

## II. Regional developments in military expenditure, 2021

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Total world military expenditure reached US\$2113 billion in 2021.<sup>1</sup> States in the Americas accounted for the largest share of the total, 42 per cent. It was followed by Asia and Oceania, with a 28 per cent share, Europe, with 20 per cent, and the Middle East, with an estimated 8.8 per cent share. Africa accounted for the smallest share, only 1.9 per cent of world military expenditure.

This section reviews the main trends in military expenditure in 2021 and over the period 2012–21 from a regional perspective. It describes how specific developments have affected national decision-making on military spending as well as subregional and regional trends. For analysis of global trends see section I.

### **Africa**

Military expenditure in Africa increased by 1.2 per cent in real terms in 2021 to \$39.7 billion.<sup>2</sup> The spending pattern over the decade 2012–21 can be divided in three distinct periods: spending rose for three successive years in 2012–14, followed by four years of decline in 2015–18 and then three consecutive years of increases. The 4 countries included in North Africa accounted for 49 per cent of Africa's military spending, while the 46 countries covered in sub-Saharan Africa accounted for the remaining 51 per cent.

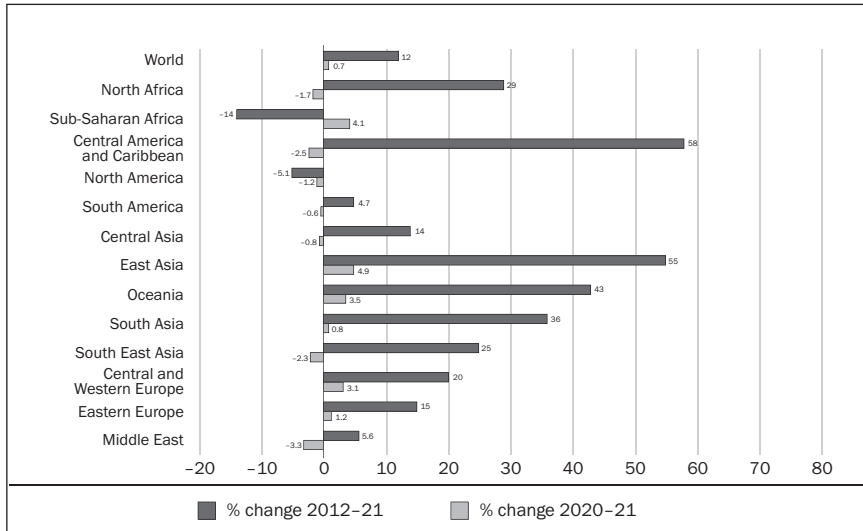
#### *North Africa*

Military expenditure by countries in North Africa reached \$19.6 billion in 2021, down 1.7 per cent compared to 2020 but still 29 per cent higher than in 2012 (see figure 8.5). Algeria and Morocco drive trends in North African spending. Together, the two countries account for about three-quarters of the subregion's spending. Unresolved military and economic rivalries between the two and continued territorial disagreements over contested Western Sahara underpin the long-term tension and the increase in military expenditure in the subregion.<sup>3</sup>

<sup>1</sup> All figures for spending in 2021 are quoted in current 2021 US dollars. Except where otherwise stated, figures for increases or decreases in military spending are expressed in constant 2020 US dollars, often described as changes in 'real terms' or adjusted for inflation.

<sup>2</sup> This total excludes Djibouti, Eritrea and Somalia, for which it was impossible to make a reliable series of estimates for inclusion in the regional total.

<sup>3</sup> On the conflict in Western Sahara see chapter 6, section IV, in this volume.



**Figure 8.5.** Changes in military expenditure by subregion, 2012–21 and 2020–21  
 Source: SIPRI Military Expenditure Database, Apr. 2022.

At \$9.1 billion, Algeria was the largest spender in the subregion and the region. Despite a fall of 6.1 per cent in 2021, its spending was still 16 per cent higher than in 2012. In contrast, at \$5.4 billion, Morocco's military expenditure was up by 3.4 per cent since 2020 and 48 per cent higher than in 2012. Morocco has steadily sought to bolster its military capability through arms procurement deals with the United States, France and China.<sup>4</sup>

### *Sub-Saharan Africa*

Military expenditure in sub-Saharan Africa in 2021 was \$20.1 billion, up 4.1 per cent from 2020 but still 14 per cent lower than in 2012.<sup>5</sup> The increase in 2021 was the first in the subregion since 2014.

The rise in sub-Saharan African military spending in 2021 was primarily due to increases in Nigeria's military expenditure. Its military spending rose by 56 per cent to \$4.5 billion in 2021 in response to a plethora of security challenges, ranging from violent extremism via farmer–herder conflict, banditry and kidnapping, to separatist insurgencies and attacks on state oil production.<sup>6</sup> An initial 9.4 per cent increase (91 billion naira or \$228 million) in the Nigerian military budget was supplemented in July 2021 with an additional

<sup>4</sup> Boukhars, A., 'Reassessing the power of regional security providers: The case of Algeria and Morocco', *Middle Eastern Studies*, vol. 55, no. 2 (2018). On the arms transfers to Morocco see also chapter 9, section III, in this volume.

<sup>5</sup> The total for sub-Saharan Africa excludes the Comoros and Sao Tome and Principe, which are not in the SIPRI Military Expenditure Database and are assumed to have low expenditure, and Djibouti, Eritrea and Somalia.

<sup>6</sup> On the armed conflict and security challenges in Nigeria see chapter 7, section II, in this volume.

716 billion naira (\$1.8 billion).<sup>7</sup> This supplementary budget was equal to three-quarters of the initial military budget. Disaggregated information in the supplementary budget shows that this additional funding was for capital expenditure for the Nigerian armed forces.<sup>8</sup> Part of the additional military budget could thus have been used to pay for weapon systems delivered to the Nigerian military in 2021. These included combat aircraft from Brazil and China and off-shore patrol vessels from the Netherlands and France.<sup>9</sup>

The downward trend in sub-Saharan Africa's spending between 2014 and 2020 can be explained by persistent reductions in military spending by four of the subregion's five biggest spenders, as ranked in 2014: Angola, South Africa, Sudan and South Sudan. Principal of those was the sharp fall in spending in South Sudan, down 94 per cent between 2014 and 2020. This was followed by decreases of 73 per cent by Angola, 68 per cent by Sudan and 4.3 per cent by South Africa. The worsening economic conditions and continued low oil prices, slumps in oil production, and slow economic recovery were central to lower military spending in Angola, Sudan and South Sudan.<sup>10</sup> In South Africa, which has a more robust and diverse economy, almost a decade of stagnant economic performance led to a fall in military budgets.<sup>11</sup>

With the continued decline in the military expenditure of Angola, Sudan and South Sudan in 2021, the subregion's top 5 spenders were Nigeria, South Africa, Kenya, Uganda and Angola. In the cases of Kenya and Uganda, both have faced similar counterinsurgency challenges in recent years: Kenya's fight against al-Shabab and Uganda's armed conflict against the Allied Democratic Forces (ADF).<sup>12</sup> Over the 2014–21 period, military expenditure rose by 241 per cent in Uganda but remained relatively stable in Kenya, up by only 6.4 per cent.

In 2021 four sub-Saharan African countries experienced military coups—Chad in April, Mali in May, Guinea in September and Sudan in October—while there was also a failed coup in Niger in March.<sup>13</sup> A core justification by military leaders for the coups has been dissatisfaction with the government's ability to combat Islamist extremism, either through effective military strategy or

<sup>7</sup> 'Buhari signs N982 billion supplementary budget for 2021', *Premium Times* (Abuja), 26 July 2021.

<sup>8</sup> Nigerian Budget Office of the Federation, 'Supplementary appropriation bill 2021', p. 4.

<sup>9</sup> On arms transfers to Nigeria see also chapter 9, section III, in this volume.

<sup>10</sup> Tian, N. and Lopes da Silva, D., 'Debt, oil and military expenditure', *SIPRI Yearbook 2018*.

<sup>11</sup> International Monetary Fund (IMF), *South Africa: Staff Report for the 2021 Article IV Consultation*, IMF Country Report no. 22/37 (IMF: Washington, DC, 21 Jan. 2022); DefenceWeb, 'Budget cuts mean South Africa is losing its sovereign capability, defence industry', 31 May 2020; and Leone, D., 'South African Air Force Gripen fighter jets are grounded since September and they won't fly again until late January 2022 at the earliest. Here's why', Aviation Geek Club, 25 Dec. 2021.

<sup>12</sup> On armed conflict in the Horn of Africa see chapter 7, section IV, in this volume.

<sup>13</sup> Zeigler, S. M., 'Are military coups back in style in Africa?', Rand Corporation, 1 Dec. 2021. See also the discussion in chapter 7 of this volume.

by providing the military with equipment to combat the worsening security situation.<sup>14</sup>

In the five-year period 2017–21, military spending rose in three of the five countries that suffered either a coup or a coup attempt in 2021: Chad (31 per cent), Guinea (1.3 per cent) and Mali (12 per cent). It fell in Niger (–11 per cent) and Sudan (–73 per cent).

Military expenditure increases in some of these coup-affected countries are often explicitly meant to fund the fight against Islamist extremism. In Mali, for example, additional resources were allocated to the military in accordance with the Law on Military Policy and Programming for 2015–19 and the Law on Interior Security Policy and Programming for 2017–21 to improve operational capacity and military capability.<sup>15</sup> In contrast, despite a deteriorating security situation, worsening economic conditions resulted in budgetary cuts across military and non-military sectors in Chad and Sudan.<sup>16</sup>

The economic burden of the military in these coup-affected countries is higher than in non-coup-affected countries in sub-Saharan Africa. Between 2017 and 2021 the average military burden—that is, military spending as a share of gross domestic product (GDP)—of countries in sub-Saharan Africa was 1.5 per cent. In comparison, the average military burden between 2017 and 2021 of these five countries ranged from 1.6 per cent in Guinea to 2.9 per cent in Mali, all higher than the subregional average.

## The Americas

Military expenditure in the Americas reached \$883 billion in 2021. Spending in the region fell for the first time since 2017, down 1.2 per cent in real terms compared to 2020 and 4.2 per cent lower than in 2012. While spending fell in all three subregions—Central America and the Caribbean, North America, and South America—the regional decrease was mainly due to the fall in spending by the United States. North American countries (i.e. the USA and Canada) accounted for 94 per cent of total regional spending in 2021, with 5.1 per cent in South America, and 1.2 per cent in Central America and the Caribbean.

<sup>14</sup> Maclean, R., 'Five African countries. Six coups. Why now?', *New York Times*, 31 Jan. 2022; and Mishra, A., 'Coups are making a comeback in Africa, but what's driving them?', Observer Research Foundation, 1 Nov. 2021.

<sup>15</sup> International Security Sector Advisory Team (ISSAT), 'Mali SSR background note', Geneva Centre for Security Sector Governance (DCAF), 11 Feb. 2019; Loi de Finances 2018 [Finance Act 2018], Malian Law no. 2017-073 of 26 Dec. 2017, pp. 22–23; and La Sirène, 'Loi d'orientation et de programmation de la sécurité intérieure: 446 milliards F CFA pour ne rien faire... Salif mérite-t-il encore la confiance d'IBK?' [Law on Interior Security Policy and Programming: 446 billion CFA francs for doing nothing... Does Salif still deserve the confidence of IBK?], *Mali Jet*, 3 May 2018.

<sup>16</sup> 'Sudan to cut government spending, increase social spending', Reuters, 27 June 2021; and Amnesty International (AI), *Strangled Budgets, Silenced Dissent: The Human Cost of Austerity Measures in Chad* (AI: London, 2018), pp. 7–13.

**Table 8.4.** Components of US military expenditure, fiscal years 2017–21

Figures are current US\$ b. unless otherwise stated. Figures may not add up to the given totals because of the conventions of rounding.

	2017	2018	2019	2020	2021 <sup>a</sup>
<i>Department of Defense</i>	569	601	654	690	712
Military personnel	145	146	156	161	175
Operation and maintenance	245	257	272	279	287
Procurement	104	113	125	139	137
Research, development, testing and evaluation	68	77	89	100	103
Other (construction, housing etc.)	6.8	8.6	12	11	11
Department of Energy, atomic energy defence activities	20	21	23	25	27
Other defence-related activities	9.3	9.5	9.3	9.7	9.4
National Intelligence Program, military-related activities	[41]	[45]	[45]	[47]	[46]
Department of State, international security assistance	7.1	6.8	6.8	6.7	6.7
Transfers to fund southern border wall construction	..	..	-3.6	..	..
<b>Total</b>	<b>647</b>	<b>686</b>	<b>734</b>	<b>778</b>	<b>801</b>
Military expenditure as share of GDP (%)	3.3	3.3	3.4	3.7	3.5

.. = not applicable; [] = estimated figure; FY = fiscal year; GDP = gross domestic product.

<sup>a</sup> Figures for FY 2021 are estimates.

Sources: SIPRI Military Expenditure Database, Apr. 2021; US Office of Budget and Management, 'Table 3.2—Outlays by function and sub-function: 1962–2026', 28 May 2021; Federation of American Scientists (FAS), Intelligence Resource Program, 'Intelligence budget data', [n.d.]; and US Department of State, *Congressional Budget Justification: Department of State, Foreign Operations and Related Programs—Fiscal Year 2022* (Department of State: Washington, DC, 2021).

### *North America*

North American military spending amounted to \$827 billion in 2021. This represented a decrease of 1.2 per cent compared to 2020 and a fall of 5.1 per cent since 2012. Given the size of the US military budget, which makes up 38 per cent of the world total, North American military expenditure is driven primarily by decisions made in Washington (see below). Canadian military spending totalled \$26.4 billion in 2021, up by 3.1 per cent since 2020. Canada allocated 1.3 per cent of its GDP to its military, whereas the USA allocated 3.5 per cent. As the Canadian and US economies recovered in the aftermath of the pandemic-induced crash in 2020, the military burden of both countries decreased in 2021.

*United States military spending.* The USA spent \$801 billion on military activities during the 2021 fiscal year (see table 8.4).<sup>17</sup> Following SIPRI

<sup>17</sup> The US fiscal year runs from 1 Oct. until 30 Sep. The 2021 fiscal year thus started in Oct. 2020.

methodology, this total includes funding for the National Intelligence Program and international security assistance. Compared to 2020, there was a nominal increase of 2.9 per cent but a real-terms decrease of 1.4 per cent. This discrepancy is attributable to a rising US inflation rate.<sup>18</sup>

The US military budget for the 2021 fiscal year was prepared, negotiated and passed during the final year of the administration of US President Donald J. Trump. When the national budget request was first published in February 2020, it allocated a total of \$754 billion to national defence. This figure included funding for the Department of Defense (DOD), military-related nuclear activities and other defence-related activities.<sup>19</sup> Adjusted for inflation, the DOD's budget request was 2.7 per cent less than the amount enacted for the 2020 fiscal year.<sup>20</sup>

The budget process was delayed by congressional disputes over the scope of economic relief measures amid the Covid-19 pandemic. It was not until December 2020, two and a half months into the new fiscal year, that the US Congress approved the National Defense Authorization Act (NDAA) for 2021, an omnibus spending bill that specifies the level of funding for the DOD.<sup>21</sup>

When broken down into different funding categories, the US military budget for 2021 sheds light on shifting strategic priorities and military planning assumptions. The budget line with the largest increase between 2020 and 2021 was that for military personnel. In 2021 active-duty members of the armed services received an average pay rise of 2.7 per cent, as well as a higher basic housing allowance.<sup>22</sup> This explains why the budget category for military personnel grew by a nominal 8.7 per cent despite projections of personnel strength being unchanged.

To finance the planned overhaul of the US nuclear arsenal and expand nuclear capabilities as laid out in the 2018 Nuclear Posture Review, funding for military-related nuclear activities increased by 8.0 per cent in nominal terms in 2021.<sup>23</sup> In May 2021 the Congressional Budget Office projected the 10-year cost of maintaining and modernizing the US nuclear arsenal to be \$634 billion until 2030.<sup>24</sup>

<sup>18</sup> US Department of Labor, Bureau of Labor Statistics, 'Consumer price index—January 2022', USDL-22-0191, 10 Feb. 2022.

<sup>19</sup> US Office of Management and Budget, *A Budget for America's Future: Fiscal Year 2021 Budget of the US Government* (US Government Publishing Office: Washington, DC, 2020), pp. 116, 129.

<sup>20</sup> Harrison, T. and Daniels, S. P., *Analysis of the FY 2021 Defense Budget* (Rowman & Littlefield: Lanham, MD, Aug. 2020), pp. 2, 5.

<sup>21</sup> O'Brien, C., 'Senate passes defense bill, setting up veto showdown with Trump', Politico, 11 Dec. 2020.

<sup>22</sup> Losey, S., 'Troops would see 2.7% pay raise under proposed DOD budget', Military.com, 28 May 2021.

<sup>23</sup> Reif, K., 'US nuclear budget skyrockets', *Arms Control Today*, vol. 50, no. 2 (Mar. 2020); and US Department of Defense (DOD), *Nuclear Posture Review* (DOD: Arlington, VA, Feb. 2018). On US nuclear weapon modernization see chapter 10, section I, in this volume.

<sup>24</sup> Bennet, M., 'Projected costs of US nuclear forces, 2021 to 2030', US Congressional Budget Office (CBO), May 2021.

Investment in the research, development, testing and evaluation (RDT&E) of new weapon systems has become a staple of recent budget requests. In 2021 a total of \$103 billion was appropriated for this category, a nominal increase of 3.0 per cent compared to the previous year. Incoming US President Joe Biden has vowed to continue on this course; his defence budget request for the 2022 fiscal year forecasted a 6.5 per cent nominal increase in RDT&E funding.<sup>25</sup>

In contrast, appropriations for the procurement of weapon systems shrank by 1.4 per cent in nominal terms between 2020 and 2021. The largest cuts were for shipbuilding, aircraft and ground systems.<sup>26</sup> The decrease in procurement funding alongside a renewed focus on RDT&E may indicate that the DOD is rebalancing its portfolio to favour new technologies over legacy systems.

One of the defining moments of 2021 was the end of the nearly two-decade-long international military presence in Afghanistan, as the USA and its partners in the North Atlantic Treaty Organization (NATO) withdrew their remaining troops.<sup>27</sup> Estimates of the total cost of the US war in Afghanistan exceed \$2.3 trillion over 20 years.<sup>28</sup> While most of this money was spent on military operations, the USA also devoted substantial financial resources to reconstruction activities and military aid to Afghanistan. For instance, between 2001 and 2021 the US government invested around \$85 billion in an effort to bolster the Afghan security forces.<sup>29</sup> Following the collapse of the Afghan government and the Taliban takeover in August 2021, the US departments of Defense and State reallocated funds that had previously been made available for reconstruction in Afghanistan to other departmental activities.<sup>30</sup>

A few months before the US operation in Afghanistan drew to a close, President Biden published his first budget request, which allocated \$768 billion to national defence in the 2022 fiscal year.<sup>31</sup> When the request was handed over to the US Congress, however, the DOD's funding had been boosted by an additional \$25 billion. Members of the Congress voting in favour of this increase pointed out the need to hedge against rising inflation and to bolster US capabilities amid long-term strategic competition with China and Russia.<sup>32</sup>

<sup>25</sup> Harrison, T. and Daniels, S. P., *Analysis of the FY 2022 Defense Budget: Funding Trends and Issues for the Next National Defense Strategy* (Rowman & Littlefield: Lanham, MD, Dec. 2021).

<sup>26</sup> Harrison and Daniels (note 20), p. 12.

<sup>27</sup> Council on Foreign Relations (CFR), 'Timeline: The US war in Afghanistan 1999–2021', Sep. 2021. On the war in Afghanistan see chapter 4, section III, in this volume.

<sup>28</sup> Costs of War Project, 'US costs to date for the war in Afghanistan', Brown University, Watson Institute for International and Public Affairs, Aug. 2021.

<sup>29</sup> US Special Inspector General for Afghanistan Reconstruction (SIGAR), Quarterly report to the United States Congress, 30 Jan. 2022, pp. 41–42.

<sup>30</sup> US Special Inspector General for Afghanistan Reconstruction (note 29).

<sup>31</sup> Harrison and Daniels (note 25), pp. 3–4.

<sup>32</sup> Eversden, A., 'NDAA passes Senate at \$740 billion; heads to Biden's desk', *Breaking Defense*, 15 Dec. 2021.

The budget request for the 2022 fiscal year was also the first since 2001 not to appropriate funds for Overseas Contingency Operations (OCO). This supplemental fund was created to finance the wars in Afghanistan and Iraq but soon became a means of circumventing spending caps and covering activities unrelated to overseas operations.<sup>33</sup> Following a debt ceiling crisis, the 2011 Budget Control Act (BCA) was passed to reduce the ballooning US budget deficit by imposing limits on defence and non-defence spending over the coming decade.<sup>34</sup> Even though these caps were routinely raised, most recently in 2019, it was not enough to cover all US military spending.<sup>35</sup> To finance the deficit, resources were thus appropriated under OCO, which is not subject to the BCA. In 2021, the most recent year during which defence planners made use of the OCO fund, \$69 billion was appropriated under this category.<sup>36</sup>

### *Central America and the Caribbean*

Military spending in Central America and the Caribbean was \$11.0 billion in 2021. This was a 2.5 per cent drop compared to 2020 but a 58 per cent rise compared to 2012. The use of military forces to combat criminal activity remains the main driver of military spending in the subregion.<sup>37</sup>

Mexico's military spending dropped by 3.4 per cent in 2021 to \$8.7 billion. The decline was mainly due to an economic contraction. Because military spending fell to the same extent as GDP, Mexico's military burden remained unchanged at 0.7 per cent. Mexico is by far the largest spender in Central America and the Caribbean—it accounted for nearly 80 per cent of the subregion's total military spending in 2021. The composition of Mexico's military spending has mirrored the growing use of the military in police operations.<sup>38</sup> Despite the cut in overall military expenditure in 2021, spending on the National Guard increased by 35 per cent. As a result, spending on the National Guard as a share of Mexico's total military expenditure rose from 11 per cent in 2020 to 16 per cent in 2021.

<sup>33</sup> McGarry, B. W. and Morgenstern, E. M., *Overseas Contingency Operations Funding: Background and Status*, US Congressional Research Service (CRS) Report to Congress R44519 (US Congress, CRS: Washington, DC, 6 Sep. 2019).

<sup>34</sup> Budget Control Act of 2011, US Public Law 112–5, signed into law 2 Aug. 2011. See also Sköns, E. and Perlo-Freeman, S., 'The United States' military spending and the 2011 budget crisis', *SIPRI Yearbook 2012*.

<sup>35</sup> McGarry, B. W., *The Defense Budget and the Budget Control Act: Frequently Asked Questions*, US Congressional Research Service (CRS) Report to Congress R44039 (US Congress, CRS: Washington, DC, 30 Sep. 2019).

<sup>36</sup> Harrison and Daniels (note 20), p. 2.

<sup>37</sup> On the armed conflict between state forces and armed gangs in Central America see chapter 3, section III, in this volume.

<sup>38</sup> On the armed conflict in Mexico between state security forces and drug cartels see chapter 3, section II, in this volume.



The use of military forces in combatting organized crime is also a driver of military spending in El Salvador. At \$383 million, El Salvador's military spending increased by 6.8 per cent in 2021. The growth was largely related to the use of the armed forces in public security missions. In 2021, over 10 000 troops—nearly half of armed forces personnel—were deployed under the Territorial Control Plan, a public security policy aimed at combatting El Salvador's criminal gangs.<sup>39</sup> Salvadoran President Nayib Bukele plans to double the size of the armed forces by 2026, from 20 000 to 40 000 troops.<sup>40</sup> In pursuit of this goal, the approved budget for 2022 projects the highest military spending since the end of the 1979–92 civil war.<sup>41</sup>

### *South America*

South America's military spending was relatively unchanged in 2021, at \$45.3 billion—a mere 0.6 per cent drop compared to 2020. Military spending growth was relatively limited over the decade 2012–21, at 4.7 per cent. Brazil accounted for 42 per cent of the subregion's total military expenditure in 2021, followed by Colombia (23 per cent) and Chile (14 per cent).

Brazil's military spending in 2021 was \$19.2 billion, a 4.3 per cent decrease compared to 2020. This was the third consecutive year of decline. Budget execution increased from 88 per cent in 2020 to 90 per cent in 2021, which was more in line with budget execution rates prior to the pandemic. Despite the budget cut, Brazil was still able to pursue some of its strategic armament programmes.<sup>42</sup> For instance, the FX-2 programme—the goal of which is to replace Brazil's ageing fleet of combat aircraft—continued to receive funds. At \$266 million, actual expenditure on the FX-2 programme in 2021 was 9.4 per cent higher than initially budgeted. The FX-2 programme includes acquisition of 36 Gripen combat aircraft from the Swedish company Saab.<sup>43</sup> Other notable ongoing programmes were the construction of a nuclear-powered submarine (the PROSUB programme) and the development of the Astros 2020 artillery system.<sup>44</sup>

Colombia's military spending rose 4.7 per cent in 2021, to \$10.2 billion. This was 30 per cent higher than in 2012. Since the 2016 peace agreement that ended the conflict between the government and the Revolutionary Armed

<sup>39</sup> SWI swissinfo.ch, 'Más de 10.000 militares son parte de un plan contra pandillas en El Salvador' [More than 10 000 soldiers are part of an anti-gang plan in El Salvador], 20 July 2021. See also the discussion in chapter 3, section III, in this volume.

<sup>40</sup> López, A., 'El Salvador duplicará sus efectivos militares de 20.000 a 40.000 en cinco años' [El Salvador to double its military personnel from 20,000 to 40,000 in five years], Infodefensa, 22 July 2021.

<sup>41</sup> Bernal, D., Jordán, L. and Urbina, J., 'El Ejército, el que más crece en presupuesto' [The army, the budget that grows the most], *Prensa Gráfica* (San Salvador), 2 Oct. 2021.

<sup>42</sup> Caiafa, R., 'Brasil planeja investir 20 bilhões de dólares em Defesa durante 2021' [Brazil plans to invest 20 billion dollars in Defense during 2021], Infodefensa, 13 Oct. 2020.

<sup>43</sup> On this and other Brazilian arms imports see chapter 9, section III, in this volume.

<sup>44</sup> On armed violence in Brazil see chapter 3, section IV, in this volume.

Forces of Colombia–People’s Army (Fuerzas Armadas Revolucionarias de Colombia–Ejército del Pueblo, FARC-EP), Colombia’s military spending has grown every year except for 2018. The rising trend can be attributed to the ongoing conflicts between the government and other armed groups, such as the National Liberation Army (Ejército de Liberación Nacional, ELN), as well as against former members of FARC-EP who have rejected the peace accord and formed splinter groups of their own.<sup>45</sup>

## Asia and Oceania

Military spending in Asia and Oceania totalled \$586 billion in 2021. This was 3.5 per cent higher than in 2020 and up 48 per cent since 2012, continuing an uninterrupted upward trend dating back to at least 1989.<sup>46</sup> Over the decade 2012–21, military spending rose in all five subregions of Asia and Oceania. The regional increase was due primarily to the rise in Chinese and Indian military spending, which in 2021 accounted for 63 per cent of total spending in the region, up from 51 per cent in 2012.

### *Central Asia*

The combined total military expenditure in 2021 for the countries in Central Asia for which data is available was \$1.8 billion, accounting for 0.3 per cent of total spending in Asia and Oceania. The total for Central Asia, which is comprised of spending figures for Kazakhstan, Kyrgyzstan and Tajikistan, was down 0.8 per cent in 2021 but was 14 per cent higher than in 2012. Military spending information has not been publicly available for Turkmenistan since 1999 and for Uzbekistan since 2003.

Kazakhstan was the largest spender in the subregion. At \$1.6 billion, it accounted for 89 per cent of the subregional total.

### *East Asia*

Military expenditure in East Asia totalled \$411 billion in 2021, an increase of 4.9 per cent since 2020 and of 55 per cent since 2012. The increase in 2021 marked the 27th consecutive year of rising spending in East Asia.<sup>47</sup> The three biggest spenders in the subregion were China (71 per cent of the total), Japan (13 per cent) and the Republic of Korea (South Korea, 12 per cent). Together, these three countries accounted for 97 per cent of total East Asian spending,

<sup>45</sup> On the armed conflict in Colombia see chapter 3, section IV, in this volume.

<sup>46</sup> No data is available for North Korea, Turkmenistan or Uzbekistan for 2012–21 and they are not included in the totals for Asia and Oceania. Data for Viet Nam is not available for the years 2019–21. For Myanmar official data on the military budget is available for most years but is not used as there is significant spending outside the official budget. Incomplete data for Tajikistan, which indicates an increase, is included in the total.

<sup>47</sup> On geopolitical tensions in East Asia see chapter 4, section II, in this volume.

**Table 8.5.** Components of China's military expenditure, 2017–21

Figures are in b. yuan at current prices unless otherwise stated.

	2017	2018	2019	2020	2021
<i>Official Chinese figures</i>					
National defence (central and local)	1 044	1 128	1 213	1 292	1 381
<i>Additional items included in SIPRI's estimate of China's total military expenditure</i>					
People's Armed Police (central and local)	113	123	124	130	139
China Coast Guard	[8.1]	[9.2]	[11.1]	[11.8]	[12.7]
Payments to demobilized and retired soldiers	118	124	140	189	202
Additional military RDT&E spending <sup>a</sup>	[139]	[153]	[173]	[158]	[158]
Additional military construction spending <sup>a</sup>	0.2	0.1	0.1	0.1	0.1
Arms imports <sup>b</sup>	[1.3]	[0.9]	[0.5]	–	–
<b>Total (yuan b.)</b>	<b>1 424</b>	<b>1 538</b>	<b>1 660</b>	<b>1 781</b>	<b>1 893</b>
<b>Total (US\$ b. at current prices)</b>	<b>210</b>	<b>233</b>	<b>240</b>	<b>258</b>	<b>293</b>
Military expenditure as a share of GDP (%)	1.7	1.7	1.7	1.8	1.7

[ ] = estimated figure; GDP = gross domestic product; RDT&E = research, development, testing and evaluation.

<sup>a</sup> Some spending on military RDT&E and military construction is also included in the main national defence budget.

<sup>b</sup> By 2020 all arms imports are estimated to be paid for by the equipment expenditure reported in the official defence budget.

Sources: Chinese Ministry of Finance, Budget Department, [2021 central budget expenditure table], 23 Mar. 2021 (in Chinese); and Chinese Ministry of Finance, Budget Department, Various national budget expenditure tables for years 2017–20 (in Chinese).

dwarfing the spending of the two other countries in the subregion, Mongolia and Taiwan.<sup>48</sup>

*Chinese military spending.* China, the world's second largest spender, allocated an estimated \$293 billion to its military in 2021, an increase of 4.7 per cent since 2020 and of 72 per cent compared to 2012 (see table 8.5). China's military spending has grown for 27 consecutive years—the longest streak by any country in the SIPRI Military Expenditure Database. The 4.7 per cent rate of increase in 2021 was the same as in 2020 and equalled the slowest annual growth in Chinese spending since 1995. Despite the ongoing property market slump, the pursuit of a 'zero Covid' policy and a regulatory crackdown on technology companies, China's GDP is estimated to have increased by 8.4 per cent in 2021.<sup>49</sup> Its military burden thus fell by 0.1 percentage points, to 1.7 per cent of GDP.

<sup>48</sup> Figures may not add up to the given totals because of the conventions of rounding.

<sup>49</sup> 'China's economy slowed at end of 2021 amid COVID outbreaks', Deutsche Welle, 17 Jan. 2022; and Huang, E., 'China's tech crackdown could last decades, but won't stop long-term investors, says wealth manager', CNBC, 23 Nov. 2021.

The 2021 Chinese military budget forms part of the first year of the country's 14th five-year plan, which covers a wide range of social, economic development and national security initiatives in 2021–25.<sup>50</sup> An element of the new five-year plan is the application of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era—the policies and ideology of Chinese President Xi Jinping—to strengthening the military and the continued modernization of the People's Liberation Army (PLA).<sup>51</sup> While complete 'mechanization' (i.e. modernization of military equipment) was supposed to be achieved by 2020, the 2021–25 plan still mentions 'mechanization' as part of the military strengthening process.<sup>52</sup>

China's continued increases in military spending are further proof of the Communist Party of China's support for strengthening the military as a governing priority under President Xi.<sup>53</sup> Both Xi Jinping Thought and the 14th five-year plan note two significant dates for the Chinese military: modernization by 2035 and transforming into a 'world class' military by 2049.<sup>54</sup> The 14th five-year plan sets an additional goal: to strengthen the military via training, reform, science and technology, and information and intelligence by 2027.<sup>55</sup> While the goal is vague and may just be a propaganda slogan, it reinforces the narrative of progress in China's long-term military modernization plan.<sup>56</sup>

SIPRI's military expenditure figures for China differ from the official national defence budget. The SIPRI figure for 2021 is 37 per cent or 512 billion yuan (\$79 billion) higher than the figure published in the official state budget. The annually published national defence budget does not include important elements of what SIPRI defines as military expenditure, some of which are listed in other parts of the official state budget.

<sup>50</sup> Tiezzi, S., 'China's fifth plenum: What you need to know', *The Diplomat*, 29 Oct. 2020.

<sup>51</sup> Xinhua, [Two sessions authorized for release, draft outline of the plan: Accelerate the modernization of national defence and the military to achieve unity of a prosperous country and a strong military], 3 May 2021 (in Chinese). On Xi Jinping Thought see Buckley, C., 'Xi Jinping thought explained: A new ideology for a new era', *New York Times*, 26 Feb. 2018.

<sup>52</sup> Fravel, M. T., 'China's "world-class military" ambitions: Origins and implications', *Washington Quarterly*, vol 43, no. 1 (2020), p. 87; and Chinese State Council, *China's National Defense in the New Era*, Defence White Paper (Chinese State Council Information Office: Beijing, July 2019), chapter II.

<sup>53</sup> Buckley, C. and Myers S. L., 'Xi Jinping presses military overhaul, and two generals disappear', *New York Times*, 11 Oct. 2017.

<sup>54</sup> Campbell, C., *China's Military: The People's Liberation Army (PLA)*, US Congressional Research Service (CRS) Report for Congress R46808 (US Congress, CRS: Washington, DC, 4 June 2021); Nouwens, M., 'Is China speeding up military modernisation? It may, but not yet', *The Interpreter*, Lowy Institute, 4 Nov. 2020; Buckley (note 51); and Noon, N. and Bassler, C., 'Schrodinger's military? Challenges for China's military modernization ambitions', *War on the Rocks*, 14 Oct. 2021.

<sup>55</sup> Xinhua, [Proposal of the Central Committee of the Communist Party of China on formulating the 14th Five-year Plan for National Economic and Social Development and Long-term Goals for 2035], 3 Nov. 2020 (in Chinese).

<sup>56</sup> Hart, B., Glaser, B. S. and Funaiolo, M. P., 'China's 2027 goal marks the PLA's centennial, not an expedited military modernization', *China Brief*, Jamestown Foundation, 26 Mar. 2021.

SIPRI's estimate of Chinese military expenditure is comprised of seven components.<sup>57</sup> Official information is available for four: national defence, the People's Armed Police, payments to demobilized and retired soldiers, and additional military construction spending. Together, these four categories accounted for 91 per cent of total spending in 2021. Estimates are made for two of the remaining three components, the China Coast Guard and additional funding for military RDT&E. The combined share of these two components was 9.0 per cent of the total in 2021. Since 2020, the cost of arms imports paid for outside the national defence budget is assumed to be zero and fully accounted for within the official defence budget.<sup>58</sup>

*Japanese military spending.* Military spending by Japan was \$54.1 billion in 2021.<sup>59</sup> Following the initial approval of the 2021/22 budget in December 2020, the Japanese government passed a supplementary budget for total government spending in November 2021 that added an additional 774 billion yen (\$7.0 billion) to the military budget for 2021/22.<sup>60</sup> The result was a 7.3 per cent increase in military spending in 2021 compared to 2020, the highest annual growth rate since 1972. Moreover, at 1.1 per cent of GDP, Japan's military burden in 2021 according to SIPRI data surpassed the threshold of 1 per cent of GDP for the first time since 1960.<sup>61</sup> Over the decade 2012–21 Japanese spending rose by 18 per cent. The main drivers of Japan's increased spending have been the growing perceived security threats from China, the Democratic People's Republic of Korea's (DPRK, or North Korea) and Russia.<sup>62</sup>

Around 55 per cent of the supplementary military budget was for advance payments to Japanese military companies for procurement of new equipment. This was stated to be a way to ease the financial situation faced by Japanese arms-producing companies in the wake of the Covid-19 pandemic.<sup>63</sup>

*South Korean military spending.* South Korean military expenditure reached \$50.2 billion in 2021. The implementation of the 2021 military budget followed a similar trajectory to that of 2020. After the initial proposed budgetary increase of 5.4 per cent, the South Korean government revised its military budget, cutting 563 billion won (\$492 million) or 1.1 per cent

<sup>57</sup> Tian, N. and Su, F., *A New Estimate of China's Military Expenditure* (SIPRI: Stockholm, Jan. 2021).

<sup>58</sup> Tian and Su (note 57), pp. 4–6.

<sup>59</sup> The SIPRI figures for Japan's military expenditure do not include spending by the Ministry of Defense on the emergency measures for disaster prevention and mitigation and building national resilience, which is considered non-military activity.

<sup>60</sup> Japanese Ministry of Finance, 'Overview of the supplementary budget for FY2021', Nov. 2021; and Grevatt, J. and MacDonald, A., 'Japan adds USD6.8 billion to 2021 defence budget', *Janes*, 29 Nov. 2021.

<sup>61</sup> Takahashi, K., 'Japan approves record extra defense budget', *The Diplomat*, 26 Nov. 2021.

<sup>62</sup> Japanese Ministry of Defense, 'National defense program guidelines for FY 2019 and beyond', 18 Dec. 2018.

<sup>63</sup> Takahashi (note 61).

from the initial budget.<sup>64</sup> The savings from the military expenditure cut were redirected into a 35 trillion won (\$30.6 billion) economic relief and pandemic-recovery package.<sup>65</sup>

As a result, South Korea's military expenditure increased by 4.7 per cent in 2021. This was the 22nd consecutive year in which South Korean military expenditure has risen: over the period 1999 to 2021, allocations to the military increased by 142 per cent. The increase in South Korean spending came amid continued development of nuclear weapons and testing of ballistic missiles by North Korea, in violation of United Nations Security Council resolutions.<sup>66</sup>

### *Oceania*

At \$35.3 billion in 2021, military spending in Oceania rose by 3.5 per cent between 2020 and 2021 and by 43 per cent over the decade from 2012. Australia accounted for 90 per cent of the subregion's total in 2021.

Australia's military expenditure in 2021 was US\$31.8 billion. This was 4.0 per cent higher than in 2020 and 42 per cent higher than in 2012. The economic burden of Australia's military activities amounted to 2.0 per cent of its GDP in 2021, unchanged since 2020 but 0.3 percentage points higher than in 2012.

On 16 September 2021, Australia, the United Kingdom and the United States announced the signing of a trilateral security pact.<sup>67</sup> Termed AUKUS, the agreement includes the procurement by Australia of eight nuclear-powered submarines and closer cooperation on cyber, artificial intelligence (AI) and quantum technologies.<sup>68</sup> While China was not mentioned in the official AUKUS agreement, Australia has publicly stated in documents such as the 2020 Defence Strategic Update that China's increased assertiveness and pursuit of greater influence in the Indo-Pacific region directly affects Australia's security environment.<sup>69</sup>

<sup>64</sup> South Korean Ministry of Economy and Finance, '2021 budget proposal: 2021 budget drawn up to speed up turnaround and prepare for the future', Press release, 1 Sep. 2020; Grevatt, J. and MacDonald, A., 'South Korea cuts 2021 defence budget', *Janes*, 3 Aug. 2021; and Yonhap, 'Govt. cut W560b won of defence budget, including for F-35A plan, for COVID-19 extra budget', *Korea Herald*, 2 Aug. 2021.

<sup>65</sup> Grevatt and MacDonald (note 64); and South Korean Ministry of Economy and Finance (MOEF), Budget Office, *Recovery for All: Korea's Fiscal Response to COVID-19* (MOEF: Seoul, 29 Oct. 2021), p. 3.

<sup>66</sup> Grevatt, J. and MacDonald, A., 'South Korea finalise USD46.32 billion defence budget for 2022', *Janes*, 3 Dec. 2021. On North Korea's nuclear weapon and ballistic missile programmes see chapter 10, section IX, in this volume.

<sup>67</sup> Morrison, S., Australian Prime Minister, Johnson, B., British Prime Minister, and Biden, J. R., US President, Joint leaders statement on AUKUS, Australian Department of the Prime Minister and Cabinet, 16 Sep. 2021. See also Borger, J. and Sabbagh, D., 'US, UK and Australia forge military alliance to counter China', *The Guardian*, 16 Sep. 2021.

<sup>68</sup> Clarke, M., 'The AUKUS nuclear submarine deal: Unanswered questions for Australia', *The Diplomat*, 22 Sep. 2021.

<sup>69</sup> Australian Department of Defence (DOD), *2020 Defence Strategic Update* (DOD: Canberra, 2020), pp. 11, 15. See also Wintour, P., 'As China threat rises, can AUKUS alliance recover from rancorous birth?', *The Guardian*, 23 Nov. 2021; and Clarke (note 68).

The immediate implication of the AUKUS agreement was the cancellation of a 2016 deal with Naval Group, a French company, for the supply of 12 diesel-powered submarines to Australia. Reported to be worth 90 billion Australian dollars (US\$67 billion), the French deal had been denounced in the Australian public debate as too costly.<sup>70</sup> Although Australia is yet to choose between British and US submarines under the AUKUS agreement, the new submarine deal is estimated to cost as much as 171 billion Australian dollars (US\$128 billion).<sup>71</sup> The Australian Parliamentary Budget Office estimates that military spending could rise from the current 43.6 billion Australian dollars in 2021 to 75.7 billion Australian dollars by 2031.<sup>72</sup> Part of this increase is probably due to a need to absorb the costs of the AUKUS agreement, including the nuclear submarine programme.

### *South Asia*

Military spending in South Asia increased again to \$95.1 billion in 2021 after a real-terms decrease in 2020 of 2.7 per cent. Spending in 2021 was 0.8 per cent higher than in 2020 and 36 per cent higher than in 2012.

India is the largest military spender in South Asia, making up 81 per cent of the subregion's total in 2021. Its budget of \$76.6 billion also ranked as the second highest in Asia and Oceania and the third highest in the world. This was up by 0.9 per cent from 2020 and by 33 per cent from 2012. India's economy recovered from a sharp contraction in 2020 to grow by 9.5 per cent in 2021 after undergoing a devastating wave of Covid-19 in the first half of 2021. The military burden consequently dropped to 2.7 per cent of GDP after reaching 2.9 per cent in 2020, the highest value in the decade 2012–21.

In 2021, 60 per cent of India's total military budget was allocated to personnel expenses such as salaries and military pensions. Around one-quarter is generally spent on capital outlays, which continued to grow after a big surge in 2020. About 12 per cent of the spending in 2021 went to paramilitary forces, including the Indo-Tibetan Border Police, the budget of which rose by 9.1 per cent in the context of the Ladakh border confrontation with China.<sup>73</sup>

Amid ongoing, albeit de-escalated, stalemates on two fronts—with China and Pakistan—the Indian government has placed self-reliance and

<sup>70</sup> Shepherd, T., 'Australia's Aukus nuclear submarines could cost as much as \$171bn, report finds', *The Guardian*, 13 Dec. 2021; and Galloway, A., 'Defence knew submarines would cost almost \$80b five years ago', *Sydney Morning Herald*, 13 Oct. 2020.

<sup>71</sup> Nicholls, A., Dowie, J. and Hellyer, M., *Implementing Australia's Nuclear Submarine Programme* (Australian Strategic Policy Institute: Canberra, Dec. 2021), p. 72.

<sup>72</sup> Cheung, A. et al., *Beyond the Budget 2021–22: Fiscal Outlook and Scenarios*, Report no. 02/2021 (Parliamentary Budget Office: Canberra, 2021); and Wright, S., 'Subs get to sail past \$100 billion as defence call on budget grows', *Sydney Morning Herald*, 20 Sep. 2021.

<sup>73</sup> On the armed conflict in the border areas of China, India and Pakistan see chapter 4, section III, in this volume.

modernization of its armed forces as its top military priorities.<sup>74</sup> In a push to strengthen the indigenous arms industry and local research and development (R&D) capabilities, 64 per cent of capital outlays in 2021 were earmarked for domestic equipment acquisitions.<sup>75</sup>

Pakistan's military spending fell for the third consecutive year in 2021, to \$11.3 billion, a decrease of 0.7 per cent since 2020. This came against the backdrop of rising inflation during the Covid-19 pandemic as well as the ceasefire agreement reached with India over Kashmir in February 2021.<sup>76</sup> At 3.8 per cent of GDP in 2021, Pakistan's military burden was the highest in Asia and Oceania. Pakistan also spent the highest share of total government expenditure on the military (18 per cent) in Asia and Oceania.

Afghanistan's military budget for 2021, adopted by the government of President Ashraf Ghani, increased by 1.8 per cent to \$278 million. Following the Taliban's seizure of power in August 2021, in early 2022 the new government released its first quarterly budget, which followed the same format with regards to military expenditure as the budgets of the previous government.<sup>77</sup>

### *South East Asia*

Military spending in South East Asia decreased by 2.3 per cent between 2020 and 2021 to \$43.2 billion. This was the third time since 2012 that the subregion's total military spending fell. The other two instances were a small decrease of 0.7 per cent in 2014 and a decrease of 7.3 per cent in 2018, when Indonesia and Malaysia each reduced military expenditure in a context of economic downturn and electoral campaigns. These variations, supported by fluctuations in the military burden, show that military spending in South East Asia is sensitive to economic downturns and political events.<sup>78</sup>

The Covid-19 pandemic had an impact on military expenditure in South East Asia. For instance, Singapore's military expenditure was revised downward during 2020 explicitly because of the pandemic.<sup>79</sup> It rose again in 2021, reaching \$11.1 billion (a growth of 7.1 per cent) but did not grow as fast as the country's health expenditure. Health spending rose from a 13 per cent share

<sup>74</sup> Sitharaman allocates Rs 4.78 lakh crore to defence budget for 2021–22, "highest in 15 years", Asian News International, 1 Feb. 2021.

<sup>75</sup> On the Indian arms industry see Fleurant, A., 'Arms production and military services', *SIPRI Yearbook 2015*; and Jackson, S. T. and Grinbaum, M., 'The Indian arms-production and military services industry', *SIPRI Yearbook 2012*.

<sup>76</sup> On the ceasefire see chapter 4, section II, in this volume.

<sup>77</sup> Afghan Ministry of Finance (MOF), [Quarterly national budget 1400] (MOF: Kabul, 21 Dey 1400 [11 Jan. 2022]) (in Pashto).

<sup>78</sup> Ball, D. et al., *Asia's New Geopolitics: Military Power and Regional Order*, Adelphi Series vol. 59, nos 478–480 (Routledge: Abingdon, 2021), pp. 71–124.

<sup>79</sup> Heijmans, P., 'Singapore faces defense budget cutbacks amid virus impact', Bloomberg, 29 June 2020; and Parameswaran, P., 'What does Singapore's new defense budget say about the country's security thinking', *The Diplomat*, 24 Feb. 2020.



of total government spending in 2020 to 18 per cent in 2021, higher than the military expenditure share (11 per cent in 2020 and 15 per cent in 2021).<sup>80</sup>

The downward trend in the subregion's military spending was driven overall by its second and third largest spenders, Indonesia and Thailand, which both reduced their military expenditure in 2021: Indonesia by 15 per cent to \$8.3 billion and Thailand by 8.5 per cent to \$6.6 billion.<sup>81</sup> The decrease in Indonesia casts doubts over its budgetary capacity to absorb the costs of the projected purchases of 42 Rafale combat aircraft (estimated at \$8.1 billion) and 36 F-15 combat aircraft (announced as \$13.9 billion).<sup>82</sup> In the past, Indonesia has resorted to foreign loans to procure its military equipment, but has already encountered difficulties in paying for its current joint combat aircraft development programme with South Korea.<sup>83</sup>

## Europe

Total military spending in Europe in 2021 amounted to \$418 billion. This was 3.0 per cent higher than in 2020 and 19 per cent higher than in 2012.

### *Central and Western Europe*

The military expenditure of the states in Central and Western Europe totalled \$342 billion in 2021, 3.1 per cent higher than in 2020. This represented the seventh consecutive year of growth. While military expenditure growth was slower in 2021 than in 2019 (5.1 per cent) and 2020 (5.2 per cent), it was still higher than in 2017 (2.3 per cent) and 2018 (2.9 per cent). Over the decade 2012–21, the subregion's military expenditure grew by more than 20 per cent.

The economies of countries in Central and Western Europe rebounded quickly after the Covid-19-induced recession of 2020. GDP in the eurozone—the 19 members of the European Union (EU) that have adopted the euro as a common currency—contracted by 6.3 per cent in 2020 but was projected to grow by 5.0 per cent in 2021. The trend was even more pronounced in the United Kingdom, where economic output declined by 9.8 per cent in 2020

<sup>80</sup> Singaporean Ministry of Finance (MOF), *The Revenue and Expenditure Estimates for the Financial Year 2012/2022*, Cmd 5 of 2021 (MOF: Singapore, 2021), p. 12. The figure for military spending as a proportion of total government spending may differ from figures in government documents as SIPRI uses IMF government spending figures.

<sup>81</sup> Gregatt, J. and MacDonald, A., 'Covid-19: Thailand proposes 2021 defence budget reduction', *Jane's Defence Weekly*, 2 July 2020; and Grevatt, J., 'Indonesia sets 2022 defence budget at USD9.3 billion', *Jane's Defence Weekly*, 25 Aug. 2021.

<sup>82</sup> Hummel, T. and Widiyanto, S., 'France seals \$8.1 billion deal with Indonesia to sell 42 Rafale jets', Reuters, 10 Feb. 2022; and US Defense Security Cooperation Agency, 'Indonesia—F-15ID aircraft', New Release no. 22-13, 10 Feb. 2022.

<sup>83</sup> Rahmat, R., 'Amid funding challenges, Indonesia eyes A400M for aerial tanker requirements', *Jane's Defence Weekly*, 11 Oct. 2021; and Yonhap, 'S. Korea cuts Indonesia's payment for joint fighter development', *Korea Herald*, 15 Nov. 2021.

but increased by 6.8 per cent in 2021.<sup>84</sup> At the same time, financial policies remained expansive, as the circulation of the virus led to further mobility and economic restrictions and governments continued to support companies and jobs.<sup>85</sup> As a result, government budget deficits worsened in 2021 compared to 2020.<sup>86</sup>

Of the 36 countries in Central and Western Europe for which SIPRI provides military spending data, 21 increased military spending as a share of total government spending in 2021. This reflects the continued priority that Central and West European governments assigned to allocating public expenditure to their armed forces, despite the Covid-19 pandemic. In 2021 the strategic situation and threat perceptions thus weighed more heavily in the decision-making of Central and West European governments than fiscal and economic conditions.<sup>87</sup>

In 2021 the European Commission's European Defence Fund (EDF) came into force, building on two previous military research funding mechanisms: the Preparatory Action on Defence Research (2017–19) and the European Defence Industrial Development Programme (2019–20). Over the period 2021–27 a total of €8.0 billion (\$9.5 billion) is earmarked for the EDF in the EU's 2021–27 Multiannual Financial Framework (MFF) and €5.0 billion (\$5.9 billion) is to be financed outside the EU budget for the European Peace Facility (EPF).<sup>88</sup> In addition, the MFF also includes €1.7 billion (\$2.0 billion) for 'military mobility' over the seven-year period. This expenditure is earmarked to overhaul dual-use transport infrastructure, which will facilitate the circulation of military personnel and equipment across Europe.<sup>89</sup> All this expenditure is in addition to national military spending by EU countries; it is currently not included in the SIPRI estimate of world military spending.

The \$9.7 billion increase in Central and West European military spending in 2021 was mostly driven by procurement and R&D.<sup>90</sup> According to NATO, 18 of its European members increased the share of their military expenditure spent on equipment in 2021, some quite starkly, such as Croatia

<sup>84</sup> International Monetary Fund (IMF), *World Economic Outlook, October 2021: Recovery during a Pandemic—Health Concerns, Supply Disruptions, and Price Pressures* (Washington DC: Oct. 2021), p. 5.

<sup>85</sup> European Central Bank (ECB), *Economic Bulletin*, no. 8/2021, p. 47.

<sup>86</sup> International Monetary Fund (IMF), *World Economic Outlook Database*, Oct. 2021, <<https://www.imf.org/en/Publications/WEO/weo-database/2021/October>>

<sup>87</sup> On the growing geopolitical tensions in Europe see chapter 5, section I, in this volume.

<sup>88</sup> European Commission, 'The European Defence Fund', 30 June 2021; European Commission, 'Multiannual Financial Framework 2021–2027 (in commitments)—Current prices', Jan. 2021; and European External Action Service (EEAS), 'Questions and answers: The European Peace Facility', 22 Mar. 2021.

<sup>89</sup> European Commission, 'Defence Union: Further progress made towards military mobility in the EU', 27 Sep. 2021.

<sup>90</sup> Tian, N., Lopes da Silva, D. and Wezeman, P. D., 'Spending on military equipment by European members of the North Atlantic Treaty Organization', *SIPRI Yearbook 2020*.

(+33 percentage points) and Greece (+26 percentage points).<sup>91</sup> Both countries planned purchases of Rafale combat aircraft from France.<sup>92</sup>

There were similar surges in spending on equipment by non-NATO countries in Central and Western Europe. For instance, Finland's acquisition of military equipment jumped from €789 million (\$899 million) in 2020 to €2.3 billion (\$2.7 billion) in 2021, the same year it signed a procurement deal for 64 F-35 combat aircraft at an approximate cost of \$9.4 billion.<sup>93</sup> Sweden's procurement spending plans increased from 14.8 billion kronor (\$1.6 billion) to 17.8 billion kronor (\$2.1 billion) between 2020 and 2021.<sup>94</sup> Hence, in a context of heightened geopolitical tensions, Central and West European states appeared to prioritize the procurement of their armed forces' equipment in their military spending.

The United Kingdom's military expenditure amounted to \$68.4 billion in 2021, up by 3.0 per cent from 2020. The UK's military burden was 2.2 per cent of GDP in 2021, above the NATO target of 2 per cent. Over the period 2012–21, the UK's military expenditure grew by only 3.7 per cent, the slowest of all countries in Central and Western Europe. In 2021 the British government published its Integrated Review of Security, Defence, Development and Foreign Policy. This included the announcement of a £24.0 billion (\$33.0 billion) increase in the Ministry of Defence's budget (the largest component of SIPRI's estimate of British military spending) over four years.<sup>95</sup> This incorporates £6.6 billion (\$9.1 billion) for military R&D. The additional spending is also expected to fund a new Space Command, sustain the nuclear weapon programme, and support the modernization of the British Royal Air Force and the British Royal Navy with the introduction of new types of weapon system.<sup>96</sup> The Defence Command Paper gave more indications of the priorities for the British armed forces. New emphasis is put on emerging military capabilities in the AI or cyber domains, while the number of personnel in the British Army will be reduced from 76 000 to 72 500 by 2025, and legacy platforms will be retired (e.g. the Type 23 frigates).<sup>97</sup>

<sup>91</sup> NATO, 'Defence expenditure of NATO countries (2014–2021)', Press Release no. PR/CP(2021)094, 11 June 2021.

<sup>92</sup> 'France confirms deal with Greece for six more Rafale fighter jets', France 24, 12 Sep. 2021; and 'Croatia signs deal to buy 12 French fighter jets during visit by Macron', France 24, 25 Nov. 2021.

<sup>93</sup> Finnish Ministry of Finance, 'Statsbudgeteten 2022, Huvudtitel 27: Försvarsministeriets förvaltningsområde' [State budget 2022, Main title 27: Administrative area of the Ministry of Defence], 2021, pp. 3–4; and Lehto, E. and Stone, M., 'Finland orders 64 Lockheed F-35 fighter jets for \$9.4 bln', Reuters, 10 Dec. 2021.

<sup>94</sup> Swedish government, 'Utgiftsområde 6—Försvar och samhällets krisberedskap' [Expenditure area 6—Defence and civil protection], Proposition 2020/21:1, 2020, p. 8.

<sup>95</sup> See Béraud-Sudreau, L. and Tian, N., 'Reassessing SIPRI's military expenditure estimate for the United Kingdom', SIPRI Topical Background, 9 Feb. 2021.

<sup>96</sup> British Government, *Global Britain in a Competitive Age: The Integrated Review of Security, Defence, Development and Foreign Policy*, CP 403 (Her Majesty's Stationery Office: London, Mar. 2021).

<sup>97</sup> British Ministry of Defence, *Defence in a Competitive Age*, CP 411 (Her Majesty's Stationery Office: London, Mar. 2021); and Brooke-Holland, L., 'Defence Command Paper 2021: Summary', Briefing Paper no. 9181, British House of Commons Library, 19 Mar. 2021.

French military expenditure reached \$56.6 billion in 2021, a 1.5 per cent increase over 2020. Over the decade 2012–21, French military spending grew by 13 per cent. The military burden was 1.9 per cent of GDP in 2021. France's military spending in 2021 was in line with the Law on Military Planning (Loi de Programmation Militaire, LPM) for 2019–25. The government had originally tabled an increase in the funding outlined in the LPM for 2021. However, this was postponed due to the financial uncertainty during the Covid-19 pandemic.<sup>98</sup> According to the Ministry of Armed Forces, one of the reasons that prompted the government not to proceed with the increase was that the military burden had risen automatically, due to the economic crisis, to reach 2 per cent, which could have prematurely indicated that the French armed forces had completed their modernization process.<sup>99</sup> The government thus wanted to wait for the economic situation to settle before reassessing spending plans for the final three years of the LPM.<sup>100</sup>

Germany, the third largest military spender in Central and Western Europe, spent \$56.0 billion in 2021, a fall of 1.4 per cent. Its military burden in 2021 was 1.3 per cent of GDP. A new coalition government came to power in September 2021, composed of the Social Democratic, Green and Free Democratic parties. The coalition agreement includes a goal to invest 3 per cent of Germany's GDP jointly in diplomacy, development and commitments to NATO.<sup>101</sup> This phrasing moves away from the NATO target of 2 per cent of GDP to be spent on 'defence expenditure' and tends to include military spending as part of a wider approach to security, including other aspects of human security and international commitments (see section I).<sup>102</sup>

### *Eastern Europe*

Military spending in Eastern Europe increased by 2.3 per cent between 2020 and 2021 to \$76.3 billion, and by 15 per cent between 2012 and 2021. Russia, which accounted for 86 per cent of the total, drove this trend.

The Russian Federation's military spending reached \$65.9 billion in 2021. This represented a real-terms growth of 2.9 per cent compared to 2020, confirming Russia's upward trajectory since 2018. This came after a period of decline in 2017 and 2018 due to economic difficulties in the wake of Western

<sup>98</sup> Castex, J., French Prime Minister, Statement on the updating of the Law on Military Programming, French Senate, 23 June 2021 (in French).

<sup>99</sup> Mackenzie, C., 'Despite pressure from lawmakers and pandemic, French defense budget to remain unchanged'. *Defense News*, 5 Oct. 2020.

<sup>100</sup> French Senate, Legislative update on the Law on Military Programming, Response to Written Question no. 22 683, 9 Sep. 2021 (in French).

<sup>101</sup> German Social Democratic Party (SPD), Bündnis 90/The Greens and Free Democratic Party (FDP), *Mehr Fortschritt wagen: Bündnis für Freiheit, Gerechtigkeit und Nachhaltigkeit* [Daring more progress: Alliance for freedom, justice and sustainability], Coalition agreement (SDP/The Greens/FDP: Berlin, 26 Nov. 2021), p. 144.

<sup>102</sup> On this wider approach see also Brzoska, M., Omitogoon, W. and Sköns, E., *The Human Security Case for Rebalancing Military Expenditure* (SIPRI: Stockholm, May 2022).

sanctions and a period of lower commodity prices. Russia's military burden remained relatively high in 2021, at 4.1 per cent, among the highest 15 in the world.

Russian military spending growth in 2021 can be attributed to the government's budget surplus due to high commodity prices. Average oil prices were \$70 per barrel in 2021, while Russia's breakeven oil price—that is, when income from oil sales covers the cost of extraction—was estimated to be around \$40 per barrel.<sup>103</sup> The higher commodity prices generated additional revenue for the Russian government, which relies on commodity exports for a large proportion of its income.<sup>104</sup> In September 2021, Russia's current account surplus from higher oil export revenue rose to \$82 billion—a level that had not been reached for 14 years.<sup>105</sup> Russia did not reallocate the windfall revenue solely to foreign exchange savings, but also for additional public spending, including on its armed forces.<sup>106</sup>

The 2021 'national defence' budget, which accounts for three-quarters of total Russian military spending, was revised several times.<sup>107</sup> In the Budget Law of 8 December 2020, 'national defence' for 2021 was set at 3118 billion roubles (\$42.3 billion).<sup>108</sup> When the subsequent draft budget was submitted in September 2021, 'national defence' for 2021 was revised to 3381 billion roubles (\$45.9 billion).<sup>109</sup> Eventually, information from the State Treasury regarding actual spending for the year 2021 showed that 3573 billion roubles (\$48.4 billion) had been spent under this budget line.<sup>110</sup> The top-up allocations are likely to have been spent on operational activities, given that additional funds could not be easily allocated to weapon production and procurement. In late 2021, Russia amassed troops alongside the Ukrainian

<sup>103</sup> World Bank, 'World Bank commodities price data', 2 Feb. 2022, p. 1; and International Monetary Fund (IMF), *Russian Federation: Staff Report for the 2020 Article IV Consultation*, IMF Country Report no. 21/36 (IMF: Washington, DC, 19 Jan. 2021), p. 38.

<sup>104</sup> World Bank, 'Amidst strong economic rebound in Russia, risks stemming from COVID-19 and inflation build, says World Bank report', Press Release no. 2022/ECA/38, 1 Dec. 2021.

<sup>105</sup> World Bank, *Amidst Strong Economic Recovery, Risks Stemming from COVID-19 and Inflation Build—Special Focus on Russia's Green Transition: Pathways, Risks and Robust Policies*, Russia Economic Report no. 46 (World Bank: Washington, DC, Dec. 2021), p. xii.

<sup>106</sup> On the relationship between oil revenue and military expenditure see Tian and Lopes da Silva (note 10).

<sup>107</sup> Wezeman, S. T., 'Russia's military spending: Frequently asked questions', SIPRI Topical Background, 27 Apr. 2020; and Cooper, J., *Russian Military Expenditure: Data, Analysis and Issues* (Swedish Defence Research Agency: Stockholm, Sep. 2013). On the other quarter of Russian military spending—comprised of social support, pensions, paramilitary forces, support for the nuclear weapons complex, and other expenditure by the Ministry of Defence such as health, education and housing—see Tian, N. et al., 'Regional developments in military expenditure, 2019', *SIPRI Yearbook 2020*.

<sup>108</sup> Russian Ministry of Finance, [On the federal budget for 2021 and for the planning period 2022 and 2023], Dec. 2020, p. 47 (in Russian).

<sup>109</sup> Russian State Duma, Defence Committee, [On the federal budget for 2022 and for the planning period of 2023 and 2024], 14 Oct. 2021, p. 5 (in Russian).

<sup>110</sup> Russian Federal Treasury, Budget Execution, Monthly report for January 2022, 8 Feb. 2022.

border and demanded a guarantee that Ukraine will not join NATO and that the alliance will refrain from expanding eastwards.<sup>111</sup>

Despite a certain degree of disaggregation in the official military budget, 48 per cent of total Russian military expenditure in 2021 is labelled as ‘classified’ within three broad categories: the Ministry of Defence, applied R&D, and other spending. This includes part of the spending on the nuclear weapons complex, which, according to budgetary documents, will increase in the coming years.<sup>112</sup> This is partly due to the production of a new generation of intercontinental ballistic missiles (ICBMs).<sup>113</sup>

Several countries in Eastern Europe are or have been involved in armed conflict or are facing regional tensions. Ukraine’s military spending rose steeply after Russia’s annexation of Crimea and its support of separatists in the Donbas region in 2014.<sup>114</sup> Overall, its military spending rose by 72 per cent in 2014–21 and by 142 per cent over the decade 2012–21. The upward trend was interrupted in 2021 by an 8.5 per cent drop in military spending, to \$5.9 billion. This accounted for 3.2 per cent of the country’s GDP in 2021. The USA has been increasing military aid to Ukraine since 2014. Between 2015 and 2021, US military aid to Ukraine totalled \$717 million (which is included in the military spending of the USA, not Ukraine—see box 8.2 in section I).

Territorial disputes and skirmishes between Armenia and Azerbaijan have continued since the 2020 conflict over Nagorno-Karabakh.<sup>115</sup> Armenia and Azerbaijan both had high military burdens in 2021: 4.4 per cent and 5.3 per cent, respectively. While Azerbaijan’s military spending grew by 16 per cent between 2020 and 2021, reaching \$2.7 billion, Armenia’s decreased by 5.2 per cent to \$619 million.

## The Middle East

Military expenditure in the Middle East is estimated to have totalled \$186 billion in 2021, down 3.3 per cent since 2020 but 5.6 per cent higher than in 2012.<sup>116</sup> For over a decade, until 2021, SIPRI had been unable to estimate military spending by Qatar (now the fifth largest spender in the region and the 22nd in the world) or provide an estimate for the region since 2014. Newly

<sup>111</sup> Bertrand, N., Sciutto, J. and Lillis K. B., ‘Russia continues to amass new troops near Ukraine’s border despite Biden urging Putin to de-escalate tensions’, CNN, 17 Dec. 2021; and Roth, A., ‘Russia issues list of demands it says must be met to lower tensions in Europe’, *The Guardian*, 17 Dec. 2021. See also chapter 5 in this volume.

<sup>112</sup> Russian Ministry of Finance, [On the federal budget for 2022 and for the planning period 2023 and 2024], Dec. 2021, p. 71 (in Russian).

<sup>113</sup> Gady, F.-S., ‘Russia’s RS-28 Sarmat ICBM to enter serial production in 2021’, *The Diplomat*, 31 Oct. 2018; and Bratersky, A., ‘Russian nuclear weapons stand out in defense budget request’, *Defense News*, 1 Nov. 2021. On Russian nuclear forces see chapter 10, section II, in this volume.

<sup>114</sup> On the armed conflict in Ukraine see chapter 5, section II, in this volume.

<sup>115</sup> Forestier-Walker, R., ‘Armenia and Azerbaijan’s new-old border war’, *Al Jazeera*, 19 Nov. 2021.

<sup>116</sup> This total excludes Syria and Yemen but includes an estimate for the UAE.

available data for Qatar allows a regional estimate to be made once more, although data for the United Arab Emirates (UAE) remains unavailable.

Six of the 10 countries with the highest military burden are in the Middle East: Oman, which spent 7.3 per cent of its GDP on the military (the highest level in the world), Kuwait at 6.7 per cent, Saudi Arabia at 6.6 per cent, Israel at 5.2 per cent, Jordan at 5.0 per cent and Qatar at 4.8. per cent. In contrast to 2020, the military burden fell in most countries of the Middle East in 2021. This was mostly due to a rapid economic recovery from pandemic-related disruptions. The largest fall in military burden was in Saudi Arabia, where it dropped 2.6 percentage points.

Saudi Arabia's estimated military expenditure in 2021 was \$55.6 billion, which is a fall of 17 per cent compared with 2020. The decrease came amid reports that Saudi Arabia had begun to withdraw its military forces from Yemen, but the Saudi Arabian government rejected the claims and stated that the troops were simply being redeployed.<sup>117</sup> Saudi Arabia's military spending has followed a downward trend since 2015, largely due to a sharp fall in oil prices that put its economy under strain.<sup>118</sup> Saudi Arabia's economy showed signs of recovery as oil prices began to rise in 2020–21, but this has not yet led to a corresponding increase in military spending.<sup>119</sup>

The cut in Saudi Arabian spending in 2021 was the largest since 2016, when military spending fell by 28 per cent. Public expenditure as a whole has been decreasing, yet military spending as a share of public expenditure has also declined: it fell from 23 per cent in 2019 to 21 per cent in 2021. Budget lines such as education, health and social development have been relatively stable as a share of public expenditure. Despite shrinking, military spending is still the largest proportion of Saudi Arabia's public expenditure.

Iran's planned military spending rose for the first time in four years in 2021, to \$24.6 billion. The annual increase of 11 per cent was approved despite Iran's continuing economic problems due to the effects of many years of sanctions: US sanctions on Iran's oil exports have severely affected government revenue, resulting in a soaring budget deficit.<sup>120</sup> The rise in military spending coincided with continued strained relations with the United States, the Arab states of the Gulf and Israel, and its proxy war in Syria.<sup>121</sup> The increase also took

<sup>117</sup> El Yaakoubi, A. and Mukhshaf, R., 'Saudi-led coalition says troops redeploying in Yemen, not withdrawing', Reuters, 11 Nov. 2021. On the armed conflict in Yemen see chapter 6, section V, in this volume.

<sup>118</sup> On the relationship between oil revenue and military expenditure see Tian and Lopes da Silva (note 10).

<sup>119</sup> Nereim, V., 'Saudi Arabia's economic growth stays near decade-high as oil powers rebound', Bloomberg, 10 Feb. 2022.

<sup>120</sup> Rome, H., 'Iran in 2021: The economy', Iran Primer, US Institute of Peace, 15 Dec. 2021.

<sup>121</sup> Al-Monitor, 'Gulf states cooperate on defense, Iran and economic integration at summit', 15 Dec. 2021; and Akbarzadeh, S., Gourlay, W. and Ehteshami, A., 'Iranian proxies in the Syrian conflict: Tehran's "forward-defence" in action', *Journal of Strategic Studies*, 4 Jan. 2020, pp. 12–14. On developments in Iranian–US relations see also chapter 6, section I, in this volume.

place as Iran adopted a more assertive diplomatic stance in the negotiations concerning the Joint Comprehensive Plan of Action (JCPOA) on its nuclear programme.<sup>122</sup>

The budget of the Islamic Revolutionary Guard Corps (IRGC) continued to grow in 2021. The increase of 14 per cent took spending on the IRGC to 38 per cent of Iran's total military spending. This followed a 15 per cent increase in 2020 compared to 2019, when the IRGC budget was 34 per cent of Iran's total military budget. The rising trend will probably continue: the proposed budget for 2022 foresees a 141 per cent nominal increase for the IRGC budget (in the context of a high inflation rate).

In 2021 Israel's military spending rose 3.1 per cent to \$24.3 billion. In addition, Israel receives military aid from the USA, which in 2021 totalled \$3.8 billion, including \$500 million for missile defence.<sup>123</sup> This continued a streak of growth since 2010, amounting to a 39 per cent rise. The most recent increase continues the 3–4 per cent annual growth projections of the 2030 Security Concept, a multi-year military modernization programme presented in 2018.<sup>124</sup> It also allows Israel to pursue the 2019 Momentum Plan, a military programme aiming to strengthen the capabilities of the armed forces, the Israel Defense Forces (IDF).

Israel spent two years without a properly approved state budget because of a political stand-off in the Knesset, the parliament. As a result, military spending in 2021 and 2020 was based on the 2019 budget with top-up allocations. In 2021 the Knesset finally agreed to a budget that projects a significant rise in military spending for 2022.<sup>125</sup> This suggests that the change in government following elections in 2021 will not affect Israel's commitment to ongoing military modernization programmes nor does it represent a shift in threat perception.<sup>126</sup> The Israeli government continued to express severe concerns about Iran's nuclear capabilities in 2021.<sup>127</sup> A senior official of the Mossad, Israel's national intelligence agency, affirmed that the country would do 'whatever it takes' to prevent Iran from building a nuclear weapon.<sup>128</sup>

In 2021 Qatar's military spending was \$11.6 billion, equivalent to 4.8 per cent of Qatari GDP. Qatar's military spending accounted for 22 per cent of the state budget, the largest share among all sectors. Health, for example, took

<sup>122</sup> On developments in the JCPOA see chapter 11, section II, in this volume.

<sup>123</sup> US military aid is accounted for in US military spending, not Israel's (see box 8.2 in section I). Sharp, J. M., *US Foreign Aid to Israel*, US Congressional Research Service (CRS) Report for Congress RL33222 (US Congress, CRS: Washington, DC, 18 Feb. 2022), p. 2.

<sup>124</sup> Tian et al. (note 107), pp. 251–52; and Israeli Prime Minister's Office, 'PM Netanyahu presents "2030 Security Concept" to the Cabinet', 15 Aug. 2018.

<sup>125</sup> Ahronheim, A., 'Israel finally has a budget, and so does the IDF—analysis', *Jerusalem Post*, 4 Nov. 2021.

<sup>126</sup> Al Jazeera, 'Israel swears in new government, ending Netanyahu's 12-year rule', 13 June 2021.

<sup>127</sup> Knell, Y., 'Iran nuclear programme: Threat of Israeli strike grows', BBC News, 23 Nov. 2021.

<sup>128</sup> Kube, C. and De Luce, D., 'Tensions rising between US and Iran; New Year's seen as potential flashpoint', NBC News, 20 Dec. 2021.



8.5 per cent. SIPRI does not have military expenditure data for Qatar for the period 2011–20 but estimates that Qatari spending increased by 434 per cent between 2010 and 2021. This is by far the steepest rise among members of the Gulf Cooperation Council (GCC) for the period.<sup>129</sup> During those years, Qatar sent troops to assist the Libyan rebels who overthrew the regime of Muammar Gaddafi; backed the Syrian opposition; and expanded its armed forces and modernized its military equipment with several arms-import programmes.<sup>130</sup>

Turkey's military spending fell for the second consecutive year in 2021, by 4.4 per cent to \$15.5 billion. The decline took place amid a severe currency and debt crisis that has hit the country since 2018.<sup>131</sup> Despite the recent cuts, Turkish military spending grew by 63 per cent in the decade 2012–21. The surge coincided with Turkey's expanding foreign policy engagement in the Middle East and North Africa.<sup>132</sup> Another driver of Turkish military spending has been the pursuit of military procurement autarky by 2023.<sup>133</sup> The Defence Industry Support Fund received a little over a fifth of Turkey's total military spending in 2021, slightly higher than in 2020. This fund was created in 1985 to help develop Turkey's arms industry through direct support to a wide range of indigenous firms and enterprises in the defence sector.<sup>134</sup> However, it remains unclear how the recent cuts in military spending will affect Turkey's aim of reducing its reliance on arms imports.

<sup>129</sup> Data for the UAE is available only until 2014.

<sup>130</sup> Wezeman, P. D. and Kuimova, A., 'Military spending and arms imports by Iran, Saudi Arabia, Qatar and the UAE', SIPRI Fact Sheet, May 2019.

<sup>131</sup> Kubilay, M. M., 'Turkey's self-made currency crisis', Middle East Institute, 3 Dec. 2021.

<sup>132</sup> On Turkey's involvement in the armed conflicts in the Middle East and North Africa see chapter 6, sections II and IV, in this volume.

<sup>133</sup> Kurç, Ç., 'Between defence autarky and dependency: The dynamics of Turkish defence industrialization', *Defence Studies*, vol. 17, no. 3 (2017).

<sup>134</sup> Özlü, H., 'The foundation and development of Turkey's defense industry in the context of national security strategy', *Perceptions*, vol. 26, no. 2 (autumn–winter 2021), p. 229; and *Daily Sabah*, 'Turkey creates defense industry investment fund', 13 June 2021.