

I. Global developments in military expenditure

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World military expenditure is estimated to have been \$1686 billion in 2016. This represents a marginal increase of 0.4 per cent in real terms on 2015 and follows on from a 1.1 per cent increase between 2014 and 2015 (see table 9.1 and figure 9.1).¹ World military expenditure rose by 14 per cent in real terms in the 10-year period 2007–16. However, this increase actually occurred only between 2007 and 2010. Spending decreased slightly in 2011 and has remained at a fairly constant level since then. The global military burden, the share of world military expenditure as a share of global gross domestic product (GDP), decreased in 2016 to 2.2 per cent due to growth in world GDP.

The trend in global military expenditure in 2016 can be categorized into two distinct regional divisions. Spending increased in the Americas, Europe, and Asia and Oceania, while spending fell in Africa and the Middle East.² The growth in spending in the Americas was mainly driven by a 1.7 per cent rise in military expenditure by the United States—the first increase in US spending since 2010. The growth in military expenditure in both Western and Central Europe was principally related to the perceived threats from Russia, concerns over terrorism and the fight against the Islamic State (IS) in Iraq and Syria (see figure 9.2). In Eastern Europe, the growth was largely driven by Russia's one-off payment on debts accrued to arms producers, which led to an overall increase of 5.9 per cent in Russia's spending compared with 2015. The rise in spending in Asia and Oceania was driven by substantial increases in military expenditure in China, India and other South East Asian countries.

The decline in military expenditure in Africa and the Middle East in 2016 was chiefly a result of the sharp fall in the price of oil and persistent price slump that began in late 2014, which put significant pressure on military spending in many oil export-dependent states in those regions (see section III). Africa experienced its second successive year of falling military

¹ All SIPRI's military expenditure data is freely available online at: <<http://www.sipri.org/databases/milex>>. The sources and methods used to produce all data discussed in this chapter are also presented on the SIPRI website. Except where otherwise stated, all figures for increases or decreases in military spending are expressed in constant (2015) US dollars, often described as changes in 'real terms' or adjusted for inflation. All actual spending figures are quoted in 'nominal' figures, which are not adjusted for inflation.

² For the second consecutive year, SIPRI is not providing an estimate of overall regional spending in the Middle East due to missing data from several key countries (Lebanon, Qatar, Syria, the United Arab Emirates and Yemen). For those countries for which data is available, their combined total military expenditure in 2016 showed a decrease of 17% compared with 2015. For further detail see chapter 3, section III, in this volume.

Table 9.1. Military expenditure by region, 2007–16

Figures for 2007–16 are in US\$ b. at constant (2015) prices and exchange rates. Figures for 2016 in the right-most column, marked *, are in current US\$ b. Figures may not add up to stated totals because of the conventions of rounding.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2016*
World total	1 476	1 561	1 666	1 695	1 699	1 695	1 672	1 664	1 682	1 688	1 686
<i>Geographical regions</i>											
Africa	26.5	31.0	32.0	(33.6)	(36.9)	(37.2)	40.5	42.1	(39.7)	(39.2)	(37.9)
North Africa	7.6	9.1	(10.1)	(11.0)	(13.8)	14.9	17.0	18.1	(18.4)	(18.7)	(18.7)
Sub-Saharan Africa	18.9	22.0	21.9	(22.6)	(23.0)	(22.3)	(23.6)	(24.0)	21.2	20.5	19.2
Americas	715	768	822	842	832	797	743	699	678	683	693
Central America and the Caribbean	5.7	5.9	6.5	7.0	7.2	7.9	8.4	9.1	9.5	8.6	7.8
North America	653	702	757	776	767	724	666	626	611	622	626
South America	55.5	60.6	58.7	59.0	57.5	65.5	68.8	63.8	56.7	52.5	58.8
Asia and Oceania	279	296	335	343	357	372	392	414	436	456	450
Central and South Asia	48.4	52.9	60.7	61.6	62.8	63.2	63.7	67.1	68.9	73.3	73.3
East Asia	181	193	220	227	239	253	269	286	302	315	308
Oceania	20.9	21.5	23.2	23.4	23.0	22.3	22.1	23.9	26.1	26.6	26.6
South East Asia	28.5	29.4	30.7	31.1	32.1	33.2	36.5	36.3	39.8	41.9	41.9
Europe	324	332	338	331	325	326	320	322	333	342	334
Central Europe	20.6	19.6	19.0	18.3	17.9	17.6	17.4	18.4	20.9	21.5	21.0
Eastern Europe	43.5	47.6	48.8	49.5	53.5	61.5	64.4	69.2	74.6	77.2	75.4
Western Europe	259	265	270	263	253	247	238	235	237	243	237
Middle East	132	133	139	145	149	162	176	187	..	..	..
<i>Share (% of GDP)</i>											
Africa	1.8	1.9	2.0	1.8	1.8	1.9	2.0	2.2	2.0	2.0	2.0
Americas	1.3	1.4	1.6	1.5	1.4	1.5	1.5	1.5	1.4	1.3	1.3
Asia and Oceania	1.8	1.7	1.9	1.7	1.7	1.7	1.8	1.8	1.9	1.8	1.8
Europe	1.8	1.8	1.7	1.6	1.5	1.5	1.5	1.5	1.6	1.6	1.6

Middle East	4.4	4.0	4.8	4.5	4.6	5.0	5.1	5.1	6.1	6.0
<i>World military spending per capita (current US\$)</i>	232	221	227	236	245	246	243	241	229	227
<i>World military burden (i.e. world military spending as a % of world GDP, both measured in current US\$)</i>	2.7	2.4	2.6	2.5	2.4	2.4	2.3	2.1	2.3	2.2

() = total based on country data accounting for less than 90% of the regional total; . . . = estimate not provided due to unusually high levels of uncertainty and missing data; GDP = gross domestic product.

Notes: The totals for the world, regions and income groups are estimates, based on data from the SIPRI Military Expenditure Database. When military expenditure data for a country is missing for a few years, estimates are made, most often on the assumption that the rate of change in that country's military expenditure is the same as that for the region to which it belongs. More detailed information on sources and methods can be found at <<https://www.sipri.org/databases/milex/sources-and-methods>>. When no estimates can be made, countries are excluded from the totals. The countries excluded from all totals here are Cuba, Eritrea, North Korea, Somalia, Syria, Turkmenistan and Uzbekistan. Totals for regions and income groups cover the same groups of countries for all years. The coverage of the geographical regions and subregions is based on the grouping of countries in the SIPRI Military Expenditure Database. Income groups are based on the World Bank World Development Indicators, January 2017 with a gross national income per capita in 2015 of \$1025 or less for low-income countries; \$1026–\$4035 for lower-middle-income countries; \$4036–\$12 475 for upper-middle-income countries; and more than \$12 476 for high-income countries.

Sources: SIPRI Military Expenditure Database, <<http://www.sipri.org/databases/milex/>>; International Monetary Fund (IMF), *World Economic Outlook Subdued Demand: Symptoms and Remedies* (IMF: Washington, DC, Oct. 2016); IMF, *International Financial Statistics* (IMF: Washington, DC, Sep. 2016); and United Nations Department of Economic and Social Affairs, Population Division, 'World population prospects, Population indicators', July 2016.

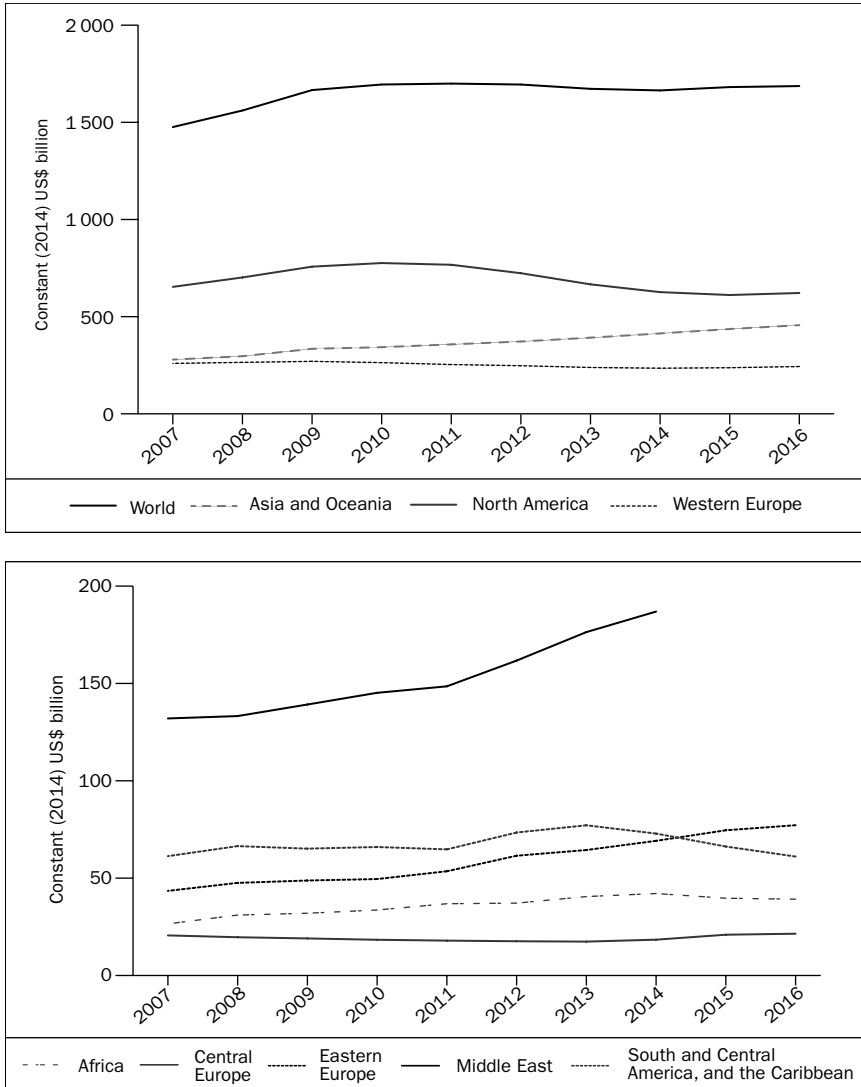


Figure 9.1. World and regional military expenditure, 2007–16

expenditure, mostly due to the economic problems in oil export-dependent countries such as Angola and South Sudan, which led to cuts in government spending. The fall in military expenditure in the Middle East in 2016 (based on those countries for which data is available) came despite the fact that all countries in the region—except Oman—were militarily involved in at least one armed conflict. Reductions in military spending caused by low oil prices were also visible at subregional level. The 7.5 per cent decrease in military spending in South America, for example, can largely be attributed to the

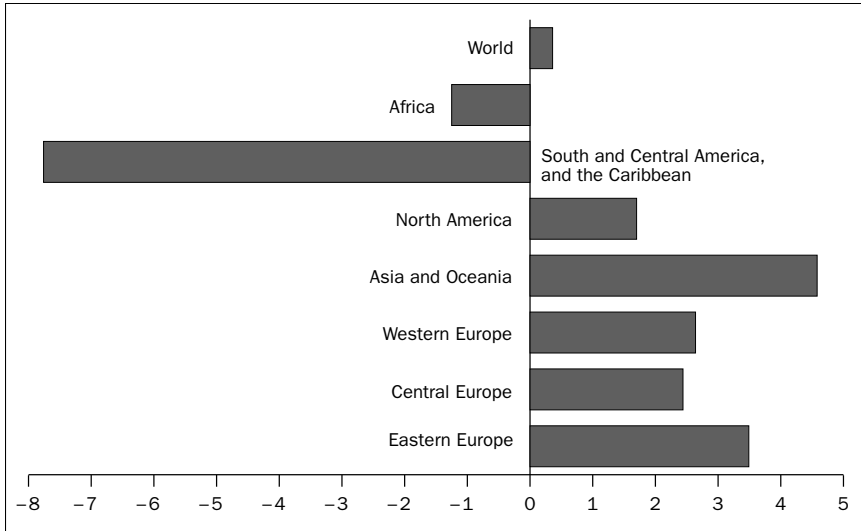


Figure 9.2. Changes in military expenditure, by region, 2015–16

56 per cent fall in spending by oil export-dependent Venezuela between 2015 and 2016 and the economic problems in Brazil.

Trends in military expenditure, 2007–16

Total global military spending reached a plateau in 2010, which continued in 2016. This period of flattening out, following several consecutive years of increases, can be divided into two phases. The initial phase (2010–13) was shaped by the effects of austerity measures implemented in most developed countries and the withdrawal of US troops from Iraq and Afghanistan, which counteracted the increases in the rest of the world. This was followed by a second phase of oil and other commodity price shocks (2014–16), which negatively affected military spending in much of the developing world outside Asia, but was offset by rising spending in Asia and Oceania, Western Europe (since 2014) and the USA (since 2015).

Between 2007 and 2016 the largest increases in military expenditure, at subregional level, were in North Africa (145 per cent), Eastern Europe (78 per cent), East Asia (74 per cent) and Central and South Asia (51 per cent) (see table 9.2). The growth in North Africa was mainly spurred by Algeria's high levels of oil revenue and regional power ambitions. The increase in Eastern Europe was driven by Russia's push for regional influence (e.g. the conflict with Ukraine)—and the corresponding rising threat perceptions

Table 9.2. Key military expenditure statistics by region, 2016

Region/ subregion	Military expenditure, 2016 (US\$ b.)	Change (%) ^a		Major changes, 2015 (%) ^b			
		2015–16	2007–16	Increases		Decreases	
World	1 686	0.4	14				
<i>Africa</i> ^c	(37.9)	-1.3	48	Botswana	40	South Sudan	-54
North Africa	(18.7)	1.5	145	Mali	18	Cote d'Ivoire	-27
Sub-Saharan Africa ^c	(19.2)	-3.6	8.5	Chad	18	Ghana	-23
				Senegal	17	Zambia	-22
<i>Americas</i> ^d	693	0.8	-4.4	Trinidad and Tobago	14	Venezuela	-56
Central America and Caribbean ^d	7.8	-9.1	50	Argentina	12	Peru	-20
North America	626	1.7	-4.8	Colombia	8.8	Ecuador	-13
South America	58.8	-7.5	-5.5	Honduras	7.7	Mexico	-11
<i>Asia and Oceania</i> ^e	450	4.6	64	Philippines	20	Kazakhstan	-26
Central and South Asia ^f	73.3	6.4	51	Viet Nam	9.7	Kyrgyzstan	-7.9
East Asia ^g	308	4.3	74	India	8.5	Afghanistan	-6.2
Oceania	26.6	1.7	27	Mongolia	7.1	Cambodia	-5.2
South East Asia	41.9	5.1	47				
<i>Europe</i>	334	2.8	5.7	Latvia	44	Azerbaijan	-36
Central Europe	21.0	2.4	4.2	Lithuania	35	Croatia	-8.9
Eastern Europe	75.4	3.5	78	Bulgaria	14	Belarus	-8.3
Western Europe	237	2.6	-6.2	Hungary	11	Georgia	-5.5
<i>Middle East</i> ^h	..	..	..	Iran	17	Iraq	-36
				Kuwait	16	Saudi Arabia	-30
				Jordan	9.3	Oman	-9.6

() = uncertain estimate.

^a Changes are in real terms.

^b The list shows the countries with the largest increases or decreases for each region as a whole, rather than by subregion. Countries with a military expenditure in 2016 of less than \$100 m., or \$50 m. in Africa, are excluded.

^c Figures exclude Eritrea and Somalia.

^d Figures exclude Cuba.

^e Figures exclude North Korea, Turkmenistan and Uzbekistan.

^f Figures exclude Turkmenistan and Uzbekistan.

^g Figures exclude North Korea.

^h No SIPRI estimate for the Middle East is available for 2015 and 2016. A rough estimate for the Middle East (excluding Syria) is included in the world total.

Source: SIPRI Military Expenditure Database, <<https://www.sipri.org/databases/milex>>.

and responses of its neighbours—and its intervention in Syria.³ In East Asia the rise was principally the result of China's economic growth (facilitating

³ Van Metre, L., Gienger, V. G. and Kuehnast, K., 'The Ukraine–Russia conflict: signals and scenarios for the broader region', United States Institute of Peace, Special Report 366, Mar. 2015.

its military modernization) and regional power aspirations.⁴ The increase in Central and South Asia can be attributed to India's many large ongoing and planned procurement programmes aimed at making it a major military power.⁵

By contrast, military spending fell in Western Europe (–6.2 per cent), South America (–5.5 per cent) and North America (–4.8 per cent) between 2007 and 2016. The decrease in Western Europe was due to reductions in military spending in all countries except for Finland, France, Germany and Switzerland. The fall in North America was mainly the result of cuts to the US military budget post-2010. South America's drop in spending was due to the region's increasingly benign security environment and Venezuela's economic problems causing an 85 per cent real-terms decrease in its military spending between 2007 and 2016.

The largest military spenders in 2016

The top 15 countries with the highest military expenditure in 2016 were the same as those in 2015, although there were some changes in their ranking (see table 9.3). These changes mean that for the first time in the SIPRI Military Expenditure Database's history no West European country is ranked among the top five global military spenders.

Together, the top 15 countries accounted for 81 per cent of global military expenditure in 2016. The USA heads the top 15 list, with over one-third (36 per cent) of the world's spending, followed by China with 13 per cent. As a result of large cuts to Saudi Arabia's military budget, Russia moved above Saudi Arabia and regained the position of third largest spender. It was originally expected and planned that the Russian Government would reduce its spending in 2016, including military spending. However, late in 2016 actual spending was pushed substantially higher by a decision to make a one-off payment of roughly \$11.8 billion in government debt to Russian arms producers. India moved from seventh to fifth place after its largest annual spending increase since 2009. Meanwhile, both the United Kingdom and Brazil dropped one place in the rankings. The UK fell from sixth to seventh—a move largely attributed to the devaluation of the British pound following the result of a referendum on the country's membership of the European Union. In Brazil, which went from 12th to 13th position, failure to revitalize an economy deep in recession led to a decline in military spending of 7.2 per cent between 2015 and 2016.

⁴ 'China's military rise: the dragon's new teeth', *The Economist*, 7 Apr. 2012; and Erickson, A. and Liff, A. P., 'The limits of growth: economic headwinds inform China's latest military budget', *Wall Street Journal*, 5 Mar. 2016.

⁵ 'India as a great power: know your own strength', *The Economist*, 30 Mar. 2013.

Table 9.3. The 15 countries with the highest military expenditure in 2016

Spending figures are in US\$, at current prices and exchange rates. Countries are ranked according to military spending calculated using market exchange rates (MER).

Rank		Country	Spending, 2016 (\$ b., MER)	Change, 2007–16 (%)	Share of GDP (%) ^b		World Share, 2016 (%)
2016	2015 ^a				2016	2007	
1	1	USA	611	-4.8	3.3	3.8	36
2	2	China	[215]	118	[1.9]	[1.9]	[13]
3	4	Russia	69.2	87	5.3	[3.4]	[4.1]
4	3	Saudi Arabia	[63.7]	20	[10]	8.5	[3.8]
5	7	India	55.9	54	2.5	2.3	3.3
Subtotal top 5			1 015	..	..	..	60
6	5	France	55.7	2.8	2.3	2.3	3.3
7	6	UK	48.3	-12	1.9	2.2	2.9
8	8	Japan	46.1	2.5	1.0	0.9	2.7
9	9	Germany	41.1	6.8	1.2	1.2	2.4
10	10	South Korea	36.8	35	2.7	2.5	2.2
Subtotal top 10			1 243	..	..	..	74
11	11	Italy	27.9	-16	1.5	1.6	1.7
12	13	Australia	24.6	29	2.0	1.8	1.5
13	12	Brazil	23.7	18	1.3	1.5	1.4
14	14	UAE ^c	[22.8]	123	[5.7]	[3.3]	[1.3]
15	15	Israel	18.0	19	5.8	6.7	1.1
Subtotal top 15			1 360	..	..	..	81
World			1 686	14	2.2	2.3	100

[] = estimated figure; GDP = gross domestic product; UAE = United Arab Emirates.

^a Rankings for 2015 are based on updated military expenditure figures for 2016 in the current edition of the SIPRI Military Expenditure Database. They may therefore differ from the rankings for 2015 given in the SIPRI Yearbook 2016 and in other SIPRI publications in 2016.

^b The figures for military expenditure as a share of gross domestic product (GDP) are based on estimates of 2016 GDP from the International Monetary Fund (IMF) World Economic Outlook and International Financial Statistics Database, Oct. 2016.

^c The figures for the UAE are for 2014, as no data is available for 2015 and 2016. The percentage change is from 2006 to 2014.

Sources: SIPRI Military Expenditure Database, <<https://www.sipri.org/databases/milex>>; and International Monetary Fund, World Economic Outlook Database, Oct. 2016, <<https://www.imf.org/external/pubs/ft/weo/2016/02/weodata/download.aspx>>.

As in previous years, the list of the top 15 spenders shows several different spending trends over the past 10 years. There were large increases by China and India (driven mostly by economic growth and regional aspirations), and Russia and the United Arab Emirates (UAE) (spurred mostly by oil income). Moderate increases in military expenditure were seen in Australia, Brazil, Israel, Saudi Arabia and South Korea, while the other countries (France, Germany, Italy, Japan, the UK and the USA) either remained static or experienced minor reductions in spending during 2007–16.

Countries in the Middle East in the top 15 (e.g. Israel, Saudi Arabia and the UAE) allocate far more of their GDP to military spending than any of the other countries in the list. In 2016 Saudi Arabia had the highest military burden among the top 15, spending 10 per cent of its GDP on the military.

Regional trends

Africa

Military expenditure in Africa dropped by 1.3 per cent in real terms in 2016 to \$37.9 billion.⁶ This was the second successive year of decrease after 11 consecutive years of increases dating back to 2003. Despite the decrease in 2016, military spending in Africa remains 48 per cent higher than in 2007.

Military expenditure in North Africa continues to rise. The total in 2016 of \$18.7 billion is an increase of 1.5 per cent compared with 2015 and is 145 per cent higher than in 2007. Algeria, Africa's largest spender, accounted for 55 per cent of North African and 27 per cent of African military expenditure in 2016. Between 2015 and 2016 Algeria increased its military spending by 2.3 per cent, a much lower level of increase than any other year since 2007. This slowdown in growth came at a time when low oil prices were having a major effect on Algeria's public finances.

Military spending in sub-Saharan Africa in 2016 was \$19.2 billion, down 3.6 per cent compared with 2015 but 8.5 per cent higher than in 2007. Cuts in spending by Angola and South Sudan drove the downward trend in 2016. A subregional total without these two countries would show spending in sub-Saharan Africa to have increased by \$222 million but when they are included military spending is shown to have contracted by \$781 million—a difference of \$1 billion.

South Sudan, facing the prospect of a protracted civil conflict, increased its military budget for 2016 by 141 per cent. Military spending now has the largest budget allocation, accounting for 22 per cent of the country's entire budget. While military expenditure is estimated to have risen in nominal terms in 2016, in real dollar terms, South Sudan's spending dropped by 54 per cent. South Sudan is embroiled in violent conflict, which has resulted in sharp falls in oil production and surging food prices. These, in turn, have fuelled both currency depreciation (over 1000 per cent) and hyperinflation (212 per cent), leading to substantial decreases in real-terms military spending. The drop of \$627 million in South Sudan's military spending was the largest recorded fall in Africa in 2016.

Angola's military spending decreased by \$376 million between 2015 and 2016, moving it from the highest to the second highest spender in

⁶ This total excludes Eritrea and Somalia, for which it was considered impossible to make a reliable series of estimates for inclusion in the regional total.

sub-Saharan Africa (behind South Africa) and the fifth highest in Africa. The Angolan economy has been severely affected by the decline in oil prices (see section III). Military spending fell to \$3.2 billion—a level of spending not seen since 2006—and could decrease further should oil prices remain low.⁷

Although regional conflicts have usually impacted on military spending in sub-Saharan Africa, in 2016 increases in military spending in most states were either minimal or substantially lower than the levels of increase in 2015. In the Democratic Republic of the Congo, military expenditure rose by only 2.4 per cent, down from a 43 per cent increase in 2015, despite political violence involving various militias continuing in the provinces of North Kivu, South Kivu and Orientale.⁸ Mali, amid ongoing peacebuilding efforts and its fight against armed Islamic extremists, increased military expenditure by 18 per cent in 2016. While this is the second highest increase in sub-Saharan Africa, it is much lower than Mali's 67 per cent increase in 2015. An explanation for the lower level of increase could be the negative cost of conflict and its impact on government finances.

Botswana had the highest percentage increase in military spending between 2015 and 2016 of any country in Africa. Despite it being in one of the least conflict-prone areas of sub-Saharan Africa and one of the few African countries to have never been involved in an armed conflict, Botswana's spending grew by 40 per cent or \$152 million in 2016. This is reported to be part of Botswana's military modernization programme.⁹ Although Botswana has a high degree of democracy, transparency in arms procurement is low—as is the case for many African countries.

Military expenditure in Nigeria increased by only 1.2 per cent to \$1.7 billion in 2016, despite its large-scale military operations against Boko Haram. However, corruption allegations linked to military procurement continue to raise questions about the reliability of the country's published figures.¹⁰

Americas

Military expenditure in the Americas increased by 0.8 per cent in 2016 to \$693 billion—still 4.4 per cent lower than in 2007. Expenditure in North America (Canada and the USA) was \$626 billion in 2016, accounting for 90 per cent of total spending in the region. North America's total was 1.7 per cent higher compared with 2015 but 4.8 per cent lower compared with 2007 (see section II). Spending in South America continues to decrease

⁷ Patrick, M., 'Angola cuts 2016 spending by 20%', *Wall Street Journal*, 14 Mar. 2016; and Rumney, E., 'Angola passes revised budget as falling oil prices hit economic forecast', *Public Finance International*, 17 Aug. 2016.

⁸ Armed Conflict Location and Event Data Project, 'Conflict trends (no. 54): real time analysis of African political violence', Dec. 2016.

⁹ Mmeso, P., 'Botswana: preparing for war?', *The Patriot*, 8 Feb. 2016; and 'Botswana on a P7.5 billion weapons spending spree', *Sunday Standard*, 1 Feb. 2016.

¹⁰ Perlo-Freeman, S. et al. 'Military expenditure', *SIPRI Yearbook 2016*, pp. 506–507.

following its peak in 2013, while spending in Central America and the Caribbean fell for the first time since 2004. Combined total military expenditure in these two subregions was \$66.6 billion, down 7.8 per cent compared with 2015 and at the same level as in 2007. Military spending in South America in 2016 was \$58.8 billion, down 7.5 per cent compared with 2015 and by 5.5 per cent compared with 2007. Spending in Central America and the Caribbean was \$7.8 billion, down 9.1 per cent on 2015 but still up by 50 per cent compared with 2007.

The decline in military expenditure in South America can mainly be attributed to the increasingly benign security environment in the subregion and the deepening impact of falling commodity prices (ongoing since late 2014), particularly in oil prices on oil exporting countries. Faced with the world's highest inflation rate, Venezuela's military spending in 2016 more than doubled in local currency.¹¹ In real dollar terms, however, military expenditure continued its downward trajectory: it was \$2.9 billion (56 per cent) lower compared with 2015 and down by 88 per cent compared with its peak in 2006. Similarly, military spending also decreased in Ecuador and Peru. As government income from oil exports continued to shrink due to the effects of falling oil prices, Ecuador and Peru cut their military spending by 13 and 20 per cent respectively in 2016 (see section III).¹² The worsening recession in Brazil, South America's largest spender, led to cuts of 7.2 per cent in its military budget.¹³ While many of the major military spenders in South America cut their budgets in 2016, there were substantial increases in Argentina (12 per cent) and Colombia (8.8 per cent).

In Central America and the Caribbean, changes in military expenditure are largely driven by Mexico, which accounted for 77 per cent of the subregion's spending. Military spending in Mexico has increased in recent years due to its use of military force against drug cartels, but 2016 marked the first annual decrease in military spending (-11 per cent) since 2004. The persistent global context of low oil prices and high government debt was highlighted by the Mexican Government's proposal to make budget cuts of \$13.1 billion in 2016 and a further \$12.9 billion in 2017.¹⁴ Mexico's military spending will most likely continue to decrease in the coming years (see section III).

¹¹ Borger, J., 'Venezuela's worsening economic crisis: the Guardian briefing', *The Guardian*, 22 June 2016.

¹² Gruss, B. and Caceres, C., 'The commodity price bust: implications for Latin America', International Monetary Fund, 24 June 2015.

¹³ Kiernan, P. and Jelmayer, R., 'Brazil's recession deepens', *Wall Street Journal*, 1 June 2016.

¹⁴ Agencia EFE, 'Mexican gov't cuts 2016 budget by \$13 bn amid slumping oil prices', 9 Sep. 2015; and Webber, J., 'Mexico steps up austerity plans in 2017 budget', *Financial Times*, 9 Sep. 2016.

Table 9.4. Components of SIPRI estimates for China's military spending, 2012–16

Figures are in yuan b. at current prices. Figures may not add up to stated totals because of the conventions of rounding.

	2012	2013	2014	2015	2016
National Defence budget (central and local)	669	741	829	909	978
People's Armed Police	118	139	157	164	173
Additional military RDT&E spending	[108]	[116]	[120]	[122]	[133]
Payments to demobilized soldiers	52	68	70	76	82
Additional military construction spending	[41]	[45]	[49]	[52]	[56]
Arms imports	[3.5]	[3.7]	[8.6]	[9.3]	[8.4]
Commercial earnings of PLA	[1.0]	[1.0]	[1.0]	[1.0]	[1.0]
Total	994	1 114	1 233	1 333	1 431

[] = estimated figure; PLA = People's Liberation Army; RDT&E = research, development, test and evaluation.

Sources: SIPRI Military Expenditure Database, <<https://www.sipri.org/databases/milex>>; and Ministry of Finance of the People's Republic of China, Various documents, <<http://yss.mof.gov.cn/>>.

Asia and Oceania

Military spending in Asia and Oceania amounted to \$450 billion in 2016, an increase of 4.6 per cent on 2015. This is a slightly lower rate of growth than in the previous two years. Regional spending increased by 64 per cent between 2007 and 2016, with almost all countries raising their spending in that period.¹⁵ However, the rate of growth varied widely: it was 2.5 per cent in Japan; 8 to 9 per cent in Brunei Darussalam, New Zealand and Taiwan; 113 per cent in Indonesia; 117 per cent in China; and 202 per cent in Cambodia. Only Afghanistan, Fiji and Timor-Leste recorded a clear decrease between 2007 and 2016. Five of the top 15 global spenders in 2016 are in Asia and Oceania: China, India, Japan, South Korea and Australia (in ranked order). China had by far the highest military spending in the region: an estimated \$215 billion, or 48 per cent of regional spending. This amount is almost four times that of India's total, which is the second largest in the region at \$55.9 billion.

In general, Asian states are continuing to modernize their military capabilities, which is helping to drive military spending upwards.¹⁶ There are two main factors behind this military modernization process. First,

¹⁵ Data is not available for North Korea, Turkmenistan and Uzbekistan for 2007–16 and they are not included in the Asia and Oceania totals. Data for Tajikistan is incomplete but indicates an increase and is included. Data for Laos and Myanmar is too incomplete to determine clear trends.

¹⁶ Mapp, W., *Military Modernisation and Buildup in the Asia Pacific: The Case for Restraint*, S. Rajaratnam School of International Studies (RSIS) Monograph no. 31 (RSIS: Singapore, Oct. 2014).

there are many ongoing tensions in Asia: in the Korean Peninsula, between North Korea and South Korea; between China and Japan over claims in the East China Sea; between China and several South East Asian countries over claims in the South China Sea; between India and Pakistan; and between India and China. Second, economic growth in the region has generally continued, even if sometimes at a lower rate than in previous years, which makes it possible to raise military spending without increasing the military burden on the economy. Almost all countries in the region have kept their military spending as a percentage of GDP at the same level since 2012.

China's total of \$215 billion (1431 billion yuan) represents a real-terms increase of 5.4 per cent compared with 2015 and of 118 per cent compared with 2007 (see table 9.4). This amounts to 1.9 per cent of China's GDP in 2016, a military burden that has remained steady since 2010. The spending increase between 2015 and 2016 is the lowest annual rate of increase since 2009–10. Despite its high ambitions for its armed forces, both in missions and in acquiring new equipment, China seems to be continuing to link military spending growth to economic growth. China's economic growth was under 7 per cent in both 2015 and 2016, which is the lowest level of growth in a quarter of a century.¹⁷ However, the official Chinese defence budget grew at a higher rate than the economy in both years: 10 and 7.6 per cent respectively.¹⁸

China publishes its national defence budget each year but China's total military expenditure includes resources from various other parts of the state budget (see table 9.4). Data for a number of these additional elements is available from official sources for at least some years, but for others, data is unavailable, incomplete or unreliable. As a result, the estimates involve a significant degree of uncertainty.¹⁹

In September 2015 China announced a planned reduction of the People's Liberation Army (PLA) personnel strength from 2.3 million to 2 million. With this cut, the PLA force has been reduced by some 2 million since military modernization started in earnest in the mid-1980s.²⁰ China also modified the structure of the armed forces in 2016 by creating a joint command. This reduces the traditional control of the armed forces by the ground forces and gives more influence to the other services: the Air Force, the Navy, the Rocket Force (which controls the growing strategic nuclear forces) and the newly formed Strategic Support Force (which controls space, cyber and

¹⁷ Blanchard, B. and Martina, M., 'China's 2016 defence budget to slow in line with economy', Reuters, 4 Mar. 2016; and 'China GDP annual growth rate', Trading Economics, accessed 16 Feb. 2017.

¹⁸ Agence France-Presse, 'China raises 2016 defense spending by 7.6%', *Defense News*, 6 Mar. 2016; and Cheng, D., 'China hikes defense budget by 7.6 percent', *Daily Signal*, 9 Mar. 2016.

¹⁹ For further detail on SIPRI's methodology for estimating China's military spending see Perlo-Freeman et al. (note 10), pp. 516–19.

²⁰ Tiezzi, S., 'The real reason China is cutting 300,000 troops', *The Diplomat*, 8 Sep. 2015.

electronic warfare).²¹ These changes and the continuing anti-corruption campaign aim to make the PLA smaller, more professional and effective, and cheaper.²² Because military salaries have reportedly increased substantially in recent years, the troop cuts may represent a significant source of savings for the government.²³

While Chinese sources give no information on the division of the defence budget by services, the new force structure, the 2015 defence white paper and the growing number of modern aircraft and ships either acquired or in development suggest that the air force and navy budgets are growing at a faster rate than the budget for ground forces.²⁴ The formation of the Strategic Support Force emphasizes the growing importance of space and cyber as areas for military operations and is also an indication of substantive investment in them.

India's total military spending in 2016 was \$55.9 billion (3.9 trillion rupees), a real-terms increase of 8.5 per cent compared with 2015 and 54 per cent compared with 2007. This is India's highest annual increase since 2009.

Japan's military spending was \$46.1 billion in 2016, an increase of 1.1 per cent compared with 2015. The rise in expenditure was largely to cover the lower rate of the yen versus the US dollar, which impacted on Japan's arms acquisitions from the USA and increased the salaries, and the expenses for the relocation, of US forces stationed on the island of Okinawa.²⁵ Between 2007 and 2016 Japan's spending rose by 2.5 per cent, the lowest level of increase in the region. However, Japan's growing perception of threats from China and North Korea has led to changes in its policies. It is placing a stronger emphasis on mobile forces, including small amphibious assault capabilities, and is planning further increases in military spending.²⁶

Europe

At \$334 billion in 2016, Europe's military spending accounted for 20 per cent of global military expenditure. The figure for 2016 is an increase of 2.8 per cent compared with 2015 and is only 5.7 per cent higher than in 2007. Spending increased in all subregions in 2016. Central and Eastern Europe's military expenditure increased by 2.4 and 3.5 per cent, respectively, while in Western

²¹ Costella, J., 'The Strategic Support Force: China's information warfare service', *China Brief*, vol. 16, no. 3 (8 Feb. 2016); and Kania, E., 'China's Strategic Support Force: a force for innovation?', *The Diplomat*, 18 Feb. 2017.

²² Clover, C., 'Xi's China: command and control', *Financial Times*, 26 July 2016.

²³ Tiezzi (note 20).

²⁴ Tiezzi, S., 'In new white paper, China's military embraces global mission', *The Diplomat*, 28 May 2015; and Kaiman, J., Makinen, J. and Cloud, D. S., 'China's troop-cut plan is more about modernization than peace, analysts say', *Los Angeles Times*, 3 Sep. 2015.

²⁵ Gady, F., 'Japan approves record defense budget', *The Diplomat*, 28 Dec. 2015.

²⁶ Japanese Ministry of Defense (MOD), *Defense of Japan 2016* (MOD: 2016); and Reuters, 'Japan's government approves record military spending', 21 Dec. 2016.

Europe spending rose by 2.6 per cent. Total military spending in Eastern Europe for 2016 was \$75.4 billion, an increase of 78 per cent compared with 2007. The growth in Russia's military expenditure largely accounted for this increase. By contrast, military expenditure in Central Europe grew by 4.2 per cent between 2007 and 2016 to \$21 billion, while spending in Western Europe decreased by 6.2 per cent in that period to \$237 billion in 2016.

A total of 4 of the 15 largest military spenders in the world—France, the UK, Germany and Italy in ranked order—are in Western Europe. Together, they account for 10 per cent of global military expenditure. In 2016 neither France nor the UK achieved the planned increases in military spending announced in 2015. France's military spending increased by 0.6 per cent between 2015 and 2016 to \$55.7 billion. However, there are indications that the total figure for 2016 is underestimated, in part due to a lack of transparency in the French Ministry of Defence's reporting of its spending for international operations (see section V). In nominal local currency terms, military spending by the UK rose by 2.7 per cent in 2016. However, when the figures for the UK are adjusted to the constant US dollar rate, real-terms growth amounted to only 0.7 per cent, giving a total of \$48.3 billion for 2016. The difference between the two percentage growth rates is mostly due to the devaluation of the pound against the US dollar following the result of the 2016 referendum on the UK's membership of the European Union.²⁷ The British National Audit Office concluded that this depreciation jeopardized the major weapons modernization programme presented in 2012, which is estimated to cost £178 billion (\$240 billion) over the period 2016–26.²⁸ Germany raised its military spending by 2.9 per cent in 2016 as a direct result of Chancellor Angela Merkel's efforts to push through an increase in the military budget.²⁹ Italy increased spending by 11 per cent in 2016, which was the seventh largest relative increase in Europe. This can be partly attributed to its support for the local arms industry with funding for domestic procurement, including participation in parts of the production of the F-35 combat aircraft.³⁰

Central European countries continued to collectively increase their military spending, which was up by 2.4 per cent in 2016 compared with 2015.

²⁷ For further detail on the impact of the UK's decision to leave the European Union (commonly referred to as 'Brexit') see chapter 4, section I, in this volume.

²⁸ British National Audit Office (NAO), *Ministry of Defence: The Equipment Plan 2016 to 2026*, Report by the Comptroller and Auditor General, HC 914, Session 2016–17 (NAO: London, 25 Jan. 2017).

²⁹ Chase, J., 'Merkel: Germany to heavily increase Bundeswehr budget', *Deutsche Welle*, 16 Oct. 2016.

³⁰ Piovesana, E., 'Analisi delle spese militari italiane' [Analysis of Italian military expenditure], MIL€X Osservatorio sulle spese militari italiane, 15 Feb. 2017; and Italian Ministry of Economy and Finance, 'Tabellan N.3: Stato di previsione del ministero dello sviluppo economico' [Table 3, State forecast of the Minister of Economic Development], 17 Feb. 2017.

Box 9.1. The cost of Russia's intervention in Syria

In September 2015 Russia started to provide direct military support to the Syrian Government in its fight against various rebel forces. While the forces deployed rapidly grew in size and were a significant boost to Syrian Government military operations, only a very limited part of total Russian military strength was deployed. By early 2017 Russian aircraft had flown 19 160 combat missions over Syria—as compared to over 138 000 sorties carried out by the US-led Western coalition over Iraq and Syria between 8 Aug. 2014 and 14 Feb. 2017 (at a cost of \$11.2 billion)—and the Russian navy had deployed its only aircraft carrier and several other large ships off the Syrian coast.

The cost of the Russian operations remains unclear. According to the Russian Government, the operations in Syria had cost \$464 million (33 billion roubles) by mid-March 2016, which was taken from the existing military training budget. President Vladimir Putin claimed that the combat operations were 'more effective' than training and thus more cost-effective, but he also hinted at unspecified 'additional costs' after the operations. Other sources estimated the operations to cost between \$2.3 and \$4.5 million per day. The lower estimate is more or less in line with the official data. One Russian media source estimated the cost of operations at \$892 million (58 billion roubles) by October 2016, while another put it at just under \$1.5 billion, seemingly using the \$4.5 million per day estimate, which is in line with average sortie costs for the Western coalition. However, these estimates were made before the large naval deployment.

As with costs for similar operations by other countries, it is likely that at least some of the Russian costs are paid from funds made available in addition to the normal budget but for which information is not available.

Sources: Petrov, I., [American B-52 bombed a Syrian village], *Rossiyskaya Gazeta*, 10 Jan. 2017 (in Russian); US Department of Defense, 'Operation inherent resolve', accessed 15 Jan. 2017, <https://www.defense.gov/News/Special-Reports/0814_Inherent-Resolve>; TASS, 'Russia's Syria operation cost over \$460 million: Putin', 17 Mar. 2016; and Kozyrev, I., [The year of Russia in Syria: how much does it cost], Nalin, 30 Sep. 2016 (in Russian).

This represents a return to the level of the subregion's average 10-year growth rate after a 14 per cent increase between 2014 and 2015. The 2015 increase is explained by a substantial rise in Poland's military expenditure that year (Poland is the largest spender in the subregion, accounting for 44 per cent of Central Europe's spending in 2016). On top of its regular military expenditure of \$8.8 billion in 2015, Poland made a one-off payment of \$1.42 billion for combat aircraft that were delivered from the USA in 2006–2008. Payments for this project had been deferred in 2011–14.³¹ If the one-off payment were excluded from Poland's 2015 total, its expenditure for 2016 would be 10 per cent higher than its regular military spending in 2015. Many of the European countries with the largest relative increases in military spending between 2015 and 2016 are in Central Europe.³² This suggests that the perception of an increased threat from Russia following the Ukraine

³¹ Palowski, J., 'Poland increases its defence budget up to PLN 38 billion. F-16 instalments will be paid back', *Defence24*, 6 Sep. 2014.

³² These countries are Bulgaria, Hungary, Latvia, Lithuania and Montenegro. However, their combined weight in the subregional figure is very low at only 15%.

crisis persists. At 44 per cent, Latvia's increase in military expenditure in 2016 was the highest in Europe, while Lithuania's military expenditure rose by 35 per cent.

In Eastern Europe, Russia's military spending in 2016 was \$69.2 billion (4.6 trillion roubles), a nominal increase of 15 per cent compared with 2015 and 317 per cent compared with 2007. However, due to high inflation rates, especially in recent years, the increase in Russian military spending in real terms was only 5.9 per cent compared with 2015 and 87 per cent compared with 2007. Spending in 2016 was 5.3 per cent of GDP—the highest proportion since Russia became an independent state and the seventh highest globally (see table 9.3).

The increase in military expenditure and heavy burden on the economy come at a time when the Russian economy remains in serious trouble due to low oil and gas prices and the economic sanctions imposed since 2014, leading to reduced government revenues. It was originally expected and planned that the Russian Government would reduce its spending, including military spending, in 2016, especially since the price of oil had dropped from \$50 per barrel—the level on which the original 2016 budget plan was based—to \$29 per barrel by the end of 2015.³³ Planned military spending for 2016 was \$59.6 billion (4 trillion roubles), slightly less than actual spending in 2015, but a fall in real terms of about 9 per cent (the first real-terms decrease since 1999) given high projected inflation in 2016. In particular, the 'state defence order', the budget for procurement of new equipment, was planned to be 9.6 per cent lower in 2016 than the actual level for 2015.³⁴ However, late in 2016 actual spending was pushed up by 16 per cent above the planned level after a decision to make a one-off debt payment of roughly \$11.8 billion (793 billion roubles) to Russian arms producers. This debt had accumulated since 2011 when some acquisitions had been made on credit.³⁵ Without this debt repayment, Russia's military spending would have decreased in both real and nominal terms. The costs of Russia's intervention in Syria seemed not to have substantially added to the country's military spending in 2016 (see box 9.1). The price of oil recovered to above \$40 per barrel during 2016 and national oil and gas exports reached record levels that year, giving the Russian Government some additional financial breathing space.³⁶ However,

³³ TASS, 'Russian Finance Ministry to review 2016 budget in Q1 due to lower oil prices', 12 Jan. 2016.

³⁴ Russian Ministry of Finance, [Russian Federal Budget 2016, Federal Law no. 359-FZ], 14 Dec. 2015 (in Russian); and Cooper, J., *Prospects for Military Spending in Russia in 2017 and Beyond*, Working Paper (University of Birmingham: Birmingham, 23 Mar. 2017).

³⁵ Russian State Duma, [Record of 2 November 2016 g], accessed 21 Nov. 2016 (in Russian), <<http://transcript.duma.gov.ru/node/4534/>>, referenced in Cooper (note 34).

³⁶ Rizvi, O., 'The secrets behind Russia's 2016 oil success', Oilprice, 9 Jan. 2017.

while Russia increased its military budget in late 2016 to pay off the debt, it cut most other government spending at that time beyond planned levels.³⁷

Ukraine's military expenditure in 2016 was \$3.4 billion. In nominal terms, its spending followed a similar pattern to Russia's: it grew by 11 per cent in 2016 compared with 2015. But accounting for inflation Ukraine's military spending decreased in real terms by 3.8 per cent in 2016. Between 2007 and 2016 Ukraine's military expenditure increased by 28 per cent in real terms. Spending in that period is marked by two clear phases. Between 2007 and 2011 military expenditure fell by 17 per cent. This was followed by large increases in 2012–16. The increases in 2014 and 2015 were due to the conflict with rebel forces in eastern Ukraine, and mainly funded the cost of operations and improved conditions for the expanded military force.³⁸ The small decrease in 2016 might be due to a reduction in the overall intensity of the conflict in the country, which also provided Ukraine with the opportunity to seek to balance its budget to fulfil loan conditions from the International Monetary Fund.³⁹ However, fighting flared up on several occasions in 2016 and military spending is planned to increase in 2017, in part for acquisitions of new equipment.⁴⁰

Despite ongoing clashes between Armenia and Azerbaijan over Nagorno-Karabakh, military spending in both countries fell for the first time since 2011. Azerbaijan's spending was affected by low oil prices and decreased by 36 per cent in real terms to \$1.4 billion in 2016 (see section III). The substantial 'defence special project allocation', which in 2015 made up 42 per cent of Azerbaijan's total military spending and is believed to mainly cover arms acquisitions, was removed in 2016, suggesting that Azerbaijan has opted to cut the more flexible part of its military budget to make up for budget shortages.⁴¹ Armenia's military spending decreased by 5.5 per cent in 2016 to \$431 million. The fall in military expenditure in both countries reduced the spending imbalance between them from around 7.4 to 1 in favour of Azerbaijan in 2011–15 to 3.2 to 1 in 2016. Military expenditure equalled 4.0 per cent of GDP in both countries in 2016.

³⁷ Cooper, J., 'The draft amended Russian federal budget for 2016', Unpublished research note, 11 Oct. 2016; and Cooper (note 34).

³⁸ For further detail on the conflict in Ukraine see Anthony, I. et al., 'The Ukraine conflict and its implications', *SIPRI Yearbook 2015*; and chapter 4, section II, in this volume.

³⁹ Reuters, 'Ukraine backs 2016 budget with deficit agreed with IMF', 24 Dec. 2015.

⁴⁰ President of Ukraine, 'President signed the State Budget of Ukraine for 2017', 26 Dec. 2016.

⁴¹ Forrester, C., 'Crossroads of the Caucasus', *Jane's Defence Weekly*, 31 Aug. 2016, pp. 29–32.