

V. Arms production and military services

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Overview of major trends in arms production

The sales of arms and military services by the SIPRI Top 100—the world's 100 largest arms-producing and military services companies outside China, ranked by their arms sales—totalled \$402 billion in 2013 (see table 10.10). This is a decrease of 2 per cent in real terms compared to 2012, continuing the decline that began in 2011, but at a slower rate. Despite three consecutive years of decreasing sales by the Top 100, their total revenues remain 46 per cent higher in real terms than in 2002.

Companies in the traditional arms-producing countries make up more than 84 per cent of the turnover of the Top 100. These companies are the focus of this section. In 2013, these countries maintained their general push for exports as they continued to adjust to challenging economic conditions and domestic political environments. There were no discernible changes in arms production capacities, but the impact of the economic crisis on arms sales appears to have been mixed at the global level. This primarily reflects the decrease in military spending in Western Europe and North America—where the largest arms producers by sales are located—in contrast to the rise in expenditure in other regions (see table 10.11). The growth in spending in these other regions has helped emerging producers to increase their turnover. See table 10.12 for the full list of the Top 100 arms-producing and military services companies in the world (excluding China) for 2013.

Key developments in major arms-producing countries

The economic environment in the Global North, where the core arms-producing capabilities are located, continues to be characterized by budgetary constraints.¹ Austerity policies generally curbed military spending at the regional level in 2013, but the impact of these measures on defence investment accounts (i.e. procurement and research and development), which are mainly used by states to fund their domestic arms industries, varied by country.

The United States

In the United States, the largest arms-producing country, two major factors influenced US defence companies' strategies in 2013: limitations, or 'caps', imposed on all federal government expenditure by the Budget Control Act (BCA) of 2011; and the ending of major US military involvement in Iraq in

¹ See table 10.12.

Table 10.10. Trends in arms sales of companies in the SIPRI Top 100 arms-producing companies, 2004–13

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Change, 2004–13
<i>Arms sales in current (2013) prices and exchange rates</i>											
Total (\$ b.)	273	289	313	348	388	403	417	419	404	402	
Change (%)	16	6	8	11	11	4	3	0	-4	0	47
<i>Arms sales in constant (2013) prices and exchange rates</i>											
Total (\$ b.)	339	348	365	384	410	441	448	427	410	402	
Change (%)	8	3	5	5	7	8	2	-5	-4	-2	19

Note: The figures in this table refer to the companies in the SIPRI Top 100 in each year, which means that they refer to a different set of companies each year, as ranked from a consistent set of data. In particular, the figures shown above for 2012 differ from those in table 10.11.

Source: Table 10.12; and the SIPRI Arms Industry Database, <<http://www.sipri.org/research/armaments/production>>.

2011 and in Afghanistan in December 2014.² Although the Department of Defense (DOD) base budget was subject to mandatory cuts under the BCA in 2013, ad hoc congressional agreements such as the Bipartisan Budget Agreement—along with the use of the Overseas Contingencies Operations budget, which included significant spending for procurement—gave the DOD some flexibility to manage the pressures on spending in the short term.³ Nonetheless, DOD spending fell in 2013 and this, coupled with the winding down of military activities in the Middle East and Asia, at least partly explains the moderate decrease in sales since 2011 by US companies ranked in the Top 100. The companies with the most significant declines in their arms sales were armoured vehicle manufacturers and those, such as KBR, that supply services in theatre.⁴

The US arms industry anticipated a fall in spending in the light of the announced withdrawal of troops from Iraq following the Status of Forces Agreement of 14 December 2008 and of the ongoing global financial and economic crisis. Some companies, such as Lockheed Martin, began early

² Budget Control Act of 2011, US Public Law 112-25, signed into law 2 Aug. 2011, <<http://thomas.loc.gov/cgi-bin/bdquery/z?d112:SN00365>>. On the influence of the Budget Control Act on US military expenditure see chapter 9, section II, in this volume. See also Sköns, E. and Perlo-Freeman, S., 'The United States' military spending and the 2011 budget crisis', *SIPRI Yearbook 2012*, pp. 162–66.

³ Bipartisan Budget Act of 2013, US Public Law 113-67, signed into law 26 Dec. 2013, <<http://www.gpo.gov/fdsys/pkg/PLAW-113publ67/html/PLAW-113publ67.htm>>.

⁴ KBR was ranked 15 in 2009 but left the Top 100 in 2013. See Jackson, S. T., 'The SIPRI top 100 arms producing and military services companies in the world excluding China, 2010', *SIPRI Yearbook 2012*, pp. 251–56; and Fleurant, A. and Perlo-Freeman, S., 'The top 100 arms producing and military services companies in the world, 2013', SIPRI Fact Sheet, Dec. 2014, <<http://www.sipri.org/research/armaments/production/recent-trends-in-arms-industry>>.

preparations for a new downward budget cycle by implementing a classic three-pronged strategy.⁵ First, these companies rationalized their activities by restructuring and selling off some divisions, which in some cases led to redundancies and plant closures.⁶ A forecast wave of mergers akin to the one that followed the end of the cold war has not yet taken place. Instead, larger players in the US arms industry have tended to restructure through the creation of spin-off businesses. One of the first and most significant examples of this type of restructuring was Northrop Grumman's decision to spin off the naval shipyard Huntington Ingalls Industry in 2011; other companies have since followed suit.⁷ This move at the higher levels of the industry to restructure through spin-offs rather than mergers is perhaps partly due to the DOD's apparent reluctance to approve mergers between primary contractors with the US military.⁸ Notable exceptions include United Technologies' acquisition of Goodrich in 2011 and Alliant Techsystems' purchase of Orbital Sciences, a producer of rockets and satellites. However, the process of consolidation has mostly taken place among smaller producers, which is also a reflection of supply chain rationalization.⁹

The second strategic approach taken by many US companies was diversification, in search of sales opportunities outside the military market. Drawing lessons from past experiences, which had mixed success, companies looked to non-defence market segments that share common char

⁵ White House, 'President Bush and Iraq Prime Minister Maliki sign the Strategic Framework Agreement and Security Agreement', Press release, 14 Dec. 2008, <<http://georgewbush-whitehouse.archives.gov/news/releases/2008/12/20081214-2.html>>. Lockheed Martin started laying off staff and restructuring its business units in 2009. Potter, M., 'Lockheed continues layoffs as restructuring continues', CBS Money Watch, 26 Oct. 2009, <<http://www.cbsnews.com/news/lockheed-continues-layoffs-as-restructuring-continues/>>.

⁶ Between 2008 and 2009, rationalization led by the 5 leading US arms producers resulted in over 12 000 redundancies. See Bélanger, Y. et al., *Les Mutations de L'Industrie de Défense: Regards Croisés sur Trois Continents* [Changes in the defence industry: viewpoints on 3 continents], Cahiers de L'Institut de Recherche Stratégique de L'Ecole Militaire (IRSEM) no. 10 (IRSEM Ecole Militaire: Paris, 2012), p. 60.

⁷ Northrop Grumman, 'Northrop Grumman completes spin-off of Huntington Ingalls Industries, Inc.', Press release, 31 Mar. 2011, <<http://investor.northropgrumman.com/phoenix.zhtml?c=112386&p=irol-newsArticle&ID=1544584&highlight=>>>. Another example of significant restructuring is the break-up of ITT into 3 specialized divisions; defence activity was spun off under ITT Exelis. 'ITT complete split into 3 separate companies', Bloomberg News, 31 Oct. 2011. For background and general discussion on restructuring in the arms industry see Sköns, E. and Gill, B., 'Arms production', *SIPRI Yearbook 1996*, pp. 411–55.

⁸ Jackson (note 4).

⁹ Depass, D., 'Alliant spinoff, merger completed', *Star Tribune*, 9 Feb. 2015. Grant Thornton, 'Aerospace & defense update: mergers, acquisitions and the operating environment', Update (Spring 2012), <https://www.grantthornton.com/staticfiles/GTCom/Aerospace%20and%20Defense/AD_MA_Update_Spring_2012.pdf>; and PricewaterhouseCoopers, 'Mission control: fourth-quarter 2014 aerospace and defense industry mergers and acquisitions analysis', Analysis, Feb. 2015, <http://www.pwc.com/en_US/us/industrial-products/publications/assets/pwc-aerospace-defense-industry-mergers-acquisitions-q4-2014.pdf>.

Table 10.11. Regional and national shares of arms sales for the SIPRI Top 100 arms-producing companies in the world excluding China, 2013 compared to 2012^a

Arms sales figures are in US\$ b., at current prices and exchange rates. Figures do not always add up to totals because of the conventions of rounding.

Number of companies	Region/ country ^b	Arms sales (\$ b.)		Change in arms sales, 2012–13 (%)		Share of total Top 100 arms sales, 2013 (%)
		2013	2012 ^c	Nominal ^d	Real ^e	
39	North America	225.6	232.9	-3	-5	56.1
38	United States	224.8	232.1	-3	-5	55.9
1	Canada	0.8	0.8	-5	-3	0.2
30	Western Europe	113.2	110.6	-2	-1	28.1
10	United Kingdom	44.8	44.3	1	0	11.1
6	France	25.4	22.3	14	9	6.3
2	Trans-European ^f	16.6	16.2	2	-2	4.1
2	Italy	12.1	13.8	-13	17	3.0
4	Germany	6.9	6.7	2	-2	1.7
1	Sweden	3.0	2.9	2	-2	0.7
2	Switzerland	1.6	1.2	32	31	0.4
1	Norway	1.1	1.2	-8	-9	0.3
1	Finland	1.0	0.9	12	7	0.2
2	Spain	0.9	1.1	-20	-24	0.2
11	Eastern Europe	33.3	26.9	24	20	8.3
10	Russia	31.7	25.4	25	20	7.9
1	Ukraine	1.7	1.4	17	17	0.4
9	Other established producers	15.4	17.3	-11	-5	3.8
3	Israel	7.4	7.0	6	-2	1.8
4	Japan ^g	6.1	8.5	-28	-12	1.5
2	Australia	1.9	1.8	5	10	0.5
11	Emerging producers	14.7	13.9	6	4	3.6
5	South Korea	5.2	4.5	16	11	1.3
3	India	5.1	5.5	-8	-9	1.3
1	Singapore	2.0	1.9	7	5	0.5
1	Brazil	1.2	1.1	14	19	0.3
1	Turkey	1.1	0.9	29	27	0.2
100	Total	402.3	401.5	0	-2	100.0

^a Although it is known that several Chinese arms-producing enterprises are large enough to rank among the SIPRI Top 100, a lack of comparable and sufficiently accurate data makes it impossible to include them. There are also companies in other countries, such as Kazakhstan and Ukraine, that might be large enough to appear in the SIPRI Top 100 list were data available, although this is less certain.

^b Figures for a country or region refer to the arms sales of the Top 100 companies headquartered in that country or region, including those of its foreign subsidiaries. They do not reflect the sales of arms actually produced in that country or region.

^c Arms sales figures from 2012 refer to companies in the SIPRI Top 100 for 2012 and not to the companies in the Top 100 from 2013. Figures are given at current (2013) prices and exchange rates.

^d This column gives the change in arms sales 2012–13 in current US dollars.

^e This column gives the change in arms sales 2012–13 in constant (2013) US dollars.

^f The companies classified as trans-European are EADS (Airbus) and CNH Industrial.

^g Figures for Japanese companies are based on contracts with the Japanese Ministry of Defence.

Source: Table 10.12.

acteristics with their traditional markets, particularly in technology applications. These so-called adjacent markets include cybersecurity, energy and the environment, healthcare information technology and simulation.¹⁰ Besides commonalities of application, they share other features with the defence market. Many projects in adjacent markets originate from state and public institutions with which the arms industry is familiar. In some markets, such as energy, projects were established as part of the economic recovery plan implemented in 2009, which allocated money to the DOD specifically to develop green energy initiatives.¹¹

The third element of the US arms industry's strategy was a renewed push for international sales—a goal shared by the current US administration. After years of industry requests for a simpler and more streamlined export licencing process, the Obama administration announced in 2009 the implementation of an export control reform initiative.¹² In a related area, in 2011 the DOD launched a 'defence exportability feature' development programme in cooperation with industry.¹³ These initiatives signal a greater willingness on the part of industry and the US federal executive branch to work together to simplify the arms transfer process and facilitate exports.¹⁴ The DOD's programme is designed to encourage industry to create 'exportable' versions of selected weapons systems at the development phase, something European companies have been doing for some time. Although US companies have dominated the global arms market since the end of the cold war, they have remained heavily reliant on the domestic

¹⁰ Lemer, J. and Thomas, H., 'Defence groups diversify amid budget cuts', *Financial Times*, 20 Sep. 2011; and Dehoff, K., Dowdy, J. and Niehaus, J., 'Managing a downturn: how the US defense industry can learn from its past', McKinsey & Co. insights and publications, Apr. 2013, <http://www.mckinsey.com/insights/manufacturing/managing_a_downturn>.

¹¹ US Department of Defense, 'Department of Defense information related to the American Recovery and Reinvestment Act of 2009 (Recovery Act)', [n.d.], <<http://www.defense.gov/recovery>>.

¹² On the US export control reform initiative see section I in this chapter; and US Department of State, Directorate of Defense Trade Controls, 'Export control reform', 31 July 2014, <<https://www.pmdtc.state.gov/ECR/index.html>>.

¹³ US Department of Defense, Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, 'Defense exportability features', 7 Aug. 2014, <<http://www.acq.osd.mil/ic/DEF.html>>.

¹⁴ US Department of Defense, *Department of Defense Fiscal Year (FY) 2016 President's Budget Submission*, Defense Wide Justification Book, vol. 3 of 3, Research, Development, Test And Evaluation, Defense-wide (Office of the Secretary of Defense: Washington, DC, Feb. 2015).

market.¹⁵ Difficult domestic trading conditions have therefore led several major contractors to turn more firmly towards the export market.¹⁶

Economic indicators published in 2014 appear to show improving market conditions. However, the federal budget gridlock affecting DOD spending, which seems unlikely to be resolved in the near future as the USA enters a presidential election cycle in 2015–16, combined with new international crises requiring a US military response, have increased uncertainty about the direction the USA will take in the short term, particularly with regard to its defence investment accounts.

Western European producers

Stagnant or declining military spending in Europe, along with only piecemeal progress in consolidating demand for and supply of arms at the regional level, have led major European arms companies to adapt their business strategies in a similar manner to US arms producers, through rationalization, diversification and a focus on international sales. As in the USA, however, large-scale consolidations have been rare. The most significant event in this area in the past year was the announcement in mid-2014 of an agreement between French land weapons producer Nexter and Germany's Krauss Maffei Wegmann to form a joint venture in 2015.¹⁷ However, few cross-border consolidations have taken place since the collapse in 2012 of the proposed merger between the British company, BAE Systems, and the trans-European company, EADS.¹⁸ EADS became Airbus Group in early 2014, reorganizing its main activities into three units: Airbus Aviation, Airbus Defence and Space, and Airbus Helicopters. The name change and

¹⁵ Reporting of foreign arms sales by US major suppliers is uneven at best. Sales made through the US Government under the Foreign Military Sales programme are reported in companies' annual reports, but sales made through direct commercial sales or from subsidiaries overseas are sometimes aggregated in a total foreign sales figure, which would include sales made to non-defence government entities as well as to other non-defence companies. Annual reports for 2013 from the 5 leading US arms suppliers (General Dynamics, L3 Communications, Lockheed Martin, Northrop Grumman and Raytheon) indicate—very approximately—that foreign arms sales represent between 7% and 20% of total sales. As a point of comparison, the French shipbuilder DCNS and the Thales Group's 2013 annual reports both indicate a share of international sales of around 40% for that year.

¹⁶ Cameron, D., 'Northrop Grumman, Raytheon pledge boost in spending and exports', *Wall Street Journal*, 29 Jan. 2015; and 'Marilyn Hewson: Lockheed wants to increase exports by 20%; targeting AsiaPacific, Middle East', *ExecutiveBiz*, 10 July 2012, <<http://blog.executivebiz.com/2012/07/lockheed-looking-to-try-hand-in-international-market-in-unsure-budget-environment-marilyn-hewson-comments/>>.

¹⁷ There has already been some slippage in the planned schedule to join both companies' capabilities. Tran, P. and Müller, A., 'Nexter, KMW announce joint venture with "intended unification"', *Defense News*, 1 July 2014.

¹⁸ Jackson, S. T., 'Key developments in the main arms-producing countries, 2011–12', *SIPRI Yearbook 2013*, pp. 205–17.

business reorganization underline the importance to the group of civilian production, which makes up the largest share of its total production.¹⁹

The failed BAE–EADS merger has highlighted divergences in the approach to managing military demand and overseeing supply-side reorganization taken by the three major European arms-producing countries involved as owners: France, Germany and the United Kingdom. National priorities still dominate military production, notwithstanding recent initiatives implemented by the European Commission to harmonize European Union (EU) member states' legislation to create the conditions for greater integration.²⁰ The failure of the merger to go through has cast doubt on the feasibility of large, trans-European deals in the current environment, despite calls for the establishment of a European 'defence and technological industrial base'.²¹

While large-scale consolidations in Europe seem likely to be rare occurrences in the short term, a number of smaller strategic acquisitions have taken place. For instance, important acquisitions in the propellant and large-calibre ammunition production sectors—which are considered key market segments by many countries—were pursued in 2013 and 2014. This trend is likely to continue in 2015. In 2010 French company Safran Group bought the propellant producer SNPE, which was subsequently sold to Nexter in 2013.²² Nexter also bought two ammunition and propellant divisions from British company Chemring in 2014.²³ Another example in the ammunition sector is Norwegian company Nammo Group's acquisition in 2013 of a production facility in Spain from General Dynamics European Land Systems-Santa Bárbara Sistemas.²⁴ In contrast to these strategic purchases, SAAB's acquisition of submarine shipyard Kockums, a Sweden-based subsidiary of Germany's ThyssenKrupp Marine Systems (TKMS), was mostly motivated by other considerations. The return of Kockums to

¹⁹ Colart, L., 'EADS devient Airbus pour changer de stratégie commerciale' [EADS to become Airbus to change commercial strategy], France info, 2 Jan. 2014, <<http://www.franceinfo.fr/actu/economie/article/eads-devient-airbus-group-pour-changer-de-strategie-commerciale-309935>>.

²⁰ Mampaey, L. et al., 'Study on the implementation of Directive 2009/43/EC on transfers of defense-related products', Group for Research and Information on Peace and Security (GRIP), 22 Aug. 2014.

²¹ Meddah, H., 'L'échec de la fusion EADS-BAE souligne le double discours des Etats' [The failure of the EADS-BAE merger highlights states' double standards], *L'Usine Nouvelle*, 11 Oct. 2012; 'A European mega-merger? Nein, danke', *The Economist*, 13 Oct. 2012; and Chuter, A., 'Top 100 Europe: Mergers find little traction', *Defense News*, 21 July 2013.

²² Cabirol, M., '3 millions d'euros: c'est le prix modeste payé par Nexter pour s'offrir SNPE' [3 million euros: the modest price paid by Nexter to buy SNPE], *La Tribune*, 30 Dec. 2013.

²³ Nexter Group, 'Nexter Systems signs acquisition agreements for the companies Mecar and Simmel Difesa with Chemring Group', Press release, 24 Apr. 2014, <<http://www.nexter-group.fr/en/press-releases/649-nexter-systems-annonce-la-signature-des-contrats-dacquisition-des-societes-mecar-et-simmel-difesa-aupres-du-groupe-chemring>>.

²⁴ Nammo Group, 'Nammo and Santa Bárbara Sistemas reach agreement for takeover of the Palencia factory', Press release, 30 Nov. 2012, <<http://www.nammo.com/news-and-events/news/nammo-and-santa-barbara-sistemas-reach-agreement-for-takeover-of-the-palencia-factory/>>.

Swedish ownership alleviated concerns in Sweden over TKMS's management of Kockums and also brought some Swedish naval production capabilities back under domestic control.²⁵

Exports remain a high priority for all major European arms producers. Most governments are supportive, and have dedicated significant human, administrative and financial resources to assist their national companies with bids for major contracts overseas.²⁶ Nonetheless, some countries, such as Germany and Norway, have announced stricter export policies, although it is too early to assess their impact, if any, on industry. Faced with tight national procurement budgets, the European arms industry has become more reliant on foreign sales to compensate for reduced domestic orders. Some European arms producers, therefore, have greater experience of pursuing international sales than many of their US counterparts.²⁷

Europe's excess arms-production capacities at both national and regional levels, added to the apparent lack of progress with European supply-side consolidations and reduced demand for military equipment, suggest that a more integrated European arms market and industry are still a long way off. Major European arms-producing countries currently face difficult choices when establishing spending priorities. For instance, France has chosen to shield defence investment accounts from the austerity policies applied to general government spending. The 2014–19 *Loi de programmation militaire* (military planning law) maintains stable procurement spending levels to support major acquisition programmes, such as the Scorpion—a multi-role armoured vehicle programme—which will cost €2 billion (\$2.2 billion).²⁸ The Scorpion modernization programme was awarded to a consortium of French companies based on national preference, an approach that is not in line with the principles promoted by the European Commission for establishing a level playing field in the European arms market.²⁹

²⁵ Anderson, G., 'SAAB agrees to buy Kockums', *Jane's Defence Industry*, 29 June 2014.

²⁶ Béraud-Sudreau, L. et al., 'The extra-EU defence exports' effects on European armaments cooperation', SIPRI Report for the European Parliament, Directorate-General for External Policies of the Union, Directorate B, Policy Department, Feb. 2015 (unpublished).

²⁷ Recent data produced by SIPRI indicates that domestic orders still account for a large part of total turnover. Béraud-Sudreau et al. (note 26).

²⁸ *Loi relative à la programmation militaire pour les années 2014 à 2019* [Military planning law, 2014–2019], French law 2013-1168 of 18 Dec. 2013, <http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000028338825>; and Tran, P., 'France awards €5 billion Scorpion vehicle contract', *Defense News*, 6 Dec. 2014.

²⁹ European Commission, 'Towards a more competitive and efficient defence and security sector', Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2013) 542 final, 24 July 2013.

Russia

In 2009 Russia embarked on a wide-ranging and ambitious military modernization plan—the state armament programme—supported by significant resources from increased revenues from oil sales.³⁰ Until late 2014 the price of oil was at an all-time high. The major goals pursued by the Russian Government under the programme are to provide better military capabilities for the Russian armed forces, and to upgrade and improve the Russian arms industry's production capacities.³¹ Several analysts have suggested that the controversial deal to buy Mistral amphibious assault ships from France, which was halted in 2014 due to Russia's involvement in the Ukraine crisis, was partly motivated by Russia's domestic improvement plan. It was reported that certain parts of the ships were built in Russia, leading to training and knowledge transfers from France that would help to upgrade Russian naval shipyards.³² Russia's modernization programme therefore seems to be continuing to rely on finding a balance between increasing indigenous capacities and using foreign suppliers to fill some gaps.³³

Recent SIPRI Top 100 rankings show that the 2009 modernization programme is having a positive impact on the turnover of a number of Russian companies.³⁴ Russian arms producers have steadily climbed up the list of largest companies by arms sales since 2009, largely because of supplies to the Russian armed forces. Almaz-Antey is close to entering the top 10 in terms of arms sales, with a 34 per cent increase in turnover on 2012 (see table 10.12).

To speed up the modernization process, the Russian authorities, when importing weapons systems, have regularly sought to include technology transfers in the framework of joint ventures or co-production of the system in question.³⁵ At the same time, although the Russian arms industry is now more reliant on domestic sales than in previous years, Russia remains the second largest arms exporter globally (see table 10.1 in section I). It also frequently includes technology transfers or co-production aspects in export deals with clients. Until recently, Russia was in the unique position

³⁰ Nichol, J., *Russian Military Reform and Defense Policy*, Congressional Research Service (CRS) Report for Congress R42006 (US Congress, CRS: Washington, DC, 24 Aug. 2011); and Oxentsterna, S., 'The Russian defence budget and the state armament programme up to 2020', Paper prepared for SIPRI's 17th Annual International Conference on Economics and Security, SIPRI, Stockholm, 14–15 June 2013.

³¹ Anderson, G., 'The Russian defence industrial base', RUSI Defence Systems, June 2009.

³² Ibister, R. and Quéau, Y., *An Ill Wind: How the Sale of Mistral Warships to Russia is Undermining EU Arms Transfers Controls* (GRIP and SaferWorld, Nov. 2014). On the Mistral deal also see chapter 3, section III, in this volume.

³³ Jackson, S. T., 'Arms production', *SIPRI Yearbook 2010*, pp. 251–71.

³⁴ Pyadushkin, M., 'Russia's military modernization under President Putin', *Aviation Week & Space Technology*, 15 Jan. 2015.

³⁵ Nichol (note 30).

of being an established arms producer and supplier, while still importing selected major weapons systems as a way of accelerating the transfer of knowledge to improve its indigenous capabilities.

It is too early to predict whether the sanctions imposed against Russia, by the EU, the USA and several other countries such as Australia, Canada and Japan, because of its involvement in the ongoing conflict in Ukraine will have a significant impact on Russia's arms industry modernization process. Nonetheless, the sanctions as a whole, combined with falling oil prices, had a detrimental effect on the Russian economy in the last quarter of 2014. A number of analysts anticipate that the country will enter recession in 2015.³⁶ However, spending on procurement is still budgeted for in 2015 and is planned to increase substantially in 2016–17.³⁷

There are conflicting reports as well as speculation about the success of Russia's arms production and industry modernization projects, making an analysis of the progress achieved difficult. The low level of transparency by the Russian authorities feeds this uncertainty.

Emerging producers

The Top 100 arms-producing companies now includes a new category of country—emerging suppliers—to track the progress of companies based in states that have stated ambitions to increase their arms production. Collectively, Brazil, India, Singapore, South Korea and Turkey represent a small part of total arms sales by the Top 100. However, the growth in deals by these countries, as well as the significant goals set by their governments in terms of indigenous production of armaments and their export strategies call for further investigation as they start to establish themselves on the list of largest arms producers.

The growing South Korean arms industry is primarily based on significant domestic demand, including major involvement in component production for imported US arms. However, South Korea is also looking to secure a position in the arms export market and, according to official figures, exports amounted to \$3.6 billion in 2014.³⁸ Of the emerging producers ranked in the 2013 Top 100, India has the second highest number of companies (three), with equivalent sales to those of the five ranking South Korean companies. Even though successive Indian governments have stated their intention to develop a comprehensive, technologically advanced indigenous arms industry, India's capacity to reach that goal remains questionable. Sales are mainly based on bulk licence production of

³⁶ Zavyalova, K. and Kelly, L., 'Russia in recession in 2015, ruble to stay pressured: Reuters poll', Reuters, 22 Dec. 2014.

³⁷ On Russia's military spending in the context of the Ukraine crisis see chapter 3, section IV, in this volume.

³⁸ Jun, J., 'S. Korea exports reach record high', *Korea Times*, 4 Jan. 2015.

foreign-designed weapons, while the development of indigenous systems has been plagued with problems for decades.

Brazil's aviation company, Embraer, and Turkey's electronics company, Aselsan, have both significantly risen in the Top 100 since first appearing on the list in 2011 and 2010, respectively. Their inclusion can be attributed partly to their increased sales and partly to the exit from the list of companies from the Global North due to falling sales. Both Embraer and Aselsan have remained in the SIPRI Top 100 since 2010.

Table 10.12. The SIPRI Top 100 arms-producing and military services companies in the world excluding China, 2013^a

Figures for arms sales, total sales and profit are in US\$ million. Dots (.) indicate that data is not available.

Rank ^b		Company ^c	Country	Arms sales		Total sales, 2013	Arms sales as a % of total sales, 2013	Total profit, 2013	Total employment, 2013
2013	2012			2013	2012				
1	1	Lockheed Martin	USA	35 490	36 000	45 500	78	2 981	115 000
2	2	Boeing	USA	30 700	30 600	86 623	35	4 585	168 400
3	3	BAE Systems	UK	26 820	26 770	28 406	94	275	84 600
4	4	Raytheon	USA	21 950	22 500	23 706	93	2 013	63 000
5	6	Northrop Grumman	USA	20 200	19 400	24 661	82	1 952	65 300
6	5	General Dynamics	USA	18 660	20 940	31 218	60	2 357	96 000
7	7	EADS ^d	Trans-European	15 740	15 400	78 693	20	1 959	144 060
8	9	United Technologies Corp.	USA	11 900	12 120	62 626	19	5 721	212 000
9	8	Finmeccanica	Italy	10 560	12 530	21 292	50	98	63 840
10	11	Thales	France	10 370	8 880	18 850	55	761	65 190
11	10	L-3 Communications	USA	10 340	10 840	12 629	82	778	48 000
S	S	BAE Systems Inc. (BAE Systems UK)	USA	10 300	10 370	11 363	91	..	..
12	14	Almaz-Antey	Russia	8 030	5 810	8 547	94	399	..
S	S	EADS Cassidian (EADS)	Trans-European	6 750	6 420	7 936	85	566	28 800
13	13	Huntington Ingalls Industries	USA	6 550	6 440	6 820	96	261	38 000
14	17	Rolls Royce	UK	5 550	4 990	24 239	23	2 155	55 200
15	18	United Aircraft Corporation ^e	Russia	5 530	4 440	6 913	80	1 395	..
16	15	Safran	France	5 420	5 300	19 515	28	1 584	66 230
17	19	United Shipbuilding Corporation ^e	Russia	5 120	4 150	6 377	80	94	..
18	16	Honeywell	USA	4 870	5 110	39 055	12	3 924	131 000
S	S	Pratt & Whitney (United Technologies USA)	USA	4 800	4 200	14 501	33	1 876	31 700
19	24	DCNS	France	4 460	3 580	4 460	100	138	13 650
20	25	Textron	USA	4 380	3 550	12 104	36	498	32 000
21	29	Booz Allen Hamilton	USA	4 100	3 200	5 479	75	232	22 700
22	12	Leidos ^f	USA	3 930	7 820	5 772	68	164	22 000

Rank ^b		Company ^c	Country	Arms sales		Total sales, 2013	Arms sales as a % of total sales, 2013	Total profit, 2013	Total employment, 2013
2013	2012			2013	2012				
23	20	General Electric	USA	3 850	4 100	146 045	3	13 057	307 000
S	S	Eurocopter Group (EADS)	France	3 760	3 700	8 363	45	526	22 400
S	S	MBDA (BAE Systems UK/EADS W. Eur. / Finmeccanica Italy)	Trans-European	3 720	3 860	3 718	100	..	10 000
S	S	Sikorsky (UTC)	USA	3 630	4 510	6 253	58	594	16 520
24	22	ITT Exelis	USA	3 560	3 800	4 816	74	281	17 200
25	26	Vertolety Rossii ^g	Russia	3 500	3 520	4 343	80	298	41 200
26	30	Babcock International Group	UK	3 270	3 180	5 543	59	407	10 260
27	32	Mitsubishi Heavy Industries ^h	Japan	3 240	3 010	34 318	9	1 643	80 580
28	27	CACI International	USA	3 200	3 300	3 565	90	136	15 300
S	S	AgustaWestland (Finmeccanica)	Italy	3 180	2 940	5 413	59	345	13 230
29		Science Applications ⁱ	USA	3 170	..	4 121	77	113	13 000
30	21	Oshkosh Truck	USA	3 050	3 950	7 665	40	316	11 900
31	34	Saab	Sweden	2 950	2 900	3 645	81	114	14 140
32	33	Rheinmetall	Germany	2 860	3 000	6 126	47	283	21 080
33	28	Harris ^e	USA	2 850	3 220	5 012	57	534	14 000
34	39	Bechtel ^j	USA	2 800	2 500	39 400	7	..	..
35	36	Elbit Systems	Israel	2 780	2 740	2 922	95	824	11 670
36	42	United Engine Corporation ^e	Russia	2 720	2 460	4 995	54	9	83 400
37	40	Hewlett-Packard ^k	USA	2 700	2 500	112 298	2	5 113	315 700
38	38	Israel Aerospace Industries	Israel	2 660	2 540	3 642	73	83	..
39	47	Serco ^e	UK	2 560	2 200	8 037	32	149	120 540
S	S	EADS Astrium (EADS)	France	2 530	2 540	7 681	33	456	17 000
40	23	Computer Sciences Corp.	USA	2 400	3 690	12 998	18	674	79 000
41	37	Rockwell Collins	USA	2 400	2 590	4 610	52	632	18 300
42	43	Hindustan Aeronautics	India	2 390	2 430	2 582	93	467	..
43	35	URS Corporation	USA	2 310	2 850	10 991	21	247	50 000

44	46	General Atomics ^j	USA	2 280	2 200	..	..	..	..
45	48	CEA	France	2 270	2 190	5 732	40	57	15 870
46	74	Tactical Missiles Corporation	Russia	2 230	990	2 421	92	138	39 890
47	41	ManTech International	USA	2 210	2 470	2 310	96	-615	7 800
	S	Sukhoi (UAC Russia)	Russia	2 180	2 310	2 813	78	379	..
48	31	DynCorp	USA	2 120	3 040	3 287	65	-254	20 000
49	51	ST Engineering	Singapore	2 020	1 890	5 302	38	464	22 840
50	45	Fluor ^j	USA	1 970	2 260	27 352	7	668	38 130
51	54	Rafael	Israel	1 960	1 700	2 001	98	99	7 000
	S	Selex ES SpA (Finmeccanica)	Italy	1 930	880	2 641	73	-426	10 600
52	57	Dassault Aviation Groupe	France	1 860	1 470	6 100	31	647	11 600
53	60	KRET	Russia	1 850	1 380	2 427	76	207	48 550
	S	Dassault Aviation (Dassault Aviation Groupe)	France	1 840	1 410	5 267	35	478	8 080
54	49	Indian Ordnance Factories	India	1 820	2 130	1 918	95	..	93 520
55	52	Cobham	UK	1 820	1 880	2 797	65	361	10 090
56	44	Alliant Techsystems	USA	1 820	2 330	4 775	38	341	16 000
	S	Alenia Aermacchi (Finmeccanica)	Italy	1 790	2 100	4 440	40	242	11 700
57	56	ThyssenKrupp	Germany	1 770	1 530	52 831	3	..	156 860
58	58	UkrOboronProm	Ukraine	1 680	1 440	1 871	90	65	120 000
59	61	Fincantieri	Italy	1 500	1 300	5 061	30	113	20 390
60	69	Korea Aerospace Industries	South Korea	1 400	1 030	1 841	76	82	3 140
	S	Irkut (UAC)	Russia	1 320	1 090	1 818	73	14	..
61	63	Diehl ^e	Germany	1 230	1 200	3 858	32	..	14 520
62	68	Embraer	Brazil	1 210	1 060	6 325	19	361	19 280
	S	Thales Systemes Aeroportés	France	1 200	930	1 200	100	105	..
63	59	QinetiQ	UK	1 190	1 410	1 862	64	..	6 220
64	92	GenCorp	USA	1 120	830	1 383	81	3	5 390
65	87	Aselsan	Turkey	1 110	860	1 140	97	125	5 340
66	88	LIG Nex1	South Korea	1 100	850	1 103	100	50	2 920
	S	UMPO (UEC Russia)	Russia	1 100	760	1 183	93	80	..
67	64	Kongsberg Gruppen ^h	Norway	1 080	1 180	2 778	39	208	7 490
68	55	Mitsubishi Electric	Japan	1 070	1 550	41 540	3	1 572	124 310

Rank ^b		Company ^c	Country	Arms sales		Total sales, 2013	Arms sales as a % of total sales, 2013	Total profit, 2013	Total employment, 2013
2013	2012			2013	2012				
69	71	Precision Castparts	USA	1 060	1 010	9 616	11	1 784	29 100
70	70	Triumph Group	USA	1 050	1 030	3 763	28	206	13 830
71	84	Austal	Australia	1 030	880	1 084	95	31	..
	S	S Sevmash (USC Russia)	Russia	1 030	1 170	1 369	75	6	..
72	75	Krauss-Maffei Wegmann	Germany	1 010	980	1 062	95	..	..
73	83	Patria Industries	Finland	1 000	890	1 095	91	125	3 610
74	81	Nexter	France	990	910	1 045	95	98	2 780
75	53	Kawasaki Heavy Industries ^h	Japan	970	1 850	14 195	7	395	34 620
76	74	Meggitt	UK	960	990	2 558	38	363	10 720
77	67	Samsung Techwin	South Korea	960	1 080	2 660	36	121	4 930
78	96	RTI Systems	Russia	950	800	1 005	95	..	10 000
79	82	GKN	UK	950	900	11 150	8	636	49 700
80	66	Chemring Group	UK	920	1 120	977	94	..	3 690
81	72	Jacobs Engineering Group ^j	USA	920	1 000	11 818	8	423	66 500
	S	S Austal USA (Austal Australia)	USA	900	750	902	100	60	4 150
82	76	Bharat Electronics	India	900	970	1 054	85	159	9 950
83	65	Navantia	Spain	900	1 130	943	95	-80	5 620
84	77	ASC	Australia	890	950	886	100	-4	2 600
85	107	Hanwha	South Korea	880	720	5 236	17	110	..
86	62	Uralvagonzavod ^e	Russia	870	1 220	2 900	30	..	..
87	91	Hyundai WIA	South Korea	870	830	5 754	15	388	..
88	95	Moog	USA	860	820	2 610	33	120	11 150
89	109	Sozvezdie ^e	Russia	860	650	1 140	75	25	17 300
90	86	Cubic Corporation	USA	840	870	1 361	62	20	8 200
91	79	RUAG	Switzerland	830	930	1 890	44	101	8 240
92	90	AAR Corp.	USA	830	840	2 035	41	73	5 800
93	50	NEC ^h	Japan	820	2 050	31 179	3	346	100 910

94	99	CNH Industrial ^l	Trans-European	820	800	33 800	2	1 195	71 192
S	S	IVECO (CNH Industrial Netherlands)	Italy	820	800	..	..	..	1 180
95	101	MIT ^m	USA	810	780	884	92	..	3 700
96	89	CAE	Canada	800	840	2 053	39	185	8 000
97	104	Alion Science & Technology	USA	800	750	849	94	-37	2 790
98	94	Ultra Electronics	USA	800	820	1 164	69	60	4 570
99	97	The Aerospace Corp. ^e	USA	780	800	869	90	..	3 450
100	149	Pilatus Aircraft	Switzerland	770	280	1 094	70	156	1 750

^a Although several Chinese arms-producing enterprises are large enough to rank among the SIPRI Top 100, it has not been possible to include them because of lack of comparable and sufficiently accurate data.

^b Companies are ranked according to the value of their arms sales in 2013. An S denotes a subsidiary company. A dash (–) indicates that the company did not rank among the SIPRI Top 100 for 2012. Company names and structures are listed as they were on 31 Dec. 2013. Information about subsequent changes is provided in these notes. The 2012 ranks may differ from those published in *SIPRI Yearbook 2014* and elsewhere owing to continual revision of data, most often because of changes reported by the company itself and sometimes because of improved estimations. Major revisions are explained in these notes.

^c When the name of subsidiaries and operational companies owned by a holding or investment company, the name of the parent company is given in parentheses along with its country, where it differs.

^d EADS was renamed Airbus Group in Jan. 2014.

^e Arms sales figures for these companies are estimates and are subject to a high degree of uncertainty.

^f In September 2013, SAIC spun off its technical, engineering and IT services business. The spun-off segment retained the original company name: Science Applications International Corporation (SAIC). The parent company was renamed Leidos Holdings. Therefore, the figure for Leidos Holdings in 2012 refers to the 2012 sales of the former SAIC.

^g Vertolety Rossii (Russian Helicopters) and United Engine Corporation are subsidiaries of OPK Oboronprom, but, since comparable financial data for Oboronprom for 2013 is not currently available, they are reported here as independent companies. For more on Russian arms industry consolidation see Jackson, S. T., ‘Arms production’, *SIPRI Yearbook 2011*; Jackson, S. T., ‘Arms production’, *SIPRI Yearbook 2010*; and Perlo-Freeman, S. et al., ‘The SIPRI Top 100 arms-producing companies, 2007’, *SIPRI Yearbook 2009*, pp. 286–87.

^h Arms sales figures for Japanese companies represent new military contracts rather than revenues.

ⁱ In September 2013, SAIC spun off its technical, engineering and IT services business. The spun-off segment retained the original company name: Science Applications International Corporation (SAIC). The parent company was renamed Leidos Holdings. Therefore, the new company Science Applications does not have any rank or arms sales figure for 2012 as it is a new company.

^j Arms sales figures for these companies are based on data on US prime contract awards from USAspending.gov. They may be underestimated as awards from classified contracts are not included in this data.

^k Arms sales figures for Hewlett-Packard are based on data on US prime contract awards from USAspending.gov plus sales to the British Ministry of Defence from UK Defence Statistics. They may be underestimated because awards from classified contracts are not included in the US data.

^l CNH Industrial was formed from the merger in 2013 of Fiat Industrial S.p.a. (which was separated from FIAT) and CNH Global NV. The arms sales of CNH Industrial for 2013 are those of IVECO, another Italian company. The figures given for 2012 also refer to the arms sales of IVECO, then a subsidiary of FIAT. CNH Industrial is headquartered in the Netherlands, has its head office in London, is listed on the Italian and US stock exchanges, and has its primary operational activities in Italy, including IVECO. It is therefore treated as a 'trans-European' company in the Top 100 for statistical purposes.

^m The Massachusetts Institute of Technology (MIT) runs Federally Funded Research and Development Centers, including the Lincoln Laboratory, which conducts R&D projects funded by the US Federal Government, including the Department of Defense (DOD). The arms sales of MIT refer to R&D activities funded by the DOD.