

III. Arms-producing and military services companies, 2020

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The combined arms sales of the world's 100 largest arms-producing and military services companies (the SIPRI Top 100) were \$531 billion in 2020.¹ This represents an increase of 1.3 per cent on their arms sales in 2019.² This increase continued an uninterrupted upward trend since 2015 (see figure 8.6 and table 8.6), roughly correlating with rising global military expenditure levels. The arms sales of the Top 100 were 17 per cent higher in 2020 than in 2015 (the first year for which SIPRI included Chinese firms in its ranking).

This section reviews developments in the arms production and military services industry in 2020 (the most recent year for which consistent data on arms sales of the Top 100 is available). It first assesses the effects of the Covid-19 pandemic on arms production before reviewing developments in the major arms-producing countries and regions. 'Arms sales' are defined here as sales of military goods and services to military customers domestically and abroad.³

The effects of the Covid-19 pandemic on arms production

Arms production around the world was largely resilient against the shock of the Covid-19 pandemic and the resulting economic downturn. While the global economy contracted by 3.1 per cent in 2020, the total arms sales of the Top 100 and military spending both increased.

This resilience can be attributed to at least three key factors. First, the arms industry, like many other economic sectors, benefited from expansionary financial policies in 2020, the first year of the pandemic. Military manufacturers were largely shielded by sustained government demand for military goods and services. Second, some states rolled out specific measures to mitigate the effects of government-mandated lockdowns on their arms-producing companies, such as accelerated payments or order schedules. Third, because arms-procurement contracts usually span several years, many

¹ Unless otherwise stated, all financial figures—including arms sales figures—in this section are presented in nominal (current) 2020 US dollars, while percentage changes and shares are in constant 2020 US dollars (i.e. in real terms). For further detail on the SIPRI Top 100 see the SIPRI Arms Industry Database, Dec. 2021.

² This change of 1.3% refers to the arms sales in 2019 and 2020 of the 100 companies in the Top 100 for 2020. Table 8.6 shows the change of 0.8% in the sales of the Top 100 for 2020 compared to the slightly different set of companies in the Top 100 for 2019. The latter figure is lower since, by definition, the companies that left the Top 100 between 2019 and 2020 would have had a lower rate of change in arms sales than those that joined.

³ For further details see SIPRI Arms Industry Database, 'Sources and methods', [n.d.].

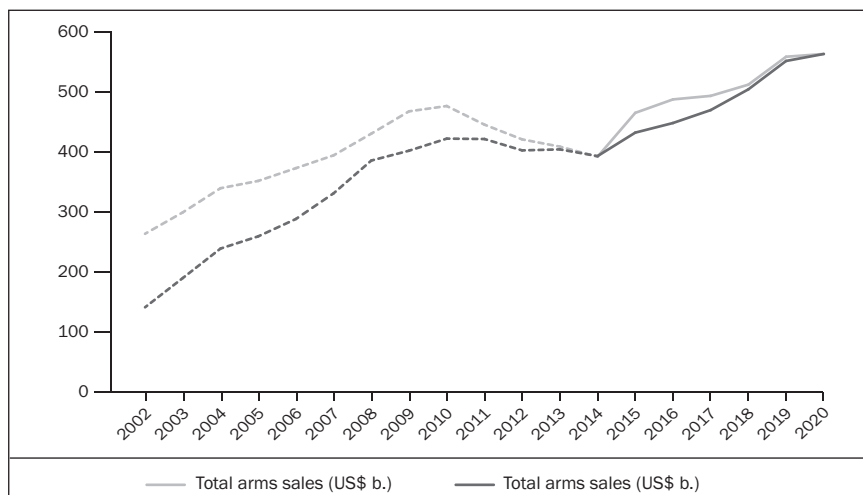


Figure 8.6. Total arms sales of companies in the SIPRI Top 100, 2002–20

Note: There was a series break between 2014 and 2015, when Chinese companies were first included in the data set. The arms sales of the Top 100 for 2015 (including Chinese companies) were 14 per cent higher than those of the Top 100 for 2014 (which exclude Chinese companies) primarily due to this change. However, even if Chinese arms companies are excluded, total Top 100 arms sales would still have increased by 0.8 per cent between those years.

Source: SIPRI Arms Industry Database, Dec. 2021.

arms-producing companies were able to capitalize on a backlog of orders placed before the outbreak of the health crisis.

However, despite these and other factors, global arms production was not fully immune to the impact of the pandemic. In many cases, measures taken to slow the spread of the virus disrupted supply chains and delayed deliveries. The pandemic also affected restructuring, as exemplified by the cancelled merger of Hexcel and Woodward. These two United States-based companies, which both produce components for military aircraft, had agreed to merge in January 2020. They abandoned the effort in April, citing the disruptions and uncertainties caused by the pandemic.⁴ Had the merger taken place as planned, the resulting company would probably have entered the Top 100 in 2020.

During the first year of the Covid-19 pandemic, many companies involved in both the civilian and military sectors increased their arms sales as a proportion of their total sales. This could have meant that their military sales grew faster or declined at a slower rate than their civilian sales, or that military sales remained stable while civilian sales fell. This illustrates the relative resilience of the demand for military goods and services, which—even

⁴ Hexcel, 'Woodward and Hexcel announce mutual termination of merger agreement', Press release, 6 Apr. 2020.

Table 8.6. Trends in arms sales of companies in the SIPRI Top 100, 2011–20

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<i>Arms sales in current prices and exchange rates</i>										
Total (\$b.)	420	405	406	398	428	441	458	484	521	531
Change (%)		-3.6	0.2	-2.0	..	3.0	3.9	5.7	7.6	1.9
<i>Arms sales in constant (2020) prices and exchange rates</i>										
Total (\$b.)	439	419	410	397	454	471	476	491	527	531
Change (%)		-4.6	-2.1	-3.2	..	3.7	1.1	3.2	7.3	0.8

|| = series break.

Note: Figures for each year refer to the companies in the SIPRI Top 100 in that year, so the data covers a different set of companies each year. On the series break between 2014 and 2015 see the notes to figure 8.6.

Source: SIPRI Arms Industry Database, Dec. 2021.

before the pandemic—was somewhat insulated from the business cycles experienced in the commercial sector.

Regional and national developments in the Top 100

The United States

With 41 arms companies, the United States hosted the highest number of companies ranked in the Top 100 for 2020 of any country worldwide (see table 8.7). Together, their arms sales amounted to \$285 billion, an increase of 1.9 per cent compared with 2019. US companies accounted for 54 per cent of the combined arms sales of the Top 100.

Since 2018, the top five arms companies in the ranking have all been based in the USA. Lockheed Martin, by far the largest arms company in the world, has occupied the top rank every year since 2009. In 2020 its revenue from arms sales totalled \$58.2 billion, or 11 per cent of the Top 100's total arms sales. Of the companies included in the 2020 ranking, Lockheed Martin recorded the largest absolute year-on-year growth in arms sales, of \$4.2 billion (or 7.7 per cent in real terms). Raytheon Technologies is the world's second largest arms company, with arms sales of \$36.8 billion in 2020. It was formed by the merger of Raytheon and United Technologies Corporation (UTC) in 2020. The 2020 arms sales of the merged company were 5.7 per cent lower than the combined (pro forma) arms sales of these two firms in 2019. Boeing, one of the world's largest military aerospace manufacturers, ranked third. Due to the Covid-19 pandemic and the impact of government-mandated lockdowns and travel restrictions on commercial aviation, Boeing's total sales fell by \$19.6 billion in 2020. Its arms sales also decreased, by 5.9 per cent from \$34.1 billion in 2019 to \$32.1 billion in 2020. Northrop Grumman ranked fourth, with arms sales of \$30.4 billion or 5.7 per cent of the Top 100 total.

Table 8.7. Regional and national shares of arms sales for companies in the SIPRI Top 100, 2019–20

Arms sales figures are in constant (2020) US\$. Figures for 2019 refer to the companies in the Top 100 for 2020, not the slightly different set of companies in the Top 100 for 2019. Changes between 2019 and 2020 are in real terms, based on constant (2020) US\$. Figures may not add up to the given totals because of the conventions of rounding.

No. of companies	Region/ Country ^a	Arms sales (\$m.)		Change in arms sales, 2019–20 (%)	Share of Top 100 sales, 2020 (%)
		2020	2019		
41	<i>United States</i>	285 040	279 708	1.9	54
26	<i>Europe</i>	109 280	108 227	1.0	21
7	United Kingdom	37 490	35 289	6.2	7.1
6	France	24 740	26 807	-7.7	4.7
2	Trans-European ^b	16 040	15 463	3.7	3.0
2	Italy	13 820	13 497	2.4	2.6
4	Germany	8 910	8 799	1.3	1.7
1	Sweden	3 390	3 302	2.6	0.6
1	Poland	1 490	1 687	-12	0.3
1	Ukraine	1 320	1 295	2.0	0.2
1	Norway	900	776	16	0.2
1	Spain	1 180	1 310	-10	0.2
5	<i>China</i>	66 750	65 761	1.5	13
9	<i>Russia</i>	26 360	28 180	-6.5	5.0
19	<i>Other arms producers</i>	43 070	41 643	3.4	8.1
3	Israel	10 440	10 108	3.3	2.0
5	Japan	9 880	9 624	2.7	1.9
4	South Korea	6 500	6 216	4.6	1.2
3	India	6 500	6 390	1.7	1.2
1	United Arab Emirates	4 750	4 679	1.5	0.9
1	Turkey	2 200	1 966	12	0.4
1	Singapore	1 890	1 665	14	0.4
1	Canada	910	996	-8.6	0.2
100	Total	530 500	523 518	1.3	100

^a 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.

^b The 2 companies classified as 'trans-European' are Airbus and MBDA.

Source: SIPRI Arms Industry Database, Dec. 2021.

General Dynamics was in fifth position, with arms sales of \$25.8 billion, equivalent to 4.9 per cent of the total.

To reinforce its military advantage and hedge against perceived threats emanating from what it considers to be its strategic competitors (i.e. China and Russia), the USA has been investing more heavily in research and

development and the procurement of next-generation weapon systems.⁵ This has prompted a wave of mergers and acquisitions in the US arms industry in recent years, with some companies seeking to broaden their product portfolios to gain a competitive edge when bidding for contracts.

The all-stock merger-of-equals between Raytheon and UTC, which was finalized in April 2020, was one of the largest mergers in the history of the arms industry. The multibillion-dollar merger of L3 Technologies and Harris was completed a year earlier, in June 2019. The resulting company, L3Harris Technologies, ranked 10th in 2020. The trend continued in 2021 with the merger of Peraton and Perspecta as well as the acquisition of FLIR Systems by Teledyne Technologies (ranked 89th in 2020) for \$8.2 billion.

The trend of mergers and acquisitions is particularly pronounced in the space sector. For example, in 2018 Northrop Grumman acquired Orbital ATK, a space systems contractor (ranked 47th in 2017), for approximately \$9.2 billion. The acquisition by KBR (ranked 43rd in 2020) of Centauri, a provider of space and directed energy capabilities, was finalized in October 2020.

However, the US Department of Defense has become concerned about mergers and acquisitions in the arms industry, signalling that the US government may put an end to this trend.⁶ For instance, although Lockheed Martin announced plans in 2020 to buy competitor Aerojet Rocketdyne (ranked 75th) for \$4.4 billion, the acquisition was later blocked by a US government regulatory agency.⁷

China

The combined arms sales of the five Chinese companies included in the Top 100 ranking amounted to an estimated \$66.8 billion in 2020—1.5 per cent more than the same five companies in 2019. With a 13 per cent share of total Top 100 arms sales, Chinese arms companies in the Top 100 had the second highest total arms sales in 2020, behind US firms. The rise of China as a major arms producer has been driven by its aim to become more self-reliant in weapon production and by the implementation of ambitious modernization

⁵ Tian, N., Lopes da Silva, D. and Marksteiner, A., 'Global developments in military expenditure, 2020', *SIPRI Yearbook 2021*. On a similar trend in 2021 see section II.

⁶ Lopez, C. T., 'DOD report: Consolidation of defense industrial base poses risks to national security', US Department of Defense, 16 Feb. 2022; and US Office of the Under Secretary of Defense for Acquisition and Sustainment, *State of Competition within the Defense Industrial Base* (Department of Defense: Arlington, VA, Feb. 2022). See also Béraud-Sudreau, L., 'COVID-19: A new wave of European arms industry consolidation?', SIPRI Essay, 7 Sep. 2020.

⁷ Lockheed Martin, 'Lockheed Martin terminates agreement to acquire Aerojet Rocketdyne', Press release, 13 Feb. 2022.

programmes.⁸ All five Chinese arms companies ranked among the top 20, with three in the top 10.

With estimated arms sales of \$17.9 billion in 2020, China North Industries Group Corporation (NORINCO, ranked 7th) is China's largest arms-producing company. The arms sales of NORINCO, a land systems specialist, rose by 12 per cent in 2020, in part because the company deepened its involvement in emerging technologies and contributed to the development of the BeiDou military–civil satellite navigation system. Estimated arms sales of the Aviation Industry Corporation of China (AVIC, ranked 8th), China's main military aircraft producer, declined by 1.4 per cent in 2020 to \$17.0 billion. However, the decrease is probably due to exchange rate fluctuations, as its arms sales increased in nominal terms. The third Chinese company with arms sales high enough to rank in the top 10 was China Electronics Technology Group Corporation (CETC, ranked 9th), the country's leading producer of military electronics. At \$14.6 billion, CETC's arms sales fell by 6.0 per cent in 2020. China Aerospace Science and Industry Corporation (CASIC, ranked 12th), one of China's leading producers of missile and space systems, also recorded a drop in arms sales. CASIC's arms sales of \$11.9 billion in 2020 were 2.8 per cent lower than in 2019. The fifth Chinese company in the Top 100 was China South Industries Group Corporation (CSGC, ranked 20th), which manufactures military vehicles. CSGC's arms sales rose by 13 per cent in 2020 to \$5.4 billion.

All the Chinese companies in the Top 100 are state-owned enterprises that produce both military and civilian products. Most of the revenue generated by these five companies is derived from civilian sales. Arms sales as a share of total sales range from 16 per cent for CSGC to 43 per cent for CETC.

Europe

There were 26 European companies ranked in the Top 100 in 2020. Together, they accounted for 21 per cent of total Top 100 arms sales or \$109 billion, up by 1.0 per cent compared with 2019. Of these firms, seven are headquartered in the United Kingdom, six in France, four in Germany, two in Italy and one each in Norway, Poland, Spain, Sweden and Ukraine. A further two, Airbus and MBDA, are categorized as 'trans-European' since their ownership and control structures are spread across more than one European country.

The arms sales of the seven companies based in the UK amounted to \$37.5 billion in 2020, equivalent to 7.1 per cent of the Top 100 total. Their arms sales were 6.2 per cent higher in 2020 than in 2019. BAE Systems (ranked

⁸ Chinese State Council, *China's National Defense in the New Era* (State Council Information Office: Beijing, July 2019); and Cheung, T., 'Keeping up with the *Jundui*: Reforming the Chinese defense acquisition, technology, and industrial system', eds P. C. Saunders et al., *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms* (National Defense University Press: Washington, DC, 2019).

6th) was the only European arms company to rank in the top 10. Its arms sales increased by 6.6 per cent to \$24.0 billion in 2020. Almost half of this, or \$11.9 billion, was from sales made by BAE System's US subsidiary. Two of the British companies in the Top 100 recorded decreases in arms sales in 2020: the arms sales of Babcock International (ranked 39th) decreased by 4.6 per cent, while those of Meggitt (ranked 95th) fell by 7.9 per cent. The largest relative increase in arms sales among British companies was recorded by Melrose Industries (ranked 69th), a producer of aerospace components. Its arms sales grew by 41 per cent in 2020 to \$1.5 billion, which the company attributed to high demand for its military aerospace engines.⁹

With combined arms sales of \$24.7 billion, the six arms companies based in France accounted for 4.7 per cent of total Top 100 arms sales. This represents a decrease of 7.7 per cent between 2019 and 2020. The arms sales of four of these six companies decreased. The arms sales of Thales (ranked 14th), the largest French arms company, fell by 5.8 per cent in 2020 to \$9.1 billion. Naval Group (ranked 31st) recorded a drop in arms sales of 11 per cent to \$3.8 billion. Both Thales and Naval Group ascribed their losses to operational interruptions caused by the Covid-19 pandemic.¹⁰ The largest percentage decrease in arms sales of any company in the Top 100 was reported by Dassault Aviation Group (ranked 32nd). Its arms sales declined by 37 per cent, mainly due to a sharp drop in export deliveries of its Rafale combat aircraft in 2020 compared with 2019, when deliveries peaked. Safran (ranked 25th) recorded the largest percentage increase in arms sales among French companies in the Top 100. Its arms sales grew by 24 per cent to reach \$4.5 billion in 2020, which the company attributed to increased sales of sighting and navigation systems.¹¹

The combined arms sales of the two trans-European firms ranked in the Top 100 were \$16.0 billion in 2020 or 3.0 per cent of the Top 100 total. Airbus (ranked 11th) reported arms sales of \$12.0 billion in 2020, up by 5.7 per cent on 2019. The arms sales of MBDA (ranked 30th), a joint venture specializing in missiles, decreased by 1.7 per cent in 2020 to \$4.1 billion.

With \$13.8 billion in total arms sales, the two ranked companies based in Italy accounted for 2.6 per cent of the Top 100 total. Arms sales by Leonardo (ranked 13th) were \$11.2 billion in 2020—a decrease of 1.5 per cent on 2019. Fincantieri (ranked 47th), a shipbuilder, recorded a 23 per cent increase in arms sales in 2020. Significant fluctuations in annual arms sales are common among shipbuilding companies because of long production timelines.

⁹ Melrose Industries, *Annual Report 2020* (Melrose: Birmingham, Mar. 2021), p. 15.

¹⁰ Thales, 'Investor meeting', Nov. 2021, p. 36; and Naval Group, *Rapport financier 2020* [Financial report 2020] (Naval Group: Paris, Mar. 2021), p. 6.

¹¹ Safran, 'Full year 2020 earnings', 15 Feb. 2021, p. 9.

The arms sales of the four ranked companies headquartered in Germany reached \$8.9 billion in 2020, equivalent to 1.7 per cent of the total for the Top 100. This was a slight increase of 1.3 per cent compared with 2019. Rheinmetall, the largest German arms company, ranked 27th with arms sales of \$4.2 billion. This represented a year-on-year growth of 5.2 per cent, explained in part by higher sales of armoured fighting and transportation vehicles. The arms sales of Hensoldt (ranked 78th), a military electronics specialist, also grew in 2020, by 7.9 per cent. The arms sales of the other two German companies declined in 2020: those of shipbuilder ThyssenKrupp (ranked 55th) by 3.7 per cent and those of Krauss-Maffei Wegmann (ranked 70th), a land systems manufacturer, by 7.5 per cent.

The five other European companies listed in the Top 100 for 2020 were Saab of Sweden (ranked 36th), PGZ of Poland (ranked 68th), UkrOboronProm of Ukraine (ranked 77th), Navantia of Spain (ranked 84th) and Kongsberg Gruppen of Norway (ranked 100th).

The Russian Federation

The nine Russian companies in the ranking accounted for 5.0 per cent of total Top 100 arms sales in 2020.¹² Their combined arms sales fell by 6.5 per cent to \$26.4 billion in 2020. This marked a continuation of the downward trend observed since 2017, when the total arms sales of these same nine firms peaked at \$31.5 billion. Russian arms sales fell in 2020 even though the Russian government stated that it had provided assistance to the arms industry in order to dampen the negative effects of the Covid-19 pandemic.

Russian firms recorded some of the sharpest declines in arms sales among the Top 100. Arms sales of Almaz-Antey (ranked 17th) decreased by 31 per cent, of Russian Helicopters (ranked 81st) by 13 per cent and of United Shipbuilding Corporation (ranked 33rd) by 11 per cent. This downturn can be attributed to several factors. The foremost factor was the ending of the State Armament Programme (Gosudarstvennyy Programmu Vooruzheniya, GPV) for 2011–20, a major modernization plan for the Russian armed forces.¹³ The funding allocated to arms procurement in the follow-up GPV, for the period up to 2027, is lower in real terms.¹⁴ Furthermore, some arms export deliveries were delayed due to the pandemic, which may have contributed to the overall decline in Russian arms exports in 2020, thus driving down arms company revenues.

¹² Ten Russian companies ranked in the Top 100 for 2018. The 10th company, High Precision Systems (which ranked 46th in 2018), cannot be ranked in the Top 100 for 2019–20 due to a lack of reliable data.

¹³ Cooper, J., *Russia's State Armament Programme to 2020: A Quantitative Assessment of Implementation 2011–2015*, Swedish Defence Research Agency (FOI) Report no. FOI-R--4239--SE (FOI: Stockholm, Mar. 2016).

¹⁴ Conolly, R. and Boulègue, M., *Russia's New State Armament Programme Implications for the Russian Armed Forces and Military Capabilities to 2027* (Chatham House: London, May 2018).

Despite these factors, some Russian companies increased their arms sales significantly in 2020. For example, United Aircraft Corporation (ranked 21st) increased its arms sales by 16 per cent, while those of KRET (ranked 58th) grew by 22 per cent and those of Russian Electronics (ranked 71st) by 39 per cent.

Other arms-producing countries and their companies

Collectively, the arms sales of the 19 companies in the Top 100 based outside the USA, China, Russia and the rest of Europe totalled \$43.1 billion in 2020—an increase of 3.4 per cent on 2019. This represented 8.1 per cent of the total arms sales of the Top 100. Five of these companies are based in Japan, four in the Republic of Korea (South Korea), three each in Israel and India, and one each in Canada, Singapore, Turkey and the United Arab Emirates (UAE).

Together, the three companies based in Israel had arms sales of \$10.4 billion or 2.0 per cent of the Top 100 total. Their arms sales increased by 3.3 per cent compared with 2019. The arms sales of Elbit Systems (ranked 28th) were \$4.2 billion in 2020, up by 1.4 per cent on 2019. This growth was mainly due to increased sales of military aircraft equipment and the acquisition of the Harris Night Vision business from L3Harris Technologies.¹⁵ The arms sales of Israel Aerospace Industries (ranked 35th) grew by 11 per cent in 2020 to reach \$3.5 billion. Rafael's arms sales fell by 2.2 per cent to \$2.7 billion in 2020.

The total arms sales of the five companies headquartered in Japan was \$9.9 billion, equivalent to 1.9 per cent of the total for the Top 100.¹⁶ Their combined arms sales rose by 2.7 per cent in 2020 despite decreases by three companies: Kawasaki Heavy Industries (ranked 53rd), IHI Corporation (ranked 90th) and Mitsubishi Electric (ranked 97th). These reductions were outweighed by substantial increases in the arms sales of Mitsubishi Heavy Industries (ranked 26th) and Fujitsu (ranked 76th). The arms sales of Mitsubishi Heavy Industries grew by 11 per cent in 2020 to reach \$4.4 billion, while Fujitsu's were up by 23 per cent to \$1.3 billion.

With combined arms sales of \$6.5 billion in 2020, the four companies based in South Korea accounted for 1.2 per cent of the Top 100 total.¹⁷ Their arms sales were 4.6 per cent higher in 2020 than in 2019. The arms sales of three of these companies increased in 2020. The arms sales of the largest South Korean arms company, Hanwha Aerospace (ranked 50th), rose marginally (by 0.3 per cent). The arms sales of LIG Nex1 (ranked 73rd) increased by 9.6 per cent to reach \$1.4 billion. This company only sells military products and does not appear to have been affected by the pandemic. Hanwha Corporation (ranked

¹⁵ Elbit Systems, Annual report for 2020, Form 20-F, US Securities and Exchange Commission (SEC), 24 Mar. 2021, p. F-18.

¹⁶ Data on Japanese companies were provided by the Mitsubishi Research Institute.

¹⁷ Data on South Korean companies were provided by the Korea Institute for Industrial Economics and Trade (KIET).

85th) also recorded a significant growth in arms sales (19 per cent), driven by its guided weapons business.

Three companies based in India were included in the 2020 ranking. Their total arms sales of \$6.5 billion were 1.7 per cent higher in 2020 than in 2019 and accounted for 1.2 per cent of the Top 100 total. The arms sales of Hindustan Aeronautics (ranked 42nd) rose by 1.5 per cent and those of Bharat Electronics (ranked 66th) rose by 4.0 per cent. Indian Ordnance Factories (ranked 60th) increased its arms sales marginally (by 0.2 per cent). Domestic procurement helped to shield Indian companies from the negative economic consequences of the pandemic. In 2020 the Indian government announced a phased ban on imports of more than 100 different types of military equipment to support domestic companies and enhance self-reliance in arms production.¹⁸

Edge (ranked 23rd) is a UAE-based conglomerate created in 2019 through the consolidation of 25 smaller entities. Its estimated arms sales reached \$4.8 billion in 2020. Turkey-based Aselsan (ranked 51st) had arms sales of \$2.2 billion in 2020, an increase of 12 per cent on 2019. The arms sales of Singapore-based ST Engineering (ranked 61st) amounted to \$1.9 billion in 2020. They were up by 14 per cent compared with 2019. CAE (ranked 98th), a flight-simulator company headquartered in Canada, had arms sales of \$910 million in 2020, a decrease of 8.6 per cent on 2019.

¹⁸ Indian Ministry of Defence, 'MOD's big push to Amanirbhar Bharat initiative; Import embargo on 101 items beyond given timelines to boost indigenisation of defence production', Press release, 9 Aug. 2020.