison of annual operating margins shown in Figure 8 is more unstable. Two features to note: In 2003, Boeing-Defense recorded a one-time charge of \$1.7 billion against its space launch and orbital systems division, which drove the company’s performance down to 2.8 percent for the year. In 2008, Northrop Grumman announced a \$2.5 billion write-off against its shipbuilding business that resulted in a net loss of -\$111 million for the reporting year (The Boeing Company et al., 2001–2010).

FIGURE 9. ANNUAL RESEARCH AND DEVELOPMENT EXPENDITURES, PERCENTAGE OF ANNUAL REVENUES FOR TOP FIVE U.S. DEFENSE FIRMS (2001-2010)

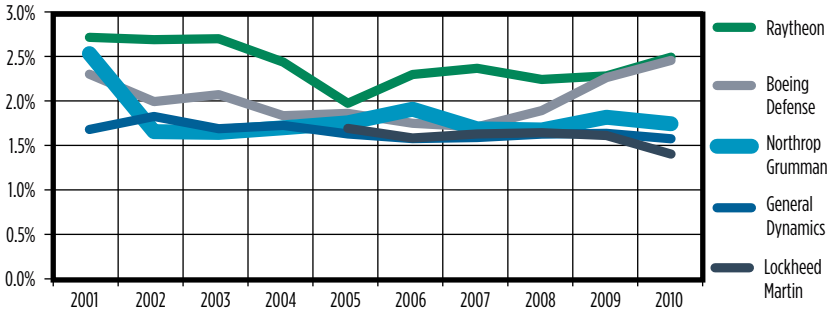
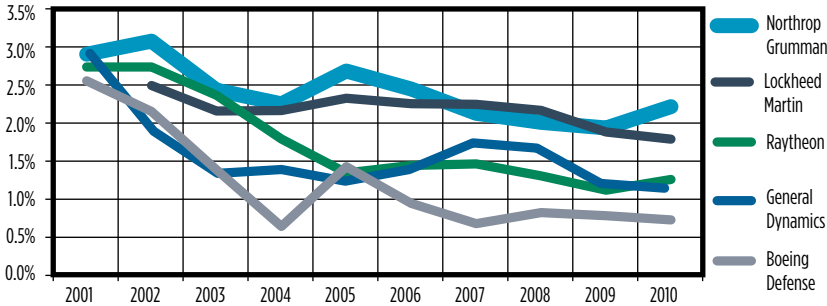


FIGURE 10. ANNUAL CAPITAL EXPENDITURES, PERCENTAGE OF ANNUAL REVENUES FOR TOP FIVE U.S. DEFENSE FIRMS (2001-2010)



Next, applying the framework developed for likely industry responses, it is helpful to compare research and development expenditures along with capital investments. For the top five U.S. defense firms, Figures 9 and 10 show the data from 2001 through 2010 as a percentage of annual revenues.

From the data, research and development expenses are fairly constant, with Boeing Defense indicating a noticeable increase in investment over the past three reporting years. However, capital expenditures for the top defense companies show a clear downward trend. This downward trend is led by Boeing Defense, the same company that indicated stronger recent investment in research and development.



FIGURE 11. SEC DATA COMPILED FOR NORTHROP GRUMMAN BUSINESS SEGMENTS (2001-2010)

		2001	2002	2003
Northrop Grumman (Business Segments)				
Annual Revenue	\$B,USD	\$3.00	\$3.27	\$6.62
Annual Operating Earnings	\$M,USD	\$258	\$331	\$573
Annual Operating Margin	% Annual Revenue	8.60%	10.10%	8.70%
Electronics				
Annual Revenue	\$B,USD	\$4.72	\$5.34	\$6.04
Annual Operating Earnings	\$M,USD	\$359	\$435	\$590
Annual Operating Margin	% Annual Revenue	7.60%	8.10%	9.80%
Information Systems				
Annual Revenue	\$B,USD	\$3.78	\$4.24	\$8.87
Annual Operating Earnings	\$M,USD	\$170	\$249	\$539
Annual Operating Margin	% Annual Revenue	4.50%	5.90%	6.10%
Shipbuilding				
Annual Revenue	\$B,USD	\$1.88	\$4.71	\$5.45
Annual Operating Earnings	\$M,USD	\$19	\$306	\$295
Annual Operating Margin	% Annual Revenue	1.00%	6.50%	5.40%
Technical Services (Omitted from Comparison Charts - Segment Operations Started in 2004)				
Annual Revenue	\$B,USD			
Annual Operating Earnings	\$M,USD			
Annual Operating Margin	% Annual Revenue			

While this simple comparison is not conclusive, it is indicative of the industry response of reduced investment presented in the financial performance data of the top five U.S. defense companies.

Next, data available in the 10-K annual reports help provide examples of the need for diversification. In 2010, Lockheed Martin reported 84 percent of the company's net revenues from the U.S. Government, with 15 percent of revenues from FMS. Also in 2010, Boeing Defense reported 87 percent of revenues from contracts to the U.S. Government, and Northrop Grumman's U.S. Government sales were 92 percent of 2010 revenues. General Dynamics reported 72 percent of revenues from the U.S. Government, and Raytheon reported 88 percent of total sales

2004	2005	2006	2007	2008	2009	2010
<i>Northrop Grumman (Business Segments) continued</i>						
\$8.01	\$9.01	\$8.85	\$8.20	\$9.84	\$10.42	\$10.91
\$634	\$729	\$844	\$852	\$417	\$1,071	\$1,256
7.90%	8.10%	9.50%	10.40%	4.20%	10.30%	11.50%
<i>Electronics continued</i>						
\$6.42	\$6.64	\$6.58	\$6.91	\$7.09	\$7.67	\$7.61
\$670	\$710	\$744	\$813	\$952	\$969	\$1,023
10.40%	10.70%	11.30%	11.80%	13.40%	12.60%	13.40%
<i>Information Systems continued</i>						
\$10.00	\$10.62	\$9.11	\$10.42	\$10.16	\$8.61	\$8.40
\$622	\$736	\$823	\$895	\$813	\$631	\$756
6.20%	6.90%	9.00%	8.60%	8.00%	7.30%	9.00%
<i>Shipbuilding continued</i>						
\$6.25	\$5.79	\$5.32	\$5.79	\$6.15	\$6.21	\$6.72
\$389	\$241	\$393	\$538	(\$2,307)	\$299	\$325
6.20%	4.20%	7.40%	9.30%	-37.50%	4.80%	4.80%
<i>Technical Services (Omitted from Comparison Charts - Segment Operations Started in 2004) continued</i>						
\$0.23	\$0.04	\$1.79	\$2.18	\$2.30	\$2.78	\$3.23
(\$3)	(\$17)	\$110	\$120	\$121	\$161	\$206
-1.30%	-40.50%	6.10%	5.50%	5.30%	5.80%	6.40%

(The Boeing Company et al., 2001–2010). Just looking at the most recent 2010 reporting period, financial performance of the top U.S. defense companies is clearly at significant risk as defense budgets decline. Diversification will likely be a key industry response.

Turning next to restructuring, the initial set of comparisons over the past 10 years ranks Northrop Grumman as third in annual revenues and last in annual operating margins. Narrowing the focus, performance data for each of Northrop Grumman's business segments indicate potential industry responses. Figure 11 summarizes Northrop Grumman's business segment performance from 2001–2010, and Figures 12 and 13 compare annual revenues and operating margins.

FIGURE 12. ANNUAL REVENUES OF NORTHROP GRUMMAN'S BUSINESS SEGMENTS (2001-2010)

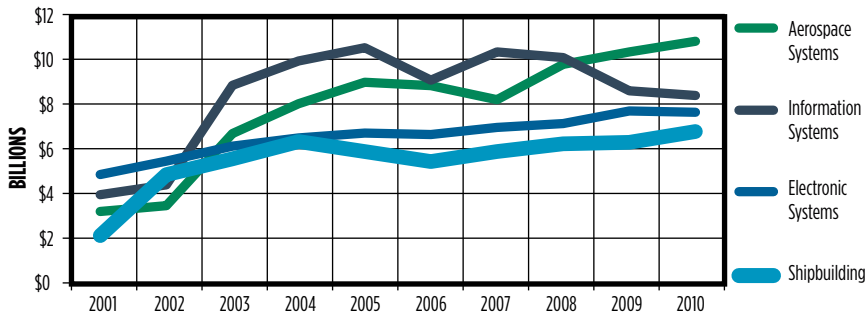
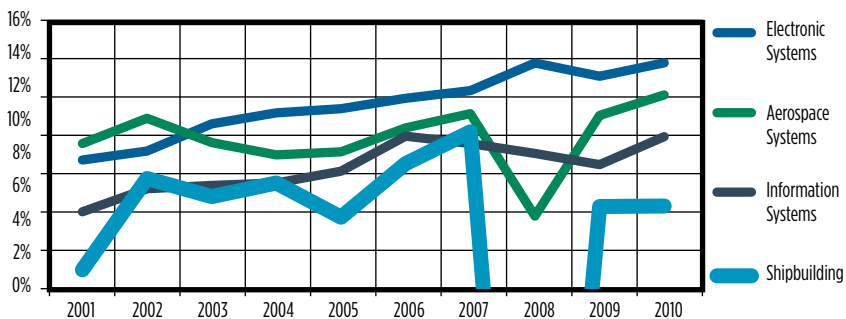


FIGURE 13. ANNUAL OPERATING MARGINS OF NORTHROP GRUMMAN'S BUSINESS SEGMENTS (2001-2010)



Based on these comparisons, Northrop Grumman shipbuilding lags the company’s other business segments in both revenues and operating margins, with shipbuilding reflecting the sizeable impact of the \$2.5 billion charge taken in 2008. This likely helps provide important context to the company’s announcement in 2010 that it intended to spin off its shipbuilding business (The Boeing Company et al., 2001–2010). While only a singular example, this serves to highlight the active industry response of restructuring.


Using the information developed in this short case study, the response is positive to the fifth key question—are specific scenarios already in motion?

What Can Be Done?

Fortunately, much can be done to counter the downside risk of a declining U.S. defense budget. The following section outlines several recommendations to mitigate the risk to the U.S. military as well as the U.S. defense industry.

The first recommendation is to enact an aggressive incentive program focused on business investment. Current plans for accelerated capital depreciation credit align very well with this recommendation. Since the financial rationale for capital expenditures is driven by how quickly a company can recover its investment, an accelerated depreciation credit has a significant positive effect through taxation benefit. In addition, an increased research and development tax credit should also be enacted to better align financial incentives with the strategic benefit of investment by U.S. defense companies in future technologies. It is important to note that the public policy dimension of this recommendation will be a considerable challenge. Even as the global economy recovers, U.S. lawmakers will struggle to balance the strategic benefits of policies such as these with the need to sustain or increase federal tax revenues. This recommendation will help counter industry's likely response of reducing investment.

The second recommendation addresses potential restructuring of the U.S. defense industry by updating federal policy guidance and processes. The downturn during the 1990s spurred a series of consolidation actions across the defense industry, with the majority of these activities resulting in mergers or acquisitions. As a result, the overwhelming majority of today's federal policies focus on antitrust and competitive concerns. Similarly, reform efforts related to the Committee on Foreign Investment in the United States pushed the balance-point further away from beneficial foreign ownership of businesses that provide capabilities to the U.S. military. As the global economy has changed during the past decade, these policies have become increasingly out of date (Department of Defense, 1996). Further complicating the concern, a number of different federal departments and agencies are responsible for areas of the review and approval process. From the Department of Justice to the Securities and Exchange Commission, no clear process owner exists. In addition to updating the policies involved, clear process ownership should be established. This recommendation is essential to successfully managing the likely industry response of restructuring (Department of Defense, 2003).



The third recommendation is to accelerate current reform efforts related to U.S. export controls. Much like the industry restructuring policies outlined previously, military export controls have not kept pace with changes in the global environment. In August of 2009, the White House initiated a review to identify needed export reforms, but the basic issues and struggles remain. Oversight and authority for export controls continue to be redundant and—in the assessment of the Government Accountability Office (GAO)—overly restrictive and ineffective (GAO, 2010). In some cases, the real effect on U.S. defense companies is an inability to compete for FMS opportunities, while European or Asian companies expand their global market share. As the U.S. defense industry seeks to diversify both its customer and product base, more effective and better balanced export requirements will be key to this strategy.

The fourth recommendation emphasizes the importance of continued open and proactive communication. Through formal statements and even informal remarks, Department of Defense officials can signal to industry what actions it will support as well as what actions it will not. As an example, in February of 2011 former Under Secretary of Defense Ashton Carter delivered timely guidance to industry by stating that the Department of Defense would support consolidation of second- and third-tier suppliers, but not first-tier defense companies. For businesses diligently working to develop strategies for declining defense budgets, this level of openness is essential (Carter, 2011). The costs to evaluate and formally propose a potential merger or acquisition are significant. The least favorable outcome is for industry to invest the resources only to have the federal government determine that the proposal is not in its best interest. Clear, open, and proactive communication is key.

In summary, this set of recommendations focuses on investment incentives, industrial review policies, export reforms, and proactive communication. Combined together, these form an effective response to the sixth question—what can be done?

Conclusions

Mirroring the structure developed at the beginning of this discussion, the following section addresses each of the opening questions.

Where are we in the sequence of events? It would be comforting to describe how the United States is still very early in the timeline and how a wide range of options remains open to policy makers. However, the reality is that more than a decade of federal deficit spending and the resulting increase in the national debt has crossed the point of crisis. Simple options are no longer available.

What is likely to happen next? Prior to release of the President's 2012 budget, expectations centered on the need for a series of strategic commitments to responsibly draw down federal expenditures while increasing revenues. Now, growing consensus opinion points to a near-term scenario requiring dramatic cuts in federal spending that include sharp reductions in discretionary expenditures focused on the U.S. defense budget.

How will industry respond? Based on the discussion, three likely scenarios for industry's response emerge: reduced investment, diversification, and restructuring. Near-term response to uncertainty will impact capital investment as well as research and development spending. Companies will also pursue opportunities to diversify their customer base as well as their range of products and services. As industry adjusts to declining future demand, many businesses will choose to restructure through acquisitions, divestiture, or mergers. In some cases, companies may choose to no longer compete for U.S. defense business.

What are the impacts on acquisition? The impact of declining U.S. defense budgets will be seen in acquisition scope, structure, and competition. Scope will transition from a focus on wartime supply and rapid development to much more modest upgrades and reset activities. Structure will transition from a broad mix of contract types to a more narrow set of shorter duration, fixed-price, limited-quantity contracts. Competition will increase significantly both in depth and breadth as U.S. companies begin to trade operating margins for continued revenues, and international companies increase efforts to compete for U.S. defense contracts.

Are specific scenarios already in motion? Researching the top five U.S. defense firms, elements of the predicted industry response clearly exist. Investment in areas such as capital expenditure is in decline. In particular, Boeing Defense has reduced its rate of capital investment by over half during the past decade. Diversification is underway as companies compete for FMS opportunities. Many examples of restructuring exist to include acquisitions, divestitures, and proposed mergers.

What can be done? Four policy recommendations hold particular promise. First, the federal government should provide financial incentives for business investment through increased tax credit for research and development as well as capital investments. Second, the policies that govern the restructuring of U.S. defense companies should be consolidated and updated to include beneficial foreign investment. Third, the current effort to revise U.S. export controls should be accelerated to enable market diversification of U.S. defense companies through foreign military sales. Fourth, the Department of Defense should increase its use of industry forums, public statements, and other communication channels to signal its intentions as companies develop their response strategies.

Closing Comments

Building on the analysis and recommendations presented in this discussion, it is possible for both the U.S. Department of Defense and the U.S. defense industry to mitigate the dangerous downside risk of anticipated defense budget cuts.

Intervention *is* possible.

Now, stop running—and slowly put down the scissors.

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