

# **SIPRI YEARBOOK 2013**

Armaments, Disarmament and International Security

## Developments in arms transfers, 2012

PAUL HOLTOM, MARK BROMLEY, PIETER D. WEZEMAN AND  
SIEMON T. WEZEMAN



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## I. Developments in arms transfers, 2012<sup>1</sup>

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The volume of international arms transfers in the period 2008–12 was 17 per cent higher than in 2003–2007 (see figure 5.1).<sup>2</sup> The composition of the five largest suppliers of arms changed between these two periods, with China replacing the United Kingdom as the fifth largest supplier. This represents the first change in the composition of the top five suppliers since the end of the cold war. India was the largest recipient of arms during 2008–12, with China in second place.

### Major supplier developments

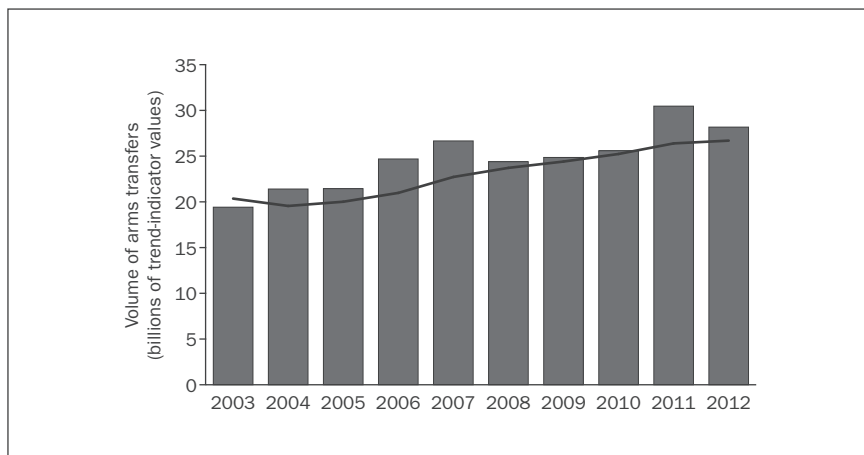
The five largest suppliers in 2008–12—the United States, Russia, Germany, France and China—accounted for 75 per cent of the volume of exports of major conventional weapons, down from 78 per cent in 2003–2007 (see tables 5.1 and 5.2).

#### *The United States*

The USA was the largest exporter of major conventional weapons in the period 2008–12, accounting for 30 per cent of all transfers. The volume of US arms exports increased by almost 16 per cent between 2003–2007 and 2008–12. Existing orders combined with those agreed or planned in 2012 indicate that the USA will maintain its position as the largest exporter in the coming years. However, the preeminent position of the USA will be strongly influenced by orders and delivery schedules for the troubled F-35 combat aircraft.

<sup>1</sup> Except where indicated, the information on arms deliveries and orders referred to here is taken from the SIPRI Arms Transfers Database, <<http://www.sipri.org/databases/armstransfers>>. The database contains data on transfers of major conventional weapons between 1950 and 2012. The data for 2008–12 and for 2012, on which most of this section is based, is given in the ‘Register of major conventional weapon transfers, 2008–12’ and the ‘Register of major conventional weapon transfers, 2012’, which are available at <[http://www.sipri.org/databases/armstransfers/recent\\_trends](http://www.sipri.org/databases/armstransfers/recent_trends)>. The data on which this section is based is valid as of 18 Feb. 2013. The figures here may differ from those in previous editions of the SIPRI Yearbook because the SIPRI Arms Transfers Database is updated annually.

<sup>2</sup> SIPRI data on arms transfers refers to actual deliveries of major conventional weapons, including sales, licences, 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 international transfers of major conventional weapons. For a description of the TIV and its calculation, see ‘Sources and methods’ below.



**Figure 5.1.** The trend in international transfers of major conventional weapons, 2003–12

*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 ‘Sources and methods’ below for an explanation of the SIPRI trend-indicator value.

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

Asia and Oceania received 45 per cent of US deliveries of major conventional weapons in 2008–12, followed by the Middle East and Europe (see table 5.1). Deliveries to Asia and Oceania increased by 51 per cent between 2003–2007 and 2008–12. Moreover, of the five largest recipients of US arms in the period 2008–12—South Korea (12 per cent of US deliveries), Australia (10 per cent), the United Arab Emirates (UAE, 7 per cent), Pakistan (5 per cent) and Singapore (6 per cent)—four were in Asia and Oceania.

While the Middle East was the main recipient region of US major conventional weapons in 2003–2007, deliveries to the region were 14 per cent lower in 2008–12. The perceived threat of Iran to the Arab states of the Gulf, in particular the threat of Iranian ballistic missiles, is driving new acquisitions of air defence and missile defence systems. In 2012 Kuwait requested a possible sale of 4 Patriot surface-to-air missile (SAM) systems with 60 PAC-3 missiles for anti-ballistic missile (ABM) use.<sup>3</sup> The UAE requested 48 additional missiles for 2 THAAD ABM systems ordered in 2011, and Qatar requested 2 THAAD systems with 150 missiles and 11 Patriot SAM systems with approximately 770 PAC-3 missiles.<sup>4</sup>

<sup>3</sup> US Defense Security Cooperation Agency, ‘Kuwait—PATRIOT advanced capability (PAC-3) missiles’, News release, Transmittal no. 12-29, 20 July 2012, <[http://www.dscamilitary.com/PressReleases/36-b/2012/Kuwait\\_12-29.pdf](http://www.dscamilitary.com/PressReleases/36-b/2012/Kuwait_12-29.pdf)>.

<sup>4</sup> US Defense Security Cooperation Agency, ‘United Arab Emirates—terminal high altitude area defense system missiles (THAAD)’, News release, Transmittal no. 12-40, 5 Nov. 2012, <[http://www.dscamilitary.com/PressReleases/36-b/2012/UAE\\_12-40.pdf](http://www.dscamilitary.com/PressReleases/36-b/2012/UAE_12-40.pdf)>; US Defense Security Cooperation Agency,

Afghanistan and Iraq have become significant recipients of US major weapons in connection with the drawdown and withdrawal of US combat forces and the handover of operations to local forces. They each received 4 per cent of US exports during 2008–12. Exports to Afghanistan primarily consisted of over 12 000 second-hand and new light armoured vehicles. While air power is deemed essential for Afghan counterinsurgency operations, the USA has only delivered or funded the delivery from third countries of a limited number of light aircraft and helicopters.<sup>5</sup> This could potentially leave US forces with a significant role following the withdrawal of most ground forces by the end of 2014. Iraq received large numbers of second-hand and newly produced tanks, armoured vehicles and artillery, with deliveries ongoing. Deliveries of at least 36 F-16 combat aircraft are scheduled for the period 2014–18.

Aircraft accounted for 62 per cent of the volume of US exports in 2008–12, and combat aircraft made up the bulk of aircraft deliveries. Sales of the F-35 (Joint Strike Fighter, JSF) combat aircraft will probably continue that trend. The first 2 F-35s were delivered to an export customer (the UK) in 2012 as part of the final testing phase. However, the programme encountered serious problems in 2012 due to cost increases and delays, and several potential customers cancelled or began a review of their F-35 procurement plans: Canada cancelled its order of 65 F-35s due to steeply increased costs; Italy announced a decrease in its planned purchase of F-35s from 131 to 90 aircraft; Turkey announced a review of an order for up to 100 F-35s due to increasing costs; and the Dutch Parliament urged its government to cancel a plan to acquire up to 85 F-35s for cost reasons.<sup>6</sup> At the same time, older designs continued to be in demand; roughly 220 F-16 and F-15 aircraft were on order, with potential for more orders to follow.

Following reductions in the US military budget, the US Government and arms industry are looking more towards export markets to offset decreasing domestic demand.<sup>7</sup> However, processes to facilitate US arms

'Qatar—terminal high altitude area defense system missiles (THAAD)', News release, Transmittal no. 12-49, 5 Nov. 2012, <[http://www.dsca.mil/PressReleases/36-b/2012/Qatar\\_12-49.pdf](http://www.dsca.mil/PressReleases/36-b/2012/Qatar_12-49.pdf)>; and US Defense Security Cooperation Agency, 'Qatar—PATRIOT missile system and related support and equipment', News release, Transmittal no. 12-58, 7 Nov. 2012, <[http://www.dsca.mil/PressReleases/36-b/2012/Qatar\\_12-58.pdf](http://www.dsca.mil/PressReleases/36-b/2012/Qatar_12-58.pdf)>.

<sup>5</sup> US Department of Defense (DOD), *Report on Progress toward Security and Stability in Afghanistan: United States Plan for Sustaining Afghanistan National Security Forces* (DOD: Washington, DC, Apr. 2012), pp. 26–28; and 'Afghan Air Force may not be ready to fly solo', Wall Street Journal Live, 24 July 2012, <<http://live.wsj.com/video/afghan-air-force-may-not-be-ready-to-fly-solo/E8B84ED0-1AC1-4C00-88F6-AA3231067927.html>>.

<sup>6</sup> Hoffman, M., 'Canada halts planned F-35 purchase', *DOD Buzz*, 13 Dec. 2012; Peruzzi, L., 'Italian force cuts hit JSF numbers', *Jane's Defence Weekly*, 22 Feb. 2012, p. 14; 'Annual defence report 2012', *Jane's Defence Weekly*, 12 Dec. 2012, p. 26; and Bekdil, B. E., 'Turkey says cost, problems prompted JSF purchase delay', *Defense News*, 7 Feb. 2013.

<sup>7</sup> Felstead, P., 'Raytheon continues Mid-East push to offset US downturn', *Jane's Defence Weekly*, 7 Nov. 2012, p. 23.

**Table 5.1.** The 10 largest suppliers of major conventional weapons and their destinations, by region, 2008–12

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 xxi.

Recipient region	Supplier									
	USA	Russia	Germany	France	China	UK	Spain	Italy	Ukraine	Israel
<i>Africa</i>	3	17	4	13	13	4	2	6	31	4
North Africa	2	14	-	12	4	2	-	4	2	-
Sub-Saharan Africa	0	3	4	1	10	2	2	2	29	4
<i>Americas</i>	6	6	17	8	6	28	25	20	1	22
South America	3	6	11	4	6	5	14	6	1	18
<i>Asia and Oceania</i>	45	65	31	54	74	27	20	32	48	36
Central Asia	0	2	0	-	-	-	-	1	1	1
East Asia	19	15	12	17	-	7	-	1	25	1
Oceania	10	-	1	5	-	2	12	0	-	1
South Asia	10	36	2	6	63	18	-	21	12	23
South East Asia	7	12	15	27	11	0	8	9	10	9
<i>Europe</i>	18	4	35	14	-	10	41	25	9	18
European Union	17	0	34	11	-	8	10	23	-	17
<i>Middle East</i>	27	9	14	11	7	31	11	17	10	19
<i>Other</i>	1	-	-	-	-	-	-	-	-	1

- = nil; 0 < 0.5.

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

exports have been under way for some time. First, US export control regulations have been under review since 2010 with the aim of simplifying the process of export licensing to all countries. Second, defence trade cooperation treaties with Australia and the UK—intended to remove administrative barriers for cooperative programmes—came into force in 2012.<sup>8</sup> At present there are no plans for similar treaties to be concluded with other countries.

Despite its efforts to increase its arms exports, the USA is more reluctant than other suppliers to include technology transfers in export deals. This issue has come to be regarded as one of the obstacles to securing large export orders with India.<sup>9</sup> Nevertheless, in 2012 India selected 22 AH-64E combat helicopters, 15 CH-47F heavy transport helicopters, and a US engine for both its indigenous Tejas combat aircraft and the modernization of 125 Jaguar combat aircraft. India also ordered 145 M-777 155-mm guns and 6 C-130J transport aircraft from the USA. In late 2012 India received the first of 12 P-8I anti-submarine warfare (ASW) aircraft on order—an advanced design so new that the USA has only just received the first few for its own forces. The fact that the US Department of Defense is planning to include technology protection features, such as ‘anti-tampering characteristics’, in the weapon design from the outset could make equipment developed for the USA export-ready without additional costs and time.<sup>10</sup>

### *Russia*

Russia accounted for 26 per cent of the volume of global arms exports in the period 2008–12. The volume of Russia’s major conventional weapons exports increased by 28 per cent between 2003–2007 and 2008–12. Asia and Oceania received 65 per cent of Russian exports, followed by Africa and the Middle East (see table 5.1). The largest individual recipients were India (35 per cent), China (14 per cent), Algeria (14 per cent), Viet Nam (6 per cent) and Venezuela (5 per cent).

During 2012 Russian President Vladimir Putin used meetings of the Russian Commission for Military Technology Cooperation (which discusses policies for Russian arms trade) with foreign states to consider the ways in which Russia should use arms exports as ‘an effective instrument for

<sup>8</sup> Bell, M., ‘US–UK defence trade treaty takes effect’, *Jane’s Defence Weekly*, 18 Apr. 2012, p. 5; and Grevatt, J., ‘Canberra finally ratifies trade treaty with US’, *Jane’s Defence Weekly*, 7 Nov. 2012, p. 5. For details of how the treaty affects US export licensing procedures see US Department of State, Directorate of Defense Trade Controls, ‘Frequently asked questions (FAQs): defense trade cooperation treaties & resources’, <<http://www.pmdtc.state.gov/faqs/treaties.html#1>>.

<sup>9</sup> Pandit, R., ‘Israel pips US in anti-tank guided missile supply to India’, *Times of India*, 29 Nov. 2012.

<sup>10</sup> Malenic, M., ‘US targets exportability as part of acquisition overhaul’, *Jane’s Defence Weekly*, 21 Nov. 2012, p. 10.

**Table 5.2.** The 50 largest suppliers of major conventional weapons, 2008–12

The table lists the 50 largest exporters (both states and non-state actors) of major conventional weapons in 2008–12. Ranking is according to total volume of exports in 2008–12. Figures may not add up because of the conventions of rounding.

Rank		Supplier	Volume of exports (TIV, millions)		Share, 2008–12 (%)	Change since 2003–2007 (%)
2008– 12	2003– 2007 <sup>a</sup>		2012	2008–12		
1	1	United States	8 760	40 495	30	16
2	2	Russia	8 003	35 184	26	28
3	3	Germany	1 193	9 919	7	-8
4	4	France	1 139	8 042	6	-18
5	8	China	1 783	6 462	5	162
6	5	United Kingdom	863	4 997	4	1
7	12	Spain	720	4 036	3	136
8	7	Italy	847	3 159	2	20
9	10	Ukraine	1 344	3 087	2	49
10	9	Israel	533	2 694	2	17
11	6	Netherlands	760	2 673	2	-24
12	11	Sweden	496	2 600	2	25
13	14	Switzerland	210	1 432	1	14
14	13	Canada	276	1 240	1	-7
15	24	Norway	169	746	1	211
16	16	South Korea	183	733	1	50
17	17	South Africa	145	692	1	49
18	18	Uzbekistan	-	627	0	64
19	19	Belgium	21	599	0	109
20	27	Belarus	-	488	0	165
21	31	Brazil	32	383	0	167
22	34	Australia	75	363	0	255
23	15	Poland	140	324	0	-45
24	26	Turkey	53	236	0	21
25	21	Finland	62	220	0	-16
26	33	Iran	0	217	0	109
27	39	Jordan	12	163	0	117
28	..	Portugal	0	145	0	..
29	41	Singapore	76	143	0	107
30	29	Austria	9	117	0	-32
31	42	Romania	108	112	0	67
32	38	Ireland	25	104	0	39
33	..	Chile	-	100	0	..
34	22	Denmark	23	83	0	-66
35	55	Serbia	1	81	0	913
36	25	Czech Republic	8	79	0	-63
37	20	Libya	-	78	0	-71
38	62	New Zealand	75	75	0	7 400
39	43	Moldova	-	60	0	20
40	49	Saudi Arabia	-	59	0	228
41	35	India	2	46	0	-55
42	56	Venezuela	-	43	0	438
43	47	United Arab Emirates	-	43	0	26



Rank		Supplier	Volume of exports (TIV, millions)		Share, 2008–12 (%)	Change since 2003–2007 (%)
2008– 12	2003– 2007 <sup>a</sup>		2012	2008–12		
44	60	Syria	–	40	0	1 233
45	23	North Korea	–	40	0	–83
46	48	Bulgaria	3	29	0	–80
47	51	Brunei Darussalam	–	24	0	..
48	30	Montenegro	–	18	0	–90
49	49	Kyrgyzstan	–	14	0	–89
50	52	Bosnia and Herzegovina	–	14	0	..
..	..	Others (9 suppliers)	6	22	0	..
..	..	Unknown supplier(s)	16	87	0	..
<b>Total</b>			<b>28 172</b>	<b>133 468</b>	<b>100</b>	<b>17</b>

0 = <0.5.

Note: The SIPRI data on arms transfers relates to actual deliveries of major conventional weapons. To permit comparison between the data on such 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 international arms transfers and not of the financial values of such transfers. Thus, it is not comparable to economic statistics such as gross domestic product or export/import figures. The method for calculating the trend-indicator value is described in ‘Sources and methods’ below.

<sup>a</sup> The rank order for suppliers in 2003–2007 differs from that published in *SIPRI Yearbook 2008* because of subsequent revision of figures for these years.

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

advancing national interests, both political and economic’.<sup>11</sup> He noted that Russia enjoys closer cooperation with partners on joint research and development and production, and is seeking more opportunities for modernizing and repairing Soviet-supplied arms.<sup>12</sup> However, to remain a major exporter on the world market, Putin stressed that there should be ‘a clear and effective coordination and decision-making mechanism [for arms exports]’.<sup>13</sup>

India remains Russia’s most important recipient. In 2012 and early 2013 Russian Government officials and arms companies stressed the importance of developing joint projects with India.<sup>14</sup> Deliveries of naval vessels remain a problem, as the scheduled delivery of the Gorshkov aircraft carrier has

<sup>11</sup> President of Russia, ‘Meeting of the Commission for Military Technology Cooperation with foreign states’, 2 July 2012, <<http://eng.kremlin.ru/news/4121>>.

<sup>12</sup> President of Russia, ‘Meeting of the Commission for Military Technology Cooperation with foreign states’, 17 Dec. 2012, <<http://eng.news.kremlin.ru/news/4760>>.

<sup>13</sup> President of Russia (note 11).

<sup>14</sup> President of Russia, ‘Meeting of the Commission for Military Technology Cooperation with foreign states’, 17 Oct. 2012, <<http://eng.kremlin.ru/news/4531>>; and ‘Russia remains key arms supplier for India—Rosoboronexport’, RIA Novosti, 5 Feb. 2013, <[http://en.rian.ru/military\\_news/20130205/179229598.html](http://en.rian.ru/military_news/20130205/179229598.html)>.

been delayed yet again, from December 2012 to November 2013.<sup>15</sup> Delivery has also slipped on 3 Talwar frigates, although two were delivered in 2012. Despite continuing delays and competition from Israel, the USA and major European suppliers, India continues to place significant orders with Russia, ensuring that it remains India's largest supplier. In December 2012 India confirmed an order for 71 Mi-17-V5 helicopters (worth \$1.3 billion) and 42 Su-30MKI combat aircraft kits (worth \$1.6 billion) to be assembled in India with delivery in 2017–18, which brought the value for Russian agreements concluded with India in 2012 to over \$3 billion.<sup>16</sup>

Russia's arms transfer relationship with China seems more positive from the Russian perspective for the first time in many years. Russia appears to have acquiesced to the Chinese proposal for a deal to acquire 24 Su-35 combat aircraft, although a contract is not expected to be signed before 2014.<sup>17</sup> China is reportedly interested in cooperation to develop a submarine based on the Russian Project-1650 design.<sup>18</sup>

Russia has contributed to the arms build-up in South East Asia.<sup>19</sup> South East Asia accounted for 12 per cent of Russian exports during 2008–12, with Russia delivering an estimated 37 Su-30MK and Su-27S combat aircraft, along with a variety of missiles, to Indonesia, Malaysia and Viet Nam. In 2012 Indonesia ordered 6 Su-30MK2s and 37 BMP-3F armoured vehicles. Russia will supply the Vietnamese Navy with two more Gepard-3 frigates that were ordered in 2012, and the first of 6 Project-636 submarines is due to be delivered in 2013, with delivery of all 6 to be completed by 2016. Deliveries of Su-30MK2s continued in 2012 and negotiations for more Su-30MK2s and also S-300PMU-1 SAM systems are ongoing.<sup>20</sup>

Anatoly Isaikin, the general director of the Russian state arms trading corporation, Rosoboronexport, drew attention in mid-2012 to the fact that Russia only recently began to use long-term export credits to support arms exports.<sup>21</sup> According to Isaikin, in the previous three years decisions had been taken to grant long-term export credits for arms worth approximately \$7 billion. The recipient of the largest export credit arrangements in recent years is Venezuela, which was granted a \$4 billion credit line for arms

<sup>15</sup> [Deputy director of the FSMTC of Russia Vyacheslav Dzirkali: 'Military-technical cooperation with India, China and Viet Nam has very good prospects for further development'], Interfax, 24 Dec. 2012, <<http://www.militarynews.ru/excl.asp?ex=151>> (in Russian).

<sup>16</sup> 'Russia remains key arms supplier for India—Rosoboronexport' (note 14).

<sup>17</sup> Nikolskiy, A., [Big batch of originals], *Vedomosti*, 21 Nov. 2012 (in Russian).

<sup>18</sup> Kiseleva, E., [Amur on the Chinese coast], *Kommersant*, 20 Dec. 2012 (in Russian).

<sup>19</sup> Wezeman, S. T., 'The maritime dimension of arms transfers to South East Asia, 2007–11', *SIPRI Yearbook 2012*. See also chapter 9, section IV, in this volume.

<sup>20</sup> [Deputy director of the FSMTC of Russia Vyacheslav Dzirkali: 'Military-technical cooperation with India, China and Viet Nam has very good prospects for further development'] (note 15).

<sup>21</sup> Nikolskiy, A., [We must not purchase weapons without understanding for what purpose], *Vedomosti Online*, 9 June 2012, Translation from Russian, Open Source Center.

purchases.<sup>22</sup> In late December 2012, the Russian state corporation Vnesheconombank (Bank for Foreign Economic Activity) agreed to provide almost \$400 million in credit to finance Indonesia's acquisitions (see above).<sup>23</sup> At the beginning of 2013 President Putin confirmed that Russia would grant \$1 billion worth of credit to Bangladesh for arms purchases, which could include Yak-130 trainer/combat aircraft, armoured vehicles and Mi-17 helicopters.<sup>24</sup>

In addition to increasing the use of export credits, in 2012 Russia pledged to provide a significant quantity of military aid to Kyrgyzstan and Tajikistan. Kyrgyzstan is due to receive \$1.1 billion worth of military aid for small arms and light weapons, armoured vehicles and helicopters and training.<sup>25</sup> For Tajikistan, Russia is to provide \$200 million for upgrading air defence systems. At the same time, Tajikistan agreed to extend Russia's lease for the 201st military base for 30 years without new payments.

### European suppliers

The three largest exporters in Europe (excluding Russia) were Germany, France and the UK. Debates have occurred, to a greater or lesser degree, in all three countries about the extent to which recent arms exports to states in the Middle East are in line with European Union (EU) and national guidelines.<sup>26</sup> Despite these concerns, the Middle East remains one of the most attractive markets for each states' arms exports.

#### Germany

Between 2003–2007 and 2008–12 Germany's major conventional weapons exports decreased by 8 per cent, although it retained its position as the third largest exporter. Other states in Europe received 35 per cent of German exports in 2008–12, followed by states in Asia and Oceania and the Americas (see table 5.1). The fall in German exports coincides with the completion of deliveries under several significant deals for naval and land

<sup>22</sup> 'Russia to lend Venezuela \$4 bln to pay for arms deals', RIA Novosti, 7 Oct. 2011, <<http://en.rian.ru/world/20111007/167461572.html>>.

<sup>23</sup> Bonar, J., 'Russia to finance Indonesian purchase of six Flanker fighter aircraft', BSR Russia, 21 Dec. 2012, <<http://www.bsr-russia.com/en/defence/item/2592-russia-to-finance-indonesian-purchase-of-six-flanker-fighter-aircraft.html>>; and [Military leadership of Indonesia pleased with MTC development with Russia], RIA Novosti, 9 Nov. 2012 (in Russian).

<sup>24</sup> President of Russia, 'Press statements following talks with Prime Minister of Bangladesh Sheikh Hasina', 15 Jan. 2013, <<http://eng.kremlin.ru/transcripts/4868>>; and Kravchenko, S. and Devnath, A., 'Russia, Bangladesh to discuss \$1 billion loan to fund arms sales', Bloomberg, 14 Jan. 2013, <<http://www.bloomberg.com/news/2013-01-14/russia-bangladesh-to-discuss-1-billion-loan-to-fund-arms-sales.html>>.

<sup>25</sup> Karabekov, K. et al., [Kyrgyzstan and Tajikistan to be armed with Russian money], *Kommersant*, 6 Nov. 2012 (in Russian).

<sup>26</sup> Bromley, M. and Wezeman, P. D., 'Policies on exports of arms to states affected by the Arab Spring', *SIPRI Yearbook 2012*.

systems in the mid- to late 2000s. German companies are pursuing deals that may serve to reverse this trend, particularly with states in the Middle East. These include the possible sale of 600–800 Leopard-2A7+ tanks and several hundred Boxer armoured vehicles to Saudi Arabia and the possible sale of up to 200 Leopard-2A7+ tanks to Qatar.<sup>27</sup>

During 2012 the prospective sales to Saudi Arabia and Qatar—together with the confirmed sales to Algeria of around 1200 Tpz-1 armoured vehicles and 2 MEKO-A200 frigates—were at the centre of a long-running political debate about the level of restrictiveness of German arms export controls.<sup>28</sup> During 2012 several media reports indicated that German Chancellor Angela Merkel was seeking to use arms exports as a means of strengthening and supporting allied states in crisis-affected regions.<sup>29</sup> Merkel's statements—combined with the deals signed or under discussion with states in the Middle East and North Africa—led to calls from opposition parties and parliamentarians from the governing Christian Democratic and Free Democratic parties for greater transparency in arms export policies and improved parliamentary oversight over how these policies are formulated and implemented.<sup>30</sup>

### France

France retained its position as the fourth largest exporter in 2008–12 despite its major conventional weapons exports decreasing by 18 per cent since 2003–2007. States in Asia and Oceania received 54 per cent of French exports in 2008–12, followed by other states in Europe and Africa (see table 5.1). Like Germany, the fall in French exports coincides with the completion of deliveries under several major deals for naval, air and land systems in the mid- to late 2000s. The fall in deliveries is likely to be temporary, with several exports on order but undelivered at the close of 2012. In January 2012 India had selected the French Rafale as the winner of its \$10.4 billion purchase of 126 combat aircraft, the first sale to an export

<sup>27</sup> Von Hammerstein, K. et al., 'German weapons for the world: how the Merkel Doctrine is changing Berlin policy', Spiegel Online, 3 Dec. 2012, <<http://www.spiegel.de/international/germany/german-weapons-exports-on-the-rise-as-merkel-doctrine-takes-hold-a-870596.html>>.

<sup>28</sup> Holtom, P. et al., 'Developments in arms transfers in 2011', *SIPRI Yearbook 2012*, pp. 267–68.

<sup>29</sup> 'Berlin wants to arm Gulf states: government is planning relaxation of the German arms export rules—joint NATO policy sought', *Financial Times Deutschland*, 30 July 2012, Translation from German, Open Source Center; and Demmer, U., Neukirch, R. and Holger, S., 'Arming the world for peace, Merkel's risky weapons exports', Spiegel Online, 30 July 2012, <<http://www.spiegel.de/international/germany/merkel-s-risky-weapons-sales-signal-change-in-german-foreign-policy-a-847137.html>>.

<sup>30</sup> German Parliament (Bundestag), Social Democratic Party Group, 'Frühzeitige Veröffentlichung der Rüstungsexportberichte sicherstellen' [Ensuring timely publication of arms export reports], Motion, 28 Mar. 2012, Drucksache 17/179188; German Parliament (Bundestag), Green Party Group, 'Rüstungsexporte kontrolliere' [Controlling arms exports], Motion, 25 Apr. 2012, Drucksache 17/9412; German Parliament (Bundestag), Minutes of the plenary debate, 31 Jan. 2013, Plenary Protocol 17/219, item 4; and 'Abgeordnete fordern: Bundestag soll Rüstungsexporte stoppen können' [Parliamentarians demand: Bundestag should be able to stop arms exports], *Der Tagesspiegel*, 4 Jan. 2013.

customer. However, the process of reaching final agreement on the deal has been delayed, and no contract had been signed by the end of 2012.

Transfers to the Middle East accounted for 11 per cent of French exports during 2008–12, and France has a number of major conventional weapons on order with states in the region. These include orders by Saudi Arabia for 164 Aravis armoured vehicles, 1000 BONUS-2 guided shells and 32 CAESAR 155-mm self-propelled guns. The issue of arms transfers to the Middle East is less politically controversial in France than in Germany, and there are indications that national decision making on approving and denying transfers to the region differs in certain key respects between the two countries. In particular, there are indications that France is willing to grant approval for export licences that Germany would deny. For example, it was reported in 2012 that Germany had blocked the export of chassis and engines for the Aravis armoured vehicles that France sold to Saudi Arabia.<sup>31</sup>

### *United Kingdom*

Between 2003–2007 and 2008–12 British major conventional weapons exports increased by 1 per cent. However, between these periods the UK fell from being the fifth largest supplier to the sixth largest. States in the Middle East received 31 per cent of British exports in 2008–12, followed by states in the Americas and Asia and Oceania (see table 5.1). The period 2008–12 is the first five-year period since 1950 that the UK has not been among the top five suppliers. There are indications that the volume of British exports may increase in the near future. In particular, the volume of major conventional weapons on order from the UK but undelivered at the close of 2012 was the highest since 1994.

Saudi Arabia was the UK's largest recipient, accounting for 30 per cent of deliveries. British policies on arms export to the Middle East have been sharply criticized in recent years, particularly in the reports of the Arms Export Controls Committees of the House of Commons (the lower house of the British Parliament).<sup>32</sup> Nonetheless, in November 2012 the British Prime Minister, David Cameron, visited Oman, Saudi Arabia and the UAE in an effort to boost arms sales to states in the Gulf region.<sup>33</sup> In May 2012 Saudi Arabia ordered 22 Hawk-100 trainer/combat aircraft as part of a larger

<sup>31</sup> Ruello, A. and Lienhardt, C., 'Berlin bloque deux gros contrats français en Arabie Saoudite' [Berlin blocks two large French contracts in Saudi Arabia], *Les Echos*, 21 Dec. 2012.

<sup>32</sup> See British House of Commons, Business, Innovation and Skills, Defence, Foreign Affairs and International Development Committees, *Scrutiny of Arms Exports (2012): UK Strategic Export Controls Annual Report 2010, Quarterly Reports for July to December 2010 and January to September 2011, the Government's Review of arms exports to the Middle East and North Africa, and wider arms control issues*, First Joint Report of Session 2012–13, vol. 1 (Stationery Office: London, July 2012).

<sup>33</sup> Black, I., 'David Cameron: UK arms sales to Gulf countries "legitimate"', *The Guardian*, 6 Nov. 2012.

£1.6 billion (\$2.2 billion) deal.<sup>34</sup> In December 2012 Oman agreed a £2.5 billion (\$4 billion) deal for 12 Typhoon combat aircraft and 8 Hawk-100 trainer/combat aircraft.

### **Asian suppliers**

Of the 20 largest arms exporting countries for 2008–12, 15 were located in North America and Europe (including Russia), 3 in Asia, 1 in the Middle East and 1 in Africa. However, developments in several Asian countries illustrate how countries can grow into larger arms suppliers, changing the ranking and the variety of arms exporting states.

#### *China*

The volume of Chinese exports of major conventional weapons rose by 162 per cent between 2003–2007 and 2008–12, and China's share of the volume of global arms exports increased from 2 to 5 per cent. As a result, for the first time since 1986–90, China ranked as the fifth largest supplier in 2008–12. Asia and Oceania received 74 per cent of the volume of Chinese exports and Africa received 13 per cent in 2008–12 (see table 5.1).

Pakistan accounted for 55 per cent of the volume of Chinese exports, receiving, among other items, an estimated 61 JF-17 combat aircraft. Pakistan is likely to remain China's largest recipient of arms in the coming years due to large outstanding and planned orders for JF-17 combat aircraft, submarines and F-22P frigates. Myanmar was the second largest importer during 2008–12, accounting for 8 per cent of exports. The third largest recipient was Bangladesh, accounting for 7 per cent of exports.

In recent years a steady stream of new Chinese major conventional weapons has been revealed, such as a prototype of the J-31 combat aircraft first presented in 2012 and offered for export.<sup>35</sup> However, China's deliveries during 2008–12 still involved many older or low-end technologies for low-income countries. For example, China has not yet exported its most capable combat aircraft (J-10 and J-11) but continued to deliver F-7s (the least advanced of its newly produced combat aircraft available globally) to Bangladesh, Namibia, Nigeria, Sri Lanka and Tanzania, and JF-17s to Pakistan. Like many other arms-producing countries, China uses imported components and technology for many of the weapons it produces for its own use and for export. For example, the JF-17 and J-10 combat aircraft have engines supplied by Russia.

<sup>34</sup> The deal also includes 55 PC-21 trainer aircraft from Switzerland and 25 primary training aircraft.

<sup>35</sup> Perett, B. et al., 'Avic promotes J-31 as an export fighter', *Aviation Week & Space Technology*, 19 Nov. 2012.

A number of recent deals indicate that China can compete with more established suppliers in securing orders from major recipients. In 2012 it emerged that 54 Type 90-2 tanks had been supplied in 2010 to Morocco, its first major arms deal with China. Algeria reportedly ordered 3 F-22A frigates in 2012. Deliveries of 8 Y-8 transport aircraft to Venezuela started in 2012, and it was reported in 2012 that Venezuela planned to order armoured vehicles from China for \$500 million.<sup>36</sup> An important limitation on Chinese exports is that, for political reasons, several of the largest arms importers—including India, Japan, South Korea, major European countries and the USA—do not consider China a suitable supplier.

### *South Korea*

Based on technology imports and its own indigenous technological capacity, South Korea has built up a significant and advanced arms industry.<sup>37</sup> However, it ranked as only the 16th largest supplier, accounting for 0.5 per cent of the volume of global arms transfers in the period 2008–12. Turkey accounted for 59 per cent and Indonesia for 30 per cent of South Korean exports. According to official figures, South Korean arms export agreements grew from \$144 million in 2002 to \$2.4 billion in 2011, with a marginal decrease to \$2.35 billion in 2012.<sup>38</sup>

South Korea has ambitions to increase its arms exports and has designated the arms industry as one of the country's new growth engines.<sup>39</sup> In early 2012 the head of the South Korean Defense Acquisition Program Administration (DAPA) claimed that South Korean arms exports could be boosted to \$10 billion.<sup>40</sup> Less ambitious and more realistic was the goal stated in 2011 by the South Korean Government to increase arms exports to \$4 billion by 2020.<sup>41</sup> South Korea also intends to become a leading country in cooperative arms development programmes. For example, in 2010 it took the lead in a programme to develop a new combat aircraft, the KF-X, with Indonesia.<sup>42</sup>

Several export developments in 2011 and 2012 show that South Korea is using its technical potential to become an exporter of a broad range of arms, challenging established arms suppliers. The first export orders for South Korean trainer/combat aircraft and submarines were secured when Indonesia ordered 16 T-50 trainer/combat aircraft in 2011 and 3 Type-209

<sup>36</sup> 'Chavez: Venezuela to buy tanks from China', Associated Press, 3 July 2012.

<sup>37</sup> Jackson, S. T., 'Arms production', *SIPRI Yearbook 2011*, pp. 240–44.

<sup>38</sup> [Recent trends in defence industry exports and future challenges], Korea Institute for Industrial Economics and Trade (KIET), no. 544, 19 Nov. 2012 (in Korean), p. 2; and Grevatt, J., 'Seoul reports USD2.35bn military exports for 2012', *Jane's Defence Weekly*, 6 Feb. 2013, p. 25.

<sup>39</sup> [Recent trends in defence industry exports and future challenges] (note 38), p. 5.

<sup>40</sup> Tae-hoon, L., 'Korea eyes tenfold growth in defense exports', *Korea Times*, 16 Jan. 2012.

<sup>41</sup> Tae-hoon, L., 'Arms exports reach record \$1.19 bil.', *Korea Times*, 4 Jan. 2011.

<sup>42</sup> 'Indonesia agrees to join S. Korea's fighter development', Agence France-Presse, 15 July 2010.



submarines in 2012. Although Israel chose the Italian M-346 trainer/combat aircraft over the T-50 in 2012, the Philippines decided to procure 12 T-50s, and the aircraft remains a strong candidate in the competition to supply at least 350 advanced trainer aircraft to the USA.<sup>43</sup> South Korea signed significant contracts with South American countries in 2012: Colombia ordered 16 anti-ship missiles and Peru ordered 18 KP-SAM portable SAM systems (the first known South Korean exports of guided missiles), 2 large landing ships and 20 KT-1 trainer aircraft. Notably, for the first time, South Korean ships were procured for a European navy when the UK ordered 4 MARS oilers in 2012.

### *Japan and Singapore*

Developments in Japan and Singapore indicate that their arms exports could grow.

Japan has a highly developed and diversified arms industry but, due to its restrictive arms export policy, its exports of major arms have been very low.<sup>44</sup> However, in 2011 the Japanese Government took steps to relax its arms export policy to facilitate (a) development and production of military equipment together with other countries and (b) exports that it deems in support of peacebuilding or humanitarian objectives.<sup>45</sup> Tangible results of the shift in Japanese policy in 2012 included discussions about the export of Japanese submarine technology to Australia; marketing of maritime patrol aircraft, patrol vessels and electronic warfare equipment in India; and the first ever participation of Japanese arms producers in India's largest international defence exhibition.<sup>46</sup>

While Singapore ranked as only the 29th largest arms exporter in the period 2008–12, several recent deals suggest that its arms industry is increasingly competitive on the international arms market. In 2011 it finished delivery of 115 Bronco armoured vehicles to the UK. In 2012 it delivered an Endurance amphibious assault ship to Thailand and won a \$700 million contract for the supply of four patrol vessels to Oman.

<sup>43</sup> 'Time for T-X', *Air Forces Monthly*, no. 298 (Jan. 2013), pp. 60–64.

<sup>44</sup> On Japan's arms export policy see Japanese Ministry of Foreign Affairs, <<http://www.mofa.go.jp/policy/un/disarmament/policy/index.html>>.

<sup>45</sup> Defense Production Committee, KEIDANREN Aerospace and Defense Committee, American Chamber of Commerce in Japan, 'Joint statement on defense industry cooperation between Japan and the United States', 17 July 2012, <<http://www.keidanren.or.jp/en/policy/2012/059.html>>; and 'Govt decides to ease arms export ban', *Yomiuri Shimbun*, 28 Dec. 2011, <<http://www.yomiuri.co.jp/dy/national/T111227003855.htm>>.

<sup>46</sup> 'Japan tech deal could help power our subs', *The Australian*, 27 Sep. 2012; and 'Our focus is to first introduce the US-2 in the Indian Navy', SP's Navalforce.net, Apr.–May 2012, <<http://www.spsnavalforces.net/story.asp?mid=24&id=12>>.



## Major recipient developments

In the period 2008–12, Asia was the largest recipient region of major conventional weapons, accounting for 43 per cent of global imports. The next largest recipient region was the Middle East (17 per cent), followed by Europe (15 per cent), the Americas (11 per cent), Africa (9 per cent) and Oceania (4 per cent). Compared to 2003–2007, there was a notable increase for Asia (up from 38 per cent in 2003–2007) and for Africa (up from 5 per cent), and a clear decrease for Europe and the Middle East (both down from 22 per cent).

The five largest recipients of major conventional weapons—India, China, Pakistan, South Korea and Singapore—were all in Asia (see tables 5.3 and 5.4). The high levels of deliveries to South and South East Asia reported in *SIPRI Yearbook 2012* continued, as did China's dependence on Russia for certain key components and the simultaneous development of indigenous Chinese weapons.<sup>47</sup>

The increase in African imports was the result of deliveries to North Africa. Deliveries to sub-Saharan Africa were slightly higher in 2008–12 than in 2003–2007, but deliveries to North Africa increased by 350 per cent. Deliveries to Algeria increased by 277 per cent, and Algeria rose from being 22nd largest recipient to 6th place. Morocco rose from 69th place to 12th, with an increase of 1460 per cent in deliveries, most of which were in 2011–12. Both countries will continue to be major importers as they continue the modernization of their armed forces.

The decrease of 20 per cent in deliveries to European states between 2003–2007 and 2008–12 seems largely related to the financial crisis and the resulting budget constraints (see section II below). The smaller decrease of 7 per cent for the Middle East is expected to be temporary. Many of the countries in the Middle East have placed significant orders in recent years and additional orders are planned.

### *Importing military power projection capabilities*

Military power projection is the ability of a state to 'rapidly and effectively deploy and sustain forces in and from multiple dispersed locations to respond to crises, to contribute to deterrence and to enhance regional stability'.<sup>48</sup> A notable trend among the major importers in recent years has been the acquisition of long-range strike and support systems with ranges that make them capable of military power projection substantially beyond their national territories. Deliveries and orders of major weapons in 2012 under-

<sup>47</sup> Holtom et al. (note 28), pp. 269–71; and Wezeman (note 19).

<sup>48</sup> US Joint Chiefs of Staff, 'Power projection', US Department of Defense (DOD), *Dictionary of Military and Associated Terms* (DOD: Washington, DC, 15 Dec. 2012), p. 231.

**Table 5.3.** The 10 largest recipients of major conventional weapons and their suppliers, 2008–12

Figures are the 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 by any of the 10 largest recipients are identified.

Supplier	Recipient									
	India	China	Pakistan	S. Korea	Singapore	Algeria	Australia	USA	UAE	Saudi Arabia
Australia	-	-	-	-	1	-	..	3	-	-
Belgium	-	-	-	-	0	-	-	16	1	1
Canada	-	-	50	-	-	0	-	-	1	2
China	1	..	5	5	30	3	7	5	9	2
France	1	13	1	15	11	-	2	12	1	6
Germany	1	0	1	-	-	-	2	-	-	4
Ireland	-	-	-	-	-	-	-	-	-	-
Israel	4	-	-	1	5	-	1	1	-	-
Italy	2	-	2	0	3	0	-	6	11	1
Libya	-	-	1	-	-	-	-	-	1	-
Netherlands	0	-	-	1	-	-	-	1	-	1
New Zealand	-	-	-	-	-	-	-	1	-	-
Norway	-	-	-	-	-	-	0	10	-	-
Poland	-	-	-	-	-	-	-	3	-	-
Russia	79	69	2	-	-	93	-	0	14	-
South Africa	0	-	-	-	-	0	-	5	0	0
Spain	-	-	-	-	-	-	9	0	-	7
Sweden	-	-	5	1	4	-	0	0	2	0
Switzerland	-	4	2	-	2	-	-	8	3	1
Turkey	-	-	1	-	-	-	-	-	0	-
Ukraine	1	10	4	-	-	1	-	-	-	-
United Kingdom	6	3	0	-	-	2	2	22	-	36
United States	2	-	27	77	44	0	77	..	68	39
Uzbekistan	4	-	-	-	-	-	-	-	-	-
Other suppliers	-	-	0	-	0	-	-	0	0	0

- = nil; 0 < 0.5.

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

score this trend. Several importers have doctrines or ideas for out-of-area operations.<sup>49</sup>

Among the deliveries in 2012 that stand out in this regard is the delivery of an Akula nuclear-powered submarine from Russia to India. It is only the second time that a nuclear-powered submarine has been exported by Russia. The acquisition provides India with a sea-interdiction and land-attack weapon of nearly unlimited range. It will also be used for training crews for nuclear submarines currently being produced in India that are to be armed with ballistic missiles.<sup>50</sup>

China's commissioning of the former Soviet Kuznetsov class aircraft carrier *Varyag* was another exceptional event in 2012. A civilian Chinese company bought the ship in 1998 in an unfinished state from Ukraine, which had inherited the shipyard and the ship during the break-up of the Soviet Union. The ship was said to be for use as an entertainment centre, but on arrival in China, it was moved to a Chinese naval shipyard and completed as an aircraft carrier for the Chinese Navy. It remains uncertain to what extent Ukraine was aware of the real purpose of the acquisition, but there have been reports that Ukraine also sold blueprints of the carrier, which would have made it possible (or at least easier) for China to finish the ship. Once operational, the ship will be a limited military power projection tool, but it is probably more important for training crews for aircraft carriers being produced in China and developing doctrines for their use.<sup>51</sup>

Both India and China are also acquiring long-range transport and tanker aircraft. In alignment with India's stated ambition of being a regional power and its capability for long-range operations are its acquisition of 10 C-17 transport aircraft and plans for at least 6 more along with an order for 12 C-130J transport aircraft from the USA and its planned order for up to 9 A-330 tanker/transport aircraft from Spain.<sup>52</sup> In 2010 China ordered 10 second-hand Il-76 transport aircraft from Russia and Belarus after a planned order for 34 newly produced Il-76 and 4 Il-78 tanker aircraft from Russia fell through. The Il-76 can be seen as an interim solution, since China has also developed the Y-20 transport aircraft, reportedly with help from Ukraine. The aircraft was first flown in early 2013 and fitted with Russian engines. Such transport and tanker aircraft would be useful to support Chinese operations in the South China Sea.

The ongoing operations in Afghanistan and the interventions in Libya in 2011 and in Mali in early 2013 have shown the importance of transport and

<sup>49</sup> E.g. Holton, P. et al., 'International arms transfers', *SIPRI Yearbook 2011*, pp. 280–83.

<sup>50</sup> See chapter 6, section IV, in this volume.

<sup>51</sup> Friedman, N., 'A long wait', *Proceedings* (US Naval Institute), Oct. 2011, pp. 88–89.

<sup>52</sup> Holton et al. (note 49); and Bedi, R., Subramaniam, P. and Hardy, J., 'Critical mix', *Jane's Defence Weekly*, 23 Jan. 2013, p. 26.

**Table 5.4.** The 50 largest recipients of major conventional weapons, 2008–12

The table lists the 50 largest importers (both states and non-state actors) of major conventional weapons in 2008–12. Ranking is according to total volume of imports in 2008–12. Figures may not add up because of the conventions of rounding.

Rank		Recipient	Volume of imports (TIV, millions)		Share, 2008–12 (%)	Change since 2003–2007 (%)
2008– 12	2003– 2007 <sup>a</sup>		2012	2008–12		
1	2	India	4 764	15 609	12	59
2	1	China	1 689	7 483	6	-47
3	12	Pakistan	1 244	7 079	5	194
4	5	South Korea	1 078	6 527	5	8
5	21	Singapore	627	5 496	4	279
6	22	Algeria	650	5 247	4	277
7	8	Australia	889	5 207	4	62
8	9	USA	1 297	5 011	4	63
9	3	UAE	1 094	4 310	3	-40
10	17	Saudi Arabia	923	4 145	3	118
11	10	Turkey	1 269	3 866	3	45
12	69	Morocco	790	2 574	2	1 460
13	25	Venezuela	643	2 552	2	110
14	14	United Kingdom	598	2 530	2	18
15	4	Greece	35	2 520	2	-61
16	26	Malaysia	53	2 511	2	112
17	33	Iraq	455	2 359	2	183
18	27	Norway	163	2 120	2	91
19	79	Afghanistan	576	2 111	2	2 244
20	38	Viet Nam	364	2 077	2	194
21	7	Egypt	226	1 984	1	-43
22	13	Japan	239	1 972	1	-11
23	44	Portugal	35	1 666	1	211
24	11	Chile	56	1 592	1	-37
25	61	Syria	376	1 521	1	511
26	30	Germany	183	1 439	1	44
27	34	Brazil	410	1 425	1	78
28	58	Myanmar	619	1 387	1	425
29	20	Spain	256	1 371	1	-10
30	6	Israel	387	1 352	1	-68
31	28	Indonesia	188	1 339	1	21
32	24	Canada	188	1 256	1	3
33	15	Poland	182	1 117	1	-47
34	18	South Africa	148	1 116	1	-40
35	48	Azerbaijan	158	1 088	1	155
36	46	Colombia	279	1 045	1	121
37	16	Italy	215	912	1	-55
38	29	Netherlands	260	897	1	-13
39	39	Jordan	158	857	1	23
40	19	Taiwan	412	841	1	-52
41	120	Qatar	316	808	1	7 245
42	47	Mexico	267	684	1	48
43	89	Uganda	342	680	1	1 185

Rank			Volume of imports (TIV, millions)		Share, 2008–12 (%)	Change since 2003–2007 (%)
2008– 12	2003– 2007 <sup>a</sup>	Recipient	2012	2008–12		
44	52	Thailand	297	650	0	76
45	53	Sweden	228	568	0	61
46	54	Bangladesh	325	539	0	55
47	37	Sudan	64	531	0	-29
48	50	Austria	9	526	0	29
49	81	Ecuador	108	462	0	463
50	74	NATO	22	442	0	281
..	..	Others (105 recipients)	2 017	10 048	8	..
..	..	Unknown recipient(s)		26	0	..
<b>Total</b>			<b>28 172</b>	<b>133 468</b>	<b>100</b>	<b>17</b>

0 = <0.5; NATO = North Atlantic Treaty Organization.

Note: The SIPRI data on arms transfers relates to actual deliveries of major conventional weapons. To permit comparison between the data on such 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 international arms transfers and not of the financial values of such transfers. Thus, it is not comparable to economic statistics such as gross domestic product or export/import figures. The method for calculating the trend-indicator value is described in 'Sources and methods' below.

<sup>a</sup> The rank order for suppliers in 2003–2007 differs from that published in *SIPRI Yearbook 2008* because of subsequent revision of figures for these years.

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

tanker aircraft.<sup>53</sup> European countries have invested and are continuing to invest in large transport aircraft and tanker aircraft for military and humanitarian interventions outside Europe. The USA delivered 7 C-17 transport aircraft to the UK between 2001 and 2013, and 3 C-17s to the North Atlantic Treaty Organization (NATO) in 2009 for a pool for use by NATO members. While NATO countries have plans for additional aircraft, most of them will come from European cooperative production arrangements, such as the A-400M transport aircraft and the A-330 MRTT tanker aircraft.

<sup>53</sup> Hoyle, C., 'UK extends support role in Mali, but rules out UAVs', *Flightglobal*, 31 Jan. 2013; and Svitak, A. and Osborne, T., 'Stretched thin', *Aviation Week & Space Technology*, 21 Jan. 2013, p. 29.

## Sources and methods

The SIPRI Arms Transfers Programme maintains the SIPRI Arms Transfers Database, <<http://www.sipri.org/databases/armstransfers/>>, which contains information on deliveries of major conventional weapons to states, international organizations and non-state armed groups from 1950 to 2012. Data collection and analysis are continuous processes: the database is updated as new data becomes available and a new set of data is published annually. Thus, data from several editions of the SIPRI Yearbook or other SIPRI publications cannot be combined or compared. Revisions of coverage are applied retroactively for the whole period covered by the database.

### *Sources and estimates*

Data on arms transfers is collected from a wide variety of sources. The common criterion for all these sources is that they are open; that is, published and available to the public. Such open information cannot, however, provide a complete picture of world arms transfers. Sources often provide only partial information, and substantial disagreement between them is common. Since publicly available information is inadequate for the tracking of all weapons and other military equipment, SIPRI covers only what it terms major conventional weapons. Order and delivery dates and the exact numbers (or even types) of weapon ordered and delivered, or the identity of suppliers or recipients, may not always be clear. Exercising judgement and making informed cautious estimates are therefore important elements in compiling the SIPRI Arms Transfers Database.

### *Types of transfer*

SIPRI's definition of an arms transfer includes sales of weapons, including manufacturing licences, as well as aid, gifts and most loans or leases. The recipient of the arms must be the armed forces, paramilitary forces or intelligence agencies of another country, a non-state armed group, or an international organization. In cases where deliveries are identified but it is not possible to identify either the supplier or the recipient with an acceptable degree of certainty, transfers are registered as coming from an 'unknown supplier' or going to an 'unknown recipient'.

### *Types of weapon: major conventional weapons*

The SIPRI Arms Transfers Database only includes 'major conventional 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 and ships, (j) reconnaissance satellites, and (k) air refuelling systems.

The transferred item must have a military purpose. In cases where a sensor, turret or refuelling system (items *d*, *i* and *k*) 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 than that of the platform.

### *The SIPRI trend indicator*

SIPRI has developed a unique system to measure the volume of transfers of major conventional weapons using a common unit, the trend-indicator value (TIV). The TIV is based on the known unit production costs of a core set of weapons and is intended to represent the transfer of military resources rather than the financial value of the transfer. Weapons for which a production cost is not known are compared with core weapons based on: a comparison with core weapons using size and performance characteristics (weight, speed, range and payload);

type of electronics, loading or unloading arrangements, engine, tracks or wheels, armament and materials; and, finally, the year in which the weapon was produced. A weapon that has been in service in another armed force is given a value 40 per cent of that of a new weapon; a used weapon that has been significantly modernized or modified by the supplier before delivery is given a value of 66 per cent of the value when new.

SIPRI calculates the volume of transfers to, from and between all parties using the TIV and the number of weapon systems or subsystems delivered in a given year. This quantitative data is intended to provide a common unit to allow the measurement of trends in the flow of arms to particular countries and regions over time. Therefore, the main priority is to ensure that the measurement system remains consistent over time, and that any changes introduced are backdated.

SIPRI TIV figures do not represent sales prices for arms transfers. They should therefore not be compared with gross domestic product (GDP), military expenditure, sales values or the financial value of export licences in an attempt to measure the economic burden of arms imports or the economic benefits of exports. They are best used as the raw data for calculating trends in international arms transfers over periods of time, global percentages for suppliers and recipients, and percentages for the volume of transfers to or from particular states.