

India's Rise in Global Manufacturing: An In-depth Analysis and Future Outlook

- Prof Arun Sehgal, Visiting Faculty, JBIMS, University of Mumbai



India has steadily climbed the ranks of global manufacturing, cementing its place as the world's fifth-largest manufacturing economy with a Manufacturing Value Added (MVA) of USD 456 billion in 2024 . This achievement reflects the country's progress in transitioning from a service-based economy to one where industrial and manufacturing capabilities are increasingly at the forefront. However, a significant gap remains between India and leading manufacturing nations like China and the USA. This article delves into India's current position in the global manufacturing landscape, the critical drivers behind its growth, the challenges it faces, and future predictions for the sector.

India's Current Standing in Global Manufacturing

India's manufacturing sector has witnessed considerable expansion, driven by government initiatives like Make in India, the Production-Linked Incentive (PLI) Scheme, and the broader Atmanirbhar Bharat (Self-reliant India) campaign. These programs have aimed to position India as a global manufacturing hub by promoting domestic production, reducing reliance on imports, and attracting foreign investment.

Despite these efforts, India's MVA, at USD 456 billion, is still dwarfed by China, which leads the global rankings with an MVA of USD 4,659 billion—over ten times that of India. Similarly, the United States, the second-

largest manufacturing economy, recorded an MVA of USD 2,497 billion in 2024. Germany and Japan, with MVAs of USD 845 billion and USD 818 billion respectively, also stand ahead of India .

However, the fact that India has climbed into the top five is noteworthy. It shows considerable progress, particularly given the country's late start in industrialization compared to its Western and East Asian counterparts. With ambitious plans to boost manufacturing as a percentage of GDP from the current 17% to 25%, India is poised to further solidify its position in global manufacturing in the coming years .

What is Manufacturing Value Added (MVA)?

Manufacturing Value Added (MVA) is a crucial economic metric that measures the net output of a country's manufacturing sector. It is calculated by subtracting the value of intermediate goods (raw materials and components) from the total production output, thus indicating the actual value created in the manufacturing process . MVA is a key indicator of the overall health and contribution of the manufacturing sector to a nation's economy, and it helps compare the industrial strength of countries on a global scale.

India's rise in MVA is a promising sign of its growing industrial strength, but the country must address several challenges to continue its upward trajectory.

Critical Factors Driving India's Manufacturing Growth

Several factors have contributed to India's rise in the global manufacturing rankings, including:

1. **Government Initiatives:** Programs like Make in India and the PLI Scheme have been instrumental in encouraging both domestic and international companies to invest in manufacturing in India. The PLI scheme, for example, provides financial incentives to manufacturers in key sectors like electronics, pharmaceuticals, and automotive components. The goal is to make India a global hub for the production of these goods by incentivizing investments that boost both production volume and quality.

2. **Favorable Demographics:** India has a young and growing workforce, which provides a competitive advantage in labor-intensive

industries like textiles, electronics assembly, and light manufacturing. By 2025, India is expected to have the largest working-age population in the world, further fueling its capacity for growth in the manufacturing sector .

3. **Infrastructure Investments:** The Indian government has made substantial investments in improving infrastructure, particularly in logistics, transportation, and energy. Projects like the Dedicated Freight Corridor (DFC) and the development of industrial corridors have reduced the cost and time associated with transporting goods across the country, making Indian manufacturers more competitive globally .

4. **Rising Domestic Demand:** India's growing middle class, with its increasing appetite for consumer goods, has created a strong domestic market for manufacturers. This local demand helps manufacturers scale their operations domestically before entering export markets, making the country a more attractive destination for investment .

Challenges Hindering India's Manufacturing Growth

Despite its achievements, India faces several challenges in scaling its manufacturing capabilities to compete with top global players like China and the USA:

1. **Infrastructure Deficit:** Although India has made progress in infrastructure development, significant gaps remain, particularly in rural areas. Poor connectivity, unreliable power supply, and inadequate industrial facilities increase operational costs and reduce efficiency for manufacturers.

2. **Labor Market Rigidities:** India's labor laws are often cited as a barrier to manufacturing growth. The rigidity in hiring and firing workers makes it difficult for companies to scale their operations flexibly in response to market conditions. Although the government has introduced labor reforms, implementation remains uneven across states .

3. **Lack of Advanced Technology:** While India has made strides in adopting digital technologies, the manufacturing sector still lags behind global leaders in automation, robotics, and Industry 4.0 technologies. Without greater investment in innovation and technology, Indian manufacturers may struggle to still be competitive globally.

4. **Global Competition:** India faces intense competition from other manufacturing hubs like Vietnam, Mexico, and Bangladesh, which offer lower labor costs and more streamlined regulations. To maintain its

competitiveness, India must continue to offer a conducive business environment and attract higher levels of foreign direct investment (FDI) .

Future Predictions for India's Manufacturing Sector

India's manufacturing sector has the potential to reach new heights in the coming years. Several factors point toward sustained growth:

1. **Increased FDI:** India has consistently attracted significant levels of FDI in its manufacturing sector. In 2021-22, India received over USD 81 billion in FDI, with a substantial portion going toward manufacturing industries like electronics, automobiles, and pharmaceuticals. Continued reforms and improvements in the ease of doing business are likely to attract even more investment.

2. **Shift in Global Supply Chains:** The COVID-19 pandemic exposed vulnerabilities in global supply chains, leading many companies to diversify their production bases. India is well-positioned to benefit from this shift as companies seek alternatives to China. India's large domestic market, growing infrastructure, and government incentives make it an attractive destination for companies looking to set up manufacturing facilities .

3. Digital Transformation in Indian Manufacturing

Digital transformation will play a pivotal role in boosting India's manufacturing competitiveness in the global arena. The adoption of advanced technologies such as Artificial Intelligence (AI), Machine Learning (ML), the Internet of Things (IoT), and robotics is already underway. These technologies, often referred to collectively as Industry 4.0, can streamline production processes, reduce operational costs, improve efficiency, and enhance product quality .

Indian manufacturing firms are increasingly investing in automation and digital solutions. For example, sectors such as automotive, textiles, and electronics are gradually integrating smart factories and data-driven manufacturing processes. The Indian government is also incentivizing this shift with various initiatives like the National Policy on Electronics and the National AI Mission, which aim to foster a digital ecosystem for manufacturers.

The future of Indian manufacturing will heavily depend on how quickly companies can adopt and integrate these digital solutions. While leading players have already begun this transition, there is still significant work to be done to ensure that small and medium-sized enterprises (SMEs) are not left behind. SMEs, which form the backbone of India's manufacturing sector, will need support in terms of investment, training, and infrastructure to adopt these innovative technologies effectively.

4. Sustainability and Green Manufacturing

As global awareness around climate change grows, there is increasing pressure on manufacturers to adopt sustainable practices. India is no exception to this trend. With its large manufacturing base, the country has a responsibility to reduce its environmental impact by embracing green manufacturing processes.

Green manufacturing refers to the use of environmentally friendly production methods, including energy-efficient machinery, waste minimization, and recycling. In India, some forward-thinking companies are already taking the lead. For instance, Tata Steel has made significant investments in reducing its carbon footprint using energy-efficient production technologies. Similarly, companies like Mahindra & Mahindra are promoting sustainable manufacturing practices through initiatives such as water conservation and waste management at their facilities.

The Indian government is also promoting sustainability through programs such as the National Electric Mobility Mission Plan, which encourages the production of electric vehicles (EVs) to reduce pollution. Furthermore, India has set ambitious targets under its National Action Plan on Climate Change to promote renewable energy and reduce greenhouse gas emissions from its manufacturing sector .

The global trend towards sustainability offers India an opportunity to position itself as a leader in green manufacturing. By adopting environmentally friendly practices, Indian manufacturers can tap into the growing demand for sustainable products and gain a competitive edge in the global market .

Future Predictions for India's Manufacturing Sector

With its growing industrial base, favorable demographics, and government initiatives, India's manufacturing sector is expected to witness significant growth in the coming years. However, to realize its full potential, India will need to address its existing challenges and capitalize on emerging opportunities.

1. **Increased Role of Technology:** As more companies adopt digital tools and automation, the efficiency of India's manufacturing processes is expected to improve dramatically. Industry 4.0 technologies will enable real-time monitoring of production lines, predictive maintenance, and greater flexibility in responding to market demands. Over the next decade, it is likely that most of India's leading manufacturers will transition to smart factories, further boosting productivity.

2. **Strengthening of Supply Chains:** India's strategic location and improving infrastructure make it well-positioned to become a global supply chain hub. As the world reevaluates supply chains post-COVID-19, companies are looking for alternative locations to reduce over-dependence on any single country, particularly China. India, with its growing manufacturing capabilities and supportive government policies, is poised to attract more foreign investments into its supply chains .

To support this shift, India has been focusing on upgrading its logistical infrastructure. Projects like the Dedicated Freight Corridor (DFC), which aims to create a more efficient freight transportation network, will significantly reduce transit times for goods across the country, making Indian manufacturers more competitive. The development of industrial corridors such as the Delhi-Mumbai Industrial Corridor (DMIC) and the Chennai-Bengaluru Industrial Corridor will also play a critical role in strengthening India's position in global supply chains.

Additionally, the government's National Logistics Policy is designed to streamline logistics operations, reduce logistics costs, and enhance transparency in the supply chain. With these initiatives, India is making strides toward creating a more robust, resilient, and efficient supply chain ecosystem, which will be crucial for attracting global companies .

The Production-Linked Incentive (PLI) Scheme, introduced by the government, also incentivizes multinational companies to set up manufacturing plants in India. By providing financial rewards for

companies that increase local production, the PLI scheme is attracting investments in sectors such as electronics, automotive components, and pharmaceuticals . As these sectors grow, they will enhance India's role in global supply chains, particularly in high-demand industries like semiconductors and renewable energy.

3. Growth in Exports: India's manufacturing sector is expected to play a crucial role in boosting the country's exports in the coming years. With a growing domestic manufacturing base and increasing government support, Indian manufacturers are well-positioned to tap into global markets, especially in sectors like electronics, textiles, automotive components, and pharmaceuticals. The Make in India initiative has already begun encouraging local manufacturers to produce goods for both domestic consumption and export, reducing India's reliance on imports and boosting its trade balance.

India's electronic exports have particularly gained momentum, with major global players like Samsung and Apple establishing production facilities in the country. In addition, India is emerging as a significant player in the pharmaceutical and automobile sectors, with companies like Tata Motors and Bajaj Auto exporting vehicles to several countries, while Indian pharmaceutical companies are supplying generic drugs to global markets .

Furthermore, India has signed several free trade agreements (FTAs) with key regions, including the Association of Southeast Asian Nations (ASEAN), Japan, and South Korea, to promote exports. India is also actively negotiating new trade agreements with the European Union, the United Kingdom, and Australia, which are expected to open up new markets for Indian manufacturers . These agreements will lower tariffs, increase market access, and make Indian products more competitive on the global stage.

4. Job Creation and Skill Development: As India's manufacturing sector expands, it is expected to generate millions of new jobs, contributing to economic growth and reducing unemployment. The government's Skill India Mission aims to train over 400 million workers by 2025, equipping them with the skills needed for modern manufacturing . This initiative focuses on areas such as automation, robotics, and precision manufacturing, which are essential for the future of Indian manufacturing.

However, job creation will only be successful if the workforce is adequately skilled. The advent of Industry 4.0 technologies means that future manufacturing jobs will require specialized skills in areas like data analysis, robotics, and AI. To meet these demands, India must invest heavily in education and vocational training programs that focus on developing a skilled workforce.

Moreover, India's National Apprenticeship Promotion Scheme (NAPS) provides incentives for employers to hire apprentices and train them in relevant industry skills. By encouraging collaboration between the private sector and educational institutions, this program aims to create a pipeline of talent ready to meet the demands of an evolving manufacturing industry .

5. Sustainability as a Competitive Advantage: Sustainability is increasingly becoming a key differentiator in the global manufacturing landscape, and Indian companies are beginning to realize the potential competitive advantages of adopting environmentally friendly practices. The global trend toward green manufacturing is being driven by consumer demand for sustainable products and stricter environmental regulations .

Several Indian companies have already started integrating sustainability into their manufacturing processes. Tata Steel, for example, has adopted energy-efficient production techniques to reduce its carbon emissions, while Godrej & Boyce has developed a range of eco-friendly products that emphasize energy conservation and minimal environmental impact .

The Indian government is also pushing for sustainable manufacturing through initiatives like the National Electric Mobility Mission Plan, which aims to promote the production of electric vehicles (EVs) and reduce carbon emissions. The shift towards electric mobility is expected to create new opportunities in industries such as battery manufacturing, EV component production, and renewable energy .

By positioning itself as a leader in sustainable manufacturing, India can tap into the growing global demand for eco-friendly products. This shift will not only benefit the environment but also give Indian manufacturers a competitive edge in global markets where sustainability is becoming a key purchasing criterion .

Conclusion

India's manufacturing sector is at a pivotal point, with significant advancements and opportunities for future growth. Rising to the position of the fifth-largest manufacturing economy with a Manufacturing Value Added (MVA) of USD 456 billion, India has proven that it can compete on the global stage . However, as the global manufacturing landscape continues to evolve, India must tackle several challenges, including infrastructure bottlenecks, labor market issues, and increasing competition from other nations.

India's future as a global manufacturing hub will depend on how well it can adopt digital technologies such as AI, robotics, and IoT to boost efficiency and innovation. Projects aimed at improving infrastructure and supply chains, such as the Dedicated Freight Corridor (DFC) and the National Logistics Policy, will be crucial in reducing operational costs and improving competitiveness . Additionally, India's shift towards sustainable manufacturing practices, driven by both market demand and government policies, will give its industries a competitive edge in environmentally conscious markets.

Export growth, fueled by free trade agreements and expanding production capabilities, along with substantial job creation through skill development programs, further underscores the potential of India's manufacturing sector. While challenges remain, the country is well-positioned to capitalize on emerging global trends and assert itself as a leading player in the international manufacturing arena .

With continued investment in infrastructure, technology, and sustainability, India's manufacturing industry could reach new heights, contributing significantly to both its economy and global supply chains. If successful, India may soon realize its vision of becoming a global leader in manufacturing and a driving force in the world economy.

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