The Russian Defence Industry: No Phoenix Rising from the Ashes

For many years now a drastic process of contraction has been under way in the Russian defence industry. The nadir was reached in 1998, by which year output had declined to just one fifth of its level at the start of the 1990s. For 1999 Russian statistics indicate that output has begun to grow once again; the growth rate given is surprisingly high, far higher than the average growth of industrial output. Many commentators have interpreted this as the reawakening of Russia's military complex and of the country's renewed rearmament. The debate on an increase in defence spending by the Russian Federation – not least in connection with the recent sinking of the nuclear submarine in the Barents Sea – has led to greater attention being paid to Russia's defence industry. However, there are currently a whole series of facts that indicate that the Russian defence industry is not rising like a phoenix from the ashes.

General trends

Drastic fall in output until 1998

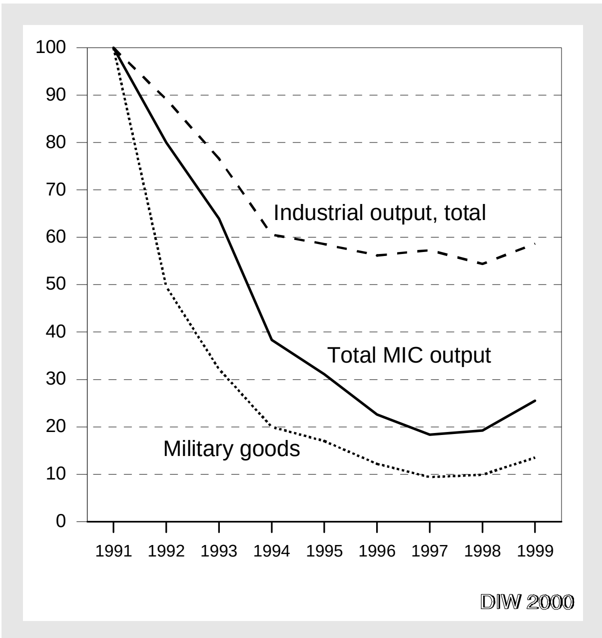
In Russian statistics the term 'defence industry' covers a range of enterprises, research institutes and engineering bureaux, all of which come under the auspices of the government department responsible for the military-industrial complex (MIC).[1] The nuclear industry does not come under this definition; it is not possible to determine its importance within arms production with any precision. It is also unclear to what extent the output produced by spin-offs and privately owned small firms, founded in the shadow of core firms of the military complex, are contained in the available statistics. It is estimated that the data on the MIC encompass around 90% of Russian arms production.[2] Although the information content and reliability of the official statistics are limited, they are the only available basis on which the sector as a whole, and its various segments, can be analysed.

The firms and institutes that form the arms industry produce not only military, but also civilian goods[3]: rough estimates suggest that military goods still account for only around 40 to 50% of the total. Since the start of the transition process the output of the Russian arms sector has contracted drastically, indeed by far more than the average for industry as a whole (cf. figure 1). The nadir was reached in 1998, in which year output was down by around 80% on its 1991 figure.

The reasons behind the rapid contraction of military output are to be seen primarily in the loss of both foreign and domestic markets. The domestic market virtually collapsed in the wake of substantial cuts in spending on military procurement and research and development. Important export markets also dried up, due to both the declining demand (particularly from former Warsaw Pact countries) and the refusal by Russia to continue to supply weapons to certain countries free of charge. Civilian production within the sector was unable to offset the decline in output in the military sphere. Originally geared to the Russian domestic market, it proved uncompetitive once price determination and for-

Figure 1

Military-Industrial Complex (MIC): Output 1991= 100



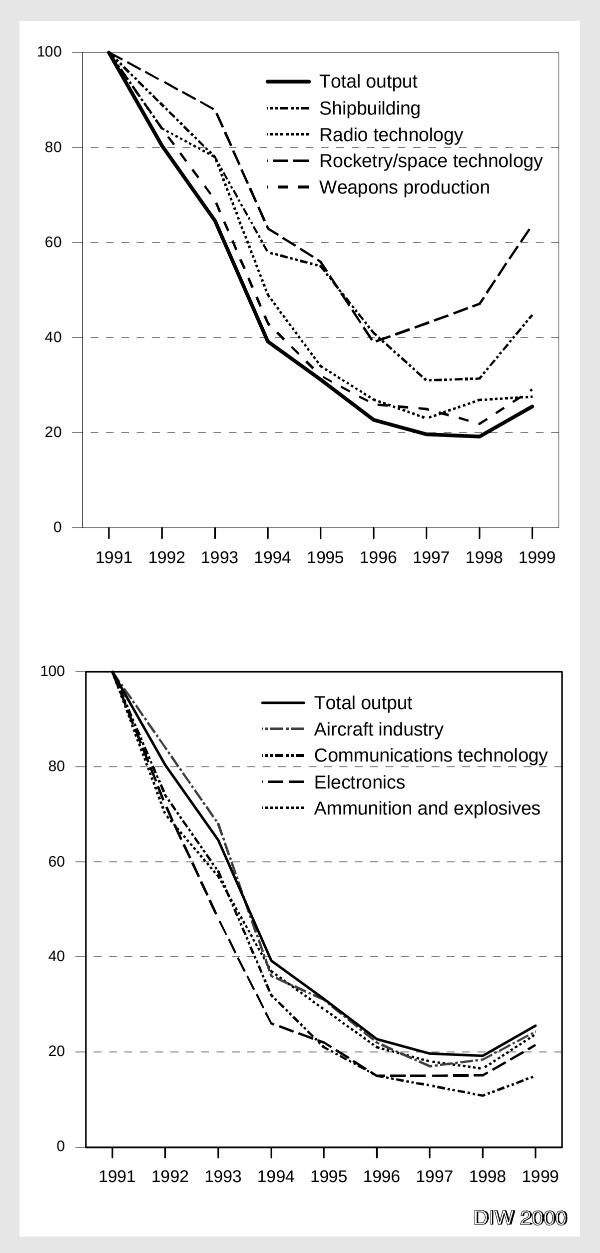
Sources: SIPRI Yearbook 2000; Rossiya 1/2000; Goskomstat: various issues.

[1] The MIC covers the following areas: aircraft industry, rocket and space industry, electronics, communications technology industry, radio electronics, shipbuilding, the weapons industry and the ammunitions industry.

[2] Stockholm International Peace Research Institute (SIPRI), *Yearbook 2000*, Chapter 6, Arms Production, Russia.

[3] Indeed, under the Soviet system these firms played a leading role in the production of many civilian goods, and in the case of some consumer durables (such as refrigerators, cameras, vacuum cleaners) they actually had a monopolistic position on the domestic market.

Figure 2
Military-Industrial Complex: Output by Industry
1991 = 100



Sources: Rossiya; various issues.

eign trade were liberalised. Enterprises were slow to adjust to the new situation, and did so very unevenly.

In 1999 the arms industry reported output growth for the first time since the Russian Federation was founded; the annual growth rate was as high as 33%, whereby the growth of military output, at 35%, was somewhat stronger than that of civilian production (29%).[4] These figures, which are far above the rate of growth of industrial output (8.1%), largely reflect successes on export markets, increased expenditure on military procurement, and the improved competitive position of civilian goods produced by the arms sector compared with foreign competitors on the Russian market. This trend was initiated, in particular, by a depreciation of the Russian rouble by almost 80% in 1998. In 1999 the export of military goods generated export earnings of more than USD 3 billion (cf. table 3).

Sectoral differentiation

Trends in the various segments of the arms sector have diverged, in some cases markedly (cf. figure 2). The reasons for the relatively favourable trend in rocket and space technology and shipbuilding are to seen primarily in the strong foreign demand. Rocket and space technology is one of the few high-tech fields in which Russia's technological systems are competitive in international terms. There is a considerable demand potential that can be tapped with a combination of low prices and mature technology (carrier rockets) developed back in the 1960s. The reorganisation in 1995 of more than 40 companies under the auspices of the Russian Space Agency and cooperation with western companies has also had a beneficial effect.[5]

In shipbuilding, alongside the export of military vessels – in 1998 38% of all Russian arms exports came from this segment[6] – foreign demand for special transport ships has ensured the survival of the shipyards. Usually the Russian firms produce the vessel hulls, whereas the superstructure and electronics are normally imported. During the second half of the 1990s, finance was provided to complete a number of ships for the Russian Navy; in addition Russian shipping companies and oil companies are beginning to modernise or expand their fleets.

Output trends in the aircraft industry lagged somewhat behind the average for the defence sector. This was associated with substantial overcapacity, against the background of the virtually total collapse of civilian demand for Russian aircraft. In the civilian segment, Russian producers were only able to survive in a small number of niche markets, such as that for wide-bodied transport planes[7]; the export of military planes was unable to offset this trend.

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[4] Rossiya 1/2000, p. 64.

[5] The most important cooperation projects in this area are 'International Launch Services', 'Sea Launch', the construction of the 'Alpha' space station and the production of rocket engines within the framework of the Pentagon programme to modernise the Atlas rockets.

[6] *http://ia.vpk.ru/fin/eko/5_1_es_132.htm*

Dynamic development of software firms through cooperation with the West

Within the Soviet system the software industry was not an independent sector, but was integrated within industrial, and particularly defence, firms. In recent years spin-offs and new businesses have led to the creation of a large number of independent small and medium-sized firms. The private Moscow Centre for SPARC Technology, Elbrus 2000, is a perfect illustration of this development. Initially commissioned to distribute products for Sun Microsystems, it soon received software development commissions from its American partner. By this means it proved possible to build up an innovative company in the early 1990s, that is at a time in which there was scarcely any commercial demand for innovative software in Russia. The workforce rose to 400 in three production locations (Moscow, St. Petersburg and Novosibirsk). There was also an increase in the number of foreign clients (including Avant!, Harris, Cygnus and Transmeta). Since the financial crisis in Russia in 1998, the number of commercial customers in Russia itself has also grown; alongside banks and ministries the most important clients include energy and metallurgy firms (cf. http://www.el2000.ru/about.html; also based on an interview with the scientific director of the firm, B. Babayan.)

Electronics and communications technology are the areas where the technological gap on the world market is widest. Even under the previous regime, import dependency had been heavy, even for military production. Yet in recent years a number of joint ventures and other forms of cooperation with western firms[8] have arisen, particularly in research and development (see box), but also in production.

Military procurement at extremely low level

A prime reason for the decline of the defence industry is the sharp decline in government demand, even measured in nominal terms. According to figures provided by the Stockholm International Peace Research Institute (SIPRI), total military spending by the Russian Federation – a figure obtained by totalling all expenditure that is of military relevance – fell from USD 47.5 billion in 1992 to USD 18.1 billion in 1998; in 1999 it rose to USD 22.4 billion (cf. table 1).

Since 1994 military expenditure has fallen sharply as a proportion of Russian GDP; military spending and GDP trends have clearly become decoupled (cf. figure 3).

Actual financing less than planned

The restructuring of spending within the defence budget in favour of spending on human resources and maintaining the armed forces has been reflected in a relatively sharper decline in spending on planned procurement than in total military expenditure.[9] On top of this comes that fact that between 1992 and 1998 only 20 to 30% of government procurement orders were actually paid for[10]; calculations for 1998 show that only USD 418 million were spent on procurement orders.[11] It is estimated that by the start of 1999 the Russian state was in debt to the defence industry to the tune of between 23 and 25 billion rouble.

The arms industry reacted to the state's failure to pay its bills by, among other things, non-payment of wages, taxes and bills for inputs, and by resorting to barter trade, particularly with suppliers. As of January 1999 the total value of the payables of the defence industry (including outstanding taxes due to the Federation budget) amounted to 109.8 billion rouble, whereas the receivables represented just 49.8 billion rouble.[12] This means that the defence industry has received a massive amount of credit from other sectors of the economy. Thus, to some extent the impact of falling procurement

[7] Currently, with the AN-124, the Russian aircraft company 'Volga-Dnjepr' and the Ukrainian company 'Aviyalinii Antonova' share almost 90% of the world market for wide-bodied transport planes. Cf. Ekspert, 26/2000, p. 5.

[8] Among others with Motorola, Samsung, Texas Instruments and Sun Microsystems.

[9] In 1998 spending on procurement represented just 17.4% of the military budget. Cf. Bonn International Centre for Conversion (BICC), *Conversion Survey 2000*, p. 46.

[10] *http://ia.vpk.ru/fin/fom/5_2_vv_9.htm*

[11] BICC, *Conversion Survey 2000*, p76.

[12] *http://ia.vpk.ru/fin/fin 5_2_es_15htm* and *_14.htm*

Table 1

Military Spending in the USA, Germany and Russia[1]

	1992	1993	1994	1995	1996	1997	1998	1999[2]
USA								
Military spending in USD billions	331.28	313.78	296.19	278.86	263.73	262.16	256.05	259.91
% share of GDP	4.90	4.50	4.20	3.80	3.50	3.40	3.20	3.20
Germany								
Military spending in USD billions	49.95	44.93	41.91	41.16	40.34	38.91	39.00	39.54
% share of GDP	2.10	2.00	1.80	1.70	1.70	1.60	1.50	1.50
Russia								
Military spending in USD billions	47.50	41.90	40.50	25.70	23.40	24.90	18.10	22.40
% share of GDP	5.50	5.30	5.90	4.10	3.80	4.20	3.20	3.40

1 Figures at constant 1995 prices. — 2 Provisional.
Sources: SIPRI Yearbook 2000, Tables 5.A3., 5.8.; http://www.nato.int/docu/pr/1999/p99-152e.htm.

expenditure has been cushioned. Even so, the military output of the arms industry fell between 1992 and 1999 to a greater extent than total military expenditure (–72.7% compared with –53%).[13]

Due to the selective deployment of the scarce procurement resources – more than half of which were concentrated on modernising the strategic nuclear weapons[14] – the serial production of many conventional weapons systems (including aircraft and helicopters) virtually ground to a halt. There was even a decline in repair and maintenance work, so that many weapons systems suffered frequent failures.

The war in Chechnya – a stimulus to the arms industry?

So far the war itself has evidently not generated a procurement boom, leading merely to a limited number of new orders. These have been concentrated in those areas in which Russia's technological backwardness is significant.[15] The costs of the war consist largely in personnel expenditure. The supplementary pay given those members of the army and the interior ministry participating actively in the war, alone, is estimated to amount to between around USD 80 and 100 million per month.[16] Additional costs are also incurred for fuel and lubricants and for repair services. Military hardware and munitions can largely be drawn from stockpiles.

The war in Chechnya may, however, lead to changes in the structure of military procurement in the future. There has been a debate on abandoning the goal of nuclear-strategic parity with the USA in favour of strengthening the conventional armed forces, in order to defend Russia's territorial integrity and its ability to deploy troops in international military activities and counter local conflicts. Such a change of direction would, however, require the commitment of substantial budgetary resources. It would imply the need to modernise areas of decisive importance for today's military technology and waging war, such as precision-steered weaponry and C^3 systems (command, control and communication). Producing such systems requires a high level of development and corresponding capacities in the areas of communications and information technology and electronics, that is in those areas in which Russia's gap on the West is widest.

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[13] 1991 data on military spending are not available. Cf. J. Cooper, 'The military expenditure of the USSR and the Russian Federation 1987-97', *SIPRI Yearbook 1998*, p. 258.

[14] According to information provided by defence minister Sergejev, 80% of the procurement resources were dedicated to this area; cited in *The Bulletin of the Atomic Scientists*, Vol. 56, No. 4, July/August 2000, p. 58.

[15] This is also indicated by the fact that in the first half of 2000 weapons production recorded the lowest growth rates within the MIC. Indeed, output fell by 4.2% compared with the same period the previous year. The fastest growth was recorded by communications technology, output of which rose by 92.5%. Cf. *http://ia.vpk.ru/cqi-bin/ia/fin/rep.pl.* One example is the development and production of a new generation of compatible tactical wireless sets ('Akveduk'), which are to improve the substantial communications problems experienced between the Russian troops in Chechnya. Cf. *Defense News*, May 29, 2000, p. 18.

[16] Russian sources claim that additional pay of between 800 and 1000 rouble per man per day is being provided, which is between USD 800 and 1000 per month. Cf. Kommersant-Daily, April 22, 2000, p.3. Given an estimated deployment of 100 000 men, the total additional cost would be of the order of between USD 80 and 100 million per month.

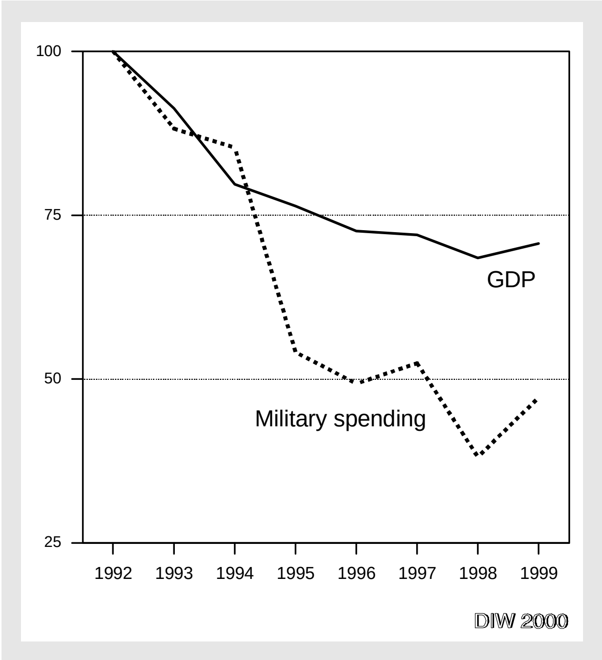
The increase in planned procurement expenditure in 2000 and 2001 indicates the intention to strengthen the defence industry.[17] It remains to be seen, however, whether it will actually be financed. There have been repeated reports that the funds set aside in the defence budget for 2000 have not been entirely disbursed.

In the medium and longer term it is not to be expected that military expenditure can be increased to above 3 to 4% of GDP.[18] A more pronounced redistribution of government finances would not only generate social tensions, but would also be opposed by the lobby groups representing other sectors. Such an increase could therefore only be implemented under the conditions of a state of emergency. Given that there is a trade-off between maintaining manning levels and the technological modernisation of the armed forces, a drastic reduction in the size of the armed forces and in the number of units and divisions would be a necessary condition of any more-than-proportional increase in spending on military hardware. According to estimates by Russian experts, it would be necessary to reduce the number of armed forces personnel from the current figure of 1.2 million to around 700 000 to 800 000 men, or even fewer, in order to raise procurement expenditure to 45% of total defence spending.[19]

Figure 3

GDP and Military Spending in Russia

1992 = 100



1 No figures are available on military spending in 1991.
Sources: SIPRI Yearbook 2000; Goskomstat: various issues.

Arms exports at a low level

As in other areas, there are significant differences between the data on the structure of Russian arms exports provided by international institutes (such as SIPRI) and official Russian data.[20] However, they do point to similar development trends. Following the dissolution of the Warsaw Pact, Russian arms exports fell from USD 10.46 billion in 1990[21] to between USD 3.13 and 3.5 billion, depending on the source, in 1999 (cf. table 2). This means that Russia once again occupies second place, behind the USA, in the world rankings of arms exporters, followed by France (USD 1.7 billion) and Germany (USD 1.3 billion). Given that the arms exports volume of Russia is much lower than that of the US, the economic importance of arms exports, in terms of their share of GDP, is, however, much greater for Russia than for the US (0.86% compared with 0.14%).

In spite of the facilitation of arms exports they have been subject to fluctuations. Moreover, the substantial barriers to market entry facing Russian companies in some segments of the international arms trade suggest that there will be no sustained growth of Russian arms exports.

The most important export goods have traditionally been aircraft (especially the Suchoi and MiG series), helicopters (MIL and Kamov), submarines and other warships, anti-aircraft defence systems and certain types of armoured vehicle. In geographical terms, exports have been concentrated on just a few countries. More than

[17] At 140.8 billion rouble, the official defence budget for 2000 is 32% above that of the previous year. According to informal figures, this is claimed to encompass procurement expenditure of 62 billion rouble (*Defense News*, January 31, 2000, p. 6), equivalent to between USD 2.1 and 2.3 billion. This is substantially higher than the previous year. For 2001 the budget plan has earmarked 206.3 billion rouble for defence, representing 2.66% of planned GDP (*Izvestia*, 24.8.2000).

[18] According to the Chairperson of the Duma defence committee, A. Arbatov, the legal ceiling on defence expenditure of 3.5% of GDP will be reached neither in 2000 nor in 2001. A figure of 2.6% is expected for 2001, broadly in line with the share forecast for 2000.

[19] Sovet po vnezhney i oboronnoy politike. Strategiya dlya Rossii: Povestka dnya dlya presidenta 2000. Moskau 2000, p. 139.

[20] Whereas the SIPRI data on arms exports consist of trend indicators on the basis of determined exchange rates for large-scale weapons systems, the Russian data subsume under the heading 'Military-technical co-operation' not only the export of weapons and military hardware, but also services, military aid, licences and the joint development of weapons and military technology. Cf. *SIPRI Yearbook 1999*, p. 442/3. Illegal exports are not covered by the data.

[21] This includes a large proportion of exports to the former members of the Warsaw Pact paid for in transfer rouble and exports to developing countries that were not paid for at all.

Table 2
Arms Exports by the USA, Germany and Russia and World Total[1]

	1994	1995	1996	1997	1998	1999[2]
World						
Arms exports in USD billions	19.69	19.99	21.29	25.72	23.72	20.61
USA						
Arms exports in USD billions	9.84	9.19	9.31	11.43	13.07	10.44
% share of GDP	0.16	0.15	0.14	0.17	0.18	0.14
Germany						
Arms exports in USD billions	2.64	1.47	1.41	0.68	1.19	1.33
% share of GDP	0.15	0.08	0.08	0.04	0.06	0.05
Russia						
Arms exports in USD billions	1.16	3.34	3.58	2.83	1.75	3.13
% share of GDP	0.29	0.88	0.98	0.77	0.50	0.86

1 Figures at constant 1995 prices. — 2 Provisional.
Sources: SIPRI Yearbook 2000, Tables 5.A3., 5.8.; Goskomstat: Rossiya v tsifrakh 2000, S. 144; http://www.eia.doe.gov; http://www.nato.int/docu/pr/1999/p99-152e.htm.

half are sold in China and India, although both countries have frequently paid for them, not in cash, but in kind. According to Russian experts, barter trade accounted for 75% of the receipts from arms exports to China until the mid-1990s and for 50% since then, largely reflecting the difficulty of selling Chinese products (primarily cheap textiles and shoes).

Traditionally the military links between Russia and India have been very close. The Indian army, navy and airforce are largely equipped with Russian hardware.[22] It is to be expected that the smouldering conflict between India and Pakistan, India's efforts to create an integrated air-defence system, and the demand for spare parts and repairs will mean that Russian exports to the country will continue. Given that China, and also India, is increasingly interested in technological co-operation with the Russian arms industry in order to develop and modernise their own defence capacities, there is likely to be a trend towards a decline in exports of finished products. In the longer term, China, in particular, could become a serious competitor for Russia on certain segments of the arms market.

Other traditional partners of Russia, such as Syria, Iraq, Iran and Libya, must be considered to be unstable markets for both economic reasons – some of them still have outstanding debts for weaponry supplied by the Soviet Union – and political reasons. Importers of Russian arms in south-east Asia – Indonesia, Malaysia and Vietnam – have in some cases pulled out of contracts with Russia, in the wake of the Asian financial crisis. Following the financial recovery, this region remains of interest to Russian arms suppliers, although it must be doubted whether the volume of exports will substantially exceed that prior to the on set of the crisis. Additional markets for Russia are Angola, Ethiopia and Eritrea, all of which are involved in armed conflict with each other or with neighbouring countries. The order of magnitude of their demand, however, is hardly significant.

Without co-operation with the West little chance of success on non-traditional markets

In the last ten years Russian companies have swiftly learnt the conditions and customs of the international arms business and have overcome barriers such as lack of market experience, inadequate supply of after-sales services and spare parts, and lack of credit and of the supplementary non-military services that are usual on this market. Even so the market for large-scale weapons systems remains a highly politicised market with substantial barriers to market entry.

Russian arms exporters still have only a very limited role in the Middle East, one of the most lucrative developing-country markets for weapons. Following the Gulf War the USA has remained the main partner of the countries allied with it. The markets of NATO member states are also virtually impenetrable for Russian exporters. They have been unable to revitalise exports to the former partner countries of the Warsaw Pact that have now become members of NATO, or have a prospect of doing so. Exports to Greece and Cyprus are still limited, also for political reasons. Even competitive systems, such as S-300 air-defence systems, cannot be sup-

[22] Figures of up to 60% or 80% are not uncommon; cf. *Jane's Defense Weekly*, 17 November 1999.

Table 3

Russia's Engineering and Arms Exports

	1992	1993	1994	1995	1996	1997	1998	1999
				USD billions				
Exports	53.6	59.6	67.5	81.1	88.6	88.3	74.2	74.3
Of which engineering exports	3.8	2.9	5.6	7.9	8.5	9.1	8.2	7.8
Of which arms exports	0.9	1.2	1.7	3.1	3.9	3.6	2.7	3.5
				%				
Shares								
– engineering in total exports	7.1	4.9	8.3	9.7	9.6	10.3	11.1	10.6
– arms exports in engineering exports	22.6	41.4	30.4	39.2	45.9	39.6	32.9	44.6

1 Figures at current prices. — 2 Figures for 1992 and 1993 excluding engineering exports to the CIS countries.
Sources: Goskomstat: Yearbook 1997, p. 580; Yearbook 1999, p. 568; Sotsiyal'no-ekonomicheskoe polozhenie Rossii janvar' 2000 goda, p. 87; SIPRI official statistics file on arms transfers.

plied to countries that are heavily dependent on arms imports from the USA. They are held to be technologically superior to the American Patriot system, and are 30% cheaper.[23] Demand for them has risen since the Kosovo war.

In the absence of co-operation with leading NATO weapons producers, Russian firms will find it extremely difficult to increase their market shares in such countries. Although there have been some examples of such co-operation – with US firms for rocket engines, with French firms for electronics and avionics[24] – they have been of little quantitative importance. As the most recent example of the failure to establish an East-West co-operation – to build a version, adapted to NATO standards, of the AN-70 transport plane, a joint Russian-Ukrainian product – shows, greater cost-effectiveness is not always sufficient to clinch a deal. The plane in question, which can be deployed for both military and civilian purposes, is considered to be superior, in economic and technological terms, to the planned west European transporter, the Airbus A-400. Even after all the critical systems have been adapted to western standards, the final price of the AN-70 is just 60% that of the A-400.[25] Moreover, the AN-70 has already been tried and tested and is available at short notice. Despite budget restrictions in all the EU countries, procurement of the AN-70 has been rejected.[26] The Russian and Ukrainian firms will scarcely be in a position, left to their own devices, to generate the finance necessary to embark on series production.

Arms exports a stability factor all the same

From a macroeconomic perspective the volume of Russian arms exports is marginal. Yet, even if they only account for around 4-5% of Russian exports, in many cases exports are necessary in order to exploit economies of scale, and thus to ease the pressure on the defence budget. In recent years the volume of exports has been greater than the domestic demand for arms. At times they were the only source of finance that enabled firms to meet procurement orders and to undertake some development. The concentration of exports on certain firms exacerbates the process of differentiation between firms in different areas of the defence industry. Moreover, in view of the low international competitiveness of the civilian parts of the sector, arms exports are currently an important means for Russia to diversify its export structure and to participate in international trade in manufactured goods. In 1999 the export rate of the

[23] J. McLean, 'Russia seeks arms for food deal with Thailand', Reuters, 30.11.1999.

[24] For instance the SU-30 fighters for India are equipped with French avionics; the night-sight systems for the Ka-50 helicopter also comes from France. Russian arms firms have sought co-operation agreements with western firms even for orders to upgrade Soviet weapons systems, as a way of raising their competitiveness. An example of this is the joint venture between Daimler-Chrysler, MiG and Rozvooruzenie to modernise the MiG-29. Cf. S. Saradzhyan, 'Russian-German joint venture positions to win MiG upgrades'. *Defense News*, July 10, 2000, p. 18.

[25] Bruce Bird, Director of Air Foyle Ltd., Defense Procurement Analysis (DPA), Spring 2000, p.21. Other experts have expressed the view that the price advantage over the A-400 is even greater.

[26] Clearly, in their attempts to create a joint (west) European aerospace company and to develop a common, co-ordinated military procurement policy within the EU, permitting the economies of scale required for the European armaments firms to be economically efficient, the political will of the EU states affected was sufficient to block even a partial integration of Russian and Ukrainian arms firms.

military goods produced by the sector was 69%, whereas that of its civilian output was just 24%. Arms exports account for almost 45% of total sales abroad of engineering products (cf. table 3).

Sluggish restructuring of the defence sector

Efficient organisational structures are an important precondition if arms companies are to raise productivity and reduce costs. There has been only a small change in the number of firms; in mid-1999 the figure was still around 1 490. Little progress has been made with the – originally envisaged – privatisation process. For three years now, entirely state-owned firms have accounted for more than 40% of the total number of firms, and there has even been a slight increase in the proportion of firms in which the state holds a share since 1997 (1999: 33%).[27] There is still huge overcapacity and an excessively broad product range. The co-operation between research and development, on the one hand, and production, on the other, remains inefficient in many cases. The rising age of the workforce also constitutes a problem. Wages in the sector are more than 30% lower than the industrial average, inducing, young, flexible and highly skilled workers, in particular, to leave the industry. Scarcely any youngsters are willing to be recruited.

The restructuring deficiencies are particularly evident in the area of aviation. Whereas in the USA and western Europe a profound concentration process has taken place, Russia still has six large companies in this field (MAPQ, Suchoi, Tupolev, Ilyusin, Yakovlev and the Russian-Ukrainian consortium for the construction of the AN-70, in which the Russian firm Aviyakor has a stake), and several hundred smaller companies. If the optimistic forecasts of Russian exports for domestic demand to the year 2007 – namely for 50 to 70 civilian and 15 to 25 military aircraft and between 20 and 40 civilian and military helicopters – prove realistic, only 18-20% of the existing capacities will be utilised, even if exports can be raised to 25 units a year.[28]

Although the government under President Putin has clearly made greater efforts to drive forward the process of concentration within the Russian defence industry,[29] no progress has been made towards privatisation and an efficient reorganisation of procurement policy according to strictly competitive criteria. Yet these are crucial factors if the restructuring processes by defence firms are to be accelerated.

Outlook

In spite of the recent strong growth of output in the arms industry and the planned further increases in spending on military procurement, it must be doubted whether these trends are sustainable. Even on the optimistic assumption that government tax receipts will continue to rise, with defence spending keeping pace, it is unlikely that the defence industry as a whole will regain its former strength. Throughout the world the production of weapons is increasingly dependent on access to modern technologies from other sectors. Many of the so-called critical technologies for the production of military goods – such as software and information and telecommunications technologies – are now developed world-wide in the civilian sector of the economy. Russia almost entirely lacks such a dynamic production environment. Today's successes are due almost entirely to technological developments dating back to the time of the Soviet Union, or to co-operation with western firms. However, if the Russian armed forces were radically slimmed down and modernised, and if co-operation with western firms were expanded, some Russian arms producers might be able to hold their own against global competition in certain high-tech areas of the market.

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[27] *http://ia.vpk.ru/body.htm*

[28] Rossiya, 1-2/1996, p. 95 and see also Rossiyskaya Gazeta, 7.9.1997, p. 3.

[29] Tupolev PLC was set up and the air-defence capacities have been concentrated in two companies, Almaz and Antei.