



A CALL TO ACTION FOR
BROADENING AND
DEEPENING
ELECTRONICS
MANUFACTURING

BY THE
HONOURABLE
PRIME MINISTER
NARENDRA MODI



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INCREASING INDIA'S ELECTRONICS EXPORTS AND SHARE IN GVCS

TOWARDS AN ATMANIRBHAR BHARAT.

#MakeInIndia



Introduction

While addressing the heads of Indian missions abroad and stakeholders in the trade and commerce sector, Hon'ble Prime Minister Shri Narendra Modi on 6 August 2021 gave a clarion call on 'Local Goes Global'. He emphasized the need to 'increase India's share in the global supply chains in exports manifold [. . .] set up export hubs in the states [. . .] build a seamless and high-quality supply chain within the country [and achieve] growth of our share in the global value chain'.

The PM noted that, 'This is the time for us to establish a new identity of quality and reliability. We have to constantly try to add value to India's high value-added products for their exports in every nook and corner of the world.'

He underlined the significance of a stable policy for exports and identified four crucial factors for increasing exports and production. These were, making Indian manufacturing 'qualitatively competitive'; putting an end to logistics-related problems and thereby reducing costs; encouraging collaboration between the Centre, states, including exporters' councils, and the private sector; and improving access to international markets.

The PM specifically referred to the Production-Linked Incentive (PLI) scheme and its crucial role in 'increasing not only the scale of our manufacturing but also the level of global quality and efficiency [and to] facilitate the development of a new ecosystem of Made-in-India products [and] new global champions in manufacturing and exports' (emphasis added). He also referred to electronics as one of key sectors for specific focus in this context.



Electronics to Lead the Way

The electronics sector has the potential to become one of the top exports of India in the next 3–5 years, together with a number of products for which important export hubs could be created in India. The National Policy on Electronics (NPE) 2019 set the target of achieving a turnover of \$400 billion by 2025. This includes a targeted production of mobile handsets valued at \$190 billion, of which exports would be \$110 billion. NPE (2019) envisions to 'strengthen India's linkages with global trade, integrate with global value chains and build facilitative programmes and incentive framework to boost Indian ESDM exports'. The pandemic has pushed India back by two years and hence the NPE 2019 targets for electronics production in 2025 would need to be revised to realistic levels of about USD 250 billion.



An Action plan for Achieving the Honourable PM's Vision

This report identifies the major steps that would help in substantively achieving the PM's vision over the next few years. Chapter 2 discusses GVC issues. Chapter 3 examines the strategies required for export promotion of electronic products for achieving the targets of NPE 2019. Chapter 4 looks at the WTO-consistency of existing export- or manufacturing-supportive policies and suggests options for adopting them in a WTO-consistent way. Chapter 5 outlines the issue of domestic value added in the electronics sector. Chapter 6 looks at some other significant issues such policy stability, effective implementation of policies and Centre–State collaboration. Key lessons and recommendations are in Chapter 7.



Main Challenges in the Electronics Sector

As outlined by the PM, to build a large volume of exports, India must develop a large manufacturing base with a quantum jump in the scale of production and extensive participation in global value chains (GVCs). In the past, lead firms have mostly or entirely looked at India for its domestic market. This mindset is now changing and will have to be nurtured through suitable policy interventions. Electronics is among the most GVC-intensive sectors in the world, with its global value chains largely concentrated among a few countries in Asia. Electronics GVCs are amongst the longest in terms of the stages of inputs and tasks performed.¹ The PM emphasized scaling up and increasing exports, as well as domestic value addition. For all three, it is critical to 'shift the ecosystem' in the short term (1–4 years) while building skills and competency. With the experience and skills developed during this period, domestic companies can start plugging into GVCs from a stronger base. Lead firms² such as Apple or Samsung cannot generate the required scale of production for a major export boost without a significant part of the ecosystem shifting along with them, which includes their tiers 1 to 3 suppliers.

The geographical concentration of the electronics GVCs shows that most participants are in Asia. China and Vietnam are the most prominent among these. In 2020, China's and Vietnam's electronics exports (USD) were respectively 70 and 11 times that of India's.³ Most of China's and Vietnam's electronics exports come from GVCs. Shifting of GVCs to India under a China+1 FDI strategy of

¹ See Figure 2 in <https://voxeu.org/article/global-value-chain-transformation-decade-ahead>.

² Lead firms and their component manufacturers together comprise much of the ecosystem.

³ Based on HS 6-digit export and import data from UNCOMTRADE.

major global firms implies that augmenting the ecosystem in India would require relocation of major component and sub-assembly manufacturing mainly from China. This relocation is at present facing constraints.

Further, attracting GVCs requires open trade and investment policies. Tariff and non-tariff barriers can deter the movement of component and sub-assembly manufacturers. Any constraint on investment will also be a barrier to attracting GVCs. Stability of policies, reducing delays in GVC processes, and incentives, are very important for attracting FDI and ensuring efficient operations. India's policies should be WTO-consistent as the inconsistent ones can be challenged by competitors and create an uncertain investment environment. The PM also stressed this point by stating 'rationalizing export incentives and making them WTO-compliant will also boost our exports'.



A Strategy to Address these Challenges



Scale of Production and Export Orientation Are Key Areas for Policy Focus

A larger scale of production reduces costs and improves competitiveness, increasing the ability to export and link up with GVCs. This in turn paves the way for creating a larger scale of production.

1. A larger scale of production creates incentives for co-location of tiers 1 to 3 of the GVC within the nation, and helps prepare the conditions for quickly building the domestic ecosystem for the industry concerned. Interestingly, without such co-location of the lead firm and its suppliers within the nation, achieving a larger scale of operations is not possible.
2. A larger scale helps to achieve success in increasing the domestic value addition in the GVC. Experience of other countries shows that even an initial low domestic value addition (DVA) ratio can be converted into a large aggregate level of DVA with an increase in the scale of production. The scale of increase of exports from both Vietnam and China is so large that the absolute impact on domestic value addition is very significant compared to India's exports. Chinese electronics exports were about 80 times that of India in 2021. In 2001, Vietnam's exports of electronics were less than that of India (i.e. 80% of Indian exports), but by 2020 they had become 11 times the electronics exports of India.

With an increase in scale over time, China and Vietnam have also managed to increase their DVA ratios and thus the impact of the rise in exports on domestic value addition is larger with time. Estimates for Vietnam show that its DVA ratio in electronics is about 23 to 25% in 2020. With an

older industry than Vietnam, estimates of China's DVA ratio are higher at about 37 to 40%. About a decade ago, this average DVA ratio in China was below 30% for electronics devices.⁴ A much stronger focus on scale therefore is more suitable for achieving a large increase in DVA for the nation. It is in this background that the NITI Ayog Report on electronics had concluded that, "It is not important how much value per unit of a product a country adds. What matters is how much total value it adds."

Building Local Skills and Indian EMS: Strategy and Timelines

During the initial phase, the focus has to be on building scale and exports through GVCs established by lead firms and their tier 1, 2 and 3 manufacturers. These firms bring the requisite experience and train the local manpower. They also bring with them the experience of setting up production, production processes, operating high-tech manufacturing with customized machinery, and supply-chain procurement experience. During this period, discussions between the lead firms and local firms should be encouraged with institutional support to inform, engage and train the local producers, for local firms to become more significant parts of the GVCs over time. The Indian manufacturers will be well established and use their global experience in 4 to 8 years after tiers 1, 2 and 3 manufacturers and lead firms have established their operations within the country.



Major Policy Actions to be taken

Time is of Essence: Focus on Establishing Scale, GVCs and Export Momentum Within the Next Three to Five Years

Another important insight is that policy should focus on establishing the main operational conditions within the next three to five years. The window of opportunity is short and this time should be used to establish as large a part of the GVC as possible.

Relocate GVCs: Advantage India

1. GVCs – 1–4 years: Tiers 1, 2 and 3 manufacturers to be incentivized to relocate manufacturing capacities for finished products, sub-assemblies and components from any nation, including China, Vietnam, Japan, South Korea, etc., for a period of 1–4 years. The path taken could be 100% FDI, or joint ventures.

⁴ See for example, https://www.ecb.europa.eu/home/pdf/research/compnet/DEVEC_1670.pdf?57a5265fab96f74f6f7a2ab0464575d3

2. Develop a deeper Indian ecosystem (5–8 years): Encourage JVs with international manufacturers, incentivize Indian companies to manufacture global sub-assemblies and components to supply to GVCs for global consumption.

► Co-location is Essential for Rapid Increase in Scale and Skill Development

A manifold increase in scale and exports would require facilitating co-location of the lead firms and its main suppliers from tiers 1 to 3. This enables a larger level of domestic production, on the job learning by Indian firms and manpower, and a larger base for interaction of Indian firms to generate their skills and technical capabilities that will lead to their much deeper engagement with GVCs over time.

► A More Effective Perspective on Domestic Value Addition

There is an emphasis on measuring domestic value addition (DVA) primarily through its ratio to production or exports. In some cases, policy mandates the achievement of specific DVA ratios. This would introduce inefficiencies and reduce competitiveness, adversely affecting the momentum on scale and exports. Also, an initial focus on increasing India's domestic value-added ratio may lock it at a technological stage and prove to be counterproductive. For achieving the manifold increase in exports, the emphasis on ratio must change and DVA should be considered in aggregate terms, especially in the first phase of the co-location. The experience and linkages of Indian firms developed within this period will pave the way for a more inherently integrated process to raise the domestic value addition ratio. An alternative approach focused on scale, exports, and learning through on the job is more efficient than a policy which mandates DVA ratio.

► Reduce Tariffs for inputs and Reduce Policy-Related Operational Burden and Delays

The PLI programme emphasized by the honourable PM, was introduced to address the cost disabilities of the Indian electronics industry vis-à-vis the main competing economies like China and Vietnam. In this background, it is important not to introduce new cost disabilities that reduce the impact of PLI and delay participation in GVC, such as higher tariffs on inputs and restrictions to co-location of existing tiers 1 to 3 suppliers of the lead firms. This is especially important as India is among a number of alternative locations being considered by lead firms for connecting with global markets. Once relocation has taken place elsewhere, the China+1 strategy of FDI by major firms would also be less significant for making FDI decisions because the relocation would already have happened. Any change in the next 10 years is unlikely. Further, consistent with the Hon'ble Prime Minister's vision, States need to formulate appropriate export-related policies and incentive schemes, For instance, States could play an important role in the case of RoDTEP, where the existing rates do not remit the entire indirect taxes on power and transport (i.e. indirect taxes whose remission is allowed by WTO). To the extent that the Centre is unable to do so, States should augment RoDTEP for exporters. This can reduce costs by 1–2%. In an industry where assembly margins are only 5%, this reduction would be substantial. Further in terms of Centre–State policy collaboration, Central

policies have a much larger impact than those of individual states, and the Centre has the larger responsibility for customs, tariffs, and some major parts of the administration related to operational burden and delays. Policy changes at the Centre would give a major boost and serve as examples to states with respect to several policies related to the ease of doing business.

In particular, the full impact of tariffs need to be kept in mind. High tariffs only bring a marginal reprieve through import substitution. India's higher tariffs (especially those on inputs) result in lower levels of competitiveness, compared to competing countries with lower tariff levels. Thus, tariffs would reduce export possibilities and may actually increase imports. The Indian market for many significant electronics products is a small part of the total global market. A protected domestic market created by tariffs results in a lower scale of operations, leading to lower competitiveness and reduced export capabilities. Tariffs create difficulties for domestic suppliers to achieve the production level that is required to scale up for a globally significant presence in the export markets. Tariffs would thus create difficulties to achieve the Hon'ble PM's vision of a "manifold increase" in India's exports and scale.

► Create Stability of Policy Regime and Ensure Effective Implementation of Policy

In his speech on 6 August, the PM has recognized the importance of stable policies for exports. This requires that for a reasonable period of time policies that adversely affect investment and business plans (of GVCs, e.g. tariff increases) should be avoided. In addition, the policy toolkit should include consultation with the main stakeholders before changing policies. Policy approach should not create uncertainty, for instance by choosing policies that are likely to be challenged at the WTO and may need to be changed within the first two to three years of implementation. Further, stability and credibility of a policy regime requires that the announced policy be effectively implemented. This requires a monitoring mechanism that does not itself become burdensome, together with emphasis on addressing the shortcomings in policy implementation.

► Export Promotion: A New Perspective

The points made by the PM in his 6 August speech provide a more comprehensive approach to export promotion than the conventional approach, which focuses on creation of additional and new export markets (i.e. mainly creating additional demand abroad for Indian exports). The Prime Minister has included various supply side considerations as well, which are especially important because of the major export potential for electronics from India. They also suggest that for seeking additional export markets, export promotion councils should plan initiatives using the framework of GVCs, considering the experience of competing economies and strategies of successful EPCs in other countries. Countries like China and developed nations like the US and EU work out a medium-term strategy in consultation with major stakeholders; this practice should be adopted in India as well. Further, there should conceptually be an export promotion policy chain, with Indian Missions abroad being an integral part of this policy chain (as emphasized by the PM in his speech).

▶ Role of Indian Industry and Manpower is Critical

For the development of domestic firms that can participate in GVCs of electronics the Indian government would need to invest in supplier development programmes. They could begin by linking and handholding appropriate domestic firms in joint ventures with contract manufacturers to lead firms. In the short run, similar to China the Indian public sector firms in the technology space could also help transfer key technologies to local firms, especially mechanical parts in smartphones and other electronics. In the long run, however, the focus must be on improving the quality of the human capital base through investments in education and training at all levels. Efforts to strengthen vocational education, e.g. restructuring Skill India programme, may be particularly valuable in the medium term, while more advanced skills would be required to conduct research, product development and design in the long term. Policy support provided for technology development would be of key importance in this context. For example, China pre-selects a group of meritorious students to work with lead firms in their major projects. India could also provide a pool of local low-cost engineers to work on such projects as part of their curriculum.

▶ Indian Champion Firms Essential for Sustaining Deeper Domestic Growth Momentum

While global firms are essential for providing the foundation and momentum for India's exports and GVCs in electronics, domestic firms are essential for sustaining and expanding the domestic ecosystem over time. For this domestic champions play an essential role together with global champions. A beginning has to be made by large scale growth of medium and small firms, a process in which large firms play the main role as engines of growth. During their growth process, the key challenges faced by domestic firms are the disruptive influence of predatory pricing by firms with deep pockets, the relatively high cost of money for capital investment and working capital, and difficulty in getting access to funds especially when they face acute (and even unfair) competition. Small and medium firms are cash strapped in comparison to the larger firms. Access to funds should be made available to them through banks and an interest subvention scheme could be considered for domestic champions (or those selected for the PLI support programme). Further, technological development is the foundation for building and sustaining competitiveness. The government needs to provide support through, among others, an R&D fund to facilitate technology development similar

Conclusion

Given the critical role of electronics in other economic sectors (within electronics, automotive sector, medical devices), and its importance for implementing social policies and public services, it would continue to be a priority sector for many years ahead. This sector will also play a key role in implementing the Prime Minister's vision of a digital India. The electronics sector has the potential to become one of the top exports of India within the next 3-5 years, together with a number of products that could emerge as important exporting hubs.