Atmanirbhar Export

Leveraging Indigenous Defence Production for Strategic Autonomy and Global Outreach

Neeraj Singh Manhas* and Hari Yadav G.**

India's 'Atmanirbhar Bharat' (Self-Reliant India) initiative represents a strategic shift towards developing indigenous defence capabilities to complement self-governance and global expansion, especially on the defence front. This change has significantly improved India's position in the global defence market, transforming it from a major defence importer to a new exporter. India's defence exports have shown incredible growth, reaching an all-time high of Rs 21,083 crore (about US$ 2.63 billion) in the financial year 2023–24 budget, an increase compared to previous years, and marking a spectacular growth of 32.5 per cent over the previous fiscal year. This growth reflects the expansion of India's domestic defence production capacity, which it now exports to more than 85 countries around the world. Products such as helicopters, ships, missiles and military vehicles demonstrate the diversity and sophistication of India's defence exports. These efforts are in line with the 'Make in India' initiative, which aims to enhance India's manufacturing capabilities in the world, paving the way for reaching a target of Rs 35,000 crore (about US$ 5 billion) exports by 2025. India aims to strengthen its position as a reliable supplier of high-quality defence technology, thereby contributing to global security

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and the development of international cooperation. This article examines the essence of India's journey towards self-reliance in defence production and its implications for strategic autonomy and global outreach.

Keywords: *Atmanirbhar Bharat, Defence, Make in India, Technology, Military, Exports*

Introduction

India's defence sector, the world's fourth-largest armed forces, is on the verge of a major upheaval.[1] The government has identified defence and aerospace as critical areas under the 'Atmanirbhar Bharat' (Self-Reliant India) plan, prioritising the development of indigenous manufacturing capabilities supported by a strong Research and Development (R&D) environment.[2] The Union Budget for 2023–24 has boosted funds for defence services modernisation and infrastructure development to Rs 1.62 lakh crore, which is a 57 per cent rise since 2019–20. The industry has been allocated Rs 5.94 lakh crore in the same budget, representing a considerable 13 per cent increase over the previous year.[3] India is widely recognised as one of the most significant importers of weaponry in the world. In the past, the export of defence products was not the primary focus of the domestic defence industry. The Government of India was reticent to push defence exports to even Friendly Foreign Countries (FFCs).[4] Following the implementation of legislative steps in 2001 by the Vajpayee government to liberalise the military industry and the subsequent opening of the defence sector to private firms, the importance of defence exports in India began to significantly increase. In May 2020, the Modi government launched a global initiative called 'Atmanirbhar Bharat' to encourage India to become self-reliant.[5]

The main aim was to reduce the country's reliance on imported goods due to the worldwide consequences of the COVID-19 pandemic, which had underscored the urgency to bolster domestic production capabilities in various industries, notably defence.[6] The competition was built around five main themes. The first was *Economy*—to attain the goal of boosting the country's economy to US$ 5 trillion by 2025; the second *Infrastructure*—investment in the expansion of infrastructure worth more than Rs 10,000,000 crore (about US$ 1.3 trillion) over the next five years for achieving the US$ 5 trillion economy goal; third, *Systems*—implementing 21st century technology-based systems; fourth *Vibrant Demography*—increasing India's competitiveness for self-reliance over the next five years; and the fifth and the last *Demand*—using full resources and capacity, whose overall aim is to create a productive

economy that supports innovation, skills and personal development that will contribute to business in India.[7]

This article evaluates India's efforts towards achieving self-sufficiency in supporting global initiatives, and sets targets for future growth to fulfil export goals by 2025 through the 'Atmanirbhar Bharat' initiative, which seeks to position India as a major defence exporter in the world.[8]

Atmanirbhar Bharat as a Comprehensive Strategy in Achieving the Broader Vision

The 'Atmanirbhar Bharat' initiative in the defence sector, underlines India's strategy to transition to greater self-reliance in defence production. It aims not only to strengthen India's economic and military position, but also to make India a major contributor to global defence by building on legacy of technological advances and to strengthen relations between the regions.[9] However, to build strategic autonomy in defence is another opportunity to provide significant military hardware, technical and logistical support without over-reliance on foreign countries.[10] This freedom is necessary to protect national sovereignty, strengthen military preparedness and promote independent decision-making at the international level. As of April 2023, the Ministry of Defence had awarded 606 industrial licences to 369 businesses in the defence sector, with the goal of attaining a turnover of Rs 1.75 lakh crore in aerospace and defence industry by 2025, including Rs 35,000 crore (about US$ 5 billion) in exports.[11]

While 'Atmanirbhar Bharat' is closely aligned with the 'Make in India' initiative, which primarily focuses on transforming India into a global manufacturing hub by encouraging both domestic and foreign companies to produce their goods in India, 'Atmanirbhar Bharat' is a broader initiative.[12] It aims to make India self-reliant across various sectors, including manufacturing, defence, agriculture and technology. The emphasis is on reducing dependency on imports and strengthening domestic supply chains.

To strengthen the domestic defence sector, the government intends to create openness, predictability and ease of doing business through a strong ecosystem and supportive regulations.[13] The Department of Military Affairs (DMA) has produced 310 items of services, and two 'Positive Indigenisation Lists', of 2,958 items under Defence Public Sector Undertakings (DPSUs), out of which 411 military products are to be procured from domestic sources. These lists are aimed at promoting the use of domestically produced goods and reducing reliance on imports for defence needs.[14]

Moreover, the Indian government has undertaken measures to attract more foreign direct investment (FDI) into the defence sector. The FDI standards have been liberalised, permitting investment of up to 74 per cent through the automatic route and up to 100 per cent through the government route.[15] The purpose of this action is to strengthen the military manufacturing system in India by promoting foreign investment, improving knowledge transfer and expanding defence exports. These reforms, including de-licensing, de-regulation, export promotion and FDI liberalisation, as a part of a broader strategy to make India a hub for defence manufacturing and exports.[16]

Currently, there are six Ordnance Factories and one manufacturing facility of Bharat Electronics Limited (BEL) operating in the state of Tamil Nadu. In addition, as stated by the Government of Tamil Nadu, there are 35 prominent private enterprises engaged in the production of defence-related goods. These are backed by around 250 Micro, Small and Medium Enterprises (MSMEs). Following the establishment of the Defence Corridor in Tamil Nadu, over 30 additional firms have indicated their willingness to establish or expand production facilities. The Government of India has also initiated the establishment of two more specialised Defence Industrial Corridors (DICs) in the states of Uttar Pradesh and Tamil Nadu. These corridors are designed to serve as centres for defence industrial activity, leveraging existing infrastructure and human resources to boost defence manufacturing within the country.[17] The aim is to attract significant investment, develop the domestic supply chain and strengthen the overall defence manufacturing ecosystem.[18]

Additionally, the government has launched initiatives like Innovations for Defence Excellence (iDEX) and Defence Testing Infrastructure Scheme (DTIS) to promote innovation in the defence and aerospace sector.[19] The iDEX programme is specifically designed to promote innovation and technological advancement in the defence and aerospace sectors by actively involving innovators and entrepreneurs. On the other hand, the primary objective of DTIS is to provide cutting-edge testing infrastructure that will assist the development of domestic defence equipment. These efforts are part of a broader strategy to make India a global hub for defence manufacturing and exports, fostering self-reliance and indigenisation in the defence sector.[20]

Furthermore, the rise in defence exports showcases India's success in leveraging its technological and manufacturing prowess to produce globally competitive defence products, boosting its economy, creating jobs and enhancing its geopolitical standing. Not only does this help to world peace,

but it also solidifies India's position as a leader in the global military sector through strong partnerships and advancements in research and development.[21]

Opportunities for The Defence Sector

The defence industry in India is currently at a crucial crossroads, which is being pushed by a confluence of regional factors and international tendencies. As a result of having lower labour and production costs in comparison to many Western countries, India is able to maintain a cost competitiveness that serves as the foundation of its existing competitive edge, and because of this economic activity, India is at a desirable place for manufacturing, which enables the country to provide appealing content on the international arena. As a result, both market penetration and competition are increased.[22]

India's concentration on developing specialist technologies has provided the country with a unique position in the area of maintaining the ecology of the world. The success it has made in the areas such as missile technology, space defence initiatives and nuclear capability, made it eager to move into areas where increasing levels of technology will lead to effective governance. India's defence capabilities are improved as a result of this effort, which also serves as a foundation for international collaboration and exports.[23]

However, focusing on self-sufficiency within its defence industry will bolster India's strategic autonomy while stimulating growth within its own defence and aerospace sectors. The involvement of the private sector is also poised to expand significantly, which is fueled by the government's authorisation of exports and the implementation of embargoes on the importation of specific items.[24] This shift is expected to diminish India's dependency on foreign imports by amplifying local manufacturing capabilities. Additionally, this strategy aims to elevate India's export levels, aligning with its ambitious goal of reaching Rs 1.75 lakh crore in aerospace and defence sectors, and also the Rs 36,500 crore (about US$ 4.8 billion) in defence exports by 2025. This ambition is a component of a more comprehensive vision to transform India into a country that exports more defence equipment and services than it imports, therefore enhancing its standing in the international defence market.[25]

India's ‹Make in India' initiative is pivotal in driving India towards self-reliance in the defence sector. One of the earliest examples of a start-up in the defence and aerospace sector dates back to 2006–07 when the Tata Group ventured into this largely government-controlled industry. At that time, the concept of 'Make in India' was not yet prominent, making

investments particularly risky, especially in terms of procurement. 'Initially, we had nothing but a blank sheet of paper and the TATA brand name,' recalls Sukaran Singh, CEO and MD of Tata Advanced Systems Limited (TASL), the company now leading the Tata Group's aerospace and defence manufacturing efforts.[26] Singh reflects on the company's first major deal involving the S92 helicopter, designed for VVIPs. Under this agreement with Sikorsky, later acquired by Lockheed Martin, TASL manufactured the cabins for helicopters widely used by VVIPs globally. the US President.[27] Since then, TASL has made significant strides, and the Hyderabad-based company is now preparing to become India's first private manufacturer of military aircraft and aerostructures in partnership with global original equipment manufacturers, including Pilatus Aircraft Ltd, Cobham Mission Equipment and RUAG Aviation. The decision to build a defence business was guided by two key considerations. The first was to develop capabilities in aerospace and defence with a focus on exports, while keeping a long-term goal of offering these capabilities to India. The second was to concentrate on developing technology that could not be accessed from abroad. 'No one was thinking about it at the time,' Singh says. 'The then-chairman, Ratan Tata, insisted that we make these investments as a first step towards building aircraft and helicopters for foreign companies and developing technologies that foreign companies would not provide to India.[28] This strategy of building capabilities by targeting international markets and developing our technologies, even without immediate orders, was truly his vision.' However, Indian government regulations passed in 2009 favoured the domestic defence organisations with capital purchases exceeding Rs 300 crore. India instituted the Defence Offset Policy in 2005, which required overseas vendors to invest a minimum of 30 per cent of the purchase value in the nation. This benefitted not just TASL but also the other indigenous organisations.[29]

Historically, it was reliant on imports for its defence needs, but India is now encouraging private sector engagement to foster strategic alliances with international manufacturers.[30] These partnerships are expected to not only open up India's relatively untapped defence market to global producers, but also create a plethora of opportunities for Indian companies through enhanced production capabilities and technological advancements in equipment.[31] Between 2018 and 2021, the government approved over 150 capital procurement proposals, valued at Rs 2,47,515 crore (about US$ 32.4 billion).[32] These approvals were in line with the Defence Acquisition Procedure (DAP) 2020, emphasising the government's commitment to bolster local manufacturing and reduce dependence on foreign imports for military needs.

The DAP 2020 was specifically designed to enhance indigenous defence manufacturing and includes provisions for indigenisation, encouraging the participation of domestic industries in defence production.[33]

One of the primary goals of the Indian government's 'Make in India' initiative is to integrate Micro, Small, and Medium Enterprises (MSMEs) into the defence supply chain, thereby enhancing the country's self-reliance in defence and contributing to the growing defence export market. Under Prime Minister Narendra Modi's leadership, the MSME sector has matured and is poised to play a crucial role in making India truly 'atmanirbhar' (self-reliant) in defence equipment manufacturing. However, Indian MSMEs are not yet fully integrated with industry chambers in developed nations, and their value addition remains lower compared to competitors in China and ASEAN countries.[34] Despite the sector's vast potential, it suffers from a lack of clear policy direction and technical expertise. Therefore, it is imperative to adopt critical measures to create an enabling environment that maximises the potential of MSMEs in the defence sector.

MSMEs have become the forces subtly redefining the defence industry. More than 10,000 MSMEs were actively engaged in increasing India's defence output by 2022. By providing them with amazing opportunities, MSMEs' participation helped government to expand in the horizons of innovation within the defence environment outside traditional players, so confirming that India has entered the global markets in the field of defence.[35] To encourage MSMEs and start-ups to further invest in defence manufacturing, the government earmarked Rs 1,500 crore in the FY 2023–24 budget from the allocation for procurement through domestic private industries (DPI). Additionally, in FY 2024–25, the Indian government allocated an extra Rs 400 crore for innovation in defence through the Acting Development of Innovative Technologies (ADITI) under the iDEX scheme. This scheme aims to engage start-ups, MSMEs and innovators in developing defence technology-based solutions, supplying the Indian military with innovative and indigenous technological advancements. For the current fiscal year, the government has allocated Rs 518 crore—a 450 per cent increase over FY 2023–24 to attract and support young, innovative minds.[36]

However, India has seen a considerable progress in constructing naval assets with the commissioning of the INS Vikrant aircraft carrier by Prime Minister Narendra Modi in September 2022. This carrier is the largest warship ever built in India's naval history, which is fostering new technological advancements within the Indian industry, benefitting both SMEs and MSMEs.[37] The Indian Navy's Warship Design Bureau has made significant

advancements with the Project 17A frigates, including the recent launch of INS Vindhyagiri in August 2023. However, despite these accomplishments, India's naval shipbuilding still faces dependencies on importing critical subsystems such as avionics, engines and navigation systems. This reliance on foreign suppliers for essential components remains a challenge to achieving full self-reliance in defence manufacturing, despite ongoing efforts to indigenise technology.[38]

Furthermore, from 2018 to January 2022, out of 191 capital acquisition projects, a significant majority, totalling 121, were indeed contracts and agreements with Indian companies.[39] This substantial proportion of acquisitions from domestic firms underscores the shift towards procuring defence supplies from within the country, supporting local manufacturers, and fostering an ecosystem that benefits the domestic defence industry.[40] In the fiscal year 2022–23, the government has sanctioned a minimum of five projects under the Make-I category to enhance R&D efforts led by the industry. A dedicated mechanism under the Directorate General of Acquisitions has been set up to ensure that budgets allocated specifically for start-ups and private enterprises are fully utilised. These plans are in place to refine the Quality Assurance (QA) processes, and to make them less intrusive and more efficient.[41]

The iDEX-Prime initiative also supported defence sector start-ups by financial assistance ranging from Rs 1.5 crore (about US$ 0.2 million) to Rs 10 crore (about US$ 1.3 million). A substantial portion of this capital procurement budget, which accounts for 68 per cent, is reserved for the domestic industry, which reinforces the commitment to indigenous manufacturing.[42] The process for industrial licensing is also streamlined, featuring extended validation periods to ease operational challenges for businesses. The launch of an indigenisation portal named SRIJAN, on 14 August 2020, which has showcased 10,940 items that were previously imported, signalling them as candidates for indigenisation. The Indian defence sector has shown a desire to localise 2,880 of these commodities, with the goal of making it easier for Indian businesses, notably MSMEs, to produce them domestically. With a view to giving primacy to indigenous design and development of defence equipment, the category 'Buy' (Indian-IDDM: Indigenously Designed, Developed, and Manufactured) has been accorded the highest priority in capital procurement cases.[43]

At the backbone of these technological advancements, and India's skilled workforce, which is boasting as one of the world's largest contingents of engineers and scientists, through which India is able to propel R&D

in the defence industry, making it one of the countries with the greatest groups of experts and scientists in the world.[44] These astute organisations are contributing to the advancement of innovation, pushing the limits of what is possible, and ensuring that India continues to be at the forefront of technological advancements in the defence sector.[45]

As the state of the global conservation landscape continues to change, there are a few themes that stand out as exceptional potential for India to specialise and expand its operations. The countries strive to defend their digital economies from the growing number of cyber threats, cybersecurity, which has emerged as a serious problem. India's prowess in Information Technology (IT) and software development positions make it a key player capable of offering advanced cybersecurity solutions tailored for defence applications.[46]

Another significant trend is the growing reliance on drones and Unmanned Aerial Vehicles (UAVs). These technologies have transformed modern warfare and defence strategies, offering versatile and cost-effective solutions for surveillance, reconnaissance and targeted operations.[47] India's debut into the drone technology industry, characterised by its domestic growth plans and strategic collaborations, demonstrates the country's ability to become a market leader in this developing market.[48]

The defence sector alone cannot advance through conventional methods; as the nation evolves, it must adopt emerging technologies. One of the most crucial areas is the semiconductor industry, which is foundational to the development of all other technologies. Under Prime Minister Modi's vision for the 'Atmanirbhar Bharat' initiative, India has been actively strengthening its collaboration in the semiconductor sector with global partners, including the US, Taiwan, the European Union and others.[49] With the US, for instance, there have been initiatives like the collaboration between Purdue University and the India Semiconductor Mission. In partnership with Taiwan, Tata Electronics and Taiwan's Powerchip Semiconductor Manufacturing Corporation (PSMC) have established India's first commercial semiconductor to manufacture 12-inch wafer fab in Dholera, Gujarat.[50] The Taiwanese government has entrusted PSMC with aiding Tata Electronics in building a 300mm wafer fab, setting a precedent for other Taiwanese companies to enter the Indian market. PSMC's role includes overseeing the fab's construction and earning fees for hardware and software, while adopting a hands-off approach to operations and customer orders. Additionally, India's technology hubs, like Bengaluru, have played a significant role in the global semiconductor supply chain, particularly in chip design.[51] To further solidify

its position in the global technology landscape, Prime Minister Modi's recent visit to Singapore has emphasised on collaboration with Singapore in technology, innovation and supply chains; this move is mainly in securing the investments, developing its infrastructure and fostering research and development to enhance its semiconductor capabilities.[52]

The integration of Artificial Intelligence (AI) and robotics into defence sector is also increasing by redefining the international military capabilities. Recently, Indian Army has collaborated with Rashtriya Raksha University to establish the Wargame Research and Development Centre (WARDEC) in New Delhi, which is a significant leap forward. This facility is a first of its kind in India, and will employ virtual reality and AI to hone war strategies and combat skills.[53]

India's commitment to integrating AI in defence is underscored by international collaborations, such as the India–US Defence Artificial Intelligence Dialogue, which promises to bolster cooperation in emerging defence domains. AI-driven UAVs and Lethal Autonomous Weapon Systems (LAWS) are being explored to provide strategic advantages in combat scenarios.[54] AI's pivotal role is also evident in border security, with advanced surveillance systems deployed along the frontiers to augment situational awareness and operational accuracy. The Defence Research and Development Organisation (DRDO) continues to be a key player, focusing on AI research through its specialised labs and collaborating with start-ups and academia to push the boundaries of defence technologies. To review and enhance the DRDO operations, the government has recently established a committee adhering to the principle of developing 'fit for purpose' domestic defence research and innovation capabilities that meet the 21st century's demands is at the forefront of the agency's objectives.[55] The Technology Development Fund (TDF) scheme has seen an increase in funding from Rs 10 crore to Rs 50 crore per project, encouraging the DRDO to initiate the ‹Dare to Dream' Innovation contest to nurture start-ups and innovative ideas. Moreover, a quarter of the defence R&D budget for the fiscal year 2023–24 has been allocated to academic institutions and the private sector.[56] However, reflecting on the nation's dedication of launching 75 AI products and technologies at the 'AI in Defence' symposium signalled India's readiness to embrace AI's transformative power. India's growing intelligence economy, supported by a strong IT industry, will certainly contribute to the development of smart defence equipment and arms control, thereby improving business efficiency and decision-making.[57]

In the space sector, India has demonstrated notable potential with its successful space missions. The Mars Orbiter Mission (Mangalyaan), which was India's first interplanetary mission, made it one of the few space agencies in the world to reach Martian orbit and was the first to do so in its maiden attempt.[58] Additionally, the Chandrayaan missions to the moon have further cemented India's position in space exploration. The first lunar expedition, Chandrayaan-1, led to the discovery of water molecules on the moon, and the successful lunar landing was achieved by Chandrayaan-3 mission, which landed near the moon's south pole.[59] These missions contribute to India's growing reputation in space technology and exploration. They also form a critical foundation for advancing India's capabilities in space defence, a field that encompasses the use of space technology and satellites for defence purposes, such as communications, reconnaissance and satellite-based surveillance.

India has the potential to establish specialised markets in the future, particularly in the fields of Electronic Warfare Systems, Naval Defence Technology and Defence Communication Systems, and with its expertise it is poised to play a significant role in these fields by leveraging its own resources and providing solutions to the challenges of international trade.[60] Significantly, the defence sector is currently undergoing a transformative era characterised by its robustness and adaptability to the global market. India is prioritising these important industries on its affordable pricing, specialised technology and trained workforce. These endeavours would not only bolster India's military capabilities, but also fortify its standing as a prominent participant in the international defence industry, and facilitate significant advancement, collaboration and prosperity.[61]

Exports Under the 'Atmanirbhar Bharat' Initiative

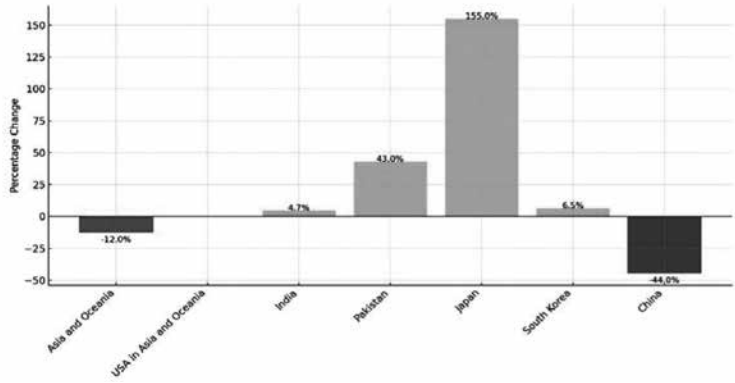
India's economy has grown to become the fifth biggest in the world, securing its place among the 'Fabulous Five' with a GDP reaching US$ 3.5 trillion. It is on track to become the third-largest economy by 2027, following the United States and China.[62] The value of the Indian aerospace and defence industry was also reported to be Rs 80,000 crores (about US$ 9.7 billion), for the fiscal year 2019–20, with the private sector contributing Rs 17,000 crores (about US$ 2.05 billion).[63] The government initiatives aimed at local production and revenue growth have seen a robust expansion.[64]

Between 2017 and 2021, according to the Stockholm International Peace Research Institute (SIPRI), India was one of the top global importers of

significant weaponry, accounting for 11 per cent of the international market. Although there is a 12 per cent reduction in defence trade for the collective region of Asia and Oceania.[65] Contrasting the USA's presence in Asia and Oceania, along with India, both of which experienced a modest increase in defence trade activities by 4.7 per cent. Pakistan's defence trade has seen a more considerable increase, at 43 per cent, suggesting a significant uptick in its defence trade activities. Notably, Japan stands out at a dramatic surge of 155 per cent in its defence dealings, which indicates an aggressive expansion or modernisation efforts. South Korea shows a marginal increase of 6.5 per cent, implying steady growth in its defence sector. In stark contrast, China exhibits a substantial decrease in its defence trade by 44 per cent, the implications of which will range from changes in its domestic defence procurement policies to variations in international demand or the geopolitical strategy (Figure 1).[66]

However, India's armament imports have seen a reduction, falling from US$ 19,432 million to US$ 15,356 million in the last five years. In response, the Indian government is actively working towards diminishing its dependence on foreign defence imports in favour of boosting locally manufactured exports.[67] The Defence Procurement Procedure (DPP) has been cited as a barrier by some in the private sector. Critics have argued that the DPP has not always been efficient or sufficiently incentivised for the private sector. This has led to calls for reforms to make the process more transparent, efficient and industry-friendly to better facilitate India's move towards greater self-reliance in defence manufacturing.[68]

Figure 1 Arms Imports during the period 2019–2023

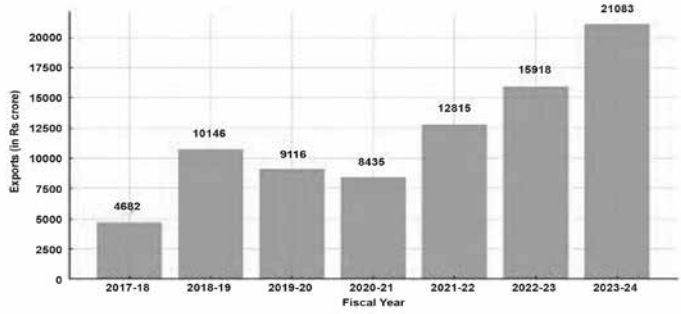


Source: Author's own. Data by SIPRI Arms Transfers Database, March 2024.

India's defence exports encompass a diverse array of items, including Personal Protective Gear, Offshore Patrol Vessels, Advanced Light Helicopters (ALH), SU Avionics, Bharati Radio, Coastal Surveillance Systems, Kavach MoD II Launcher and Fire Control Systems (FCS), alongside spare parts for Radars, Electronic Systems and Light Mechanical Parts, etc.[69] The MoD oversees 16 central DPSUs, which are dedicated to producing defence and internal security equipment and platforms. The Hindustan Aeronautics Limited (HAL) stands out as the largest among these DPSUs, operating under the DDP. Additionally, the Ordnance Factory Boards (OFBs), which include 41 Indian Ordnance Factories, is undergoing a reorganisation into seven DPSUs within the DDP. The private sector is represented by both Original Equipment Manufacturers (OEMs) and Foreign OEMs (FOEMs), known for their extensive expertise and excellence. The foundation of India's defence supply chain is built on over 12,000 MSMEs and 194 new defence technological solutions. As a result ofthe indigenisation efforts by DPSUs, OFB and Service Headquarters (SHQs) through their distinct indigenisation processes (In-house, Make-II and other Make-II), 1,776 components and spares were successfully indigenised in the fiscal year 2020–21.[70]

In the FY 2017–18, India exported at Rs 4,682 crore. A significant surge was observed in 2018–19, reaching Rs10,746 crore. However, there was a slight decline in the subsequent year 2019–20, with earnings at Rs 9,116 crore, followed by a further dip to Rs 8,435 crore in 2020–21. The exports were rebound sharply in 2021–22, climbing up to Rs 12,815 crore, and continued to rise to Rs 15,918 crore in 2022–23. The FY 2023–24, showcased the highest record of export earnings of Rs 21,083 crore (Figure 2).[71]

Figure 2 India's Defence Exports (in Rs Crore) from 2017–18 to 2023–24



Source: Author. Data by Ministry of Defence, Government of India.

India's export protection policy has also undergone significant changes to boost self-reliance and boost exports. The Indian government has introduced various reforms to improve the defence system and make it more transparent and efficient. These reforms include regionalisation of imports, prioritisation of domestic purchases, creation of strict regional lists to eliminate imports and approval of alternative methods.[72] These measures not only support domestic manufacturing companies but also increase export potential by improving the competitiveness and efficiency of Indian defence products. The increased FDI, changes in the purchasing process and promotion of defence equipment triggered a positive development in defence exports. While the process of becoming a major defence exporter is difficult, but India's recent policy reforms and export performance point towards a future with the global implications and good collaborations. It is very important to maintain focus on technological development, business expansion and operational efficiency to support and accelerate this development in international defence sector competition.[73] In addition, DPSUs are also encouraged to enter into partnerships with private organisations to increase productivity and innovation. The government has promised to strengthen DPSUs' role in exports, as evidenced by its plans to increase its financial independence.[74]

India's defence exports have shown promising trends in recent years, with significant achievements in several product categories and growing demand from international markets. A wide variety of products exported including bullet-proof jackets to 34 countries like Australia, Japan, Israel and Brazil; ammunition (ranging between 5.56 mm to 155 mm) to 10 countries including United Arab Emirates (UAE), Egypt, Indonesia and Thailand; Defence Electronics to the United States, United Kingdom and France; and Fast Interceptor Boats to Mauritius, Seychelles and Maldives. Among India's most significant defence exports is the BrahMos supersonic cruise missile, which has drawn widespread attention for its speed, range and precision. The joint India–Russia project has successfully positioned itself in the international arms market, with the first export deal signed with the Philippines for US$ 375 million in early 2022. This deal marks India's growing capability to provide cutting-edge technology to friendly foreign nations. Furthermore, ongoing negotiations with countries like Vietnam and Indonesia signify BrahMos' potential to shape future defence relationships, particularly in the Indo-Pacific. The BrahMos missile system, adaptable to land, sea and air platforms, stands as a versatile and high-impact weapon for defence forces worldwide. It will enhance India's influence in maritime security dynamics, positioning the country as a critical defence partner in regions like Southeast

Asia. Lastly, the export of Anti-Air System, Artillery guns, Pinaka multi-barrel rocket launchers (MBRL), Anti-Tank missiles, rockets and ammunition, Advanced Towered Artillery Gun System (ATAGS) to Armenia and other countries, has seen a consistent increase in the amount of defence-related goods exported, which reflects India's formidable capabilities in these areas (Figure 3).[75]

Figure 3 India's Major Arms Export Countries

Source: The Pulse India.

The government is now prioritising enhancement of indigenous defence manufacturing capabilities as part of its continuous efforts to reduce reliance on foreign imports of defence and military equipment. As part of this initiative, 107 more licences have been awarded to 358 private enterprises, bringing the total number of defence licences granted to 584 in support of the 'Make in India' initiative in the defence sector.[76]

The success of India's defence exports has also benefitted from economic growth in Southeast Asia, the Middle East and Africa. In 2023, India signed contracts with Armenia for supplying Pinaka multi-barrel rocket launchers, anti-tank missiles and advanced artillery systems. This deal, valued at over US$ 250 million, highlights India's growing reputation as a reliable defence exporter in conflict-prone regions. These regions show increasing interest in Indian defence products due to their high value, reliability and strengthening of social and economic ties.[77] India's focus on exports to friendly countries is in line with its broader goals of increasing its geopolitical influence and encouraging cooperation.[78] However, despite this success, difficulties continue in expanding the product range and diversifying export data. The

highly competitive global defence industry requires constant innovation, quality improvement and unwavering commitment to after-sales support, these are the areas where India is actively striving to enhance its investment nature.[79]

Strategies for Enhancing Defence Exports

The 'Atmanirbhar Bharat' initiative presents a significant opportunity to transform India into a major player in the global defence market. At first, this may appear to be a daunting task. Yet, to achieve this ambitious goal, a multi-pronged strategy is essential. Key elements of a comprehensive approach could include:

Strengthening Public–Private Partnerships (PPPs)
The dynamism of the private sector must be harnessed effectively to boost defence exports. India has had notable success in implementing Public–Private Partnership (PPP) models. This strategy should be further expanded by enhanced collaboration such as facilitating joint ventures between Public Sector Undertakings (PSUs) and private firms in R&D, production and exports. It is crucial to establish shared resources by granting commercial entities access to government-owned testing facilities and specialised knowledge. PPPs can also be reinforced by offering incentives, such as the implementation of special benefits like tax advantages or priority in export promotion programmes, in order to stimulate private sector involvement.[80]

Joint Ventures and International Collaborations
India should explore strategic alliances with international military firms to enter new markets, distribute risks and transfer advanced technologies. It should proactively research its 'Focus Markets' and implement 'Technology Transfer Safeguards' to safeguard intellectual property and facilitate efficient technology transfer.[81] The partnership between Tata and Boeing can enhance 'Atmanirbhar Bharat' and promote exports, while also enhancing self-reliance. This will help India navigate its defence deals effectively.

Focus on Niche Technologies
India is focusing on developing advanced cybersecurity solutions for defence applications and becoming a global exporter in this field. They also aim to

establish themselves as a centre for the advancement and trade of high-quality military drones with diverse functionalities. Additionally, India is allocating resources to enhance their space defence capabilities and counter emerging space-related risks.[82]

Infusion of Technology into the Defence Sector

The integration of technology into the defence industry is transforming the process of designing, developing and deploying defence systems. Cutting-edge technologies like AI, robotics, cybersecurity and quantum computing are elevating capabilities, enhancing efficiency and fuelling innovation. This integration not only enhances national security but also places the defence sector at the forefront of technological advancements, guaranteeing that nations stay competitive and ready in an ever more intricate global environment.

Quality Control and Timely Delivery

India's success in the global military sector relies heavily on the establishment of a reliable reputation. Therefore, it is necessary to adopt ‹International Standards' by ensuring rigorous adherence to international quality certifications (ISO, etc.) for defence products. It should also focus on enhancing the ‹Supply Chain Resilience' to develop robust and optimised supply chains that can withstand potential disruptions and guarantee on-time delivery.

Branding and Marketing

The aim is to utilise 'Branding and Marketing' strategies to establish a unique and favourable brand image for Indian military exports, with focus on highlighting innovation and dependability. It is advisable to create a specialised export marketing agency specifically for this objective.

Through the meticulous implementation of these policies, India has the potential to significantly enhance its defence exports and establish itself as a self-sufficient global defence supplier.

Challenges in Boosting Defence Exports

India is prioritising the increase of its defence exports in order to strengthen its position as a prominent player in the international defence market. Nevertheless, the procedure is riddled with several challenges, ranging from

regulatory hurdles to fierce global competitiveness. To fully unlock India's potential as a military supplier, it is crucial to address these difficulties.

Bureaucratic Obstacles and Procedural Delays

The greatest obstacle is the complex and cumbersome bureaucratic framework, which is governing export protection. Process delays caused by lengthy approvals and administrative delays may result in reduced production and export protection. In a corporation where completing orders on schedule is crucial, these kinds of delays may be inconvenient as well as time-consuming. Enhancing these systems and enhancing their efficiency can significantly contribute to India's global competitiveness.

Limited Investment/Participation by Private Sector

Historically, Indian military businesses have primarily been publicly owned entities with minor involvement from private entities. Despite the recent policy reform's objective of promoting increased involvement in cooperation via streamlining the investment procedure and offering incentives, there are still unresolved issues. These encompass challenges pertaining to the procurement of technology, securing funding and the arduous path towards safeguarding the environment. The expansion and involvement of the private sector are crucial for fostering innovation, enhancing production capacity, establishing a robust and competitive economy.

Competition from Defence Exporters

India faces stiff competition from defence exporters such as the US, Russia, France and Israel, which have long established good relationships with suppliers and have advanced technology and experience. These countries also have a strong defence system, supported by significant R&D investments, allowing them to provide a wide range of military technologies. For India to capture a significant share of the global defence market, it needs to not only match the technological capabilities and reliability of these suppliers but also create a unique selling point that differentiates its products.

Disruption in the Global Value Chains

The COVID-19 pandemic serves as a prime example of the recent challenges in accessing semiconductor chips, which severely disrupted global supply chains and led to widespread shortages. The production and distribution of these essential components were hindered by factory shutdowns, communication

breakdowns and a surge in demand for electronic devices during lockdowns. This shortage impacted several industries, including consumer electronics, defence and the automotive sector, exposing significant vulnerabilities in the global semiconductor supply chain. The crisis underscored the urgent need for greater resilience and diversification in chip manufacturing. For India, it was a wake-up call to become more self-sufficient and reduce dependence on other nations.

Concerns Regarding Technology Transfer and Protection of Intellectual Property

Technology transfer and protection of intellectual property (IP) has become a major issue in export protection. On the one hand, importing countries often require technology transfer as part of a defence contract to develop their own domestic resources. On the other hand, there are concerns about technology protection and data privacy. Balancing these conflicting interests is no small task. India needs to build a strong technology partnership to protect its interests while meeting the requirements of foreign buyers. This includes ensuring that technological change does not harm national security or the competitive advantage of Indian defence companies.

Addressing these difficulties necessitates the collaboration of the government, corporate sector and other stakeholders safeguarding the ecosystem. Implementing measures to streamline administrative procedures, foster private enterprise, enhance technical infrastructure and safeguard intellectual property are crucial advancements. In addition, the implementation of joint ventures, investments in R&D, and a strategic emphasis on specialised technologies that provide India distinct advantages can facilitate the country's progress in the competitive market and supplement export protection. Effectively tackling these difficulties will not only enhance India's export defence capabilities, but also enhance its self-governance, positioning it as a significant participant in the global defence alliance.

Policy Recommendations

In order to fully realise India's capacity as a significant defence exporter, it is crucial to implement certain governmental measures. A few approaches were described in the previous section for creating a comprehensive ecosystem for export growth; five key areas which could help in this regard are discussed next.

Strengthen Private Sector Participation

PPPs
Expand the role of PPPs in defence production by offering financial incentives such as tax rebates for private entities entering into joint ventures with DPSUs. These partnerships should focus on high-value items like missile technology, drones and space defence solutions.

Ease Regulatory Hurdles
Streamline the DPP and introduce faster clearances for MSMEs, particularly for defence start-ups and innovators under the iDEX scheme. This would also support faster market entry for indigenous technologies.

MSME Integration
Develop a comprehensive policy to foster MSME inclusion in defence supply chains. This should include dedicated funding and mentorship programmes to elevate their technical capabilities and integrate them into the larger defence ecosystem.

Leverage Defence Corridors for R&D and Production

Enhance Defence Industrial Corridors
The defence corridors in Tamil Nadu and Uttar Pradesh must be leveraged to attract greater FDI and international collaborations. Introduce specialised zones within these corridors for R&D hubs focusing on next-generation technologies such as AI, UAVs and cybersecurity.

Technological Hubs for Semiconductors and AI
Accelerate the collaboration between India and global semiconductor leaders, ensuring that India becomes a key player in the semiconductor supply chain, which is critical for modern defence technology.

Focus on Advanced Technologies for Niche Export Markets

Drones and UAVs
Make India a global leader in drone technology, offering versatile models for reconnaissance, surveillance and combat applications. Government policies should incentivise private companies through subsidies for R&D in UAV technologies.

Cybersecurity Solutions
Develop India as a hub for military-grade cybersecurity solutions, which are increasingly in demand for global defence applications. Government contracts can be directed towards indigenous cybersecurity firms, thereby creating a robust internal market that can later scale for exports.

Streamline Export Approvals and International Engagement

Revised Export Regulations
Implement a fast-track approval system for defence exports with clear categorisation for low-risk and high-risk technologies. By simplifying the approval process for experienced exporters, India can improve its responsiveness in the global market.

Diplomacy through Defence
Enhance defence exports by integrating defence sales into high-level diplomatic missions. Defence attachés stationed abroad should receive specialised training in market analysis and export facilitation, enabling them to promote Indian defence products effectively.

International Collaboration for Market Access
Forge new defence partnerships with key nations, particularly in Southeast Asia, Africa and the Middle East. Joint military exercises with potential buyers can showcase Indian defence technology.

Ensure Quality and Timely Delivery

Focus on Quality Assurance
Establish a national defence quality standard system aligned with ISO certifications to ensure that Indian defence products meet international benchmarks. This will build credibility and foster long-term relationships with international buyers.

Supply Chain Resilience
Strengthen India's defence supply chain by securing key materials and technologies domestically, reducing dependence on global suppliers and ensuring timely delivery of defence products.

The Way Ahead

This article has explored the transformative potential of the 'Atmanirbhar Bharat' initiative in positioning India as a key player in the global defence market. By leveraging indigenous defence production, India not only enhances its strategic autonomy, but also significantly expands its global outreach.[83] India's success in Missile Technology, Space Defence and Nuclear Capability has led to a focus on technology-driven government. This initiative improves India's defence capabilities and serves as a foundation for international collaboration and exports. Focusing on self-sufficiency in the defence industry will boost India's strategic autonomy and stimulate growth in its own defence and aerospace sectors. The private sector's involvement is expected to expand, reducing India's dependency on foreign imports and amplifying local manufacturing capabilities.

India's defence exports have shown promising growth in recent years, with a variety of products exported to 85 countries including, bullet-proof jackets, ammunition, defence electronics, Fast Interceptor Boats, BrahMos Supersonic Cruise Missiles, Anti-Air Systems, etc. These exports have also benefitted from economic growth in Southeast Asia, the Middle East and Africa, as these regions show increasing interest in Indian defence products due to their high value, reliability and strengthening of social and economic ties. India's focus on exports to friendly countries aligns with its broader goals of increasing geopolitical influence and encouraging cooperation.

However, achieving the vision of a 'Viksit Bharat' (developed India) by 2047 demands a resilient and self-sufficient defence sector. The ongoing transformation within the defence industrial complex is preparing a foundation for various stakeholders to support domestic technological innovation and foster strategic international partnerships.[84] While challenges remain, the concerted efforts of the government, private sector and international partnerships can overcome these hurdles. Looking ahead, India's defence sector is poised for unprecedented growth in exports,[85] contributing to a more balanced global defence ecosystem and reinforcing India's position as a strategic defence partner on the world stage.[86] This sector's expansion in exports will not only contribute to India's strategic autonomy, but also reinforce its role as a critical player in the global defence ecosystem.

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