II. Developments among the suppliers of major arms, 2018–22

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SIPRI has identified 63 states as exporters of major arms in 2018–22. The five largest exporters of arms during that period—the United States, Russia, France, China and Germany—accounted for over three-quarters (76 per cent) of all arms exports (see table 6.2). US and French arms exports rose between 2013–17 and 2018–22, while Russian, Chinese and German arms exports fell. The top 25 arms exporters accounted for 98 per cent of the world's arms exports in 2018–22. States in North America and Europe together accounted for 87 per cent of all arms exports in the period. The five largest exporters in Western Europe—France, Germany, Italy, the United Kingdom and Spain—supplied around one-quarter (24 per cent) of total global arms exports in 2018–22.

The United States

The USA's arms exports grew by 14 per cent between 2013–17 and 2018–22 and its share of total global arms exports rose from 33 per cent to 40 per cent. The USA delivered major arms to 103 states in 2018–22, almost as many as the next two biggest exporters combined. Its total arms exports in 2018–22 were 148 per cent higher than those of Russia—the second largest exporter—compared with 50 per cent higher in 2013–17.

Exports to the Middle East accounted for 41 per cent of total US arms exports in 2018–22 (see table 6.3), down from 49 per cent in 2013–17. Partly on account of its policies aimed at containing Iranian influence, the USA exported large volumes of advanced major arms to states in the region.[1] Four Middle Eastern states were among the top 10 importers of US arms in 2018–22: Saudi Arabia accounted for 19 per cent of US arms exports, Qatar 6.7 per cent, Kuwait 4.8 per cent and the United Arab Emirates (UAE) 4.4 per cent.

States in Asia and Oceania received 32 per cent of total US arms exports in 2018–22, roughly the same proportion as in 2013–17 (33 per cent). Three major US allies in the region were among the 10 largest importers of US arms in 2018–22: Japan accounted for 8.6 per cent of total US arms exports, Australia 8.4 per cent and the Republic of Korea (South Korea) 6.5 per cent.

[1] Lopez, C. T., 'US, Gulf nations assess the same threats in the Middle East', US Department of Defense, 13 Feb. 2023. On US–Iranian tensions see Smith, D., 'Introduction: International stability and human security in 2020', *SIPRI Yearbook 2021*, pp. 11–12; Davis, I., 'Key general developments in the region', *SIPRI Yearbook 2021*, pp. 141–43; and Davis, I. and Fazil, S., 'Armed conflict and peace processes in Iraq, Syria and Turkey' and Davis, I., 'The Israeli–Palestinian conflict and peace process', *SIPRI Yearbook 2022*, pp. 158–59 and 160–61, respectively.

Taiwan was the 4th largest importer of US arms in 2013–17, but only the 19th largest in 2018–22. However, by the end of 2022 it had several large orders in place for major arms from the USA, including 66 combat aircraft. The USA has been providing military support to Taiwan since 1950 and in recent years this support has been growing in importance again with increased concerns (in both the USA and Taiwan) about the possibility of a Chinese invasion of Taiwan. In 2022 the US Congress passed the Taiwan Enhanced Resilience Act, which authorized the US government to provide Taiwan with up to US$2 billion a year in military aid and up to $2 billion in loans for military purchases from the USA through to 2027. However, if or when the grants and loans will be used remained undecided at the end of 2022.[2]

A total of 23 per cent of US arms exports went to states in Europe in 2018–22, up from 11 per cent in 2013–17. The rise in US arms exports to the region is because many European North Atlantic Treaty Organization (NATO) states started rearming due to growing tensions with Russia in 2022. Three of the USA's NATO partners in the region were among the 10 largest importers of US arms in 2018–22: the UK accounted for 4.6 per cent of US arms exports, the Netherlands 4.4 per cent and Norway 4.2 per cent. Particularly important among the arms delivered to these countries were 78 F-35 combat aircraft for all three (16 to the UK, 32 to the Netherlands and 30 to Norway) and 14 P-8A anti-submarine warfare (ASW) aircraft for Norway (5) and the UK (9). However, due to increasingly strained bilateral relations, the USA's arms exports to its NATO ally Türkiye were at a lower level in 2018–22, such that Türkiye dropped from being the 7th largest recipient of US arms in 2013–17 to the 27th largest in 2018–22. Of particular importance was the cancellation by the USA of a programme for up to 100 F-35 combat aircraft to Türkiye after the latter imported two Russian S-400 air defence systems in 2019.[3] In 2022 the US government considered the possibility of allowing Türkiye to acquire less advanced F-16 combat aircraft, reportedly on the grounds of maintaining NATO unity and capabilities, as well as US national security, economic and commercial interests. However, within Congress there were significant doubts about such a deal due to continuing political and economic relations between Türkiye and Russia, Türkiye stalling its support for Swedish and Finnish NATO accession, Turkish–Greek disputes and concerns about human rights.[4]

The volume of US exports of major arms to Ukraine increased sharply in 2022 (see section I). Nevertheless, as the supplies to Ukraine involved

[2] Lawrence, S. V. and Campbell, C., 'Taiwan: Political and security issues', Congressional Research Service (CRS) In Focus no. IF10275, 17 Feb. 2023.

[3] Jennings, G., 'US, Turkey continue to settle F-35 dispute', Janes, 24 Jan. 2023.

[4] Zanotti, J. and Thomas, C., 'Turkey (Türkiye): Possible US F-16 sale', Congressional Research Service (CRS) Insight no. IN2111, 16 Feb. 2023.

Table 6.2. The 25 largest exporters of major arms and their main recipients, 2018–22

Rank 2018–22	Rank 2013–17[a]	Exporter	Share of total global exports (%) 2013–17	Share of total global exports (%) 2018–22	Change in volume (%) from 2013–17 to 2018–22	Main recipients and their share of exporter's total exports (%), 2018–22					
1	1	USA	33	40	14	Saudi Arabia	19	Japan	8.6	Australia	8.4
2	2	Russia	22	16	–31	India	31	China	23	Egypt	9.3
3	3	France	7.1	11	44	India	30	Qatar	17	Egypt	8.0
4	4	China	6.3	5.2	–23	Pakistan	54	Bangladesh	12	Serbia	4.5
5	5	Germany	6.1	4.2	–35	Egypt	18	South Korea	17	Israel	9.5
6	9	Italy	2.5	3.8	45	Qatar	24	Egypt	23	Türkiye	12
7	6	UK	4.7	3.2	–35	USA	20	Qatar	16	Saudi Arabia	7.7
8	8	Spain	2.5	2.6	–4.4	Australia	35	Saudi Arabia	19	Belgium	12
9	12	South Korea	1.3	2.4	74	Philippines	16	India	13	Thailand	13
10	7	Israel	2.6	2.3	–15	India	37	Azerbaijan	9.1	Philippines	8.5
11	10	Netherlands	2.1	1.4	–39	USA	27	Mexico	11	Tunisia	7.4
12	15	Türkiye	0.6	1.1	69	Qatar	20	UAE	17	Oman	13
13	14	Sweden	0.9	0.8	–16	USA	25	Pakistan	24	Brazil	15
14	13	Switzerland	1.0	0.7	–34	Australia	21	Denmark	14	Spain	13
15	20	Australia	0.3	0.6	64	Canada	35	Chile	31	USA	13
16	17	Canada	0.6	0.5	–9.4	Saudi Arabia	49	UAE	22	USA	4.9
17	11	Ukraine	1.7	0.5	–70	China	48	Saudi Arabia	13	Thailand	7.5
18	19	UAE	0.4	0.4	–5.8	Egypt	28	Jordan	27	Algeria	15
19	30	Poland	0.1	0.4	168	Ukraine	95	Nepal	1.2	Ecuador	0.6
20	18	Belarus	0.5	0.3	–37	Serbia	33	Viet Nam	25	Uganda	14
21	22	South Africa	0.3	0.3	6.7	UAE	27	USA	21	India	15
22	16	Norway	0.6	0.3	–55	USA	27	Ukraine	15	Lithuania	14
23	24	Brazil	0.2	0.3	35	France	25	Nigeria	15	Chile	12
24	33	Belgium	0.1	0.2	212	Saudi Arabia	35	Canada	28	Pakistan	21
25	25	Jordan	0.2	0.2	14	USA	61	Egypt	26	Armenia	7.0

UAE = United Arab Emirates.

Notes: Percentages below 10 are rounded to one decimal place; percentages over 10 are rounded to whole numbers.

[a] The rank order for exporters in 2013–17 differs from that published in *SIPRI Yearbook 2018* because of subsequent revision of figures for these years.

Source: SIPRI Arms Transfers Database, Mar. 2023.

Table 6.3. The 10 largest suppliers of major arms and their recipients, by region, 2018–22

Figures are the percentage shares of the supplier's total volume of exports of major arms delivered to each recipient region in 2018–22.

	USA	Russia	France	China	Germany	Italy	UK	Spain	South Korea	Israel
Africa	2	12	3.5	9.5	4.3	5.5	0.2	1.5	0.2	1.0
Americas	1.5	–	7.2	<0.05	7.6	8.9	31	13	7.9	13
Asia and Oceania	32	65	44	80	32	11	22	37	63	59
Europe	23	5.9	6.6	4.8	20	6.9	13	17	28	26
Middle East	41	17	34	5.6	36	68	30	31	0.9	–

– = no deliveries; <0.05 = between 0 and 0.05.

Notes: Percentages below 10 are rounded to one decimal place; percentages over 10 are rounded to whole numbers. Figures may not always add up to 100% because of the conventions of rounding and because some suppliers exported small volumes of major arms to unidentified recipients or to international organizations that cannot be linked to a particular region.

Source: SIPRI Arms Transfers Database, Mar. 2023.

relatively less advanced and mainly second-hand military equipment from US stocks, the level of US arms exports to Ukraine in 2022 was still below the levels sent to four other states that year—Kuwait, Saudi Arabia, Qatar and Japan—because they received advanced new weapons, such as combat aircraft and air defence systems.

The USA has many pending arms export deliveries (see table 6.1 in section I). In 2022 alone 13 states ordered a total of 376 combat aircraft and combat helicopters from the USA, with the largest order from Canada for 88 combat aircraft. Other major orders agreed in 2022 included 96 combat helicopters and 394 tanks for Poland; 24 transport aircraft, 29 combat helicopters and 40 transport helicopters for Australia; 35 combat aircraft and 60 heavy transport helicopters for Germany; and 20 combat aircraft and 18 heavy transport helicopters for South Korea.

Russia

In 2018–22 Russia delivered major arms to 47 states and accounted for 16 per cent of total global arms exports. Russian arms exports remained stable between 2008–12 and 2013–17, but fell by 31 per cent between 2013–17 and 2018–22. The annual volumes of arms exports in 2018 and 2019 were at similar levels to or higher than those in each of the previous 20 years, but were significantly lower in 2020, 2021 and 2022.

States in Asia and Oceania received 65 per cent of total Russian arms exports in 2018–22, while Middle Eastern and African states received 17 per cent and 12 per cent respectively. Just under two-thirds of Russian arms exports went to three states in 2018–22: India (31 per cent), China (23 per cent) and

Table 6.4. Deliveries by arms category by the 10 largest suppliers of major arms, 2018–22

Figures are the percentage shares of each category of major arms in the exports of the 10 largest suppliers in 2018–22.[a]

Arms category	USA	Russia	France	China	Germany	Italy	UK	Spain	South Korea	Israel	**World total**
Aircraft	64	44	59	29	11	39	32	44	7.0	7.8	**48**
Combat aircraft and helicopters	53	40	45	21	1.5	24	23	4.5	6.6	2.8	**37**
Air defence systems	3.6	6.9	2.2	5.3	4.1	–	0.1	0.2	–	17	**3.8**
Armoured vehicles	9.6	12	1.7	20	15	6.2	1.3	0.9	4.0	0.4	**10**
Artillery	0.3	0.1	0.9	3.7	1.6	1.5	4.3	0.7	23	2.5	**1.5**
Engines	2.2	20	4.6	0.3	13	0.1	15	–	–	–	**6.1**
Missiles	16	13	11	17	10	3.8	17	0.1	1.0	39	**13**
Naval weapons	0.9	0.6	0.3	–	–	2.3	–	–	–	0.9	**0.7**
Satellites	–	0.2	0.7	–	–	–	–	–	–	–	**0.1**
Sensors	3.3	1.0	3.4	2.3	9.2	3.9	1.6	1.5		22	**3.8**
Ships	0.5	3.1	16	22	36	42	8.5	53	65	6.7	**12**
Major surface warships	–	0.8	2.8	16	11	39	–	45	27	–	**5.4**
Submarines	–	2.3	10	0.4	20	–	–	–	9.0	–	**2.6**
Other	–	–	–	<0.05	–	0.6	21	0.1	–	4.6	**1.0**

– = no deliveries; <0.05 = between 0 and 0.05.

Notes: Percentages below 10 are rounded to 1 decimal place; percentages over 10 are rounded to whole numbers.

[a] On SIPRI's categories of major arms see box 6.1 in section I of this chapter.

Source: SIPRI Arms Transfers Database, Mar. 2023.

Egypt (9.3 per cent). India was also the largest recipient of Russian arms in 2013–17, but exports to India decreased by 37 per cent between the two periods. In contrast, exports increased to China (by 39 per cent) and Egypt (by 44 per cent) within the same time frame. However, Russia made no deliveries to Egypt in 2021–22 and the volume of deliveries to China in 2020–22 was at a much lower level than in 2018–19. It is likely that order volumes from these two states will reduce in the coming years. Egypt, for example, cancelled a large order for combat aircraft in 2022, probably due to pressure from the USA, while China is becoming less reliant on Russian imports as it develops domestic alternatives. Exports to the other 7 of the 10 largest recipients of Russian arms in 2018–22 decreased, by 59 per cent on average.

The low volume of pending deliveries of major arms from Russia indicates that its arms exports are likely to continue to drop in the coming years. Combat aircraft (including combat helicopters) have been among Russia's main arms exports since 1992. It delivered 328 of these in 2018–22, which accounted for 40 per cent of Russian arms exports in the period (see table 6.4). However, by the end of 2022, it had pending deliveries for only

84 combat aircraft. Russia's invasion of Ukraine will probably put additional constraints on Russia's ability to export arms, as it is likely to prioritize the production of arms for its own military over those for export. The multilateral sanctions, including wide-ranging trade restrictions, imposed on Russia, coupled with pressure from the USA and its allies on states not to acquire Russian arms, will also hamper its efforts to export arms.[5]

France

French arms exports accounted for 11 per cent of the global total in 2018–22 and were 44 per cent higher than in 2013–17. One important reason for the increase was the 284 Rafale combat aircraft ordered from France since 2015, of which 92 were delivered in 2018–22. These aircraft accounted for 33 per cent of the total French arms exported in that period. After previously losing export orders to competitors, the series of major orders for the aircraft since 2015 was labelled a 'success story' by the French government.[6] Arms exports are an important foreign policy tool for the French government and essential for maintaining a French arms industry that allows strategic autonomy in arms procurement.[7] Among the methods used to promote arms exports, the French government has sold 'combat proven' equipment from national stocks that can be delivered fast to fulfil urgent foreign demand.[8] In 2021, for example, France sold 24 Rafales from its own air force inventory to Greece and Croatia (12 each) and will restock its inventory with new aircraft in the near future.

Most of France's arms exports in 2018–22 went to states in Asia and Oceania (44 per cent) and the Middle East (34 per cent). It delivered major arms to 62 states in 2018–22, but the three largest recipients—India, Qatar and Egypt—together received 55 per cent of French arms exports in that period. This was largely due to the supply of a total of 108 combat aircraft to these states (India received 62, Qatar 36 and Egypt 10), along with 4 submarines to India and 3 frigates to Egypt. With a 30 per cent share of exports, India was by far the largest recipient of French arms in 2018–22, replacing Egypt, which occupied that position in 2013–17 (see section III).

The most notable French arms export agreement signed in 2022 was with Indonesia, for 42 Rafale combat aircraft. By the end of 2022, France had far more major arms on order for export than Russia.

[5] On the trade restrictions on Russia see chapter 12, section III, in this volume.

[6] French Ministry of the Armed Forces (MAF), *Rapport au Parlement sur les exportations d'armament de la France* [Report to Parliament on French arms exports] (MAF: Paris, 2022), p. 49.

[7] French Ministry of the Armed Forces (note 6), pp. 16–17.

[8] French Ministry of the Armed Forces (note 6), p. 50.

Other major exporters

China

China accounted for 5.2 per cent of total global arms exports in 2018–22, although its arms exports decreased by 23 per cent compared to 2013–17. Most Chinese arms exports (80 per cent) went to states in Asia and Oceania. China delivered major arms to 46 states in 2018–22, but over half of its arms exports (54 per cent) went to just one state—Pakistan, which has become highly dependent on China for its arms procurement since the USA reduced its military aid to Pakistan in 2011 and from 2018 largely stopped supplying it with arms.[9] Given that China still has orders to deliver 700 tanks, 2 frigates, 8 submarines and 72 combat aircraft to Pakistan, the country will remain the largest recipient of Chinese arms in the near future. In 2022, for the first time since the mid 1970s, when Albania was one of China's top arms importers, there were substantial Chinese arms exports to a European state—Serbia, which received two surface-to-air missile (SAM) systems. However, Serbia accounted for only 4.5 per cent of Chinese arms exports in 2018–22.

Germany

Exports of major arms by Germany made up 4.2 per cent of the global total in 2018–22. Despite a decrease in exports of 35 per cent compared to 2013–17, Germany remained the fifth largest exporter of major arms in 2018–22. States in the Middle East received the largest share of German arms exports in 2018–22 (36 per cent), followed by Asia and Oceania (32 per cent) and Europe (20 per cent). One explanation for the decrease in German arms exports is the delay in deliveries of one submarine each to Israel, Singapore and Türkiye. These were planned to be delivered by the end of 2022 as part of a total of 14 submarines ordered from Germany by these three states.

Italy

Italy accounted for 3.8 per cent of the world's arms exports in 2018–22. Italian arms exports were 45 per cent higher in 2018–22 than in 2013–17 and the highest for any five-year period since 1981–85. Two-thirds (67 per cent) of Italian arms exports in 2018–22 went to the Middle East. Three states accounted for 59 per cent of Italian arms exports: Qatar (24 per cent), Egypt (23 per cent) and Türkiye (12 per cent).

United Kingdom

Arms exports by the UK decreased by 35 per cent between 2013–17 and 2018–22. By the end of 2022 existing orders for British arms indicated its

[9] Filseth, T., 'US resumes arms sales to Pakistan with $450 million F-16 deal', *National Interest*, 8 Sep. 2022; and Kronstadt, K. A., 'Pakistan–US relations', Congressional Research Service (CRS) In Focus no. IF11270, 8 July 2021.

exports were unlikely to increase soon. A total of 29 frigates on order by Australia, Canada, Indonesia and Poland have a considerable arms export value, but deliveries of these ships are planned over a long period, from the mid 2020s to 2044.

Spain

Arms exports by Spain decreased by 4.4 per cent between 2013–17 and 2018–22. Spain's exports of major arms in 2018–22 were almost entirely ships (53 per cent of the total volume) and transport aircraft (39 per cent). Most significant were the deliveries of two large destroyers to Australia and three smaller frigates to Saudi Arabia.

South Korea

Arms exports by South Korea increased by 74 per cent between 2013–17 and 2018–22, giving it a 2.4 per cent share of the global total. Most South Korean arms exports (63 per cent) went to states in Asia and Oceania, but demand for the country's arms is also growing in other regions, as demonstrated by the large orders that Poland and Egypt placed in 2022 (see section III). Important aspects in South Korean efforts to gain orders are its ability to deliver quickly, at comparatively low prices, and to offer licensed or joint production.[10] The fast delivery seemed especially important to Poland as it sees Russia as an imminent threat. The first Korean tanks and artillery pieces were delivered to Poland in 2022, only months after the orders were signed.[11] South Korea has stated that it aims to become the fourth largest arms exporter by 2027 (after the USA, Russia and France), touted arms exports as an important economic export growth engine, and announced major investments of public funds to develop exportable military technology and promote exports.[12] While South Korea has built up a large order book in recent years, with substantial pending deliveries, even the high values of orders for major arms placed recently are only a fraction of the value of South Korea's total exports (see box 6.2).

Israel

Arms exports by Israel decreased by 15 per cent between 2013–17 and 2018–22, but there were significant pending deliveries by the end of 2022. Particularly important are a series of long-standing orders for air defence systems by India, which has been a major recipient of Israeli arms since the early 2000s, and an increase in orders for air defence systems in Europe. There were also

[10] Lendon, B. and Bae, G., 'President Yoon wants South Korea to become one of world's top weapons suppliers', CNN, 17 Aug. 2022.

[11] Palowski, J., 'K9A1 howitzers and K2 main battle tanks delivered to Poland', Defence24.com, 6 Dec. 2022.

[12] Lendon and Bae (note 10); and Park, Y., 'South Korea to invest $1.16 billion in defense industry by 2027 to boost exports', *Aju Business Daily*, 16 Feb. 2023.

Box 6.2. Financial aspects of arms transfers

Arms exports are often pursued for economic reasons either to gain income directly from foreign trade or to reduce domestic procurement costs. In the latter case, increased production runs for arms exports can lead to reduced unit costs for domestic arms acquisitions. For some states, economic benefits of arms exports are important, especially for the smaller producers, while larger producers may be in a position where the economic benefits are outweighed by other considerations that may limit arms exports. To support better understanding of such economic drivers, SIPRI collects and publishes data on the financial value of the arms trade in addition to the SIPRI arms transfers trend-indicator values.

The governments of most of the main arms-exporting states publish financial data on arms exports. According to SIPRI's statistics on arms transfers, states that produce official data on the financial value of their arms exports accounted for over 90 per cent of the total volume of deliveries of major arms. There are significant limitations in using this data. For example, there is no internationally agreed definition of what constitutes 'arms' and governments thus use different lists; some states report on export licences issued or used and other states report actual exports; and these methodologies may change over time. However, the data can be used to obtain rough indications of the relative importance of arms exports for a national economy and globally.[a]

The estimate of the financial value of the global international arms trade for 2021—the latest year for which relevant data is available—was at least US$127 billion. The data suggests a significant real-terms increase over time from at least $95 billion in 2012 (in constant 2021 US dollars).

Despite the increase, the estimated value of the global arms trade remains only a fraction of the total trade in all products and services: for 2012 it was less than 0.4 per cent and for 2021 less than 0.5 per cent of the value of total global trade.[b]

On a state level, there are vast differences in arms exports as a share of total exports. In 2021, for example, arms exports accounted for 2.7 per cent of all Russia's exports, and only 0.8 per cent of Sweden's.[c] For states that publish only data on the value of licences or orders, which often result in actual exports spread over several years, such shares cannot be calculated. However, even for South Korea, which reported very high increases in arms export orders in 2021 and 2022, the value of those orders in 2021 was still only 0.9 per cent of total actual exports in 2021.[d]

[a] For an explanation of SIPRI's methodology for this data set, the various issues with official financial data on arms exports, and data for the period 1994–2021, see SIPRI, 'Financial value of the global arms trade', SIPRI Databases.

[b] The value of the total global trade in all products and services in 2021 was $27.3 trillion. World Trade Organization (WTO), *World Trade Statistical Review 2021* (WTO: Geneva, 2022), p. 11.

[c] World Bank, 'Exports of goods and services (current US$)—Russian Federation', World Bank Open Data; and World Bank, 'Exports of goods and services (current LCU)—Sweden', World Bank Open Data.

[d] World Bank, 'Exports of goods and services (current US$)—Korea, Rep.', World Bank Open Data.

orders in 2022 for Israeli air defence systems by Colombia and Morocco. Since the normalization of relations between Israel and the UAE and Bahrain in 2020, new potential markets have been opened for Israeli arms.