INDIA'S MANUFACTURING SECTOR

GS 3 – Indian Economy and Issues relating to Growth, Development and Employment

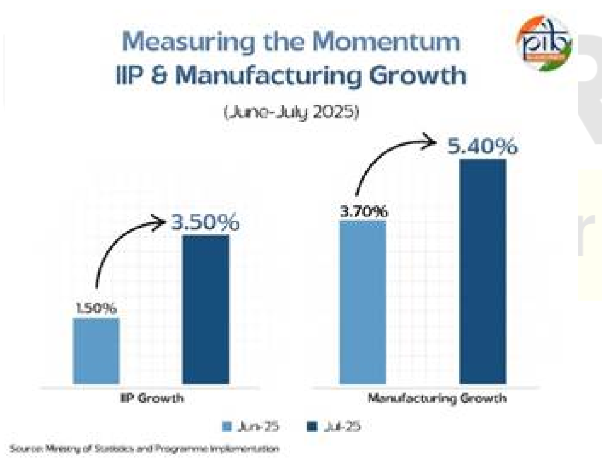
Context

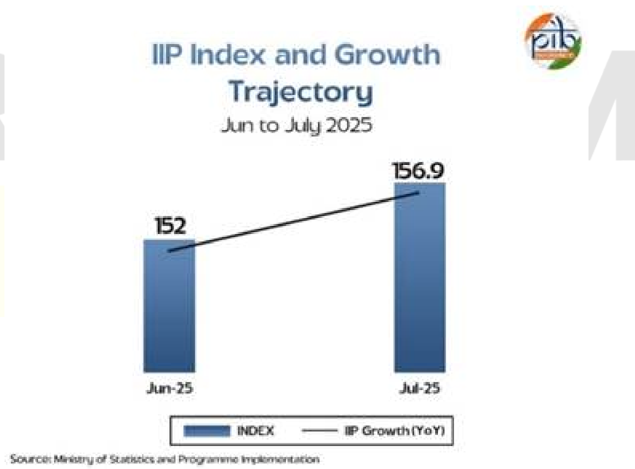
Recently, **NITI Aayog's Frontier Tech Hub** launched the roadmap *"Reimagining Manufacturing: India's Roadmap to Global Leadership in Advanced Manufacturing"*, which envisions India becoming a **top-three global manufacturing hub by 2035**.
It lays down a **10-year strategic roadmap** for integrating **frontier technologies**—AI, robotics, advanced materials, and digital twins—across 13 key manufacturing sectors to achieve **Viksit Bharat @2047**.

Current Status of India's Manufacturing Sector

Parameter	Data (2025)	Source
Share in GDP	16–17%	IBEF
Employment	27 million+	IBEF
IIP Growth (July 2025)	3.5% YoY	MoSPI
Manufacturing Growth (July 2025)	5.4% YoY	MoSPI
PMI (July 2025)	59.1 (16-month high)	PIB

- Major industries: **Automotive, Engineering, Chemicals, Pharmaceuticals, Electronics, Textiles, Consumer Durables.**
- Supported by **Make in India**, **PLI Schemes**, and **PM GatiShakti**.





Significance of the Manufacturing Sector

1. Driver of Economic Growth

- Manufacturing anchors India's growth engine with **16–17% GDP share** and is projected to reach **25% by 2035**.
- Sectors like **automobiles, engineering, and electronics** form the core of India's industrial ecosystem.

2. Employment & Inclusive Development

- Employment in manufacturing rose from **6% (2004–14)** to **15% (2014–24)** (PIB, 2025).
- **PM MITRA Parks** aim for 20 lakh jobs; **Footwear & Leather Mission** targets 22 lakh jobs.
- Manufacturing fosters **urban–rural, male–female inclusion** through skill-based employment.

3. Export Competitiveness

- Exports (Q1 FY26): **US$210.3 bn (+6% YoY)** driven by engineering, chemicals, electronics.
- **Electronics exports**: US$29.1 bn (FY24) → US$38.6 bn (FY25) → est. US$50 bn (FY26).
- India supplies **50% of global vaccines**, earning the tag *Pharmacy of the World*.

4. Investment & Industrial Ecosystems

- FDI inflows (2014–25): **US$748.8 bn**, with manufacturing FDI up **69%** in a decade.
- **PLI** disbursed ₹21,534 crore, catalysing ₹1.76 lakh crore investment.

5. Technology-Driven Competitiveness

- **Industry 4.0** tools (AI, digital twins, robotics) are enhancing productivity and quality.
- The HSBC PMI of 59.1 reflects **high business confidence and export order growth**.

6. Linkages & Multiplier Effects

- Strong interlinkages with logistics, energy, and services create multiplier effects.
- **GatiShakti & National Logistics Policy** enhance supply-chain efficiency.

7. Sustainable Industrialisation

- Initiatives like **National Manufacturing Mission** and **Net Zero 2070** align with clean-tech goals—solar PV, EV batteries, wind turbines.

Opportunities and Potential

1. Pathway to a $1 Trillion Manufacturing Economy

- India aims for **US$1 trillion manufacturing output by FY26**.
- Manufacturing could contribute **US$500 bn annually** to the global economy by 2030.

2. Global Value Chain Integration

- **Mobile exports**: ₹1,500 crore (2014–15) → ₹2 lakh crore (2024–25).
- India is emerging as a **China+1 alternative**, with value addition in electronics up to **70%**.

3. Industry 4.0 Transformation

- Adoption of AI, robotics, and advanced materials could add **US$1 trillion to GDP by 2047**.
- Initiatives: **SAMARTH Udyog Bharat 4.0**, **Digital Manufacturing Hubs**.

4. Green Manufacturing

- ₹20,000 crore allocated in Budget 2025–26 for renewable manufacturing.
- India targets **10% of global wind component demand by 2030**.

5. Expanding Domestic Demand

- By 2030, India's middle class will form **17% of global consumption**.
- E-commerce exports: **US$1 bn → US$400 bn annually by 2030**.

6. Investment Confidence

- FY25 FDI inflow: **US$81 bn**, of which **US$19 bn** in manufacturing.
- Global giants—**Google (Pixel Tamil Nadu)**, **Micron (₹23,771 crore Gujarat plant)**—boost investor trust.

7. MSME and Startup Synergy

- MSMEs → 30% of manufacturing output.
- **1.91 lakh startups**, generating **17.7 lakh jobs** (DPIIT, 2025).
- MSME–startup collaboration fuels **innovation and decentralisation**.

8. Infrastructure & Industrial Corridors

- FY25: ₹28,602 crore in new corridor projects.
- Logistics cost to be cut below **8% of GDP** by 2030 (World Bank LPI top 25 target).

9. Sunrise Sectors

Sector	Target
Semiconductors	₹76,000 crore PLI – first chip by Dec 2025
Defence Manufacturing	₹50,000 crore exports by 2029
EVs & Automobiles	4th largest global producer
Textiles & Leather	US$350 bn by 2030

10. Strategic Window (2025–2047)

- Timely adoption of frontier tech could make India the **top 3 globally** by 2035.
- Delay could cost **US$270 bn by 2035** and **US$1 tn by 2047** (NITI Aayog).

Challenges

Category	Key Issues
Infrastructure	High logistics cost (double that of China), power outages, and poor warehousing
Regulation & Policy	Complex clearances, land acquisition delays, and inconsistent implementation
Skill Gap	Mismatch between workforce skills and Industry 4.0 needs
MSME Constraints	Credit access, outdated technology, and low R&D
Competition	High input costs vis-à-vis Vietnam, China
Environment	Resource intensity, climate compliance (e.g., CBAM risk)

Government Initiatives

Initiative	Focus
PLI Scheme	Incentivises production across 14 sectors; boosts scale & exports
National Manufacturing Mission (2025–26)	Focus on clean-tech, cost of doing business, and quality manufacturing
Make in India (2014)	Enhances investment, innovation, and job creation
PM GatiShakti & Industrial Corridors	Integrated logistics, multimodal connectivity
National Logistics Policy (2022)	Reduces cost, improves export competitiveness
Skill India & PMKVY	Workforce training for modern tech manufacturing
Startup India & MSME Schemes	Tech and finance support for innovation and job creation
Green Manufacturing Drive	Solar PV, EV batteries, electrolysers, wind turbines

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Way Forward

1. **Accelerate Technology Adoption** – Integrate AI, robotics, and digital twins in cluster-based models.
2. **Empower MSMEs** – Simplify credit, promote digital manufacturing & R&D linkages.
3. **Enhance Infrastructure** – Fully operationalise GatiShakti and reduce logistics cost to <8% of GDP.
4. **Green Transition** – Expand clean-tech production aligned with Net Zero 2070.
5. **Skilling & Innovation** – Strengthen industry–academia partnerships; promote innovation hubs.
6. **Stable Policy Regime** – Predictable regulatory environment for domestic and global investors.

Conclusion

India stands at a **historic inflexion point** in its industrial journey.
By combining **frontier technology adoption**, **green industrialisation**, and **inclusive workforce development**, India can transition from a **factor-driven to a technology-driven economy**.
If executed with consistency, the manufacturing sector can anchor the vision of a **US$1 trillion manufacturing economy** and realise the dream of a **Viksit Bharat @2047**.

Source: [PIB]