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India's GVC integration: An analysis of upgrading efforts and facilitation of lead firms

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Working Paper 386

**India's GVC integration: An
analysis of upgrading efforts and
facilitation of lead firms**

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Abstract

India presents an unique example of manufacturing capability in most sectors, but low integration into GVCs. This paper examines the reasons for India's low integration into GVCs, especially in the manufacturing sector. It argues that one of the reasons for India's low integration into GVCs is its primary focus on the domestic market. The second reason for India's limited role is the role played by the lead firms. In this paper, we show that while India has several horizontal and vertical policies, there are fewer instances of GVC specific policies which lead to the encouragement of lead firms. The policy implications from the paper are the processes that emerging countries can follow in nurturing lead firms.

Key words: *Global value chains, industrial policy, integration, upgrading, lead firms*

JEL classification: *F16, F23, L23, L25, L60, O25*

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India's GVC integration: An analysis of upgrading efforts and facilitation of lead firms

Saon Ray and Smita Miglani

1. Introduction¹

International trade has been dominated by trade in intermediate goods and services since the mid-1990s. The emergence of global value chains (GVCs) has occurred, with the fragmentation of production, whereby value is added in multiple countries, leading to an increase in trade in intermediate parts and components. Intermediate inputs account for as much as two thirds of international trade (Johnson and Noguera, 2012) and increasing numbers of imported parts and components are embodied in exports (Feenstra, 1998). More than half of developing country exports in value-added terms involve GVCs. The share of trade in parts and components between developing countries has increased over four times in the last 25 years (WTO, 2014). Between 1995 and 2009, income from GVC-related trade increased six-fold for China and five-fold for India (OECD, WTO, and the World Bank Group, 2014).

The emergence of value chains has been uneven, with a limited number of emerging economies taking the lead in supplying intermediate inputs and final assembly (Pomfret and Sourdin, 2016). While there are several papers examining the reasons for the success of countries in engaging in GVCs, fewer studies (with the exception of OECD (2015)), document the reasons for countries failing to integrate into GVCs. GVC participation is driven by many factors, including size of the country, level of industrialisation and its structure, composition of exports, and positioning in the value chain, as well as the policy climate.

This paper examines the reasons for India's low integration into GVCs, especially in the manufacturing sector, using findings from a firm level primary survey. India presents an unique example of manufacturing capability in most sectors, but low integration into GVCs (Baldwin, 2011; Athukorala, 2013). This paper argues that one of the reasons for India's low integration into GVCs is its policy focus on the domestic market. This has repercussions in areas such as trade, industry, and infrastructure development – all important for GVC linkages. The second reason for India's low GVC engagement is the limited role played by the lead firms. A lead firm is one that governs the whole of a value chain and sells its final product. The literature has documented that these firms play an integral part in GVC integration (UNCTAD, 2013). While the literature also abounds with examples of the role played by lead firms in upgrading once firms are integrated into GVCs, there are fewer examples of how to foster lead firms or how countries can encourage the integration. GVC specific policies, as explained by Gereffi and Sturgeon (2013) point in this direction. In this paper, we show that while India has several horizontal and vertical policies, there are fewer instances of GVC specific policies which lead to the nurturing of lead firms. The policy

¹ The authors would like to thank Prof. Dev Nathan and Prof. Prema-Chandra Athukorala for their comments on the earlier draft.

implications from the paper are the processes that emerging countries can follow in encouraging lead firms.

The paper is organised in the following manner: in the next section we discuss the literature on lead firms and the role of industrial and other policies in encouraging GVC integration and upgrading. In section 3, we focus on the case of India. We explain the evolution of India's industrial policies, which then leads to a discussion of India's policies in the context of GVC integration. The final section concludes with policy implications.

2. Literature Survey

2.1 Role of lead firms

Lead firms have been defined as small, medium, or large firms that have forward or backward linkages with a large number of micro, small and medium enterprises (MSMEs) (USAID, 2008). GVCs are networked through lead firms. GVCs generally involve a key role for lead firms, often known under global brands, such as Levi in garments, Carrefour in food retailing, Ford in automobiles, or Ericsson in telecommunications (Ray and Miglani, 2018). Usually lead firms are multinational corporations (MNCs), and these firms create networks by breaking down the value chain into a variety of discreet functions and locating them wherever they can be carried out most effectively, where they can improve the firm's access to resources and capabilities (Ernst and Kim, 2002). From a policy perspective, how GVCs integrate into the economy is critical and the role of the lead firm is very important in this context (Taglioni and Winkler, 2016).

The earliest literature on GVCs discusses the role of lead firms in GVC integration and upgrading. For instance, their specific functions are discussed in the context of the buyer and producer-driver commodity chains and the different governance structures of value chains (Gereffi and Korzeniewicz, 1994; Gereffi, 1999a, 1999b; Gereffi et al., 2005). One of several factors that shape the way in which a country's labour market is impacted by GVC integration includes lead firms' strategies, apart from factors like the type of sector, domestic skills base, and the institutional environment (Farole, 2016). Lead firms form ties with the lower-tier firms in a GVC network and provide product, market, and technical information, with the expectation that lower-tier suppliers will maintain and improve performance or upgrade to meet global competitive standards. Lower-tier suppliers, in turn, invest in equipment, skills, and specialisation necessary for producing within the framework of a production network, with the expectation that lead firms will continue to use their outputs — and over time, provide opportunity for upgrading.²

Lead firms generally outsource 'commodity like' activities that add little value, while they retain direct control over intangible, high value added activities (Kaplinsky and Morris, 2001) as opposed to low value added activities. Lead firms emerged in large developing countries

² See <http://www.carecprogram.org/uploads/docs/CAREC-Notes/Nov2007-Value-Chains.pdf>. Also see, <http://services.iadb.org/wmsfiles/products/Publications/37813118.pdf> , http://natlex.ilo.ch/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms_193512.pdf

and led to increase in South-South and regional value chains (Cattaneo et al., 2013; Staritz, 2012). Some argue that the engagement of BRICS countries³ in the GVCs was partly due to the setting up of operations of lead firms in these countries following the slow growth faced in their own countries (Gereffi and Sturgeon, 2013).

The creation of lead firms is about upgrading and innovation, too. A related stream of articles published later has focused on emergence of learning capabilities, upgrading, and innovation systems in GVCs with the differentiating role of lead firms (Pietrobelli and Rabellotti, 2011; Azmeh and Nadvi, 2014). However, there are important asymmetries in sectors and chain segments. In the automobile and electronics sectors, global contract manufacturers' capabilities are crucial in first-tier suppliers and assemblers, while it is difficult for SMEs to access such chains (Kawakami and Sturgeon, 2011).

Yet, lead firms' activity in developing countries has not been sufficient enough in the GVC framework. Milberg (2004) has argued that lead firms tend to outsource low value added activities to developing countries, as a result of which the value added for even export oriented manufacturing activity does not increase. Several studies point towards the fact that it is possible for countries to tweak their industrial and other policies to foster greater engagement in GVCs. However, literature on the importance of creating lead firms in the context of GVCs, and their emergence process, especially in developing countries like India, has been missing. We refer to the literature available on the process of industrialisation which led to creation of lead firms in the case of India subsequently in this paper.

Lead firms have played a limited role in India's GVC integration, in line with its low participation rate. In the following sections, we argue how government policies can be implemented to enhance firms' integration into GVCs, upgradation within GVCs (in case already integrated) and encourage the emergence of lead firms and further increase their role in GVCs. The context is India, but in places can be generalised for the developing world. In particular, Gereffi and Sturgeon's (2013) framework is followed to examine the gaps in India's policy towards GVCs. We begin with an analysis of the industrial policy and other regulatory barriers.

2.2 Determinants of GVC integration

GVCs can offer developing countries opportunities to integrate into the world economy at lower costs – but gains from GVC integration are not automatic. Initial integration into GVCs typically leads to favourable structural transformation, as labour is moved to higher productivity activities. But not all countries manage to join GVCs; only those sufficiently close to being able to produce at world standard quality and efficiency levels are able to participate. In these cases, knowledge and technology transfers, which are often facilitated through FDI and openness to new imports, can trigger initial integration. However, developing countries initially join GVCs in low-skill tasks that can be easily shifted to competing countries, and thus their value capture can remain limited. Upgrading within

³ BRICS is the acronym coined for an association of five major emerging national economies: Brazil, Russia, India, China, and South Africa.

GVCs can then constitute a way to underpin development thereafter. Yet, upgrading to more sophisticated tasks with high value capture, such as R&D, design, or branding, can be hard to achieve (WTO, 2014). This is discussed in the next sub-section.

The varying degree of integration into value chains is determined by diverse factors. Some of these are exogenous in nature (such as a country's geographic location, market size, cultural characteristics, and endowment of natural resources), while others are endogenous, so that they can be influenced by government policies and firm level decisions. OECD, together with the WTO and UNCTAD in recent years (see OECD (2013a), OECD (2014), and OECD (2015) have analysed the development of GVCs – including factors determining countries' participation in GVCs and benefiting from such inclusion.

OECD (2015) assesses the determinants and economic effects of GVC participation across developing countries in five developing regions of Africa, the Middle East, and Asia, offering a starting point for policymakers to assess their country's engagement and consider policy options on how to benefit from the reality of increasingly fragmented production. The results of this analysis show that the key determinants of GVC participation are structural factors, such as geography, size of the market, and level of development. In the short to medium term, this suggests that policy can affect GVC participation only to a certain extent. However, trade and FDI policy reforms, along with improvements in the business environment, logistics and customs, intellectual property protection, infrastructure and institutions, play active roles in promoting further engagement (OECD, 2015; WTO, 2014).

Kowalski et al. (2015) show for 152 countries that there is positive change in domestic value added in exports due to positive foreign sourcing. This varies with the income level of the country: for high-income countries, the per capita domestic value added in exports is driven by the sophistication of primary and non-primary intermediates. In low-income countries, the sophistication of non-primary intermediates matters the most. FDI openness and GVC backward participation are closely related. India has a high regulatory restrictiveness indicator.

Participation in GVCs also depends critically on competence and competitiveness in performance of specific tasks, and thus on the education and skills of a country's workforce and its entrepreneurs (OECD, 2013b). For participation and upgrading within value chains, investment in innovation and knowledge-based capital, such as research and development (R&D), intellectual property, software, and data, as well as economic competencies such as organisational know-how and branding, are crucial.⁴

Investment in innovation is considered an important driver of GVCs. With the shift in demand to emerging markets, lead firms are required to define strategies to set up innovation centres in developing countries, which can provide a significant boost to developing countries' exports (Govindarajan and Trimble, 2012). For this, it is important that the host developing country be able to develop capacities, which rely on education and skills. It is

⁴ Since GVC trade is often associated with transfers of knowledge and technology, protection of IP is a major determinant for many industries.

often observed that the highest proportion of value creation in a GVC is found in upstream activities such as new concept development, R&D, or manufacturing of key parts and components, and in downstream activities such as marketing, branding, or customer service. Such activities involve tacit, non-codified knowledge in areas such as original design, creation, and management of cutting-edge technology and complex systems (OECD, 2014).

Labour skills score high (particularly in information and communication technology (ICT), textiles and apparel, and tourism sectors) as a factor influencing investment decisions. In general, countries that are tied in to GVCs generally have higher skill levels than those that are not, and participation in these value chains sharpens that distinction as firms and workers learn (OECD, 2014).

Standards play an important role in the functioning of GVCs. Lead firms rely increasingly on global standards to reduce complexities of transactions as they place new demands on value chains. These standards establish rules for information exchange, shape firm behaviour, and ensure quality in GVCs. They enable codification of product and process specifications to ensure that a range of global suppliers can consistently deliver quality end products. These can be both public and private, and need to be respected throughout the value chain at every stage of production. GVCs make a strong case for regulatory convergence, harmonisation, mutual recognition, and diffusion of international standards. Failure to comply with these standards can result in exclusion from the GVCs (Gereffi, Fernandez-Stark, and Psilos, 2011). Inadequate standards can raise the cost of local production and create unnecessary obstacles to trade by minimising the backward linkages and positive spill-over effects of FDI. In this case, inputs may have to be imported to meet the lead firm's standards, and local tasks confined to basic transformation/manufacturing only. On the other hand, too high local standards could constitute unnecessary obstacles to trade. The way out is adjustment through multi-stakeholder dialogue and cooperation, which is a gradual process that takes time (Lee et al., 2012; Cadot et al., 2012).

2.3 Policies for upgrading

“State action and inaction creates the enabling conditions that shape whether and how firms, regions and nations are able to engage with global markets, and their capacities to upgrade these engagements...this includes such policy arenas as wage-setting, tariffs, taxes (and tax concessions), infrastructure provision, education, training and research, and spatial planning (such as the establishment of free trade zones and business hubs)” (Neilson et al., 2014).

For countries that have embraced and integrated into GVCs, the challenge is getting the GVC to work for their country's development. For such countries, the issue of upgrading assumes greater importance, to which we turn next.

Upgrading is the process by which economic actors improve competitiveness and their positions in international hierarchy of value added activities. The concept is important in the GVC literature and refers to firms' capacity to make better products more efficiently and

move into more skilled activities (Kaplinsky, 2000; Giuliani et al., 2005). This takes place when firms or countries are already part of the GVCs. Learning and upgrading in GVCs can be influenced by the governance of GVCs and different mechanisms of this are likely to dominate in different types of chains (Gereffi et al., 2005). In the absence of upgradation, competition can lead to production shifting to lower-cost producers and countries.

There are different forms of upgrading that can be undertaken in a value chain, and not all of them may result in the creation of lead firms.⁵ The literature abounds with examples of upgrading and the strategies that firms should follow for upgrading. Again, it is also determined by the governance structure of GVCs. Summarising the literature, Pipkin and Fuentes (2017) make the following observation: while the literature argues that certain governance structures are crucial for upgrading, there are disagreements about whether lead firms assist or impede developing countries in upgrading. There are also questions regarding the developmental consequences of upgrading, especially on workers (Barrientos et al., 2010). However, as noted by Pipkin and Fuentes (2017), the literature has not been as prolific in the role of local institutions such as regulatory and industrial policy agencies that might affect the process. It has been recognised theoretically that such institutions play a role, but which behaviours are important for learning, institutional capacity building, and support for upgrading is yet to be fully understood.

Upgrading is not automatic, nor does it give a country the capability to carry out the entire range of activities to compete in the global economy (Navas-Aleman, 2011). In the context of India, in the chemicals industry, knowledge and production processes are proprietary and upgrading requires investment in R&D, while in garments, production processes are more standardised and upgrading can come from use of newer raw materials.⁶ The role of the lead firm here is of paramount importance in upgrading. In a quasi-hierarchical chain, buyers impose their conditions concerning product design, marketing, and branding on garment producers (Giuliani et al., 2005). Upgrading is likely to be lowest in such cases compared to a situation where the process is collaborative (Ray et al., 2016). Thus, the process of upgrading is sector specific and efforts to achieve it should be seen in the context of the sector that is being targeted.

2.4 Policies to nurture lead firms

The question of the role of policies in helping countries integrate and upgrade in GVCs may not be obviously connected with encouraging lead firms. This is the case of many developing countries, including India, as we will see later in the paper.

Gereffi and Sturgeon (2013) present a typology of industrial policies in emerging countries which has three components: first, horizontal policies which affect the entire national economy. Second, vertical industrial policies that are targeted at particular sectors or

⁵ Role of the governance structure in upgrading: Chain governance is one of the factors likely to influence a firm's upgrading chances (Bair, 2009; Schmitz, 2004).

⁶ Though we discuss the India specific examples in the next section, this has been presented here as it pertains to upgrading. For more details on the Indian case, see Ray and Miglani (2018).

industries, and finally, GVC oriented policies. While the first two policies can be termed as traditional policies, the third is aimed at improving a country's position in GVCs and includes possibilities of upgrading as well as improving the links across different segments of the value chain.

Countries can internationalise their domestic firms in two ways: first, countries (and firms) can export to international buyers, and second, firms can become domestic final producers that import intermediates.⁷

Emergence of lead MNCs and eventual GVC participation depends most importantly on factors such as creating a conducive business environment, attracting foreign investment, and internationalisation of domestic firms. FDI inflows have played an important role in the success of the outward-oriented development strategy in the developing world. FDI helps bring in new (risk-sharing, non-debt creating) capital flows, foreign exchange, easy access to foreign markets and foreign sourcing, and technology transfers (Prasad et al., 2006; Chia and Plummer, 2015).⁸

If the lead firm is an MNC (as is mostly the case), its backward and forward linkages with the host economy and its firms are very important. There are lessons from case studies of other countries in the literature (Nathan, et al., 2018). Two factors must be noted in this context. First, the role of lead firms in the governance of the chain and second, the nature of technology in a sector. For host countries, benefits from technology transfers, knowledge spillovers, and increase in value addition can translate into better jobs and so on only if the links of the lead firm with the rest of the economy are strong.⁹ This latter factor is crucial in adjudging the role of GVCs in a country's development. These linkages will determine the benefits of integrating with a GVC. The role of the government may be limited if the linkages of the lead firm with the rest of the economy remain weak (Taglioni and Winkler, 2016).

3. The case of India

India's integration into GVCs remains weak despite the strong growth in trade flows over the last two decades. Participation of a country in GVCs is defined by its engagement with a particular part of the production process, that is, trade in intermediary goods and services (Banga, 2016). This is defined as the sum of the share of foreign value added in gross exports (backward linkages) and the share of domestic value added in exports of intermediate goods

⁷ Four types of firms typically take part in GVCs: first, multinationals, relying on inputs from domestic suppliers; second, domestic suppliers to multinationals in the country; third, domestic suppliers that export, and fourth, domestic producers relying on imported inputs. There is also another group of players – contract manufacturers that produce fully assembled goods for large retailers.

⁸ Examples of policies followed in some countries include *Turkey*, where in previously lagging internal regions, such as the “Anatolian Tigers” (including Kayseri and Eskişehir), were notable for having strong entrepreneurial and manufacturing cultures, providing domestic investors with access to capital and business networks that allowed them to exploit the advantages offered by the industrial zone. Costa Rica, Malaysia, and Morocco, attracted a few large efficiency-seeking MNEs, through a strong investment promotion and key policies such as macroeconomic stability and skills development (World Bank, 2020).

⁹ There is greater sharing of blueprints, technicians, managerial practices, and transfer of tacit knowledge due to vertically integrated production systems (Taglioni and Winkler, 2016). However, spillovers of such knowledge will occur only under certain conditions.

(forward linkages). These linkages give a measure or ‘participation index’ of a country’s engagement in GVCs. The share of foreign value added embedded in the production of exports is low even compared with the 20 per cent average observed in developing and emerging market economies. The domestic value added embodied in foreign final demand was 20 per cent for India in 2011, while the foreign value added in domestic final demand was about 25 per cent for India in the same year (Taglioni and Winkler, 2016).

India’s participation index stands at around 40 per cent, which is obtained by combining the two measures from the buyer’s and seller’s perspectives. India’s backward and forward participation has been low, at 22 and 19 per cent respectively in 2009 (OECD, 2013b). Baldwin (2011) argues that since 1970, seven countries, China, Korea, India, Indonesia, Thailand, Turkey, and Poland, have gained more than one percentage point of world manufacturing GDP. Apart from India, the manufacturing sectors of all these countries are heavily involved in the international supply chains of Japan (the East Asians) or Germany (Poland and Turkey). The depth of integration in the South Asian region has barely increased since the mid-1990s, unlike in other income groups, signalling that the region has yet to gain momentum. Moreover, the complexity and quality of exported goods has been modest.

India fares poorly in the various logistics performance and efficiency indices compiled internationally. In various indicators, it ranks behind many developed Asian economies such as Japan, Korea, Taiwan, and even emerging markets such as China, Malaysia, and Thailand. In the World Bank’s International Logistics Performance Index (LPI) 2018,¹⁰ India ranked 44th among 160 countries with a score of 3.18, suggesting modest performance in the constituent parameters. Other indicators which suggest modest performance in logistics are the ‘Trading across Border’ parameter of the ‘Ease of Doing Business’ indicator¹¹ published by the World Bank; and the ‘Trade Facilitation Indicator’ developed by the OECD.¹²

¹⁰ The World Bank follows two approaches in the construction of this index – international and domestic. The International LPI approach compiles logistics performance at the gateways of countries (such as ports or borders), while the Domestic LPI approach enables assessment of the same within countries. The International LPI 2016 allows for comparisons across 160 countries, whereas the domestic LPI covers more than 125 countries across all income groups. The international LPI is the weighted average of the country scores, ranging from one (lowest) to five (highest), on six parameters relevant for policy regulation, indicating key inputs to the supply chain and supply chain performance outcomes.

¹¹ Each year, the World Bank publishes its ‘Ease of Doing Business’ indicator. It is a measure of the friendliness of the regulatory environment in economies to the starting and operation of business firms. The ‘Ease of Doing Business 2019’ index benchmarks across 190 world economies. Rankings are determined by sorting aggregate distance to frontier scores on 10 parameters. Higher rankings (a low numerical value) indicate better, usually simpler, regulations for businesses and stronger protections of property rights. The ‘Trading across Border’ parameter under this index records the time and cost (excluding tariffs) associated with the logistical process of exporting and importing goods, with three sets of procedures – documentary compliance, border compliance, and domestic transport. The survey covers two Indian cities, Delhi and Mumbai; and one city of the UK, London. In 2019, India moved up several places to the 63th spot.

¹² The OECD has developed a set of trade facilitation indicators that correspond to the main provisions of the WTO Trade Facilitation Agreement and reflect the state of the regulatory framework in different countries. The indicators are developed based on a regulatory database covering border procedures contained in the TFA, with inputs from public sources, governments, and the private sector, and fact-checked by covered countries. These cover the full spectrum of border procedures for countries and help governments identify areas for action to help boost trade flows by reducing trade costs and introducing other reform measures.

Hoda and Rai (2014, 2018) and the World Bank (2019) discuss at length the policy reform measures (related to land, labour, taxation, infrastructure development, and setting up SEZs¹³, among others) which can stimulate FDI inflows into manufacturing and improve the environment for domestic investment in manufacturing. The same measures are also considered useful in boosting competitiveness as a GVC location by strengthening MSMEs in the country and making it possible for multinational firms to outsource to these enterprises. The automobile industry has been a successful example of this.

3.1 India's policy framework

As has been discussed in the literature, the typology of policies presented by Gereffi and Sturgeon (2013) should have three components: first, horizontal policies which affect the entire national economy. Second, vertical industrial policies that are targeted at particular sectors or industries, and finally, GVC oriented policies. The industrial policy in India has followed the first and second objectives outlined by Gereffi and Sturgeon (2013). However, the third objective has not been followed by India – this requires specific policies in specific industries. This paper discusses some of the policies followed by India in the sectors that were chosen for this study.

India's industrial policy of the early post-colonial period aimed to achieve economic independence through industrialisation (Felipe et al., 2013). Its occupation of industrial 'commanding heights' allowed the Indian government to directly control investment (Singh, 2008). The first Industrial Policy Resolution in 1948 laid down the strategy of development to be followed in the country, which was broad in scope and gave primacy to the public sector. The Industrial Development and Regulation Act was enacted in 1951 and paved the way for the Industrial Policy Resolution of 1956. This was the first comprehensive strategy for industrial development in the country and emphasised the promotion of heavy industries. The Industrial Policy Resolution of 1956 classified industries into three categories: first, Schedule A under the Government, second, 12 industries which were to be progressively state owned, and the third category of all other industries to be driven primarily by the private sector but remain open for the state as well. The Industrial Policy Resolution also emphasised the role of small and cottage industries and the assistance that such industries would receive due to their role in promoting employment.

Industrial licensing played a key role in channelling the investment, controlling entry, and expansion of capacity of the industrial sector until 1991. The development vision which was implemented through the five-year plans of the Planning Commission laid primary emphasis on the development of capital goods industries, to enable indigenous industrialisation. These and other key industries were reserved for state ownership. The private industrial sector was allowed but was to fully conform to the five-year plans through the so-called 'licence raj'

¹³ "India's SEZ policy framework restricts market access to the domestic tariff area (DTA), thereby constraining value chain development. Suppliers and ancillary investors are unable to claim income tax exemptions. Such tensions, a direct result of competing policy objectives, have limited the development of linkages between zones and the DTA." World Bank (2019).

system, which controlled all the key aspects of the business (scale and location of investments, minimum and maximum outputs, and imports).

India followed a policy of import substitution until liberalisation in 1991 – this meant that imports were substituted with domestic production of goods through high tariffs and quotas on the same. Since 1991, this policy has gradually been withdrawn. The reservation of items for exclusive manufacture by the SME sector was done away with and disinvestment of PSUs was initiated. The liberalisation of the country also meant the removal of quotas and the reduction in tariffs of most items. When most of the industrial policies were liberalised, from the 1990s onwards, areas reserved for the public sector were narrowed down and greater participation by the private sector was permitted in core and basic industries.¹⁴ Additionally, a targeted FDI policy was pursued by the government (Rodrik and Subramanian, 2004; Kohli, 2006). These reforms paved the way for the foundation of modern-day lead firms in the country. Kathuria (2001) and Goldar and Banga (2018) through their research show evidence of existence of positive spill-overs from the presence of foreign-owned firms.

Public sector-led development of different industries as a tool for the self-reliant growth of the economy continued until the 1980s.¹⁵ Public sector institutions therefore acted as lead firms also for the sectors. In the second half of the 1990s, an end to the Small Scale Industries reservation was brought about based on the 1997 Abid Hussain Committee Report on Small Enterprises. The committee suggested that the policy of protection be replaced by a policy of promotion with adequate supply of credit, technology assistance, and low transaction cost. For the first time, the policy of focused development of clusters was suggested through the report.

Table 1A gives a summary of some of the recent policy enactments in India in the selected sectors, again using the typology given by Gereffi and Sturgeon (2013). These have been categorised into horizontal (some examples are the enactment of ‘Goods and Services Tax’ or GST, the ‘Make in India’ scheme to encourage in-house manufacturing; ‘Skill India’

¹⁴ Major liberalisation reforms were undertaken in 1991, and the investment licensing system and state monopoly were abolished in almost all industries. FDI was allowed in the majority of sectors (at first up to 49 per cent and later up to 100 per cent of ownership). Industrial location policy and the Monopoly and Restrictive Trade Practices Act were abolished (Kohli, 2006; Felipe et al., 2013). Trade was gradually liberalised – the average weighted tariff fell from 83 per cent in 1990 to 14.5 per cent in 2005.

¹⁵ India put little emphasis on competing in international markets and pursued an aggressive import-substitution (IS) policy, supported by high tariffs (the average weighted tariff was 83 per cent in 1990) and comprehensive import controls. FDI was highly restricted, especially following the 1973 Foreign Exchange Regulation Act. Such a degree of protection from international competition, when coupled with price controls, ensured significant margins to industrial enterprises, but there was no East-Asian-style government compulsion to improve performance. Some industrial policy measures during the IS period were successful. For example, the Indian government promoted the generic pharmaceutical industry by ‘freeing’ product patents through the 1970 Patent Act, setting up the Council of Scientific and Industrial Research labs, and introducing restrictions on MNCs (Chaudhuri, 2013). However, in many cases, industrial policy was constrained by ideological considerations. For example, in the electronics hardware industry, the policy favoured native innovation, even when it would have been much more effective to first acquire more advanced technologies through foreign licensing and then build on them, as the East Asian countries did. As another example, the Indian government restricted the scale of investment of large firms in order to protect small-scale enterprises, which were favoured for ideological reasons, rather than ensuring scale economies of factories set up, as was done in East Asia.

campaign to undertake large scale training of the workforce and; ‘Digital India’ scheme to incentivise digitalisation of economic transactions and record keeping in the economy.) Some policies aimed at all sectors have been in the areas of logistics sector reforms, setting up of the ‘Indian trade portal’, and ‘Investor facilitation cell’. Sector specific or vertical policies have been listed separately ahead.

Some of the recent measures taken by the Government of India include implementation of The Goods and Services Tax in 2017 and the Insolvency and the Bankruptcy Code, 2016.¹⁶ Other measures to facilitate the ease of doing business include initiation and simplification of online applications for the Industrial License and Industrial Entrepreneur Memorandum. Twenty services were integrated with the eBiz portal so as to facilitate the smooth functioning of the single window clearance for obtaining clearances from Government agencies. The number of documents for exporting and importing was reduced to three (Economic Survey, 2017-18, Ministry of Finance).

More recently, pro-industrial policy measures like the 2011 National Manufacturing Policy and the 2014 Make in India initiative aimed at attracting MNCs to set up production and design facilities through measures like further sectoral de-licensing, building of industrial corridors, and facilitation of greater government–business cooperation (especially through the Investor Facilitation Centre and the Invest India initiative) have become crucial for firm development. From Table 1A, we can make the following observations about India’s policy framework: while many of the recent changes in policy are a step in the right direction, the focus on facilitating national champions or lead firms is still clearly missing. Most of the recent GVC specific policies are increasing the cost of intermediates imports and can only be attributed to the lack of a holistic approach to this issue.

3.2 Findings of the survey¹⁷

To corroborate findings from secondary sources at sectoral level, a firm level primary survey was conducted in the years 2014 and 2015 to capture the elements of value chain activity in India. The pilot survey was conducted between January 2014 and March 2014 in three sectors, apparel, cables, and automotive components, covering about 25 firms. The main survey was conducted between August 2014 and February 2015 in 98 firms across six states in five selected sectors. The number of firms interviewed was 27 in the automotive industry, 11 in the reactive dyes and 22 in the specialty chemicals segments in the chemicals industry, 19 in the electronics (semiconductor microchips), and 19 in the formulations in the pharmaceutical industry.¹⁸

Table 1 gives an evidence of integration and upgrading across sectors in the country. The difference in upgrading in several of the sectors that were surveyed emerges from two

¹⁶ The Insolvency and Bankruptcy Code, 2016 is the bankruptcy law of India, which seeks to consolidate the existing framework by creating a single law for insolvency and bankruptcy. The Insolvency and Bankruptcy Code, 2015 was introduced in the Lok Sabha in December 2015.

¹⁷ The analysis in the paper is based on both the surveys as well as secondary sources listed in the paper.

¹⁸ 3 firms in the diamond industry were interviewed.

factors: first, the nature of the governance of the chain and the role played by the lead firms. Second, the nature of the technology and knowledge in each sector varies. For example, in certain industries such as the chemicals industry, the knowledge and production processes are proprietary and upgrading requires investment in R&D.¹⁹ However, in sectors such as garments, production processes are more standardised and upgrading can come from use of newer raw materials. Policy formulation must take these details into cognisance.

Table 1: Evidence of integration and role played by lead firms in GVCs; examples from India

Sector	Integration	Upgrading	Role of lead firms	Whether present, and examples of lead firms (MNC and Indian)
Automobiles	Yes	Yes	Catalyst for innovation, harbingers of technology, financial investment, and skilling workforce	Yes, a few (Tata Motors)
Chemicals (specialty)	No	Limited	Heralded innovation and stimulated demand	Yes, very few (BASF)
Diamonds	Yes	No	Skilling workforce and attracting important investors	No
Garments	No	Limited	Reduction of lead times, standardisation of the production process, and preferential transportation and logistics through long-term relationships	Yes, very few (Gap, VF)
Paper	No	-	Introducers of modern technology	No
Petrochemicals	Yes	No	Overcoming problems of feedstock access, attracting investment, and forward integration	Yes, very few (Reliance)
Pharmaceuticals (Formulations)	Yes	Limited	Significant role in establishment of IP compliance	Yes, a few (Ranbaxy)
Reactive dyes	Yes	No	Introduction of environmental standards and greener options	Yes (Sudarshan Chemicals)
Semiconductor microchips	Yes	No	Innovation leading to reduction in costs	Yes, a few (Texas Instruments)

Source: Authors' compilation based on survey

Table 1 also gives a snapshot of the role played by lead firms in selected sectors of GVCs, along with their examples in India. Although lead firms have been few, they have performed important roles in each of the sectors discussed above (Ray and Miglani, 2018). In the automobile sector, lead firms have significantly contributed to the development of supplier firms through transfer of technology and imports. In reactive dyes, firms like Atul, Sudarshan, and Clariant are integrated in GVCs through exports. Firms are trying to cater to their feedstock requirement by backward integration. While the pharmaceutical sector has been one of the topmost recipients of foreign investment domestically, R&D is critical. While Indian firms are doing more R&D than before, there has been no drug discovery in the country. Moreover, knowledge transfer has been limited and the industry is facing serious

¹⁹ In the section on barriers discussed later in this paper, these differences are exemplified by the responses received in the survey.

obstacles to upgrading. In Semiconductor microchips, the availability of skilled manpower at low cost has resulted in the successful integration into the value chain in this sector. There is a need to develop an indigenous design sector, as most semiconductor designing in India is pull driven while only 20% is push driven. There is also a need to encourage end-to-end product ownership within the semiconductor sector in India. The Specialty chemical manufacturing is moving eastward on the global map and India's share is increasing every year. While the current level of knowledge-sharing remains limited in the textile chemicals segment, which is dominated by global majors, in the construction chemicals segment, the story is different. Indian firms like Pidilite have also been able to develop brands in the construction chemicals segment. The Indian garments sector is an example of unsuccessful integration into GVCs. The sector is diverse with many clusters around the country and caters to a large domestic market, the neighbouring countries, and the Middle East. The standards for these markets are quite different from that of the larger markets of the US and the EU, to which only some firms cater. Lead time is very important for this sector, as is turnaround time in ports.

Table 2 gives a summary of factors impeding GVC participation in India using the typology developed by Gereffi and Sturgeon (2013) for industrial policies in emerging countries which has three components as discussed before:

Table 2: A summary of factors impeding GVC participation in India

	Impeding Factor	Evidence of obstacle
Policy Related		
Horizontal	Liberalised FDI policy	Electronics
	Trade policy factors	Automobiles
Targeted	Transport and infrastructure/logistics	All industries
	Institutional and legal frameworks	Electronics/IT
Natural		
	Geography – distance from shipping routes	All industries
	Climate	-
Firm-specific		
	Capability to meet international product and quality standards	Clothing, Specialty chemicals, Pharmaceuticals
	Access to finance	Dyestuffs, Electronics, Pharmaceuticals R&D
	R&D	Dyestuffs, Formulations (pharmaceuticals), Specialty chemicals
	Creating sustainable industrial clusters	Dyestuffs, Specialty chemicals
	Human capital related – low-cost knowledge base	Dyestuffs, Electronics
	Technology	Dyestuffs, IT/Electronics

Source: Authors' compilation based on survey

Table 3 focuses on the barriers that have been responsible for India lagging behind in integration into GVCs, as reported in the survey. It identifies government policy related, firm level, and other constraints, which have affected transfer of knowledge and learning capabilities in different sectors. Many barriers like rigid labour laws (automobiles) are common to trade in general, but some are specific to GVC trade. An example of the latter is

the inverted duty structure in the automobile sector. This has become more pronounced in the Budget announcements of 2018, which are discussed in Table 1A.

All firms surveyed in this research study were of the opinion that future support should target improving the business environment. Suppliers from all sectors ranked lack of access to finance (in particular, trade finance) as a major obstacle in the way of entering, establishing, or moving up value chains. SMEs in sectors such as dyes and intermediates emphasised the importance of effective support via financing (access and incentives for domestic and foreign investment). Labour force training was also recognised as an effective way to increase supply-side capacity.

Table 3: Summary of barriers based on our survey

Regulatory processes	Lack of incentives	Problems related with approvals	Others
Unfavourable business environment (Specialty chemicals)	Logistics inefficiency (Specialty chemicals)	Pharmaceuticals	Labour laws (Automobiles)
Long time at ports (Automobiles)	Inverted duty structure (Automobiles)	Dyestuffs	High taxes (Auto-components)
Aftermarket (Automobiles)	Access to finance (Specialty chemicals)	Specialty chemicals	Skill shortage (Dyestuffs, Pharmaceuticals, Automobiles (especially in metallurgical engineering))
	Power costs and irregular supply (Dyestuffs)	Problems related with environmental approvals (Pharmaceuticals, dyestuffs, Specialty Chemicals)	

Source: Authors' compilation based on survey

On the issue of standards,²⁰ firms in the pharmaceutical sector pointed out that standards are poor in India, quality checks are not well-defined, know-how for standardisation is lacking, and there is a lack of uniformity between products produced in different states as well as in different seasons. The need for quality control was emphasised.

India has faced a gamut of issues, ranging from lack of political will, resource (finance and skill) constraints, mismanagement of resources, technological backwardness, and operational issues in the past. These are also reflected in the trade restrictiveness and performance indicators published every year by organisations such as the World Bank and the World Economic Forum. Transportation and shipping costs and inadequate infrastructure were cited as major obstacles. Across all sectors, customs procedures rank high as a particular obstacle in bringing developing country suppliers into their value chains.

Another way to look at barriers to integration into GVCs is through costs. Costs (production, labour, transport, investment, and tax incentives) are the major drivers of lead firms'

²⁰ Findings of survey conducted between December 2013 and February 2015.

decisions to invest or source production in developing countries. Wage differentials, for instance, are primary drivers of the globalisation of production. The notion of costs encompasses all other factors. For example, high costs could result from a lack of infrastructure or competition in basic services. They could also result from excessive administrative burdens (including at the border) or strict labour laws (i.e. weak business environment); or a high level of insecurity or corruption. Some of these ‘costs’ have been addressed in the Indian context, as discussed in Table 1A.

It needs to be noted that there are a few issues which have been responsible for the absence or creation of lead firms. Nathan (2018) notes that the development of functional and manufacturing capabilities requires GVC appropriate industrial policy. Such a policy needs to focus on segments within sectors and support different forms of functional upgrading. OECD (2015) discusses how regional co-operation can be an effective strategy to promote integration into value chains by addressing regional bottlenecks. In this context, exercising caution and prudence while finalising international trade agreements would help the policymakers identify the right partners and markets for the set goals.

4. Conclusions

This paper examines the reasons for India’s low integration in GVCs, especially in the manufacturing sector. It argues that one of the reasons for India’s low integration in GVCs is its focus on the domestic market. In the case of large markets like India, sometimes it is enough for firms to cater only to the domestic market, especially if there are barriers to GVC integration. This rules out the possibility of the country being part of any domestic or regional value chain and the associated loss of benefits in the process. The need of the hour is to integrate into GVCs, to lift productivity levels across sectors and create jobs. Greater participation in GVCs can help foster structural transformation, for instance through export diversification, and the possibility to absorb technology and skills from abroad.

As outlined earlier, India’s trade and manufacturing policy has primarily targeted the domestic market. This has also been true for the FDI policy. Unlike other countries such as China or Vietnam, whose FDI policy has been focused on inviting MNCs with GVC linkages to their countries, India has not really been selective about its approach.

The second reason for India’s limited role is the role played by the lead firms. In this paper we show that while India has several horizontal and vertical policies, there are fewer instances of GVC specific policies which lead to the nurturing of lead firms. The policies followed by India have not been particularly conducive to encourage GVC integration or the development of lead firms.

The findings of this paper suggest that India can do a lot to facilitate GVCs simply by coordinating the activities of different policy-making and implementation bodies. Important areas of reform are reduction of the administrative burden associated with traceability of products by measures such as increasing the staff; harmonisation/mutual recognition of standards along the value chains; and reduction of barriers at the border, including customs

and trade facilitation processes. The need for enhancing investment in R&D was emphasised repeatedly by firms, particularly in the pharmaceutical and specialty chemicals segments.

In an integrated approach to be a part of GVCs, the government needs to specifically select and attract the GVC linked firms – the large sellers as well as large markets or buyers of the produced goods. This kind of approach will forge links between local and global lead firms. A second step in this would be ensuring inter-ministerial coordination in taking policy decisions which stay aligned to the GVC integration priorities.

The policy implications from the paper are the process that emerging countries can follow in nurturing lead firms. GVCs do not respond to piecemeal approaches to policy changes. Rather, a holistic approach is needed, in cooperation with the international community and businesses. Many of the barriers have resulted from the fact that India has adopted a largely piecemeal approach to policy-making with regard to value chains till now. Targeted policies have been few or non-existent in the case of India. A complete ‘whole-of-the-supply-chain’ policy approach is needed. Indian policymakers need to examine how lead firms can be encouraged in some sectors, while in others, there is a need for upgrading within the value chain.

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Appendix

Table 1A: Some recent policy enactments

Horizontal policies – GST 2017, Labour reforms – Unified labour and industrial portal, Labour Inspection scheme 2014, Make in India 2014, Skill India 2015, Digital India 2015, IPR 2016, Sagarmala 2015, Bharatmala 2017, FDI policy reforms (various years)		
GVC policies aimed at all sectors – Logistics sector schemes, Indian Trade Portal 2014, Investor Facilitation Cell 2014.		
	Sector specific/ vertical policies	GVC related sector specific policies
Automobiles	<ul style="list-style-type: none"> • Automotive Mission Plan 2016-26 • National Electric Mobility Mission Plan (NEMMP) 2020 • Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles • The National Automotive Testing R&D Infrastructure Project (NATRiP) • New Green Urban Transport Scheme, 2017 	Customs duty on specified parts/accessories of motor vehicles, motor cars, motorcycles increased (from 7.5 to 10 and 15 per cent), CKD imports of motor vehicles (10 to 15 per cent), CBU imports of motor vehicles (20 to 25 per cent), trucks and buses radial tyres (10 to 15 per cent), proposed to increase in Union Budget 2018-19
Chemicals (specialty) including dyes	<ul style="list-style-type: none"> • Policy to establish PCPIRs 	-
Diamonds	<ul style="list-style-type: none"> • Special Notified Zone (SNZ): opened in Mumbai in December 2015. • Development of 310 National Occupational Standards (NOSs). 	Customs duty on diamonds including lab-grown semi-processed, half-cut; non-industrial diamonds including lab-grown (other than rough diamonds), cut and polished diamonds proposed to be increased from 2.5 to 5 per cent (2018).
Garments	<ul style="list-style-type: none"> • Scheme for Integrated Textile Parks for funding of infrastructure, buildings for common facilities. 74 textile parks approved, of which 18 are operational, 32 under implementation. • The Integrated Skill Development Scheme to provide skills to 26.75 lakh persons between 2010-11 and 2014-15 for employment on textiles sector. • Amended Technology Upgradation Fund Scheme for textiles industry (ATUFS) approved in January 2016 to provide incentives to entrepreneurs for upgrading technologies. 	Customs duty on silk fabrics proposed to be increased from 10 to 20 per cent (2018).
Petrochemicals	<ul style="list-style-type: none"> • PCPIR, Setting up of “Centres of Excellence” for research. 	-
Pharmaceutical (Formulations)	<ul style="list-style-type: none"> • The National Pharmaceutical Pricing Policy, 2012. Regulation of prices of drugs on the basis of regulating prices of formulations. 	-

Source: Authors' compilation

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