

## I. Developments in arms transfers, 2015<sup>1</sup>

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Over the past 10 years there has been a slow and steady upward trend in the volume of international major arms transfers (see figure 15.1).<sup>2</sup> The volume of major arms transfers in the five-year period 2011–15 was 14 per cent higher than in 2006–10. From 1980–84, when it reached its highest level since 1950–54, the volume of transfers almost continuously declined until in 2000–2004 it was only 44 per cent of the 1980–84 volume. The total for the latest five-year period, 2011–15, was 47 per cent higher than 2000–2004 and the highest total since 1989–1993 (the five-year period most directly affected by the end of the cold war). While annual fluctuations are common and experience has shown that annual totals are not reliable indicators for future developments, it is noteworthy that the total annual volumes over the past five years (2011–15) have been relatively stable.

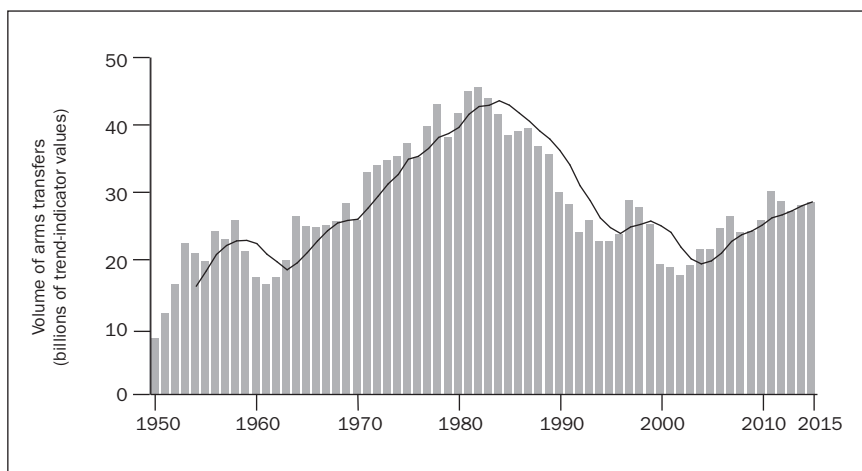
### Major supplier developments

The five largest suppliers in 2011–15—the United States, Russia, China, Germany and France—accounted for 74 per cent of the volume of exports of major arms (see table 15.1). This compared to 73 per cent for the top five suppliers in 2006–10.<sup>3</sup> The USA and Russia were by far the biggest exporters, together accounting for 58 per cent of global exports, up from 52 per cent in 2006–10. The composition and order of the five largest suppliers of arms changed between 2006–10 and 2011–15. China rose to third place behind the USA and Russia, and narrowly ahead of France and Germany. The United Kingdom, which in 2006–10 was the fifth largest supplier, fell to sixth position in 2011–15. Of the top 20 arms exporting countries for 2011–15, 14 were located in North America and Europe (including Russia), 3 in Asia

<sup>1</sup> Except where indicated, the information on arms deliveries and contracts referred to in this chapter is taken from the SIPRI Arms Transfers Database, <<http://www.sipri.org/databases/armstransfers>>. The database contains data on transfers of major weapons between 1950 and 2015. The data on which this chapter is based is valid as of 25 Jan. 2016. The figures in this chapter may differ from those in previous editions of the SIPRI Yearbook because the Arms Transfers Database is updated annually.

<sup>2</sup> SIPRI data on arms transfers refers to actual deliveries of major weapons, including sales, production under licence, aid, gifts and leases. SIPRI uses a trend-indicator value (TIV) to compare the data on deliveries of different weapons and to identify general trends. TIVs give an indication only of the volume of international arms transfers—based on an assessment of the arms' capabilities—and not of their financial values. Since year-on-year deliveries can fluctuate, a 5-year moving average is employed to provide a more stable measure for trends in transfers of major weapons. For a description of the TIV and its calculation see box 15.1.

<sup>3</sup> The calculation is based on the top 5 exporters in 2006–10: the United States, Russia, Germany, France and the United Kingdom compared with the top 5 in 2011–15.



**Figure 15.1.** The trend in international transfers of major weapons, 1950–2015

*Note:* The bar graph shows annual totals and the line graph shows the five-year moving average (plotted at the last year of each five-year period). See box 15.1 below for an explanation of the SIPRI trend-indicator value.

*Source:* SIPRI Arms Transfers Database, <<http://www.sipri.org/databases/armstransfers/>>.

and Oceania, 2 in the Middle East and 1 in Africa (see table 15.1).<sup>4</sup> A total of 58 countries exported major weapons in 2011–15, although in some cases only second-hand weapons were exported.

### *The United States*

The USA was the largest exporter of major weapons in the period 2011–15, accounting for 33 per cent of the global volume of deliveries. US arms exports increased by 27 per cent between 2006–10 and 2011–15. The USA delivered major weapons to at least 96 countries in 2011–15, more than any other supplier. The main recipients were Saudi Arabia, accounting for 9.7 per cent of US arms exports, and the United Arab Emirates (UAE), accounting for 9.1 per cent (see section II). At the regional level, the Middle East was the main destination for US weapons, accounting for 41 per cent of US arms exports (see table 15.2). Asia and Oceania received 40 per cent and Europe 9.9 per cent.

There is no doubt that the USA will maintain its position as the largest exporter in the years to come. It has well-established relations with many major clients and potential clients. There are numerous orders in place for major weapons, particularly for combat aircraft, which account for a sub-

<sup>4</sup> SIPRI includes Turkey in the region defined as the Middle East. For further details of SIPRI's regional coverage see p. xxix and <[http://www.sipri.org/research/armaments/milex/milex\\_database/regional\\_coverage](http://www.sipri.org/research/armaments/milex/milex_database/regional_coverage)>.

**Table 15.1.** The 50 largest suppliers of major weapons, 2011–15

The table includes all countries and non-state actors that exported major weapons in the five-year period 2011–15. Ranking is according to 2011–15 total exports. Figures are SIPRI trend-indicator values (TIVs). Percentages above 10 per cent have been rounded to the nearest whole number, those below 10 per cent to one decimal. Figures and percentages may not add up to displayed totals because of the conventions of rounding.

Rank		Supplier	Volume of exports (TIV, millions)		Share 2011–15 (%)	Change since 2006–10 (%)
2011–15	2006–10 <sup>a</sup>		2015	2011–15		
1	1	United States	10 484	46 908	33	27
2	2	Russia	5 483	36 233	25	28
3	6	China	1 966	8 447	5.9	88
4	4	France	2 013	8 035	5.6	–9.8
5	3	Germany	2 049	6 721	4.7	–51
6	5	United Kingdom	1 214	6 477	4.5	26
7	8	Spain	1 279	5 048	3.5	55
8	10	Italy	570	3 844	2.7	48
9	11	Ukraine	323	3 686	2.6	54
10	7	Netherlands	444	2 791	2.0	–25
11	9	Israel	710	2 593	1.8	–6.2
12	12	Sweden	186	2 095	1.5	–6.8
13	14	Canada	312	1 489	1.0	20
14	13	Switzerland	369	1 440	1.0	–5.1
15	15	South Korea	105	1 052	0.7	–2.5
16	24	Turkey	291	855	0.6	130
17	19	Norway	155	713	0.5	41
18	20	Belarus	14	452	0.3	–4.4
19	16	South Africa	39	448	0.3	–43
20	26	Australia	113	446	0.3	83
21	22	Finland	16	332	0.2	–17
22	21	Uzbekistan	34	243	0.2	–42
23	45	Romania	–	218	0.2	407
24	17	Poland	14	212	0.1	–66
25	31	Czech Republic	120	210	0.1	54
26	18	Belgium	–	198	0.1	–64
27	23	Brazil	41	189	0.1	–51
28	28	Jordan	18	177	0.1	–11
29	27	Iran	–	162	0.1	–22
30	42	Singapore	48	140	0.1	155
31	25	Austria	14	123	0.1	–54
32	36	United Arab Emirates	63	104	0.1	11
33	34	India	33	97	0.1	–5.8
34	42	Denmark	15	95	0.1	76
35	..	New Zealand	7	82	0.1	..
36	38	Serbia	19	73	0.1	–16
37	32	Ireland	–	65	<0.05	–52
38	51	Saudi Arabia	–	62	<0.05	226
39	54	Hungary	–	41	<0.05	356
40	48	Bulgaria	–	38	<0.05	..
41	30	Portugal	7	25	<0.05	–83
42	..	Brunei Darussalam	–	24	<0.05	..
43	..	Egypt	22	22	<0.05	..
44	35	Chile	–	20	<0.05	–80

Rank		Supplier	Volume of exports (TIV, millions)		Share 2011–15 (%)	Change since 2006–10 (%)
2011–15	2006–10 <sup>a</sup>		2015	2011–15		
45	..	Bosnia and Herzegovina	–	17	<0.05	..
46	55	Indonesia	4	12	<0.05	33
47	40	Moldova	–	11	<0.05	–85
48	..	Sudan	–	11	<0.05	..
49	49	Slovakia	–	9	<0.05	–76
50	..	Botswana	–	8	<0.05	..
..	..	8 others	10 484	46 908	0.1	..
<b>Total</b>			<b>28 626</b>	<b>142 890</b>	<b>100</b>	<b>14</b>

.. = not available or not applicable; – = no deliveries.

*Note:* The SIPRI data on arms transfers relates to actual deliveries of major weapons. To permit comparison between the data on deliveries of different weapons and to identify general trends, SIPRI uses a trend-indicator value (TIV). This value is only an indicator of the volume of arms transfers and not of the financial values of such transfers. Thus, it is not comparable to economic statistics. The method for calculating the TIV is described in box 15.1.

<sup>a</sup> The rank order for suppliers in 2006–10 differs from that published in *SIPRI Yearbook 2011* because of subsequent revision of figures for these years.

*Source:* SIPRI Arms Transfers Database, <<http://www.sipri.org/databases/armstransfers/>>.

stantial part of the volume of US arms exports. In 2011–15 it delivered a total of 175 combat aircraft to 15 countries. Exports of the F-35 combat aircraft will form a major and growing part of US exports of major weapons. By the end of 2015 some 611 F-35 had been ordered or selected by foreign buyers. As of that date, 10 had been delivered. In 2015 Italy received its first F-35—this was also the first F-35 produced under licence outside the USA.<sup>5</sup> In addition, the USA will fulfil major outstanding orders for other weapons, including 198 other combat aircraft, 150 of which are F-15SA aircraft for Saudi Arabia.

Arms exports are an important part of US security policy. For example, the USA views China's military modernization and policies towards other claimants of maritime zones in the South China and East China seas as serious potential threats, and has supported allies in the region such as India, Japan, Australia and the Philippines with arms sales or aid. Notably, the USA has also offered to sell military equipment to Viet Nam. Additionally, in 2015 the USA announced the first major planned sales to Taiwan in four years. The main items were two second-hand frigates and improvements to Taiwan's military communication systems. While China lodged its stand-

<sup>5</sup> A total of 5 F-35 aircraft have been delivered to foreign buyers as part of the research and development phase of the F-35 programme. They are being used for training and undergoing final development in the USA. Another 5 have been delivered for training use in the USA. While the '5th generation' F-35 is just starting to enter service, the USA has started limited budgeting for a follow-up '6th generation' combat aircraft to be available from 2030. Tucker, P., 'Here's what you'll find on the fighter jet of 2030', *Defense One*, 5 Feb. 2015.

ard official protest against the proposed deals, the sales were actually fairly modest, valued at no more than \$1.8 billion.<sup>6</sup>

The war against the Islamic State (IS) in Iraq and Syria was a major reason behind US military aid and arms sales to the Middle East in 2015. The flow of US arms to Iraq, which started in 2003, continued in 2015 as Iraq resupplied its stock of major arms following the capture or destruction by IS of many of Iraq's weapons in 2014. In particular, Iraq's air power increased significantly in 2014–15 with the delivery of 18 combat aircraft from the USA. However, there were signs in 2015 that Iraq is attempting to reduce its military dependence on the USA by increasing its arms imports from other countries, in particular from Russia but also from, among others, China and Iran.

Another key development affecting US arms exports to the Middle East region was the 2015 agreement on Iran's nuclear programme.<sup>7</sup> Israel and several Arab states of the Gulf, as well as some sections of the US Congress, viewed the agreement as a catalyst for increased threat to the region from Iran. To obtain wider support for the deal from its regional allies and the US Congress, the US Government put in place plans to (a) accelerate the decision-making process in relation to certain arms sales to its allies in the Middle East; and (b) boost military aid to and cooperation with those regional allies (see section II).<sup>8</sup> As part of these new measures, the USA started discussions with Israel to increase military aid (under the Foreign Military Aid programme) from the current \$3.1 billion a year to \$4–5 billion a year from 2018 to 2027.<sup>9</sup>

### *Russia*

The volume of Russia's exports of major weapons grew by 28 per cent between 2006–10 and 2011–15, and its share of total global exports rose from 22 to 25 per cent. However, export volumes in the years 2014 and 2015 were substantially lower than the annual volumes recorded in 2011–13, and were more in line with those recorded in the period 2006–10.

At the regional level, Asia and Oceania received 68 per cent of Russian exports in 2011–15, followed by Africa and the Middle East with 11 and 8.2 per cent respectively. Russia exported to 50 states in 2011–15, as well as to Ukrainian rebels in 2014, but its exports were highly concentrated, with just three clients—India, China and Viet Nam—accounting for 61 per cent of its exports.

<sup>6</sup> Phipps, G., 'DSCA notifies Congress of \$1.83bn arms sale to Taiwan', *Jane's Defence Weekly*, 23 Dec. 2015, p. 4.

<sup>7</sup> For further details see chapter 3 and chapter 17, section I, in this volume.

<sup>8</sup> Pincus, W., 'Fine Print: A push to boost military support to Israel because of Iranian nuclear deal', *Washington Post*, 24 Aug. 2015.

<sup>9</sup> Sharp, J. M., *U.S. Foreign Aid to Israel*, Congressional Research Service (CRS) Report for Congress RL33222 (US Congress, CRS: Washington, DC, 10 June 2015); and Opall-Rome, B., 'Obama offers Israel new 10-year aid package, but there's a catch', *Defense News*, 13 Feb. 2016.

**Table 15.2.** The 10 largest suppliers of major weapons and their destinations, by region, 2011–15

Figures are the percentage shares of the supplier's total volume of exports delivered to each recipient region. Figures may not add up because of the conventions of rounding. For the states in each region and subregion see page xxix.

Recipient region	Supplier									
	USA	Russia	China	France	Germany	UK	Spain	Italy	Ukraine	Netherlands
Africa	2.8	11	17	18	2.0	1.5	1.6	9.8	24	17
North Africa	2.3	7.4	5	17	1.3	1.3	–	8.4	1.3	17
Sub-Saharan Africa	0.5	3.4	12	1.8	0.7	0.2	1.6	1.5	22	0.4
Americas	6.2	6.2	5	11	23	11	15	14	1.6	36
South America	2.3	6.2	5	5.4	10	2.2	7.1	5.7	1.6	15
Asia and Oceania	40	68	75	28	23	28	37	28	54	5.4
Central Asia	0.1	2.3	–	0.5	0.3	–	1.4	1.4	3.5	2.1
North East Asia	16	11	–	13	9.0	5.1	–	0.1	26	0.4
South East Asia	7.2	14	20	5.2	11	9.6	6.9	6.6	13	2.2
Oceania	6.6	–	–	5.4	0.9	2.3	29	2.4	–	–
South Asia	11	41	55	4.5	2.2	11	0.2	17	12	0.8
Europe	9.9	6.4	–	15	29	6.1	13	21	15	15
European Union	9.2	0.1	–	14	28	4.8	4.2	18	0.7	15
Middle East	41	8.2	3	27	23	54	37	27	5.6	26
Other	<0.05	<0.05	–	–	–	–	–	0.2	0.2	–

.. = not available or not applicable; – = nil; <0.05 = between 0 and 0.05.

Source: SIPRI Arms Transfers Database, <<http://www.sipri.org/databases/armstransfers/>>.

India has been the main recipient of Russian weapons since 2007, and Russia's exports to India grew by 74 per cent between 2006–10 and 2011–15. India accounted for 39 per cent of total Russian exports in 2011–15, compared with 29 per cent in 2006–10. India is Russia's leading client not only in terms of export volumes but also in terms of the financial value of the arms transfer deals. In 2014, for example, India accounted for \$4.7 billion or 28 per cent of the actual value of Russian arms exports.<sup>10</sup> By the end of 2015, the ongoing discussions on arms transfers between Russia and India had resulted in around \$7 billion-worth of new order agreements. These included agreements to order five S-400 surface-to-air missile (SAM) systems, two Project-636 submarines, one nuclear-powered submarine and three additional Talwar frigates.<sup>11</sup> However, India's procurement process is slow and no final contract had been signed for any of the weapons as of early 2016.

Russian arms exports to China have been in decline for several years. However, in 2015 China ordered 24 Su-35S combat aircraft—the latest version of the Su-30 series—and several S-400 SAM systems (see below). Thus, the volume of Russian arms deliveries to China is expected to increase in the years to come. The negotiation process for these deals has taken time, as it seems Russia was initially reluctant to sell comparatively low numbers of Su-35S aircraft and S-400 systems to China. It appears that Russia was concerned that China's intention was to reverse-engineer the weapons and apply the technical knowledge gained to the development of its own systems.<sup>12</sup>

Russia's arms supplies to European countries increased 264 per cent between 2006–10 and 2011–15. This was mainly due to deliveries to Azerbaijan, which in 2011–15 accounted for 4.9 per cent of Russian exports (see below).

As was the case for the USA, Russia's main export category in 2011–15 was aircraft, which accounted for 44 per cent of total Russian arms exports in that period. Supplies of aircraft in 2011–15 included 209 combat aircraft to 7 countries, highlighting that, in general, demand for Russian combat aircraft remains strong. As noted above, China ordered 24 Su-35S aircraft in 2015—the first international order for this model. Indonesia has also selected the Su-35S. As of the end of 2015, Russia's total number of outstanding deliveries for combat aircraft stood at 286, with several other deals reported to

<sup>10</sup> Strokan, S. and Safronov, I., [Narendra Modi is going to Russia for 'triumph'], *Kommersant*, 21 Dec. 2015 (in Russian). According to the Indian Embassy in Moscow, total Russian exports to India in 2014 amounted to \$6.34 billion. Embassy of India in Moscow, 'Statistics for India's trade with Russian Federation', [n.d.].

<sup>11</sup> Strokan and Safronov (note 10); and Bedi, B., 'Hitches persist in Indian Navy's plans to lease second Russian SSN', *Jane's Defence Weekly*, 6 Jan. 2016, p. 16.

<sup>12</sup> 'Russian S-400 for China: challenge for Asian geopolitics', *Sputnik*, 17 Apr. 2015.

be under negotiation.<sup>13</sup> However, there was no breakthrough in negotiations with India in relation to Russia's next generation of combat aircraft, the PAKFA (see below). Russia expects India to shoulder a substantial part of the development costs for the PAKFA. India's reluctance to fully commit to the project and the growing pressure on Russia to cut military expenditure as a result of the severe economic crisis in the country have put the development of the PAKFA into doubt. No other country has to date shown any serious interest in what Russia views as its equivalent to the USA's F-35 combat aircraft.

### *China*

China's exports of major arms grew by 88 per cent between 2006–10 and 2011–15. China's share of the global volume of arms exports rose from 3.6 to 5.9 per cent between those periods, putting China on a similar footing in terms of global share as France and Germany. China supplied major arms to 37 states in 2011–15. Deliveries to states in Asia and Oceania rose by 139 per cent between 2006–10 and 2011–15, with the region accounting for 75 per cent of Chinese exports in 2011–15. Pakistan was the main recipient of Chinese exports, accounting for 35 per cent, followed by Bangladesh and Myanmar, accounting for 20 and 16 per cent respectively; all three states have a long history of purchasing Chinese weapons. India considers China a major political rival and the flow of Chinese arms to these neighbouring states has raised concerns in India.

Among the most noteworthy Chinese exports of 2014–15 were its deliveries of unmanned combat aerial vehicles (UCAVs) to Iraq and Nigeria. Although the number of UCAVs exported in each case was relatively low, these deliveries were the first known exports of UCAVs by a country other than the USA, signalling that China is now a serious rival to the USA in this new market.

Further growth in China's overall arms sales may be limited, however, due to the fact that major arms importers, such as India, will not or are hesitant to import Chinese arms for political reasons. In 2013 Turkey selected a long-range air defence system from China over competing systems offered by France and the USA. Had the deal gone through, it would have been by far the largest-recorded Chinese arms deal with a North Atlantic Treaty Organization (NATO) country. However, Turkey cancelled the advanced negotiations for the system in 2015 following pressure from the USA and other NATO states.<sup>14</sup>

<sup>13</sup> Milovanova, L., 'A watershed year for Russia's Sukhoi combat aircraft on the global arms market', TASS, 20 Feb. 2016.

<sup>14</sup> Sariibrahimoglu, L., 'Turkey cancels T-Loramids project', *Jane's Defence Weekly*, 25 Nov. 2015, p. 12.



*France*

France was the fourth largest exporter of major weapons in 2011–15, with exports 9.8 per cent lower than in 2006–10. It exported arms to 78 countries in 2011–15. At the regional level, 28 per cent of its exports went to Asia and Oceania, 27 per cent to the Middle East, 18 per cent to Africa, 15 per cent to Europe, and 11 per cent to the Americas.

The fall in French arms exports was mainly due to a temporary gap in major orders for arms. France's involvement in several military operations overseas and persistent, difficult national economic conditions over the past five years have limited growth in France's military procurement funding. In response, the government and French arms companies have increased their efforts to secure export deals to offset the deficit in national orders. These efforts have proved fairly successful across a variety of export categories.

In 2014–15 the French naval industry clinched several major deals, accepting orders from Malaysia for six small frigates, and from Egypt for four small and one large frigate and two amphibious assault ships. Also in the naval sector, the first deliveries of submarines ordered by India and Brazil are set to start in 2016 or 2017. India ordered a total of six submarines in 2005, while Brazil ordered five in 2009. These are the largest export deals for French submarines so far recorded.

France also signed the first export orders for its Rafale combat aircraft in 2015, after 25 years of unsuccessful marketing attempts. Egypt and Qatar each ordered 24 aircraft, and negotiations with India for 36 Rafales were at an advanced stage by the end of 2015 (see below).

*Germany*

Germany's exports of major weapons decreased by 51 per cent between 2006–10 and 2011–15, and its share of the global total fell from 11 per cent to 4.7 per cent. Germany supplied major arms to 57 states in 2011–15. The main recipients were other European states, accounting for 29 per cent of Germany's arms exports. The next highest recipients at the regional level were the Americas, Asia and Oceania, and the Middle East—each receiving 23 per cent. Unlike some of the other major arms exporters that focused strongly on aircraft in 2011–15, Germany's main export categories were ships and armoured vehicles. Supplies of ships accounted for 35 per cent of Germany's arms exports in 2011–15 and included the delivery of 9 submarines to various clients (compared with 7 submarines delivered by all other suppliers in that period); another 20 are on order (compared with a total of 27 on order with other suppliers). Armoured vehicles accounted for 19 per cent of German arms exports in 2011–15. Germany is the only remaining producer of heavy tanks in Western Europe and delivered the first 10 of an order of 62 newly produced tanks to Qatar in 2015. Other armoured vehicle deliveries in 2015 included 28 second-hand tanks to Poland and 14 to Indonesia.

Although the exports of major weapons and weapons components to states in the Middle East (including the deliveries of tanks to Qatar and other supplies to Saudi Arabia) were the topic of heated political debate in Germany throughout 2015, the German Government continued to grant such export licences.<sup>15</sup> However, Sigmar Gabriel, the German Minister for Economic Affairs and Energy who is the minister responsible for arms export licensing, stated in early 2016 that the export of tanks to Qatar was licensed under the previous government and would not have been allowed under the current government.<sup>16</sup> The government also indicated that plans to sell tanks or tank technology by German tank producer KMW to Saudi Arabia could no longer count on government approval, mainly due to concerns over the human rights situation in Saudi Arabia.<sup>17</sup>

### *Other suppliers*

While the USA, Russia, China, Germany and France were the top 5 largest exporters of major weapons in 2011–15, 4 out of the 5 other countries that completed the top 10 were in Western Europe: the UK, Spain, Italy and the Netherlands (in order of export volume). Although each of these Western European states has an independent arms export policy, in many cases the major arms they export are produced in cooperation with other Western European states.

*The United Kingdom.* British arms exports increased by 26 per cent between 2006–10 and 2011–15, making it the world's sixth largest arms exporter in 2011–15, with 4.5 per cent of global arms exports. Based on the number of outstanding orders at the end of 2015, it seems likely that the UK will remain outside the top five for the foreseeable future. The British arms industry is heavily reliant on one export client, namely Saudi Arabia, which in 2011–15 accounted for 46 per cent of British arms exports (see section II). Other major export clients include India and Indonesia, which account for 11 and 8.7 per cent respectively. The UK is part of a group of four countries (the others being Germany, Italy and Spain) that produce the Typhoon combat aircraft. The UK was responsible for negotiating sales of 72 Typhoon to Saudi Arabia and the supplies of the aircraft under those contracts accounted for 34 per cent of the value of the UK's arms exports in 2011–15.

*Spain.* Spain's arms exports grew by 55 per cent between 2006–10 and 2011–15, and Spain accounted for 3.5 per cent of the global total in 2011–15. Exports of tanker aircraft and large transport aircraft were the main drivers

<sup>15</sup> German Federal Ministry for Economic Affairs and Energy, 'Schriftliche Fragen und die Bundesregierung im Monat Februar 2016' [Written questions to the Federal Government in February 2016], questions 18 and 19, 19 Feb. 2016.

<sup>16</sup> Greive, M., 'Warum Deutschlands Waffenexporte so stark wachsen' [Why Germany's arms exports grow so strong], *Die Welt*, 19 Feb. 2016.

<sup>17</sup> Stratmann, K., 'Germany rethinks arms trade with Saudi Arabia', *Handelsblatt*, 5 Jan. 2016.

behind the increase. These included a total of 14 A330 MRTT tanker/transport aircraft, which were delivered to Australia (5), Saudi Arabia (6) and the UAE (3), and a total of 5 A400M transport aircraft, which were delivered to Malaysia (2) and Turkey (3). Although these aircraft are exported from Spain, they are produced by Spain in cooperation with France, Germany and the UK.

*Italy.* Italian arms exports rose by 48 per cent between 2006–10 and 2011–15, and Italy accounted for 2.7 per cent of global deliveries in 2011–15. Italy exported to 75 clients, the third highest number of recipients (behind the USA and France). Italy's exports mainly consisted of smaller contracts. As part of its role in the Typhoon combat aircraft programme, in 2015 Italy was responsible for organizing the sale of 28 Typhoon aircraft to Kuwait.

Only seven countries out of the top 25 arms exporters in 2011–15 are outside of Europe or North America: China, Israel, South Korea, Turkey, South Africa, Australia and Uzbekistan (in order of export volume). Of those seven, only China was placed in the top 10.

*Israel.* Israel's arms exports in 2011–15 accounted for 1.8 per cent of global arms exports. It is an important supplier of arms in certain niche categories, in particular ground-based and airborne radars, guided missiles and UCAVs.

Several countries in the top 25 or just outside that grouping, including South Korea, Turkey and Brazil, might become competitors to the established arms suppliers in the near future. While South Korea's arms exports remain limited (accounting for only 0.7 per cent of the global total in 2011–15), it is developing an advanced and diversified arms industry. Originally set up to serve the domestic market, the South Korean arms industry has in recent years also increasingly pursued export deals. The first export order for South Korean-produced combat aircraft was signed in 2011 and a total of 56 aircraft were ordered in 2011–15. South Korea's first export order for submarines (3 in total) was signed in 2012. In 2015, after having initially blocked the arrangement, the USA approved technology transfers as an offset for a South Korean order for the USA's F-35 combat aircraft. South Korea plans to apply the technology in the development of its KFX combat aircraft that is scheduled to be in service by 2028. Indonesia has already placed an order for the KFX and South Korea hopes to receive further orders in the next few years.<sup>18</sup> Turkey is another challenger to the established producers. Its arms exports more than doubled between 2006–10 and 2011–15. It exported major arms to 15 countries in 2011–15. Brazil, which was just outside the top 25 in 2011–15, is also developing its arms industry. This might lead to an increase in its arms exports in the years to come.<sup>19</sup>

<sup>18</sup> Grevatt, J., 'KAI handed \$7.4 billion KFX development deal', *Jane's Defence Weekly*, 6 Jan. 2016, p. 8.

<sup>19</sup> For further discussion of the Brazilian arms industry see chapter 14, section II, in this volume.

## Major recipient developments

In 2011–15 Asia and Oceania was the main recipient region of major weapons, accounting for 46 per cent of global imports. The Middle East received 25 per cent of global imports in that period (see section II). Europe was the third largest recipient region but its share fell from 21 per cent in 2006–10 to 11 per cent in 2011–15. The share for the Americas also fell: from 12 per cent in 2006–10 to 9.6 per cent in 2011–15. Africa accounted for 8 per cent of global imports in 2011–15.

Compared with 2006–10, imports by states in the Middle East increased by 61 per cent in 2011–15. Imports by states in the regions of Asia and Oceania and Africa also rose between 2006–10 and 2011–15, by 26 per cent and 19 per cent respectively. By contrast, imports by states in Europe and the Americas fell between 2006–10 and 2011–15, by 41 per cent and 6 per cent respectively.

### *Africa*

The three largest importers in Africa in 2011–15 were Algeria (30 per cent of regional imports), Morocco (26 per cent) and Uganda (6.2 per cent). Russia accounted for 34 per cent of exports of major weapons to the region, followed by France and China (each accounting for 13 per cent), and the USA (11 per cent).

*Algeria.* Arms imports by Algeria fell by 18 per cent in 2011–15 compared with 2006–10. However, under the known contracts a number of significant deliveries are scheduled for the next five years, including 2 frigates from China, 2 frigates from Germany, and 190 tanks, 42 combat helicopters, 14 combat aircraft and 2 submarines from Russia.

*Morocco.* Imports by Morocco increased by 528 per cent between 2006–10 and 2011–15, although they remained below the level of Algerian arms imports. However, by the end of 2015, Morocco's only large outstanding order for arms was for 150 tanks from the USA.

*Sub-Saharan Africa.* States in sub-Saharan Africa received 41 per cent of total African imports. Uganda, Sudan and Nigeria were the largest importers in the subregion, accounting for 15, 12 and 11 per cent of the subregional total respectively. Russia accounted for 27 per cent of arms exports to the subregion and China for 22 per cent. Most sub-Saharan African states import only small volumes of arms, despite the fact that many are involved in or located close to armed conflicts.

In 2015 Cameroon, Chad, Niger and Nigeria began a joint military campaign against the Boko Haram rebel group. Their combined arms imports in 2011–15 accounted for 0.6 per cent of world arms imports. Combat aircraft are a key military capability in this campaign. Imports of armed aircraft by the four states in 2011–15 included 1 second-hand, high-end combat aircraft, 8 second-hand ground-attack aircraft, 20 armed helicopters and 5 UCAVs.

Major armed conflict broke out in Mali in 2012. Its largest arms procurement since the start of the conflict was an order placed in 2015 for six basic ground-attack aircraft from Brazil.

### *The Americas*

Imports of major weapons by states in the Americas decreased by 6 per cent between 2006–10 and 2011–15. Despite a fall in imports of 8.5 per cent between those two periods, the USA remained the largest importer of major weapons in the Americas.

Arms imports by South American states decreased by 19 per cent between 2006–10 and 2011–15. Russia accounted for 33 per cent of deliveries to the subregion, followed by the USA and Germany with 16 and 10 per cent respectively.

*Venezuela.* Venezuela was the largest importer in South America and the second highest in the Americas in 2011–15. Its imports increased 13 per cent between 2006–10 and 2011–15, and it accounted for 1.9 per cent of the global total in 2011–15. However, most of the deliveries in 2011–15 related to contracts signed before 2010, the great bulk of which were completed by 2013. Venezuela has not placed many major orders during the past five years, indicating a likely steep decline in the number of future deliveries.

*Brazil.* Brazil was the third largest importer in the Americas in 2011–15 with 1.0 per cent of the global total. It is the only South American country with major outstanding orders, including 36 combat aircraft from Sweden and 4 diesel-electric submarines and 1 nuclear submarine from France. Brazil's arms imports grew by 35 per cent between 2006–10 and 2011–15.

*Mexico.* Mexico was the only significant recipient of major arms in Central America in 2011–15. Its imports rose by 331 per cent compared with 2006–10, making it the fourth largest importer in the Americas. The USA accounted for 52 per cent of deliveries to Mexico in 2011–15, followed by Spain and France with 19 and 9.8 per cent respectively. Mexico has traditionally not been a major arms buyer and faces no external threat or serious internal political conflict. However, the Mexican Government is embroiled in a long-running and bloody war with drug cartels, which explains the rapid growth in arms transfers. Rather than relying on its corrupt and inefficient police force, Mexico has made increasing use of the military over the past five years to reinforce its campaign against the drug cartels.

Aircraft made up 63 per cent of Mexico's arms acquisitions in 2011–15. These included helicopters and maritime patrol, transport and light combat aircraft, which are all used in operations against drug cartels. Armoured vehicles for internal security roles accounted for 18 per cent of Mexico's acquisitions, including the first deliveries of 4335 light armoured vehicles

from the USA.<sup>20</sup> The Mexican navy is also involved in actions against drug cartels.<sup>21</sup> Mexico plans to procure 20 patrol boats from the Netherlands, 6 of which were delivered in 2011–15. It also plans to add to its fleet of maritime patrol aircraft in the next few years.

### *Asia and Oceania*

Three of the five largest recipients of major weapons were in Asia and Oceania—India, China and Australia (see tables 15.3 and 15.4). There were also notable trends at the subregional level. South Asia accounted for 44 per cent of the total for Asia and Oceania, followed by East Asia and South East Asia, each accounting for 23 per cent. Oceania accounted for 8.2 per cent of the regional total and Central Asia for 2.3 per cent. States in East Asia feature heavily among the major recipients in 2011–15. China, South Korea and Viet Nam were among the top 10 global importers, and many countries in the sub-region have significantly increased their arms acquisitions in the past few years or plan to do so in the future. The rising tension between China and other states in the subregion caused by competing rights in the South China and East China seas is a major driving force behind these acquisitions.

*India.* India was world's largest importer of major arms in 2011–15, accounting for 14 per cent of the global total. Imports rose by 90 per cent between 2006–10 and 2011–15. In 2011–15 India's imports were three times greater than those of either of its regional rivals: China and Pakistan. Russia supplied 70 per cent of India's arms imports in 2011–15 and, based on planned and existing orders, it will remain, by a significant distance, the main supplier of major arms to India for the foreseeable future.<sup>22</sup> However, India and the USA increasingly view each other as major strategic partners, which partly explains why imports from the USA to India rose elevenfold between 2006–10 and 2011–15. The USA accounted for 14 per cent of India's arms imports in 2011–15.

India's attempts to design, develop and produce its own advanced major weapons remain beset with delays, spiralling costs and quality problems. A key reason for India's high level of imports is the failure of its state-owned industry to consistently produce indigenously designed weapons that are capable of becoming real alternatives to the equivalent designs from other countries. In addition, critics claim that India's current procurement system is slow and inefficient, which has led to gaps in India's military capabili-

<sup>20</sup> Guevara, I., 'Refurbishing the force: Mexico's 2015 defense spending', *El Daily Post*, 3 June 2015.

<sup>21</sup> Guevara (note 20).

<sup>22</sup> Russia was also the leading supplier to India in terms of the financial value of arms contracts. In the period covered by the fiscal years 2012–15, Russia and India signed contracts worth 340 billion rupees (around \$5.5 billion); the USA was ranked second with contracts worth 300 billion rupees (around \$4.9 billion). 'Russia remains biggest arms supplier to India', *TASS*, 29 Feb. 2016.

ties.<sup>23</sup> In an effort to improve India's performance in these areas, the Indian Ministry of Defence worked on developing a new defence procurement procedure during 2015. The new procedure includes options for fast-tracking programmes and involving the private sector in large-scale arms production programmes (including licensed production of foreign designs).<sup>24</sup>

Among the most significant orders approved by the Indian Government in 2015 was a deal for 36 Rafale combat aircraft from France. The order replaced an earlier advanced plan to buy 126 Rafales and is a government-to-government contract for complete aircraft delivered from France. This marks a new approach from India to the purchase of weapons of strategic importance. Prior to this deal, India had tended to conclude contracts directly with foreign companies. These contracts would typically stipulate that a substantial percentage of production would take place in India. However, this type of deal could not be negotiated in the case of the Rafale due to differences between the parties over the price, the responsibility for quality and timely delivery, and the inclusion of technology transfers. India plans to purchase additional combat aircraft and is considering offers from France, Germany, Russia, Sweden and the USA.<sup>25</sup>

India's joint development programmes with Russia to produce the PAKFA combat aircraft (known as the FGFA in India) and the MTA transport aircraft have experienced similar difficulties to those affecting the original deal with France for the Rafale. The PAKFA/FGFA programme, which officially is a cooperative research and development initiative but in reality amounts to little more than the acquisition by India of modified Russian designs, stalled in early 2013. At that time, India failed to provide the \$5 billion Russia demanded as India's share in the development costs and Russia refused to transfer relevant technology and share production of the aircraft with India. Reports in early 2016 indicated that India had reduced its planned procurement from about 220 PAKFA/FGFA aircraft to only 65 and waived its requirement of production in India.<sup>26</sup> The MTA programme, which was launched in 2009, has not made any progress since 2012 and remains no more than one of several possible options to meet India's requirements.

*China.* China continues to develop its capability for producing its own advanced major weapons and has become less dependent on arms imports, which decreased by 25 per cent between 2006–10 and 2011–15. In the early

<sup>23</sup> Katoch, P., 'Gaming military money', *Indian Defence Review*, 12 Jan. 2015; and Bedi, R., 'Indian Parliament slams MoD for delays to army procurement', *Jane's Defence Industry*, 6 Mar. 2015.

<sup>24</sup> Grevatt, J., 'India's private sector responds to "Make in India" drive', *Jane's Defence Industry*, 20 May 2015. The new defence procurement procedure was launched in Mar. 2016. 'Manohar Parrikar unveils defence procurement procedure, says will boost "Make in India" policy', *Financial Times*, 28 Mar. 2016.

<sup>25</sup> Grevatt, J., 'Saab in talks with India over potential Gripen sale', *Jane's Defence Weekly*, 6 Jan. 2016, p. 6.

<sup>26</sup> Bedi, R., 'India and Russia revive FGA talks', *Jane's Defence Weekly*, 17 Feb. 2016, p. 14.



**Table 15.3.** The 50 largest recipients of major weapons, 2011–15

The table includes all countries and non-state actors that imported major weapons in the five-year period 2011–15. Ranking is according to 2011–15 total imports. Figures are SIPRI trend-indicator values (TIVs). Percentages above 10 per cent have been rounded to the nearest whole number, those below 10 per cent to one decimal. Figures and percentages may not add up to displayed totals because of the conventions of rounding.

Rank		Recipient	Volume of exports (TIV, millions)		Share 2011–15 (%)	Change since 2006–10 (%)
2011–15	2006–10 <sup>a</sup>		2015	2011–15		
1	1	India	3 078	20 107	14	90
2	15	Saudi Arabia	3 161	9 932	7.0	275
3	2	China	1 214	6 681	4.7	–25
4	5	United Arab Emirates	1 289	6 553	4.6	35
5	9	Australia	1 574	5 204	3.6	26
6	12	Turkey	448	4 927	3.4	54
7	4	Pakistan	735	4 722	3.3	–13
8	43	Viet Nam	870	4 115	2.9	699
9	7	United States	565	4 108	2.9	–8.5
10	3	South Korea	245	3 761	2.6	–47
11	8	Algeria	636	3 500	2.4	–18
12	17	Egypt	1 475	3 429	2.4	37
13	10	Singapore	98	3 324	2.3	–18
14	23	Iraq	1 215	3 295	2.3	83
15	25	Indonesia	683	3 089	2.2	101
16	39	Taiwan	681	2 941	2.1	331
17	49	Morocco	42	2 920	2.0	528
18	20	Venezuela	162	2 774	1.9	13
19	38	Azerbaijan	285	2 175	1.5	217
20	55	Bangladesh	653	2 082	1.5	483
21	19	United Kingdom	382	2 042	1.4	–17
22	42	Myanmar	320	1 999	1.4	284
23	33	Afghanistan	74	1 778	1.2	94
24	16	Japan	310	1 658	1.2	–37
25	44	Oman	148	1 515	1.1	194
26	14	Israel	617	1 485	1.0	–48
27	29	Canada	395	1 457	1.0	11
28	31	Brazil	289	1 419	1.0	35
29	28	Italy	596	1 349	0.9	–3.8
30	56	Qatar	655	1 300	0.9	279
31	53	Kuwait	366	1 275	0.9	233
32	70	Thailand	185	1 229	0.9	579
33	63	Mexico	500	1 156	0.8	331
34	6	Greece	762	1 130	0.8	–77
35	35	Syria	–	1 115	0.8	26
36	18	Norway	143	991	0.7	–60
37	30	Netherlands	86	953	0.7	–20
38	37	Jordan	198	920	0.6	30
39	34	Colombia	215	919	0.6	1.8
40	26	Spain	153	875	0.6	–43
41	22	Poland	131	837	0.6	–65
42	47	Finland	228	798	0.6	69
43	65	Kazakhstan	419	789	0.6	218
44	90	Uganda	3	713	0.5	919



Rank		Recipient	Volume of exports (TIV, millions)		Share 2011–15 (%)	Change since 2006–10 (%)
2011–15	2006–10 <sup>a</sup>		2015	2011–15		
45	13	Chile	114	668	0.5	–77
46	95	Turkmenistan	122	644	0.5	1 030
47	45	Sudan	27	576	0.4	16
48	27	Germany	102	570	0.4	–60
49	74	Russia	88	556	0.4	315
50	60	Sweden	43	535	0.4	71
..		114 others	1 853	10 024	7.0	..
		<b>Total</b>	<b>28 626</b>	<b>142 890</b>	<b>100</b>	<b>14</b>

.. = not available or not applicable; – = no deliveries.

*Note:* The SIPRI data on arms transfers relates to actual deliveries of major weapons. To permit comparison between the data on deliveries of different weapons and to identify general trends, SIPRI uses a trend-indicator value (TIV). This value is only an indicator of the volume of arms transfers and not of the financial values of such transfers. Thus, it is not comparable to economic statistics. The method for calculating the TIV is described in box 15.1.

<sup>a</sup> The rank order for suppliers in 2006–10 differs from that published in *SIPRI Yearbook 2011* because of subsequent revision of figures for these years.

*Source:* SIPRI Arms Transfers Database, <<http://www.sipri.org/databases/armstransfers/>>.

2000s China was by far the world's largest importer of major weapons but by 2011–15 it had dropped to third place. Nevertheless, China remains partly dependent on imports for some key weapons and components, including large transport aircraft and helicopters, and engines for aircraft, vehicles and ships (engines accounted for 30 per cent of China's imports in 2011–15). In 2015 China signed orders for long-range air defence systems and 24 combat aircraft from Russia, even though China produces weapons in those categories. This suggests that China does not yet consider itself to be self-sufficient in those categories or that it believes it will gain significant technological insights from the imported weapons. China's largest supplier was Russia, which accounted for 59 per cent of Chinese imports, followed by France and the Ukraine with 15 and 14 per cent respectively.<sup>27</sup>

*Viet Nam.* Viet Nam moved from being the 43rd largest importer in 2006–10 to being the eighth largest in 2011–15, with arms imports increasing 699 per cent. This was the highest rate of growth recorded among the top 10 importers for 2011–15. Russia accounted for 93 per cent of the deliveries, which included 8 combat aircraft, 4 fast attack craft and 4 submarines

<sup>27</sup> Most of the deliveries from France are produced under licence in China, often under contracts signed decades ago. The European Union embargo on arms trade to China, in force since 1989, is weak and unclear, allowing deliveries of many systems considered by SIPRI to be 'major weapons' to continue. For further discussion of the EU embargo and exports by Western countries to China see Brüner, O., Bromley, M. and Duchâtel, M., *Western Arms Exports to China*, SIPRI Policy Paper no. 43, (SIPRI: Stockholm, Jan. 2015).

**Table 15.4.** The 10 largest recipients of major conventional weapons and their suppliers, 2011–15

Figures are the percentage shares of the recipient's total volume of imports received from each supplier. Only suppliers with a share of 1 per cent or more of total imports of any of the 10 largest recipients are included in the table. Smaller suppliers are grouped together under 'Others'. Figures may not add up to 100 because of the conventions of rounding.

Supplier	Recipient									
	India	Saudi Arabia	China	UAE	Pakistan	Australia	Turkey	USA	South Korea	Viet Nam
Australia	0.1	-	-	-	-	-	-	6.7	-	-
Belarus	-	-	2.5	-	-	-	-	-	-	-
Canada	0.6	2.5	-	0.9	0.4	-	0.5	11	-	0.7
China	-	0.1	..	-	63	-	1.4	-	-	-
France	1.6	5.1	15	8.4	0.5	7.2	0.5	8.0	0.1	0.4
Germany	0.7	2.8	0.6	1.8	0.1	1.1	2.8	21	13	-
Ireland	-	-	-	-	-	1.2	-	-	-	-
Israel	4.5	-	-	-	-	-	1.3	3.5	3.4	2.1
Italy	1.7	<0.05	-	5.9	4.6	1.5	6.4	5.5	-	-
Jordan	-	-	-	-	2.9	-	-	-	-	-
Netherlands	0.1	1.1	-	-	-	-	3.8	5.3	0.3	-
New Zealand	-	-	-	-	-	-	-	1.8	-	-
Norway	-	-	-	-	-	0.5	0.2	8.1	-	-
Poland	0.1	-	-	-	-	-	-	3.5	-	-
Russia	70	-	59	4.1	2.9	-	-	0.4	-	93
Saudi Arabia	-	-	-	-	-	-	1.3	-	-	-
South Africa	0.3	0.1	-	0.3	-	-	-	0.1	-	-
South Korea	-	-	-	-	-	-	9.5	-	..	-
Spain	-	5.9	-	4.5	0.2	28	8.9	3.6	-	0.9
Sweden	-	1.6	-	3.7	4.6	0.7	-	0.9	2.2	-
Switzerland	0.4	2.1	4.4	1.9	-	-	-	6.8	-	-
Turkey	-	2.0	-	2.0	1.9	-	..	-	-	-
Ukraine	1.2	-	14	-	3.3	-	-	-	-	-
United Kingdom	3.6	30	3.0	1.0	<0.05	2.8	-	13	1.3	2.6

Supplier	Recipient									
	India	Saudi Arabia	China	UAE	Pakistan	Australia	Turkey	USA	South Korea	Viet Nam
United States	14	46	-	65	19	57	63	..	80	-
Uzbekistan	1.0	-	0.5	-	-	-	-	-	-	-
Others	-	0.8	-	1.3	0.3	-	0.2	1	-	0.8

- = nil; <0.05 = between 0 and 0.05.

Source: SIPRI Arms Transfers Database, <<http://www.sipri.org/databases/armstransfers/>>.

armed with land-attack missiles. However, Viet Nam has started to diversify its arms imports, acquiring small volumes from Israel, Canada and Spain. Viet Nam's arms acquisitions (surface ships and submarines made up 44 per cent and aircraft 37 per cent of total acquisitions) are aimed at strengthening its capabilities in the South China Sea area, where there are tensions with China over the two countries' territorial claims. Additional weapons for maritime use are on order, including 6 frigates and 2 submarines.

### *Europe*

Imports by states in Europe decreased by 41 per cent between 2006–10 and 2011–15. The USA accounted for 30 per cent of deliveries to Europe in 2011–15, followed by Russia and Germany with 15 and 13 per cent respectively. Many countries in the region are still affected by economic crises, which have led to cuts in spending on major arms. Greece and Spain, in particular, greatly reduced their arms purchases in 2011–15. By contrast, Azerbaijan's deliveries increased by 217 per cent between 2006–10 and 2011–15, making it the largest importer of major weapons in Europe and the 19th largest importer worldwide. Although the overall trend in Europe in 2011–15 was for reductions in arms deliveries and orders, most NATO member states announced increases in their spending on procurement of equipment in 2011–15, which will result in higher numbers of orders for major weapons, including imports.<sup>28</sup> Poland and the Baltic states are among those countries that placed major orders in 2015.

*The United Kingdom.* The UK was the second largest arms importer in Europe, and the 21st largest importer worldwide, with 1.4 per cent of global deliveries in 2011–15. This was despite a decline in the volume of British arms imports of 17 per cent between 2006–10 and 2011–15. The USA was by far the biggest exporter to the UK, accounting for 73 per cent of deliveries, followed by France with 10 per cent.

*Greece.* Greece's imports of major arms from 2011–15 were down by 77 per cent compared with 2006–10. However, while Greece remained in deep economic crisis in 2015, its arms imports increased steeply that year due to the delivery of 2 submarines from Germany ordered in 2000. Greece's submarine procurement policy is linked to its rivalry with Turkey, which has 6 submarines on order of the same type as Greece received in 2015.

*Poland and the Baltic states.* Poland's arms imports fell by 65 per cent between 2006–10 and 2011–15. However, partly in reaction to Russia's foreign policy but also in line with existing armament plans, in 2013 Poland

<sup>28</sup> Tigner, B., 'NATO's European allies stem defence cuts, boost spending on equipment', *Jane's Defence Weekly*, 3 Feb. 2016, p. 12.

embarked on a major 10-year military modernization programme.<sup>29</sup> As part of this programme, it ordered long-range air-to-surface missiles from the USA in 2015 and selected the US Patriot SAM system for a future order. Also linked to the perceived growing threat from Russia, the Baltic states—Estonia, Latvia and Lithuania—started arms import programmes in 2011–15, albeit on a much smaller scale than Poland. All three are investing in armoured vehicles and short-range air defence systems.

*Azerbaijan.* Azerbaijan has been in conflict with neighbouring Armenia over the region of Nagorno-Karabakh for many years. In 2011–15 the volume of Azerbaijan's imports of major weapons dwarfed that of Armenia: in 2011–15 Azerbaijan's import volume was over 10 000 per cent higher than Armenia's, compared with 2006–10 when it was almost 600 per cent higher. Neither Azerbaijan nor Armenia produce any major weapons. However, in 2015 Azerbaijan continued with plans to establish a national production capacity based on limited assembly or licensed production of Israeli, South African and Turkish weapons, including patrol craft, armoured vehicles and artillery rockets.

<sup>29</sup> For further details see Anthony, I. et al., 'The Ukraine conflict and its implications', *SIPRI Yearbook 2015*, pp. 90–91.

**Box 15.1. Methodology**

The SIPRI Arms Transfers Database, <<http://www.sipri.org/databases/armstransfers/>>, contains information on deliveries of major weapons to states, international organizations and non-state armed groups from 1950 to 2015. A new set of data is published annually, replacing data in several editions of the *SIPRI Yearbook* or other SIPRI publications.

SIPRI's definition of 'transfer' includes sales, manufacturing licences, aid, gifts and most loans or leases. The item must have a military purpose: the recipient must be the armed forces or paramilitary forces or intelligence agency of another country, a non-state armed group, or an international organization.

The SIPRI Arms Transfers Database only includes 'major weapons', which are defined as (a) most aircraft (including unmanned), (b) most armoured vehicles, (c) artillery over 100 millimetres in calibre, (d) sensors (radars, sonars and many passive electronic sensors), (e) air defence missile systems and larger air defence guns, (f) guided missiles, torpedoes, bombs and shells, (g) most ships, (h) engines for combat-capable aircraft and other larger aircraft, for combat ships and larger support ships, and for armoured vehicles, (i) most gun or missile-armed turrets for armoured vehicles, (j) reconnaissance satellites, (k) air refuelling systems, and (l) naval guns, missile launch systems and anti-submarine weapons.

In cases where a sensor, engine, turret, refuelling system or naval gun or other system (items d, h, i, k and l) is fitted on a platform (vehicle, aircraft or ship), the transfer only appears as a separate entry in the database if the item comes from a different supplier from that of the platform.

SIPRI has developed a unique system to measure the volume of transfers of major weapons using a common unit, the trend-indicator value (TIV). The TIV is intended to represent the transfer of military resources. Each weapon has its own specific TIV. Second-hand and second-hand but significantly modernized weapons are given a reduced TIV. SIPRI calculates the volume of transfers by multiplying the weapon-specific TIV with the number of weapons delivered in a given year. SIPRI TIV figures do not represent sales prices for arms transfers.