

### III. The SIPRI Top 100 arms-producing and military services companies, 2022: Regional and national developments

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The arms industry is the industrial segment engaged in the development and production of arms for the military and in the provision of military services. Since it cuts across several defined industries in official industrial statistics and is not a well-demarcated industry of its own, it is difficult to monitor and review developments in the global arms industry. SIPRI therefore maintains its own database of the largest arms-producing and military services companies.<sup>1</sup> This, together with data on military expenditure (see sections I and II of this chapter) and international arms transfers (see chapter 6), enables an assessment of the size, structure and developments in the global military sector. This section reviews the main development in the list of the 100 largest arms-producing and military services in 2022 ranked according to arms revenue—the SIPRI Top 100 for 2022—first looking at overall trends and then at trends in each region.<sup>2</sup>

The combined arms revenue of the SIPRI Top 100 for 2022 was US\$597 billion (see table 5.6). This was 3.5 per cent less in real terms than the arms revenue of those companies in 2021 (see table 5.7).<sup>3</sup> The decline was mainly the result of overall decreases in the arms revenue of the US and Russian companies included in the SIPRI Top 100. Looking instead at the trend in the set of Top 100 companies in each year, 2022 was the second consecutive year of decline and substantially stronger (–4.5 per cent) than the first decline observed in 2021, which was a marginal fall of 0.3 per cent.

Overall, the arms revenue of the Top 100 for 2022 was still 14 per cent higher than that of the Top 100 for 2015. The decline in 2022 is rather striking given the rising demand for arms after the Russian Federation's full-scale invasion of Ukraine in February 2022 (see section IV). Large backlogs in orders and surging demand for arms during 2022 and 2023 suggest that the total arms revenue of the SIPRI Top 100 may rise significantly in the years ahead.

<sup>1</sup> SIPRI Arms Industry Database, Dec. 2023.

<sup>2</sup> 'Arms revenue' refers to company revenue generated from arms sales, defined as sales of military goods and services to military customers domestically and abroad. The most recent year for which consistent data on arms revenue of the Top 100 is available is 2022. For the full Top 100 list see SIPRI Arms Industry Database, Dec. 2023, <<https://www.sipri.org/databases/armsindustry>>. On sources and methods, including definitions of terms, see SIPRI Arms Industry Database, 'Sources and methods', [n.d.].

<sup>3</sup> Arms revenue in 2022 is reported in current (2022) US\$. Unless otherwise stated, all relative changes are expressed in real terms based on constant 2022 US\$.

**Table 5.6.** Trends in arms sales of companies in the SIPRI Top 100 arms-producing and military services companies, 2013–22

Change is the difference (in %) between the total arms sales of the Top 100 of each year and the different set of companies in the Top 100 for the previous year.

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<i>Arms sales in current prices and exchange rates</i>										
<b>Total (\$b.)</b>	<b>406</b>	<b>399</b>	<b>452</b>	<b>465</b>	<b>484</b>	<b>516</b>	<b>556</b>	<b>571</b>	<b>605</b>	<b>597</b>
Change (%)	0.2	-1.7	..	2.9	4.2	6.4	7.8	2.8	5.9	-1.3
<i>Arms sales in constant (2022) prices and exchange rates</i>										
<b>Total (\$b.)</b>	<b>450</b>	<b>439</b>	<b>522</b>	<b>543</b>	<b>552</b>	<b>572</b>	<b>616</b>	<b>627</b>	<b>625</b>	<b>597</b>
Change (%)	-2.3	-2.6	..	4.0	1.8	3.6	7.7	1.8	-0.3	-4.5

Note: There is a series break between 2014 and 2015, when Chinese companies were first included in the data set.

Source: SIPRI Arms Industry Database, Dec. 2023.

## The United States

As in every other year of SIPRI's data set, the region with the largest presence in the Top 100 for 2022 is North America, with 43 companies that recorded arms revenues of \$304 billion (51 per cent of the Top 100 total). Only 1 of these companies is Canadian, with the 42 companies based in the United States continuing to dominate the ranking. Although their combined arms revenue fell by 7.9 per cent in 2022, to \$302 billion, this was still more than half of the total.

The top five arms companies in 2022 are all based in the USA. Together, their arms revenue made up 32 per cent of the total Top 100 arms revenue. The arms revenue of four of the five decreased in 2022. Lockheed Martin again topped the ranking despite its arms revenue falling by 8.9 per cent to \$59.4 billion. The decrease was mainly due to supply chain problems.<sup>4</sup> Raytheon Technologies (ranked second) reported a 12 per cent drop in arms revenue compared to 2021. Boeing (ranked fourth) recorded a 19 per cent decrease caused by lower production volumes of military aircraft.<sup>5</sup> The arms revenue of General Dynamics (ranked fifth) fell by 5.6 per cent. Only Northrop Grumman (ranked third), with unchanged revenue, did not record a decrease in arms revenue in 2022.

Many US arms companies were still affected by Covid-19-related labour shortages and supply chain constraints in 2022. Of the 42 US companies in the ranking, 32 reported a drop in arms revenue. While 16 of those 32 companies recorded nominal annual increases, when the figures are adjusted for inflation—which hit record levels in the USA in 2022—their arms revenue decreased in real terms.

<sup>4</sup> Lockheed Martin Corp., *2022 Annual Report* (Lockheed Martin: Bethesda, MD, 2023), p. 16.

<sup>5</sup> Boeing Company, *Annual Report for 2022: Today, Tomorrow and Beyond* (Boeing: Arlington, VA, Feb. 2023), p. 36.

**Table 5.7.** Regional and national shares of arms sales for companies in the SIPRI Top 100, 2021–22

Arms sales figures are in constant (2022) US\$. Figures for 2021 refer to the companies in the Top 100 for 2022, not the slightly different set of companies in the Top 100 for 2021. Changes between 2021 and 2022 are in real terms, based on constant (2022) US\$. Figures may not add up to the given totals because of the conventions of rounding.

No. of companies	Region/Country <sup>a</sup>	Arms sales (\$ m.)		Change in arms sales, 2021–22 (%)	Share of Top 100 sales, 2022 (%)
		2022	2021		
43	<i>North America</i>	303 800	329 814	-7.9	51
42	United States	302 380	328 495	-7.9	51
1	Canada	1 420	1 318	7.7	0.2
26	<i>Europe (excl. Russia)</i>	120 660	119 624	0.9	20
7	United Kingdom	41 820	40 765	2.6	7.0
5	France	26 010	27 055	-3.9	4.4
4	Germany	9 090	8 990	1.1	1.5
3	Trans-European <sup>b</sup>	19 670	17 954	9.6	3.3
2	Italy	15 290	16 190	-5.6	2.6
1	Sweden	3 700	3 720	-0.5	0.6
1	Poland	1 600	1 409	14	0.3
1	Ukraine	1 260	1 400	-10	0.2
1	Norway	1 230	1 095	12	0.2
1	Spain	990	1 045	-5.3	0.2
22	<i>Asia and Oceania</i>	134 070	130 047	3.1	22
8	China	107 930	105 056	2.7	18
4	Japan	7 140	7 068	1.0	1.2
4	South Korea	6 870	6 934	-0.9	1.2
3	India	6 380	5 940	7.4	1.1
1	Taiwan	2 590	1 904	36	0.4
1	Singapore	2 180	2 221	-1.8	0.4
1	Australia	980	925	6.0	0.2
7	<i>Middle East</i>	17 930	16 190	11	3.0
4	Türkiye	5 490	4 511	22	0.9
3	Israel	12 440	11 679	6.5	2.1
2 <sup>c</sup>	<i>Russia</i>	20 760	23 483	-12	3.5
<b>100</b>	<b>Total</b>	<b>597 220</b>	<b>619 157</b>	<b>-3.5</b>	<b>100.0</b>

<sup>a</sup> Figures for a country or region refer to the arms sales of the Top 100 companies headquartered in that country or region, including those by subsidiaries in another country or region. They do not reflect the sales of arms actually produced in that country or region.

<sup>b</sup> Trans-European refers to companies whose ownership and control structures are located in more than one European country. The 3 companies classified as 'trans-European' are Airbus, MBDA and KNDS.

<sup>c</sup> Due to lack of data for several individual Russian companies, 1 of the 2 Russian companies is a holding company, Rostec, which controls 7 arms companies for which SIPRI previously had data: High Precision Systems, KRET, Russian Electronics, Russian Helicopters, United Aircraft Corp., United Engine Corp. and UralVagonZavod.

Source: SIPRI Arms Industry Database, Dec. 2023.

## Europe (excluding Russia)

The Top 100 for 2022 contains 26 arms companies based in Europe (outside Russia). Their combined arms revenues rose by 0.9 per cent to reach \$121 billion, which represented 20 per cent of the total Top 100 arms revenue.

Together, the seven companies based in the United Kingdom had the highest share of the total Top 100 arms revenue in Europe. With \$26.9 billion in arms revenue in 2022, accounting for two-thirds of the combined British total, BAE Systems (ranked sixth) remained the largest European arms company. A majority of the company's sales were generated by its non-European subsidiaries, including in the USA (44 per cent), Saudi Arabia (11 per cent) and Australia (4 per cent).<sup>6</sup> While BAE's arms revenue was unchanged in real terms in 2022, its backlog of orders increased by 58 per cent to \$45.7 billion, indicating a probable increase in arms revenue in 2023 and beyond.

The drop in the aggregate arms revenue of the five companies in the Top 100 based in France was mainly due to year-on-year decreases in the arms revenue of Dassault Aviation (ranked 23rd) and Safran (ranked 34th). Both companies are involved in the production of Rafale combat aircraft. Even though orders for Rafales have increased in recent years, 14 were delivered in 2022 compared to 25 in 2021. Both companies also reported supply chain disruptions linked to the war in Ukraine.<sup>7</sup>

There are three trans-European companies in the Top 100 for 2022: Airbus, MBDA and KNDS. Of these three, the arms revenue of Airbus (ranked 14th) increased most, with a 17 per cent rise in 2022 to hit \$12.1 billion. KNDS (ranked 44th) also increased its arms revenue, by 11 per cent to \$3.2 billion, primarily as a result of deliveries of large volumes of ammunition and armoured vehicles to France and Hungary.<sup>8</sup> In contrast, the revenue of MBDA (ranked 32nd) fell to \$4.4 billion, a 7.3 per cent decrease from 2021.

The 5.6 per cent real term fall in the combined 2022 arms revenue of the two ranked companies based in Italy was caused by Leonardo (ranked 13th), by far the larger of the two. The 7.0 per cent fall in its arms revenue to \$12.5 billion was partly due to a delay in the delivery schedule of Eurofighter Typhoon combat aircraft to Kuwait.<sup>9</sup>

Taken together, the arms revenue of the four Top 100 companies based in Germany increased in 2022. However, one of the four recorded a decrease in arms revenue: ThyssenKrupp (ranked 62nd). Its arms revenue fell by 16 per cent to \$1.9 billion as it delivered fewer ships than the previous year.

<sup>6</sup> BAE Systems, *Annual Report 2022* (BAE: London, 2023), p. 2.

<sup>7</sup> Dassault Aviation, *Annual Report 2022* (Dassault: Paris, Mar. 2023), p. 2; and Safran, 'Safran reports full-year 2022 results', 17 Feb. 2023.

<sup>8</sup> KNDS, 'KNDS reports another year of growth', Press release, 19 June 2023.

<sup>9</sup> Leonardo, *Integrated Annual Report 2022* (Leonardo: Rome, 2023), p. 57.

Only one Top 100 arms company is based in Poland, PGZ (ranked 71st). In 2022 it signed collaboration agreements with two South Korean companies (Hanwha Aerospace and Hyundai Rotem) to license production of armoured vehicles, artillery systems and rockets in Poland.<sup>10</sup> The deals were part of a major expansion of Poland's military capabilities in 2022 in response to Russia's full-scale invasion of Ukraine (see section II).

The arms revenue of the only Ukrainian company in the Top 100, UkrOboronProm (ranked 81st), fell by 10 per cent to \$1.3 billion in 2022. The decrease was largely the result of Ukraine's soaring inflation, as the company's arms revenue grew by 8.7 per cent in nominal terms. With the aim of enhancing Ukraine's domestic capabilities to produce weapon systems and ammunition, UkrOboronProm has entered into joint ventures with arms companies of member states of the North Atlantic Treaty Organization (NATO; see section IV).<sup>11</sup>

### **The Russian Federation**

Only two Russian companies appear in the Top 100 for 2022. Unlike in previous years, a holding company—Rostec (ranked 10th with \$16.8 billion in arms revenue)—is included in the 2022 rankings. Holding companies are normally not included in the Top 100 as they have no direct manufacturing capacity and therefore do not fit the definition of an arms company. Rostec is listed because it controls seven companies—High Precision Systems, KRET, Russian Electronics, Russian Helicopters, United Aircraft Corporation, United Engine Corporation and UralVagonZavod—that were included in previous Top 100 rankings but for which data for 2022 could not be obtained.

The inclusion of Rostec alongside United Shipbuilding Corporation (USC; ranked 36th) in the Top 100 thus gives an approximate indication of the size of Russia's arms industry in 2022. The combined arms revenue of these two Russian companies in 2022, \$20.8 billion, was 12 per cent lower than their revenue in 2021.

During the second half of 2022, the Russian government introduced measures to strengthen its armed forces and boost military production, resulting in continuous increases to military spending during the year.<sup>12</sup> However, according to Rostec and USC data, there was no significant growth in arms revenue even in nominal terms: Rostec's arms revenue decreased by 9.9 per cent in real terms, although it increased in nominal terms; USC's arms revenue fell by 18 per cent to around \$4.0 billion. Moreover, arms revenue as

<sup>10</sup> Cucino, A. and Scarazzato, L., 'The impact of the war in Ukraine on Polish arms industrial policy', SIPRI Commentary, 2 June 2023.

<sup>11</sup> UkrOboronProm, [Briefing], 18 Nov. 2022 (in Ukrainian).

<sup>12</sup> Cooper, J., 'Russia's military spending during its war against Ukraine', SIPRI Insights on Peace and Security no. 2023/07, June 2023, pp. 3–5.

a share of total revenue remained stable for both companies in 2022, at 55 per cent for Rostec and at 79 per cent for USC.

While this apparent discrepancy coincided with high rates of inflation and a decline in arms exports, other factors may also have played a role.<sup>13</sup> First, due to diminishing transparency, the Top 100 for 2022 does not include data for Almaz-Antey (which had arms revenue of \$7.6 billion in 2020, the last year for which data is available) and Tactical Missiles Corporation (arms revenue of \$4.8 billion in 2021), neither of which is part of Rostec.<sup>14</sup> Both produce categories of equipment in high demand due to the war, such as air defence systems and missiles, and as such it is likely that their revenue rose significantly.<sup>15</sup> Second, as has been the case in the past in Russia, government payments to arms companies may have been delayed, and thus revenue from this production will only appear in future years, when payments are made.<sup>16</sup> Third, companies may have reported work to refurbish arms from Soviet-era stockpiles as new production. The reported revenue of such work would not be as high as if the equivalent arms were newly produced.<sup>17</sup>

## Asia and Oceania

There were 22 companies based in Asia and Oceania in the Top 100 for 2022. Their combined arms revenue reached \$134 billion, up by 3.1 per cent on 2021.

Eight companies based in China were listed in the Top 100, and three were in the top 10. Their arms revenue gives China the second largest share of Top 100 sales, behind the USA. The 2.7 per cent rise in aggregate Chinese arms revenue in 2022 was the fourth consecutive annual increase. Six of the eight increased their arms revenue in 2022. China North Industries Group Corporation (NORINCO, ranked seventh), a land systems manufacturer, is the largest Chinese arms company. Its arms revenue rose by 4.4 per cent to \$22.1 billion in 2022. Aviation Industry Corporation of China (AVIC), China's main military aircraft manufacturer, is the second largest Chinese arms company and was the eighth largest in the Top 100. Its arms revenue rose by 4.7 per cent to \$20.6 billion, reflecting the increased production of fourth-generation combat aircraft and the fielding of fifth-generation

<sup>13</sup> On Russia's arms exports in 2019–23 see chapter 6, section II, in this volume.

<sup>14</sup> For comparative purposes, the figures for Russia for 2021 in table 5.7 do not include the arms sales of Tactical Missiles Corp. (which ranked most recently at 37 in the Top 100 for 2021) or Almaz-Antey (which ranked most recently at 20 in the Top 100 for 2020). SIPRI Arms Industry Database (note 1).

<sup>15</sup> On Russia's use of missiles in the war with Ukraine see chapter 10, section III, in this volume.

<sup>16</sup> [Rogozin: Defence industry enterprises will repay 200 billion roubles of debt on loans from 2016 by January], TASS, 8 Sep. 2017 (in Russian).

<sup>17</sup> Cranny-Evans, S., 'Russia's defence industry gears up for a long war', *European Defence Review*, 9 Jan. 2024; and Luzin, P., 'Spring 2023 outlook for Russian arms manufacturing', *Eurasia Daily Monitor*, 6 Apr. 2023.

combat aircraft by the Chinese armed forces.<sup>18</sup> The largest relative increase in arms revenue among Chinese companies in 2022 was made by China South Industries Group Corporation (CSGC, ranked 21st), a producer of armoured vehicles and ammunition. Its arms revenue went up by 12 per cent to reach \$6.5 billion.

The biggest Japanese arms producer, Mitsubishi Heavy Industries (ranked 43rd), saw its arms revenue decrease by 6.1 per cent to \$3.3 billion in 2022. All four Japanese manufacturers in the Top 100 reported a rise in domestic orders in 2022 and anticipate substantial growth in arms revenue in 2023 and beyond.<sup>19</sup>

In South Korea the arms revenue of Hanwha Aerospace (ranked 48th) fell by 8.5 per cent to \$2.8 billion due to global supply chain problems.<sup>20</sup> In an effort to become an all-domain arms producer, it acquired the ammunition division of Hanwha Corporation in 2022 and a controlling stake in the ship-builder DSME in 2023, two companies listed in previous Top 100 rankings.<sup>21</sup> All four South Korean companies that remain in the Top 100 reported a surge in orders and backlogs in 2022, largely driven by domestic demand and major arms deals signed with Poland and the United Arab Emirates (UAE), indicating significant growth in the coming years (see section IV).<sup>22</sup>

Three companies in the Top 100 for 2022 are based in India, one more than in 2021. With a 28 per cent increase in its arms revenue—due to the delivery of warships and submarines to the Indian Navy—Mazagon Dock Shipbuilders (ranked 89th) entered the Top 100 for the first time. Taiwan-based National Chung-Shan Institute of Science and Technology (NCSIST, ranked 50th) recorded the largest relative growth in arms revenue among companies in Asia and Oceania. Its arms revenue rose by 36 per cent to \$2.6 billion in 2022. This was a result of higher domestic demand for aircraft, submarines and uncrewed aerial vehicles (UAVs).<sup>23</sup>

<sup>18</sup> US Department of Defense (DOD), *Military and Security Developments Involving the People's Republic of China 2022*, Annual report to Congress (DOD: Washington, DC, Oct. 2022), p. 59.

<sup>19</sup> E.g. Kawasaki Heavy Industries (KHI), *Consolidated Financial Statements for the Years ended March 31, 2023 and 2022* (KHI: Tokyo, June 2023), pp. 9–11. On Japanese military spending see section II of this chapter.

<sup>20</sup> Hanwha Aerospace, '4Q 2022 earnings release', Jan. 2023, p. 8.

<sup>21</sup> Lee, J., 'South Korea's Hanwha group officially acquires DSME', *NavalNews*, 19 Dec. 2022; and Grevatt, J., 'Update: Hanwha announces defence consolidation', *Janes*, 2 Aug. 2022.

<sup>22</sup> Lee, J. and Smith, J., 'Insight: Inside South Korea's race to become one of the world's biggest arms dealers', *Reuters*, 29 May 2023; and Seung, S. and Kim, M., 'LIG Nex1 to post record earnings on missile exports in 2022', *Pulse*, 28 Dec. 2022.

<sup>23</sup> National Chung-Shan Institute of Science and Technology (NCSIST), [2022 annual performance evaluation report] (NCSIST: Taipei, June 2023), pp. 8–9 (in Chinese).

## The Middle East

The Middle East was the region with the largest year-on-year relative increase in Top 100 arms revenue. The combined arms revenue of the seven companies based in the region—based in just two countries, Türkiye and Israel—rose by 11 per cent to reach \$17.9 billion. The revenue of all seven rose, but the 22 per cent increase in arms revenue of the four Turkish companies accounted for most of the growth in the region.

The four companies based in Türkiye had combined arms sales of \$5.5 billion. Two Turkish companies joined the Top 100 for the first time in 2022: Baykar (ranked 76th) and Roketsan (ranked 100th). Baykar's arms revenue rose by 94 per cent, the largest increase among all Top 100 companies, due to growing sales of Bayraktar TB2 UAVs, used extensively by Ukraine in the beginning of the Russia–Ukraine war.<sup>24</sup> Roketsan and Turkish Aerospace Industries (TAI, ranked 82nd) also increased their arms revenue significantly in 2022, by 17 per cent and 14 per cent, respectively.

The aggregate arms revenue of the three companies in the Top 100 based in Israel rose by 6.5 per cent to \$12.4 billion in 2022. Elbit Systems (ranked 24th) increased its arms revenue by 4.0 per cent to reach \$5.0 billion. This was a result of increased sales of artillery systems and armoured vehicles to European countries, among other things.<sup>25</sup> After a 5.5 per cent annual increase, the arms revenue of Israel Aerospace Industries (ranked 35th) hit \$4.1 billion in 2022. Its arms order backlog also grew substantially to reach a value of \$15.6 billion. The 12 per cent rise in the arms revenue of Rafael (ranked 42nd with arms revenue of \$3.4 billion) was the largest relative increase among the Israeli companies in the Top 100.

<sup>24</sup> Helou, A., 'With Turkish drones in the headlines, what happened to Ukraine's Bayraktar TB2s?', *Breaking Defense*, 6 Oct. 2023.

<sup>25</sup> Elbit Systems, Annual report for 2022, Form 20-F, US Securities and Exchange Commission (SEC), 1 May 2022, p. 43.