

INDIAN ELECTRONIC MANUFACTURING: The Talk of the town



INDIAN EMS SECTOR – THE TALK OF THE TOWN

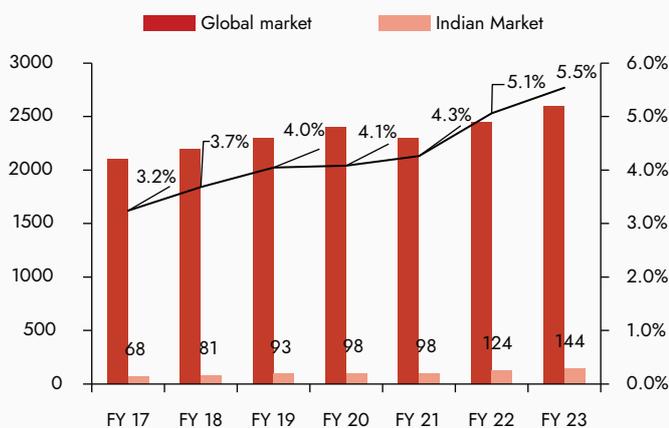
Dear Patron,

In the dynamic world of global electronics manufacturing, India has undeniably emerged as the paramount topic of discussion among industry cognoscenti. Post-COVID, the strategic relocation of manufacturing facilities from China to India, in accordance with the "China+1" strategy, has been a focal point of interest. India has risen as a compelling alternative for tech supply chains, innovation hubs, and joint ventures. This shift reflects both the growing concern for national security and the need for more resilient manufacturing strategies.

This relocation is not merely a trend; it represents a calculated shift, underpinned by the confluence of skilled labour, a burgeoning domestic market, and enticing government incentives. In this edition of our newsletter, we thoroughly examine this seismic transformation, delving deep into India's rapid ascent as the epicentre of electronic manufacturing.

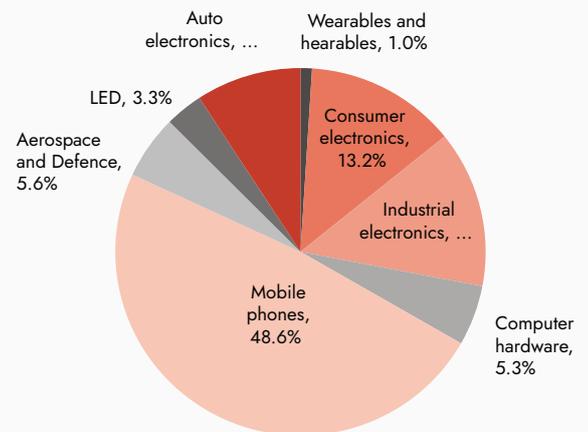
In several key aspects, India looks to mirror China in terms of its vast scale, robust legal infrastructure, substantial knowledge base, and longstanding tradition of manufacturing excellence. As the world's largest democracy, India's increasingly open economy, coupled with strong incentives in the tech sector, positions it to operate at scale and advance its role as a technological innovator. With this momentum, India aims to move up the value chain and explore long-term prospects in hardware production, including potentially venturing into semiconductor manufacturing.

Exhibit 1 - India's share in global electronic manufacturing



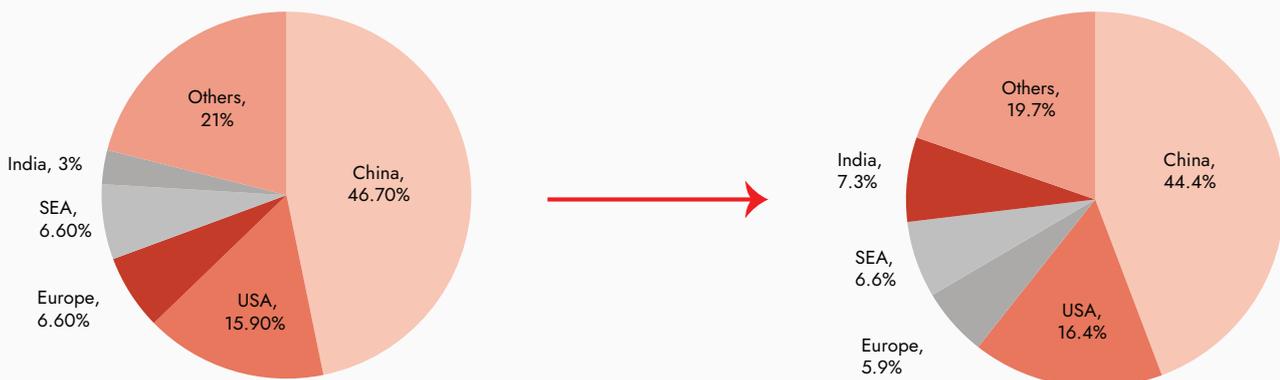
Source – Frost and Sullivan report on India's EMS sector

Exhibit 2 - Industry wise contribution to India's EMS sector



Source – Frost and Sullivan report on India's EMS sector

Exhibit 3 - India's current 2.8% share in global EMS market to touch 7.3% by FY28E



Source – Frost and Sullivan report on India's EMS sector

Technology supply chain transformation is not new, with Samsung moving phone production out of China 15 years ago, and rising costs in China and geopolitical risk have already prompted a significant transfer and build-up of production 'around' China, particularly in Vietnam. We expect this trend to accelerate in electronics manufacturing and see India as the next natural major stop for global companies, driven by supportive policies from the Indian government and promising demographics and structural changes.

Apple's interest could send a signal to companies looking to relocate from China. Google is also looking to diversify its production beyond China and Vietnam to India for its Pixel smartphones. Google has discussed its plans with Lava, Dixon Technologies, and Bharat FIH. Interestingly, even HP is looking to ramp up local manufacturing in India.

Exhibit 4 - Many global electronics companies have already started or announced facilities in India

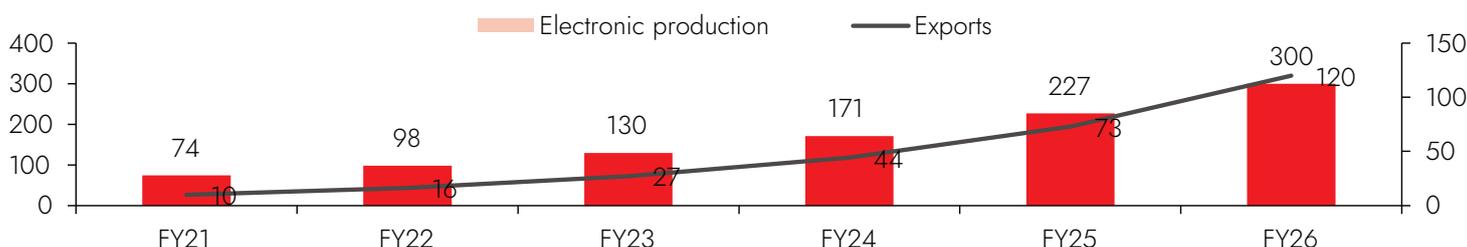
Company	India manufacturing facilities and plans
Apple	<ul style="list-style-type: none"> Indian govt said in Jan-2023 that it expects share of Apple's production from India to rise from 5-7% to potentially 25%. As per Bloomberg, Apple, through its suppliers Foxconn, Pegatron and Wistron, produced \$7bn of iPhones in India in FY23 and exported ~\$5bn of those.
Foxconn	<ul style="list-style-type: none"> Commenced India operations in 2015; has three plants, 50+ mobile assembly lines and 25K+ employees. Investing \$500mn to set up a new facility in state of Telangana.
Pegatron	<ul style="list-style-type: none"> As per Reuters, Pegatron plans to set up a second plant in Tamil Nadu just 6 months after opening the first one at \$150mn spend.
Samsung	<ul style="list-style-type: none"> Started manufacturing mobiles in India in 2007 and has its plant in Noida, Uttar Pradesh is the world's largest mobile factory. Plans to invest ~\$50mn in Tamil Nadu to manufacture 4G, 5G equipment.
Tata/Wistron	<ul style="list-style-type: none"> As per ET, Tata Group is looking to acquire Wistron's iPhone plant in India.
Dixon	<ul style="list-style-type: none"> Founded in 1993, Dixon is a leading Indian electronic manufacturing services (EMS) player. Dixon spent ~\$44mn in FY23E and JEF expects ~\$30mn capex in FY24E towards various PLIs and expansions. Focus on backward Integration: Currently, ~75% of Dixon's topline is OEM (prescriptive biz); Dixon is focusing on backward integration to improve profitability. Eg: For Motorola (Mobiles), Dixon is setting up a LDS line.
Cisco	<ul style="list-style-type: none"> Cisco has its second largest R&D centre outside of the US in India. Plans to start manufacturing in India, targeting \$1bn in combined domestic production and exports in the coming years.

Source – Google news search

Chip is the new oil. Electronics, and semiconductors as its building blocks, have become critical not only for the economic progress of a nation but also for its national security. India's electronics demand is accelerating, led by rising incomes and digital adoption. Net electronic imports rose to \$54bn in FY23, forming 21% of the trade deficit, next only to oil (43%).

Recognizing the rising importance of electronics, the Indian govt has embarked on a path to promote domestic manufacturing. The govt has set a target of raising electronics production to \$300bn by FY26 (FY23: ~\$100bn), which includes growing exports to \$120bn by FY26 (FY23: ~\$25bn). While targets seem ambitious, prudent policies have propelled India on the right path with electronics production and exports rising 3-4x in the last 7 years.

Exhibit 5 - India's production and export volume targets



Source – MEITY, GOI

WHY WAS INDIA LATE TO THE PARTY?

Though there has been a buzz of Make in India manufacturing, consensus would agree that we are slightly late to the party as India missed building an electronics component ecosystem. The majority of the electronic manufacturing in India is still assembly as India directly evolved from being an agrarian economy to a services-led economy due to a lack of manufacturing thrust from policymakers. Several factors led to this late shift to manufacturing such as:

1. India ranked low on qualitative factors despite low cost of factors of production:

In assessing a nation's potential to become a manufacturing hub, cost competitiveness is undeniably a pivotal factor. However, the dynamics at play extend beyond the mere reduction of production costs. India, historically, has faced challenges on multiple fronts that have hindered its ascent in the manufacturing arena. These challenges encompass the intricate interplay of labour skill levels, the ease of doing business, infrastructure reliability, regulatory complexities, and more. Moreover, the ease of doing business, entailing the labyrinth of regulatory intricacies, remains a notable impediment that companies must navigate. This demands streamlined processes, reduced bureaucracy, and a more business-friendly environment.

Exhibit 6 - Global qualitative business development indicators

Countries	Quality of labor score	Ease of doing business score	Infrastructure score ¹⁰	Infrastructure - Transport score	Infrastructure - Utility score	Risk and protections score
Unites State	1.67	2.00	2.22	2.00	2.67	2.00
Switzerland	1.67	1.67	2.44	3.00	2.33	2.75
United Kingdom	2.67	2.33	2.25	2.75	3.00	1.50
Canada	2.33	2.33	2.42	3.25	3.00	2.00
Germany	1.67	2.67	2.28	2.50	2.33	2.50
South Korea	2.33	3.33	1.50	1.50	2.00	2.00
Taiwan	3.00	2.33	2.78	3.00	2.33	1.75
Tapaln	2.33	3.00	2.25	1.75	2.00	2.50
Ireland	1.33	3.00	3.58	4.75	3.00	2.25
France	2.67	3.00	2.69	2.75	2.33	2.25
Malaysia	3.33	2.33	3.06	2.50	3.67	3.00
Iyaly	3.33	3.00	3.50	3.50	3.00	3.00
China	3.67	2.33	3.64	2.25	3.67	3.50
Mexico	4.33	4.00	4.44	4.00	4.33	4.25
India	5.00	4.33	4.42	3.02	5.00	3.75
Vietnam	4.67	4.33	4.31	4.25	4.67	4.75
Brazil	5.00	5.00	4.47	4.75	4.67	4.75

Source: Cost of Manufacturing Operations Around the Globe, KPMG LLP, 2020

2. Labour laws and lack of an adequately skilled workforce:

Despite having the lowest cost of labour globally, India ranked lower on labour literacy rate availability of skilled labour. Electronic manufacturing is a highly intricate and technology-driven sector that demands a skilled and specialized workforce. The intricate processes involved in designing, assembling, and testing electronic components necessitate a deep understanding of engineering, precision, and quality control. Skilled labour is indispensable for soldering tiny components, programming microprocessors, and ensuring the flawless operation of complex electronic devices. Barely one in five Indians in the labour force were skilled as per the HDR report of 2020, with the figure at 21.2% India stood at 129 among 162 countries as on 2020.

3. Inadequate infrastructure and local component ecosystem:

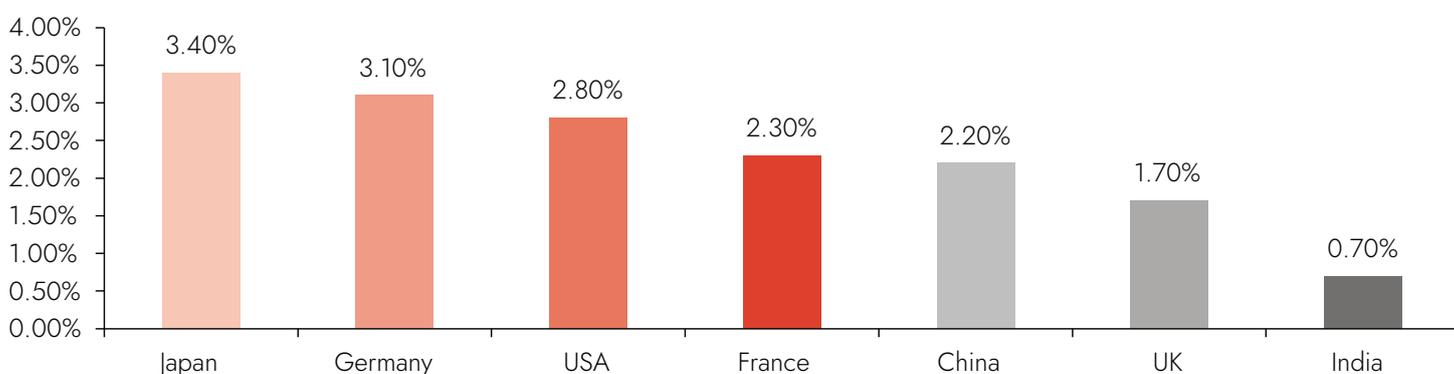
China and Vietnam have provided infrastructure support like buildings, plug-and-play-type infrastructure, and ready facilities, including onsite dormitories. Strong local presence of sub-assemblies and component ecosystems, whether capex or labour intensive, is an important factor for brands and manufacturers when planning to move production outside China. Currently, China is a global manufacturing hub, with >90% of global electronic products being produced there. This also implies supply chain strength currently located in China, resulting in a peer cluster effect and thus better cost and time to market.

4. Lack of significant investment in R&D:

India historically has been an agrarian and service-led economy and there was a lack of focus on the development of global design and innovation centers. India has attracted some investment in chips and design manufacturing, which has continued. For most other products, the design and intellectual property (IP) rights have been owned by the global parent and the Indian facility has operated a back-end manufacturing site.



Exhibit 7 - R&D spend by major economies as on 2022



Source – World bank report, 2022

HOW ARE WE COURSE-CORRECTING?

As the world 'de-risks' i.e., moves supply chains out of China, India is presented with a window of opportunity to realize its long-cherished ambition to become the factory of the world. India's leaders have thought for decades that the manufacturing-led economic growth model, which served Northeast Asian nations like China, Japan, and South Korea so well, can be replicated in India. Like China, India has an enormous pool of skilled and unskilled labour – a prerequisite to becoming a low-cost manufacturer and exporter.

FOCUS ON 'MAKE IN INDIA', TO 'SELL TO THE WORLD'

The 'Make in India' initiative was rolled out to encourage global manufacturers to move their factories to India. The initiative has made India a leading manufacturer of smartphones. Between 2014 and 2022, India shipped 2 billion domestically assembled smartphones and feature phones. In 2022, 98% of phones shipped in India were produced domestically and 16% of such phones were exported. To put this in perspective, in 2014 just 19% of phones shipped in India were domestically assembled. To replicate these countries' growth trajectories in India, several policies, and initiatives besides 'Make in India' are already in play.

PRODUCTION-LINKED INCENTIVE SCHEMES

The Production-Linked Incentive (PLI) – which aims to boost manufacturing in India by giving manufacturers subsidies, has had considerable success. When the PLI was introduced in 2020, it provided subsidies to just 3 categories of manufactured goods. Today, it covers 14 categories, including mobiles. The scheme has seen investments of 6900 crs much higher than the FY24 target of 5500 crs. During the scheme tenure, the scheme is expected to contribute to the production of more than 8 lakh crores, exports of 4.8 lakh crores, and generate more than 200000 jobs.

Exhibit 8 - PLI scheme outlay and companies approved

Sector	Scheme outlay (\$ bn)	Total companies approved	Key names
Large scale electronics manufacturing	5.1	32	Samsung, Foxconn, Wistron, Pegatron
Auto & auto comps	3.2	95	Maruti, Hyundai, M&M
Solar PV modules	3	14	Reliance, TataPower, JSW
Advanced chemistry cell	2.3	3	Reliance, Ola and Rajesh Exports
IT Hardware	2.1	14	Dell, Dixon, Lava
Pharmaceuticals	1.9	55	Sun, Dr.Reddy, Lupin, Cipla
Telecom hardware	1.5	42	Nokia, Samsung, Syrma, Tejas Networks
Food processing	1.4	182	HUL, ITC, Nestle, Dabur
Textile products	1.3	64	ABFRL, RWSM, Arvind
Drug intermediaries	0.9	35	Aurobindo, Macleods, Granules
Specialty Steel	0.8	27	TataSteel, JSWSteel, SAIL, AMNS
White goods	0.8	61	Daikin, BlueStar, Havells, Voltas
Medical devices	0.4	23	Philips, Panacea, BPL, Siemens

Source – MEITY, GOI

CREATING A SKILLED WORKFORCE

The government's national skill mission of 2015 is helping the country develop a skilled workforce needed for India to become a thriving 21st-century economy, it needs skilled workers in every sector, including in the tertiary sector. Its objectives are thoughtfully aligned with the government's vision to transform India into a dynamic thriving modern economy. However, a lot of work is still to be done. To make India an electronic manufacturing and development behemoth, super skills need to be developed and significant investment to be made in R&D spending.



Exhibit 9 - addition to working age population

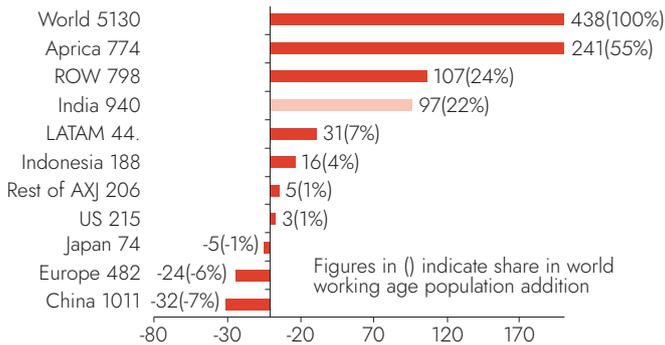
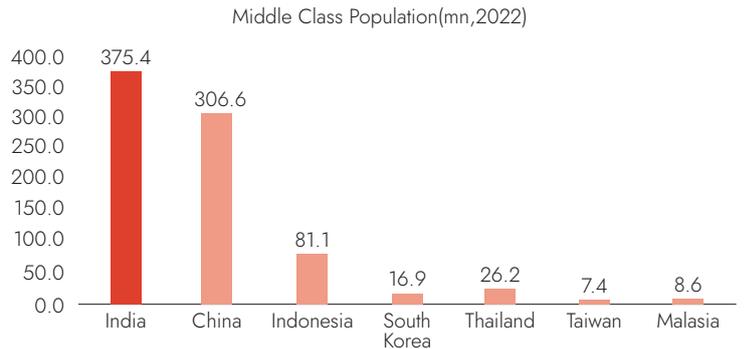


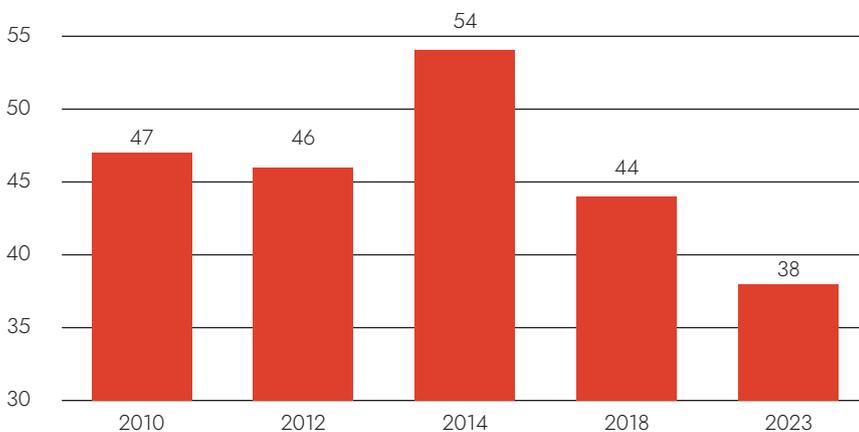
Exhibit 10 - india has the highest working age population



FOCUS ON INFRASTRUCTURE DEVELOPMENT

In addition to creating a more skilled workforce, the Indian government is making sweeping changes to address India's biggest constraint to growth – the country's poor infrastructure. Today infrastructure in India is being developed at a more robust pace than anywhere in the world – outside China. It's forecasted that the Indian government will increase capital expenditure on roads from .5% of GDP in 2020 to .8% of GDP in 2023. The country is adding 10,000 km to its highways every year. It's estimated that India will spend 1.7% of its GDP on infrastructure this year – twice as much as the USA and most European countries. The continued building of such infrastructure will lower the cost of transporting items across India and overseas.

Exhibit 11 - India's ranking in LPI improved to 38 from 2014



Source – MEITY, GOI

A PROTECTIONIST STANCE

Recently, to encourage foreign manufacturers of laptops and other electronics to start manufacturing in India, the Indian government hiked import duties on imported laptops. The import duties will kick in from November 1st, 2023. Following the announcement, 32 entities, including leading manufacturers like Dell, Asus, Foxconn, and HP, have applied for licenses to manufacture laptops, personal computers, and servers in India. Their entry into India will spur investment and create jobs.

These initiatives focus on boosting domestic manufacturing, especially in electronics and mobile devices, through incentives, subsidies, and regulatory reforms. This strategy has successfully attracted major smartphone manufacturers, creating jobs and fostering technology transfer.

CONCLUSION:

India's shift towards a full design-to-development model in electronic manufacturing is a promising stride, but it's important to remember that the path ahead is still long. While the buzz around manufacturing is encouraging, it's crucial not to get carried away prematurely. Sustaining this transformation will require consistent efforts in research and development, infrastructure enhancement, and skill development. By staying committed to these objectives, India can solidify its position in the global electronic manufacturing landscape and chart a successful course for the future.

India's EMS sector has also seen a similar rise with recent IPOs and veterans in this sector rising multifold times. Though we remain constructive on the sector, a key thing to watch out for is the transformation of the Indian EMS companies to a full-scale design-to-development manufacturer from an assembler as that would help in the development of a competitive moat. One should also consider the valuations at which these companies are trading. Outliving the recent euphoria, one should discount the company's future growth rate and cash flows over the long term to determine the sustainable multiples for these companies.

We continue to look out for interesting opportunities in this sector by granular understanding of the business model and its competitive strengths and moats.

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For any queries, please contact:

Umang Shah - Phone: +91 22 6623 3281,

Email - aiapms@ambit.co

Registered Address: Ambit Investment Advisors Private Limited -

Ambit House, 449, Senapati Bapat Marg,

Lower Parel, Mumbai - 400 013

Corporate Address: Ambit Investment Advisors Private Limited - 

2103/2104, 21st Floor, One Lodha Place,

Senapati Bapat Marg, Lower Parel, Mumbai - 400 013

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