CSS STUDY

India's Limited Room for Maneuver

How New Delhi Addresses Its Strategic and Critical Vulnerabilities *vis-à-vis* China and Russia after the Galwan Clash and Russia's Full-Scale Invasion of Ukraine

Boas Lieberherr

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Center for Security Studies (CSS), ETH Zürich

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Author: Boas Lieberherr
ETH-CSS project management: Oliver Thränert
Editor: Niklas Masuhr, Oliver Thränert
Language Editor: Michael Woods
Layout and graphics: Miriam Dahinden-Ganzoni

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Executive Summary

India's strategic and critical vulnerabilities with regards to China and Russia have become starkly exposed. New Delhi's asymmetric economic relations with Beijing are marked by a trade deficit, and India is significantly dependent on Chinese suppliers for key products, such as electronics, active pharmaceutical ingredients (APIs), and rare-earth minerals. China has also made inroads into critical Indian sectors through foreign direct investment (FDI). In theory, these asymmetries could give China the ability to weaponize its economic influence to gain political leverage.

Similarly, India's defense sector has long relied on Russia – a dependency that is becoming increasingly risky due to intensifying patterns of global power competition. More than two-thirds of India's defense equipment originates from the Soviet Union or Russia. This includes platforms that form the backbone of the Indian Armed Forces, including fighter jets, main battle tanks, aircraft carriers, submarines, and air-defense systems. These vulnerabilities are not merely hypothetical. For instance, the operational readiness of the Su-30MKI air superiority fighter, a mainstay of India's air defense, has been compromised. This is due to Russia's current inability or unwillingness to deliver certain spare parts.

This report addresses the impact of two events on India's dependencies on China and Russia. The first is the June 2020 escalation of the India-China border dispute in the Galwan Valley, which led to the first fatalities in the dispute in over four decades. The second is Russia's full-scale invasion of Ukraine in February 2022. These events have not brought about a significant inflection point in India's economic and defense policies toward China and Russia, respectively. Instead, they have reinforced earlier trends. Since these events, India has responded with swifter and more serious action to address specific strategic and critical vulnerabilities in relation to China and Russia. However, in many cases such action has built on mitigation measures that were implemented several years prior to these two events. Despite these efforts, India's economic dependence on China has continued to increase in a number of critical product categories since the Galwan clash. Furthermore, India has no imminent solutions to the challenges posed by relying on Russia for spare parts and maintenance support. It will likely take India several years, if not decades, to reduce its strategic and critical vulnerabilities to a significant degree.

Regarding economic asymmetries with China, India is pursuing a "de-risking" approach. Since the 2020 escalation in the Galwan Valley, the Indian government has been more willing to implement economic measures that explicitly aim at China. It also appears more dedicated to addressing the security implications that arise from economic reliance on China in a targeted manner. This is demonstrated by India's efforts to restrict FDI from China, bar Chinese bids on its 5G infrastructure, and ban Chinese apps such as TikTok due to data security concerns. India has also implemented production-linked incentive programs to bolster domestic manufacturing and safeguard certain sectors through tariff or non-tariff measures. These efforts are expected to persist even if the ongoing border standoff is resolved.

These actions demonstrate India's interest in reducing its economic dependence on China. However, Prime Minister Narendra Modi's de-risking policy has only partially achieved its desired outcomes so far. New Delhi's reliance on Beijing in several critical product categories has grown since 2020. Moreover, if India's objective was to force China to restore the status quo ante along the Line of Actual Control (LAC) through acts of economic retaliation, it has failed. China continues to occupy territory claimed by India. However, New Delhi achieved some success in restricting FDI from China and reducing the involvement of Chinese companies in strategic sectors. There are also several indicators that can demonstrate whether India's de-risking strategy is working in the future. These include a decrease in overall *relative* imports from China, a continuous reduction in import dependence on China in critical product categories, and an increase in India's domestic production capability for relevant product categories.

China's economy will remain pivotal for India's economic growth. As a result, in pursuing its de-risking strategy, India is faced with the challenge of navigating complex trade-offs between security and economic interests. For instance, India withdrew from the Regional Comprehensive Economic Partnership (RCEP) due to its concerns about an even greater trade deficit with China. However, this decision may decrease India's attractiveness as a business destination. Without duty-free access to the RCEP market, foreign investors may be less inclined to invest in the country. Thus, India's efforts to mitigate strategic vulnerabilities *vis-à-vis* China's economy may come with a price and have a dampening impact on its economic growth.

Regarding India's defense relationship with Russia, New Delhi seems to be pursuing both short- and long-term strategies to reduce its critical vulnerabilities. In the short- to medium-term, India's current dependence on Russia poses challenges that cannot be entirely resolved. Temporary solutions include accessing new sources of spare parts from countries that also possess Russian defense equipment and increasing local production. However, locating substitute sources for specific spare parts from other countries can be a challenging task. Furthermore, enhancing domestic production is a time-consuming process that may only increase the availability of spare parts to a limited extent, as critical materiel will still need to come from Russia.

In the long-term, India is working toward greater defense industry indigenization as well as diversifying its weapon systems by increasing its procurement from suppliers in countries like the US, France, and Israel. India is the world's largest importer of arms and it has a relatively underdeveloped domestic defense industry. Partly as a result of this, it is uncertain what will result from India's indigenization efforts and their progress will likely be slow. For example, despite India's recent relaxation of FDI regulations in the defense sector, the level of investment remains low. Hence, India's defense industry is struggling at precisely the moment when its armed forces are being called to address the country's increasingly tense security environment. Therefore, New Delhi has no choice for the foreseeable future but to look abroad for weapons system expertise, be this through direct armaments imports or licensed production in India. However, for technical and strategic reasons, Russia is becoming a less attractive source for arms procurements for India when compared to Western suppliers. It seems unlikely that India will initiate any new major arms procurement projects involving Russia in the near future.

India's critical vulnerabilities *vis-à-vis* Russia will persist as long as Russian-origin major platforms, including T-90 tanks and Su-30MKI fighter aircraft, remain in service with the Indian Armed Forces. The potential risks stemming from India's reliance on Russian platforms would increase if Russia becomes more reliant on China as a result of the war in Ukraine. If China gains greater influence over Russia, Beijing may exert pressure or use its leverage to get Moscow to withhold replacements and spare parts from India before or during a Sino-Indian crisis. This illustrates that India's two axes of vulnerability risk overlapping and exacerbating each other. For India, maintaining a strong partnership with Russia will be crucial in mitigating this risk.

Three trends emerge from reviewing these insights and New Delhi's handling of strategic and critical vulnerabilities *vis-à-vis* China and Russia. First, the US and its allies and partners will play an increasingly significant role for India in building its economic and military national power. At the same time, the relative importance of Russia and China in India's pursuit of its primary foreign policy objective – which is to develop into a major power in a multipolar world – is waning. The increasing importance that India is placing on the Quad in contrast to China- and Russia-dominated formats, like the SCO and the BRICS, illustrates this trend.

Second, India's cooperation with the US and its allies and partners will face certain limitations due to New Delhi's strategic and critical vulnerabilities *vis-à-vis* China and Russia. One reason for this is that India will oppose the adoption of an overt collective strategy of containing China that involves the Quad. This is because New Delhi is wary that Beijing would retaliate if it is perceived to be actively supporting US-led containment initiatives. India's inventory of Russian-origin defense platforms is also likely to set limits to defense cooperation with the US.

Finally, India's strategic and critical vulnerabilities *vis-à-vis* China and Russia are reflective of broader structural challenges in the country's economic and defense domains. India's desire to play a more important role internationally and to assert itself against China, both in South Asia and the larger Indo-Pacific, will ultimately be dependent on its success in developing its material capabilities. India may increase its political and strategic influence on the global stage in the near future. However, economic obstacles in areas including education, poverty, employment, and health, as well as persistent dependence on foreign expertise for defense in the years to come, could curtail India's aspirations.

1. Introduction

India asserts that it follows an interest-driven foreign policy known as "multi-alignment" or "strategic autonomy," which seeks to eschew geopolitical alignment with any specific political camp and steer clear of over-reliance on any major power. For example, India participates in formats dominated by the US and its allies like the Quadrilateral Security Dialogue, or the Quad, and those dominated by Russia and China, such as the BRICS and the Shanghai Cooperation Organization (SCO). However, in recent decades, India has developed strong dependencies on Russia in the defense domain and on China in the economic domain. Moreover, New Delhi's relations with Beijing have become increasingly strained and there is the possibility of a stronger Sino-Russian partnership. In this context, India's dependencies have created strategic and critical vulnerabilities, ones which have the potential to limit India's room for maneuver.

New Delhi has set aside its reluctance to take a more confrontational stance toward Beijing. This followed a series of border clashes along the Sino-Indian border that commenced in the spring of 2020. On 15 June, Chinese and Indian soldiers were involved in a hand-to-hand brawl in the Galwan Valley, with Chinese troops reportedly using stones, clubs, and sticks.[1] This led to the first fatalities in the disputes between the two countries in over four decades. Since this brawl, which will henceforth be referred to as the Galwan clash, India has taken economic retaliatory measures and has stepped up its engagement with the Quad.

Beijing argues that bilateral relations should move forward despite the heightened tensions along the Line of Actual Control (LAC), which forms the effective border between the two countries. New Delhi takes the opposite view. It holds that progress in relations cannot be separated from the border issue. However, despite this position and New Delhi's economic measures, trade between the two countries has experienced robust and rapid growth. Since the Galwan clash, overall bilateral trade has grown by about 40 per cent. Yet, this growth has been asymmetrical, with India's trade deficit with China increasing by more than 70 per cent in the same period, reaching a total of 83 billion USD by March 2023, the end of India's fiscal year 2022–23. India is concerned about its significant dependencies on China for certain goods, such as active pharmaceutical ingredients (APIs). It is also wary of China's influence in its critical economic sectors. In the context of increasing geopolitical tensions, these asymmetries might allow China to exploit India through coercive measures.

Regarding India's defense relationship with Russia, between 70 and 85 per cent of India's defense equipment is of Soviet or Russian origin. Thus, New Delhi also relies on Moscow for spare parts and maintenance. However, Russia's full-scale invasion of Ukraine in 2022, the resulting sanctions imposed upon Moscow, and Russia's decision to prioritize the repair and replacement of its own platforms have led to supply disruptions amongst its foreign customers. This has had an impact on the operational readiness of the Indian Armed Forces. For example, the Indian Air Force (IAF) is currently awaiting the delivery of crucial Russian-made spare parts for its fighter aircraft. This includes its Su-30MKI and MiG-29UPG aircraft, which make up 312 of the IAF's 554 total fighters. Thus, if the current situation persists, the maintenance of over 50 per cent of the IAF's active combat aircraft is likely to be either inadequate or face interruptions. Furthermore, although Russia's annual share of Indian arms imports is decreasing, Moscow remained responsible for 47 per cent of such imports in 2022. India is also wary about the possibility that Russia may become more dependent on China due to the impact of the war in Ukraine. If Beijing gains more leverage over Moscow, this may undermine Indo-Russian defense relations in the event of a Sino-Indian crisis. This illustrates the risk that India's two axes of vulnerability may overlap and exacerbate each other.

The escalation of the border dispute in 2020 is widely considered as an inflection point for India's strategic positioning concerning China. Meanwhile, Russia's full-scale invasion of Ukraine in February 2022 and the related supply disruptions have demonstrated to India the risk involved in being heavily dependent on Russian defense systems. Against this backdrop, the US and its allies are playing an increasingly important role for India in the political, economic, and military spheres. Indeed, India's increasing cooperation with the US and its allies now appears to be a well-established trend. In light of these and other developments, this report evaluates how the Galwan clash and Russia's invasion of Ukraine have prompted India to address its primary areas of strategic vulnerabilities regarding China and Russia – specifically, its economy in relation to China and its defense in relation to Russia. The intention is to shed light on how India plans to shape its future relations with these two countries and the extent of New Delhi's flexibility in this matter. The report also provides insight into how India may position itself in the face of increasing competition between the US and China and Russia.

This report is organized as follows. Following this introductory first section, section two links recent trends in India's foreign policy to the development of New Delhi's asymmetric dependencies on China and Russia. It also lays the foundation for the case studies presented in subsequent sections. Section three presents a framework that defines and relates the concepts of dependence and

1 Manoj Joshi, *Understanding the India China Border: The Enduring Threat of War in the High Himalayas* (Gurugram: HarperCollins, 2022), 21.

vulnerability. This section also outlines how the framework defines strategic and critical vulnerabilities. Sections four and five provide an in-depth analysis of India-China economic relations and India-Russia defense relations, respectively. Each section examines how these relations have evolved in recent years and the vulnerabilities these ties create for India. They also explore the measures and strategies India has adopted to mitigate asymmetries in these relations, as well as the likely impact of these efforts on India's strategic and critical vulnerabilities. Section six offers a summary of the report's key findings and their implications for trends in India's foreign policy.

2. Asymmetric Dependencies as Failures of Non-Alignment and Multi-Alignment?

The Galwan clash and Russia's full-scale invasion of Ukraine have accelerated the overarching trends in India's foreign policy that have been present since the turn of the millennium. These trends are characterized by increasing cooperation with the US, more complicated relations with China, and the declining importance of Russia. However, India's future room for maneuver in its foreign policy may be constrained due to its asymmetric dependencies on Russia and China, which developed both during and after the Cold War.

From the time of India's independence in 1947 to the end of the Cold War, the defining feature of New Delhi's foreign policy was non-alignment. Jawaharlal Nehru, India's first prime minister, described non-alignment as an intention "to keep away from the power politics of groups aligned against one another, which have led in the past to world wars and which may again lead to disasters on an even vaster scale."[2] Non-alignment, in theory, was designed to minimize the costs and risks associated with being a weak power and to maintain equidistance between the major powers of the Cold War.[3] However, India's rival Pakistan developed closer relations than it with both the US and China. This compelled India to move closer to the Soviet Union, despite the norm of non-alignment. In 1971, India and the Soviet Union signed the Treaty of Peace, Friendship and Cooperation. This period also saw India emerge "as the most articulate opponent of the Western world view,"[4] and the concept of non-alignment "acquired a decisively anti-Western orientation."[5]

India and the Soviet Union's defense relations began in the 1960s. Initially, this was a buyer-seller relationship, but it progressed to include collaborative efforts to develop weapon systems. Unlike the US and its allies, the Soviet Union proved to be a reliable, cost-effective defense supplier for India, crucially addressing New Delhi's defense industry indigenization needs.[6] "The perceived low risk of embargoes or of denial of technologies and spare parts, together with easy credit and barter arrangements, low price and competitive performance,"[7] in conjunction with geopolitical factors, contributed to India's preference for Soviet arms. The Soviet Union also gave India exclusive access to its most sophisticated systems and provided technical assistance, transfers of technology, and co-development options. Subsequently, Russia also did the same. More significantly, the Soviets assisted India in the development of its first nuclear-powered ballistic missile submarine, the INS Arihant.[8] It is worth noting that during the Cold War, the US sought to torpedo the transfer of Soviet technologies to India. However, despite the active opposition of the US and its sanctions, many critical technology transfers still occurred.

After the end of the Cold War, India shifted from non-alignment to an approach called "multi-alignment," also referred to as "strategic autonomy." The dissolution of the Soviet Union and a severe balance of payment crisis marked a turning point for India's foreign policy. In 1991, India undertook a partial economic liberalization and started integrating into the world economy. At the same time, it also began to "increasingly shed its anti-Western attitudes."[9]

Against the backdrop of its growing economic, political, and military influence after the turn of the millennium, India increasingly saw itself as an emerging major power. Instead of seeking to avoid involvement in the great-power system as it had during the Cold War, India now aspired to gain a prominent place in it. This involved

2 Jawaharlal Nehru, *Speeches Vol. 1* (New Delhi: Government of India, Publications Division, 1958), 2.

3 Frank O'Donnell / Mihaela Papa, "India's Multi-Alignment Management and the Russia-India-China (RIC) Triangle," *International Affairs* 97:3 (2021), 805.

4 C. Raja Mohan, "India's New Foreign Policy Strategy," Draft paper presented at a Seminar in Beijing by China Reform Forum and the Carnegie Endowment for International Peace, Beijing, 2006, 4.

5 C. Raja Mohan, "Foreign Policy After 1990: Transformation Through Incremental Adaptation," in: David M. Malone / C. Raja Mohan / Srinath Raghavan (eds.), *The Oxford Handbook of Indian Foreign Policy* (Oxford: Oxford University Press, 2015), 140.

6 Sameer Lalwani / Frank O'Donnell / Tyler Sagerstrom / Akriti Vasudeva, "The Influence of Arms: Explaining the Durability of India–Russia Alignment," *Air University US Air Force,* 15.01.2021.

7 Ravinder Pal Singh, "India," in: Ravinder Pal Singh (eds.), *Arms Procurement Decision Making, Volume 1: China, India, Israel, Japan, South Korea and Thailand* (Oxford: Oxford University Press, 1998), 63–64.

8 Lalwani/O'Donnell/Sagerstrom/Vasudeva, *The Influence of Arms*.

9 Boas Lieberherr, "How India Navigates a World in Transition," in: Brian G. Carlson / Oliver Thränert (eds.), Strategic Trends 2023: *Key Developments in Global Affairs* (Zürich: Center for Security Studies, ETH Zürich, 2023), 86.

multi-alignment, an approach which aims to obtain security and status while also avoiding an over-dependence on any major power. India's efforts to balance its ties with the US and China in a complementary manner illustrate these priorities.

India simultaneously deepened engagement with the US and pursued rapprochement with China. US-India relations have been on an upward trajectory since the signing of the 2006 bilateral civilian nuclear agreement. India committed to separate its civil and military nuclear facilities and to place all its civil nuclear facilities under International Atomic Energy Agency (IAEA) safeguards. In exchange, the US agreed to work toward full civil nuclear cooperation with India. This agreement also resulted in India receiving a waiver from the Nuclear Suppliers Group two years later, lifting restrictions on its civil nuclear trade. While differences persist between India and the US on how to shape the global order, the two countries have markedly strengthened their security and defense cooperation over the past decade and a half. Examples of this include the signing of foundational military cooperation agreements, the expansion of military exercises, India's substantial increase in arms imports from the US, and the launch of a 2+2 foreign and defense ministerial dialogue. This growing cooperation occurred primarily against the backdrop of the two countries' increasingly aligned threat perceptions of China.

At the same time, the prospect of a unipolar world dominated by the US also led New Delhi to pursue closer cooperation with China and Russia after the turn of the millennium. This was to hedge against the potential risks associated with the extent of US power and influence. For example, the three countries founded the Russia-India-China (RIC) format, collaborated through the BRICS bloc, and cooperated in the Asian Infrastructure Investment Bank. In addition, India became a full member of the SCO in 2017, after holding observer status for over a decade.

India's relationship with China appeared to improve from the end of the Cold War up until the early 2010s. Within this period, India and China signed five agreements to manage their boundary dispute and cooperated on bilateral economic issues. India and China had similarly sized economies in the early 1990s. However, China's economic lead over India has dramatically increased since the 2000s. India has also developed an economic dependence on China in the past two decades. Several factors contributed to this development. These include India's rapid trade liberalization, which saw average import duties on industrial products decline, and the lack of significant measures taken by successive governments to ready India's manufacturing sector for the demands of an open economy. Since the early 2010s, the imbalance in India-China trade relations has continued to expand rapidly.

After Xi Jinping came to power in China in 2012, Beijing adopted a more aggressive foreign policy. The frequency and severity of incidents along the India-China border increased markedly. Indeed, there were major, albeit non-lethal, skirmishes in 2013, 2014, and 2017. Despite this, India's Prime Minister Narendra Modi prioritized "building trade and investment ties with China while publicly proposing to demarcate the border to resolve the border dispute."[10] In a keynote speech at the Shangri-La Dialogue in 2018, Modi was still optimistic about China-India relations. He stated that "Asia and the world will have a better future when India and China work together in trust and confidence, sensitive to each other's interests."[11] However, such collaboration became more and more complicated due to several factors. One was Beijing's launch of its Belt-and-Road Initiative (BRI) and India's decision to oppose the initiative. Others included China's alleged systematic acquisition of global port infrastructure, outlined by the "String of Pearls" theory, which would encircle India; improving India-US relations at a time while Sino-US relations deteriorated; and China's behavior during the coronavirus pandemic.

The first deadly border clash between China and India in 45 years occurred on 15 June 2020 in the Galwan River Valley in Ladakh, India. In this brawl, 20 Indian troops and at least 4 People's Liberation Army (PLA) personnel were killed. These clashes were preceded by a major Chinese military buildup in the spring of 2020. This involved Beijing deploying thousands of troops, tanks, and artillery to several points along the two countries' disputed border and establishing new forward positions beyond the LAC in areas previously patrolled by India.[12]

The Galwan clash has been widely regarded by analysts as a turning point in India's strategic thinking and positioning *vis-à-vis* China.[13] The incident also marked the breakdown of more than 20 years of successful border management. The main difference between the two countries response to the crisis has been China's desire to move the bilateral relationship forward *despite* the tensions along the LAC, while India has chosen to make progress in the overall relationship *dependent on* the restoration of the state of affairs that existed previously. Xavier and Rozman conclude that "looking back on the June 2020 clash in the Himalayas, we can discern an end to India's idealist engagement of China."[14]

10 Lisa Curtis / Derek Grossman, *India-China Border Tensions and U.S. Strategy in the Indo-Pacific*, (Washington DC: Center for a New American Security, 2023).

11 Narendra Modi, *PM's Keynote Address at Shangri La Dialogue,* Singapore, 01.06.2018.

12 Curtis / Grossman, *India-China Border Tensions,* 7.

13 Constantino Xavier / Gilbert Rozman, "Synopsis of Indian Thinking about China, 2018–2022," *The Asan Forum,* 07.06.2022; Rohan Mukherjee, "Leveraging Uncertainty: India's Response to US-China Competition," in: Ashley Tellis / Alison Szalwinski / Michael Willis (eds.), *Navigating Tumultuous Times in the Indo-Pacific* (Seattle, Washington: The National Bureau of Asian Research, 2022), 153.

14 Xavier/Rozman, *Synopsis of Indian Thinking about China, 2018–2022.*

Before the Galwan clash, New Delhi pursued a strategy of reassuring Beijing that it was not actively balancing against China.[15] However, since 2020, New Delhi has exhibited a greater willingness to adopt a more confrontational approach toward Beijing. It has also become less cautious about engaging in strategic cooperation with the US and the Quad. India was initially hesitant to actively participate in the Quad, partly due to China's criticism of the format. However, it has significantly increased its involvement in the group since 2020.

Russia's invasion of Ukraine in 2022 has forced India to perform a difficult balancing act between maintaining its longtime strategic partnership with Russia and developing its increasingly important relationships with the US and its allies. The invasion has complicated India's relations with Russia, particularly given India's heavy reliance on Russian defense equipment, spares, and maintenance support. After the Cold War, India continued to procure arms from Russia due to "path dependence of accumulated stock, platform familiarity by operators, training, and organization around acquisition flows."[16] India has also been reluctant to publicly condemn Russia's actions in Ukraine and it has decided to significantly increase its oil imports from Russia. By doing so, India has not only garnered international criticism but also brought its long-standing relationship with Russia into the global spotlight. The arms relationship remains the "strongest and most durable" driver of this bilateral partnership.[17] However, most scholars agree that the importance of India's ties with Russia have diminished when compared to those that New Delhi has since developed with other middle and major powers. Russia's continued war in Ukraine and the associated economic, political, and military weakening of Moscow are likely to reinforce this trend.

Several factors have led India to seek closer cooperation with the US and its allies to balance against China and its potential junior partner, Russia. These include China's more muscular approach toward India, Russia's war in Ukraine and how the conflict has weakened Moscow, and the potential for closer China-Russia relations. However, India's room for maneuver in balancing its relations may be constrained. India's asymmetric dependencies on China and Russia in the economic and defense domains, respectively, put New Delhi in a difficult strategic position.

3. From Dependence to Strategic and Critical Vulnerabilities

The subsequent sections will address how the Galwan clash and Russia's invasion of Ukraine in 2022 have prompted India to address its two primary areas of reliance on China and Russia – which concern its economy and defense, respectively. However, it is first necessary to establish a framework that defines and relates dependence and vulnerability. This will allow for a clearer understanding of New Delhi's vulnerabilities *vis-à-vis* Beijing and Moscow and the potential changes in these areas that have occurred since the two events mentioned above. This study draws upon a pre-existing framework, devised by Indian analyst Amit Kumar,[18] which is also applicable beyond India. It has been simplified for the purposes of this report (see graph 1).

The framework can be used to analyze specific products or services procured from foreign sources that could leave the importing country with vulnerabilities under specific circumstances. For the purposes of this framework, *dependence* is defined as a situation in which a country relies to a substantial degree on another country to meet its supply needs. This does not necessarily imply vulnerability. Instead, an instance of *dependence* can become a *vulnerability* when combined with so-called high-probability disruptive factors, such as tariff and non-tariff barriers, supply shocks, and natural disasters (see graph 1).[19] Of course, *mutual* dependencies exist in Sino-Indian economic relations and Indo-Russian defense relations. As this report will demonstrate, however, both sets of relations are characterized by stark asymmetries that disfavor India. Hence, the vulnerabilities identified are mainly *one-sided*.

Vulnerabilities also differ in their severity. To determine whether a vulnerability is sufficiently serious to qualify as *strategic,* the framework employs two tests. One is the *alternative test,* which asks whether there are alternative suppliers for the specific good or service concerned. The other is the *incidence test,* which asks whether the product is essential and if disruptions to its supply would impact a significant portion of the country's population.

India's reliance on China for APIs serves as an example for these tests. India currently possesses no competitive alternative supplier for the APIs it sources

15 Rajesh Rajagopalan, "Evasive Balancing: India's Unviable Indo-Pacific Strategy," *International Affairs* 96:1 (2020), 75–93.

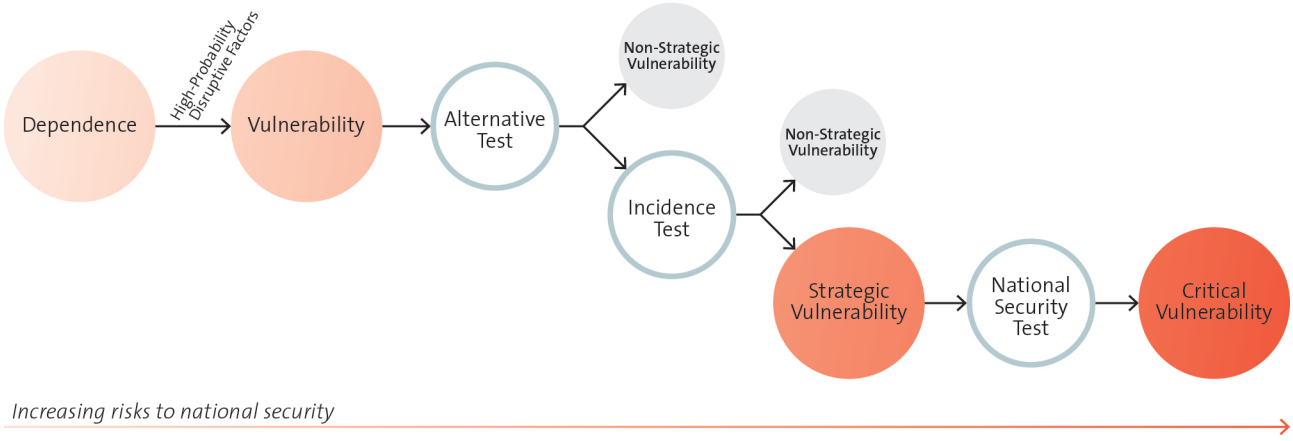
16 Lalwani/O'Donnell/Sagerstrom/Vasudeva, *The Influence of Arms.*

17 Ibid.

18 Amit Kumar, "Defining Strategic and Critical Vulnerabilities in Asymmetrical Trade Interdependence," *Indian Public Policy Review* 4:4 (2023), 70–83. The framework has been adapted with the author's consent.

19 Ibid, 76.

Graph 1:
From Dependence to Critical Vulnerability



Source: Amit Kumar, "Defining Strategic and Critical Vulnerabilities in Asymmetrical Trade Interdependence," Indian Public Policy Review 4:4 (2023), 70–83. The framework has been adapted with the author's consent.

from China.[20] A supply disruption would severely curtail India's generic medicine manufacturing and would dent its status as the pharmacy of the world. India produces 20 per cent of the world's generic drugs by volume and 60 per cent of vaccines and HIV medication.[21] Hence, India's dependence on China for APIs constitutes a strategic vulnerability.

A strategic vulnerability can in turn become *critical* if it has "a profound impact on a country's national security, or if such a vulnerability is a consequence of an enormous capability gap *vis-à-vis* an adversary that cannot be matched in the foreseeable future."[22] This is the *national security test*. Examples of what this could concern include a country's reliance on a supplier in strategic areas such as defense, electricity grids, communications, and digital infrastructure. Other examples include sophisticated and specialized technology products that cannot be substituted with alternatives in the medium term, such as advanced chips, precision weaponry, and space technology. In the case of India, the country's reliance on Russia for spares and maintenance support for its Russian-origin weapons systems thus constitutes a critical vulnerability. A decline in the Indian Armed Forces' operational readiness would pose a grave threat during an interstate crisis. As the disruption in India's supply of such goods from Russia illustrates, the relationship between a supplier country and its customer does not need to be antagonistic for dependence to develop into a vulnerability. If, however, the relationship is increasingly antagonistic, as is the case with India and China, the risks arising from vulnerabilities increase as they may be intentionally exploited by the supplier.

As the examples in this section demonstrate, strategic and critical vulnerabilities can render India susceptible to coercive actions by its supplier countries. Such vulnerabilities can also leave India susceptible to risks related to unintended supply disruptions or other circumstances over which a supplier country may have limited control. The impacts that could result from having such vulnerabilities could be sufficient to threaten India's national security.

The following two case studies in sections four and five will build on this framework to identify India's strategic and critical vulnerabilities *vis-à-vis* China and Russia. They will also analyze how India has attempted to address these vulnerabilities in the aftermath of the Galwan clash and Russia's invasion of Ukraine in 2022. Finally, they will look at the extent to which India's efforts have led to a reduction in these vulnerabilities.

20 Sudip Chaudhuri, "India's Import Dependence on China in Pharmaceuticals: Status, Issues and Policy Options," *Research and Information System for Developing Countries,* 2021.

21 Ibid; KPMG and Confederation of Indian Industry, *"Indian API Industry – Reaching the Full Potential,"* April 2020.

22 Kumar, *Defining Strategic and Critical Vulnerabilities,* 82.

4. India's Economic Relations with China

This case study investigates the shift in India's economic policy toward China after the Galwan clash, which involved the first deadly border clash between China and India in 45 years. It then analyzes bilateral trade and investment data to identify the extent of India's strategic vulnerabilities *vis-à-vis* China and how these vulnerabilities have changed over time. The final section discusses the findings and looks at the implication for India's strategic vulnerabilities in the medium term.

As all Indian statistics are based on fiscal years lasting from 1 April of one year to 31 March of the following year, this report will use an abbreviation to refer to such periods. For example, the abbreviation for the fiscal year starting in 2023 and ending in 2024 would be FY 2023–24.

4.1 India's Economic Policy Toward China

4.1.1 Pre-Galwan: Efforts to Mitigate Asymmetries

Sino-Indian bilateral trade relations have grown rapidly since the early 2000s. In FY 2011–12, China became India's largest trading partner. China also maintained this position for most years until FY 2019–20, the fiscal year before the Galwan clash. In this fiscal year, total Sino-Indian trade amounted to 81.9 billion USD (see graph 2). As trade relations have expanded in recent decades, so have the asymmetries between China and India that exist within this relationship. This part outlines how the asymmetry in this relationship is evident in the balance of trade between the two countries, the types of goods and services each exports to the other, and the increase in Chinese investment in India. It subsequently describes the Modi government's efforts since 2014 to address India's economic disparities with its neighbor.

First, the trade balance is strongly in China's favor, with India's trade deficit reaching 48.7 billion USD in FY 2019–20. While the deficit grew rapidly through FY 2017–18, it has slowly narrowed since then (see graph 2). However, this does not necessarily imply a reduction of imports from China. Coinciding with this decrease, India's imports from Hong Kong have increased significantly.[23] Hong Kong has long served as a conduit for the distribution of Chinese products to global markets by importing products from continental China and subsequently re-exporting them to their final destinations. This concurrent decline in India's imports from China and the increase in imports from Hong Kong began following the Doklam border crisis, which occurred during the summer of 2017. This border standoff between China and India temporarily complicated their relations.

Second, India mainly exports intermediate goods and raw materials to China, such as iron, ore, and agricultural products. It mainly imports capital goods and intermediate goods, such as machinery, electronics, and consumer goods. In terms of the technology content of the manufactured products, India's imports from China are dominated by high and medium technology goods, while India's exports are mainly resource-based products. India's high technology exports to China are negligible.[24] India has also complained to China about market access restrictions regarding agricultural products and the sectors it is competitive in, such as pharmaceuticals, services, and information technology.[25]

Third, Chinese interest in acquiring stakes in Indian companies has increased since 2014. Between 2014 and 2017, Chinese foreign direct investment (FDI) increased from 1.6 to 8 billion USD according to Chinese sources.[26] Much of the investment has been in India's technology sector. In addition, as of March 2020, 18 of the 30 privately held Indian startup companies with a value exceeding 1 billion USD were heavily backed by Chinese companies such as Alibaba and Tencent.[27]

The Modi government has taken initiatives to improve the domestic business and manufacturing environment in India to reduce the country's overall dependence on imports and increase exports. It has also introduced more direct measures to address the trade imbalance with China. The economic measures implemented prior to the Galwan clash were motivated by growing asymmetries with China. However, they were generally not specifically targeted against China.

Shortly after taking office in 2014, Modi launched the Make in India (MII) initiative in an attempt to increase domestic manufacturing capacity. As a result of this initiative, India has been able to attract more FDI by easing regulations. Modi has also promised to increase the share of manufacturing in the GDP of India to 25 per cent by 2025. However, the figure has stagnated at around 14 per cent since 2014.[28]

23 Biswajit Dhar, "India's Economic Dependence on China," *The India Forum*, 23.07.2020.

24 Ibid.

25 Embassy of India in Beijing, *Trade and Economic Relations,* eoibeijing.gov.in, [accessed 02.10.2023].

26 Ananth Krishnan, *Following the Money: China Inc's Growing Stake in India-China Relations* (New Delhi: Brookings Institution India Center, 2020), 11.

27 Amit Bhandari / Blaise Fernandes / Aashna Agarwal, *Chinese Investments in India* (Mumbai: Gateway House: Indian Council on Global Relations, 2020), 8.

28 TN Ninan, "Not Signing RCEP Could Be One of Modi's Biggest Blunders, 'Atmanirbhar' an Admission of Defeat," *The Print*, 21.11.2020.

In late 2019, India made a last-minute decision not to sign the Regional Comprehensive Economic Partnership (RCEP), which established a free trade agreement between some of the largest economies in the Asia-Pacific. This decision was informed by the fear of developing an even larger bilateral trade deficit with China. In the same year, India also imposed "anti-dumping duties" on 99 Chinese products, including chemical and petrochemical products, fibers and yarn, glass, and steel.[29] These duties aim to protect domestic industries from imported goods sold at prices perceived to be below their market value.

At the onset of the pandemic in early 2020, India was concerned that China's distribution of medical supplies and claims of a superior system of governance could enable Beijing to extend its influence in South Asia and the Indian Ocean area. Supply chain disruptions caused by the pandemic also raised concerns in India regarding its substantial economic dependence on China in several sectors, including medical supplies. In March 2020, India launched its Production-Linked Incentives (PLI) schemes with the aim of providing domestic production and investment incentives for important sectors of the economy.[30] The program grants financial incentives to companies in such sectors based on increases in the sale of products manufactured in India. The initiative originally applied to three sectors, including electronic products and APIs, where India has a particularly high dependence on China (see table 1 and 2). These schemes have been expanded and now cover 14 sectors, which together account for 40 per cent of India's total imports.[31] India has budgeted about 26 billion USD for the program.[32]

In May 2020, Prime Minister Modi also unveiled a new economic policy agenda called Self-reliant India (SRI) or Atmanirbhar Bharat. The purpose of this loosely defined policy is to strengthen India's domestic industry and achieve greater economic self-reliance. The Modi government aims to privatize loss-making state enterprises, to commercialize agriculture, and foster national champions in sectors such as technology.

4.1.2 Post-Galwan: Accelerated De-Risking

In May of 2020, tensions began to rise along the Sino-Indian LAC, ultimately culminating in the clash a month later in the Galwan Valley. Madan argued that the border crisis "has weakened the hands of those in Indian policymaking circles who argued for more engagement with China or for the idea that economic ties would help alleviate political strains."[33] After the deadly border clash on 15 June 2020, India adopted a "de-risking" approach. This involved increased efforts to address economic disparities with China, focusing specifically on related security concerns. The Modi government resorted to economic measures that were overtly directed against China, while launching further incentive programs to enhance India's manufacturing capabilities and investment as part of the SRI campaign. In addition, some measures India adopted may have been motivated by growing nationalist sentiment and efforts to retaliate against China in a non-military domain, with the aim of inducing a shift in Beijing's behavior.

4.1.2.1 Ban on Apps

Two weeks after the Galwan clash, India banned 59 Chinese mobile apps, including popular ones such as TikTok and WeChat. According to the Ministry of Electronics and Information Technology, the apps were engaged in activity that was "prejudicial to [the] sovereignty and integrity of India, defense of India, security of state and public order."[34] By the end of November 2020, the ban had been extended to over 200 apps. However, within a year of these bans, several Chinese apps returned to the Indian market under different names, indicating the limited nature of New Delhi's digital economic statecraft.[35]

4.1.2.2 Exclusion of Chinese Companies and Termination of Contracts

A few days after 15 June 2020, the Indian government ordered state-owned telecom companies Bharat Sanchar Nigam and Mahanagar Telephone Nigam not to use Chinese equipment for upgrading their mobile networks to 4G.[36] In March 2021, the Indian government also changed the licensing conditions for telecommunications service providers so that they could only use equipment from "trusted sources." As a result, no Chinese firms were included among the companies India selected for its 5G trials announced in May 2021.[37] According to media reports, the "exclusion" of Chinese companies could increase Indian telecommunications service provider procurement costs by up to 20 per cent.[38]

29 Indian Ministry of Commerce and Industry, *Trade Deficit Between India and China,* pib.gov.in, 04.02.2019.

30 Indian Ministry of Commerce and Industry, *Status of Production-Linked Incentive Schemes,* pib.gov.in, 07.04.2021.

31 "In Charts: How India Can Reduce Dependence on China for Imports by Leveraging PLI Schemes," *Times of India,* 06.02.2023.

32 Indian Ministry of Commerce and Industry, *Status of Production-Linked Incentive Schemes.*

33 Tanvi Madan, "The Coronavirus: Fueling Concerns and Contrasts between India and China," in: Gilbert Rozman (eds.), *Joint-U.S.-Korea Academic Studies: Questioning the Pandemics Impact on the India-Pacific: Geopolitical Gamechanger? Force for Deepening National Identity Clashes? Cause of Shifting Supply Chains?* (Washington DC: Korea Economic Institute, 2021), 184.

34 Indian Ministry of Electronics and IT, *Government Blocks 118 Mobile Apps,* pib.gov.in, 02.09.2020.

35 Laxman Kumar Behera, "Securing India: Significance of Geoeconomics and Innovation in India's Foreign Policy and Strategic Competition with China," *University of California Institute on Global Conflict and Cooperation,* 2023, 19.

36 Sankalp Phartiyal, "India Tells Two State Firms Not to Use China Telecoms Gear, Source Says," *Reuters,* 18.06.2020.

37 Indian Ministry of Communications, *Telecom Department Gives Go-Ahead for 5G Technology and Spectrum Trials,* pib.gov.in, 04.05.2021.

38 Aman Grover / Shivangi Mittal, "Chinese Firms Left Out of 5G Trials in India but Modi Govt Played Fair," *The Print,* 25.05.2021.

Indian companies also canceled commercial contracts shortly after the escalation in Galwan. Indian Railways terminated a contract for signaling equipment worth 56 million USD, which had been awarded to a Chinese company in 2016. However, according to officials, the decision to terminate this contract was taken before the Galwan clash.[39] Also in June 2020, following the clash, the Haryana state government canceled contracts worth 93.6 million USD that had been awarded to two Chinese companies. These contracts were for the installation of flue gas desulfurization equipment at two of its thermal power plants.[40]

4.1.2.3 Declaration of Country of Origin Requirement for Products on State Online Platform

At the end of June 2020, the Ministry of Commerce and Industry (MOCI) instructed sellers to indicate the country of origin for all products listed on its e-commerce platform, Government e-Marketplace.[41] The Indian government also introduced the option to display the percentage of indigenous, or domestic, content in products. Subsequently, private online retailers, including Amazon India, Walmart's Flipkart, and Meta-backed Jio, were also asked to declare the country of origin of products on their platforms.[42] These governmental directives aimed to reduce the purchase of Chinese products by Indian merchants and to lower procurement from China by various governmental agencies. However, these measures were not adequately implemented until spring 2022, particularly on newly established e-commerce platforms.[43]

4.1.2.4 Restrictions on FDI and Procurement

On 18 April 2020, the MOCI amended the FDI rules for countries sharing a "land border with India."[44] Under the new rules, investment from these countries must be approved by the Indian government. This measure was taken to prevent opportunistic "acquisitions of Indian companies due to the . . . COVID-19 pandemic."[45] The move mainly affected Chinese companies, as similar restrictions had already been applied to investors from Bangladesh and Pakistan. While direct investment from China is still possible, the review of an application can take several months to years.[46]

In July 2020, the Ministry of Finance introduced restrictions on government procurement bids from countries sharing a land border with India.[47] Bidders from these countries now require clearance from the Ministry of External Affairs and the Ministry of Home Affairs. The goal of these restrictions is to dissuade Chinese companies from engaging in transactions with Indian private enterprises, public-sector banks, and financial institutions and to hinder investment in related projects.[48] This change could lead to a decrease in China's involvement in strategic sectors such as telecommunications, power, coal, and petroleum.

4.1.2.5 Restrictions on Imports and Customs

In late June 2020, India blocked customs clearance of Chinese goods at various ports for a few days, including Chennai and Mumbai. In July 2020, India also imposed import restrictions on color televisions.[49] Most of India's television imports come from China. In October 2020, the Indian government implemented a comprehensive ban on the import of air conditioners that contain refrigerants.[50] China was responsible for over 50 per cent of these imports. In August 2023, the Indian government also announced licensing restrictions for imported laptops, tablets, and personal computers.[51] In FY 2022–23, India's imports of personal computers and laptops amounted to about 5.3 billion USD. China accounts for 77 per cent of these imports.

4.1.2.6 Self-Reliant India

Before and after the Galwan clash, the Indian government launched a number of initiatives under the banner of the SRI schemes to address India's reliance on Chinese imports in certain sectors. For example, in March 2020, the government approved a 25 per cent subsidy on "capital expenditure for the manufacturing of goods that constitute the supply chain of an electronic product."[52] It also approved a package of over 10 billion USD for the development of the semiconductor and display manufacturing

39 Sanya Dhingra, "Railways Terminates Contract With Chinese Company but 'Not Due to LAC Conflict,'" *The Print,* 18.06.2020.

40 Indo-Asian News Service, "Haryana Axes Two Power Sector Contracts with Chinese Companies," *Times of India,* 21.06.2020.

41 Indian Ministry of Commerce and Industry, *Information About Country of Origin by the Sellers Made Mandatory on GeM to Promote Make in India and Aatmanirbhar Bharat,* pib.gov.in, 23.06.2020.

42 Reuters, "E-Tailers Begin Work to List 'Country of Origin' Labels on Products," *Times of India,* 08.07.2020.

43 Indo-Asian News Service, "E-Commerce: New E-Com Players Not Showing Country of Origin for All Products in India," *Economic Times,* 09.05.2022.

44 Indian Ministry of Commerce and Industry, *Government Amends the Extant FDI Policy for Curbing Opportunistic Takeovers/Acquisitions of Indian Companies,* pib.gov.in, 18.04.2020.

45 Ibid.

46 Surojit Gupta, "After 9-Month Freeze, Centre Starts Clearing China FDI Plans," *The Times of India,* 22.02.2021.

47 Indian Ministry of Finance, *Restrictions on Public Procurement From Certain Countries,* pib.gov.in, 23.07.2020.

48 Raj Verma, "India's Economic Decoupling from China: A Critical Analysis," *Asia Policy* 30:1 (2023), 152.

49 "Government Imposes Import Restrictions on Colour TV Sets," *Hindustan Times,* 20.08.2022.

50 Indian Ministry of Commerce and Industry, *Amendment in Import Policy of Items Under ITC HS Codes 84151010 and 84151090,* dgft.gov.in, 15.10.2020.

51 "Can India Inc Extricate Itself From China?," *The Economist,* 14.08.2023.

52 Indian Ministry of Electronics and IT, *Cabinet Approves Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors,* meity.gov.in, 21.03.2020.

ecosystem in India in December 2021,[53] which was followed by a subsidy of 50 per cent for project costs for semiconductor and display plants in September 2022.[54]

India has also intensified financial scrutiny of Chinese companies in the smartphone industry, including by freezing accounts, conducting raids, and making allegations of money laundering.[55] Currently, four out of the top five selling smartphone brands in India are Chinese, including OPPO, Vivo, Xiaomi, and Huawei.

4.2 Talking Numbers: India-China Trade and Investment Relations after Galwan

This section analyzes the development of trade and investment relations between India and China following the fatal Galwan clash in 2020. It also assesses the extent to which the measures discussed in Section 4.1.2 have impacted India's strategic vulnerabilities *vis-à-vis* China. The analysis concentrates on two main areas. First, it examines aggregated trade and investment data to provide insights into the asymmetries between China and India and, thereby, India's overall strategic vulnerabilities. Second, the section examines how India's dependence on China has evolved in a selection of critical product categories and investment areas.

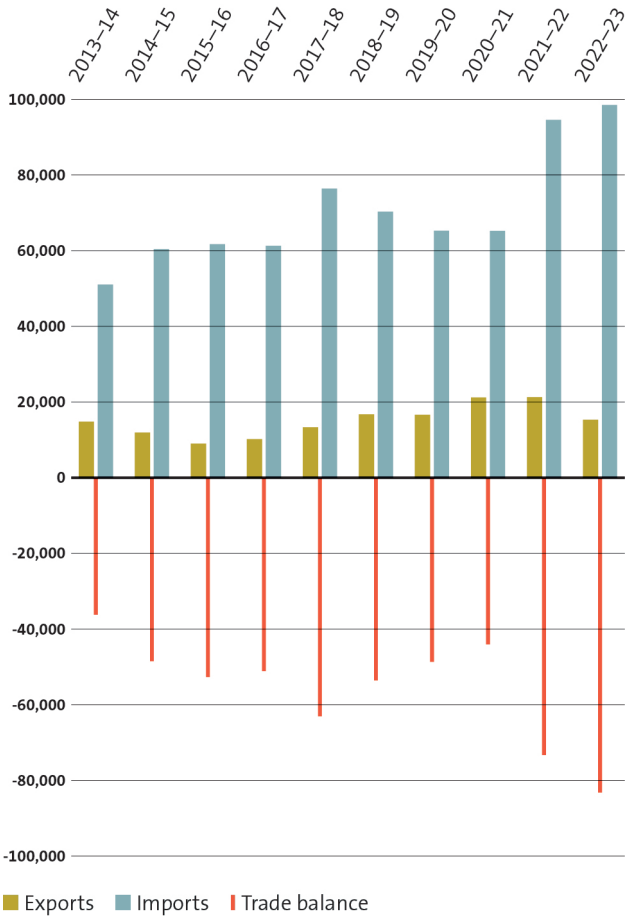
4.2.1 Trade in Goods

Total bilateral trade between China and India amounted to 113.8 billion USD in FY 2022–23 (see graph 2). This represents a 39 per cent increase compared to FY 2019–20, which ended just before the Galwan crisis. During this period, the asymmetry in trade relations between the two countries increased. India's trade deficit grew rapidly from 48.6 billion USD in FY 2019–20 to 83.2 billion USD in FY 2022–23, marking a 71 per cent increase. Moreover, while China is India's second largest trading partner, India is China's thirteenth. In FY 2022–23, China accounts for 9.8 per cent of India's total trade. This figure increased from 2020 to 2022 and has returned to pre-pandemic levels. In contrast, India is responsible for only 2.1 per cent of China's trade volume – up slightly from 2 per cent in 2019.

Graph 2:

India's Trade with China

in millions of USD



Source: Government of India, Ministry of Commerce and Industry, Trade Statistics

Looking at the composition of bilateral trade, India's imports from China account for more than 86 per cent of the total. While India's imports from China in absolute terms have increased significantly since FY 2019–20, exports to China have remained about the same. Relative to India's total imports, the share of imports from China in FY 2022–23 is back at pre-pandemic levels at 13.8 percent, while it increased in FY 2020–21 and FY 2021–22. To put this number in perspective, the second largest source of imports for India was the United Arab Emirates, with a share of 7.5 per cent. China's share of India's total exports per year has also declined. In FY 2019–20, exports from India to China made up 5.3 per cent of India's total exports. By 2022–23, this number dropped to 3.4 per cent. From a Chinese perspective, India was responsible for a mere 0.6 per cent of imports and 3.3 per cent of exports in 2022.[56]

The significant widening of India's trade deficit with China and the stagnation of its exports to its neighbor since FY 2019–20 may be of particular concern to New

53 Indian Cabinet, *Cabinet Approves Programme for Development of Semiconductors and Display Manufacturing Ecosystem,* pib.gov.in, 15.12.2021.

54 Indian Cabinet, *Cabinet Approves Modifications in "Programme for Development of Semiconductors and Display Manufacturing Ecosystem in India,"* pib.gov.in, 21.09.2022.

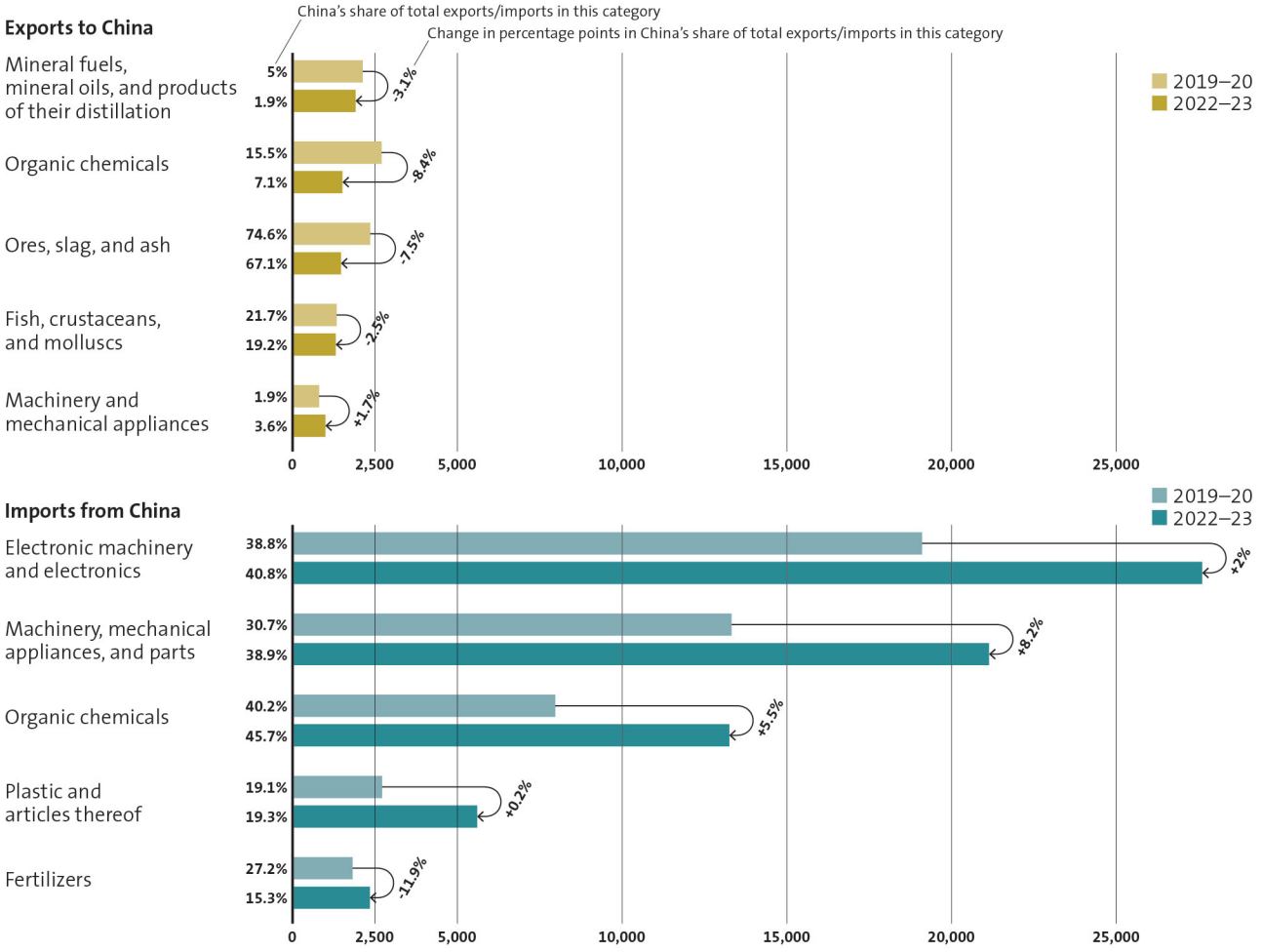
55 Viraj Gaur, "Explained: India's War on Chinese Smartphone Makers," *The Quint,* 11.08.2022.

56 National Bureau of Statistics of China, *National Data,* data.stats.gov.cn.

Graph 3:

Composition of Sino-Indian Bilateral Trade

in millions of USD



Source: Government of India, Ministry of Commerce and Industry, Trade Statistics

Delhi. Moreover, China's share of India's total trade, as well as its share of total imports, has remained roughly unchanged. This means that India has not managed to reduce its import dependence on China in either absolute or relative terms. India's exports to China have also actually declined in relative terms.

When examining the primary import and export categories in Sino-Indian trade, it is evident that the asymmetries between China and India have continued to grow, as has India's dependence on China. As discussed in the previous section, India exports raw materials and intermediate goods to China, and it imports capital and consumer goods from its neighbor (see graph 3). Since a change in the composition of exports and imports would require larger shifts in the economy, it is unsurprising that the composition only witnessed minor changes between FY 2019–20 and FY 2022–23. However, the larger categories of India's imports from China show that its reliance on its neighbor has grown in recent years. India's main imports from China include electronic machinery and electronics, machinery and mechanical appliances, and organic chemicals. These three categories account for 63 per cent of all imports from China. Between FY 2019–20 and FY 2022–23, India's dependence on China in these three categories increased by between 2 and 8.2 percentage points. China's share of India's total imports in these categories ranged from 38.9 to 45.7 per cent in FY 2022–23. India also imports more in absolute terms in the five categories listed above, with significant increases observed in the largest four import categories.

Indian exports to China have experienced a reverse trend. Among India's most important exports to China are mineral fuels and oils and products of their distillation; organic chemicals; and ores, slag and ash. The top five export categories accounted for 47 per cent of the goods sent to China in FY 2022–23. In the largest four categories, India exported less to China in both absolute and relative terms in FY 2022–23 compared to FY 2019–20.

Table 1:
India's Import Dependence on China

Product categories	China's share of total imports 2019–20	2020–21	2021–22	2022–23	In comparison with 2019–20
Telephones	42.3%	46.7%	48.0%	42.3%	→
Computers	49.5%	54.3%	56.5%	53.3%	↗
Integrated circuits	35.1%	36.5%	36.1%	29.1%	↘
Electric batteries	54.1%	56.7%	60.1%	71.9%	↗
Heterocyclic compounds with nitrogen	69.0%	71.6%	71.7%	76.3%	↗
Semiconductor devices	60.2%	70.3%	83.7%	50.8%	↘
Electronic transformers	40.1%	50.3%	52.9%	50.5%	↗
Antibiotics	65.4%	71.9%	82.6%	82.6%	↗
Mineral or chemical fertilizers	37.3%	25.1%	29.7%	16.1%	↘
Air pumps	49.3%	40.0%	50.0%	52.2%	↗
Polymers of vinyl chloride or of other halogenated olefins, in primary forms	4.3%	7.6%	18.7%	33.3%	↗
Polycarboxylic acids, their anhydrides, halides, peroxides and peroxyacids; and derivatives	15.5%	30.7%	44.1%	53.8%	↗
Broadcasting accessoires	60.7%	70.3%	76.0%	66.9%	↗

In comparison to the previous year:

> 8.0%
4.0% < < 7.9%
0.2% < < 3.9%
−0.1% < < 0.1%
−0.2% > > −3.9%
−4.0% > > −7.9%
< −8.0%

Source: Government of India, Ministry of Commerce and Industry, Trade Statistics

A more fine-grained picture of India's dependence on imports from China can be provided by breaking this down into further categories. Table 1 shows the thirteen import categories in which India imports the most by value from China in descending order. These are all subcategories of the categories in graph 3. For example, in FY 2022–23, 6.7 billion USD worth of telephones, 5.4 billion USD worth of computers, and 1.1 billion USD worth of broadcasting accessories were imported from China. Since FY 2019–20, India's dependence on China has increased in most of these categories, with China's share of India's total imports in some categories exceeding 80 per cent. The categories that saw a rise in imports from China increased by an average of 14.7 percentage points. Comparing FY 2019–20 to FY 2022–23, India's dependency decreased in only 3 out of the 13 listed categories. India has reduced its reliance on China for semiconductor devices from 60.2 per cent to 50.8 per cent during this period. However, it still imports more than half of its needs from China.

Given that the categories in table 1 still group various products together, a further subdivision can provide an even more precise understanding of India's strategic vulnerabilities *vis-à-vis* China. With this in mind, this section considers the products outlined in table 2, which have been identified by multiple sources as critical dependencies. It also focuses on these products as the Indian government has taken concrete steps in recent years to reduce its dependence on China for them. In particular, these include APIs, electronic products, and rare-earth minerals.

India's exports meet 20 per cent of the global demand for generic drugs by volume and 60 per cent of

Table 2:

India's Import Dependence on China for Specific Products

Products	China's share of total imports 2019–20	2020–21	2021–22	2022–23	In comparison with 2019–20
Active Pharmaceutical Ingredients (APIs) (Selection)					
Ciprofloxacin	96.4%	99.7%	94.4%	98.2%	↗
Cysteamine hcl	100%	100%	100%	100%	→
Ibuprofen	95.2%	91.3%	95.4%	86.3%	↘
Malonylurea (barbituric acid)	100%	99.9%	100%	91.4%	↘
Metronidazole benzoate	99.9%	95.8%	97.9%	99.5%	↘
Neomycin	95%	99.5%	99.6%	96.2%	↗
Norfloxacin	99.8%	100%	100%	94.4%	↘
Para aminophenol	100%	98.3%	72.0%	80.2%	↘
Parecetamol	91.1%	78.8%	92.1%	89.5%	↘
Penicillin	94.5%	95.8%	95.0%	96.9%	↗
Streptomycin	100%	100%	99.9%	100%	→
Sulfanilic acid	100%	99.4%	99.7%	100%	→
Vitamin B12	98.1%	90.6%	94.6%	95.4%	↘
Other antibiotics	80.1%	83.0%	84.3%	84.4%	↗
Electronics and related products					
Modems (modulators-demodulators)	61.1%	60.3%	56.7%	53.9%	↘
Parts of electronic integrated circuits	97.3%	99.3%	56.9%	49.3%	↘
Personal computers	76.9%	74.3%	72.5%	76.9%	→
Processors and controllers	38.7%	38.8%	50.3%	37.8%	→
SIM cards	70.6%	43.5%	60.4%	47.5%	↘
Solar cells	77.6%	86.6%	94.0%	NA	↗
Telephones for cellular networks or for other wireless networks	70.2%	63.7%	59.7%	86.7%	↗
Rare-earth minerals	89.6%	85.8%	85.9%	81.9%	↘

In comparison to the previous year:

> 8.0%
4.0% < < 7.9%
0.2% < < 3.9%
−0.1% < < 0.1%
−0.2% > > −3.9%
−4.0% > > −7.9%
< −8.0%

Source: Government of India, Ministry of Commerce and Industry, Trade Statistics

its demand for vaccines and HIV medication.[57] In FY 2020–21, China accounted for 47.5 per cent of India's API imports, and it was the sole importer for certain critical APIs. Any disruption or weaponization of these supplies could significantly curtail India's ability to produce generic medicine as there are no other competitive suppliers available at present.[58] As discussed in section 4.1.1, APIs were one of the first sectors targeted under India's 2020 PLI schemes. The scheme was designed to reduce manufacturing costs and increase competitiveness by providing API manufacturers with access to common infrastructural facilities in production parks. In 2021, the Indian government launched an additional program, called the Production Linked Incentive Scheme for Pharmaceuticals, which also covered APIs. It focused on product diversification and creating "global champions out of India."[59]

Regarding the imports of particular APIs, India has maintained a strong dependency on China (see table 2). India has slightly reduced its imports of certain active pharmaceutical ingredients from China. However, its vulnerability regarding APIs remains critical, with such imports in the selected categories listed in table 2 ranging from around 80 to 100 per cent.

China is also the main supplier of various electronic products to India. To address this, India's PLI schemes prominently target cell phone manufacturing. Several initiatives under the SRI campaign also focus on the supply chain of electronic products, semiconductors, and display manufacturing. India is also highly dependent on China for solar photovoltaic cells. Indeed, around 80 per cent of all solar equipment in India reportedly originates from China.[60] This means that if China were to impose sanctions on the export of solar cells, it could hinder India's renewable energy and electric vehicle industry efforts.

As table 2 shows, India's reliance on China for electric products is significant but not as pronounced as with APIs. While India's dependence has increased in some categories of electric and related products, in others it has decreased or remained at a similar level. For example, India has managed to significantly reduce its imports of integrated circuits from China. However, its dependence on China for solar cells increased markedly from FY 2019–20 to FY 2021–22.

Finally, while India has reduced its dependence on China for rare-earths minerals since FY 2019–20, China still accounts for over 80 per cent of India's imports in this category. This is significant as rare earths are essential to the production of a range of technologies, including cell phones, advanced robotics, electric vehicles, wind turbines, and various defense applications.

A study by the State Bank of India corroborates the general trend of these findings. It has systematically calculated India's dependence on China for all imported products. For two-fifths of the products that India imports from China, China accounts for more than half of total imports. Together, these goods amounted to approximately 56 per cent of the merchandise value of imports from China.[61]

India's dependencies on China remain substantial, both in aggregate terms and the level of individual product categories. While India has managed to reduce its dependencies on China in certain product categories, its strategic vulnerabilities *vis-à-vis* China have not yet significantly decreased.

4.2.2. Trade in Services

Both India and China do not report trade in services at the country level.

4.2.3. Foreign Direct Investment

Although China and India are global magnets for FDI, the flow of direct investment between the two countries has not kept up with the bilateral trade in goods. The precise extent of FDI between India and China remains unclear, as official figures from the two countries differ. According to India's Department for Promotion of Industry and Internal Trade (DPIIT), China's total FDI in India between April 2000 to March 2023 was 2.46 billion USD.[62] China's official agencies report that the total cumulative Chinese investment in India at the end of 2021 was 5.4 billion USD.[63] According to DPIIT data, FDI inflows from China to India in 2022–23 were just 10.5 million USD. This accounted for 0.41 per cent of the overall FDI received by India during that fiscal year. China was the 21st largest contributor of FDI in India for the period between April 2000 and March 2023. China's share of total FDI inflows into India for this period was 0.39 per cent. By comparison, Switzerland invested 9.78 billion USD in India, contributing 1.54 per cent of the total, over the same period. Mauritius was at the top of the list with 163.88 billion USD. In terms of investment flows from India to China, the total cumulative FDI stood at 944 million USD at the end of 2021.[64]

According to Indian officials, these numbers likely underestimate the overall amount of investment in

57 Chaudhuri, *India's Import Dependence on China in Pharmaceuticals;* KPMG and Confederation of Indian Industry, *Indian API Industry.*

58 Chaudhuri, *India's Import Dependence on China in Pharmaceuticals.*

59 Indian Ministry of Chemicals and Fertilizers, *Production Linked Incentive (PLI) Scheme for the Pharmaceutical Sector,* pib.gov.in, 26.11.2021.

60 Malini Goyal, "The Death of Indian Soldiers in Skirmish with China Raises Questions on Trade, Geopolitics & Security," *The Economic Times,* 21.06.2020.

61 State Bank of India Research, "Production Linked Incentive Scheme, Imports From China and Global Value Chain: The Possible Trinity," *Ecowrap* 59 (2022).

62 Department for Promotion of Industry and International Trade, *Fact Sheet on Foreign Direct Investment (FDI) Inflow From April, 2000 to March, 2023,* March 2023.

63 Embassy of India in Beijing, *Trade and Economic Relations.*

64 Ibid.

India that comes from China.[65] Official statistics do not include all acquisitions of stakes by Chinese companies, such as those made in India's technology sector. Nor do these statistics include investments made through third countries, such as those involving the subsidiaries of Chinese companies in Singapore, which serve as popular conduits for foreign investment.[66] For instance, China's Alibaba invested over 400 million USD in Indian financial technology company Paytm through Alibaba Singapore Holdings Private Limited.[67] Qualitative studies conducted in India to map the extent of FDI originating from China, including investments made through third countries, indicate that Chinese investment in India exceeds official figures by 1.25 to 3 times.[68] FDI from China also experienced a significant increase between 2014 and 2019, with a substantial portion of this originating from the private sector.[69] There were also greenfield investments, a type of FDI where a company sets up business operations from scratch in another country. The majority of these investments by Chinese companies in India between 2010 and 2019 were in the infrastructure sector, followed by investments in energy, consumer goods, and automobiles.[70] As stated in section 4.1.1, Chinese investment and acquisitions of Indian startups in the technology sector have also markedly increased since 2016. Such investments in critical sectors could pose a strategic vulnerability for India, depending on the given circumstances. For instance, this could be the case given the presence of significant Chinese market power. In areas including the technology sector, it is also important to consider the risks investments could create related to data security, the spread of disinformation and propaganda, and the setting of industry standards.[71]

Despite the challenges of data availability and measurability, a discernible trend can be identified in Chinese FDI in India since 2020. Official data from India and media reports indicate that the investment environment in India has become much more complicated for Chinese entities in recent years. That this is the case is also reflected in the amount of Chinese FDI in India. According to the data from DPIIT, FDI from China peaked at 505 million USD in FY 2013–14 and has been declining ever since. This trend accelerated in the fiscal year before the Galwan clash, FY 2019–20, falling to 60.6 million USD from 163.8 million USD in FY 2018–19. Since FY 2019–20, annual FDI from China has amounted to approximately 10 million USD.

This trend aligns with media reports indicating that, as a result of Indian FDI regulation changes in 2020, only about a quarter of Chinese FDI applications were approved between April 2020 and June 2023.[72] In addition, the approved applications were primarily for smaller investments. The Indian government also imposed new rules after discovering that investors from China and Hong Kong could bypass its 2020 restrictions on FDI from neighboring countries. Such circumvention involved these investors setting up an entity outside of their home country and later appointing Chinese nationals as executives to control operations. In response, the Ministry of Home Affairs made it mandatory for citizens of countries bordering India to undergo a security check before holding a company directorship in the country.[73]

Some media reports also suggest that Chinese companies are withdrawing significant investments from India due to the more complex operational environment. For example, China's automaker BYD reportedly canceled plans to invest 1 billion USD to build electric vehicles and batteries with the Indian firm Megha Engineering in July 2023. This happened after government ministries in India allegedly raised security concerns about this investment.[74] A year earlier, China's Great Wall Motor also abandoned plans to invest 1 billion USD in India after failing to obtain regulatory approval.[75]

4.3. Discussion of India's Economic Policy toward China and the Outlook for India's Strategic Vulnerabilities

India is pursuing a de-risking approach toward China. This involves an effort to address economic disparities with China, with a particular focus on the associated security risks. The Indian government has intensified this effort since the Galwan clash in 2020. However, this analysis has shown that efforts in this regard began before the border crisis in 2020, amid increasing economic asymmetries with China. The Modi government focused on improving India's domestic business environment with the MII initiative as early as 2014. Then, in the midst of the coronavirus pandemic and subsequent global supply chain disruptions, India launched the SRI initiative in May 2020.

The Galwan clash signaled to New Delhi that its relationship with Beijing would not progress as it had anticipated several years prior. Since 2020, the Indian government has been more willing to implement economic

65 Krishnan, *Following the Money,* 11.

66 Ibid.

67 Bhandari / Fernandes / Agarwal, *Chinese Investments in India*.

68 Krishnan, *Following the Money.*

69 Ibid.

70 Ibid.

71 Bhandari / Fernandes / Agarwal, *Chinese Investments in India*.

72 Ravi Dutta Mishra, "Chinese FDI Faces Great Wall in India as Security Fears Rise," *Mint,* 07.06.2023.

73 Abhinav Ranjan, "Govt Clearance Must for Chinese Nationals' Appointment as Directors in Indian Companies," *India TV News,* 03.06.2022.

74 Sarita Chaganti Singh, "Exclusive: BYD Tells India Partner It Wants to Drop $1 Billion EV Investment Plan," *Reuters,* 28.07.2023.

75 Aditi Shah, "China's Great Wall Motor Shelves $1 Bln India Plan -Sources," *Reuters,* 01.07.2022.

measures explicitly aimed at China. It also appears more dedicated to addressing the security implications arising from its economic reliance on its neighbor. For example, official data demonstrates that India is scrutinizing and limiting FDI from China, which has resulted in a significant decrease in Chinese investment flows. New Delhi has also barred Chinese companies from bidding on its 5G infrastructure. It has banned Chinese apps to prevent their use for propaganda purposes and mitigate potential risks to data security. In addition, India is trying to reduce its dependence on Chinese imports. This has involved PLI schemes to boost domestic manufacturing and investment. It has also included efforts to protect specific sectors through tariff and non-tariff measures.

A solution to the continuing border standoff is unlikely to bring significant changes in India's de-risking strategy toward China. Even if Sino-Indian relations were to improve, an enduring sense of distrust between the two nations would persist. Moreover, this distrust would remain more pronounced than before the Galwan crisis. However, China's economy will continue to play a significant role in India's economic growth. Thus, experts agree that the basic structure of Sino-Indian economic relations will not substantially change in the medium term, even in the face of an ongoing economic downturn in China.[76] India's demand for Chinese capital and consumer goods, which is the primary driver of the economic relationship, is unlikely to be significantly impacted by a bleaker economic outlook in China. Moreover, if companies like Apple increase production in India, this may result in additional demand for imports from China in the short to medium term. This is because such production, as in the case of the iPhone, often consists of assembling component parts, many of which need to be sourced from China. Therefore, trade relations are likely to remain at a similar level or continue to grow overall, while FDI between the two countries will remain limited.

Four important conclusions can be drawn from this analysis. First, even though India seems more determined to address its economic asymmetries with China and the associated security risks, strategic vulnerabilities are likely to persist in the medium term. Not only have the overall asymmetries in the bilateral economic relationship increased significantly since the Galwan clash in 2020, but India's dependence on China in key product categories has continued to grow. India has managed to decrease its reliance on China in only a fraction of the product categories that were examined in this study. India maintains a significant dependence on China in several critical import categories, including semiconductor devices, computers, solar cells, antibiotics, and rare-earth minerals. For instance, India currently has few alternative sources regarding APIs. India imports APIs from a range of countries. However, China stands out as by far the most competitive supplier for much of India's off-patent and matured products import requirements.[77] Thus, a considerable increase in domestic production appears to be the most feasible approach for lessening reliance on China. However, accomplishing this goal would likely take many years. It is also too early to assess the potential effectiveness of the Indian government's measures to reduce its reliance on such imports, such as its PLI schemes.

India is dependent on China for various product categories, yet so far Beijing has not implemented any overt economic coercive measures against New Delhi. China has previously engaged in this practice with several countries, including South Korea, Japan, Australia, and Taiwan. Primarily, these have targeted imports to China. Scholars disagree on why this is the case. One suggested explanation is that China has other levers to pull in order to pressure India. Another is that despite India's dependence on China, Beijing's economic influence on New Delhi remains limited.[78] This analysis indicates that the latter explanation does not reflect the character of Sino-Indian economic relations. In specific product categories, China holds significant leverage over India. However, China would have to weigh the potential costs to its reputation of using this leverage. If it limited exports to India related to APIs, it would be restricting supplies from the world's "global pharmacy." If China were to restrict the export of rare earths, as it did with Japan in 2010, it could create the impression that it is an unreliable supplier of goods and services to the global market. This could give further impetus for India and other countries to diversify their supply chains away from China.

Beijing could also leverage New Delhi's vulnerabilities regarding other notable product categories. For instance, these could include those where India is still heavily reliant on China, though perhaps not to the degree it is with rare-earth minerals and APIs. These categories include solar cells, electric batteries, and semiconductor devices. However, the potential risks associated with these categories appear to be more manageable for India.

Second, India has to perform a difficult balancing act, as it must balance security concerns with economic and trade interests. For instance, even though India has restricted Chinese FDI since 2020, Chinese expertise and investment remain crucial for the development of India's domestic manufacturing industry. This is particularly relevant as total FDI significantly declined in India in FY 2021–22 and 2022–23.[79] In summer 2023, India adapted its long-standing unofficial policy of denying visas for Chinese citizens. This involved New Delhi taking

76 Yokosuka Council on Asia-Pacific Studies, *Europe-Asia Webinar Series: India-China Economic Ties: Which Way Is It Heading?*, youtube.com, 09.09.2023.

77 Chaudhuri, *India's Import Dependence on China in Pharmaceuticals*.

78 Yokosuka Council on Asia-Pacific Studies, *India-China Economic Ties*.

79 United Nations Conference on Trade and Development, *World Investment Report 2023*, unctad.org.

steps to expedite visa processing for Chinese specialists in installation, expansion, and repair work, particularly for those workers employed by firms endorsed under New Delhi's PLI schemes.[80] Moreover, if India were to shift its reliance from Chinese suppliers to alternate sources for intermediate goods, the goods produced with these intermediate products would likely encounter further pricing disadvantages. This is because Chinese suppliers are often cheaper.

With regards to India's decision not to participate in the RCEP, some in India have raised concerns that large foreign multinationals may be less interested in investing in India without duty-free access to the larger RCEP market.[81] India's non-participation in the RCEP could diminish the country's appeal as a business destination. Thus, India's efforts to mitigate its asymmetries and strategic vulnerabilities *vis-à-vis* its economic relationship with China may incur additional costs for the country.

Third, India appears to be struggling to utilize economic measures to achieve its strategic objectives *vis-à-vis* China. The existing asymmetries in India-China economic relations prevent India from using trade sanctions, non-tariff barriers, and more subtle measures as an effective means of exerting pressure on China. For example, some of the economic measures taken after the Galwan clash seem to have been driven by increasing nationalist sentiment in India and attempts to retaliate against China in a non-military domain. The likely objective of these attempts was to induce a shift in Beijing's behavior at the border. If this was indeed the goal, then this strategy has failed. China continues to occupy territory claimed by India at various friction points along the border as of November 2023. It is not surprising that India has failed to achieve this aim with these measures. India accounted for only 2.1 per cent of China's total trade in 2022. The inherent asymmetry of the two countries' economic relationship constrains New Delhi's options for exerting pressure on Beijing. Indeed, India appears to recognize this. Its efforts to engage more with the Quad and the US, its activities to complicate China's SCO and BRICS agenda, and its bid to assert itself as a leader of the Global South are all aimed at compensating for this shortfall.

Finally, third countries will play a pivotal role in India's de-risking approach *vis-à-vis* China. Diversifying economic relations with various economies is essential for India to create the requisite conditions for sustainable economic growth. In 2021, the Modi government signed its first free trade agreements since assuming office in 2014. These were with Mauritius, the United Arab Emirates, and Australia. In addition, it is presently negotiating agreements with the UK, the EU, and the European Free Trade Association, among others. India's aim with these efforts is not limited to reducing its dependence on the Chinese market. It also aims to gain access to new export markets, diversify its supply chains, and enhance economic engagement with key partners as New Delhi increases its level of political cooperation.[82] India's entry into the US-led Mineral Security Partnership during Modi's state visit to the US in 2023 can also be understood in this context. The initiative aims to reduce India's dependence on China for rare-earth minerals that are needed to manufacture products such as semiconductors, solar panels, wind turbines, batteries, and electric vehicles. However, the free trade agreements India has concluded since 2021 have also faced criticism for lacking substance.

India can also benefit from global endeavors to make supply chains more independent of China. For example, large companies are expanding and enhancing their production in India. For instance, Apple currently focuses mainly on assembly-type operations in India. However, it intends to manufacture more intermediate parts, like metal casings, in the country. The company also plans to transfer important iPhone product development resources from China to India.[83]

80 Sushant Singh, "India Can't Cut the Cord From China," *Foreign Policy,* 21.08.2023.

81 Harikishan Sharma, "Arvind Panagariya: RCEP in Our Interest, No MNC Will Come if We Sit Outside," *The Indian Express,* 13.11.2019.

82 Lieberherr, *How India Navigates a World in Transition,* 99.

83 Lauly Li / Cheng Ting-Fang / Sayan Chakraborty, "Inside Apple's India dream," *Nikkei Asia,* 02.08.2023.

5. India's Defense Relations with Russia

This section addresses the depth of India's reliance on Russian military equipment and how Russia's full-scale invasion of Ukraine in February 2022 has affected this relationship. This will illustrate that India's dependence on Russia for spare parts and maintenance can be considered a critical vulnerability. The section subsequently examines the strategies India is pursuing to address these issues and discusses their effectiveness.

5.1. Taking Stock: India-Russia Defense Relations

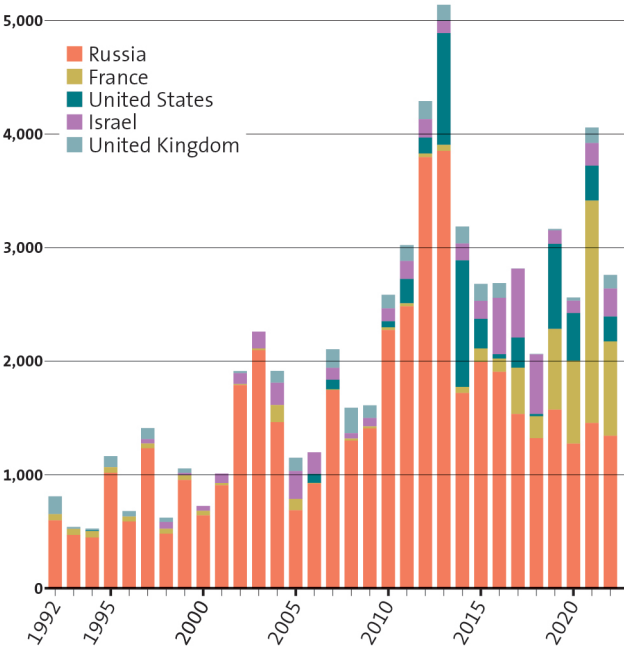
Russia-India relations have been driven by four major factors: the desire to balance against threatening neighbors, lingering mistrust of the US among certain factions of the Indian political elite, a mutual aspiration to establish a multipolar world order, and a path-dependent arms relationship.[84] When compared to the other factors, the arms relationship stands out as the "strongest and most durable" driver of this bilateral relationship and continues to hold this position.[85] The most recent success of Indo-Russian defense cooperation, the BrahMos cruise missile, is a case in point. The two countries have jointly developed a powerful missile that is now in demand by other countries, such as the Philippines. In December 2021, the two countries also held their first 2+2 foreign and defense ministerial dialogue. This reflects the continued importance India attaches to its bilateral relations with Russia, as India maintains this dialogue mechanism only with its closest partners, including the US and Japan. During the meeting, India and Russia signed a military and technical cooperation plan that will be in effect until 2031.

India heavily relies on Russian arms. It is estimated that between 70 and 85 per cent of India's military platforms are of Russian or Soviet origin.[86] According to the SIPRI Arms Transfer Database, 64 per cent of India's arms imports over the past twenty years have come from Russia.[87] Russia has always been the primary source of arms imports for India, with the exception of 2021 when India procured 36 Rafale fighter jets from France. Since 2014, Russia's share of Indian arms imports has been decreasing. However, this share remains substantial (see graph 4). From 2002 to 2007, it was at 71 per cent. For the following five years, the share stood at 78 per cent. It then decreased to 63 per cent for 2013 to 2017, before sinking again to 45 per cent for 2018 to 2022. In 2022, Russia accounted for 47 per cent of India's arms imports. India continues to heavily rely on foreign-made weapons systems overall. India's arms imports declined by more than ten percent between the period of 2013 to 2017 and the period of 2018 to 2022. Nevertheless, India was the world's leading importer of major arms for both periods, with a share of 11 per cent of total global imports of such arms.[88]

Graph 4:

Indian Arms Imports from Top 5 Suppliers

TIVs*, in millions



* The TIV, or trend-indicator value, is based on the known unit production costs of a core set of weapons and is intended to represent the transfer of military resources rather than the financial value of the transfer.

Source: SIPRI Arms Transfers Database

The three branches of the Indian Armed Forces exhibit differing levels of reliance on Russian weapon systems. According to the International Institute for Strategic Studies, 90 per cent of the Indian Army's armored fighting vehicles are of Russian or Soviet origin, including its T-72 and T-90 series main battle tanks.[89] The more modern T-90s are now manufactured in India under license from Russia without any transfer of technology. In December 2021, Russia and India signed an agreement to jointly manufacture over 600,000 AK-203 rifles in India. Regarding the Indian Air Force (IAF) and Navy, 69 per cent of combat aircraft are Russian or Soviet.[90] Sukhoi Su-30 MKI fighters constitute about 14 out of the 30 squadrons of the IAF. There are also MiG-29UPG and MiG-21 fighters in service with the IAF. The IAF

84 Spenser A. Warren / Sumit Ganguly, "India-Russia Relations after Ukraine," *Asian Survey* 62:5–6 (2022), 815.

85 Lalwani/O'Donnell/Sagerstrom/Vasudeva, *The Influence of Arms.*

86 Ibid.

87 Stockholm International Peace Institute, *SIPRI Arms Transfers Database,* sipri.org.

88 Ibid.

89 Tom Waldwyn / Viraj Solanki, "India's Defense Plans Fall Victim to Russia's War," *Foreign Policy,* 03.04.2023.

90 Waldwyn / Solanki, *India's Defense Plans Fall Victim to Russia's War.*

has also procured the S-400 Triumf air defense system from Russia, with three of the systems being delivered by the end of 2023 and two more to follow. When it comes to the Indian Navy, 44 per cent of its submarines and surface warships are of Russian or Soviet origin. Of these vessels, 65 per cent carry Russian missiles.[91] India's first aircraft carrier, the INS Vikramaditya, originally served with the Soviet Navy and later with the Russian Navy. It joined the service of the Indian Navy in 2013. The eight Russian Kilo-class diesel-electric submarines currently in the Indian Navy serve as the backbone of India's submarine fleet.

There have also been points of friction in India and Russia's defense relationship. Sources of disagreement have included product quality issues, the reliability of spare parts supplies, and the limits Russia has placed on technology transfers and access, even though Moscow has demonstrated a comparatively high level of willingness to share its technology with New Delhi.[92] These issues and other concerns have led India to begin diversifying its defense imports over the last few decades. Since 2013, India's arms imports from countries such as the US, France, and Israel have increased significantly (see graph 4). Even though India invests vast sums in these deals, the systems acquired often account for only a fraction of the Indian Armed Forces' overall inventory. For instance, the 36 Rafale fighter jets the IAF ordered from France account for only 2 of the 33 frontline squadrons. In contrast, 20 squadrons operate Russian aircraft.[93] Non-Russian suppliers are also often sought to address capability gaps, such as those concerning secondary systems for pre-existing equipment, equipment for training purposes, and equipment for material and troop transport.[94] Thus, other countries are playing an increasingly significant role in arms imports for India. Nevertheless, these countries have not yet replaced the significant role Russia plays for India in the supply of arms. Russia's position as India's top defense partner remained unchallenged until the invasion of Ukraine in 2022.

5.2. The Impact of Russia's Full-Scale Invasion of Ukraine on the Defense Relations with India

Russia's full-scale invasion of Ukraine in February 2022, the subsequent prolonged war, and the comprehensive sanctions regime targeting Moscow have affected the India-Russia defense relationship in a number of ways. The sanctions have excluded many Russian companies, particularly in the defense sector, from the international banking system. The sanctions have also restricted Russian access to key materials and technologies for the production of advanced weapons systems. Due to the material losses incurred in Ukraine and the prolonged war, Russia is expected to limit its export of defense systems and spare parts, prioritizing the replacement and repair of its own platforms. The performance of certain Russian weapon systems in the war has also raised questions in India about their quality.

As a consequence of the invasion, India has already experienced disruptions in defense supplies. It has also canceled and deferred defense contracts and seen an increased public discourse on the country's substantial dependency on Russia for defense. As the following section will show, India's reliance on Russia for spare parts and the maintenance of its Russian-made inventory of weapons can be considered a critical vulnerability. The existing supply disruptions adversely affect the operational readiness of the Indian Armed Forces. Experts concur that evaluating the severity of the current supply disruptions is difficult.[95] However, India appears to be facing a complex situation, with the sustainability and readiness of the Su-30MKI and MiG-29UPG fighter jets constituting a particularly grave vulnerability. Since India has no alternative sources for critical spare parts, any further worsening of supply disruptions could lead to serious consequences for India's national security if a conflict were to arise. Additionally, deepening Sino-Russia relations may exacerbate the negative impact of these critical vulnerabilities for India.

Regarding supply disruptions, the IAF announced in early 2023 that it had cut its projected capital expenditure on modernization as the Russia-Ukraine war had affected its supplies. This consisted of a cut of about one-third for FY 2023–24 compared to FY 2022–23.[96] The supplies affected included spare parts for the IAF's Su-30MKI and MiG-29UPG fighter jets, its Il-76 and An-32 transport aircraft, and others. The Su-30MKI and MiG-29UPG account for 312 out of the IAF's total 554 fighters. Thus, if the situation continues, the maintenance of more than 50 per cent of the IAF's active combat aircraft could become either inadequate or face interruptions. For its ground-based air defense, the IAF is also still awaiting the delivery of the last two of five S-400 air defense systems. The IAF reported that a "major delivery" from Russia, now confirmed as the S-400 system,[97] will not occur in the near future due to current delivery constraints.[98]

91 Ibid.

92 Ibid.

93 Waldwyn / Solanki, *India's Defense Plans Fall Victim to Russia's War.*

94 Christophe Jaffrelot / Aadil Sud, "Indian Military Dependence on Russia," *Institut Montaigne,* 05.07.2022.

95 Background interview with an Indian defense policy expert, Zurich and Delhi, 21.09.2023.

96 Krishn Kaushik, "Russia Cannot Meet Arms Delivery Commitments Because of War, Indian Air Force Says," *Reuters,* 23.03.2023.

97 Dinakar Peri, "Payment Crisis Leads to Uncertainty Over India-Russia Defence Deals," *The Hindu,* 20.08.2023.

98 Indian Ministry of Defence, *Demands for Grants (2023–24),* 21.03.2023.

In early 2023, the Indian Army began looking for alternative sources for spare parts and ammunition for its air defense and armored fighting vehicle fleet. These are largely of Russian origin, as the Chief of the Indian Army Staff acknowledged at the time.[99] The main concern for India does not lie in the availability of ammunition, as the Indian Army has been increasing its stockpiles in response to the standoff with China along the LAC in 2020. Instead, the issue lies in ensuing the timely delivery of items delivered based on follow-on contracts that are placed as part of annual cycles.[100] The Indo-Russia joint venture to manufacture around 600,000 AK-203 assault rifles in India is currently also experiencing delays.

The Indian Navy has also experienced delays. This include the delay of the delivery of two follow-on Talwar-class guided-missile frigates[101] and supplies and spare parts for India's Kilo-class diesel-electric submarines.[102] In addition, one of India's Kilo-class submarines, which was refitted in Russia, cannot be transported back to India because of the sanctions imposed on Moscow.[103]

The delivery of spare parts from Russia has also been complicated by issues related to payments. India is unable to make payments to Russia in US dollars for fear of incurring sanctions of its own. India and Russia have attempted to resolve the issue through a Rupee-Rouble arrangement. However, it appears this is not a viable solution due to the significant trade imbalance between Russia and India and Moscow's accumulation of Indian rupees. Overall, bilateral trade heavily favors Moscow, as India has significantly increased its oil imports from Russia since February 2022. Although India has made some payments to Russia, large payments have not resumed. News reports citing official sources claim that India owes over 3 billion USD to Russia for various defense platforms, pieces of equipment and spare parts. This debt has accumulated over a period exceeding a year, leading Moscow to pause further credit to New Delhi for its defense purchases.[104] For example, one significant reason why Russia has yet to supply the remaining S-400 systems to India is New Delhi's delay in making the regular payments.[105]

India has also delayed, suspended, or canceled plans to procure new or upgraded Russian weapon systems. New Delhi shelved its plans to procure 48 additional Mi-17V-5 medium-lift helicopters in April 2022, shifting focus to support an indigenous helicopter production program. However, news reports suggest that this decision was made prior to Russia's invasion of Ukraine in 2022.[106] Two months after the invasion, India indefinitely suspended negotiations with Russia for the acquisition of 10 Ka-31 naval early-warning helicopters. This happened after it became uncertain whether Russia could fulfil the order and the development of India's payment issues to Russia.[107] The Indian Navy already has 14 Ka-31s and had sought to acquire more. However, currently, there is no alternative supplier or domestic capability to produce or procure similar helicopters.[108] The IAF has also suspended plans to upgrade its inventory of 85 Su-30MKI fighters with Russian assistance.[109] Taken together, the deals involving the upgrading of India's Su-30MKI fighters and the procurement of the 10 Ka-31 helicopters were valued at several hundred million US dollars.

The war in Ukraine and the related performance of the Russian Armed Forces have also contributed to a growing public debate in India about the country's substantial reliance on Russian weapon systems. A report by the International Vivekananda Foundation, which is close to the Indian government, concluded based on discussions with many retired Indian diplomats and generals: "In the long term, India must work toward weaning itself away from dependence on Russia for military technology." This is because "the quality of Russian technology previously thought to be superlative is increasingly being questioned."[110] Hence, a "lesson for India would be to widen its airpower basket away from Russia." The previously mentioned public statements by senior officials from all three branches of the Indian Armed Forces about Russian supply delays also indicate the increasing concern regarding dependence on Russia. In addition, in April 2022, Indian Minister of Defence Rajnath Singh stated that the war in Ukraine underscores India's need for greater self-sufficiency in its defense industry.[111]

Indian defense planners are also likely to consider the potential ramifications of Russia becoming more dependent on China as a consequence of the war. Following the imposition of sanctions, Russia will have to import advanced components from alternative sources to replace the materials it currently cannot access and upgrade its conventional arsenal. China is a likely candidate,

99 Amrita Nayak Dutta, "Amid War, Identifying Sources for Soviet-Era Equipment Spares: Army Chief," *The Indian Express,* 13.01.2023.

100 Dinakar Peri, "After a Year of Ukraine War, Forces Looking To Tide Over Delays in Arms Supply," *The Hindu,* 23.02.2023.

101 Ujjwal Shrotryia, "Russia Delays Advanced Talwar-Class Stealth Frigates' Delivery Yet Again; Now Projected To Join Navy By May And October 2024," *Swarajyamag,* 16.08.2023.

102 Sarosh Bana, "India's Russian Arms Imbroglio," *The Strategist,* 01.11.2022.

103 "Why an Indian Submarine Stuck in Russia May Be Heading to Norway Soon," *Swarajyamag,* 14.01.2023.

104 Rahul Bedi, "Top Arms Vendor Admits Russian Defence Industry Facing 'Pressing Challenges', Seeks New Export Format," *The Wire,* 22.10.2023.

105 Peri, *Payment Crisis Leads to Uncertainty Over India-Russia Defence Deals.*

106 "IAF Shelves Plan to Buy 48 Russian MI-17 V5s, Govt to Support Indigenous Medium-Lift Helicopter Programme," *Times Now,* 16.04.2022.

107 Vivek Raghuvanshi, "India Halts Ka-31 Helicopter Deal with Russia," *Defensenews,* 16.05.2022.

108 Background interview with an Indian defense policy expert, Zurich and Delhi, 05.09.2023.

109 International Institute for Strategic Studies, *The Military Balance 2023* (London: IISS, 2023), 210.

110 Avantika Menon, "Report of VIF Strategic Discussions on the Ukraine Conflict," *Vivekananda International Foundation,* 2022.

111 Manjeet Negi, "Russia-Ukraine War Highlights Need for a Self-Reliant Military: Rajnath Singh," *India Today,* 29.04.2022.

including for materials such as heavy metals and microchips.[112] Thus, it is feasible that Chinese components may enter the Indian Armed Forces' arsenal through imported Russian weapon systems in the future.

5.3 India's Strategies to Address Its Critical Vulnerabilities *vis-à-vis* Russia

India is pursuing strategies that involve a combination of continuing a reliance on Russia, seeking out alternative suppliers for both immediate and future needs, and accelerating domestic production. This section addresses the relative importance of these factors for India's short- and long-term strategies.

In the short-term, India faces the problem of acquiring spare parts, upgrades, and maintenance support. To address its spare parts needs, India is working toward increasing its domestic production. While India does produce several Russian weapon systems under license, such as the Sukhoi Su-30MKI, it continues to rely on Russian original equipment manufacturers (OEMs) for critical components. India's progress in increasing its domestic production of spare parts for Russian-origin platforms has been limited in the past. In 2016, India started to produce some spare parts with the aim of improving their availability.[113] According to an Indian defense policy expert, India accelerated these efforts after Russia's full-scale invasion of Ukraine.[114] However, spare parts manufacturers require certification from Russian OEMs. This process can be time-consuming, due to the lengthy negotiations that often take place in the defense industry. Moreover, such efforts are only likely to increase the availability of basic spare parts, as critical spares will still need to come from the Russian OEMs. Thus, the domestic production of spare parts may (in the long run) alleviate India's critical vulnerabilities, but it will not eliminate them.

India is also seeking alternative suppliers for certain spare parts and ammunition to reduce its dependency on Russia. For example, in early 2023, the Chief of the Indian Army Staff announced that the army obtained a waiver to import spare parts and ammunition for the next two to three years from alternative sources. The equipment this covers was previously sourced from Russia and Ukraine and mainly pertains to air defense systems and India's tank fleet.[115] To provide one example, the Army is currently in advanced stages of negotiations to procure 23mm ammunition for its air defense guns from Bulgaria.[116] Indeed, states that were members of the Soviet Union or Warsaw Pact could serve as potential sources of spare parts for Russian-produced aircraft, tanks, and armored vehicles.[117] For instance, Poland is upgrading its fleet of T-72 tanks through a domestic program and could serve as a supplier of spare parts. However, these states may have their own security of supply concerns, which may limit their willingness to provide India with what it needs.[118] Moreover, obtaining spare parts for newer platforms, such as the MiG-29UPG and Sukhoi Su-30MKI, presents a greater challenge, as their critical components need to come from Russia.[119]

In the long-term, the Indian government appears focused on improving the capabilities of its domestic defense industry, as well as the further diversification of its defense inventory. India's indigenization efforts, referring to its endeavors to develop and produce defense systems and equipment domestically, started long before Russia's full-scale invasion of Ukraine. In fact, India has been trying to build a domestic defense industry since the 1950s, albeit with limited success.[120] However, India made renewed efforts to achieve this goal with the implementation of its MII initiative in 2014 and the SRI initiative in 2020. According to some experts, one of the biggest effects of the war is that it has strengthened support for the government's SRI initiative.[121]

As part of the SRI initiative, India has already taken several actions to develop its domestic defense industry, some of which were implemented prior to Russia's full-scale invasion of Ukraine. First, India has raised the limit on FDI in defense sector companies from 49 per cent to 74 per cent through an automatic approval route. FDI of up to 100 per cent is also possible, subject to government approval. In the latter case, proposals should demonstrate how they can help local businesses obtain access to modern technology. Second, in August 2020, India announced its first Positive Indigenization List (PIL),[122] which covered 110 defense goods. The items on these lists are subject to import bans. The first list consisted of larger weapon systems and delivery vehicles where India already has manufacturing capabilities and smaller components and subsystems that can be manufactured in

112 Warren/Ganguly, *India-Russia Relations after Ukraine,* 815.

113 Background interview with an Indian defense policy expert, Zurich and Delhi, 05.09.2023.

114 Ibid.

115 Dutta, *Amid War, Identifying Sources for Soviet-Era Equipment Spares.*

116 Peri, *Forces Looking to Tide Over Delays in Arms Supply.*

117 Warren/Ganguly, *India-Russia Relations after Ukraine,* 823.

118 Background interview with an Indian defense policy expert, Zurich and Delhi, 21.09.2023.

119 Aditya Pareek / Pranav Satyanath, "Can India Get Spares for Russian Military Equipment Elsewhere? Learn From Poland, Iran," *The Print,* 09.03.2022.

120 Dhruva Jaishankar, "The Indigenisation of India's Defence Industry," *Brookings India,* August 2019.

121 Anit Mukherjee, "What the Indian Military Won't Learn from the War in Ukraine," *War on the Rocks,* 21.06.2022.

122 These lists were originally referred to as "import ban lists," but were later renamed.

India.[123] More PILs have since been published, partly in response to potential shortages of spare parts from Russia. A fourth list was published in May 2023 and added 928 items, including weapons systems, pieces of equipment, and types of ammunition.[124] Importantly, in April 2022, India's Ministry of Defence also announced that it would prioritize the acquisition of domestically produced goods whenever possible in the future. It will only consider procurement from foreign sources in exceptional cases where no domestic production capability exists. Third, India is promoting an increased role for the private sector in defense production on the assumption that this could spur competition that could enhance capabilities, innovation, and technology absorption.[125] Fourth, India has taken steps to improve the organization of the declining state-owned defense industry. Notably, the country has reorganized its ordnance factories by corporatizing 41 government-operated production organizations and converting them into 7 defense public sector undertakings. India is also encouraging more public-private partnerships.

These ambitions are also reflected in India's defense budget. For instance, the share of the budget allocated for procurement and research and development has increased since FY 2018–19.[126] Capital expenditure, which accounted for 31 per cent of India's defense budget in FY 2013–14, declined to 23 per cent by FY 2018–19. However, it has risen again and reached 29 per cent for FY 2023–24. In addition, the percentage of capital procurement sourced from domestic industries rose from 58 per cent in the budget for FY 2021–22 to 68 per cent for FY 2022–23. Also in FY 2022–23, 25 per cent of the research and development budget was earmarked for India's private industry.

Despite these efforts, India remains still the world's largest arms importer and it possesses a weak domestic arms industry. Thus, it will continue to rely heavily on arms imports in the future. As previously noted, the US, France, and Israel, along with other countries, are playing a more prominent role in this regard. Between 2004 and 2013, the US accounted for 5.7 per cent of India's arms imports. For the same period, France contributed 1.6 per cent and Israel 5.1 per cent. Between 2014 and 2022, the US contributed 12 per cent, France 18.7 per cent, and Israel 9.5 per cent. This trend is expected to continue. The US also currently holds significant military contracts with India. This includes contracts for aerial transportation, such as the C-130 Hercules transport aircraft and CH-47 Chinook helicopter; howitzer artillery weapons; and components and machinery for domestically manufactured systems like the Tejas Light Combat Aircraft. France has contracts for the production and supply of diesel engines, radar systems, Scorpène-class submarines, and Rafale fighter aircraft.

Since February 2022, India has signed further contracts and memoranda of understanding with the US and France. During Prime Minister Modi's state visit to Washington in June 2023, the US and India agreed to potentially produce 99 GE Aerospace F414-INS6 engines in India for the Tejas Light Combat Aircraft Mk2 for the IAF. US Congress approved the deal in August 2023. The agreement would also encompass future joint manufacturing efforts and the transfer of technology. The Indian government is also currently in advanced negotiations to acquire 31 MQ-9B SeaGuardian drones from the US company General Atomics. The idea is for these to be assembled in India and to establish a maintenance, repair, and overhaul facility in the country. Despite these developments, challenges persist in the licensing and transfer of US defense technology to India. These stem from stringent US guidelines for end-use of systems, classified technology, copyright protection, and operational restrictions.[127] These issues can be particularly challenging in certain situations, as India sometimes demands operational autonomy for purchased systems and its intention to refit such systems with materials from other foreign suppliers.[128]

In July 2023, India and France also announced their support for the joint development of an engine for the Indian Multi Role Helicopter (IMRH). This involves the establishment of a joint venture between Safran Helicopter Engines and Hindustan Aeronautics Limited (HAL). The IMRH is a significant platform for India, as it aims to replace 215 of the IAF's Russian-made Mil Mi-17 helicopters.

5.4 Discussion of the Measures Taken by India and the Outlook for India's Critical Vulnerabilities

There are no quick solutions to India's heavy reliance on Russian defense platforms, spare parts, and maintenance. Following the full-scale invasion of Ukraine, Russian defense supplies to India have been disrupted and contracts have been cancelled. This has reduced India's operational readiness and the capabilities of specific weapon systems in the short to medium term. This highlights India's critical vulnerabilities *vis-à-vis* Russia. India has endeavored to enhance the domestic production of

123 For a product on the PIL to be classified as an "indigenous system," it must meet two criteria. First, it must use technologies designed and developed by the Indian defense industry or the Defence Research and Development Organisation. Second, it must meet the requirement of sourcing at least 50 per cent of its content from within India.

124 Indian Ministry of Defence, *'Aatmanirbharta' in Defence: MoD Approves 4th Positive Indigenisation List,* pib.gov.in, 14.05.2023.

125 Indian Ministry of Defence, *Reforms in Defence Sector,* 2021.

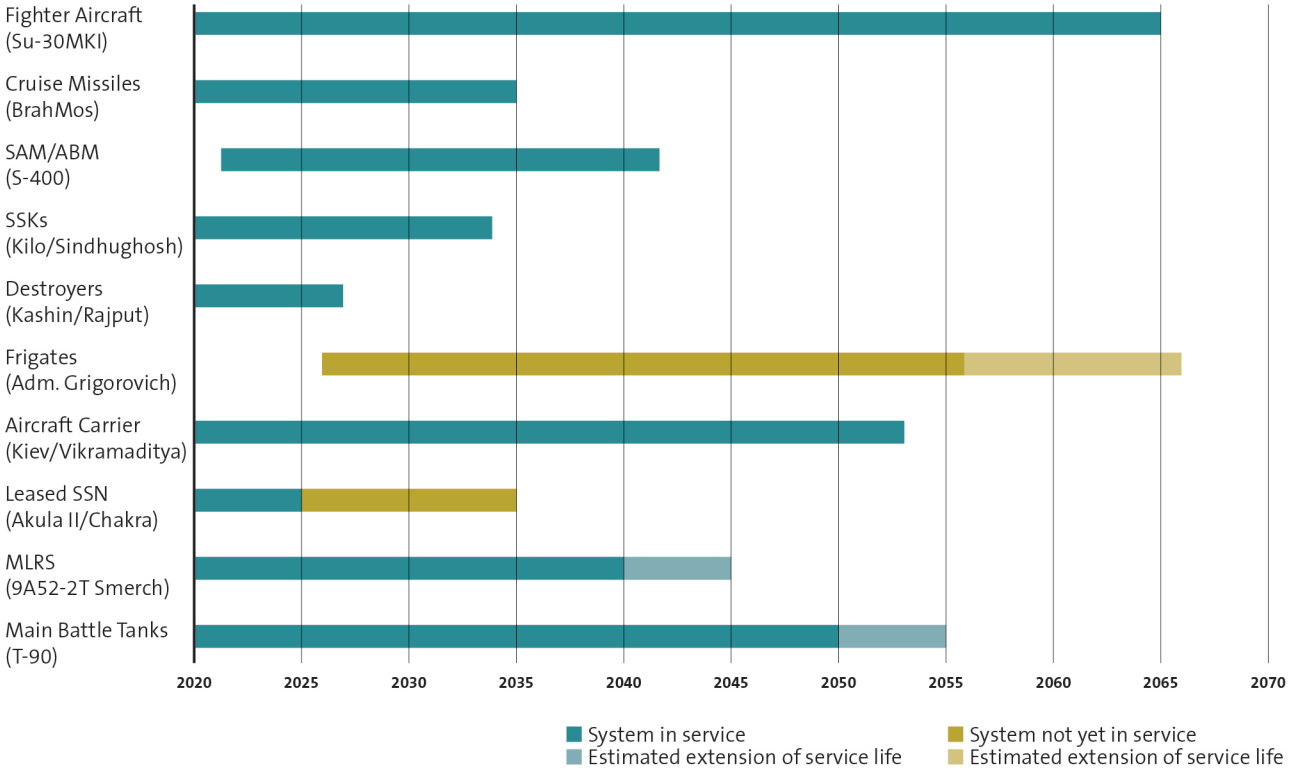
126 Laxman Behera, "High on Revenue, Low on Capital: India's Defence Budget 2023–24," *Observer Research Foundation,* February 2023.

127 Lalwani/O'Donnell/Sagerstrom/Vasudeva, *The Influence of Arms.*

128 Ibid.

Graph 5:

Estimated Service Life of India's Major Russian Weapon Systems



Source: Sameer Lalwani / Frank O'Donnell / Tyler Sagerstrom / Akriti Vasudeva, "The Influence of Arms: Explaining the Durability of India–Russia Alignment," Air University US Air Force, 15.01.2021.

specific spare parts and scout for alternate suppliers. However, it appears these efforts will only offer limited relief in the short to medium term. This is because locating substitute sources for specific spare parts can be a challenging task. Moreover, India's effort to enhance domestic production is a time-consuming process. It is also one that may only increase the availability of spare parts to a limited extent, as critical materials will still need to come from Russia.

India's critical vulnerabilities are likely to persist as long as Russian-made weapon systems continue to form the backbone of the Indian military. For certain systems, this will remain the case for many decades to come (see graph 5). The lifting of sanctions imposed on Russia or an end to the war in Ukraine could reduce India's current supply problems. However, even if these events were to occur, India would still need to consider the implications of Russia possibly becoming more dependent on China because of the war. If China were to gain greater influence over Russia, Beijing could potentially exert pressure on Moscow's policy. If a Sino-Indian conflict scenario were to occur subsequently, Russia could theoretically withhold spare parts and other essential supplies from India. The closer the relationship between China and Russia, the greater the risks that dependence on Russian defense equipment poses to India. To minimize such risks, it is likely that India will continue to invest in a robust partnership with Russia.

The overarching trajectory of India's long-term strategy of indigenization appears to have only been partially impacted by Russia's war in Ukraine. Indeed, this strategy has been a clear priority for New Delhi for over a decade. India is likely to continue pursuing this objective, regardless of the developments in the war. However, the war has had an impact, as it seems to have increased the need for India's indigenization efforts and the support for them.[129] It is too early to assess the effectiveness of these measures, as, thus far, the available evidence is anecdotal. India had aimed to produce 26 billion USD worth of arms domestically per year by 2025. However, in 2022, this figure only reached 12 billion USD, and the goal was quietly revised down to 22 billion USD. New Delhi also aims to reach an FDI stock of 10 billion USD in the defense sector by 2025. This is in comparison to a stock of 380 million USD reached in 2021.[130] However, FDI in India's defense

129 Background interviews with Indian defense policy experts, Zurich and Delhi, 05.09.2023, 21.09.2023.

130 Waldwyn/Solanki, *India's Defense Plans Fall Victim to Russia's War.*

sector has not significantly increased.[131] For instance, from September 2020, when India announced its revised FDI policy, to May 2022, FDI inflows in the defense sector totaled only 61 million USD.[132]

India's indigenization efforts will also entail trade-offs. The PILs and the associated focus on domestic production programs may result in temporary capability gaps, delays in the delivery of systems, and product quality issues. India's defense industry has largely failed to deliver advanced weapon systems in significant quantities and on time.[133] An example is the Tejas Light Combat Aircraft project, which began in 1983. The aircraft was intended to replace India's aging MiG-21 fighters, and it later became part of a general fleet modernization program.[134] The project experienced significant setbacks and delays, and the IAF had to undertake numerous provisional measures as a result. For example, these included the need to upgrade existing aircraft and postpone the planned phasing-out of MiG-21s.

Waldwyn and Solanki also argue that when it comes to the PILs, it is not entirely clear whether "New Delhi has rigorously examined local companies' capabilities to supply the listed systems."[135] They also suggest that for certain items on the lists, "the desire to produce locally has overridden capability considerations."[136] For instance, the first PIL banned the import of propeller-driven training aircraft. The IAF had acquired and started using Swiss PC-7 Mk II aircraft for training purposes. It was also interested in procuring a second batch. However, following the release of the PIL, the IAF had to resort to ordering the indigenous HTT-40. This aircraft was not the IAF's preferred option for both financial and technical reasons.[137] India will also have to balance the need for indigenization with the increasing demands involved in the modernization of its weapons systems. According to a parliamentary report, 68 per cent of Indian military platforms are currently designated as "vintage."[138] The problem is that India will not be able to pursue a comprehensive program of modernization and one of indigenization at the same time. Therefore, trade-offs may arise as India will have to choose where to focus its efforts. While modernization efforts would prioritize short-term improvements and may require imports, indigenization objectives would focus on the long-term, especially when technology transfers are involved.

India's defense sector is likely to continue to rely on foreign expertise, whether through direct imports or licensed local production, in the near future.[139] States such as the US, France, and Israel are becoming increasingly important for India's defense sector and its armed forces. Indeed, foreign suppliers mainly meet India's most advanced military capability requirements for land, aerospace, and sea.

India's defense industry has also traditionally focused on local licensed production, involving Indian state-owned enterprises and Russian OEMs. In the future, India will continue to rely on local licensing programs to develop capabilities. According to a forecast by Janes, Indian companies that employ indigenous capabilities will likely only secure about 30 per cent of the value of Indian defense contracts between 2022 and 2026.[140] The majority of the remaining contracts will progress as MII programs that, "while being based in India, rely heavily on foreign designs, technologies, weapons, systems, and sustainment."[141]

The continued diversification of the Indian defense inventory poses its own set of challenges. The Indian Armed Forces will need to integrate different systems from different suppliers, complicating interoperability. The various weapon systems will also require the armed forces to take on additional workforces with new skillsets to ensure maintenance can be carried out effectively. Finally, if India is unable to advance its indigenization efforts, it might end up developing new strategic or critical vulnerabilities *vis-à-vis* new suppliers.

Russia will remain important for India due to its reliance on Russian arms. However, Moscow has become a less attractive option for future arms procurement programs relative to Western countries. Experts also agree that India is unlikely to make major procurements from Russia in the foreseeable future.[142] In its efforts to bridge its technology gap with China, India appears to be favoring the selection of state-of-the-art weapon systems from Western countries.[143] For instance, India considered no Russian aircraft when attempting to acquire an air combat wing for its aircraft carrier, the INS Vikrant. Instead, the Indian Navy seems to be considering the French Rafale M fighter aircraft.

131 Press Trust of India, "India Receives USD 3.21 mn FDI in Defence Industries During Apr-Sep FY23," *The Economic Times,* 23.12.2022.

132 Indian Ministry of Defence, *FDI in Defence Sector,* pib.gov.in, 25.07.2022.

133 International Institute for Strategic Studies, *The Military Balance 2023,* 210.

134 Press Trust of India, "CAG Picks Holes in LCA Project, Says It Fails to Meet IAF Requirements," *The Economic Times,* 11.07.2018.

135 Waldwyn / Solanki, *India's Defense Plans Fall Victim to Russia's War.*

136 Ibid.

137 "The HTT-40 Story: IAF Is Finally Buying Made-In-India Trainer Aircraft It Refused to Buy Into for Years," *Swaraja,* 02.03.2023.

138 "Army Critical of Defence Budget," *The Hindu,* 13.03.2018.

139 "Aiming High: India's Defence Industry," *Janes,* 20.01.2022.

140 Janes, *Aiming High: India's Defence Industry.*

141 Ibid.

142 Background interviews with Indian defense policy experts, Zurich and Delhi, 05.09.2023, 18.09.2023, 21.09.2023.

143 Background interview with an Indian defense policy expert, Zurich and Delhi, 21.09.2023.

6. India's Strategic and Critical Vulnerabilities and Foreign Policy Trends

Despite India's aim to maximize strategic autonomy, it has developed asymmetric dependencies on Russia and China in the defense and economic domains, respectively, in recent decades. Against the backdrop of increasingly strained relations with Beijing and the potential for closer China-Russia relations, these dependencies have grown into strategic and critical vulnerabilities. In a worst-case scenario, India's dependence on Russian defense equipment, spare parts, and maintenance support could have direct negative consequences for its national security. India's economic dependencies on China could also potentially allow Beijing to wield its economic influence as political leverage over New Delhi. However, the risks associated with this dynamic appear to be more manageable for New Delhi. Nevertheless, the risk remains that India's two axes of vulnerability could overlap and exacerbate each other.

Following the Galwan clash in 2020 and Russia's full-scale invasion of Ukraine in 2022, India has taken swifter and more decisive actions to address its asymmetric dependencies on China and Russia. However, these two events have essentially only reinforced existing trends in India's economic and defense policies toward China and Russia, respectively. These events have not brought about an inflection point in these policies. Moreover, it will likely take India several years, if not decades, to significantly reduce its strategic and critical vulnerabilities.

Since the escalation of the border tensions along the LAC in 2020, the Indian government has become more willing to implement economic measures explicitly aimed at China. It has also shown a greater dedication to addressing the security implications that potentially arise from economic reliance on Beijing. For example, New Delhi is pursuing a de-risking approach toward China. This includes restricting Chinese FDI and market access, barring Chinese bids on 5G infrastructure projects in India, protecting domestic manufacturing by restricting the import of specific goods from China, and launching incentive programs to increase domestic manufacturing capabilities. These efforts are expected to persist even if China and India reach a resolution for the ongoing border standoff. However, New Delhi has been working toward increasing its domestic manufacturing capabilities and limiting its dependence on China for years. For example, India's MII and SRI initiatives were both launched before the Galwan clash, and India's decision not to join the RCEP took place in 2019.

India's efforts to address its strategic vulnerabilities *vis-à-vis* China are a long-term endeavor with an uncertain outcome. As it attempts to reduce its economic reliance on China, India must navigate challenging trade-offs between security concerns and economic and trade interests. The measures the Indian government has put in place since 2020 demonstrate the extent of New Delhi's interest in reducing its strategic vulnerabilities *vis-à-vis* China. However, it is too early to tell if these actions will be effective. India's reliance on the Chinese market for several critical product categories has increased since the Galwan clash. For instance, India remains heavily reliant on China for APIs and rare-earth minerals. Furthermore, even though India has been successful in decreasing its reliance on China for semiconductor imports, its dependence remains critical: China still accounts for over 50 per cent of semiconductor imports into India. If the Indian government aimed to force China to restore the status quo ante along the LAC through its economic measures, it has failed to achieve its goal. China continues to occupy territory claimed by India. However, New Delhi's efforts that aimed to restrict recent Chinese investments and acquisitions in critical sectors in India have been more effective.

China's economy will remain pivotal for India's economic growth. Experts agree that the overall structure of bilateral trade relations is not likely to undergo fundamental changes in the near future. However, this does not mean that India's strategic vulnerabilities toward China must necessarily increase. For instance, India achieved some success in reducing its dependence on China in certain product categories. There are also indicators that can demonstrate whether India's de-risking strategy is working. For instance, these include a decrease in overall relative imports from China, a continuous reduction in import dependence on China for critical product categories, and an increase in the domestic production capability for relevant categories.

As noted, Russia's full-scale invasion of Ukraine has reinforced preexisting trends in New Delhi's defense relations with Moscow. For India, Russia has become a less attractive partner for new defense procurement for technological and strategic reasons. This trend has been evident since the end of the Cold War. Major arms procurement projects involving Russia appear unlikely at present. India is also intensifying its efforts to indigenize defense production and diversify arms imports.

In the short- to medium-term, India's reliance on Russia for spare parts and maintenance presents challenges for which no comprehensive solutions are available. For instance, significant supply disruptions have reduced the operational readiness of India's Su-30MKI and MiG-29UPG fleets. India can find partial solutions to this issue by sourcing the relevant spare parts from countries that possess Russian defense equipment and by increasing local production. However, these solutions will only improve the

availability of spare parts to a limited extent in the medium term. This is because essential components must still be sourced from Russia. An end to the war in Ukraine or an easing of the sanctions regime imposed on Russia could alleviate this predicament for New Delhi in the short term. However, other developments could exacerbate the dangers associated with India's reliance on Russia for spare parts and maintenance. These include the development of closer Sino-Russian collaboration, coupled with Russia becoming more dependent on China. Such potential trends are some of the primary reasons why New Delhi will seek to maintain close ties with Moscow.

India's critical vulnerabilities *vis-à-vis* Russia, including those regarding defense platforms, spare parts, and maintenance, will decrease only slowly. These vulnerabilities are likely to persist as long as Russian primary weapon systems remain in service within the Indian Armed Forces, with estimates suggesting that this could continue for several decades. To reduce its medium- and long-term reliance on Russia, India has enhanced its efforts to develop indigenous defense capabilities and further diversify its arms imports. However, India's domestic arms industry is struggling to supply the Indian Armed Forces with the advanced technologies and equipment it requires to respond to increasingly tense security threats. This suggests progress in indigenization is likely to be slow and uncertain. More importantly, India's reliance on foreign expertise, whether through direct imports or licensed local production, is likely to persist in the near future.

Three trends for the future of India's foreign policy can be discerned from its handling of existing strategic and critical vulnerabilities with China and Russia. First, the US and its allies and partners will play an increasingly significant role for India in building its economic and military national power. Of particular importance will be the other Quad countries: the US, Australia, and Japan. External Affairs Minister Subrahmanyam Jaishankar stated in his book, *The India Way: Strategies for an Uncertain World,* that "the most impressive [Asian] growth stories of the last 150 years have all been with the participation of the West."[144] For this reason, he also suggests that "India has to maintain a narrative in the United States of its value, whether it is in terms of geopolitics, shared challenges, market attractions, technology strengths or burden-sharing."[145]

In contrast, the relative importance of Russia and China in India's pursuit of its strategic foreign policy objective – which is to develop into a major pole in a multipolar world – is diminishing. India's increasing engagement in the Quad contrasts with its more passive behavior in the SCO and BRICS formats, which are dominated by China and Russia. For example, as chair of the SCO in July 2023, "India shifted the annual summit online, pointedly refused a collective endorsement of the BRI, and slow-walked efforts to extend security cooperation, crowding the agenda with concerns such as traditional medicine and digital inclusion."[146] Since the Galwan clash, there has also been a shift in India's economic policy toward China. Prior to the clash, India had been more supportive of China-led global economic organizations like the BRICS. However, following the events of 2020, New Delhi has attempted to counter Beijing's economic tactics through bilateral and multilateral actions.

Second, India's cooperation with the US and its allies and partners will face certain limitations due to New Delhi's strategic and critical vulnerabilities in relation to China and Russia. On the one hand, India will resist the adoption of an overt collective strategy of Chinese containment that involves the Quad.[147] New Delhi's caution over strategic cooperation with the US and the Quad has diminished since the Galwan clash in 2020. However, Indian strategic elites continue to resist further institutionalizing the Quad along hard security lines.[148] This has been expressed in both words and deeds. For instance, according to Harsh Vardhan Shringla, who was India's foreign secretary at the time of the Galwan clash, for India the Quad "does not stand against something, . . . it stands for something which is positive." He suggests that this "should put to rest any speculation about [the] Quad's activities [being] directed against any States or others."[149] India has also formally uncoupled the expanded Malabar naval exercise, involving the US, India, Japan, and Australia, from the Quad.[150] Furthermore, New Delhi did not participate in the July 2023 Talisman Saber military exercise between the US and Australia in the lead-up to the G-20 Summit. Purportedly, this was to avoid offending Beijing.[151] According to one observer, this stance concerning collective security and the Quad "stems from Indian misapprehensions about a punitive response from Beijing if New Delhi is seen to be actively and explicitly supporting US-led containment efforts."[152]

Moreover, India's defense relationship with Russia sets certain limits to levels of technology exchange and interoperability with the US and in the Quad. For instance, Russian intelligence and surveillance systems,

144 Subrahmanyam Jaishankar, *The India Way: Strategies for an Uncertain World* (New Delhi: Harper Collins, 2020), 123.

145 Jaishankar, *The India Way,* 126.

146 Ian Hall, "India Pushes China to the Margins of the G20," *Lowy Institute,* 11.09.2023.

147 Kate Sullivan de Estrada, "India and the Quad: When a 'Weak Link' Is Powerful," *The National Bureau of Asian Research,* 30.10.2023.

148 Patrick Gerard Buchan / Benjamin Rimland, "Defining the Diamond: The Past, Present, and Future of the Quadrilateral Security Dialogue," *Center for Strategic and International Studies,* CSIS Brief, March 2020.

149 Harsh Vardhan Shringla, *Transcript of Special Briefing on First Quadrilateral Leaders Virtual Summit by Foreign Secretary,* 12.03.2021.

150 Sullivan de Estrada, *India and the Quad.*

151 Nayanima Basu, "Why India Did Not Participate in Australia's 'Talisman Sabre' Military Exercise," *ABP Live,* 03.08.2023.

152 Sullivan de Estrada, *India and the Quad.*

such as elements of the S-400 system, pose a possible security risk to the US due to their potential capacity to collect information on advanced US technology.[153] India's Russian-made systems and US systems are also not technologically compatible, making interoperability challenging. While US alliance partnerships with Japan and Australia facilitate extensive technological exchanges among these nations, the above factors will likely constrain cooperation with India.

Finally, India's political and strategic influence at the global level is likely to further increase in the years ahead, including when it comes to negotiating new forms of order in the Indo-Pacific. However, its rise is likely to be constrained by significant challenges in the economic and defense domains. India's strategic and critical vulnerabilities *vis-à-vis* China and Russia reflect larger structural problems. Despite India's comparatively robust economic growth figures, major economic challenges remain in terms of education, poverty, employment, and health. Hence, Wagner argues that India's rise might rest "on feet of clay."[154] For instance, the service sector is growing in importance in India's economy. However, the agricultural sector still employs almost 43 per cent of the country's total labor force, even though it only contributes 20.2 per cent to India's GDP.[155] Efforts to address this have also faced challenges. For instance, the agricultural sector liberalization reforms initiated by the Modi government in 2020 were retracted due to a year-long demonstration by Indian farmers. Since 2014, the Modi government has also been attempting to boost the manufacturing sector's contribution to the GDP, with the aim to increase it to over 14 per cent. Thus far, these efforts have been unsuccessful. Lastly, India is presently benefitting from global diversification efforts related to growing tensions between the US and China. For example, this includes Apple's expansion of production in the country. However, India could lose the opportunity to benefit from this situation. This would be the case if economic conditions in the country prove to be too challenging compared to other countries, such as Vietnam, in the medium term.

India's challenges in the defense domain are intricately connected to its economic prospects. The expansion of its domestic defense industry's capabilities and the modernization of its armed forces necessitate significant financial resources. However, India's defense budget as a percentage of its GDP and total government expenditure has unmistakably declined over the last decade.[156] Furthermore, India's efforts to modernize its armed forces and enhance its domestic defense-industrial base remain restricted due to rising costs related to personnel and pensions. Currently, 53 per cent of the defense budget is allocated to these areas. As a result of these and other issues, India is likely to continue depending extensively on foreign expertise and equipment in the coming decades, including direct imports and the domestic production of arms under license. This may result in India developing new vulnerabilities.

153 Erin Mello, "The Enduring Russian Impediment to U.S.-Indian Relations," *War on the Rocks,* 13.02.2023.

154 Christian Wagner, *India's Rise: On Feet of Clay?* (Berlin: German Institute for International and Security Affairs, 2022).

155 Staatssekretariat für Wirtschaft SECO, *SECO-Fiche Indien,* 26.08.2022.

156 Karl Dewey / Fenella McGerty / Viraj Solanki, "Personnel vs. Capital: The Indian Defence Budget," *IISS Military Balance Blog,* 18.04.2023.

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