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RESEARCH ARTICLE

The Changing Contours of Russia-India Defense Engagement

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Abstract: The article examines the evolution of Russian defense industrial and economic policies during the military conflict in Ukraine, and the potential impact of these changes on Russian-Indian cooperation. The conflict has led to major reassessment of the defense industrial policies around the world, which is anticipated to affect Asia as well. In Russia, the conflict has prompted a long-term trend towards greater militarization of the economy. In this new context, there is a growing prospect for joint Russian-Indian initiatives aimed at promoting defense industrialization projects in India, enhancing self-reliance, and bolstering India's economic mobilization potential. The most promising area of cooperation between Russia and India may not be limited to the sales of small numbers of selected high-tech weapons. Rather, it may involve creating a new industrial base to help India achieve defense self-sufficiency and be ready for economic mobilization. India's current favorable position in global politics may enable it to obtain Russian cooperation in this field on very favorable conditions. However, such a path may invite growing opposition from the US and the EU towards the Indian-Russian cooperation. It is worth noting that such pressure has been present constantly, especially since 2014, but has been ineffective so far.

Keywords: India, Russia, Ukraine conflict, defense economy, military technical cooperation, economic mobilization

The military conflict in Ukraine is expected to exert a profound transformative impact on Russia, its military, and military-industrial complex. The conflict has already prompted a re-evaluation of the fundamental principles of Russia's defense and security policies, as well as its defense economics. The conflict, which represents the first full-scale military engagement in many generations, has spurred major reforms and expansion of the Russian military. The Russian government is rediscovering the almost-forgotten skills of wartime economic mobilization and management.

Russia's traditional partners in defense and defense industrial cooperation, including India, will need to adapt to this new player in the international arena. The "new Russia" will have different economic, domestic, and foreign policy priorities. Mean-

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while, Russia's partners will also seek to draw on the extensive military experience offered by the conflict in Ukraine. This article analyzes the possible long-term implications of this ongoing deep transformation of the Russian state and its' defense and industrial policies for Russian-Indian defense cooperation.

The military conflict and the accompanying economic sanctions imposed by Western powers are anticipated to have a detrimental effect on the Russian economy and the standard of living of its citizens. For some time, the Russian economy is expected to grow below its potential, but a significant contraction is not expected. In 2022, the Russian economy contracted by only 2.1% of its GDP, and the IMF predicts that it will grow by 0.7% in 2023. The size of the Russian economic pie is likely to remain largely unchanged in the short and medium term. The IMF expects the Russian economy to grow by approximately 1% per year until 2028. However, a greater proportion of this pie will now be allocated to the military and defense industry.

From the outset of the military conflict in February 2022, the goal of the US and the EU has been to inflict a major strategic defeat on Russia. The US Defense Secretary, Lloyd Austin, expressed the objective of weakening Russia "to the degree that it can't do the kinds of things that it has done in invading Ukraine"[1].

However, the outcome will likely be quite different, with an economically weaker, but heavily militarized Russia, which will possess a much larger, battle-hardened military, and an expanded defense industrial base. Many shortcomings of the past military procurement policies will be rectified too. Post-conflict Russia will be isolated from the West economically, and by the end of conflict the US and the EU will have exhausted all their options for economic coercion against Russia, which could be used for deterrence or punishment. The current dominant scenario in Russian planning is long-term isolation, as two other hypothetical scenarios – partial normalization of Russian-Western relations, and the collapse of Russian economic and political systems – are unlikely based on the available empirical evidence. Statements made by leaders of the US and EU indicate that relations with Russia will not be reconsidered unless Russia returns to its 1991 borders, and even then, it may not be enough. Despite a stagnating economy and a declining population, Russia has been able to prevent a collapse in disposable incomes. In 2022, the average disposable incomes of Russian households decreased by only 1% year on year and returned to growth in the last quarter of the year.

As a consequence, the post-conflict Russia is expected to become a more proactive and assertive actor on the global stage, posing greater challenges to the foreign policies of the US and the EU than before. Despite the ongoing conflict in Ukraine in 2022, Russia persisted in challenging Western interests in Africa (e.g., in Mali) and its military continued to operate in Syria and conduct joint military exercises with China. In the aftermath of the conflict, Russia's foreign policy will shift its focus to Asia, Africa, and the Middle East, as relations with Europe will be minimized and effectively frozen for

[1] Bertrand N. et al. 2022. Austin's assertion that US wants to 'weaken' Russia underlines Biden strategy shift. *CNN*. 26 April. URL: https://edition.cnn.com/2022/04/25/politics/biden-administration-russia-strategy/index.html (accessed 26.01.2023).

decades to come. Russia will seek to expand its traditional partnerships in Asia and the Middle East and establish new ones. Maintaining diverse economic and political ties in these regions has been shown to play a critical role in the survival of the Russian economy under extreme sanctions. This will limit Russia's ability to take sides in regional political disputes, except for its general opposition to the West. In order to maintain economic stability, Russia will need to closely cooperate with both China and India, both Saudi Arabia and Iran. Russia may easily show hostility towards countries which it perceives as being US satellites with no independent foreign policy, as demonstrated by the sharp deterioration of Russian-Japanese relations in 2022-2023. However, Russia will also be cautious not to alienate countries which it views as promising partners.

Military and technical cooperation, as well as military-to-military engagement, will continue to be crucial tools of Russian foreign policy, including in the context of its relationship with India. The Ukrainian conflict has underscored the importance of returning to the fundamentals of defense economics from the 20th century, including the establishment of effective mechanisms for economic mobilization and the stockpiling of major equipment. These policies align with India's strategic goals of industrialization and self-reliance. For Russia, such cooperation will be especially relevant as it seeks to diversify its engagement with Asian countries and balance its increasingly close relationship with China. In the new era, the cooperation between Russia and India will no longer be limited to Russia supplying India with weapons. Instead, it may resemble the industrial cooperation between the Soviet Union and China in the 1950s. During that period, the Soviets built a number of major defense industrial enterprises in China, which formed the basis of a defense economy capable of significant mobilization during wartime. Based on the experience of the Ukrainian crisis, the sectors of the defense industry that require the deepest restructuring are the production of air defense systems, tube and rocket artillery and ammunition, production of anti-tank missiles, and field communication equipment.

Conflict in Ukraine and defense economy

The Ukrainian conflict has provided important insights into the fundamental principles of defense industrial policies. It has become clear that the defense economies of today's major industrialized nations are not sufficient for sustaining a conventional war of such magnitude. In fact, the coalition of over 50 developed countries that supported Ukraine experienced significant strains on their production capacities while attempting to replenish Ukrainian arsenals[2]. For example, the entire stockpile of artillery ammunition held by the UK military would have only been sufficient to sustain the scale of the Ukrainian conflict for one week[3].

[2] Chávez S., Rathbone J.P., Pfeifer S. 2022. Military briefing: Ukraine War exposes 'hard reality' of West's weapons capacity. *Financial Times*. 1 December. URL: https://www.ft.com/content/a781fb71-49bb-4052-ab05-a87386bf3d5e (accessed 26.01.2023).

[3] Grylls G. 2022. British Army's ammunition would last for only a week of war, says Royal United Services Institute. *The Times*. 2 December. URL: https://www.thetimes.co.uk/article/british-armys-ammunition-would-last-for-only-a-week-of-war-says-royal-united-services-institute-fd2hm0gh7 (accessed 26.01.2023).

All parties to the conflict found it necessary to reassess their defense industrial policies. In October 2022, Russia established a special interagency coordination mechanism, the Coordination Council to Support the Armed Forces, to oversee and coordinate the process of economic mobilization[4]. Pre-conflict assessments of ammunition stockpiles and production capacity needed for a great power war proved to be grossly inadequate. Russian politicians and military leaders voiced numerous complaints during the military operation about inadequate ammunition supply. Even the United States, the world's greatest military power, has struggled to keep up with the demand for ammunition caused by the conflict in Ukraine, and is now ramping up production. This will require not only a significant amount of funding but also a considerable amount of time. For instance, the expansion of production of 155-mm artillery rounds from the current rate of 14,000 per month to 36,000 per month (which is still lower than the total number of rounds being fired monthly in Ukraine) will require 3 years[5]. A more ambitious objective was later announced, with the goal of producing 90,000 rounds per month by 2025[6].

Severe losses of heavy weapon systems suffered by both sides during the conflict have highlighted the limitations of modern defense industries that focus on producing a small number of sophisticated and advanced weapon systems, making it difficult to sustain a major war. It became apparent that the existing production was insufficient to replenish the losses of equipment, and both sides increasingly turned to using obsolete weapons from Cold War-era stockpiles. Examples of this include the United States sending Hawk surface-to-air missile systems to Ukraine[7], and Russia deploying ancient T-62 tanks on the frontline[8]. It appears that having access to significant numbers of relatively simple and/or outdated weapon systems is more important than possessing a small number of advanced, state-of-the-art systems. This trend is observable on the contemporary battlefield, where these systems can play a significant role. A good example of this is the widespread use of Soviet-era systems like the SA-8 Gecko (9K33

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[4] Sostav Koordinacionnogo soveta pri Pravitel'stve Rossijskoj Federacii po obespecheniyu potrebnostej Vooruzhyonnyh Sil Rossijskoj Federacii, drugih vojsk, voinskih formirovanij i organov v redakcii Ukaza Prezidenta Rossijskoj Federacii ot 21 oktyabrya 2022 goda №763 [The Composition of the Coordinating Council under the Government of the Russian Federation to Meet the Needs of the Armed Forces of the Russian Federation, other Troops, Military Formations and Bodies as Amended by Decree of the President of the Russian Federation of October 21, 2022 No. 763]. *Russian Government*. 21 October 2022. URL: http://government.ru/info/46858/ (accessed 26.01.2023).

[5] US Ammunition Supplies Dwindle as Ukraine War Drains Stockpiles. 2022. *The Defense Post*. 10 October. URL: https://www.thedefensepost.com/2022/10/10/us-ammunition-supplies-dwindle/ (accessed 26.01.2023).

[6] Davis C.R. 2023. Ukraine is burning through artillery shells. Now the US is increasing production by 500%. *Insider*. 25 January. URL: https://www.businessinsider.com/pentagon-increasing-production-of-155mm-artillery-shells-2023-1 (accessed 26.01.2023).

[7] Lopez C.T. 2022. $400 Million Security Package Headed to Ukraine. *U.S. Department of Defense.* 10 November. URL: https://www.defense.gov/News/News-Stories/Article/Article/3216745/400-million-security-package-headed-to-ukraine/ (accessed 26.01.2023).

[8] Ptichkin S. 2022. V voyennoy spetsoperatsii stali ispol'zovat' tanki T-62 [T-62 tanks began to be used in special military operation]. *Rossiyskaya gazeta*. 12 September. URL: https://rg.ru/2022/09/12/obkatannyj-tank-v-boiu-ne-podvedet.html (accessed 26.01.2023).

Osa) by both sides to counter modern threats like unmanned aerial vehicles (UAVs)[9]. Such weapons systems, coupled with modern communication and fire control equipment, were found to be sufficient for most tasks during the conflict, and this is likely to remain the case in the future.

The economic and industrial lessons of the Ukrainian conflict have major implications for India, and they are much more important than the technological lessons. The confrontation in Ukraine, like the great wars of the first half of the 20th century, clearly shows that defense economics and industrial capacity are more important than technology, although the latter should not be underestimated. Despite being major defense industrial powers and largely self-sufficient in defense production, the US and Russia have struggled to sustain the military confrontation in Ukraine. However, Russia has been able to compensate for its weaknesses in manpower and some areas of technology by maintaining a larger scale use of artillery[10]. According to EU assessments, Russia is capable of firing between 20,000 and 50,000 rounds a day, while Ukraine can only fire 4,000 to 7,000 round[11]. Both sides have been using ammunition from accessible stockpiles as well as current production.

The Ukrainian conflict highlights the importance of maintaining robust industrial mobilization potential and producing critical weapon systems and all types of ammunition domestically, even at the expense of lower quality and more modest capabilities. It is likely that, in the new circumstances, less expensive and simpler weapons that can be produced entirely at home using local materials will coexist with a smaller number of sophisticated, state-of-the-art systems.

Effects on the Russian defense industry

Russia has learnt these lessons on the battlefield, and it is currently adapting its industrial base to the new realities, by increasing defense production and managing the existing stockpiles. Evidence suggests that the real boost in Russian defense production began before the conflict, as part of the preparation[12], with a focus on the most sophisticated weapon systems such as cruise missiles and surface-to-air missiles. This allowed Russia to maintain a high level of intensity in fighting by using such systems throughout the confrontation, with regular attacks on Ukrainian strategic targets in-

[9] Stepanov A. 2022. Kak raketnyye kompleksy "Osa-AKM" rabotayut v zone spetsoperatsii [How Osa-AKM floating anti-aircraft missile systems work in the special operation zone]. *Rossiyskaya gazeta*. 6 December. URL: https://rg.ru/2022/12/06/groza-bajraktarov.html (accessed 26.01.2023).

[10] Kube C. 2022. Russia and Ukraine are firing 24,000 or more artillery rounds a day. *NBC News*. 11 November. URL: https://www.nbcnews.com/politics/national-security/russia-ukraine-war-ammo-rcna56210 (accessed 26.01.2023).

[11] EU figures show intensity of Russia-Ukraine artillery war. *EU Observer*. 16.03.2023, URL: https://euobserver.com/ukraine/156836#:~:text=Russia%20is%20firing%20%22between%2020%2C000,EU%20memo%20dated%2013%20March. (accessed 26.01.2023)

[12] Rossiya za 8 let pochti v 40 raz uvelichila arsenal krylatyh raket bol'shoj dal'nosti [Russia has increased its' inventory of long range cruise missiles almost 40 times in 8 years]. 2020. *Interfax*. URL: https://www.interfax.ru/russia/742531 (accessed 24.04.2023)

volving several dozens of missiles each taking place every couple of weeks until March 2023[13]. However, Russia encountered more difficulties with simpler types of weapons and ammunition, such as tube artillery and main battle tanks. During the conflict, Russia had to make significant efforts to increase its capacity to both produce new weapons and ammunition and quickly overhaul and modernize the existing stockpiles.

In many cases, defense enterprises started to work 24 hours a day for six days per week[14]. In the Altai region, for instance, the production volume of defense enterprises increased by up to 60% from the beginning of 2022 to the end of October, and continued to grow[15]. It has been reported that certain enterprises have boosted their output by 1000%[16]. This growth in defense production resulted in an electricity consumption increase of 1.5% nationwide[17], despite the economic downturn and the collapse of certain civilian industries, such as the automotive industry.

The return of the era of great power rivalry means that Russia will likely keep the defense industrial capacity which is being currently built up, returning to the principles of the defense economy of the 20th century. This entails increased investment in the development of the industrial base beyond the defense industry. The conflict has shown a need for robust capacity in production of industrial machine tools. In 2022 Russia has faced rising demand for machine tools for both defense sector and for import substitution in sanctions stricken civilian industries and was struggling to satisfy it by increasing small domestic production and increased imports from China[18]. In a wartime economy, having obsolete or inefficient machine tools is still preferable to having none at all. Possible disruption of import channels and potential inability of foreign companies to meet the sudden surge in demand mean that maintaining some capacity for domestic machine tool production is necessary, even if it requires subsidies and protectionist measures for the relevant industries.

The same holds true for microchip production, where a certain level of domestic capacity is needed for national security, even if the technology is outdated. While Russia's domestic microchip industry is relatively weak and backward, it has increased production in 2022 by using second-hand equipment[19]. Currently, the Russian micro-

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[13] Russia pummels Ukraine with array of high-tech weaponry in nationwide assault. *CNN*. 10.03.2023. URL: https://edition.cnn.com/2023/03/09/europe/ukraine-russia-missile-attack-kinzhal-intl/index.html (accessed 26.01.2023)

[14] Zavody Urala perekhodyat v tri smeny shest' dney v nedelyu [The factories of the Urals are switching to three shifts six days a week]. 2022. *Yandex.Zen*. 21 December. URL: https://dzen.ru/a/Y6M2VIX282X69rbP (accessed 26.01.2023).

[15] Ob"yem proizvodstva predpriyatiy OPK Altayskogo kraya s nachala goda vyros na 30-60% [The volume of production of defense industry enterprises of the Altai Territory has increased by 30-60% since the beginning of the year]. 2022. *TASS*. 18 November. URL: https://tass.ru/ekonomika/16365281 (accessed 26.01.2023).

[16] Kakim stal 2022 god dlya oboronno-promyshlennogo kompleksa Rossii [What was the year 2022 for the military-industrial complex of Russia]. 2022. *TASS*. 28 December. URL: https://tass.ru/armiya-i-opk/16696305 (accessed 26.01.2023).

[17] Kilovattam nashli primeneniye [Kilowatts have been used]. 2023. *Kommersant*. 16 January. URL: https://www.kommersant.ru/doc/5772296 (accessed 26.01.2023).

[18] RBK: Shojgu smenil komanduyushchih dvuh voennyh okrugov [RBC: Shoigu replaced the commanders of two military districts]. 2023. *Business Online*. 23 January. URL: https://m.business-gazeta.ru/news/580966 (accessed 26.01.2023).

[19] Rossijskij «chipmejker №1» udvaivaet proizvodstvo. Rossijskoj mikroelektronike dadut novuyu zhizn' [Russian "chip maker №1" doubles production. Russian microelectronics will be given a new life]. 2022. *Cnews*. 22 April. URL: https://www.cnews.ru/news/top/2022-04-22_rossijskij_chipmejker_1 (accessed 26.01.2023).

chip industry is capable of producing microchips using 180 nanometer, 90 nanometer, and, to a limited extent, 65 nanometer technology processes[20]. These technological processes were first adopted by major global industrial leaders in 1999, 2002, and 2004, respectively. While these types of microchips may not be as advanced as more recent technology, they are still suitable for a range of military applications, including guided weapons and UAVs. However, the use of these microchips can result in Russian electronic systems being heavier and more energy-intensive compared to Western counterparts. Such capacity has helped Russia to maintain high production rates for the strategic industries and advanced weapons, especially in the face of extreme Western sanctions. At the same time, imports of more sophisticated microchips from China and other sources have also increased in comparison to the pre-sanction period[21].

The increase in production is not only crucial for waging the ongoing conflict, but also for sustaining the much-expanded Russian Armed Forces, which are expected to grow from 1 million to 1.5 million personnel by 2026[22]. This will make the Russian military comparable in size to the Chinese People's Liberation Army (PLA), which has a manpower of 2 million. It can be anticipated that, unlike the PLA, which places greater emphasis on the navy, Russia will prioritize the ground forces.

Russian defense economy after the Ukrainian conflict

Can Russia sustain the cost? The ongoing conflict with Ukraine has had undeniable negative effects on the Russian economy, leading to a close to 3% decline in GDP in 2022, with expectations of further decline in 2023. The Russian Ministry of Economic Development projects a 0.8% decrease in GDP for 2023, followed by a modest growth of 2.6% in 2024[23].

While the pre-conflict Russian defense budget for 2022 had envisioned the defense expenditure of 2.6% of GDP or 3.5 trillion rubles, the actual spending after the conflict started was reconsidered and grew by relatively modest 30% to 4.7 trillion[24]. It is likely that additional growth in defense spending may occur, however, it is prob-

[20] «Rossijskih processorov hvatit dlya osnovnyh potrebnostej gosudarstva» [Russian processors are enough for the government needs]. 2021. *Izvestia*. 31.05. URL: https://iz.ru/1170272/roman-kildiushkin/rossiiskikh-protcessorov-khvatit-dlia-osnovnykh-potrebnostei-gosudarstva (accessed 26.01.2023)

[21] Nathaniel Taplin How Microchips Migrate From China to Russia. *The Wall Street Journal.* 25.02.2023 https://www.wsj.com/articles/how-microchips-migrate-from-china-to-russia-7ad9d6f4 (accessed 26.01.2023).

[22] Shojgu anonsiroval «masshtabnye izmeneniya» chislennosti voennyh za tri goda [Shoigu announced "large-scale changes" in the number of military in three years]. 2023. *RBK*. 17 January. URL: https://www.rbc.ru/politics/17/01/2023/63c669949a794736a6c4eada (accessed 26.01.2023).

[23] Siluanov zayavil, chto padenie VVP RF po itogam goda sostavit poryadka 2,7% [Siluanov stated that the fall in Russia's GDP by the end of the year will be about 2.7%]. 2022. *Interfax*. 29 December. URL: https://www.interfax.ru/business/879096 (accessed 26.01.2023).

[24] Mingazov S. 2022. Raskhody byudzheta Rossii po stat'e «nacional'naya oborona» v 2022 godu vyrosli na tret' [Russian budget expenditures under the item "national defense" in 2022 increased by a third]. *Forbes*. 23 September. URL: https://www.forbes.ru/finansy/477887-rashody-budzeta-rossii-po-stat-e-nacional-naa-oborona-v-2022-godu-vyrosli-na-tret (accessed 26.01.2023).

able that Russia will attempt to limit its expenditure to no more than 4% of GDP. The long-term impact of this rise in defense spending on the national economy remains uncertain. The existing evidence presents a mixed picture, and the negative correlation between military expenditures and investment cannot be firmly established based on the available data (Smith, Dunne 2020). The experience of Western nations during the Cold War suggests that a market-oriented economy can support defense expenditures equivalent to 3-4% of GDP for a sustained period, particularly when considering the relatively low level of public debt in Russia. During the final decades of the Cold War, France's defense spending typically ranged between 3-3.4% of GDP[25], while the United States consistently exceeded 6% of GDP[26].

Warfare is unlikely to lead a country towards prosperity or happiness, at least in the medium-term. However, it can promote national strength. GDP figures do not directly translate into military power, foreign policy influence, or military technology. In the aftermath of the conflict, Russia is expected to have a heavily militarized economy, with an expanded defense industrial base capable of engaging in future major wars. Additionally, the nation will enhance its strategic civilian industries, aiming for greater self-sufficiency. It is unlikely that sanctions will have a significant impact on this process. By concentrating resources in strategic sectors and collaborating with allies such as China and Iran, Russia can overcome most of the sanctions' negative effects.

Undoubtedly, economic isolation from the developed world has negative implications for an economy, even if good macroeconomic policies are in place to minimize these effects. The sanctions are expected to hinder the potential growth of the Russian economy in general for the foreseeable future. However, this is not necessarily true for sectors of the Russian economy that are essential to its position in global affairs, such as the defense, nuclear, and aerospace industries. The historical record of economic isolation (such as the Soviet Union, Maoist China, post-revolutionary Iran, and present-day North Korea) suggests that industries critical to a nation's survival, including defense and dual-use technologies, primarily rely on internal drivers for their development. While this does not necessarily mean that Russia will follow a similar path of extreme isolation, these examples indicate that supporting the development of a limited set of defense and dual-use technologies is entirely feasible even under extreme sanctions.

These drivers could encompass an increased perception of external threat, a greater role of the military and security establishment in internal politics, societal mobilization, and the emergence of techno-nationalism. These factors are currently evident in Russia. The nation's isolation may create favorable circumstances for maintaining

[25] France Military Spending/Defense Budget 1960-2023. *Macrotrends*. 2023. URL: https://www.macrotrends.net/countries/FRA/france/military-spending-defense-budget (accessed 26.01.2023).
[26] U.S. Military Spending/Defense Budget 1960-2023. *Macrotrends*. 2023. URL: https://www.macrotrends.net/countries/USA/united-states/military-spending-defense-budget (accessed 26.01.2023).

a relatively elevated level of defense spending. The fiscal multipliers from military spending tend to be higher for closed economies (Sheremirov, Spirovska 2022).

In recent times, the Democratic People's Republic of Korea (DPRK) and Iran have made significant strides not only in their defense production but also in critical civilian and dual-use technology areas, despite being under the most stringent sanctions. Iran is the sole Middle Eastern country with an independent space program, producing its own supercomputers and gas turbines. This progress is due to a combination of import substitution policies for technology strictly controlled by the West, such as weapon systems, jet engines, and gas turbines, as well as the utilization of off-the-shelf foreign components that are almost impossible to monitor by Western sanctions authorities. This includes widespread commercial electronic components, components for mass-produced commercial drones, and so on. Given Russia's greater resources for successful industrial policies than Iran, it is likely to focus more on import substitution.

During the Ukraine conflict, Russia has made significant progress in addressing some of the shortcomings of its defense technological policies. This progress includes the increased production of unmanned aerial vehicles (UAVs), the development and increased production of new types of guided weapons (such as new types of guided artillery munitions[27]), the quick development of the Russian equivalent to the US-made Joint Direct Attack Munition (JDAM) bombs[28], and an increased production of new types of tanks[29]. The production of these weapons is supported by both the Russian microelectronic industry, which is capable of producing electronic components at the level achieved by Western producers in the early 2000s, and by the use of off-the-shelf commercial components that flow into Russia through numerous channels such as China, the Middle East, and Turkey.

After the conflict, Russia is expected to face long-term economic consequences resulting from military confrontation and sanctions. Nonetheless, its defense economy is anticipated to receive a significant boost in terms of increased investment in new technology and higher production rates.

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[27] Vostrebovannost' v tul'skih UAS «Krasnopol'-D» rezko vozrosla. Vysokotochnyj otvet artillerii NATO v hode SVO [Demand in the Tula UAS "Krasnopol-D" has increased dramatically. High-precision response of NATO artillery during NWO]. 2022. *Newstula*. 1 December. URL: https://newstula.ru/fn_1263996.html?utm_source=yxnews&utm_medium=desktop&utm_referrer=https%3A%2F%2Fdzen.ru%2Fnews%2Fsearch%3Ftext%3D (accessed 26.01.2023).

[28] V Rossii razrabotali pervuyu «umnuyu» polutonnuyu aviabombu [Russia has developed the first "smart" half-ton bomb]. 2023. *MK*. 5 January. URL: https://www.mk.ru/politics/2023/01/05/v-rossii-razrabotali-pervuyu-umnuyu-polutonnuyu-aviabombu.html (accessed 26.01.2023).

[29] Gusarov S. 2023. Konveyyer rabotayet kruglosutochno: «Uralvagonzavod» peredal Minoborony novuyu partiyu tankov T-90M «Proryv» [The conveyor works around the clock: Uralvagonzavod handed over to the Ministry of Defense a new batch of T-90M Proryv tanks]. *Russia Today*. 12 January. URL: https://russian.rt.com/russia/article/1096717-t-90m-uralvagonzavod-postavki-minoborony (accessed 26.01.2023).

Lessons for Indian planning

India is the world's largest net importer of weapons and faces the prospect of much larger conflicts than the one in Ukraine, possibly against adversaries with significant industrial capabilities. This dependence on imports has proved perilous, as even smaller conflicts like the Kargil war required urgent procurement of equipment, sometimes at exorbitant prices and with delays[30]. To match China's military buildup along the Himalayan border, India plans to invest more in military infrastructure, and command and control systems[31]. Special attention is also attached to the Indo-Pacific theater where India is focusing on obtaining advanced maritime domain awareness capabilities[32]. India adheres to a no-first-use nuclear policy and considers its nuclear forces solely as a tool of deterring the enemy's nuclear strike by the threat of massive retaliation (Nagal 2015).

In the context of current great power rivalry, India will need to reassess its industrial policy and prioritize the potential for defense mobilization of its economy. It is essential to create reserve production capacity for key types of weapons and equipment on Indian soil, even if it means sacrificing some of the technical capabilities of the weapon systems. In some cases, the procurement of simpler weapon systems with 100% localization should be considered simultaneously with the purchases of more advanced systems that are imported or assembled from foreign components. Importing specific weapons that cannot be produced domestically will likely have limited effects on the sales of the domestic arms industry (Blum 2018).

In the past, China employed a similar strategy when it was heavily reliant on imported defense technology. During the period from the 1980s to the early 2000s, China frequently pursued a dual strategy of producing advanced, state-of-the-art weapon systems that relied on foreign technology, as well as simpler, fully localized substitutes. For instance, in the 2000s, China produced the J-8II fighter concurrently with the procurement and license production of Russian Sukhoi fighters. Later, China produced early types of the J-10 fighter, which still relied on Russian engines. China has also produced the more sophisticated Type 99/99G tanks, which heavily depended on foreign production equipment and components, alongside the cheaper, simpler, but less capable Type 96/96G tanks. Additionally, China has produced the simple HJ-73 family of antitank missiles, along with the more powerful HJ-8, HJ-9, and HJ-10 systems.

The Ukrainian experience demonstrates that such readily available but simple sys-

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[30] Sura A. 2019. India overcharged for satellite images, arms during Kargil. *The Times of India*. 14 December. https://timesofindia.indiatimes.com/india/during-kargil-foreign-nations-fleeced-india-sold-old-sat-pics-arms/articleshow/72570657.cms (accessed 26.01.2023).

[31] Kliman D., Rehman I., Lee K., Fitt J. 2019. Imbalance of Power: India's Military Choices in an Era of Strategic Competition with China. *Center for a New American Security.* October 23. URL: https://www.cnas.org/publications/reports/imbalance-of-power (accessed 26.01.2023).

[32] Baruah D. M. 2020. India in the Indo-Pacific: New Delhi's Theater of Opportunity. Working Paper. *Carnegie Endowment for International Peace.* URL: http://www.jstor.org/stable/resrep24919.8 (accessed 26.01.2023). P. 18–25.

tems may play a vital role in several areas, including: air defense (particularly short and medium-range systems that can effectively counter unmanned aerial vehicles (UAVs) and subsonic cruise missiles by utilizing inexpensive surface-to-air missiles); infantry weapons and munitions; anti-tank guided missiles; artillery and artillery munitions; military automobiles; military engineering equipment; tactical communication systems; small tactical UAVs; helicopters; light armored vehicles; land and naval mines.

Modern war against a major defense industrial power (even if that power is participating in war indirectly) is not possible without development of such industries and having all elements of their production chains on the national territory. They do not have to rely on the last generations of technology, as in many cases Cold war era artillery and armor combined with command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) capabilities have proven to be effective. Key Indian strength in the present conditions may be a very robust national IT sector which could be mobilized to develop the C4ISR capabilities associated with the modern war (Amitav 2008).

Among the more high-tech weapons, the Ukrainian conflict has highlighted the increasing significance of theater ballistic missile defense systems, which were heavily utilized by Russia. It is worth noting that the acquisition and implementation of such systems already was a central topic in Indian national security discussions more than a decade ago (Pant 2008).

In the case of India, increased defense spending could have a significant positive impact on economic growth, primarily due to the resulting boost in industrial investment and employment generation (Mohanty, Panda, Bhuyan 2020).

It is also important to have well-developed plans for mobilizing the domestic industry prepared well in advance. To the best of our knowledge, the only major country that undertakes such planning is China, which systematically monitors the mobilization potential of its economy through yearly Defense Mobilization Potential surveys.

The Ukrainian conflict has highlighted the increased capacity of major powers to engage in proxy wars against their adversaries. This greater capability is based on the growing significance of modern information technology in modern warfare[33]. It is not solely the United States that can offer such support to its allies. China, for in-

[33] In terms of US military support to Ukraine, the provision of a constant flow of intelligence and targeting information via space assets, AWACS planes, and ground-based radars operated from NATO-controlled territory, beyond the reach of Russian countermeasures, was the most significant factor. Despite the hype around the use of the HIMARS rocket systems, the most effective long-range strikes against Russian forces in the early stages of the conflict were conducted by the Ukrainians using legacy Soviet systems such as the Tochka U (SS-21), as well as Soviet Smerch and Uragan MLRS systems. A combination of initial Russian problems with coordination between advancing ground troops and air defense, combined with American targeting, resulted in battlefield losses for Russia, not the use of any magical weapon system. NATO's radar coverage of much of Ukraine enabled the Ukrainian air defense systems to successfully conceal themselves, only turning their radars on seconds before firing missiles. This made the suppression of Ukrainian air defenses a difficult task for the Russian Aerospace Force. While the Russians did manage to destroy some Ukrainian air defense systems, including S-300s, many of them survived, limiting Russian air assets over Ukraine. Timely warning information provided by the US to Ukraine about the movements of Russian Navy ships and long-range bombers allowed the Ukrainians to accurately forecast Russian cruise missile attacks and move vulnerable high-value equipment, notably combat aircraft, to different locations.

stance, possesses a fleet of advanced AWACS planes, and its space reconnaissance capabilities are second only to those of the United States. Additionally, China produces a larger number of short and medium-range ballistic missiles and guided multiple rocket launcher systems than the United States, and in some cases, these weapons have superior capabilities. Thus, it is technically feasible for a smaller Asian power to wage a limited conventional war successfully against a major power, relying on external support in the areas of intelligence, reconnaissance, communications, and control, as well as arms sales.

Potential for Russian-Indian cooperation

Russia regards India as its natural ally in the Indo-Pacific region, although their relationship is somewhat affected by their divergent approaches toward China (Lunev, Shavlay 2018). Russia and India could collaborate on projects aimed at restructuring the Indian defense industrial base to adapt to new realities. The Indian military still relies on platforms and weapons with Russian roots, and the two countries have established defense industrial ties[34].

Since 2014, the Russian defense industry has been subject to Western sanctions, and the new measures imposed on Russia since February 2022 have not significantly undermined the capabilities of Russian weapons producers. In fact, they have benefited from growing political attention and increased financing.

After February 24, 2022, the open-source information on Russian arms exports, including exports to India, became scarce. Russian authorities increased secrecy around arms exports to avoid sanctions against Russian defense industrial companies and their foreign customers. However, according to the Russian leadership's statements, exports continued even during the most challenging periods of 2022. In late November 2022, Vladimir Putin announced that since the beginning of the year, Russia had exported weapons worth $8 billion[35]. Despite the ongoing military confrontation, Russia seems to be fulfilling the most significant defense industrial contracts with India. In 2018, India contracted for five S-400 SAM systems, and as of April 2022, the second system had been delivered, followed by the third in early 2023. Russia plans to complete the contract by the end of 2023[36].

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[34] Indian Military Dependence on Russia. 2022. *Institute Montaigne.* 5 July. URL: https://www.institutmontaigne.org/en/analysis/indian-military-dependence-russia (accessed 26.01.2023).

[35] Putin ocenil ob"em eksporta vooruzhenij [Putin assessed the scale of weapons exports] *RIA Novosti*. 25.11.2023 URL: https://ria.ru/20221125/eksport-1834383497.html (assessed 26.04.2023).

[36] Kajal K. 2023. Russia delivers third S-400 system to India. 2023. *Janes*. 02.03. URL: https://www.janes.com/defence-news/news-detail/russia-delivers-third-s-400-system-to-india (assessed 26.04.2023)

The two countries have the potential to elevate their strategic defense industrial cooperation to a new level, drawing on the experience of Soviet-Chinese cooperation in the 1950s. This entails a shift away from a series of individual high-profile defense deals towards a pre-planned creation of a new Indian defense industrial complex, which would ensure India's strategic autonomy by enabling it to meet its basic defense needs independently. This does not imply a cessation of cutting-edge technology transfers or advanced weapons sales; rather, the two dimensions of cooperation should coexist. Russia's ability to export advanced weapons systems to India is likely to increase after the conflict, as Russia will likely have significant excess production capacity for surface-to-air missiles, cruise missiles, anti-tank missiles, armored vehicles, and other weapons. Consequently, Russia is then expected to be in the position to offer its weapons at affordable prices and on short notice, especially when selling off some of the wartime stockpiles.

The growing role of dual-use information and communication technology during the conflict suggests that future bilateral defense cooperation between India and Russia may become a two-way street. Russia's interest in importing some of India's dual-use technology is likely to increase in the future. Furthermore, the experience gained by Russia in the first major full-scale conventional conflict between peer powers in generations may prove valuable to the Indian military, thereby boosting military-to-military interactions.

Moreover, the conflict will leave Russia with a large battle-hardened regular military, which will be augmented by very strong private military companies. Russia is likely to expand the use of these foreign policy tools in various parts of the world, creating additional opportunities for policy coordination and cooperation between India and Russia. Russian capabilities can be used to deal with overseas terrorism threats and protect foreign investments of friendly countries like India.

In terms of technology, the conflict in Ukraine has revealed both the strengths and weaknesses of Russian military procurement policies. Russian air defense has played a significant role in the military operation and has proven to be the most advanced in the world, capable of dealing with a wide range of threats including artillery rockets, short-range ballistic missiles, anti-radiation missiles, various types of unmanned aerial vehicles (UAVs) and loitering munitions, as well as traditional combat fixed-wing aircraft and helicopters. Prior to the conflict, Russia increased the production of surface-to-air missiles and continued to do so during the conflict. In January 2023, Vladimir Putin stated that Russia was producing as many SAM missiles as the rest of the world combined[37], which greatly reduced the damage to Russian forces from rocket, missile, and UAV attacks by Ukrainian forces.

[37] Rossiya za god proizvodit stol'ko zhe raket PVO, skol'ko ostal'noy mir vmeste vzyatyy [Russia manufactures same number of missiles as rest of the world combined]. 2023. *Expert*. 18 January. Available at: https://expert.ru/2023/01/18/rossiya-za-god-proizvodit-stolko-zhe-raket-pvo-skolko-ostalnoy-mir-vmeste-vzyatiy-putin/ (accessed 26.01.2023).

Russia effectively utilized its large arsenal of advanced Iskander (SS-26 Stone) ballistic missiles and a considerable inventory of cruise missiles. Additionally, the conflict saw the first successful use of hypersonic weapons in history when Russia deployed its Kh-47 Kinzhal missiles to destroy heavily protected Ukrainian targets. Russia maintained a general advantage in artillery and increased its use of guided artillery munitions such as Krasnopol laser-guided 152-mm rounds. Russia also made good use of advanced indigenous loitering munitions, such as the Lancet attack UAV. Notably, Russia successfully used the very long-range (up to 400 km) air-to-air missile R-37M in combat for the first time, hitting Ukrainian combat aircraft.

Conclusion

The conflict in Ukraine has had a profound impact on Russia, affecting its economy, industry, defense, and domestic and foreign policies. The new Russia will be a more assertive global actor, with significantly enhanced military capabilities. It will be capable of operating with complete disregard of the Western position on most issues, given that economic ties with the West have been severed.

In light of this isolation from the West, it is expected that Russia will place greater emphasis on enhancing its cooperation with India in all areas, including defense. Following the conflict, Russia's defense economy is anticipated to possess considerable excess production capacity and large reserves, which will enable the supply of Russian weapons in large quantities at low cost. The precise extent of such surplus supplies will be contingent upon the scale of the Russian military in the future. Currently, Russia has decided to augment its peacetime military force by 50%, bringing the total number of troops to 1.5 million. This figure is nearly equivalent to the overall number of Russian armed forces during the conflict in Ukraine, encompassing the pre-conflict military force of 900,000 to 1 million soldiers, 300,000 mobilized troops, the former Donetsk and Lugansk People's Republic forces, and paramilitary forces like the Wagner Group. Further increase may add pressure on Russian stockpiles, but such a development does not seem likely.

The conflict in Ukraine has highlighted the critical role of defense industrial and economic mobilization for a country's survival. In today's environment, the capacity for such mobilization may be more important for national security than the possession of advanced defense technology. As a result, the views on the defense economy are undergoing profound changes all around the world.

In the future, the most promising area of cooperation between Russia and India may not be limited to the sales of small numbers of selected high-tech weapons. Rather, it may involve creating a new industrial base to help India achieve defense self-sufficiency and be ready for economic mobilization. India's current favorable position in global politics may enable it to obtain Russian cooperation in this field on very favorable conditions. However, such a path may invite growing opposition from the US and the EU towards the Indian-Russian cooperation. It is worth noting that such pressure has been present constantly, especially since 2014, but has been ineffective so far.

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Меняющиеся контуры военно-технического сотрудничества России и Индии

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В статье анализируется эволюция российской военно-промышленной и экономической политики в ходе вооружённого конфликта на Украине, а также рассматриваются вероятные последствия этой эволюции для российско-индийского сотрудничества. Конфликт привёл к масштабному переосмыслению военно-промышленной политики в странах по всему миру, включая Азию. В России сформировался долгосрочный тренд на милитаризацию экономики. В изменившихся условиях возникают новые возможности для совместных российско-индийских инициатив, направленных на развитие индийской военной промышленности, повышение её самодостаточности, а также укрепление мобилизационного потенциала индийской экономики. Наиболее перспективная область сотрудничества между Россией и Индией, возможно, не должна ограничиваться продажей небольших партий высокотехнологичного оружия. Скорее, она может включать создание новой промышленной базы для помощи Индии в достижении оборонной самодостаточности и готовности к экономической мобилизации. Текущее благоприятное положение Индии в мировой политике может позволить ей добиться сотрудничества с Россией в этой области на очень выгодных условиях. Однако, такая политика может вызвать растущее противодействие со стороны США и ЕС в отношении российско-индийского сотрудничества. Стоит отметить, что такое давление присутствует постоянно, особенно с 2014 года, но пока оно оказывается неэффективным.

Ключевые слова: Индия, Россия, украинский конфликт, военная экономика, военно-техническое сотрудничество, экономическая мобилизация.

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