

Nika Chitadze

International Black Sea University, Georgia

ORCID ID: <https://orcid.org/0000-0003-2806-6426>

e-mail: nchitadze@ibsu.edu.ge

Military consequences of economic sanctions against Russia

Introduction

Russian military industry is a fundamental factor in the national power of this country. Enterprises operating in its defense sector are largely state-owned. Accordingly, Russia's large military corporations and their subsidiaries do not operate according to the principles of the internal competitive market, which is one of the foundations of technological development, but their main goal is to pursue Moscow's political interests and ensure the stability of the regime. Against the background of having strong economic leverage in the form of energy resources along with military capabilities, the fact is that thanks to these two powerful weapons, Russia is able not only to pursue its economic interests but also to blackmail neighboring countries and appropriate their territories to satisfy its imperialist intentions. The responsibility of the defense industry in the current model of Moscow's governance is exactly what the Russian government itself has based its legitimacy on – military modernization, and restoration of Russia's strength and greatness. One of the ugly manifestations of this is the military aggression in Ukraine, which is costing the lives of thousands of innocent people. The sanctions imposed by the West on an unprecedented scale will affect Moscow's defense capabilities, the only question is: when and how much? Russian military production, on the one hand, helps the country pursue an aggressive foreign policy, on the other hand, arms exports are an important source of the country's budget revenues and, at the same time, allow it to exert political influence on the buyer states. The collapse of Russia's attack on Ukraine may not only sacrifice the latter's hegemonic goals but also deprive Russia of existing and potential users of military weapons. There is no doubt that Russia has suffered colossal military losses as a result of the war, and questions arise about the quality of its weapons and heavy equipment. Until now, there was a consensus that Russian weaponry was a capable and affordable alternative to Western weapons, although this fact may also be at the cost of war. As a result of the sanctions, Russia faced not only financial problems but also technical ones. In

addition to Western countries, the leading technological powers of Asia have restricted Russia's access to critical components needed for military production. The existing restrictions apply to such advanced technologies as semiconductors, telecommunications equipment, software and encryption, microelectronics, aviation systems, oil production equipment, and other manufacturing components. In this context, it is important to consider the impact that economic sanctions may have on Russia's military capabilities, recovery prospects, and aggressive foreign policy in the future.

Russia's military expenditures

Every year in the world, the defense expenses of the states are increasing. According to the latest annual report of the Stockholm International Peace Research Institute, in 2020 America spent 778 billion USD on armaments, making it the world's leading country. China (US\$252 billion), India (US\$73 billion), Russia (US\$62 billion), and Great Britain (US\$59 billion) share the next places¹. According to the internal agreement of the North Atlantic Alliance, the member states are obliged to increase their military budgets to 2% of the GDP. For comparison, the military expenditures of the leading EU countries look like this: Germany – 53 billion USD, France – 52 billion USD, and Italy – 25 billion USD². Russia's military spending has grown significantly over the past three decades. Figure 1 shows the number of military expenditures made by Russia after the disintegration of the USSR.

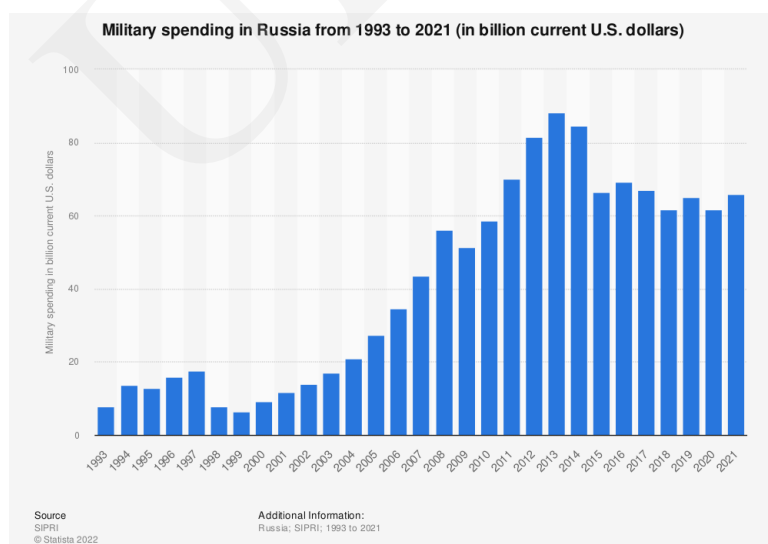


Fig. 1. Military Spending in Russia after disintegration of USSR

Source: <https://www.statista.com/statistics/1203160/military-expenditure-russia/>

¹ SIPRI Yearbook 2021. Stockholm International Peace Research Institute. Retrieved from: [HTTPS:// www.sipri.org/yearbook/2021](https://www.sipri.org/yearbook/2021)

² *Ibidem*.

During this period, Russia had the largest expenditure in 2013, which exceeded 88 billion US dollars, and after 2014, that is, the annexation of Crimea, its military expenditures more or less decreased and became stable, which is in the range of 62–69 billion US dollars.

The Russian military industry consists of about 1,300 companies, employing approximately 2.5–3 million people. The largest of these companies is Rostec, which was founded by President Vladimir Putin in 2007. The organization includes about 700 enterprises, which together form 14 holding companies. Rostec productions cover up to 60 locations in the Russian Federation and export goods to more than 70 countries of the world. The Russian government mainly spends the increased funds on the modernization of military weapons and heavy equipment. Because after the heavy war with Ukraine, Russia has colossal military losses, in the coming years it will likely increase its funding to replenish its reserves of losses. However, on the other hand, with massive economic sanctions and limited access to Western technology, it is interesting to see how well it will manage. At the current stage, Russia's only major source of budget revenues is the export of energy resources, the proceeds of which are spent on the war, on the one hand, and on the other – to protect the national currency and maintain a low rate of inflation, so that it appears that the economy is working, as usual, when it is it's not like this.

Military Production and Dependence on Western Technologies

Russia is one of the largest producers of weapons and heavy equipment in the world. Its military production nomenclature includes air defense systems (S-400, Tor-M1, Strela-10), armored vehicles (T62, BTR, T-90S), air strikes (Su-35s, MiG-35), missile weapons (9M113, Kh -35, PJ10), engines and light weapons of various manufactures. Its most famous product is the AK-47 rifle, the so-called "Kalashnikov". It was created in the 1940s by Soviet Army General Mikhail Kalashnikov. It is a cheap, durable, and easy-to-use machine that is used in more than 100 countries of the world. In its abbreviation, "AK" stands for "automatic Kalashnikov", and the number "47" stands for the year the weapon was developed³. In terms of military production, Russia is significantly dependent on Western technologies and production components. These include semiconductors, microelectronics, chips, machine tools, and software.

Sanctions imposed by the West will affect not only the production of military equipment for the Russian armed forces and their foreign buyers but also the supply of spare parts, ammunition, and refurbishing packages to existing customers. As a result, foreign buyers may decide to switch to more reliable sources of military equipment, although this is not an easy process and involves additional financial costs. There are already signs of tangible problems in military production in Russia. For example, Russia was forced to remove semiconductors from dishwashers and refrigerators, which

³ Aljazeera, 2022. Infographic: Which countries buy the most Russian weapons? Retrieved from: <https://www.aljazeera.com/news/2022/3/9/infographic-which-countries-buy-the-most-russian-weapons>

would be used to manufacture high-tech weapons. At the end of March this year, the US Treasury Department imposed sanctions on a global network of individuals and shell companies. It seems that Russia was trying to bypass the sanctions to obtain components necessary for military production. According to the American side, these persons helped Russia avoid multilateral restrictions on the export of leading Western technologies. In addition, the Treasury Department imposed sanctions on four technology companies that supply microelectronics, navigation equipment, and satellite imaging software to Russia. One of them is the company Mikron, which is the largest producer of chips in Russia. It is responsible for the manufacture of debit card chips used in Russia's domestic payments system MIR⁴. This system was created in response to sanctions imposed after the annexation of Crimea in 2014. The United States has also targeted three more industrial sectors of the Russian economy – aerospace, marine, and electronics – as they are of strategic importance to the country's defense and armaments. In addition, sectors that were critical to the Kremlin's war effort were financial services, technology, and defense industries, against which the West had already adopted a corresponding package of sanctions⁵. One of the targets of American sanctions was the "Tactical Missile Corporation" (KTRV). It is a Russian state-owned defense conglomerate that produces hypersonic weapons and technology that is actively used in radar systems and other multi-purpose missiles. In late March, the Biden administration, in addition to KTRV, imposed sanctions on dozens of Russian defense companies, including "High Precision Systems Corporation," which makes air-to-surface missiles like the Iskander and anti-tank missile systems. Sanctions also affected the company "Techmash," which produces many types of military-combat materials, missile systems, and unguided bombs. The US Commerce Department has introduced new export control restrictions aimed at preventing Russia from supplying US-made technology that could be used in the manufacturing process of military equipment, even if that technology is supplied via third countries. This includes microelectronics, telecommunications, information security equipment, sensors, navigation equipment, avionics, and civil aircraft parts⁶ (OFAC, 2022). In the West's deep belief, sanctions and strict export controls have affected Russia's defense industry and its ability to rebuild, particularly in the areas of military and electronic manufacturing components. To deal with the pressing problems, Moscow created an interagency committee to figure out how to get more military equipment domestically and if the so-called from friendly countries, such as China, may be willing to work around sanctions to provide micro-processors and munitions to Russia, two of the latter's greatest military needs. It was

⁴ Wilkie Ch. 2022. "U.S. Sanctions Global Network of Firms Helping the Russian Military Evade Export Controls". CNBC. Retrieved from: <https://www.cnbc.com/2022/03/31/us-sanctions-a-global-network-helping-russian-military-evade-export-controls-.html>

⁵ *Ibidem*.

⁶ U.S. Department of The Treasury. 2022. "U.S. Treasury Sanctions Russia's Defense-Industrial Base, the Russian Duma and its Members, and Sberbank CEO". Retrieved from: <https://home.treasury.gov/news/press-releases/jy0677>

created in the 1940s by Soviet Army General Mikhail Kalashnikov. It is a cheap, durable, and easy-to-use machine that is used in more than 100 countries of the world. In its abbreviation, “AK” stands for “automatic Kalashnikov”, and the number “47” stands for the year the weapon was developed⁷ (Al Jazeera, 2022). In terms of military production, Russia is significantly dependent on Western technologies and production components. These include semiconductors, microelectronics, chips, machine tools, and software. Sanctions imposed by the West will affect not only the production of military equipment for the Russian armed forces and their foreign buyers but also the supply of spare parts, ammunition, and refurbishing packages to existing customers. As a result, foreign buyers may decide to switch to more reliable sources of military equipment, although this is not an easy process and involves additional financial costs. There are already signs of tangible problems in military production in Russia. For example, Russia was forced to remove semiconductors from dishwashers and refrigerators, which would be used to manufacture high-tech weapons. At the end of March this year, the US Treasury Department imposed sanctions on a global network of individuals and shell companies. It seems that Russia was trying to bypass the sanctions to obtain components necessary for military production. According to the American side, these persons helped Russia avoid multilateral restrictions on the export of leading Western technologies. In addition, the Treasury Department imposed sanctions on four technology companies that supply microelectronics, navigation equipment, and satellite imaging software to Russia. One of them is the company Mikron, which is the largest producer of chips in Russia. It is responsible for the manufacture of debit card chips used in Russia’s domestic payments system MIR⁸ (Wilkie, 2022). This system was created in response to sanctions imposed after the annexation of Crimea in 2014. The United States has also targeted three more industrial sectors of the Russian economy – aerospace, marine, and electronics – as they are of strategic importance to the country’s defense and armaments. In addition, sectors that were critical to the Kremlin’s war effort were financial services, technology, and defense industries, against which the West had already adopted a corresponding package of sanctions⁹ (Wilkie, 2022). One of the targets of American sanctions was the “Tactical Missile Corporation” (KTRV). It is a Russian state-owned defense conglomerate that produces hypersonic weapons and technology that is actively used in radar systems and other multi-purpose missiles. In late March, the Biden administration, in addition to KTRV, imposed sanctions on dozens of Russian defense companies, including “High Precision Systems Corporation,” which makes air-to-surface missiles like the Iskander and anti-tank missile systems. Sanctions also affected the company “Techmash,” which produces many types of mili-

⁷ Aljazeera, 2022. Infographic: Which countries buy the most Russian weapons? Retrieved from: <https://www.aljazeera.com/news/2022/3/9/infographic-which-countries-buy-the-most-russian-weapons>

⁸ Wilkie Ch. 2022. “U.S. Sanctions Global Network of Firms Helping the Russian Military Evade Export Controls”. CNBC. Retrieved from: <https://www.cnbc.com/2022/03/31/us-sanctions-a-global-network-helping-russian-military-evade-export-controls-.html>

⁹ *Ibidem*.

tary-combat materials, missile systems, and unguided bombs. The US Commerce Department has introduced new export control restrictions aimed at preventing Russia from supplying US-made technology that could be used in the manufacturing process of military equipment, even if that technology is supplied via third countries. This includes microelectronics, telecommunications, information security equipment, sensors, navigation equipment, avionics, and civil aircraft parts¹⁰ (OFAC, 2022). In the West's deep belief, sanctions and strict export controls have affected Russia's defense industry and its ability to rebuild, particularly in the areas of military and electronic manufacturing components. To deal with the pressing problems, Moscow created an interagency committee to figure out how to get more military equipment domestically and if the so-called friendly countries, such as China, which may be willing to work around sanctions to provide microprocessors and munitions to Russia, two of the latter's greatest military needs. In addition, shortly, the problem of qualification of the workforce will become acute. Up to 100,000 IT and software specialists have left the country since the start of the war, and the number is expected to rise. This, in turn, will have a major impact on Russia's technological and military development. As a result, Western sanctions appear to have forced Russia to "dust off" Soviet defense systems and weaponry. Even though the existing means are of less accuracy, reliability, and capabilities and, therefore, easily visible to the adversary, the fact is that Russia simply has no other way at this stage, except to use them¹¹ (Detsch, 2022). Even after the annexation of Crimea in 2014, Russia's military production faced significant challenges. One of the reasons for this was the sanctions imposed by the West due to military aggression, which also affected the military-technological trade. Moscow responded to this move by saying that it would develop domestic production and use its products. However, in 2019, Russian senior officials themselves admitted that technological replacement was difficult for the Russian defense industry¹² (Karpukhin, 2019). Thus, by 2019, the debt of Russia's state-owned defense arms manufacturing companies reached USD 10 billion, and the financial viability of Russia's entire military-industrial complex exceeded USD 31 billion. The indebtedness of major military hardware companies, in turn, affected their research and technological development capabilities, as well as product demonstration and testing processes¹³ (Banerjee, Tkach, 2022). For the last

¹⁰ U.S. Department of The Treasury. 2022. "U.S. Treasury Sanctions Russia's Defense-Industrial Base, the Russian Duma and its Members, and Sberbank CEO". Retrieved from: <https://home.treasury.gov/news/press-releases/jy0677>

¹¹ Deutsch J. 2022. "Western Sanctions are 'Beginning to Bite' Into Russia's Military". Foreign Policy Journal. Retrieved from: <https://foreignpolicy.com/2022/05/12/western-sanctions-are-beginning-to-bite-into-russias-military/>

¹² Karpukhin S. 2019. "Import Substitution in Russia's Defense Industry Remains a Problem, Says Top Prosecutor". Russian News Agency. Retrieved from: <https://tass.com/defense/1070976>

¹³ Banerjee V., Tkach B. 2022. "After Ukraine, where will India Buy its Weapons?". Warontherocks. Retrieved from: <https://warontherocks.com/2022/04/after-ukraine-where-will-india-buy-its-weapons/>

decade, achieving technological sovereignty has been an irrevocable priority for Russia, especially since 2014, although it turned out to be quite difficult for it. One of the reasons for this is the Russian strategy, which is mainly focused on maintaining authoritarian power and not on encouraging economic and technological development. As a result of the sanctions at that time, Russia was forced to import the necessary production components from different countries. As a result, from 2014 to 2019, imports of semiconductor devices in Russia increased by 60%, and imports of integrated circuits increased by 25%. In addition, the country has dramatically increased purchases of various types of electronic equipment, telecommunications, spare parts, and data storage systems¹⁴ (Ringhof, 2022). Unlike the retaliatory sanctions for the annexation of Crimea, the scope of restrictions today is much wider and more complex, therefore, more complications are expected in Russian military production. Western leaders say that the measures they have imposed will help disrupt Russian supply chains, which will delay and in most cases make impossible the process of building, restoring, and modernizing military equipment on the part of the aggressor. Global technology players from Asia such as South Korea, Japan, and Taiwan have joined the Western solutions. Therefore, it can be safely said that Russia is largely cut off from the global high-tech industry. When it comes to replacing Russia's military and technological production components, the first alternative that comes to mind is China. However, at this stage, China cannot fully satisfy the Russian market. This has a certain political and economic rationale. First, although China has made remarkable progress in recent years, there are still fields where Chinese technology lags significantly behind the production of both Western and Asian countries. This is especially true for semiconductors. According to experts, the leading Chinese company SMIC needs several years to technologically catch up with such advanced chip manufacturers as South Korea's Samsung and Taiwan's TSMC. On the other hand, over-reliance on China in critical components for Russia is an unprofitable political position when the struggle for regional dominance is underway. Thirdly, it is unlikely that Chinese companies will spoil trade-partnership relations in Western markets and endanger their interests just to do business in the relatively insignificant Russian market for them¹⁵ (Ringhof, 2022).

Military trade

Russia is one of the largest exporters of military weapons, the second in order. In this regard, it is behind only the United States of America. 19% of global arms sales come from Russia. From 2016–2020, Russia sold weapons worth 28 billion US dollars to

¹⁴ Ringhof J. 2022. "How Technology Sanctions Can Help Counter the Threat from Russia". European Council on Foreign Relations. Retrieved from <https://ecfr.eu/article/give-and-tech-howtechnology-sanctions-can-help-counter-the-threat-from-russia/>

¹⁵ Ringhof J. 2022. "How Technology Sanctions Can Help Counter the Threat from Russia". European Council on Foreign Relations. Retrieved from <https://ecfr.eu/article/give-and-tech-howtechnology-sanctions-can-help-counter-the-threat-from-russia/>

45 countries around the world. Its biggest customer is India, from which it received 6.5 billion dollars in revenue over the last 5 years. The next places are shared by China (5.1 billion USD), Algeria (4.2 billion USD), Egypt (3.3 billion USD), and Vietnam (1.7 billion USD). In addition, buyers of Russian equipment include countries in Africa and Southeast Asia, as well as the states of the Persian Gulf and Central Asia. From 1990–2010, Russia expanded its sales and acquired new customers such as Venezuela, Pakistan, Turkey, the United Arab Emirates, and Myanmar. Russia's military exports include aircraft, engines, missiles, armored vehicles, air defense systems, and various

RUSSIA-UKRAINE WAR

What weapons Russia sells to the world

Half of Russia's arms exports are aircraft. Many Russian weapons are upgrades to its Soviet-era arsenal but it is **developing more advanced systems**. Between 2016 and 2020, Moscow sold \$28bn of weapons to 45 countries.



Fig. 2. Types of Weapons, which Russia exported to the International Market within 2016–2020

Source: <https://www.aljazeera.com/news/2022/3/9/infographic-which-countries-buy-the-most-russian-weapons>

types of firearms¹⁶ (Al Jazeera, 2022). Figure 2 shows, what types of military equipment have been sold by Russia within the period 2016–2020 and in which amount.

Russia received quite a lot of income from the sale of military equipment every year, which over time became an important source for its economy. Therefore, for Russia to end the war in its favor, along with political goals, would send a message to its arms buyers that their technology is successfully handling difficult military tasks, although this message now raises many questions. Russia spends about 19 billion dollars annually on the import of high-tech goods. The largest share of its purchases, or 45%, comes from the European Union, followed by the United States – 21%, China – 11%, and the United Kingdom – 2%. The main categories of Russian imports are air components and aviation spare parts, which total approximately US\$6 billion, and information and communication equipment, which exceeds US\$4 billion. The EU is also a major supplier of biotechnology, electronics, life sciences, and high-performance manufacturing goods, which together account for more than half of Russian military imports. The United States of America was the main supplier of air equipment to Russia. This also included military helicopters, airplanes, and turbojets, totaling more than \$3 billion annually. Great Britain also supplies air equipment to Russia. One-third of its high-tech exports go to Russia, which in total reaches 140 million US dollars¹⁷ (Grzegorzczuk, Marcus, Poitiers, Weil, 2022).

Just a year ago, the Russian Federation and its military were good users of European weapons and military hardware. More than a third of EU member states exported weapons to the Russian Federation. Between 2015 and 2020, the 10 member states of the European Union exported arms worth 346 million euros to Russia, both light 11 weapons and heavy equipment such as missiles, ground vehicles, warships, and others. Disruption of supply chains due to sanctions could contribute to the creation of a huge black market in arms transfers, which is expected to be difficult to reverse even after the end of Russia's war in Ukraine. During these 6 years, France was the largest supplier of arms to Russia, supplying it with armaments worth more than 152 million euros, which is 44% of the total military exports of the European Union. Western sanctions in 2014 do not seem to have had much of an impact on arms sales. In 2015, France sold weapons worth 59 million euros to Russia, and in the following years, this amount decreased and looked like this: in 2016 – 49 million euros, in 2017 – 36 million euros, in 2018 – 5.5 million euros, in 2019 – 2.4 million euros, and In 2020 – 300,000 euros. Because of these indicators, the French president had to give answers. He denied allegations that the government had violated Western sanctions by exporting weapons to Russia, saying that some arms procurement and supply contacts had been suspended and that they were obligated to complete contracts signed before the embargo. French exports are crucial for the Russian

¹⁶ Aljazeera, 2022. Infographic: Which countries buy the most Russian weapons? Retrieved from: <https://www.aljazeera.com/news/2022/3/9/infographic-which-countries-buy-the-most-russian-weapons>

¹⁷ Grzegorzczuk M., Marcus J., Poitiers N., Weil p. 2022. "The Decoupling of Russia: High-Tech Goods and Components". Bruegel. Retrieved from: <https://www.bruegel.org/2022/03/the-decoupling-of-russia-high-tech-goods-and-components/> 20



Fig.3. EU Arms Exports to Russia within 2015–2020

Source: <https://www.aa.com.tr/en/economy/eu-countries-export-arms-to-russia-despite-embargo-during-2015-2020/2543490>

military as they receive such important parts as thermographic fire control systems for tanks and aircraft navigation systems¹⁸ (Ergocun, 2022). France is not far behind Germany, which supplied equipment worth 122 million euros to Russia, which is 35% of the total military exports of the European Union. The product nomenclature mainly included icebreakers, light weapons, and special protection vehicles. In this direction, Italy takes third place – with exports worth 23 million euros. This mostly includes ground vehicles, semi-automatic weapons, and ammunition. Along with major countries, the Czech Republic exported critical goods to Russia – these were aviation equipment, unmanned aerial vehicles, aero-engines and aircraft parts, Austria – automatic and smooth-bore weapons, ammunition, other specially made components, Bulgaria – warships, special naval

¹⁸ Ergocun G. 2022. "EU Countries Export Arms to Russia Despite Embargo During 2015–2020". Anadolu Agency. Retrieved from: <https://www.aa.com.tr/en/economy/eu-countries-export-arms-to-russiadespite-embargo-during-2015-2020/2543490>

equipment and Accessories, technology and manufacturing development components¹⁹ (Brillaud, Curic, Maggiore, Minano, Schmidt, 2022).

In this sense, the share of other countries is much less, but not zero. Thus, the above-mentioned data confirm that the then sanctions did not prevent Russia, and Europe also has its share of responsibility in this. But at this stage, the situation is radically different, and the implementation of such a scenario is unlikely.

The role of "friendly countries" in the sale of Russian weapons

The Russian Federation has partners worldwide, who, on the one hand, share its aggressive policy, and, on the other hand, are so dependent on it that they simply have no other choice. One of these areas is military armaments, where Russia has powerful political leverage to influence various states. There are countries from which most of the military purchases are made by Russia, and therefore, stopping this channel means putting their national security into question. Such countries include African and Asian countries, although we can single out a few of them. For information, in the past, Russia actively filled the gaps created by the suspension of the supply of military equipment to several states by Western countries. For example, this is what happened in 2013, when the United States cut off military aid and arms supplies to Egypt due to a military coup there. Then the delivery process was taken over by Russia and France. The same thing happened in 2014 when the United States canceled a contract with Nigeria for combat helicopters because of human rights abuses there. After that, Russia started supplying Nigeria with Mi-35M fighter helicopters. This time, Russia itself may find itself in an offside position²⁰ (Kondratenko, 2020).

African countries

The African continent is one of the major purchasers of Moscow's armaments. It buys 49% of its military equipment from Russia. These include heavy weapons, battle tanks, battleships, fighter jets and helicopters, and small arms, such as the new AK-200 series rifle. By comparison, China has a 13% share of arms imports to Africa. The largest and most stable buyers of Russian weapons on this continent are Algeria, Egypt, Sudan, Angola, Burkina-Faso, Ethiopia, Morocco, and Uganda. In this regard, Egypt and Algeria are among the ten largest importers of military goods in the world. Egypt accounts for 5.8% of the world's arms imports, while Algeria accounts for 4.3%. In Africa, Russia, along with the four largest arms exporters – the US, France, Germany, and China – accounted for 76% of major arms imports in 2016–20. Along with this, the number of purchasing countries has also increased. For example, in the 2000s 16 African countries were buying Rus-

¹⁹ Brillaud L., Curic A., Maggiore M., Minano L., Schmidt N. 2022. "EU Member States Exported Weapons to Russia after the 2014 Embargo". Investigate Europe. Retrieved from: <https://www.investigateeurope.eu/en/2022/eu-states-exported-weapons-to-russia/>

²⁰ Kondratenko T. 2020. "Russian Arms Export to Africa: Moscow's Long-Term Strategy". Deutsche Welle. Retrieved from: <https://www.dw.com/en/russian-arms-exports-to-africa-moscows-longterm-strategy/a-53596471>

sian weapons, and now their number is 21²¹ (Khanyile, 2022). 13 Russia has renewed its historical ties with many African countries, which it established on this continent during the Soviet Union. The obstacles created for Russia will affect the armament and defense capabilities of African states.

The existing risks are related to the delay in the supply of the main spare parts, the violation of the operational and training plans of the defense forces, because they use Russian equipment, as well as – the high cost of maintaining the equipment already existing in these countries. On the other hand, the current situation provides an opportunity for these countries to diversify their suppliers, as well as take care of developing their production to fill the deficits.

Western sanctions against Russia have several practical implications for the defense industry of African countries. First, it will be difficult and sometimes impossible to accept orders that have already been placed. On the other hand, it will be difficult to repair, maintain or overhaul the Russian-made heavy equipment and weapons already in use, because it will be practically impossible to supply the necessary spare parts, tools, and certificates. Along with this, both parties have contractual obligations, including financial ones. Due to Russia's isolation from the global financial system, this process also requires additional efforts. Moreover, the void created by the problems in Russia must be filled by alternative suppliers. African countries will have to find potential defense industry supply partners who can carry out maintenance, repair, and overhaul operations on the equipment they have. They should also be able to provide them with additional equipment and weapons²² (Khanyile, 2022). Russia's interests in Africa are not only economic but also political and strategic. In several African countries, Russia is involved in the extraction of such important resources as coltan, cobalt, gold, and diamonds. In 2019, Russia hosted the first Russian-African summit in history, where President Putin stated that strengthening ties with African countries is one of the priorities of Russian foreign policy. A key part of this summit was the exhibition of Russian-made weapons. It became clear at the summit that Russia is focused not so much on new technologies as on the improvement of existing equipment. In addition, its armaments are more affordable compared to the production of other countries, which makes it more attractive for African countries²³ (Kondratenko, 2020).

India

India is one of the largest buyers of military weapons in the world. He had active ties with Russia even during the Soviet Union. India buys more than 50% of its military

²¹ Khanyile M. 2022. "Sanctions Against Russia will Affect Arms Sales to Africa: The Risks and Opportunities". The Conversation. Retrieved from: <https://theconversation.com/sanctions-againstrussia-will-affect-arms-sales-to-africa-the-risks-and-opportunities-180038>

²² *Ibidem*.

²³ Kondratenko T. 2020. "Russian Arms Export to Africa: Moscow's Long-Term Strategy". Deutsche Welle. Retrieved from: <https://www.dw.com/en/russian-arms-exports-to-africa-moscows-longterm-strategy/a-53596471>

equipment from Russia. A few years ago, this figure was much higher and reached 80%, but in the last decade, India has started diversifying its arms suppliers. It has increased purchases from France, Israel, and America. For example, according to the Stockholm International Peace Research Institute, the number of weapons purchased from these countries has doubled in the last 5 years, although Russia remains the number one supplier²⁴ (SIPRI, 2021). India has not openly criticized Russia and did not understand its actions due to the invasion of Ukraine, which may be behind this high military attitude. Even though after 2014, Russia failed to fully fulfill its obligations in some cases, it remains an important partner for India. For example, India purchased the S-400 missile system from Russia in 2018, part of which has not yet been delivered. There is reasonable doubt that Moscow had and has a problem with the main production components. In addition, Russia's military losses after the invasion of Ukraine may mean that it will not be able to meet India's needs, as it will focus all its resources on rebuilding its forces. According to experts, it will be difficult for the Indian army to operate effectively without the equipment supplied by Russia, and in the short and medium term, it will continue to depend on Russian weapons systems, of course, if Russia itself finds the resources to do so. Another important factor in this regard is that the Indian military knows how to use Russian-made equipment, otherwise it will require additional costs for training and testing²⁵ (Menon, 2022). At this stage, India faces a strategic dilemma – to remain dependent on Russia, diversify markets, or develop domestic production. These steps are not mutually exclusive. Thus, in the short term, India may use a combination policy to replace suppliers of low-end equipment and seek new suppliers of spare parts to reduce its direct dependence on Russia. India can buy spare parts from Russian manufacturers and take care of improving them locally. It already produces a lot of Russian weapons under the relevant licenses, is interested in boosting domestic defense production, and can export them to other Russian customers with similar shortages. It is also significant that American-Indian relations are developing more and more in recent years. 15 At the level of China's regional dominance, India acquires a strategically important load for America, and therefore, in the coming years, the deepening of cooperation between the two countries in terms of the military is not excluded²⁶ (Banerjee, Trach, 2022).

²⁴ SIPRI Yearbook 2021. Stockholm International Peace Research Institute. Retrieved from: [HTTPS:// www.sipri.org/yearbook/2021](https://www.sipri.org/yearbook/2021)

²⁵ Menon Sh. 2022. "Ukraine Crisis: Could India Cut its Defense Ties with Russia?". BBC. Retrieved from: <https://www.bbc.com/news/world-asia-india-61274042>

²⁶ Banerjee V., Tkach B. 2022. "After Ukraine, where will India Buy its Weapons?". Warontherocks. Retrieved from: <https://warontherocks.com/2022/04/after-ukraine-where-will-india-buy-itsweapons/>

Southeast Asian countries

Russia is the largest exporter of military equipment and weapons in Southeast Asian countries (Brunei, Myanmar, Cambodia, Timor-Leste, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and Vietnam), although after 2014 its sales dropped significantly. Since 2000, Russia has sold \$11 billion worth of military equipment to the region. Its biggest buyers are Vietnam, Myanmar, Malaysia, and Indonesia. Russia offers them a wide selection of equipment and a much lower price than equipment produced in the West. In addition, the Russian side is ready to partially accept taxes on goods produced in the region, to carry out joint productions, and also, unlike Europe and America, Russia does not consider the human rights situation in these countries either²⁷ (Storey, 2022). Since 2014, Russian sales in this region have significantly decreased, which has several reasons. After the annexation of Crimea in 2014, Western sanctions were imposed on Russia, and export controls were imposed on the Russian defense sector. In addition, Vietnam has suspended its military modernization program, partly due to delays in the delivery of orders from Moscow. However, a law passed in 2017 allows the US government to impose sanctions against individuals or countries that have commercial relations with the Russian military sector. Finally, along with the problems created, Russia has faced increasing competition from both American and European defense corporations and Asian giants such as China and South Korea²⁸ (Storey, 2022). After the end of the ongoing war in Ukraine, a decrease in the sales of Russian-made weapons in Southeast Asian countries is expected. This will be caused, on the one hand, by Western sanctions and export controls, and on the other hand, by the quality of Russian armaments, which showed up well during the war. Moreover, the world's largest chip maker, located in Taiwan, has suspended sales in Russia. Western sanctions were joined by the advanced industrialized economies of Asia, including Japan, South Korea, and Singapore. This will hurt Russian sales in this region.

China

China is the second largest arms importer after Russia. From 2016–2020, 18% of Russian weapons were exported to China. Moscow's armament played a crucial role in the development of the latter's military and defense industry. Russian exports peaked in the mid-2000s when China fully relied on Russian systems and technologies to modernize its military capabilities. During this period, Russia supplied China with aircraft fighters, various types of missiles, radar systems, helicopters, and submarines. These systems were relatively old and Russian exports did not include more advanced technologies. Nevertheless, Moscow's armaments helped China in particular in the development of

²⁷ Storey I. 2022. "The Russia-Ukraine War and its Potential Impact on Russia's Arms Sales to Southeast Asia". Yusof Ishak Institute. Retrieved from: <https://www.iseas.edu.sg/articles-commentaries/ideas-perspective/2022-47-the-Russia-Ukraine-war-and-its-potential-impact-on-Russias-arms-sales-to-southeast-Asia-by-ian-storey/>

²⁸ *Ibidem*.

its navy and air force. Later, he based part of his production on Russian design and technology. In 2012, China and Russia agreed to increase military cooperation, which also included the arms trade. After 2015, arms sales between the two countries increased dramatically. Russia and China signed a military cooperation roadmap in 2017, and joint military exercises in 2021 further underscored the increased cooperation. Recently, Russian sales to China include the export of a relatively small number of advanced military systems. Each country also trades with the other in basic manufacturing components. For example, Russia relies on China for machine tools and electronic components, while China depends on Russia for heavier equipment such as fighter jets, air defense systems, missiles, underwater technology, and helicopters. In this regard, it is in China's interest to gain access to technologies and expertise that it seeks to produce and test domestically. Therefore, with China's defense industry continuing to develop at a rapid pace, it is likely that Russia's technological advantage over China will weaken shortly, which in turn will change the nature of defense cooperation between the two countries and become more focused on joint military professional development, defense services on Development and Technology Transfer²⁹ (CRS 2021).

In the military context, China is important and noteworthy for Russia in several ways. First of all, Russia likely expects support from China in terms of production and supply of components, although, as is known, no tangible results in this regard are visible so far. Most likely, after the war, this process will become clearer and more relevant. Moreover, at the end of May of this year, the mentioned countries conducted the first joint exercise after Moscow invaded Ukraine. 17 This military activity was an important sign that the partnership between China and Russia has not weakened even as the four-month war in Ukraine has claimed thousands of civilian lives. This move by Moscow may represent an attempt to deepen the future partnership and a sign that Russia has and will have hope for China, even in difficult times for itself. Obviously, for its part, China will try to obtain certain advantages for Russia in exchange for certain critical production facilities, such as discounts on energy resources and increased access to military technologies. On the other hand, if Russia radically reduces sales to African and Asian countries, clear signs of which are already evident, there is a space for China to at least partially replace Russian armaments. This is an additional concern for Moscow, as the threat of losing partnerships built over the years increases, and the likelihood of returning to these markets even if forces are restored decreases.

Western sanctions will make it difficult for Russian defense companies to receive payments from foreign customers, and export controls will severely limit their access to high-tech components. Russia's military industry is likely to try to find solutions, including deepening cooperation with defense equipment companies in countries that have not imposed sanctions and export controls on Russia, such as China and India. In the current difficult situation, it is clear that Russia has hope for its friendly countries,

²⁹ Congressional Research Service. 2021. "Russian Arms Sales and Defence Industry". Retrieved from: <https://crsreports.congress.gov/product/pdf/R/R46937>

however, based on the national interests of the partner states and the new political and economic conditions, it is still a question of how far these countries will justify Russia's expectations. There is no doubt that the problems in Russia will open up new market opportunities for military arms manufacturing companies in countries such as Israel, Turkey, China, South Korea, as well as Europe. Although production disruptions in Russia will harm its consumer countries, it will be easier for them to overcome than for Moscow itself, which will have to fight on several market fronts.

Conclusion

Western sanctions in Russia, along with many other sectors, have dealt a major blow to the military and defense industry, which will become increasingly visible in the medium and long term. In general, it is practically impossible for restrictions to have any tangible effects in the short term. It is a fact that so far the harsh response of the West has not resulted in a political decision on the part of Moscow, which should be reflected at the end of the war. This is because at this stage Russia has funds for war, the main source of which is the export of its energy products and grain, thus it occupies an advanced position in the world. As a result of the war, the prices of oil products have increased, which means additional income for Russia. The consequences of the sanctions will become clearer once the war ends and Russia looks to replenish its military stockpiles. This process will be quite difficult and in many cases impossible. On the one hand, this is due to the difficult economic situation in the country and the decrease in the sources of budget revenues, and on the other hand – Moscow's limited access to the technologies and production means of the leading states of the West and Asia. Shortages of electronic components cause production delays for any product, from washing machines to missile systems. Moreover, this process will be influenced by the next decisions of the international community, which are aimed at more powerful strikes on the financial and energy sectors of Russia. Moscow's severely reduced ability to rebuild its military capabilities will affect the country's overall economic situation. In addition to its technical isolation, the greatest reputational damage has been done to its equipment and facilities, which may affect sales. This, in turn, means the loss of significant financial resources for Russia. There is no doubt that the Russian military machine has taken a huge and costly hit.

According to experts, it may take two decades for Russia to restore its military armament to the pre-war level. This will be due to sanctions as well as lack of innovation, research and development capacity, brain drain, corruption, and indebtedness to defense companies. In light of the severe results obtained in Ukraine and the sharp increase in tension with NATO, it is likely that Moscow will want to increase the military budget and will be ready to restore lost forces and reputation at the expense of reducing funds for other directions, although the implementation of this raises many questions. If the current state of affairs continues, that is, if the West stands firmly to protect its values and its imposed sanctions remain in force, it will be inevitable that Russia's defense production will decrease in the coming years. This will affect the military enter-

prises, which, in turn, will increase the level of unemployment, reduce the country's gross domestic product, and not only will Russian weapons go to new customers but the fulfillment of existing trade contracts will also be questioned. Thus, it is a fact that Russia is already facing the most difficult conditions, which will become increasingly visible shortly. After the end of the war, it will have to fight extremely hard in several directions, and it is then that it will feel most clearly the extremely heavy political and economic consequences of its aggression.



Abstract: The military industry of Russia is a strategically important sector and a large employer in Russia. Before the Russia-Ukraine war, the number of employees in the defense industry was about 23.5% of the total number of employees in the country. About 2 million people produced direct weapons and military equipment. It is also a significant player in the global arms market, with Russian Federation being the second largest conventional arms exporter after the United States, with more than \$13 billion worth of exports annually within the second decade of the XXI Century. At the same time, due to the economic sanctions and unsuccessful military operation in Ukraine, Russia's military capabilities have suffered irreparable losses after eight months of the war. In this regard, the question is the following: Is the military-industrial complex in Russia ready to recover the lost weaponry fast enough? According to the experts, the country needs at least 10 years to make up for the losses.

Keywords: Russia, Military – Industrial Complex, Economic Sanctions, military trade

Militarne konsekwencje sankcji gospodarczych wobec Rosji

Streszczenie: Przemysł wojskowy Rosji jest strategicznie ważnym sektorem i dużym pracodawcą w Rosji. Przed wojną rosyjsko-ukraińską liczba zatrudnionych w przemyśle obronnym wynosiła około 23,5% ogólnej liczby zatrudnionych w kraju. Około 2 milionów ludzi produkowało bezpośrednią broń i sprzęt wojskowy. Jest również znaczącym graczem na światowym rynku zbrojeniowym, Federacja Rosyjska jest drugim po Stanach Zjednoczonych eksporterem broni konwencjonalnej, z eksportem o wartości ponad 13 miliardów dolarów rocznie w drugiej dekadzie XXI wieku. Jednocześnie z powodu sankcji ekonomicznych i nieudanej operacji wojskowej na Ukrainie zdolności militarne Rosji poniosły po ośmiu miesiącach wojny niepowetowane straty. W związku z tym pytanie jest następujące: czy kompleks wojskowo-przemysłowy w Rosji jest gotowy na wystarczająco szybkie odzyskanie utraconej broni? Zdaniem ekspertów kraj ten potrzebuje co najmniej 10 lat na odrobienie strat.

Słowa kluczowe: Rosja, kompleks wojskowo-przemysłowy, sankcje gospodarcze, handel militariami

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