II. United States' military expenditure

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The United States remained by far the world's largest military spender in 2015. Its spending of $596 billion was 36 per cent of the world total. This was a decrease of 2.4 per cent in 2015 compared with 2014—the fifth consecutive year of decline but one of the lowest annual rates of reduction since 2010 (the year with the highest level of US spending recorded by SIPRI). The average rate of decline for the years 2010 to 2014 was 5.3 per cent. Looking at the 10-year trend, spending in 2015 was 3.9 per cent (or $24.2 billion in constant 2014 prices) lower than in 2006.

Total US military expenditure covers outlays (actual expenditure) from: (*a*) 'the base budget', that is, spending on the regular activities of the Department of Defense (DOD); (*b*) Department of Energy spending on the US nuclear arsenal; (*c*) military spending in other government departments; (*d*) Overseas Contingencies Operations (OCO) spending, which funds US military operations around the world; and (*e*) spending by the Department of State on foreign military aid.[1]

The central drivers that shaped US military spending in 2015 were not significantly different from those observed in 2014, despite growing concerns about international security and stability, and improvements in the US economy. Indeed, decreases in US military spending were largely as expected, as the Budget Control Act of 2011 (BCA), which imposes legal restrictions on government spending, remained in force in 2015.[2] An overarching agreement as to how to sustainably reduce the USA's deficit is required in order to lift the spending limits imposed by the BCA. As of early 2016, there was still no sign of any political consensus on this issue.[3] However, perceptions of a more volatile international security environment combined with what were seen as challenges to US hegemony and interests in several parts of the world led to the adoption in December 2013 of an ad hoc, short-term measure to bypass the spending limits for a two-year period. This partially mitigated the impact of the BCA on US military expenditure, allowing spending in 2015 to be around $9.2 billion higher than would otherwise have been permitted by the BCA.[4] In early 2016, in the context of the run-up to a presidential election

[1] Total foreign military aid spending in 2015 was $6.56 billion or about 1% of total spending. US Department of State, *Congressional Budget Justification: Department of State, Foreign Operations and Related Programs, Fiscal Year 2016* (US Department of State: Washington, DC, 2 Feb. 2015).

[2] Sköns, E. and Perlo-Freeman, S., 'The United States' military spending and the 2011 budget crisis', *SIPRI Yearbook 2012*, pp.162–66.

[3] Harrison, T., 'The 2016 defence budget: it's all about the budget caps', *Forbes*, 30 Jan. 2015.

[4] US House of Representatives, 'Summary of the Bipartisan Budget Act of 2013', 10 Dec. 2013.

in November, the issue of amending the BCA seemed to have been relegated to the background.[5]

A stabilization of US military spending for 2016

The slowdown observed in 2015 in the pace of the reduction in US military spending—2.4 per cent compared with 6.2 per cent in 2014—is largely due to the Bipartisan Budget Act of 2013, which is also known as the Ryan-Murray Act.[6] This legislation temporarily raised the US budget above the limitations set by the BCA in 2011 without triggering 'sequestration'—a mechanism that cuts government spending across the board should the budget exceed funding levels prescribed by the BCA.[7] However in order to meet the total amount of spending reduction required by the BCA over a 10-year period, the 2013 Bipartisan Budget Act also extended the time frame of the BCA by 2 years, to 2023.[8]

The challenging process leading up to the adoption of the 2016 US defence budget followed a similar trajectory as that observed in 2013 in the run-up to the 2014 budget (for details of the budget see table 13.4). President Barack Obama submitted the DOD's proposed fiscal year (FY) 2016 budget request to the US Congress on 2 February 2015.[9] The request called for an increase in the DOD's base budget—the largest part of DOD funding that supports its regular activities—and a reduction in the resources allocated to the special wartime budget for OCO.[10] The US Congress crafted a counter proposition that significantly boosted funding for OCO, which President Obama vetoed primarily on the basis that he considered the large increase for OCO to be a 'gimmick' to avoid dealing with the BCA budget caps.[11] Special wartime budget resources are not included in the calculation of BCA budget limits.[12] Since the enactment of the BCA, OCO funding has been widely seen as a convenient way to circumvent it and supplement the DOD base budget. This executive–legislative divergence over the defence budget triggered negotiations that led to the adoption of a new two-year agreement, the Bipartisan Budget Act of 2015 (BBA 2015).[13]

[5] According to reviews by Ballotpedia, none of the candidates in either the Republican or the Democratic primaries has specifically addressed the Budget Control Act, <https://ballotpedia.org/>.

[6] Bipartisan Budget Act of 2013, US Public Law no. 113-67, signed into law 26 Dec. 2013.

[7] Sequestration has been applied only once since the implementation of the Budget Control Act—in 2013.

[8] Fleurant, A., 'US military expenditure' *SIPRI Yearbook 2015*, pp. 353–59.

[9] US Department of Defense, Office of the Under Secretary of Defence (Comptroller), Fiscal Year 2017 Budget Request, Budget Briefing, 9 Feb. 2016.

[10] The US Government uses fiscal years for budgeting, which run from 1 Oct. to 30 Sep. The fiscal year (FY) 2017 budget is the budget that comes into force on 1 Oct. 2016.

[11] White House, Office of the Press Secretary, 'Remarks by the president at veto signing of National Defense Authorization Act', Press release, 22 Oct. 2015; and Herszenhorn, D. M., 'Congress strikes a budget deal with president', *New York Times*, 26 Oct. 2015.

[12] Fleurant (note 8).

[13] Bipartisan Budget Act of 2015, US Public Law 114-74, signed into law on 2 Nov. 2015.

Table 13.4. US outlays for the Department of Defense and total 'National defense' outlays, fiscal years 2001, 2006, 2010, 2012 and 2014–16

Figures are in current US$ billion unless otherwise stated. Years are US fiscal years, which start on 1 Oct. of the previous year.

	2001	2006	2010	2012	2014	2015	2016[a]
DOD, military	290.2	499.3	666.7	650.9	577.9	562.5	576.3
Military personnel	74.0	127.5	155.7	152.3	148.9	145.2	147.8
O&M	112.0	203.8	276.0	282.3	244.5	247.2	248.2
Procurement	55.0	89.8	133.6	124.7	107.5	101.3	103.6
RDT&E	40.5	68.6	77.0	70.4	64.9	64.1	65.2
Other DOD military	8.8	9.6	24.4	21.2	12.1	4.6	11.5
Atomic energy, defence	12.9	17.5	19.3	19.2	17.4	18.7	19.2
Other, defence-related	1.6	5.1	7.5	7.8	8.1	8.4	8.9
Total 'National defense' outlays	**304.7**	**521.8**	**693.5**	**677.9**	**603.5**	**589.6**	**604.5**
At constant (FY 2009) prices	406.6	558.1	681.0	636.7	554.1	533.9	538.8
As a share (%) of GDP	2.9	3.8	4.7	4.2	3.5	3.3	3.3
As a share (%) of total government outlays	16.4	19.7	20.1	19.2	17.2	16.0	15.3

DOD = US Department of Defense; FY = fiscal year; GDP = gross domestic product; O&M = operations and maintenance; RDT&E = research, development, test and evaluation.

[a] Figures for FY 2016 are estimates.

Source: US Office of Management and Budget, *Historical Tables: Budget of the U.S. Government, Fiscal Year 2017* (US Government Printing Office: Washington, DC, 2016), <https://www.whitehouse.gov/omb/budget/Historicals>.

The BBA 2015 increases discretionary funding levels, in other words the resources allocated to a department or an agency in an annual budget process. DOD spending falls within the discretionary funding category.[14] The adoption of the BBA 2015 not only increases funding, but also provides greater financial stability for government departments and agencies in 2016 and 2017 by removing the possibility of a short-term 'continuing resolution'—a temporary extension of the previous year's budget levels that occurs when the legislative and executive branches fail to agree on the current year budget at the time it should be enacted into law.[15] As was the case for the 2013 bipartisan agreement, the time frame of the BCA was also extended by two years, taking it to 2025, in order to comply with total mandated reductions. As a new president is set to occupy the White House in January 2017, the

[14] 'Mandatory spending' includes items such as social security and pensions spending that is required by legislation separate from the annual budget process. 'Discretionary spending' is decided in the annual appropriations acts passed by Congress, following the US administration's budget request. Since the DOD receives around half of all discretionary spending, this issue is significantly geared to defence budgeting and spending. US Office of Management and Budget, *Historical Tables: Budget of the U.S. Government, Fiscal Year 2017* (US Government Printing Office: Washington, DC, 2016), table 5.5.

[15] Gould, J., 'US budget deal provides industry, military stability', *Defense News*, 31 Oct. 2015.

BBA 2015 also leaves the thorny issue of amending the Budget Control Act in the hands of the next administration and Congress.[16]

Poised for growth? The 'Third Offset Strategy' and increases in procurement and research and development[17]

Improvements in the US economy combined with the volatility of the international security situation and the multiplication of tensions and conflicts have intensified domestic pressure to increase military spending in the USA.[18]

With the help of the BBA 2015, the USA now seems poised to begin reversing the downward trend in military expenditure that started in 2011. The DOD's FY 2017 budget request, submitted to Congress on 9 February 2016, calls for a total of $582.7 billion, of which $523.9 billion is for the base budget and $58.8 billion for OCO. This represents a marginal $2.4 billion increase for the DOD budget compared to 2016 funding, of which $2.2 billion is for the base budget, and $200 million is for the OCO budget.[19]

The FY 2017 budget request proposes increases to certain budget categories and cuts to others.[20] The budget category with the largest proposed increase is research, development, test and evaluation (RDT&E), which is dedicated to developing new weapons systems. RDT&E is earmarked to receive an extra $2.8 billion, which equates to a rise of 4 per cent.[21] The increases in RDT&E are intended to prepare a new generation of weapons that will secure the US military technical advantage for the long term (see below).[22] Although RDT&E is more modest in scope than the procurement budget category, some of the projects it funds will eventually become major programmes paid for through the procurement budget category, which is therefore likely to increase over a 10-year time frame.

[16] Herszenhorn (note 11).

[17] Figures in this subsection refer to budgetary authority requested by the president and approved by Congress in its decision on the defence budget. Budgetary authority gives the US Department of Defense permission to spend money for specified purposes, either in the same year or subsequent financial years. In particular, budgetary authority for procurement spending is often used over a number of years. SIPRI figures for military spending, however, relate to outlays for 'National Defense', i.e. the money that is actually spent in a given financial year for military purposes.

[18] For further details on US threat perceptions see US Joint Chiefs of Staff, *The National Military Strategy of the United States of America 2015: The United States Military Contribution to National Security* (US Joint Chiefs of Staff: June 2015). For further details on economic indicators see US Department of Commerce, Bureau of Economic Analysis, 'US economic accounts', [n.d.].

[19] OCO funding is projected to increase by $200 million for FY 2017. US Department of Defense (note 9). See also US Department of Defence, 'Department of Defense releases fiscal year 2017 president's budget proposal', Press Release 046-16, 9 Feb. 2016.

[20] As the FY 2017 budget request is in the process of being reviewed by Congress, the figures presented in this section could change and should be seen only as indications of the US administration's priorities for the DOD.

[21] US Department of Defense (note 9).

[22] US Department of Defense (note 9).

The FY 2017 budget request cuts procurement by $6.8 billion, through reduced orders for existing major systems such as the F-35 combat aircraft, V-22 transport helicopter/aircraft, AH-64 Apache and UH-60 Blackhawk helicopters, and C-130J transport aircraft. The procurement account, which funds spending on weapons and equipment for the US armed forces, has been the DOD budget area most severely affected by cuts mandated by the BCA over the past few years, falling by 24 per cent in nominal terms between 2010 and 2015 compared with a 15 per cent fall in overall spending. This is reflected in the reduced sales of major US arms producers since 2011.[23] However, it is worth noting that some of the procurement cuts can be attributed to specific weapons programmes being cancelled following their poor performance, or due to their complexity or lack of relevance to changing operational requirements.[24]

Some elements of the FY 2017 budget request have attracted attention. There is a four-fold increase in requested funding for the European Reassurance Initiative, an OCO budget item that is intended to 'counter Russian aggression' and support allies and partners in Europe.[25] The budget request also calls for funding of $6.7 billion to strengthen cyber-defences and develop 'offensive cyber capabilities'.[26] Thus, current geopolitical tensions in Europe, as well as perceived challenges from new types of threats and risks to national security are clearly driving some of the decisions on resource allocation.

The increase in RDT&E expenditure, and research and development spending in particular, at the expense of spending on existing systems reflects one of the central priorities of the current US administration: to qualitatively advance US military capabilities and to secure and enhance the US military advantage, in part by leveraging technological breakthroughs in the civilian sector.[27] A key element of this is the Defense Innovation Initiative, which forms part of a wider modernization strategy known as the 'Third Offset Strategy' announced in 2014 by the former Secretary of Defense, Chuck Hagel.[28] This strategy resulted from growing concern about the development

[23] SIPRI, 'Total arms sales for the SIPRI Top 100, 2002–14', 14 Dec. 2015.

[24] Harrison, T., *Analysis of the FY 2012 Defense Budget* (Center for Strategic and Budgetary Assessments: Washington, DC, July 2011).

[25] The European Reassurance Initiative budget request for FY 2017 is $3.4 billion, a significant increase on the $789 million budget request in 2016. US Department of Defense (note 9).

[26] US Department of Defense (DOD), 'Consolidated DOD FY 17 budget fact sheet', [n.d.].

[27] US Department of Defense, US Secretary of Defense, Defense Innovation Initiative, Memorandum for Deputy Secretary of Defense et al., 15 Nov. 2014.

[28] The Third Offset Strategy is a reference to the cold war Offset Strategy, which sought, in the context of a war with the Soviet Union, to counteract the greater number of Soviet forces with more advanced and efficient weapons, possibly including nuclear weapons. The title of the strategy bears no relation to the practice of offsets in international arms transfers. Dombrowski, P., *America's Third Offset Strategy: New Military Technologies and Implications for the Asia Pacific*, S. Rajaratnam School of International Studies (RSIS) Policy Report (RSIS: Singapore, June 2015).

of capabilities intended to restrict the freedom of movement of US military forces, which is considered as a threat to the country's national interests and those of its allies.[29] A perception of an erosion of US weapons technological superiority is also driving this project.[30] One important component of the Defense Innovation Initiative is to stimulate and accelerate military innovation by establishing closer ties between civilian private sector companies based in the California high-tech hub known as Silicon Valley and the US arms industry, especially in areas such as artificial intelligence (AI), robotics and additive manufacturing, which are considered dual-use in nature.[31]

It should be noted, however, that the interest displayed by the DOD in building bridges with civilian companies at the forefront of US technological development is not new. Similar efforts were undertaken in the 1990s as network and communications technologies were growing in importance in various areas and were largely perceived by the US military to be a way to advance and qualitatively increase weapons capabilities and the conduct of warfare through improved situational awareness, precision and coordination on the battlefield.[32] The current initiative has integrated some of the lessons learned at that time, but numerous possible roadblocks remain. On the issue of AI and autonomous weapons, a group of leading AI scientists and representatives from some of the largest and most innovative software companies released an open letter in July 2015 opposing efforts to 'weaponize' AI by creating autonomous weapons, initiating an important debate within both the AI and the policy communities.[33]

[29] In military jargon, these capabilities are labelled 'anti-access/area denial' or A2/AD. Freir, N., 'The emerging anti-access/area-denial challenge', Center for Strategic and International Studies, 17 May 2012; and Fontaine, R. and Smith, J., 'Anti-access/area denial isn't just for Asia anymore', *Defense One*, 2 Apr. 2015,

[30] US Department of Defense (note 27).

[31] Mehta, A. and Clevenger, A., 'DOD ties closer to Silicon Valley with FlexTech initiative', *Defense News*, 29 Aug. 2015.

[32] Galdi, T. W., *Revolution in Military Affairs? Competing Concepts, Organizational Responses, Outstanding Issues*, Congressional Research Service (CRS) Report for Congress 95-1170 F (US Congress, CRS: Washington, DC, 11 Dec. 1995).

[33] On 28 July 2015 the Future of Life Institute published an open letter proposing a ban on autonomous weapons signed by leading individuals associated with innovative companies such as Elon Musk (chief executive officer of SpaceX and Tesla Motors) and Steven Wozniak (co-founder of Apple Inc), as well as renowned scientists such as Stephen Hawking. Future of Life Institute, 'Autonomous weapons: an open letter from AI and robotics researchers', 28 July 2015.