Unlocking the GVC Potentials in India: Role of Trade Facilitation

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1 Introduction

Global value chains (GVCs) popularly refer to international production sharing, a phenomenon where production is broken into activities and tasks carried out in different countries (OECD, 2013a, 2013b, 2021). An open international trade and investment policy is critical for any economy-aspiring global economic integration through GVCs. Over the years, trade openness has proved to be an important determinant of Foreign Direct Investment (FDI) inflow in many developing economies. Countries like South Korea, China, Thailand, Malaysia, Mexico, Chile, and now Vietnam have successfully leveraged their open trade and investment policy to integrate into the global production networks. India, which has potential and has shown promise to emerge as a major manufacturing and export hub, has the scope to improve its response through necessary, timely trade policy reforms and ease of doing business.[1]

India's GVC participation is in a nascent stage and it is imperative for India to enhance its participation in GVCs.[2] Presently, a comparison of India with other countries reveals that GVC participation on its own is inadequate to make India a major location for GVCs, such as China. Compared with Vietnam, it is clear that while an increase in FDI has played a critical role for both India and Vietnam, the orientation of FDI is different among these two economies. In Vietnam, FDI is export-oriented, while in India, it is primarily oriented towards the vast domestic market with a consumer base of about 500 million people.

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[1] Results of the study by Mitra et al. (2020) indicate increasing GVC participation can positively impact the economy and contribute to raising per capita income, labor productivity, investment, and exports.

[2] Refer, for example, Mitra et al. (2020), Niti Aayog (2020), etc.

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Why is joining GVCs so important for India? First, GVCs make companies increasingly reliant on imports of intermediate goods, that is, goods that are sourced for the purpose of serving as inputs for the production of other goods. Second, via this mechanism, GVCs have been depicted as facilitating trade liberalization,[3] reducing industries' demand for the use of trade remedies,[4] and helping countries to achieve deep economic integration.[5]

For increased integration into GVCs, a combination of initiatives linked with domestic and international policies are important. These include improvement in trade facilitation, open FDI regime, developing domestic capacities to build ecosystems in specific sectors, and good governance principles including timely policy response.[6] Interestingly, a focus on GVCs becomes an important frame of reference for all the components of such a policy response. The five important essentials to facilitate GVCs are: trade policy, investment policy, market size, connectivity, and technology.[7]

The recent pandemic has had a major impact on labour-intensive value chains and has an impact on demand and supply factors. Supply chain disruptions during the first leg of pandemic have exposed our GVCs to a new set of challenges. Exposure levels vary considerably, depending on the nature of the sectors that are engaged in a value chain. For example, domestic production of automobiles, electronics, and pharmaceuticals industries was delayed due to supply chain disruptions and shortages of imported raw materials.[8] On the other, sectors such as agriculture, textiles, apparel, and food and beverages are labour intensive that are engaged in value chains are highly exposed to heat stress, pandemic, flood, a.o., thereby generating job loss and social disruptions. In such a challenging scenario, trade facilitation has an important role not only in protecting the GVC from further decline, but also strengthening the trade relations. This article makes an attempt to analyse the role that trade facilitation can play in strengthening India's GVC participation.

What is trade facilitation? Trade facilitation is the simplification, modernization, and harmonization of export and import processes by providing provisions for expediting the movement, release, and clearance of goods, including goods in transit.[9] According to the WTO, "Bureaucratic delays and 'red tape' pose a burden for moving goods across borders for traders. Trade facilitation—the simplification, modernization, and harmonization of export and import processes—has therefore emerged as

[3] Refer, Chase (2005); Manger (2009); Blanchard and Matschke (2015); Gawande, Hoekman, and Cui (2015); Baccini, Pinto, and Weymouth (2017).

[4] Refer, for example, Jensen, Quinn, and Weymouth (2015).

[5] Refer, for example, Antràs and Staiger (2012); Chase (2005); Manger (2009); Johns and Wellhausen (2016); Kim (2015).

[6] There are plenty of literatures on benefits of GVCs. Refer, World Bank (2020a, 2020b) for a comprehensive overview.

[7] Based on author's own literature on GVCs and more particularly Authukorala (2014, 2017).

[8] Production of automobiles, telecom items, electronics, engineering goods, etc., have been delayed due mainly to non-availability of imported chips in India. This has picked up headlines in all major media in India in recent months.

[9] Several literature on definition of the trade facilitation Refer for example, WTO (2015).

an important issue for the world trading system".[10] Trade facilitation is an essential condition for the rise in GVCs. Importance of trade costs for the participation of developing countries in Global and Regional Value Chains is well documented.[11] For example, faster handling of goods and services facilitate trade and promote GVCs. Other enabling factors are digital technology, paperless trade, etc. Trade facilitation is also the key to supply chain resilience. In the soft side of trade facilitation—paperless trade, harmonization of standards, whereas in the hard side—port connectivity, economic corridor, digital networks, etc., are keys to strengthen the supply chain networks and building resilience. Today's shortage of containers and semiconductors worldwide, which has disrupted production, trade, and value chains, both within and across borders, reminds us of the urgent need for improved trade facilitation.[12] Therefore, faster and on-time delivery of goods and services in a cross-border production network is essential for the sustainability of the GVCs.

The rest of the chapter is arranged as follows: Sect. 2 analyses the trends in India's participation in GVCs and major constraints faced by India. Section 3 then discusses the challenges faced by India in trade facilitation while promoting the GVCs. Section 4 then concludes with some recommendations towards improved trade facilitation.

2 India and GVCs: Emerging Trends

The GVC is known as cross-border production chains comprising more than two countries. A GVC product (or services) may have two major components—domestic value added and foreign value added. If the country A produces raw materials, countries B and C make the further value additions, and country D consumes the final product, the entire chain illustrates the quantity of domestic and foreign value added and also the double counting.[13] Nonetheless, the GVC production chains indicate several important policy insights in terms of trade, connectivity (supply chain), foreign investment, technology, jobs, and genders, among others.

Today, over 70 per cent of contemporary international trade involves GVCs.[14] The world seems to have three interconnected production hubs for the extensive trade in parts and components: one centered in the United States, one in Asia (China, Japan, and Korea), and the third one in Europe (especially Germany). While the United States, China, and European Union (EU) are India's major trading partners, India

[10] Refer, https://www.wto.org/english/tratop_e/tradfa_e/tradfa_e.htm.

[11] Refer, OECD (2013b).

[12] Refer, for example, UNCTAD (2021).

[13] For example, a typical 100-unit gross export is embedded with 72 units of domestic value added in exports and 28 units of foreign value added. However, the entire process also has significant amount of double counting if we look at the value-added statistics (UNCTAD, 2013).

[14] Refer, WTO (2019).

has been trying to integrate with the East Asia value chain network through the free trade agreement (FTA) route.

A country's participation in GVCs is a good indicator of the strength of integration.[15] Illustrated in Table 1, a set of countries depend more on backward linkages (e.g. Korea, Thailand) in their GVC participation, whereas forward linkages drive the GVC participation of another group of countries (e.g. China, Singapore, India, etc.). Variations of backward and forward linkages notwithstanding, the share of GVC in a country's exports clearly suggests higher value chains. Table 1 also tells us that the higher the country's global competitiveness (represented by GCI score), higher the country's GVC.[16]

Several economies with high GVC participation rates are known for their orientation towards international trade, especially exports. China, Vietnam, and Korea are good examples. In sharp contrast, India's GVC participation remains weak.[17] Illustrated in Table 2, India's GVC participation has declined from 45% in 2010 to about 41% in 2018. Both forward and backward participations have witnessed decelerations. However, product-level GVC participation in country's gross exports presents an interesting trend.

India, at present, has limited number of products, where it owns GVCs. Appendix 1 presents trends in GVC participation. India has witnessed a rise in GVCs participation in three products between 2000 and 2017: (i) Coke, refined petroleum, and nuclear fuel; (ii) Sale, maintenance, and repair of motor vehicles and motorcycles; retail sale of fuel; and (iii) Agriculture, hunting, forestry, and fishing. GVC participation in the rest of the products has witnessed decline or constant share between 2000 and 2017. It also indicates a scope to scale up the GVC participation in the country's exports.

Which region offers high GVC potentials for India? India has witnessed a rising trend in trade in parts and components in automobiles, electronics, machineries, transport equipment, etc., with Southeast and East Asia countries.[18] China appears as India's top trading partner in the trade of parts of components. In 2020, India's import of parts and components from China was US$ 16 billion, which was about US$ 7 billion in 2010 (Table 3). Gradually, India's value chain dependence on China, Japan, Korea, Vietnam, Thailand, Malaysia, and Singapore has sharply increased in the last decade, thereby suggesting the need for stronger supply chain resilience with Southeast and East Asia. Undoubtedly, if GVCs need to be strengthened, supply chains resilience and connectivity have to be improved.[19] Besides, FTAs have an important catalytic role in promoting GVCs.

[15] In a popular way, GVC participation is defined by forward and backward linkages, where forward linkages refer to domestic value-added exports of a country which goes into exports of other countries and backward linkages mean foreign value added in gross exports of a country.

[16] Both GCI rank and rank in share of GVC in gross exports show high correlations.

[17] This was also the finding of the Mitra et al. (2020).

[18] Refer, for example, Mitra et al. (2020).

[19] The difference between value chains and supply chains is simple. The value chain is a process in which a company adds value to its raw materials to produce products eventually sold to consumers, nationally or internationally, whereas the supply chain represents all the steps required to get the product from factory to the customer.

Table 1 Developing country-wise GVCs participation, 2018

Country	Backward linkage^ (%)	Forward linkage^ (%)	Strength of GVC* (%)	Ratio of forward linkages to backward linkages	GCI Rank +
Afghanistan	7.42	23.86	31.28	3.22	
Bangladesh	9.02	21.70	30.72	2.41	103
Bhutan	30.68	24.48	55.16	0.80	
Brunei	10.59	39.14	49.73	3.70	62
Cambodia	18.19	12.84	31.04	0.71	110
China	12.87	31.70	44.57	2.46	28
India	14.10	27.27	41.37	1.93	58
Indonesia	11.13	38.92	50.05	3.50	45
Lao PDR	6.65	25.33	31.99	3.81	112
Malaysia	35.40	28.56	63.96	0.81	25
Maldives	25.29	18.20	43.49	0.72	
Namibia	27.09	14.51	41.60	0.54	100
Nepal	15.68	21.06	36.74	1.34	109
Pakistan	5.76	34.39	40.14	5.97	107
Philippines	28.27	29.23	57.50	1.03	56
South Korea	36.68	21.01	57.69	0.57	15
Russia	9.08	49.98	59.06	5.51	43
Singapore	61.87	13.61	75.48	0.22	2
Sri Lanka	11.48	26.29	37.78	2.29	85
Thailand	30.68	21.15	51.83	0.69	38
Viet Nam	32.08	17.23	49.31	0.54	77
World	28.26	28.26	56.52	1.00	

* In terms of share of GVC in country's gross exports (%) ^share in country's gross exports (%) + GCI stands for Global Competitiveness Index of the World Economic Forum (WEF). *Source* Author's own calculation based on WITS

Kumar commented: "The Foreign Trade Policy (2015–2020) has been aimed at raising India's participation in world trade as well as increasing domestic value-added content in India's exports along with promoting brand 'India'. One of the ways in which these objectives can be simultaneously achieved is, if India initiates its own GVCs in a manner that it not only increases its share in world trade but also increases its trade competitiveness. Make in India and FTAs could be leveraged to attract more FDI and in turn use this to connect Indian SMEs to large firms".[20]

Recent FTAs focus on GVCs, which are an important part of the growth in international trade. FTAs focus on creating conditions to promote GVCs, particularly among the nations which are part of FTAs. They cover many policy areas in this

[20] Refer, Kumar (2016).

Table 2 India's production linkages

	Backward linkage^ (%)	Forward linkage^ (%)	Strength of GVC* (%)
2010	14.43	30.55	44.98
2011	16.54	30.49	47.03
2012	16.28	29.88	46.16
2013	15.96	29.73	45.69
2014	15.70	29.46	45.16
2015	15.06	28.10	43.16
2016	13.93	29.70	43.63
2017	14.10	28.34	42.44
2018	14.10	27.27	41.37

* In terms of share of GVC in country's gross exports (%) ^share in country's gross exports (%)
Source Calculated based on OECD-WTO database

Table 3 India's value chain linkages with select economies

	India's export of parts and components				India's export of parts and components			
	2010		2020		2010		2020	
	Value (US$ Million)	Share in total exports, %	Value (US$ Million)	Share in total exports, %	Value (US$ Million)	Share in total imports, %	Value (US$ Million)	Share in total imports, %
Australia	224.3	13.6	243.1	7.0	64.8	0.5	42.3	0.6
Japan	132.4	2.8	352.2	8.7	2193.6	27.4	2041.0	20.3
China	366.7	2.1	799.0	4.2	6457.6	17.0	15,652.9	26.8
Korea	118.1	3.3	280.5	6.2	2460.9	26.0	3454.0	28.5
Indonesia	186.4	4.1	278.9	6.4	187.4	1.9	180.6	1.5
Malaysia	186.5	5.3	285.2	4.6	751.3	12.6	486.8	6.6
Philippines	114.8	14.4	167.7	11.8	194.8	49.8	82.4	16.3
Singapore	577.0	6.9	852.3	10.3	1144.7	15.9	2565.3	20.9
Thailand	272.0	12.7	579.4	15.3	763.9	19.5	811.5	15.5
Vietnam	98.7	4.0	455.4	10.1	96.6	9.7	1379.3	24.8
ASEAN	**1465.0**	**6.6**	**2710.1**	**9.2**	**3139.4**	**10.6**	**5516.3**	**12.5**
World	13,816.5	6.4	25,361.5	9.2	27,336.3	8.0	45,414.1	12.4

Source WITS Database

context and have deeper levels of liberalization as well as coherence and collaboration, with a major focus on tariff elimination/reduction, reducing the trade-related costs of non-tariff measures, and trade facilitation. India's Comprehensive Economic Partnership Agreement (CEPA) with Japan and Korea and the one which is being negotiated with the EU are aimed to facilitate its integration into the GVCs.

On the other, trade facilitation and connectivity help facilitate the GVCs. With production processes and tasks in production facilitate increasingly fragmented across national borders, time-sensitive logistics services and ICT are the key to facilitating GVCs (Kimura and Kobayashi, 2009). In a study, the World Bank (2020a, 2020b) has identified that GVC participation is determined by economic endowments, market size, geography and institutional quality. Mitra et al. (2020) have identified that trade facilitation, logistics and infrastructure are some of the key determinants of the GVCs. Here, we look at the progress in trade facilitation and identify the gaps in policy measures next.

3 Trade Facilitation: Achievements So Far

3.1 Why Trade Facilitation?

Trade facilitation supports modern and effective customs administrations, streamlined and transparent trade processes/procedures, and improved services and information for private sector traders and investors. It often refers to measures reducing/removing non-tariff institutional, administrative, and technical barriers to trade. In some studies, trade facilitation has been described not just as tariffs and international transport, but also as an instrument to deal with geography, social and cultural costs (language), logistics performance, etc. "Narrow" trade facilitation often refers to customs and border procedures. Product standards (SPS and TBT), regulatory differences across countries, etc., are also discussed as part of trade facilitation. Grainger (2011) identifies four interdependent elements that constitute trade facilitation: (i) simplification and harmonization of applicable rules and procedures; (ii) modernization of trade compliance systems; (iii) administration and standards; and (iv) institutional mechanisms and tools.

Trade facilitation fosters logistics performance, and better logistics spurs growth, competitiveness, and investment. Customs and border management or the improvement of transit regimes are a few areas where trade facilitation can help improve logistics (World Bank 2019). Cutting additional costs through improved trade facilitation have helped countries in raising trade flows and/or diversifying the exports to newer markets—regionally or otherwise (WTO 2020). Behind-the-border measures have been comprehensively used throughout the ongoing crisis such as streamlining procedures, contactless trade, digitization, etc. (ADB-ESCAP, 2014; UNESCAP 2021). These have continued to be important trade policy tools in the post-crisis economic recovery phase. Simplification of trade processes and procedures along with harmonization of trade transaction data and documents are envisaged as key to improving the competitiveness of exports across most of the countries across the world.[21]

[21] Several studies conducted on it. Refer, for example, UNESCAP (2020, 2021), OECD (2021), WTO (2021).

Trade facilitation at WTO also refers to GATT Articles V, VIII, and X, which relate to the freedom of transit, fees and formalities, and the publication and administration of trade regulations. WTO's Trade Facilitation Agreement (TFA) which was signed at the WTO's 9th Ministerial Meeting, held at Bali, Indonesia on 3–7 December 2013, has added a new dimension to trade facilitation. Trade facilitation research priorities are changing very fast, more particularly after the WTO Trade Facilitation Agreement (TFA). Out of 164 member countries of WTO, 145 countries have already ratified the WTO TFA.[22] The TFA has already entered into force on 22 February 2017.

3.2 Trade Facilitation Achievements

India being a geographically dispersed country is susceptible to high and volatile trade costs**.** India has made substantial progress in documentary and border compliances, both in terms of time and cost. Access to digital technology and its application to trade facilitation helped India raise its performance globally. According to the World Bank's *Trading Across Border* indicators,[23] documentary compliance captures the time and cost associated with compliance with the documentary requirements of all government agencies of the origin economy, the destination economy, and any transit economies. On the other hand, border compliance captures the time and cost associated with compliance with the economy's customs regulations and with regulations relating to other inspections that are mandatory in order for the shipment to cross the economy's border, as well as the time and cost for handling at its port or border.

India has been able to reduce the documentary and border compliance costs of export consignment, both in terms of costs and time between 2015 and 2020 (Table 4). In 2020, India's border compliance and documentary compliance costs of exports were less than that of China. Compared to export, the absolute cost of border compliance of import consignment is more expensive in India. However, India has remarkably halved the border compliance cost of import between 2015 and 2020, thereby narrowing the gap with China in trade facilitation. On the contrary, China offers faster clearance of goods, both in case of border and documentary compliance. Although India still takes higher time towards border clearance for an import consignment, India's achievement has been phenomenal in reducing border compliance time. The progress is mainly due to application of digital technology along with procedural reforms. Border compliance time and turn-around time at ports have also been improved from a peak of 5 days to less than 2 days (De and Kumarasamy 2020). Documentary compliance time for export cargo has also reduced from over almost two days to just 15 h in India during 2015 and 2020. By making e-filling of documents mandatory, India has witnessed substantial progress in reducing documentary burden on exporters and importers. Due to trade facilitation reforms, documentary

[22] As on 1 August 2019, available at https://www.tfadatabase.org/.

[23] Methodology was developed based on Djankov et al. (2008) and was revised in 2015.

Table 4 Trading across borders: 2015 and 2020

(a) Time

		Time to export: Documentary compliance (hours)	Time to import: Documentary compliance (hours)	Time to export: Border compliance (hours)	Time to import: Border compliance (hours)
Afghanistan	2020	228.00	324.00	48.00	96.00
Afghanistan	2015	242.67	336.00	48.00	96.00
Bangladesh	2020	147.00	144.00	168.00	216.00
Bangladesh	2015	147.00	144.00	168.00	216.00
Bhutan	2020	9.00	8.00	5.00	5.00
Bhutan	2015	9.00	8.00	5.00	5.00
China	2020	8.63	12.80	20.70	35.65
China	2015	21.20	65.70	25.93	92.31
India	**2020**	**11.64**	**19.88**	**52.12**	**65.30**
India	**2015**	**41.47**	**63.32**	**109.26**	**287.38**
Maldives	2020	48.00	61.33	42.00	100.00
Maldives	2015	48.00	61.33	42.00	100.00
Nepal	2020	43.00	48.00	11.00	11.00
Nepal	2015	18.64	48.00	37.50	62.70
Pakistan	2020	55.00	96.00	58.00	120.00
Pakistan	2015	61.71	105.57	78.86	131.29
Sri Lanka	2020	48.00	48.00	43.00	72.00
Sri Lanka	2015	76.00	58.00	43.00	72.00

compliance time for export and import cargoes has been reduced to just a few hours in India. In a landmark initiative to reduce documentary compliance, India has rationalized the documentation requirement for exports and imports to just 3 from 7 and 10, respectively.[24]

(b)					
		Cost to export: Documentary compliance (USD)	Cost to import: Documentary compliance (USD)	Cost to export: Border compliance	Cost to import: Border compliance
Afghanistan	2020	344.44	900.00	452.78	750.00
Afghanistan	2015	344.44	900.00	511.11	850.00
Bangladesh	2020	225.00	370.00	408.17	900.00
Bangladesh	2015	225.00	370.00	408.17	900.00

(continued)

[24] Refer, CBIC, http://www.cbic.gov.in/htdocs-cbec/home_links/trade_agreement.

(continued)

(b)					
		Cost to export: Documentary compliance (USD)	Cost to import: Documentary compliance (USD)	Cost to export: Border compliance	Cost to import: Border compliance
Bhutan	2020	50.00	50.00	59.17	110.11
Bhutan	2015	50.00	50.00	59.17	110.11
China	2020	73.57	77.25	256.20	241.25
China	2015	84.57	125.89	484.14	745.00
India	**2020**	**57.95**	**100.00**	**211.92**	**266.11**
India	**2015**	**101.68**	**144.71**	**413.10**	**574.04**
Maldives	2020	300.00	180.44	595.75	980.50
Maldives	2015	300.00	180.44	595.75	980.50
Nepal	2020	110.00	80.00	102.86	190.00
Nepal	2015	85.00	80.00	202.86	155.56
Pakistan	2020	118.00	130.00	288.00	287.00
Pakistan	2015	168.14	180.71	308.43	307.57
Sri Lanka	2020	57.58	282.78	366.11	299.67
Sri Lanka	2015	57.58	282.78	366.11	299.67

Source The World Bank

However, India still takes over 3 days to complete the border compliance for import cargo, an improvement from 12 days needed in 2015. While India's performance in border compliance time of import cargo is laudable, India must improve it further to ease the burden of mandatory border regulations and inspections. It is encouraging to note that costs and time have declined rapidly between 2015 and 2020. One of the critical factors for the rise in costs and time in India could be inefficient logistics and border infrastructure, reducing its trade competitiveness.

To step up the trade facilitation as a priority, India has ratified the WTO's Trade Facilitation Agreement (TFA) in April 2016, which came into force in February 2017. The TFA aims to expedite the movement, release, and clearance of goods in trading across borders. India has already ratified over 70% of the provisions under Category A of the TFA, and has also implemented certain provisions of Category B such as SWIFT, RMS for which India had opted for a five years time.

What follows is that India has succeeded in reducing documents required to export and import, but India still takes considerable time for export and import, particularly at the land border. Although India's performance in trade facilitation has been impressive, there is ample scope to improve it further, particularly the performance in border and documentary compliance. The CII noted "In particular, there is scope for further simplification of documentary requirements and bridging alignment with

international standards with application of digital technology".[25] India has recognized the application of digital technology as an important component of national trade facilitation. India has achieved phenomenal progress in the automation of trade documentation. For example, almost 100% of trade documents are now submitted electronically in India through customs' single window.[26]

India has set up the National Committee on Trade Facilitation (NCTF) in 2016 and has introduced the National Trade Facilitation Action Plan (2020–2023). Besides, India has also set up Customs Clearance Facilitation Committees (CCFC), which are directly feeding information to the NCTF, that aims to transform cross-border clearance ecosystem through efficient, transparent, risk-based, coordinated, digital, seamless, and technology-driven procedures, which are supported by state-of-the-art sea ports, airports, land border crossings, rail, road, and other logistics infrastructure.[27] According to the CBIC: "NCTF has a mission to bring down the overall cargo release time within 2 to 3 days. For instance, NCTF has a target to release sea cargo within 2 days and on the same day for Air Cargo, Inland Container Depots & Land Customs Stations for exports. In case of import, it aims to release cargo within 2 to 3 days for Sea Cargo, Air Cargo & Inland Container Depots and on the same day for Land Customs Stations respectively".[28]

India has attempted to enhance trade process efficiency by implementing several modernized procedures such as SWIFT, Pre-Arrival processing, Direct Port Deliveries (Imports), Direct Port Exit (Exports), Integrated Risk Management, Revamped AEO scheme, Deferred Payment, Reduce paper and rely on digital signatures. India has renewed its focus on Digital Customs through new investment in IT infrastructure and applications such as Project Saksham. India has also taken initiatives for better coordination among various stakeholders in the border clearance. India's initiative on several digital reform measures has effectively smoothened the trade facilitation process and helped reduce trade time and costs considerably.[29]

To expedite the cargo release time and mitigate risks, India has introduced an integrated Risk Management System (RMS) to enable low-risk consignments to be cleared without examination. Besides, SWIFT and E-Sanchit eliminate physical interfaces with authorities and smoothen the trade procedures.[30] E-Sanchit is an online application, which is mandatory for traders to submit all supporting documents

[25] Refer, for example, CII (2018). Also read, CBIC's presentation on WTP TFA, available at http://www.cbic.gov.in/resources//htdocs-cbec/implmntin-trade-facilitation/tfa-presentation.pdf;jsessionid=4307CF3FCC8A6F0FE94D4BD524634D0A.

[26] It also handles all e-filing, e-payments, drawback disbursal and message exchange with stake holders almost 100 per cent India's international trade.

[27] Refer, CBIC (2017), available at http://www.cbic.gov.in/htdocs-cbec/home_links/trade_agreement.

[28] Ibid.

[29] Based on author's own discussions with the CBIC and LPAI.

[30] Customs Single Window in India allows importers and exporters to lodge their clearance documents online at a single point only. CBIC has already executed major projects to automate customs clearance processes and provide electronic data interchange (EDI) within all agencies. This system integrates nine separate forms required by the six Partner Government Agencies (PGAs) and has

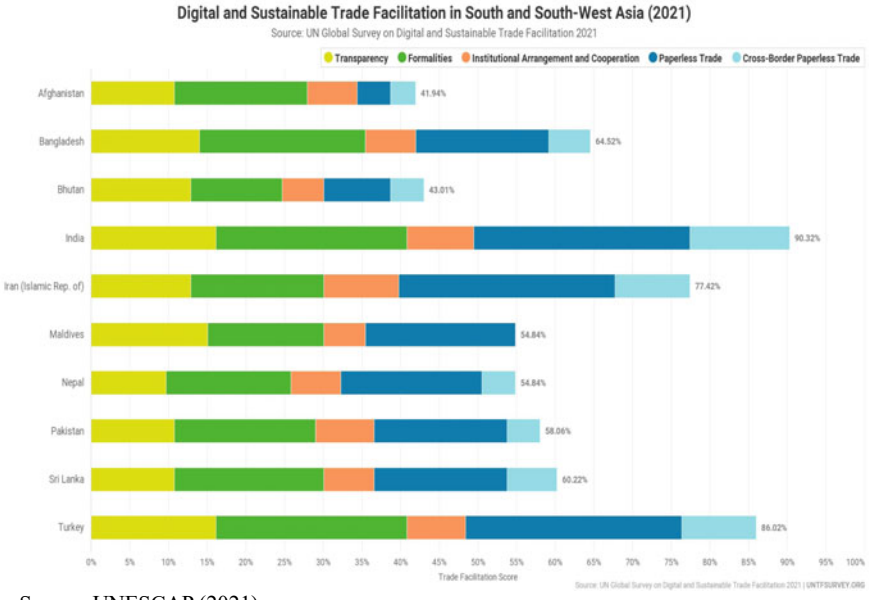
for clearance of consignments electronically with digital signatures. On top, the use of e-Delivery Orders, e-Payments, and e-Invoice have been made mandatory since April 2018 for all stakeholders in the maritime trade to reduce the documentary compliance time. Schemes like Direct Port Delivery (DPD) for imports and Direct Port Entry (DPE) for exports were introduced, which have offered large savings in terms of time as well as costs.

India has implemented the Port Community System (PCS) to provide electronic connectivity to the maritime community. The PCS aims to integrate the electronic flow of trade-related documents. All the major ports and several non-major ports have aligned with the PCS.

India has also revamped the Authorised Economic Operator (AEO) programme. The AEO programme provides benefits of Mutual Recognition Agreements (MRAs), paperless declarations with no supporting documents, deferred duty payments, among others. This programme reduces the release time of consignments and congestion at ports (Fig. 1).

With the objective of complying with international safety standards, ports across the country are being encouraged to install Radiological Detection Equipment (RDE) for screening containers. Jawaharlal Nehru Port has introduced the RDE to promote

Box 1: India leads in digital and sustainable trade facilitation



Source: UNESCAP (2021)

Fig. 1 India leads in digital and sustainable trade facilitation

done away with the requirement of importers seeking approvals from multiple government agencies for their consignments (CII, 2018).

hassle-free inspection and cargo evacuation. Radio Frequency Identification (RFID) has also been adopted across all major ports to reduce the overall time taken for container movement. RFID application has helped in eliminating the need for manual verification and facilitated the reduction in transaction time from the earlier 5 min to less than a minute at India's largest container port—Jawaharlal Nehru Port.[31]

The e-sealing procedure has been introduced to replace the erstwhile practice of supervised sealing by departmental officers. It provides for the use of RFID tamper-proof e-seals in place of bottle seals by those who were earlier availing the benefit of self-sealing facility. This has helped in the reduction of time and cost associated with the clearance of export containers.

Indian government has shifted to paperless clearance methods and the requirement of routine printouts of documents have stopped. Some major documents which are no more handled manually include GAR 7 Forms/TAR 6 Challans, TP Copy, Export Promotion Copy of Shipping Bill.[32]

The CBIC has extended the 24 × 7 customs clearances facility to non-facilitated Bills of Entry at 19 seaports and 17 Air Cargo Complexes. Further, the requirement of payment of Merchant Overtime (MOT) charges in respect of the services provided by the Customs officers at 24 × 7 Customs Ports and Airports has been eliminated.

In a joint collaboration with RBI, Import Data Processing and Management System (IDPMS) has been launched in order to facilitate efficient data processing for payment of imports and effective monitoring. Recently, JP Morgan jointly with major Indian banks have initiated live blockchain platform to address the complex cross-border payments, which helps to reduce cost and mitigate risk in cross-border financial transaction.

4 Challenges, Priorities, and Policy Interventions

India faces several challenges in its trade facilitation efforts. First, limited role played by the national trade facilitation committee till date. Second, National Single Window/Customs EDI has played a striking role, but interoperability in the South Asia region or between regions has not happened yet. Third, cross-country e-commerce is yet to be fully unlocked. Fourth, slow or nil inter-country coordination and many measures are ad-hoc or temporary. Sixth, rising gap in information sharing, delay in reporting of measures to WTO/WCO, etc.

To boost India's participation in GVCs, trade facilitation has a catalytic role. The trade facilitation factors, which need to be addressed for creating a good enabling environment for India's integration into the GVCs are as follows:

[31] Refer, the CBIC appraisal through the time release study.

[32] Also refer, Table 2.

4.1 Placing Trade Facilitation as a National Priority

The primary goal of trade facilitation is to help make trade across borders faster, cheaper, and more predictable, while ensuring its safety and security.[33] Priorities should be based on the trade facilitation need. Air or pipeline are better suits for faster delivery whereas highways carry the bulk of the goods. In terms of soft aspect of connectivity, trade facilitation is about simplifying and harmonizing formalities, procedures, and the related exchange of information and documents between the various partners in the supply chain. Improved trade facilitation between countries paves the way for GVCs.

Future improvement in GVCs will come from addressing non-tariff measures (NTMs) to trade, including through digital trade facilitation. With the application of digital technologies, trade facilitation priorities have also undergone a drastic transformation in the last few years.

With the unveiling of GatiShakti Master Plan, the need of multimodal transport connectivity is well received. However, the implementation of the national trade facilitation action plan is yet to gain the required momentum. At the same time, NTFC in India is not yet fully active in driving the WTO TFA mandates. The agencies will operate in full scale once the political leadership provides the required direction, while the country makes a case of trade facilitation a national priority.

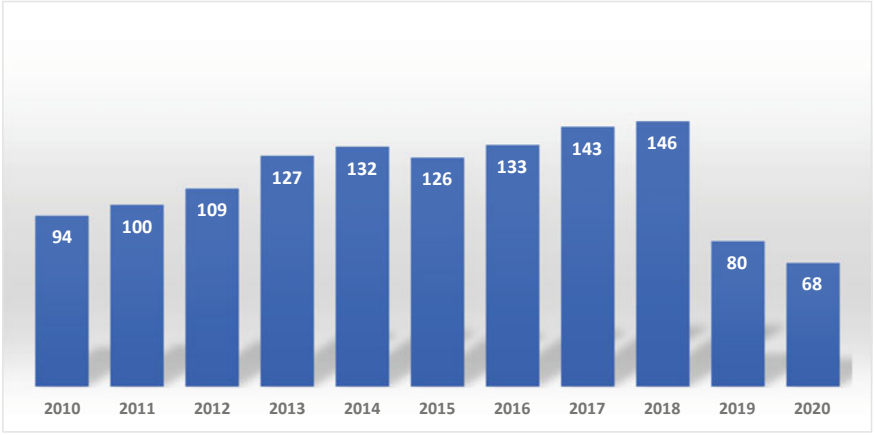
4.2 Strengthening Trade Logistics

Call for strengthening trade logistics refers the OECD's benchmark: "As goods now cross borders many times, first as inputs and then as final products, fast and efficient customs and port procedures are essential to the smooth operation of supply chains. To compete globally, firms need to maintain lean inventories and still respond quickly to demand, which is not possible when their intermediate inputs suffer unpredictable delays at the border. A country where inputs can be imported and exported within a quick and reliable time frame is a more attractive location for foreign firms seeking to outsource production stages**.** As such, trade facilitation measures are crucial to foster integration into global production networks and global markets".[34]

India's performance has improved a great deal in the last few years. Its preference in *Trading Across Borders*, as per the Doing Business report of the World Bank, has improved from the level of 146 in 2018 to 68th position in 2020. The government remains focussed on sustaining the improvement, which is critical for reducing the transaction cost in exports and imports. According to the OECD, developing countries like India can reduce the transaction cost by 13–15% by adopting the best practices in trade facilitation.

[33] This is a common definition of trade facilitation, drawn upon UN's trade facilitation implementation guide, available at http://tfig.unece.org/details.html.

[34] Refer, OECD (2013a)



Source: Doing Business Report, World Bank

Fig. 2 Trend in trading across borders ranking in India

Impressive improvement in India's trade facilitation performance is attributable to a series of reforms implemented by the government over the last several years. Notable among them are the introduction of rationalized documentation requirement, an integrated Risk Management System (RMS), the Single Window Interface for Facilitating Trade (SWIFT), E-Sanchit, Faceless customs clearances, Authorized Economic Operator (AEO) programme, Director Port Delivery (DPD) for importers, and Direct Port Entry (DPE) for exporters.

World Bank's Doing Business (DB) Report presents quantitative indicators of the business environment for 190 economies, assessing and ranking countries across 10 broad areas, including trading across borders. As per the DB report (2020), India stands at 68th position out of 190 economies, witnessing sharp improvement in its performance in the last 2 years, as seen in Fig. 2 and Table 5.

There is a scope for further improvement in the country's performance of trading across borders, which is evident from the fact that it takes 52 h and US$ 212 to meet border compliances, much higher than South Korea with 13 h and US$ 185 (Table 5). India is, of course, doing better than many neighboring countries but it should be competing with the best in the world. With regard to meeting border compliances for imports, it takes 65 h and US$ 266 in India as compared to 33 h and US$ 220 in Singapore. Here also, India performs better than many neighboring countries. Similar is the case regarding documentary compliances for exports and imports, which result in high dwelling cost and time for trading across borders.

Besides procedural and operational barriers, infrastructural barriers are still causing challenges in the seamless movement of goods and services. There is a high degree of congestion at the ports for certain types of cargoes. According to the CII: "The process of road to rail conversion is sluggish at several ports including, Jawaharlal Nehru Port Trust (JNPT) in Mumbai. Rush of containers and tractor trailers at the entry gates of the various parking plazas for document processing leads to

Table 5 Compliance cost in trading across borders: India vis-a-vis other countries

Border Compliance	India (68)	United Kingdom (33)	United States (39)	South Korea (36)	Singapore (47)	Malaysia (49)	Sri Lanka (96)	Vietnam (104)	Bangladesh (176)
Exports									
Time (hrs)	52	24	2	13	10	28	43	55	168
Cost (USD)	212	280	175	185	335	213	366	290	408
Imports									
Time (hrs)	65	3	2	6	33	36	72	56	216
Cost (USD)	266	0	175	315	220	213	300	373	900
Documentary Compliance	India (68)	United Kingdom (33)	United States (39)	South Korea (36)	Singapore (47)	Malaysia (49)	Sri Lanka (96)	Vietnam (104)	Bangladesh (176)
Exports									
Time (hrs)	12	4	2	1	2	10	48	50	147
Cost (USD)	58	25	60	11	37	35	58	139	225
Imports									
Time (hrs)	20	2	8	1	3	7	48	76	144
Cost (USD)	100	0	100	27	40	60	283	183	370

Source World Bank

delay in procedure and congestion. Empty trucks arriving to pick up DPD (Direct Port Delivery) containers have to wait in long queues to get in and out of the terminals. There is inadequate warehousing facility at several ports, which increases the transaction cost and dwell time. The road connectivity from the port to the various container freight stations (CFSs) and the highways is also in poor condition in some portions. This often poses the risk of goods getting damaged, besides resulting in slow movement of trailers and trucks, causing congestion and delays. At some ports, due to time restriction on movement of vehicles on some roads, the containers fail to report at the port on time, leading to an increase in the turnaround time and a high parking cost".[35]

4.3 Compliance with Trade-Related Standards

In the modern trading system, standards and technical regulations determine the export potential and overall competitiveness of an economy. India's standards regime is still at the nascent stage of development, and awareness and adoption of standards are very low. The lead companies in GVCs follow the strict standard compliance for sourcing intermediates. More often, they insist on adoption of private standards, which are expensive to comply with.

The OECD says: "The rising number of quality and safety standards is in part driven by concerns about information, coordination and traceability which are more acute in a world dominated by GVCs. While the need to protect final consumers through appropriate quality standards should not be understated, their complexity and above all their heterogeneity has become one of the main barriers to insertion into GVCs, in particular for small and medium-sized enterprises (SMEs)".[36] Stronger compliance procedures sometimes add additional time, which the SMEs are unable to manage. Heterogeneity in standards often has differential impacts, both for trade and industrial productions. Thus, mutual recognition of standards between countries encourages the GVCs.[37]

Noted in the OECD "Upstream firms supplying intermediate inputs to several destinations may have to duplicate production processes to comply with conflicting standards, or to incur burdensome certification procedures multiple times for the same product. In agro and consumer appliances value chains, meeting public and private standards has been identified as the main obstacle to participation in GVCs. Increasing international regulatory cooperation, including via the convergence of standards and certification requirements and mutual recognition agreements, can go a long way to alleviate the burden of compliance and enhance the competitiveness of small-scale exporters".[38]

[35] Refer, CII (2018), Kumar (2016).

[36] Refer, OECD (2013a).

[37] Refer, for example, Kaplinsky (2010).

[38] Refer, OCED (2013a).

A study by the Asian Development Bank Institute (ADBI) found that quality certification was a statistically significant indicator of GVC participation.[39] This implies that proof of quality is necessary to create GVC linkages and attract FDI, as large MNCs, which are drivers of GVCs will be attracted to markets where they are assured quality products where they can do further value addition at a lower cost.

Globally, the standards ecosystem is complex. It requires a fair amount of navigation and negotiation between countries to ensure ease of exports when it comes to standards compliance. The best examples of regional harmonization are found in the EU in the west, and ASEAN in the east. Noted in the MoCI "It has to be recognized that the days of differential standards—low for domestic market and high for exports—are over and if the Indian industry has to survive and thrive, it has to adopt global standards. The Ministries/regulators/state governments have to realize that their initiatives and schemes have to be built around global standards if they have to succeed in their objectives. Moreover, by measuring up to standards and conformity assessment procedures, exports can also be increased both in volume as well as in value terms".[40]

It has been noted that upgrading to international standards, making standards mandatory, requisite infrastructural facilities like testing, certification, trace-back, packaging and labelling, and schemes for promoting adhering to international standards can go a long way in meeting the challenges of a large number of SPS and TBT measures.[41]

India needs a more comprehensive coverage of goods under mandatory technical regulations. For this, there is a need for easier conformity assessment procedures, which are less burdensome to apply and administer. This is also required for ease of doing business. Internationally, there are varieties of options for conformity assessment available depending upon the level of risk involved. For low-risk items, Suppliers Declaration of Conformity (SDoC) is used, which is a costsaving approach and less onerous approach to conformity assessment.

However, in India, under BIS Act, only two types of conformity assessment options were available: licensing (all products except electronics) and registration (electronics). The new BIS Act 2016 will make available other options of conformity assessment. The new Act also allows multiple types of simplified conformity assessment schemes including self-declaration of conformity against a standard which will give simplified options to manufacturers to adhere to the standards and get certificate of conformity. The Act enables the Central Government to appoint any authority/agency, in addition to the BIS, to verify the conformity of products and services to a standard and issue certificate of conformity.[42]

Further, there is one more requirement of enabling law for less onerous conformity assessment schemes, i.e. SDoC as it works well only in combination with a strong

[39] Refer, Urata (2020).

[40] Refer, MoCI (2016).

[41] Ibid.

[42] Bureau of Indian standards (BIS) Act 2016 brought into force with effect from 12th October, 2017, Press Information Bureau, Government of India.

product liability law and market surveillance, both of which are weak in India. Most developed countries have enacted product liability laws. Product liability is the area of law in which manufacturers, distributors, suppliers, and retailers are held responsible for any injuries that products cause during their life cycle. The solution that came out of CII-Ministry of Commerce National Standards Conclave deliberations was that we should have a legal regime for product liability. Subsequently, Consumer Protect Act was amended in 2019 to include the provisions of product liability, which assigns the responsibility on product manufacturer or product seller, of any product or service, to compensate for any harm caused to a consumer by such defective product manufactured or sold or by deficiency in services relating thereto.[43]

5 Conclusions

In the rise of the COVID-19 pandemic, the global supply chain has witnessed certain structural changes, and may gain further momentum in the near future. The pandemic has exposed the vulnerabilities in global supply chain as the businesses were over-relying on limited manufacturing hubs. Due to this structural change in the global supply chains, disruptions in the demand and supply are expected. Thus, the minimization of its impact on business depends upon how well the multinationals respond to it.

To address the challenges caused due to this disruption, companies need to reform their business models as per the necessity and opportunity. For example, consumer goods companies, which have seen their offline stores close around the world, have moved to target potential customers with online activities in an effort to increase sales.

There exists considerable scope for India to leverage its strengths in these products and services or supply chains which could then translate into action for attracting international companies in India in those areas/sectors. India's trade policy ecosystem should enable domestic manufacturing to slot into GVCs. This will require an integrated approach to manufacturing, investments and trade including both exports and imports. We believe that an open trade environment with low tariffs can significantly drive India's GVC integration in the region.

A conducive manufacturing ecosystem is being created through the Production Linked Incentive (PLI) scheme for certain globally traded items such as electronics and textiles and garments. The technical and financial support consistent with the WTO rules will encourage more firms to foray into the GVCs through risk sharing and market access incentives. This would help in India's participation in GVC to a great extent.

Despite India's steady efforts to open up its economy, its trade and investment regime remains restrictive relative to other countries at similar levels of development. While India's vibrant export-oriented services market is relatively open in several

[43] FAQs on Consumer Protection Act 2019, Ministry of Consumer Affairs, Government of India.

sectors (computer, audio-visual and engineering), there is scope for improvement other sectors such as basic infrastructure, legal and air transport services. India's full implementation of measures in the WTO Trade Facilitation Agreement could reduce trading costs, and facilitate wider participation in GVCs.

India has made significant improvements in digital trade facilitation measures and the analysis indicates that significant improvement in trade facilitation measures in the reporting country would facilitate the export to the partner countries. India should continue to instill new dimensions in digital trade facilitation through reforms and new technologies. Further, the analysis shows that the implementation of electronic trade facilitation does promote exports.

Harmonization of documentary requirements across the world is needed to facilitate India's GVC participation. Although its implementation rate varies, the WTO TFA is a good beginning towards this direction.

India has achieved substantial economic gains by reducing policy-related non-tariff trade costs, which is a crucial catalyst for promoting GVCs. There are many areas where India can do better in trade facilitation, particularly in the neighbourhood. For example, India can introduce a coordinated border management with the neighboring countries based on approaches such as collocation of facilities, close cooperation between agencies, delegation of administrative authority, cross-designation of officials, and effective information sharing. Interoperability of single windows with partner countries is another line of activities that India may initiate. In a futuristic sense, India may think of Joint Border Post (JBP) in the neighborhood, particularly with friendly countries, which allows bordering countries to coordinate import, export, and transit processes to ensure that traders are not required to duplicate regulatory formalities on both sides of the same border. Signing of the UN's paperless trade agreement may add further momentum in the digital trade facilitation programs.

India may consider conducting national trade facilitation performance monitoring mechanisms. Along with it, the WCO TRS and ESCAP BPA may be undertaken regularly. The monitoring of the performance and application of the digital technology and adaptation will help achieve paperless trade targets. We may also explore international examples of instruments for simplification of trade procedures.

The development of trade infrastructure has to commensurate the progress made in the soft side of trade facilitation. India could unleash its full potentials in GVCs, provided it improves the infrastructure facilities, which are at present not sufficient to meet the growing demand of the country.

Countries have to strengthen the resilience through trade promotion and facilitation cell, mechanisms to address trade and investment barriers, etc., as discussed in this article. Promote digitization of trade documentation, activities for promotion of trade and investment and identification of sectors for cooperation, among others. Besides, scaling up FTAs, harmonization of standards, streamlining ROOs, etc., would pave the way for India's active participation in GVCs.

To conclude, better trade facilitation leads to reduced trade costs, thereby driving GVCs/RVCs. India has achieved substantial economic gains by reducing policy-related non-tariff trade cost. India is quite successful in introducing a digital customs arrangement in the country. India should continue to instil new dimensions in digital

trade facilitation through reforms and new technologies. The trade facilitation agenda should be harmonization of documentary requirements across the world. Although India is yet to become world's major hub for GVCs, the country can easily scale up the production chains across borders through the improved trade facilitation. This article highlights some of the opportunities that India should attempt to utilize while unlocking the GVC potential.

Appendix –Trends in India's Sectoral GVCs (%)

Sr. no	Sector	2000	2010	2017
1	Coke, refined petroleum, and nuclear fuel		48.96	50.25
2	Leather, leather products, and footwear	61.31	42.96	43.76
3	Chemicals and chemical products	44.37	42.50	42.22
4	Sale, maintenance, and repair of motor vehicles and motorcycles; retail sale of fuel	27.65	20.36	42.17
5	Pulp, paper, paper products, printing, and publishing	44.12	41.55	41.19
6	Basic metals and fabricated metal	45.20	42.72	40.45
7	Rubber and plastics	44.10	41.78	40.15
8	Mining and quarrying	41.21	37.34	35.90
9	Electrical and optical equipment	34.89	34.24	32.97
10	Water transport	30.91	32.37	30.88
11	Wood and products of wood and cork	32.77	28.19	30.28
12	Air transport	30.76	34.26	28.27
13	Inland transport	31.91	30.32	27.71
14	Textiles and textile products	32.81	33.91	27.37
15	Machinery, nec	30.86	34.26	27.14
16	Other nonmetallic minerals	45.24	27.48	26.97
17	Manufacturing, nec; recycling	30.46	36.43	24.22
18	Transport equipment	38.68	31.51	24.01
19	Construction	26.42	25.95	22.96
20	Financial intermediation	24.08	23.84	22.50
21	Other supporting and auxiliary transport activities; activities of travel agencies	23.97	21.67	21.27
22	Wholesale trade and commission trade, except motor vehicles and motorcycles	30.50	33.00	21.06
23	Retail trade, except motor vehicles and motorcycles; repair of household goods	26.71	22.15	20.02
24	Electricity, gas, and water supply		17.11	18.18

(continued)

(continued)

Sr. no	Sector	2000	2010	2017
25	Agriculture, hunting, forestry, and fishing	3.66	14.97	17.33
26	Renting of M&Eq and other business activities	34.50	28.16	15.18
27	Food, beverages, and tobacco	12.45	13.35	9.78
28	Post and telecommunications	23.05	17.53	9.39
29	Health and social work			9.19
30	Hotels and restaurants			7.17
31	Other community, social, and personal services	6.95	5.96	2.98
32	Education			1.33
33	Public administration and defense; compulsory social security	0.00	0.04	0.00
34	Real estate activities	0.67	1.21	

*GVC = ((DVA + FVA)/Gross Exports)*100. *Source* Calculated based on ADB-MRIO database

References

ADB-ESCAP. (2014). Trade process analysis report for subregional cooperation. Asian Development Bank (ADB)—United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)

Arvis, J. F., Duval, Y., Shepherd, B., & Utoktham, C. (2013). Trade costs in the developing world: 1995–2010. *World Bank Policy Research Working Paper*, (6309).

De Backer, K., & Miroudot, S. (2014). Mapping global value chains., OECD Trade Policy Papers, No.159, OECD Publishing, Paris

Chains Background Papers, RVC-8

Banga, R. (2013). Measuring value in global value chains. UNCTAD Regional value

Borin, A., & Mancini, M. (2019). Measuring what matters in global value chains and value-added trade. *World Bank policy research working paper*, (8804).

Cadot, O., Asprilla, A., Gourdon, J., Knebel, C., & Peters, R. (2015). *Deep regional integration and non-tariff measures: A methodology for data analysis.* UNCTAD Policy Issues in International Trade and Commodities, Study Series No. 69, UNCTAD

Casella, B., Bolwijn, R., Moran, D., & Kanemoto, K. (2019). Improving the analysis of global value chains: The UNCTAD-Eora Database. *Transnational Corporations, 26*(3), 115–142.

Cheng, M. K. C., Rehman, S., Seneviratne, M., & Zhang, S. (2015). *Reaping the benefits from global value chains.* IMF Working Papers 15/204, International Monetary Fund. Washington, D.C.

CII. (2018). *Trade facilitation Reforms in India: Progress & Way Forward*

De, Prabir and Durairaj Kumarasamy. (2020). What role should connectivity play in reenergising South Asia? (ARTNeT Working Paper Series No. 188). ESCAP

EXIM Bank (2021) Building value chain: Opportunities for India and ASEAN. Occasional Paper No. 203. Export-Import Bank of India

Koopman, R., Wang, Z., & Wei, S. J. (2014). Tracing value-added and double counting in gross exports. *American Economic Review, 104*(2), 459–494.

Kowalski, P., Gonzalez, J. L., Ragoussis, A., & Ugarte, C. (2015). Participation of developing countries in global value chains: Implications for trade and trade-related policies. OECD Trade Policy Papers. No. 179. OECD Publishing

Kumar, P. (2016). Industrialization and employment for sustainable growth in India. Presentation made at the CII

Lall, S. (2000). The Technological structure and performance of developing country manufactured exports, 1985–98. *Oxford Development Studies, 28*(3), 337–369.

Lanz, R., & Piermartini, R. (2018). *Specialization within global value chains: The role of additive transport costs* (No. ERSD-2018–05). WTO Staff Working Paper.

Ministry of Commerce and Industry (2016). *Annual Report 2016–17*. https://commerce.gov.in/wp-content/uploads/2020/02/MOC_636625074055561301_annual_report_16_17_eng.pdf

Mitra, S., Gupta, A. S., & Sanganeria, A. (2020). Drivers and benefits of enhancing participation in global value chains: Lessons for India. ADB South Asia Working Paper, Asian Development Bank (ADB)

NITI Aayog. (2020). NITI Aayog's Strategy for New India @ 75

OECD. (2013a). *Trade and global value chains.* OECD Publishing.

OECD. (2013b). *Trade policy implications of global value chains.* OECD Publishing, Paris.

OECD. (2021). *Economic Outlook for Southeast Asia, China and India 2021: Reallocating resources for digitalisation.* OECD Publishing, Paris.

OECD-UNIDO. (2019). *Integrating Southeast Asian SMEs in global value chains: Enabling linkages with foreign investors*

OECD–WTO. (2015). Connecting to value chains: the role of trade costs and trade facilitation. In OECD-WTO (eds.) *Aid for Trade at a Glance 2015: Reducing Trade Costs for Inclusive, Sustainable Growth.* Paris and Geneva

Pathikonda, V., & Farole, T. (2017). The capabilities driving participation in global value chains. *Journal of International Commerce, Economics and Policy, 8*(01), 1750006.

Raei, M. F., Ignatenko, A., & Mircheva, M. (2019a). *Global value chains: What are the benefits and why do countries participate?*. International Monetary Fund.

Raei, M. F., Ignatenko, A., & Mircheva, M. (2019b). *Global value chains: What are the benefits and why do countries participate?* (IMF Working Papers 19/18). International Monetary Fund

Taglioni, D., & Winkler, D. (2016). *Making global value chains work for development*. World Bank Publications.

United Nations Industrial Development Organization (UNIDO). (2018). *Global value chains and industrial development: Lessons from China.* South East and South Asia.

Urata, S., & Baek, Y. (2020). *The determinants of participation in global value chains: a cross-country, firm-level analysis* (ADBI Working Paper Series No. 1116)

Wilson, J. S., & Mann, C. L. (2003). *Trade facilitation and economic development: measuring the impact*. World Bank Policy Research Working Paper, (2988).

World Bank. (2020a). *World Development Report 2020: Trading for development in the age of global value chains.*

World Bank. (2019). *Global value chain development report 2019.*

World Bank. (2020b). *world development report 2020b: trading for development in the age of global value chains*

World Trade Organization and Institute of Developing Economies–Japan External Trade Organization. (2011). *Trade Patterns and Global Value Chains in East Asia: From Trade in Goods to Trade in Tasks*, Geneva