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Climbing up India's Manufacturing Export Ladder: How Competitive are Intermediate Goods?

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Abstract

The rising trade in intermediate goods accounts for almost two-thirds of world's trade (MGI, 2019). India's export share for intermediate goods in its total exports has increased from 31.18% in 2011 to 32.52% in 2016. Moreover, India's overall share in world merchandise exports has itself increased from 0.6% in 1993 to 0.8% in 2003 to 1.7% in 2016 (WTO, 2017), which endorse immense potentials for moving up manufacturing export ladder. So far, literature has widely studied the usefulness of imported inputs that feed into manufacturing exports, but focus is required for assessing the capacity as intermediate exporter. Recent 'Make in India' initiative boosts of making India competitive in exporting of manufactured products. But the potential cannot be fully tapped if India's competitive intermediate products for exports are not identified, which is the aim of this paper. The paper uses the dual methodologies of 'Competitiveness Analysis' and 'Comparative-Cost Analysis' (based on export unit values) to identify potential intermediate exports of India during the time-period 2012-14 and covering 50 export markets. This paper first identifies 74 India's potential intermediate products which are found to be highly competitive for exports in the identified 42 markets. In addition, we find that large proportion of these intermediate products is being exported by India at lower unit costs as compared to the competitor-exporters. Based on rigorous cost analysis, this paper then identifies most-competitive and highly cost-advantageous 15 intermediate product-market combinations for Indian exports. These majorly include chemicals, iron and steel articles, glass products, plastics, and leather intermediate inputs and cotton yarn. They are identified as high priority items for increasing India's export competitiveness. Europe is reported as the best export destination for India's intermediates. Our study has important policy implications for helping Indian exporters while developing more proactive domestic industries for the identified intermediate inputs.

Keywords: *Intermediate Inputs, Potential Export Markets, Competitiveness, Unit Costs, Product-market Combinations*

JEL classification: *F10, F14, L60, O53*

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Climbing up India's Manufacturing Export Ladder: How Competitive are Intermediate Goods?

Deb Kusum Das* and Neha Gupta†

1. Introduction

The rising trade in intermediate goods[1] accounts for almost two-thirds of world's trade (MGI, 2019). These have been used to enhance cost-competitiveness and quality of final manufactured goods for exporting to the ultimate consumers. For instance, intermediate goods constituted 66 percent and 54 percent in the exports of South Korea and China respectively in 2011[2] (80 percent share in each one's gross imports). Intermediate goods' shares in EU-28's imports and exports were 67 percent and 58 percent, respectively; similar shares for India were at 69 percent and 58 percent. Their exports and imports in fact indicate forward and backward linkages into the global value chains (GVCs)[3].

On one hand, rising imported inputs/ foreign value added (FVA) in exports is largely used to mark more GVCs linkages. Existing literature provide how these help to boost manufacturing productivity, provide better market access and greater exports volume (Goldberg, Khandelwal, Pavnick, & Topalova, 2010; Feng, Li, & Swenson, 2016; etc.). FVA in imported inputs roughly accounts for one-fifth of exports (Vrh, 2017). According to OECD, WTO and World Bank (2014), about 30-60 percent of G20's exports comprise of intermediate inputs which helped to raise their GVC participation index, mainly for China, India, Japan and Korea. At the same time, UNCTAD (2013) reports lower FVA share in exports than world's average for developing countries in South Asia, Africa and South America as compared to much integrated East and South-East Asia.

From South Asia, India is among the top 20 leading world exporters (WTO, 2017), but ironically still has lower GVCs linkages in manufacturing along with prospects of hollowing-out (Hoda & Rai, 2014; Banga, 2014b). As already indicated in recent policy initiatives namely 'Make in India', India needs to improve its export competitiveness. One of the best

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1 Simply stated, intermediate goods are defined as inputs, providing value added in production, which is traded for further processing before final usage (UNECA, 2015).

2 Data obtained from the http://ec.europa.eu/eurostat/statistics-explained/index.php/Global_value_chains_and_trade_in_value_added using latest data mainly from OECD-WTO Trade in Value Added (TiVA) Database, December 2016

3 Pathikonda and Farole (2016) also stipulate that "GVCs involve task-based trade across multiple stages of the production process that take place across a number of different countries, in which multiple inputs and exports of intermediate goods and services are necessary to produce a final good, which may also be exported."

solutions accordingly is listed as higher linking or upgrading in GVCs (Banga & Saha, 2016; Gupta, 2015b)[4]. This can be achieved in two important ways: (i*) By initiating own value chains*: Countries with huge manufacturing base, number of established brands and developed services sector have the capability to develop manufacturing GVCs. That is, these can lead by exporting many of their own value-added final manufactured products and by globally sourcing intermediates obtainable at lower costs. India has forte in production and exports of finished products from many industries. It can emerge as one of the biggest Asian hubs with several lead firms having their own GVCs for manufactured products in textiles and machinery industries (Gupta, 2016). Banga and Saha (2016) show 47 percent contribution of finished consumer and capital goods in India's exports to other RCEP countries (mainly consumer goods). They have accordingly identified India's lead products embodying competitive advantages for exports in different markets and having potential to form own GVCs. (ii) *By forging greater deeper linkages with existing GVCs through more trading in intermediates*: Rising backward linkages or FVA content in exports are definitely useful. But Banga (2014a) and Gupta (2015b) also persistently argue that for gains under GVCs, a country must have higher domestic value added (DVA) in its exports of intermediates which are passed on to the other countries. Such forward linkages may have their own set of advantages in terms of gaining competitiveness, export expansion, and strengthening of domestic industries supplying inputs. While such benefits have not been explicitly documented, Gupta (2016) shows net gains from GVCs linking for Indian textiles/clothing and machinery industries due to higher forward linkages. Tewari, Veeramani and Singh (2015) also highlight growing chances for India to connect with ASEAN by enhancing exports of machinery intermediates or parts.

In fact, India's export share for intermediate goods in its total exports has increased from 31.18% in 2011 to 32.52% in 2016[5]. Moreover, India's overall share in world merchandise exports has itself increased from 0.6% in 1993 to 0.8% in 2003 to 1.7% in 2016 (WTO, 2017), which endorse immense potentials for moving up manufacturing export ladder. So far, literature has widely studied the usefulness of imported inputs that feed into manufacturing exports, but focus is required for assessing the capacity as intermediate exporter. Recent 'Make in India' initiative boosts of India's competitiveness in exporting of manufactured products. But the GVCs potential cannot be fully realized by India if competitiveness in exporting of intermediate products is not explored. Thus, the paper aims to identify potential intermediate exports of India in selected markets using the dual methodologies of 'Competitiveness Analysis' and 'Comparative-Cost Analysis'.

The rest of the paper is organized as follows. In section 2, we review the literature relating to trade in intermediate products followed by a review of export trends. The methodology

[4] "A rapid export expansion would be difficult to achieve unless India gets gainfully integrated into the GVCs. To be gainfully integrated into GVCs, it is important for countries to forge their own GVCs by exporting the finished products and sourcing the intermediate products and services from the most efficient suppliers in the world…Alternatively, countries can link into GVCs by exporting intermediate products and services." (Goldar, Banga, & Banga, 2017b)

[5] Using World Integrated Trade Solutions (WITS) Software, described in Section 3 of this paper, and from Appendix Table 1

adopted for the present study along with the dataset used in presented in section 3. The empirics of the paper are analyzed in section 4. The issues of exporting at lower unit costs from amongst the identified intermediate are discussed in section 5. The final section concludes the study.

2. Case for Exports of Intermediate Goods

This section reviews the literature and data relating to trade in intermediates in context of India.

2.1 Review of Literature

This sub-section lists the main literature in the context of importance of intermediate goods' trade in case of both developed and developing world and presents the case for promoting export competitiveness through intermediates in emerging Asian countries mainly India.

2.1.1 Trade of Intermediate Goods: Regional Blocs

Literature has been focusing on regional blocs who acted as pioneers in the field of trade of intermediate goods. Highest trade particularly in machinery parts and components (P&C) has been recorded by main regional cluster of East Asia (EA) with South-East Asia (SEA). Japan initiated the pattern in Asia, followed by Singapore, South Korea, Taiwan, Philippines, Malaysia, Thailand, Indonesia, Vietnam, etc. But China has emerged as GVCs manufacturing epicenter for propelling region's trade (Factory Asia). Other two regional blocs are: Factory North America where United States (US) takes the lead and Factory Europe where Germany occupies the centre-stage along with United Kingdom (UK). There have been extra regional trade exchanges too from these clusters. The process of and the country-wise approach for using intermediate trade have been other widely discussed cases. Many developed countries from Europe and US have started by moving their labour-intensive manufacturing to EA and SEA. These regions grew simultaneously, but their approaches to enter into GVCs varied. For instance, China largely entered from downstream by importing inputs from neighbouring countries and became Asia's hub by exporting assembled final goods to the developed countries. On the other hand, US joined mainly from the upstream by exporting number of complex and specialized intermediate inputs or P&C. Reasons for rising exports of intermediates to nearby countries have been studied too. That is, final good manufacturers prefer shorter delivery times of intermediate inputs for better production efficiency (World Bank, 2017). This explains why Mexico's 83 percent of manufacturing intermediate exports went to US in 2015. Further, Germany's trade with its Eastern European partners (such as Poland and Czech Republic) mostly involve intermediates (both upstream and downstream) particularly relating to chemicals, machinery and motor vehicles. During 1995-2015, about 60 percent of intermediate goods accounted in Eastern Europe's exports to Germany.

2.1.2 Imports versus Exports of Intermediates

Importantly, there has been discussion in literature whether to link backward or forward in ever-changing trading regime. On one hand, 'export shares of intermediate inputs' have been

used to estimate the extent of integration into GVCs, such as by Ando and Kimura (2009), Obashi and Kimura (2016), and Gupta (2015a) for India, etc. while dealing with machinery industry. This depicts how a country is able to develop links to the different production chains spread across countries. On the other hand, the usage of 'imported intermediates in exports' has been regarded as proxy for growing GVCs participation (Goldar, Das, Sengupta, & Das, 2017a; Veeramani & Dhir, 2017; etc.). To capture imported content in exports, Hummels, Ishii and Yi (2001) brought the concept of vertical specialization. Baldwin and Lopez-Gonzalez (2015) put forward the concept of Importing to Produce (I2P) and Importing to Export (I2E). De Backer and Miroudot (2013) use GVCs participation Index as the sum of imported inputs in own exports and exports of domestically produced inputs to other countries divided by gross exports. Recent multicounty input-output tables from TIVA provide data on forward and backward GVCs linkages.

Many developing economies mainly of Asia and Africa have attempted to increase their GVCs participation by indulging in both exports and imports of intermediate goods. Two-way intra-Asian intermediate goods trades have thus became more than two-thirds of total manufacturing trade during 1995-2015. Overall, the theme has been faster growth of trade in intermediate goods than trade in finished goods and their differential effects. For instance, Soo (2017) mentions that gains are more when trade occurs in both intermediate and final foods as compared to the gains from trade in final goods only. That is, international trade happens in both types of products when the costs of coordinating intermediate goods are not much high as compared to those related to domestic produced inputs. In such a case, the production uses greater imported inputs. Importantly, higher and significant effects of intermediate goods on rising and falling of manufacturing trade have been recorded than final goods, for example, during the period 2001–08 and 2009–14 and 2000–01 and 2008–09, respectively. However, final goods added more to manufacturing trade's growth in the early periods of 1995-2000 and to its decline in 2014-15 (around crisis). In short, intermediate trade dominated in the last 2-3 decades (World Bank, 2017).

There is another widely studied case of how imported inputs and reduction in their tariffs lead to productivity gains in domestic industries and enable better usage of technologies embodied therein. This is highly crucial for developing countries. Imported inputs further support manufacturing of new varieties of domestic products, boost manufacturing output growth and lead to skills upgrading (Goldberg et al., 2010; and Topalava & Khandelwal, 2011 for India; Kasahara & Rodrigue, 2008 for Chile; Amiti & Konings, 2007 for Indonesia; Habiyaremye, 2013 for Botswana; Crino, 2012 and Calatone & Crino, 2011 for Europe). These have commendably enhanced volume and scope of exports and improved competitiveness (Feng et al., 2016; Bas, 2012). Firms with access to imported inputs have been able to bear fixed export costs via quality and technology channels, as well as able to lower their input costs with high sales (Bas & Strauss-Kahn, 2014; Antras, Fort, & Tintelnot, 2017).

In terms of jobs, there are mixed results. Jiang (2015) states that industry-wise variations in trading of intermediates must be considered well while framing employment policies. He found that from 1995 to 2009, trade in intermediate goods generated additional 32 million

jobs. Veeramani and Dhir (2017) consider higher GVCs participation mainly the backward linkages as main source of export-based jobs in India. But Banga (2016) show that GVCs participation has not led to higher employment in India, even by forward linkages. Rising backward linkages tend to have negatively affected its growth (probably by displacing domestic workers).

2.1.3 Changing Trends in Intermediate Trade and Role of India

Recent theme is of declining trade in intermediates and complex-GVCs activities post crisis, mainly since 2012-2015, leading to trends of trade protectionism. GVCs of many developed countries have also started to mature. On the other hand, industrial upgrading within GVCs is also happening in many emerging economies. For instance, China is exporting more intermediates to other low-income economies, located downstream, to boost their final goods' exports to the world (World Bank, 2017). In fact, China has been recording rising DVA content in gross exports, owing to strong domestic input industries (Kee & Tang, 2016).

At the same time, case of many low integrated countries of Africa, South America and South Asia especially India are being deeply studied. These are still largely resource-based economies rather than manufacturing-specialised ones. Gupta (2015b), Goldar et al. (2017a) portray India's lower GVCs participation than EA and SEA. But there are prospects as Bhat, Guha, Paul and Sahu (2007) and Goldar (2013) show India's rising import intensity of exports. Veeramani and Dhir (2017) projects that India can emerge as electronics assembly hub by using imported P&C.

Although Asia-Pacific region's GVC production have been largely based on intra-regional intermediate imports, but they also export number of GVC products. Source of final demand remains in developed countries outside region. Asia-Pacific accounted for 43 percent and 38 percent of global GVC-intermediate exports and imports, respectively, in 2013. Their GVC participation is generally situated in ten countries: Australia, China, Japan, India, Indonesia, Malaysia, Korea, Singapore, Thailand and Turkey. However, India continued to have low P&C's share in its total manufacturing exports over the period 2008-12 (UNESCAP, 2015).

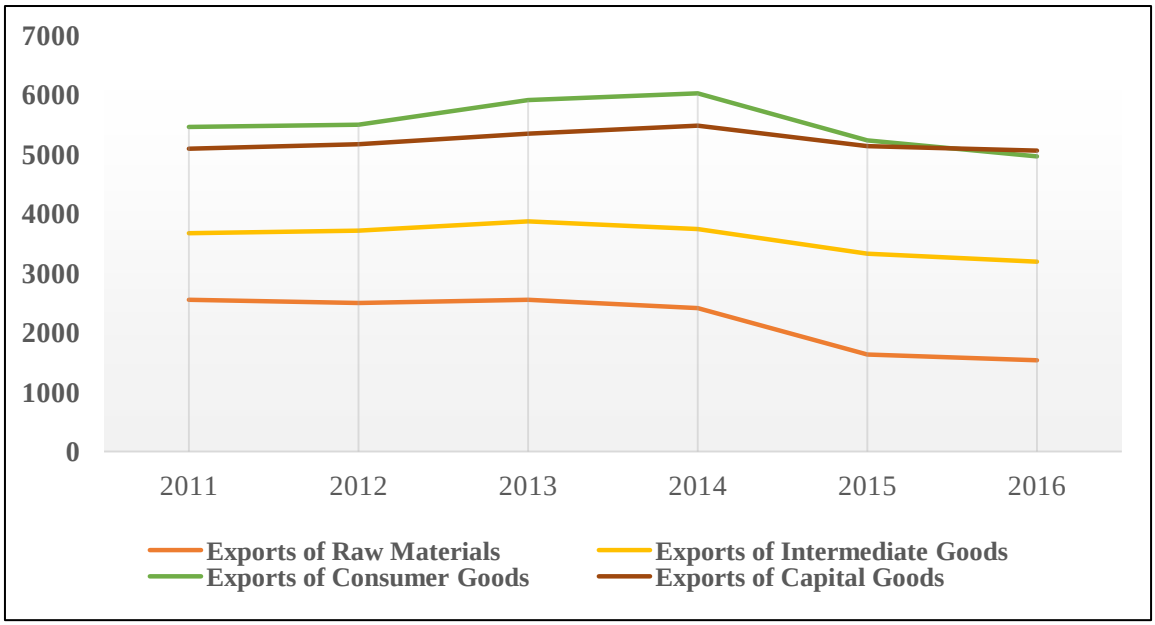
On the whole, there are still few studies which focus on exports of intermediate goods. For instance, Taglioni and Winkler (2016) focuses on the importance of sellers' or exporters' perspective too while measuring share of intermediate in total exports (such as in case of Malaysia) and indicates whether a country is supplier in GVCs. Joo and Kim (2010) assess the effect of China's exports on the Korea's exports of the intermediate goods. For India, there are studies on forward GVCs linkages, such as, Banga (2014a), Gupta (2015b), etc. Although India has higher imports of intermediate goods in 2015 at US$ 211 billion (share of 2.8 percent in world's imports) as compared to their exports at US$ 125 billon (share of 1.7 percent in world's exports), but India is reported to be among leading exporters and importers of intermediates (WTO, 2017). India's ratio of forward linkages to backward linkages in 2011 has been significant at 1.87 indicating net gains (Banga, 2016). Thus, despite low GVCs participation, the intermediate trade is rising for India, mainly its value-added exports.

The opportunity but still remains bleak due to lack of comprehensive study on the issue. This justifies the paper.

2.2 Review of Trends

During 2011-16, the global exports of finished goods (consumer and capital) have been greater than the trade in intermediate goods and primary goods (raw materials)[6] (Figure 1). Global export shares of consumer and capital goods have also increased (Table 1). Maturing of some developed countries' GVCs could explain the trend.

Figure 1: Global Exports during 2011-2016 (stages of processing – Values in USD Billion)



Source: Extracted from WITS (COMTRADE) database [Based on UNCTAD's classification of products into categories of raw materials, intermediate goods, capital goods and consumer goods]

However, owing to growing protectionism, post-2014, overall trade declined in all the segments, particularly in case of raw materials and consumer goods where export shares have also declined slightly. Many countries including China are now focusing more on domestic growth and/or on services trade. Some LDCs in Asia and Africa are too moving beyond the trade in resources. All this indirectly act as an opportunity for latecomers to upgrade particularly in manufactured intermediates' trade. In fact, amidst of such developments, the export shares of intermediates have remained stable around 21 percent over the years (Table 1).

[6] This is based on UNCTAD's classification of international trade activities into 4 categories based on stages of processing or end use (available on WITS software): "Primary products comprise raw materials and resources used in the productive process. Intermediate products comprise semi-finished goods that are used in the production of other products. Consumer products are those that are intended for final consumption. Capital goods are manufacturing goods such as machinery that are intended to be used in the production of other goods." (http://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=686, https://wits.worldbank.org/product-metadata.aspx?lang=en)

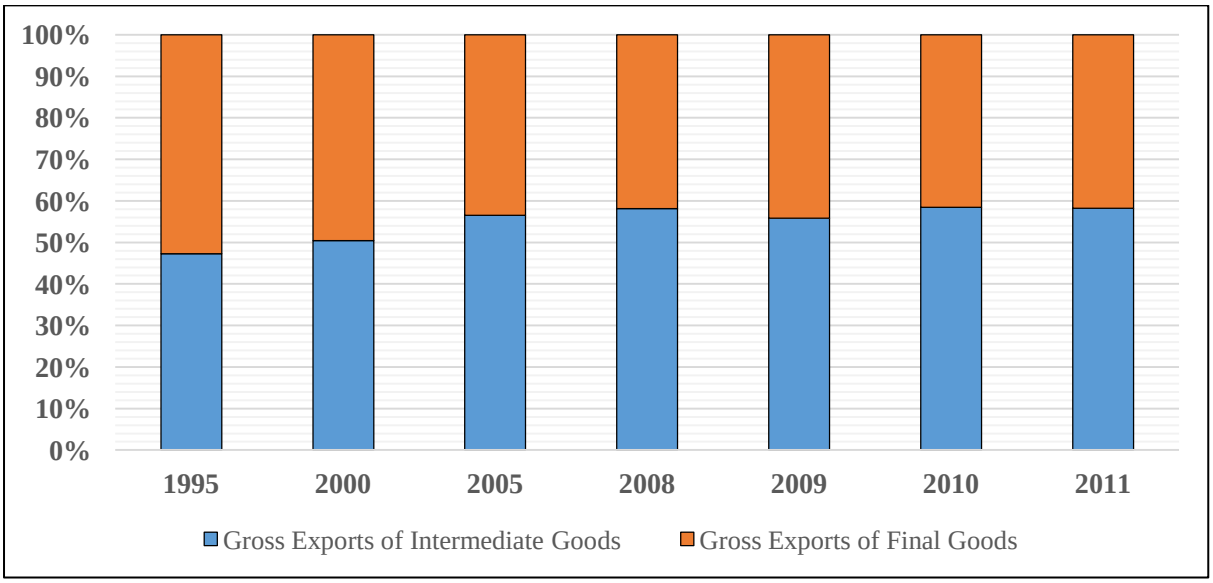
Table 1: Global Export Shares of Intermediates, Consumer and Capital Goods, and Raw Materials (in %)

Indicators	2011	2012	2013	2014	2015	2016
Share of Exports of Raw Materials in Total Exports	14.28	13.91	13.66	12.60	9.82	9.64
Share of Exports of Intermediates in Total Exports	20.80	20.81	21.13	20.47	20.87	20.68
Share of Exports of Consumer Goods in Total Exports	30.77	31.17	32.20	32.95	32.74	32.14
Share of Exports of Capital Goods in Total Exports	29.48	29.80	29.78	30.66	32.67	33.22

Source: Extracted from WITS (COMTRADE) database

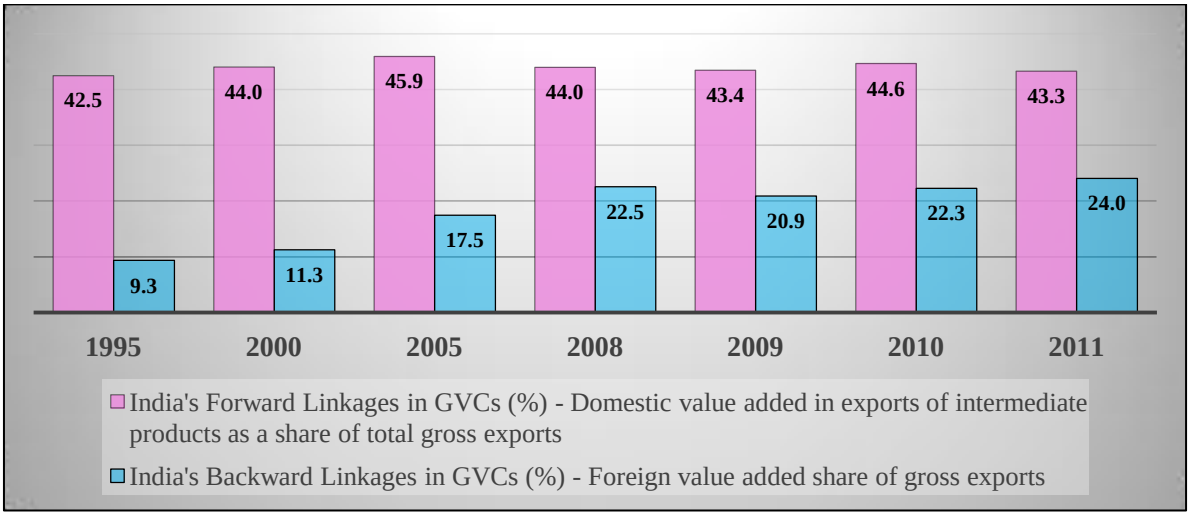
As an important case, India's shares of exports of intermediates in total exports have been more than that of final goods, since 2000 but more rapidly after 2004 (Figure 2). It has historic trade relations not only with US and developed countries of Europe, but also with developing Asia and Africa. India can emerge as potential supplier of some intermediate inputs (including primary materials). That is, India's rank in the exports of raw materials has improved to 22nd position in 2016 with share of 1.40 percent (from 27th position in 2011 with share of 1.04 percent). India's shares during 2011 and 2016 in the exports of intermediates have been much better at 2.5 percent (11th rank) and 2.6 percent (13th rank), respectively.

Figure 2: India's Exports of Final and Intermediate Goods (%)



Source: OECD-WTO TIVA 2015 [Note: latest data is available for the year 2011; Further, this database too uses similar definition of intermediate goods based on UN classification (based on end-use) covering primary products, processed products, industrial supplies, etc. Raw materials do not have separate classification and are likely to be included therein. "Intermediate goods and services are tangible and intangible products utilized as inputs in production, excluding fixed assets." - https://www.wto.org/english/res_e/statis_e/mi wi_e/Explanatory_Notes_e.pdf]

Figure 3: India's Forward and Backward Linkages in GVCs (%)



Source: OECD-WTO TIVA 2015 [Note: latest data is available for the year 2011]

As a matter of fact, India's shares in imports of FVA for exports or backward linkages have been increasing since 90s till recent decade (Figure 3). Notably, India's forward linkages in GVCs, defined as exports of intermediates for adding into other countries' exports or final consumption, are much higher (almost double).

Although, in absolute terms, during 2011-2016, India's imports of intermediate goods have been higher, but India exports intermediates (including raw materials) across the globe including US, Europe, Asia as well as Africa (Table 2 and Appendix Figure 1)[7]. These exports have however decreased post-2013, but the pace of decline is much greater in case of imports. Focused export promotion measures for goods and services in Foreign Trade Policy 2015-20 with initiation of 'Make in India' may have helped.

[7] In 2016, India imported intermediates from similar set of countries, that is, from China, Switzerland, US, Korea, United Arab Emirates (UAE), Indonesia, Hong Kong, Malaysia, Saudi Arabia, Japan and Germany. In fact, imports of raw materials declined drastically after 2014, followed by decline in intermediates' imports.

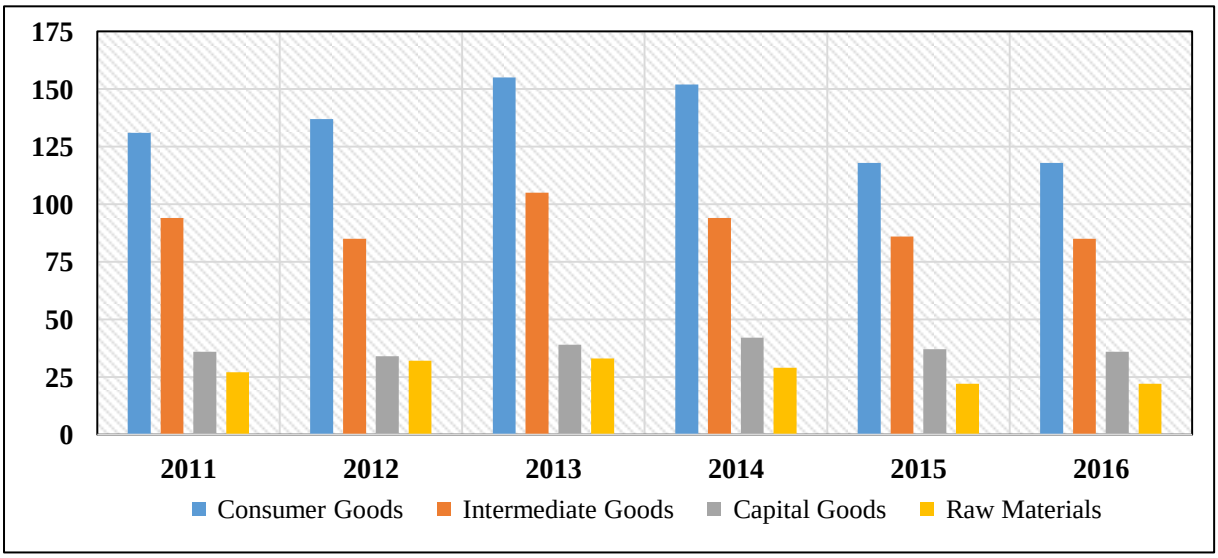
Table 2: Top Countries for India's Exports of Intermediates and Raw Materials in 2016

Top 15 Countries for India's Exports of Intermediate Goods in 2016	Country's share in India's total exports of Intermediates (%)	Top 15 Countries for India's Exports of Raw Materials in 2016	Country's share in India's total exports of raw materials (%)
US	15.3	Vietnam	16.1
Hong Kong	11.2	US	11.0
UAE	10.1	China	10.2
China	5.2	UAE	8.4
Belgium	3.5	Belgium	5.2
Bangladesh	3.3	Bangladesh	3.7
Korea	2.4	Malaysia	3.0
Italy	2.3	Japan	2.7
Germany	2.0	Indonesia	2.7
Turkey	1.9	Saudi Arabia	2.7
Thailand	1.8	United Kingdom	2.0
Israel	1.8	Egypt	1.9
Malaysia	1.7	Pakistan	1.8
Japan	1.6	Netherlands	1.8
Singapore	1.6	Nepal	1.7
Followed by UK, other South Asian countries like Nepal, Sri Lanka and Pakistan, SEA namely Indonesia, Vietnam, and to Brazil, Saudi Arabia, Spain, France, Netherlands, Egypt, Iran, etc.		Followed by Italy, SEA and EA (Thailand, Singapore, Philippines, Korea, Hong Kong, etc.), Germany, Russia, Kuwait, France, Iran, Canada, etc.	

Source: Author's calculations using WITS

Figure 4 and Appendix Table 1 further show that India's exports to the world although largely consists of consumer goods, but are followed by intermediate goods with the remarkable share of 33 percent in 2016. Banga and Saha (2016) also show similar trends: 34 percent and 31 percent of India's exports of consumer goods and intermediates to RCEP, respectively.

Figure 4: India's Exports to World during 2011-2016 (based on stages of processing – Values in USD Billion)



Source: Extracted from WITS (COMTRADE) database

Interestingly, India also has comparatively greater revealed comparative advantage in the exports of intermediate goods (1.8 percent in 2016 as compared to 1.4 percent in case of consumer goods). This has risen too from 2011 by 0.4 percentage points (highest among all – see Appendix table 1). This stresses India's growing role in exports of intermediates which must be strengthened. As export shares of countries like US, UAE, Thailand, Spain, Italy, Japan, Mexico, Germany, etc. (Appendix Table 2) have recently declined for intermediate/raw material, this opens up opportunity for India to capture vacant spaces. Accordingly, the paper aims to identify India's potential key intermediate products for greater export competitiveness.

3. Methodology and Data Sources

The paper uses the dual intricate methodologies of 'Competitiveness Analysis' (similar to the recent work of Banga & Saha, 2016) and 'Comparative-Cost Analysis' (using combinations based on export unit values) for identifying potential intermediate exports of India in selected 50 partner countries/markets. These 50 markets include: Brunei, Myanmar, Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, Vietnam, Australia, China, Japan, Korea, New Zealand, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK, US, Kenya, Ethiopia (excluding Eritrea), Ghana, Nigeria, Tanzania and Uganda. Banga and Saha (2016) have identified 35 lead products in these markets during the time period 2012-2014[8]. These 50 markets have thus been indirectly recognized by the Ministry of Commerce, Government of India for the purpose of India's export promotion and cover majority of important export destinations across all the regions. Accordingly, this paper also uses such export markets for identification of India's intermediate products. Ultimately, this paper aims to compile the list of India's potentially competitive finished and intermediate goods, and thus incorporates some matching approaches in terms of selecting the same time-period (2012-14) and 50 markets.

This paper uses Broad Economic Categories (BEC) codes to identify intermediates (both primary and processed including parts and components)[9]: '111 - Food and beverages, primary, mainly for industry; 121 - Food and beverages, processed, mainly for industry; 21 - Industrial supplies not elsewhere specified, primary; 22 - Industrial supplies not elsewhere specified, processed; 31 - Fuels and lubricants, primary; 322 - Fuels and lubricants, processed

[8] They have selected 50 markets "based on the inputs from the Department of Commerce at the Ministry of Commerce and Industry, India." In fact, this study was initiated as per the demands of Department of Commerce: "There is an urgent need to increase exports and reduce the value of imports in order to improve the balance of trade. In this context, the Department of Commerce at India's Ministry of Commerce and Industry requested the Trade Division of the Commonwealth Secretariat to provide technical assistance in the design, development and launch of a project aimed at identifying India's lead products in different markets in which India has a competitive advantage and therefore has the potential to increase its exports and form its own global value chains (GVCs), linking suppliers from least developed countries (LDCs) in to these value chains." (see, Banga & Saha, 2016 for details)

[9] Obtained from https://unstats.un.org/unsd/tradekb/Knowledgebase/50090/Intermediate-Goods-in-Trade-Statistics; Also see https://aric.adb.org/blog/intermediate-goods-dominate-intraregional-trade-in-developing-asia

(other than motor spirit); 42 - Parts and accessories of capital goods (except transport equipment); and 53 - Parts and accessories of transport equipment'. The selected BEC codes for intermediates are matched with HS 2007 codes at 6-digit level[10] to identify total intermediate goods for India. Their exports and imports data with the identified 50 markets for the years 2012, 2013 and 2014 are then extracted (using 3-years average trade flows 2012-14 for all the estimations).

The 'Competitiveness Analysis' approach first identifies those intermediate products that India exports above the threshold of US$ 50 million and which are exported to more than 4 markets in all the three years[11]. This exercise is used to identify main intermediate product-market combinations for India's exports across 50 markets.

For each selected intermediate product in 50 markets, top five exporters excluding India are selected. Thereafter, competitiveness of India and of its five competitors are calculated using following indices in each market for all the products (as used by Banga & Saha, 2016):

- Bilateral Revealed Comparative Advantage (BRCA): This measures countries' comparative advantage in exporting of products to partner markets. India's BRCA value must be more than competitors to show greater comparative advantage in any product.

$$BRCA = \frac{X_{ij}^{k} / X_{ij}}{X_{iw}^{k} / X_{iw}}$$

{X= exports, i is exporter country, j is destination market/country, k is product, w is world}

- Contribution to Trade Balance (CTB): This considers both exports and imports. CTB is used to find if a product is positively contributing to the country's trade balance.

- Market position (POS): This is calculated as per each exporter-country for a product which shows its competiveness in international market.

$$CTB_{ik} = y_{ik} - g_{ik} * y_i$$

$$y_i = 1000 * \frac{X_i - M_i}{X_i + M_i} \text{ and } g_{ik} = \frac{X_{ik} + M_{ik}}{X_i + M_i}$$

[Here, M= imports, and y_{ik} is actually equivalent to POS]

$$POS = 1000 * \frac{X_{ik} - M_{ik}}{X_{iw} + M_{iw}}$$

[10] Matching has been done using concordance available at UN Stats between HS 2007 and BEC Rev – See, https://unstats.un.org/unsd/trade/BEC%20Classification.htm

[11] Methodology may seem similar to the Banga and Saha (2016) in terms of thresholds, but the logic of adopting such thresholds in this paper differ. For instance, usage of threshold level of US$ 50 million captures about 80 percent in the exports of all intermediate products.

Broadly, the products in order to be competitive must have BRCA values as at least 1 or above with positive values of POS and CBT. However, this paper uses certain thresholds too. Competitiveness Analysis for this paper finally identifies potential key intermediates for Indian exports in selected markets which meets the criterion of "India's higher values in at least two indices as compared to the competitors for each product-market combination, where value of India's BRCA to be at least 2.80 and above, and of POS and CBT to be at least 0.1"[12]. Some logic is also applied while selecting required products, for instance, gaps between values of India's indices and that of competitors are considered. Those product-market combinations are excluded where India's either POS or CBT are negative or where India is only marginally more competitive to the next competitor-exporter.

The paper then importantly calculates 'potential market shares' that each identified intermediate input can capture in 50 markets. For this, existing market shares or export values of other 5 competitors (herein to be referred as 'relatively weak' competitors) in identified markets for each product are added up.

After identifying competitive intermediate product-market combinations using Competitiveness Analysis method, this paper subsequently lists core cost-competitive intermediate products that can be competitively exported by India at lower unit costs to the identified markets. The detailed methodology of 'Comparative-Cost Analysis' will be explained in Section 5.

Widely used COMTRADE database from World Integrated Trade Solutions (WITS)[13] software is the source of data in this paper. WITS has been designed by World Bank in partnership with various multilateral organizations, namely United Nations Conference on Trade and Development (UNCTAD), International Trade Center (ITC), United Nations Statistical Division (UNSD) and the World Trade Organization (WTO). The databases in WITS are obtained using official data sources reported by countries, where many of them report directly to the UN. This software provides data (in USD thousand terms) on international merchandise trade, tariff and non-tariff measures for all countries for different product or commodity classifications at one stop. This further display useful trade indicators such as revealed comparative advantage, country growth, etc. WITS also help users to create their own trade statistics using existing data as well as to undertake tariff cut simulations. HS product classification is used to identify intermediate products. This is a very descriptive classification available for the wide range of products at a much disaggregated level.

[12] This criteria has been selected on the basis of Berretta and Lenti (2012) where combined RCA of manufactured goods including machinery and transport equipment is provided as 3.09 in 2000, 2.72 during 2005 and 2.50 in 2010 -average RCA to be 2.77. Only those products have been thus considered where India has BRCA above 2.7 or at least 2.80. Second, POS and CBT to be at least 0.1, as the values below this would mean no contribution to trade balance. This threshold may not be sufficient, but suitable for international comparison. Such exercise is done for all the 262 products to select key intermediates that India can export in selected markets. In some cases, India's POS/CBT values may not be much despite higher BRCA or vice versa. But, appropriate level of difference has been considered in each product-market combination to justify India's higher competitiveness.

[13] See https://wits.worldbank.org/ and https://wits.worldbank.org/about_wits.html

In this paper, during the initial stage of matching BEC codes with HS codes, a total of 3154 intermediate products are identified for India. WITS however gives required trade data only for 3028 products, but usage of threshold level of US$ 50 million captures about 80 percent in the exports of all 3028 products. After applying thresholds, the 'Competitiveness Analysis' shortlists 312 product-market combinations, that is, 262 major intermediate products of India for exports across 50 markets. Then for each 262 intermediate product in each market, India's competitiveness and of its five competitors are assessed in order to identify final list of India's key manufactured competitive intermediates for climbing up export ladder.

4. Competitiveness Analysis: Key Results

Using 'Competitiveness Analysis' method, this paper finally identifies a list of India's 74 potential key intermediate products (out of 262) in 42 markets (out of identified 50 markets), that is, 116 prospective intermediate product-market combinations. That is, 8 markets are not found to be competitive destinations for India's intermediate exports, namely, Myanmar (MMR), Laos, Malaysia (MYS), Romania (ROM), Kenya (KEN), Ghana (GHA), Nigeria (NGA) and Tanzania (TZA). Results show that India can potentially gain significant market share from existing competitors by exporting selected intermediates to the identified markets, especially benzene, line pipes for oil/gas pipelines, cast articles of iron/steel, vegetable saps, cotton yarn, pigments, medicaments, etc. (Table 3 for summary and Appendix Table 3A for details).

Table 3: Summary Snapshot of Identified India's Potential 74 Intermediate Products for Exports in Selected 42 Markets

Category	Competitive 74 Intermediate Products	India's Existing Exports to 42 markets (US$ 1000)	Additional potential market share to capture from competitors (US$ 1000)
Top 25	Benzene[14], Line pipe used for oil/gas, Cast articles of iron/steel, Vegetable saps, Cotton yarn of combed fibres measuring between 125-192.31 decitex, Medicaments, Pigments to manufacture paints/dyes, parts of non-powered aircrafts/spacecraft, Mucilages/thickeners derived from locust bean/guar seeds, Sacks/bags of polymers of ethylene, Flanges and wires of stainless steel, articles of glass, Acid dyes, Flat and hot rolled products of iron/non-alloy steel, Plates/film/foil of polymers of propylene, Paperboard of cellulose fibres, Direct dyes, Reactive dyes, Menthol, Essential oils of mints, Textured yarn of polyesters, Leather further prepared after tanning of bovine /equine animals	4517302	4040490
Middle 25	Carbon electrodes, Synthetic organic colouring matter, Human hair/textile materials for wigs, Tubes/ pipes/ hollow profiles of cast iron and iron/non-alloy steel, Castor oil, Sacks/bags of plastics other than polymers of ethylene, Vitamins & derivatives, Twine/ ropes/cables of polyethylene/polypropylene, Plates/ sheets/ film of polyesters, Oil-cake from the extraction of vegetable fats, Synthetic organic products used as fluorescent brightening agents, Antibiotics & derivatives, Flat-rolled products of iron/non-alloy steel (with patterns in relief, non-corrugated, etc.), Waste oils, New pneumatic tyres of rubber, Wheat/meslin flour, Spectacle lenses of other than glass, Sulphonamides, Cotton yarn of combed fibres measuring between 232.56-714.29 decitex, Woven fabrics of polyester staple fibres	1468612	430006
Bottom 24	Woven fabrics of silk, Flat-rolled products of stainless steel, Oil-cake from extraction of acid & colza seeds, Plants used in perfumery/pharmacy, Towers/lattice masts of iron/steel, Corrugated flat-rolled products of iron/steel, Stranded wire/cables of aluminium with steel core, Cotton yarn of combed and uncombed fibres (measuring between 192.31-232.56 decitex), Sandstone, Natural barium carbonate, Bulk containers of man-made textile materials, Reclaimed rubber, Salt, Woven fabrics of cotton, Emery & other natural abrasives, Worked monumental/building stone of granite, optical fibre bundles/cables, Heterocyclic compounds, Sesamum Seeds, Cane sugar, unroasted Groundnuts	341897	68629

Source: Derived from Appendix Table 3A

[14] In recent Interim Union-Budget 2019-20 announcement (February 1, 2019), Indian government stressed on the urgent need to raise the production of hydrocarbon to minimize imports. In this paper, identifying benzene which is cyclic hydrocarbon as the most potential competitive item for Indian exports is a good signal. [See https://www.indiabudget.gov.in/ub2019-20/bs/bs.pdf (pg.12-13)].

India's existing exports of selected 74 intermediate products in identified 42 markets are estimated at US$ 6.3 billion. Potential market share that India can capture from additional exports of these products in the identified markets is calculated to be US$ 4.6 billion (assuming that India can capture 100 percent market share from all the relatively weak competitors).

On the other hand, Banga and Saha (2016) mentioned India' current exports of 35 lead products[15] as US$ 10.7 billion. For these, potential market share to capture has been reported to be on higher side at US$ 22.8 billion (representing a share of 7.24 percent in India's total exports during 2012-14, which is calculated as US$ 315 billion). This implies greater scope for raising India's exports of finished consumer and capital goods. However, potential-capturing wise, estimated hike in intermediates (share of 1.46 per cent in India's exports) is a small figure in comparison. But India's manufacturing sector needs push where capturing extra export potential from selected intermediate inputs could be an admirable idea.

In fact, majority of the selected inputs are highly competitive with higher values on all indices as compared to existing competitors. Principally, identified intermediate products span over number of sectors covering 31 broad HS chapters: oil seeds, oleaginous fruits, grains, seeds (viz. groundnuts, sesamum); medicinal plants; residues from food industry; prepared animal fodder (oil cake, solid residues from extraction of seeds, vegetable fats); mineral products like salt; stones, plastering materials, lime and cement; organic chemicals; dyes and pigments; essential oils; plastics and rubber articles; textiles mainly cotton yarn, manmade fibres and some made-up articles like packing containers; iron and steel and their articles; machinery parts viz. carbon electrodes, optical fibre bundles; etc. On the whole, India's total potential market share is quite significant in the exports of identified intermediate products/inputs.

Detailed analysis from Appendix Table 3A show very high estimated potential market share for few products despite low level of their existing exports, for instance, wheat flour and paperboard (while exporting to Brunei), pigments, polyester plates/sheets, spectacle lenses, silk woven fabrics, paperboard of cellulose fibres, etc. However, additional market share to capture is not much in case of some products despite India being competitive, such as in case of groundnuts, cane sugar, mucilages and cotton yarn HS 520513 (when exporting to Latvia), oil-cake from colza seeds, oil-cake from vegetable oils (when exporting to Cambodia), sandstone (Australia and Ireland), organic chemicals like heterocyclic compounds (while exporting to Cyprus) and other organic compounds (Bulgaria, Malta, Croatia, Cyprus, Uganda), essential oils (Denmark), carbon electrodes (Estonia), and worked monumental stone/article of granite. Their potential share can be increased by developing more capacities and productivity gains.

Interestingly, Appendix Table 3B also broadly highlights 'relatively weak' competitors from which India can potentially capture extra market share in the exports of identified 74

[15] They have identified lead (finished) products from broad 16 HS chapters: processed fish, cashew nuts, cumin seeds, dyes, leather articles, carpets, articles of apparels mainly women/ girls' dresses, bedspreads, steam turbines, electric transformers, railway tank-wagons, tractors, diamonds and articles of jewellery.

intermediates. The results show Germany, China and Italy (followed by US, UK, Netherlands, Belgium, France) as the top competitor-exporters in case of majority of the products. It is commendable for India to have the capacity to emerge as much stronger exporter for such intermediate inputs' exports in GVCs.

In short, despite low potential in intermediate exports as compared to finished products, Indian manufacturing is in position to provide number of intermediates to link at various stages of different manufactured GVCs. While additional exports of US$ 22.8 billion is possible by better exploiting the potential that exists for 35 lead products in identified markets, it would be preferable to have some additional gains by exploiting the potentials that exists for exports of intermediate products.

Further, this paper presents a complete list of India's potential 109 competitive items for exports in the identified 50 markets: 74 intermediates (identified in this study) and 35 lead products (identified in the study of Banga & Saha, 2016). These are found to be useful for enhancing India's gains under GVCs and supporting 'Make in India'. In fact, India's exports to the selected 50 markets (during 2012-14) stood at USD 167 billion, which comprises about 53 percent of India's total exports to the world. Both these product categories together occupy a total share of 10.24 percent. Although intermediates account only for 3.78 percent at present, but thoughtful exploring of their potentials can help building necessary confidence for many domestic input-producing industries. Also, over time, with better policies, India can increase its existing shares in exporting of selected intermediate products. Both industrial associations and government can play a pivotal role for capturing potential market shares in identified markets and improving export competitiveness.

5. Comparative-Cost Analysis: Exporting Inputs at Lower Costs

This section further determines whether India's identified potential intermediate products/inputs are also exported to the selected market combinations at the lower unit costs. Comparative cost-analysis is done by using the average export unit values (EUVs) which are calculated product-wise. EUV is also estimated on three-year average flow basis (2012-14) as India's exports of intermediate product to the identified market (using Appendix Table 3A - converted to USD) divided by volume of exports (quantity unit).

As an extension to competitiveness analysis, for each product-market combination, India's EUV is compared with the same five existing competitor-exporters. The results show that India exports many selected intermediate products at lower costs (Part A of Appendix Table 4 – referred to as *Stage I inputs*) to other Asia but European countries in particular. The list include vitamins and their derivatives, oil cake from colza seeds, essential oils, organic heterocyclic compounds, glass articles, pigments used to make paints, leather prepared after tanning, products of stainless steel, antibiotics, etc.

However, in case of some products (taken as *Stage II inputs*), India is although more cost-competitive while exporting, but there is also a close competitor which has almost similar or just marginally higher EUVs (see Appendix Table 5). China is the main competitor (in case

of inputs namely sandstone, witherite, emery, salt, cotton and polyester yarn, flanges and wire of stainless steel, tubes/pipes and flat-rolled products of iron/non-alloy steel, etc.), followed by US and UAE, Russia, Italy and Germany. India must remain cautious so that do not lose its cost-competitiveness in such products to other Asian economies in particular. In the course of phased development, productive capacities must be improved in industries producing these.

As EUV may not be the best indicator of cost advantage, further examination ('Comparative-Cost: Further Competitiveness Analysis' in other markets) is also done for all the Stage I inputs (see Part B of Appendix Table 4). For all product-market combinations, the case of India's lower EUVs than other two existing competitor-exporters (Column IV) is checked in other markets too rather than only in main selected market (Column II – obtained from Competitive Analysis in previous section). For instance, for product HS 293629 to Belgium combination, the case of India's lower EUV than that of Italy and Netherlands is checked even in other 47 markets (excluding Belgium, Italy, and Netherlands). If India's EUV is lower than Italy and Netherlands in the export of 293629 in at least other 10 markets (other than Belgium), then India has a clear cost advantage over Italy and Netherlands in the export of product 293629. This exercise is to corroborate the results obtained in Appendix Tables 3A and 4 (Part A).

Overall result of this paper, based on detailed Comparative-cost analysis using 2012-14 time-period, show ultimate 15 product-market combinations (*'Core Stage I inputs'* – Table 4) where India has highest cost-advantage as well as competitive-advantage than existing competitors. The combinations include 11 intermediate products targeted for exports to European countries and even to Singapore (mostly advanced nations). They are priority items for India's export promotion, followed by remaining Stage I inputs combinations whose potential can be subsequently exploited.

Table 4: India's Clear Cost Competitive Intermediate Goods (Core Stage I Inputs)

India's Most Competitive Product-Market Combinations	Concerned Industry	Estimated Potential share to capture from other Competitors (in US$ 1000) – Appendix Table 3A	Actual Exports reported during 2015-17 (in US$ 1000)
293629 - Belgium	Organic chemicals (vitamins B9, K, D, H, nicotinic acid)	19609	16420
702000 - Denmark	Glass products	6426	3972
321290 - Germany	Chemicals (pigments used in manufacture of paints)	104382	65315
702000 - Germany	Glass products	57600	27572
392321 - Ireland	Plastic articles for goods' packing (bags and sacks)	97262	3973
520513 - Latvia	Textiles (cotton yarn)	1	No exports reported
900110 - Luxembourg	Precision machinery (optical instrument and equipment)	848	872
730721 - Netherlands	Articles of iron & steel (flanges of steel)	49546	18381
321290 - Poland	Chemicals (pigments used in manufacture of paints)	23666	4070
330125 - Singapore	Essential oils (chemical)	2386	13783
722300 - Slovak Republic	Iron & steel (wire of stainless steel)	7171	1552
722300 - Slovenia		2317	1429
410711 - Spain	Leather prepared after tanning	26070	4575
392329 – Sweden	Plastic articles for goods' packing (bags and sacks)	24472	1187
702000- Sweden	Glass products	6986	3594

Source: WITS and from Appendix Tables 3A and 4

However, for these extremely competitive and potential intermediate goods-market combinations, the lower average exports are reported during 2015-17 (except for 330125 and 900110). This is the large gap which Indian manufacturing must capture. There is a need to explain why such profitable opportunities are still not being exploited by Indian entrepreneurs. Is it due to recession or ignorance or any other obstacle? Future consultations with industrial associations or export houses would be able to provide more insights.

Nevertheless, Europe and EA ad SEA are important export destinations for India (including US and Australia for few products). This is true even for those intermediates where India's export unit values are not lowest, but are second-best to the best competitor in that product-market combination. For instance, in case of exporting HS 300390 to Australia, 520811 and

500720 (Austria), 121190 (Denmark), HS 730721 (Finland and Sweden), HS 330124 (France), 320419 (Indonesia, Greece and Philippines), 401161 to Ireland, 320417 (Japan), 130219 (Japan and US), 120740 (Latvia), 392020 to Slovak republic, 880390 (UK) and 732599 to Sweden. These can be termed as the *Stage III inputs* whose cost-advantage must be enhanced in due course of time.

The idea of this paper is to achieve rapid export facilitation and competitiveness but in a more focused and phased manner. Policy priority is to actively engage in the exports of 'Core Sage I inputs' (Table 4) by overcoming all existing flaws, to be followed by working on the 'Stage I inputs' (Appendix Table 4- Part A) and then Stage II inputs (Appendix Table 5), and thereafter Stage III inputs.

6. Conclusion and Policy Direction

Indian manufacturing is found to be growing in its exports of Intermediate goods, thereby displaying some opportunities for growth. The paper uses the two rigorous methods of 'Competitiveness Analysis' and 'Comparative-Cost Analysis' to identify India's potential intermediate exports during the time-period 2012-14 covering 50 export markets. The summary of the main findings from this study is as follows:

1) Using Competitiveness Analysis, this paper identifies India's 74 potential intermediate products which are found to be highly competitive for exports in the identified 42 markets (mostly Europe, then East Asia, followed by South East Asia). These products mainly include benzene, line pipes used for oil/gas pipelines, cast articles of iron/steel, vegetable saps, cotton yarn, dyes and pigments, medicaments, etc. The paper further highlights 'relatively weak' competitors, mainly Germany, China and Italy (followed by US, UK, Netherlands, Belgium, France), from which India can potentially capture extra market share in the exports of these identified intermediates.
2) India may be currently capturing low share in exports of intermediates as compared to finished products, but some additional gains can be earned. Together, 74 intermediate products (identified in this paper) and 35 lead products (identified by Banga & Saha, 2016) can capture significant market share from the existing competitor-exporters and can help to increase India's export competitiveness.
3) Applying Comparative-cost Analysis on identified 74 potential intermediates in 42 markets combinations, the results show that large proportions of India's intermediate products are being exported at lower unit costs as compared to the competitor-exporters. However, in case of few inputs such as sandstone, emery, salt, cotton and polyester yarn, flanges and wire of stainless steel, tubes/pipes of iron, etc., China is India's main close-competitor.
4) More detailed examination is also undertaken via method of 'Comparative-Cost: Further Competitiveness Analysis', where the case of India's lower EUVs than existing competitor-exporters is further checked in other markets too rather than only in main selected market. This analysis ultimately identifies clear and most cost-competitive 15

intermediate product-market combinations. The combinations include different chemical products namely pigments, vitamins, oils, etc., iron and steel articles, glass products, plastic, leather intermediate inputs and textile products.

5) Second, it is suggested in this paper that the task of achieving India's export competiveness has to be undertaken in different stages. At the first high-priority stage, these identified 15 intermediates-market combinations must be promoted. As India still during the period 2015-17 continues to export most of them at less than the potential estimated (over the period 2012-14), there is a big opportunity.

6) Europe is reported as the best export destination for these India's potential intermediates. These inputs can certainly help India to lead in GVCs as their prominent supplier. However, India must incorporate fresh thinking while developing more proactive domestic industries for such identified intermediate inputs.

Using above analysis as a base, this study provides following policy suggestions which can help Indian exporters for climbing up the manufacturing ladder especially in intermediate products:

- There is a need to compile an exhaustive list of all the exporters (not only large companies, but also MSMEs ones). For this, Industrial associations can work hand-in-hand with the government and even academicians. Stakeholder's consultations can be held at regular intervals to understand their current level of capacities and the issues that they face while exporting.
- More schemes could be launched under 'Make in India' aimed at enhancing awareness among the exporters about the potential markets and how could they approach them. This is highly critical for small exporters due to lack of availability of adequate finance. Removing infrastructure bottlenecks is the key for better economic integration.
- Economies of scale is required in order to be more cost-competitive and move upwards in value chains as compared to other Asia mainly China. For this, large scale manufacturing of at least 15 identified intermediate inputs can be targeted at.
- More capacities could be put up in developing greater cost-advantages (i) in those inputs where India's EUV is still not very high or where India has close-competitors; and (ii) in more new categories of input lines where India may still be less competitive as compared to other existing competitor-exporters [such as, moving beyond competitiveness in yarn to the fabric segment of textile value chains which is reported to be India's one of the weakest link (Gupta 2018); upgrading to sophisticated auto-components segment where India may have some capacities (Gupta 2015a); etc.].

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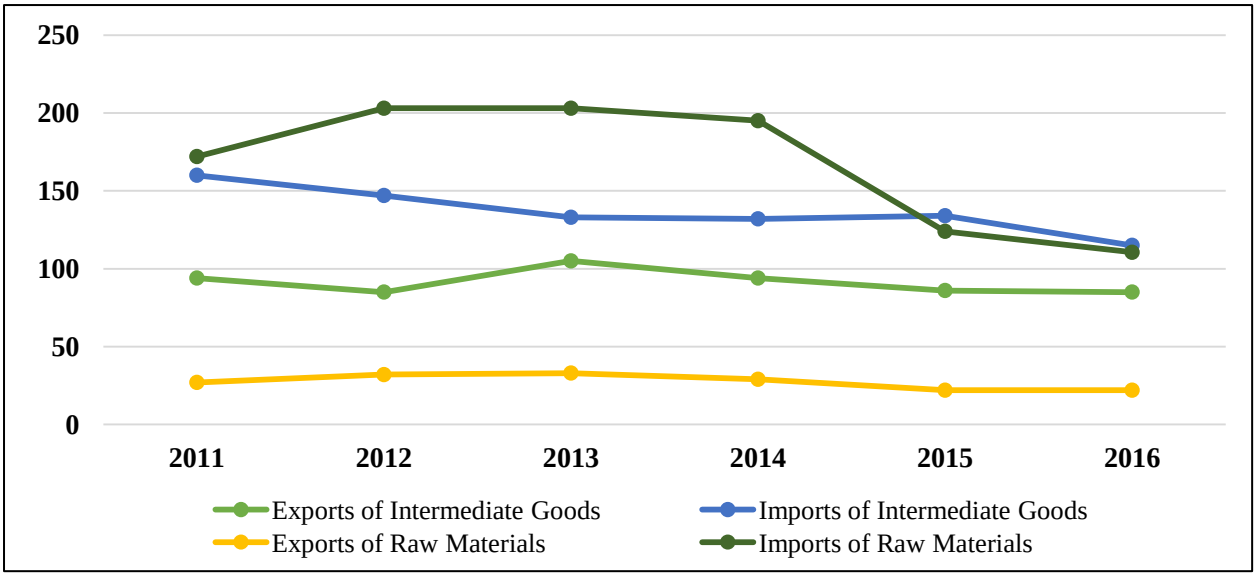
Appendix

Appendix Figure 1: India's Trade of Intermediate Goods and Raw Materials (Values in USD billion): 2011-2016



Source: Data obtained from WITS Software

Appendix Table 1: India's Exports to the World

Product Group	2016		2011	
	Export Product Share (%)	Revealed comparative advantage (RCA)	Export Product Share (%)	Revealed comparative advantage (RCA)
Capital goods	13.67	0.35	11.93	0.38
Consumer goods	45.14	1.37	43.35	1.30
Intermediate goods	32.52	1.79	31.18	1.39
Raw materials	8.35	0.64	8.9	0.62

Source: Data obtained from WITS Software

Appendix Table 2: Export Share of Countries (Highlighted portion show decline in shares from 2011 to 2016)

Top 25 Intermediate Exporters other than India	2016				2011			
	Cap. Gds.	*Cons. Gds.*	*Int. Gds.*	*Raw Mat.*	*Cap. Gds.*	*Cons. Gds.*	*Int. Gds.*	*Raw Mat.*
Australia	5.6	15.6	18.3	56.0	4.7	11.9	16.5	62.7
Austria	36.9	32.3	24.1	3.2	34.7	32.1	25.8	3.2
Belgium	16.0	41.5	31.8	7.9	15.3	41.6	32.7	8.1
Brazil	16.3	13.5	29.2	39.4	13.4	12.9	26.3	45.0
Canada	18.0	30.0	24.9	21.0	15.8	26.5	26.5	27.3
China	44.1	37.5	15.7	1.8	45.2	35.8	16.5	1.9
France	36.4	36.8	18.7	5.4	33.5	36.2	20.6	6.6
Germany	37.9	35.5	18.2	2.4	37.2	34.2	20.5	2.9
Hong Kong	61.9	15.0	20.3	2.2	55.6	22.2	19.2	2.1
Indonesia	9.9	40.8	25.9	22.6	8.2	32.9	26.3	32.5
Ireland	22.7	30.0	42.4	3.8	16.5	35.9	42.0	4.5
Italy	31.8	43.0	19.9	2.8	32.0	40.4	22.1	2.9
Japan	47.1	25.6	19.8	1.1	49.7	21.9	22.1	1.1
Korea	54.0	22.5	22.1	0.6	50.8	24.1	23.5	0.7
Malaysia	42.3	31.6	19.8	5.6	36.5	35.4	19.2	8.2
Mexico	49.1	29.8	9.5	10.2	38.7	29.5	11.8	19.2
Netherlands	29.9	37.9	21.5	9.9	28.8	37.7	23.1	9.6
Russia	4.9	22.6	20.5	35.9	2.2	33.0	14.5	39.3
Singapore	51.1	23.4	19.6	0.8	45.7	29.9	15.8	0.7
Spain	20.5	44.1	21.5	11.0	20.8	41.7	24.1	9.5
Switzerland	16.1	32.5	49.7	0.5	24.3	40.0	32.4	0.9
Thailand	38.4	34.5	20.9	5.8	31.8	35.0	23.2	9.8
UAE	5.8	15.5	13.6	14.7	12.5	17.9	16.4	30.4
UK	29.1	39.1	21.8	6.5	25.1	35.3	15.6	10.4
US	34.0	25.7	19.7	9.1	32.9	25.5	22.2	10.6

Source: Own Calculations (Using WITS software) [Note: Cap. Gds.: Capital Goods; Cons. Gds.: Consumer Goods; Int. Gds.: Intermediate Goods; Raw Mat.: Raw Materials]

Appendix Table 3A: Identified India's Potential Key Intermediate Products based on Competitiveness Analysis (*ranked as per highest additional market potential share to capture*)

Selected Intermediate Products (HS 2007)	Product Description	Markets (Partner Countries)	India's Current exports to Markets (in US$ 1000)	Additional potential market share that can be captured by India from relatively weak competitors (in US$ 1000)
290220	Benzene (Cyclic Hydrocarbon)	Belgium (BGL)	98475	832957
730511	Line pipe of a kind used for oil/gas pipelines having circular cross-sections	Australia (AUS)	87331	567290
732599	Cast articles of iron (excl. non-malleable cast iron)/steel, n.e.s.	Cyprus (CYP)	779	536
		Germany (DEU)	130318	394716
		Sweden (SWE)	32843	41531
		Finland (FIN)	9571	24848
130219	Vegetable saps & extracts	Japan (JPN)	30919	180338
		US	125650	141172
520524	Cotton yarn, single (excl. sewing thread), of combed fibres, containing 85%/more by weight of cotton, measuring <192.31dtx. but not <125dtx. , not put up for retail sale	China (CHN)	339802	267667
		Cambodia (KHM)	1788	2670
320417	Pigments & preparations based thereon	Denmark (DNK)	10495	30758
		Japan (JPN)	35862	172113
		Luxembourg (LUX)	368	12773
300390	Medicaments	New Zealand (NZL)	1254	9281
		Australia (AUS)	8328	204749
321290	Pigments used in manufacture of paints and Dyes	Germany (DEU)	76691	104382
		Poland (POL)	2678	23666
880390	parts of non-powered aircrafts, balloons and spacecraft	Austria (AUT)	2880	7285
		UK	37598	116999
		New Zealand (NZL)	15949	2230
130232	Mucilages & thickeners derived from locust bean seeds/guar seeds	Latvia (LVA)	4574	111
		US	2815115	103437
392321	Sacks & bags (incl. cones), of polymers of ethylene	Ireland (IRL)	3376	97262
730721	Flanges of stainless steel	Belgium (BGL)	11104	25112
		Netherlands (NLD)	15295	49546
		Sweden (SWE)	1168	8963
		Finland (FIN)	1100	7417
722300	Wire of stainless steel	Estonia (EST)	1040	1507
		Belgium (BGL)	17606	22869
		Netherlands (NLD)	22560	40675
		Slovak Republic (SVK)	1682	7171
		Slovenia (SVN)	1031	2317
702000	Other articles of glass	Denmark (DNK)	3488	6426
		Estonia (EST)	156	854
		Germany (DEU)	22231	57600
		Sweden (SWE)	3640	6986
320412	Acid dyes & preparations based	Italy (ITA)	56882	52376

Selected Intermediate Products (HS 2007)	Product Description	Markets (Partner Countries)	India's Current exports to Markets (in US$ 1000)	Additional potential market share that can be captured by India from relatively weak competitors (in US$ 1000)
		Spain (ESP)	22434	13074
720825	Flat-rolled products of iron/non-alloy steel, of a width of 600mm/more, hot-rolled, not clad/plated/coated, in coils, not further worked than hot-rolled, pickled, of a thickness of 4.75mm/more	Philippines (PHL)	2067	1589
		Spain (ESP)	14099	50677
392020	Plates, sheets, film, foil & strip, of polymers of propylene	Slovak Republic (SVK)	2075	50328
482390	Paper, paperboard, cellulose wadding & webs of cellulose fibres, cut to size/shape	Brunei (BRN)	557	3097
		Thailand (THA)	10143	31068
		Finland (FIN)	1022	10260
320414	Direct dyes & preparations based	Germany (DEU)	11190	18678
		Italy (ITA)	11291	18572
		Spain (ESP)	5123	4453
320416	Reactive dyes & preparations based	Indonesia (IDN)	26821	38822
290611	Menthol (under category of 'cyclic alcohol and their derivatives')	China (CHN)	205370	37048
330124	Essential oils of peppermint	France (FRA)	8609	3719
		China (CHN)	13799	22390
		Germany (DEU)	9892	9277
540233	Textured yarn other than sewing thread, of polyesters, not put up for retail sale	Cyprus (CYP)	2733	379
		Poland (POL)	14050	33761
330125	Essential oils of mints other than peppermint	Singapore (SGP)	31116	2386
		China (CHN)	85434	31135
410711	Leather further prepared after tanning/crusting, incl. parchment-dressed leather, of bovine (incl. buffalo)/equine animals, without hair on, whole hides & skins, full grains, unsplit	Cambodia (KHM)	1576	383
		Hungary (HUN)	536	4734
		Spain (ESP)	5738	26070
854511	Carbon electrodes used for furnaces	Spain (ESP)	11597	29268
		Estonia (EST)	3060	691
320419	Synthetic organic colouring matter & preparations based	Philippines (PHL)	5045	11366
		Indonesia (IDN)	8976	14451
		Greece (GRC)	583	1484
670300	Human hair, dressed/thinned/bleached or wool/other animal hair/other textile materials, prepared for use in making wigs	China (CHN)	178651	26489
730300	Tubes, pipes & hollow profiles of cast iron	Croatia (HRV)	2204	8410
		Ireland (IRL)	3741	6302
		Slovenia (SVN)	4659	10406
151530	Castor oil & fractions not chemically modified	China (CHN)	292769	12783
		France (FRA)	89344	5166
		Netherlands (NLD)	108485	6723
392329	Sacks & bags (incl. cones), of plastics other than polymers of ethylene	Sweden (SWE)	1371	24472
293629	Vitamins & their derivatives (other than Vitamin A, B1, B2, B12)	Belgium (BGL)	10361	19609
		Hungary (HUN)	1187	2188

Selected Intermediate Products (HS 2007)	Product Description	Markets (Partner Countries)	India's Current exports to Markets (in US$ 1000)	Additional potential market share that can be captured by India from relatively weak competitors (in US$ 1000)
560749	Twine, cordage, ropes & cables, of polyethylene/polypropylene, whether/not plaited/braided & whether/not impregnated, coated, covered/sheathed with rubber/plastics	Indonesia (IDN)	22307	20635
730630	Tubes, pipes & hollow profiles, welded, of circular cross-section, of iron/non-alloy steel	Korea (KOR)	9363	20031
392069	Plates, sheets, film, foil & strip, of polyesters, n.e.s	Poland (POL)	2701	16304
		Luxembourg (LUX)	90	2719
230690	Oil-cake & other solid residues from the extraction of vegetable fats/oils	Brunei (BRN)	53	19
		Korea (KOR)	41310	6175
		Cambodia (KHM)	1386	140
		Vietnam (VNM)	35572	12023
320420	Synthetic organic products used as fluorescent brightening agents	Finland (FIN)	4335	18113
294190	Antibiotics & their derivatives; salts thereof	Cyprus (CYP)	1180	6994
		Malta (MLT)	6960	2472
		Slovenia (SVN)	6624	7590
720810	Flat-rolled products of iron/non-alloy steel, of a width of 600mm/more, hot-rolled, not clad/plated/coated, in coils	Italy (ITA)	39048	10893
		Vietnam (VNM)	184483	4997
271099	Waste oils other than those containing polychlorinated biphenyls	Korea (KOR) (KOR)	36557	5499
		Singapore (SGP)	63538	8960
294200	Other organic compounds (such as cefadroxil, ibuprofane, ranitindine, timolo maleate, cimetidine, atenolol, oxyclozanide, etc.)	Austria (AUT)	24262	1957
		Czech Republic (CZE)	9288	1179
		Bulgaria	15806	294
		Malta (MLT)	19533	458
		Cyprus (CYP)	7137	108
		Croatia (HRV)	9560	546
		Ireland (IRL)	52174	6011
		Uganda	8954	103
		Poland (POL)	19652	3006
401161	New pneumatic tyres, of rubber, having a herring-bone/similar tread, of a kind used on agricultural/forestry vehicles & machines	Portugal (PRT)	8902	13266
401199	New pneumatic tyres, of rubber (excl. those with herring-bone/similar tread	Ireland (IRL)	7049	2533
		Portugal (PRT)	6704	1732
		Slovenia (SVN)	1841	1000
		Sweden (SWE)	6544	7398
721049	Flat-rolled products of iron/non-alloy steel, of a width of 600mm/more, plated/coated with zinc (not electrolytically), other than corrugated	Cyprus (CYP)	746	6708
		Ethiopia (ETH)	49385	5678
110100	Wheat/meslin flour	Australia (AUS)	3766	4248
		Brunei (BRN)	188	5918

Selected Intermediate Products (HS 2007)	Product Description	Markets (Partner Countries)	India's Current exports to Markets (in US$ 1000)	Additional potential market share that can be captured by India from relatively weak competitors (in US$ 1000)
900150	Spectacle lenses of materials other than glass	Luxembourg (LUX)	33	9710
293500	Sulphonamides	Malta (MLT)	1436	1579
		Sweden (SWE)	1284	7909
520522	Cotton yarn, single (excl. sewing thread), of combed fibres, containing 85%/more by weight of cotton, measuring <714.29dtx. but not <232.56dtx. , not put up for retail sale	Poland (POL)	10744	9320
721090	Flat-rolled products of iron/non-alloy steel, of a width of 600mm/more, clad/plated/coated, n.e.s.	Portugal (PRT)	19360	8258
551511	Woven fabrics of polyester staple fibres mixed mainly/solely with viscose rayon staple fibres	Brunei (BRN)	113	76
		Cambodia (KHM)	6611	7639
500720	Woven fabrics containing 85%/more of silk/silk waste other than noil silk	Austria (AUT)	473	7593
722011	Flat-rolled products of stainless steel, of a width of <600mm, not further worked than hot-rolled, of a thickness of 4.75mm/more	Austria (AUT)	1236	3316
		Slovak Republic (SVK)	78	141
		Denmark (DNK)	2346	376
		Netherlands (NLD)	13157	2648
230641	Oil-cake & other solid residues from extraction of low erucic acid seeds	Korea (KOR)	21160	6331
121190	Plants used primarily in perfumery/pharmacy	Denmark (DNK)	2445	5897
730820	Towers & lattice masts of iron/steel	Cambodia (KHM)	1899	5489
721041	Flat-rolled products of iron/non-alloy steel, of a width of 600mm/more, corrugated, plated/coated with zinc (not electrolytically)	Ethiopia (ETH)	29373	4811
761410	Stranded wire, cables, plaited bands & the like, of aluminium, not electrically insulated, with steel core	Cambodia (KHM)	6942	4778
520523	Cotton yarn, single (excl. sewing thread), of combed fibres, containing 85% or more of cotton, measuring <232.56dtx. but not <192.31dtx. (>43 metric number but not >52 metric number), not for retail sale	Philippines (PHL)	13410	4637
251620	Sandstone	Austria (AUT)	1085	484
		Australia (AUS)	3977	179
		Ireland (IRL)	1720	45
		United Kingdom (UK)	72385	3720
251110	Natural barium carbonate (witherite)	Brunei (BRN)	2305	2450
		New Zealand (NZL)	582	599

Selected Intermediate Products (HS 2007)	Product Description	Markets (Partner Countries)	India's Current exports to Markets (in US$ 1000)	Additional potential market share that can be captured by India from relatively weak competitors (in US$ 1000)
630532	Flexible intermediate bulk containers of a kind used for the packing of goods, of man-made textile materials	Estonia (EST)	635	1358
		Lithuania (LTU)	1080	1546
400300	Reclaimed rubber in primary forms/in plates/sheets/strip	Philippines (PHL)	1389	2118
		Portugal (PRT)	2702	785
250100	Salt & pure sodium chloride	Indonesia (IDN)	6840	2552
520811	Woven fabrics of cotton, unbleached, containing 85%/more of cotton, plain weave, weighing not >100g/m2	Austria (AUT)	1896	1347
251320	Emery, natural corundum, natural garnet & other natural abrasives	Latvia (LVA)	236	18
		Sweden (SWE)	1706	869
		Finland (FIN)	524	142
680223	Worked monumental/building stone & articles thereof of granite	Estonia (EST)	1228	261
		New Zealand (NZL)	3383	357
		Slovenia (SVN)	2434	274
900110	Optical fibres, optical fibre bundles & cables	Luxembourg (LUX)	418	848
293329	Heterocyclic compounds with nitrogen containing an unfused imidazole ring	Cyprus (CYP)	1337	435
		Malta (MLT)	937	334
330190	Essential oils (terpeneless/not), including concretes & absolutes	Denmark (DNK)	4179	713
120740	Sesamum seeds	Estonia (EST)	1783	210
		Latvia (LVA)	687	288
230649	Oil-cake & other solid residues from extraction of rape/colza seeds	Indonesia (IDN)	30911	69
		Korea (KOR) (KOR)	95479	280
520513	Cotton yarn, single (excl. sewing thread), of uncombed fibres, containing 85%/more of cotton, measuring <232.56dtx. but not <192.31dtx., not for retail sale	Latvia (LVA)	201	1
		Cambodia (KHM)	267	245
170111	Cane sugar, raw	Ethiopia (ETH)	6628	67
120220	Groundnuts, not roasted	Brunei (BRN)	444	18
Total			**6327814**	**4539126**

Source: Author's Calculations, Data from WITS

Appendix Table 3B: India's Competitors for 74 Intermediate Products

Relatively Weak Competitor-Exporters in Identified markets (India is found to be more competitive than these for 74 intermediates exports)	Identified Intermediate Products
Australia	230690,251110,300390,320419,680223
Austria	410711,520522,702000,722300,730300,900110
Belarus	540233
Belgium	151530,251620,293500,293629,294200,320417,320419,320420,321290,330124,392020,392069,392321,392329,401161,401199,721090,722011,722300,730300,730721,880390,900110,900150
Brazil	320414, 680223
Canada	130219,130232,271099,293500,294200,730630
China	120220,130219,130232,230641,230649,230690,250100,251110,251320,251620,293329,293629,294190,294200,300390,320412,320414,320416,320417,320419,320420,330125,400300,401199,482390,520523,520524,540233,551511,560749,680223,702000,720825,721041,721049,722300,730300,730511,730630,730721,730820,732599,761410,854511,880390,520513,721090
Croatia	680223
Czech Republic	251320,293500,294190,320417,392020,400300,520811,630532,722011,722300,732599
Denmark	130232,251320,392329,401199,520522,702000,722011,722300,730721
Egypt	721049
Estonia	130232,482390,630532,732599
Finland	120740,294200,401161,722011,722300,732599
France	151530,230641,251620,294190,294200,320412,320417,320419,321290,330124,330125,400300,410711,500720,720810,720825,721090,722011,722300,730721,854511,880390,900150
Germany	120740,121190,130219,130232,151530,250100,251320,251620,290220,290611,293329,293629,294190,294200,320412,320414,320417,320419,320420,321290,330124,330125,330190,392020,392069,392321,392329,401199,410711,482390,500720,520522,520811,630532,680223,702000,720825,722011,722300,730300,730511,730630,730721,732599,854511,880390,900110,900150
Greece	251620,294190,540233,721049,732599
Hong Kong	151530,290611,300390,330124,330125,410711,482390,520523,520524,551511,670300,900150
Hungary	121190,294190,330124,392020,520811,720810
Indonesia	110100,230649,230690,271099,330125,400300,520523,520524,540233,551511,670300,720810,730511
Ireland	251620, 300390
Israel	120740
Italy	110100,130219,130232,170111,251620,293329,293500,293629,294190,294200,300390,320412,320414,320417,320419,320420,321290,392069,401199,410711,500720,520513,520522,540233,670300,680223,702000,720825,721049,722011,722300,730300,730721,732599,854511,880390,900150
Japan	110100,151530,230641,290611,294200,320416,330124,330125,410711,482390,551511,720810,720825,722300,730630,854511
Kenya	294200
Korea	130219,294190,320416,320417,320419,520523,520524,551511,560749,670300,720810,720825,722300,730511
Latvia	120740,630532,680223
Lithuania	120740,130232,251320,294200,630532
Malaysia	110100,120220,230641,230690,251110,271099,400300,482390,560749

	,730511,730820
Mexico	130219, 320414
Myanmar	151530
Netherlands	120740,121190,151530,251320,290220,293329,293500,293629,294190,294200,321290,330190,392069,392321,400300,401161,401199,482390,702000,720825,721049,721090,730721,732599,854511,880390,900110
New Zealand	250100, 251620
Norway	732599,294200,251320
Pakistan	130232,230649,520524
Poland	120740,294200,300390,320414,392329,630532,721049,730300,732599,880390
Portugal	293500,410711,680000
Romania	294201,410711
Russia	251320,630532,720810,730300,854511
Serbia/Montenegro	720810
Singapore	110100,120220,230690,250100,251110,290611,320416,320419,330124,330125,482390,551511,560749,720810,720825,761410,880390
Slovak Republic	401199,720810,732599
South Africa	294200,330190,680223
Spain	130219,130232,251620,271099,290220,293329,320412,320414,320420,400300,401161,401199,540233,680223,721090,722011,722300,730300,732599,880390
Sweden	120740,121190,320417,392069,482390,630532,702000,720825,722011,722300,732599
Switzerland	130219,251620,294200,320412,320417,321290,330124,500720,520811,702000,722011,722300,880390
Thailand	151530,230649,230690,250100,251110,271099,320416,400300,520523,520524,730820,761410
Trinidad and Tobago	271099
Turkey	294200,320414,392069,401161,410711,520522,520811,551511,721041,721049,732599
Ukraine	392020
UAE	110100,170111,251320,551511,721049,721041
UK	110100,151530,251620,271099,290220,293329,293500,293629,294190,294200,300390,320412,320414,320419,321290,330124,330125,330190,392321,392329,401199,500720,540233,702000,730300,730721,732599,900110
US	110100,121190,130219,151530,230690,251320,271099,290220,290611,293629,294200,300390,320412,320414,320417,320419,321290,330124,330125,330190,392069,392321,410711,482390,540233,670300,680223,720810,722011,730630,854511,880390
Vietnam	230690,251110,400300,520513,520524,560749,730820,761410

Source: Data using WITS based on Competitive Analysis

Appendix Table 4: India's Cost-Competitive Intermediate Goods based on Export Unit Costs

PART A (Stage I inputs)				PART B (Second-level Analysis for Stage I inputs)	
India's Cost-Competitive Product-Market Combinations		*EUV (USD/ quantity unit)*		*India's Higher and Clear Cost-Competitiveness in Other markets (other than Col II)*	
Product code (HS) (I)	**Markets (Partners) (II)**	**India's Value (III)**	**EUV of other top 2 exporters (besides India) (IV)**	**Number of Markets**	**Other Competitive markets where India's EUV is lower than competitors**
293629	Belgium	4.65	Italy (11.14) Netherlands (17.97)	14	CHN, EST, FRA, GRC, JPN, KOR, LVA, LTU, MYS, NGA, SGP, ESP, US, VNM
230690	Brunei	0.25	Singapore (2.50) Thailand (31.18)	0	-
410711	Cambodia	29.84	Hong Kong (31.33) US (36.40)	4	CHN, THA, UK, VNM
330124	China	21.39	UK (33.08) Singapore (35.50)	9	AUS, DEU, IDN, JPN, KOR, MYS, PHL, THA, US
330125		17.47	Hong Kong (19.15) UK (33.34)	0	-
293329	Cyprus	25.33	China (86.65) Italy (111.13)	3	AUT, CYP, DNK
702000	Denmark	2.71	China (8) Sweden (8.84)	28	AUS, AUT, BEL, BGR, CYP, CZE, FIN, FRA, DEU, GRC, HUN, IRL, ITA, JPN, KOR, LVA, MYS, MLT, NLD, NZL, PHL, POL, PRT, ROM, SGP, ESP, UK, US
722011		3.27	Spain (4.01) Germany (4.22)	4	FRA, ITA, SVK, US
120740	Estonia	1.62	Lithuania (2.60) Latvia (2.67)	0	-
321290	Germany	2.89	UK (3.95) Belgium (8.41)	21	AUS, BGR, ETH, FRA, GHA, GRC, IDN, ITA, JPN, KEN, KOR, NLD, NZL, PHL, POL, SGP, ESP, THA, UGA, US, VNM
330124		24.49	Singapore (35.81) UK (41.43)	9	AUS, CHN, IDN, JPN, KOR, MYS, PHL, THA, US
702000		2.03	Italy (3.09) China (7.31)	30	AUS, AUT, BEL, BRN, BGR, CYP, CZE, DNK, FIN, FRA, GHA, GRC, HUN, IRL, JPN, LVA, MYS, MLT, MMR, NLD, NZL, NGA, PHL, PRT, ROM, SGP, ESP, SWE, UK, US
320416	Indonesia	5.01	Thailand (6.16) China (6.44)	7	AUS, DEU, MYS, NLD, NZL, SGP, US
392321	Ireland	2.02	Germany (4.78) UK (5.62)	26	AUS, BRN, CZE, DNK, EST, GHA, GRC, HUN, ITA, JPN, KEN, KOR, LVA, LTU, MYS, NZL, NGA, PHL, POL, SGP, SVN, ESP, SWE, TZA, UGA, US
130232	Latvia	0.59	Lithuania (4.83) Germany (8.12)	2	EST, NLD
520513		2.36	Italy (12.62)	19	BEL, BGR, CHN, HRV, CZE, DNK, DEU, JPN, KOR, LTU, NLD, POL, PRT, ROM, ESP,

					SWE, THA, US, VNM
900110	Luxembourg	22.52	Austria (35.48) Belgium (37.57)	20	AUS, BGR, HRV, CZE, DEU, GRC, HUN, ITA, LVA, LTU, NLD, NZL, NGA, POL, ROM, SVK, SVN, ESP, UK, US
294190	Malta	137.93	Italy (240.71) Netherlands (242.34)	9	HRV, FIN, FRA, JPN, KEN, LVA, THA, US, VNM
730721	Netherlands	4.97	China (6.55) Belgium (12.16)	20	AUS, AUT, CZE, EST, ETH, FIN, DEU, GHA, HUN, IDN, KEN, LTU, NZL, NGA, POL, PRT, SVK, TZA, UGA, UK
321290	Poland	2.75	Italy (7.84) France (9.11)	15	AUS, BGR, DEU, GRC, IDN, JPN, KOR, MYS, NLD, NGA, PHL, SGP, UK, US, VNM
330125	Singapore	19.21	China (30.14) Germany (32.23)	10	AUS, FRA, ITA, JPN, KOR, MYS, NLD, ROM, ESP, US
722011	Slovak Republic	2.97	Spain (3.77) Italy (3.93)	5	AUT, DNK, FRA, UK, US
722300		2.51	Czech Republic (4.56) Austria (5.62)	24	AUS, BEL, BGR, CHN, HRV, DNK, EST, FIN, FRA, GRC, IDN, IRL, JPN, LVA, MYS, POL, PRT, ROM, SGP, SVN, ESP, UK, US, VNM
722300	Slovenia	2.30	Austria (4.61) Czech Republic (4.97)	24	AUS, BEL, BGR, CHN, HRV, DNK, EST, FIN, FRA, GRC, IDN, IRL, JPN, LVA, MYS, POL, PRT, ROM, SGP, SVK, ESP, UK, US, VNM
320412	Spain	5.40	Italy (7.39) China (8.33)	8	BEL, EST, FRA, DEU, GRC, JPN, SGP, UK
410711		22.22	Turkey (28.40) France (30.53)	13	AUS, BEL, CZE, DEU, IDN, JPN, KOR, MYS, NLD, PRT, UK, US, VNM
293500	Sweden	15.37	Italy (22.47) Netherlands (135.23)	5	CHN, DEU, IRL, JPN, POL
392329		2.80	Denmark (6.06) Poland (6.09)	33	AUS, AUT, BEL, BGR, HRV, CZE, EST, ETH, FIN, FRA, DEU, GRC, HUN, IRL, ITA, KOR, LVA, LTU, MYS, MLT, NLD, NZL, PHL, ROM, SVK, SVN, ESP, TZA, THA, UGA, UK, US, VNM
702000		2.24	Denmark (7.15) Germany (19.77)	37	AUS, AUT, BEL, BGR, CHN, HRV, CYP, CZE, EST, FIN, FRA, GRC, HUN, IDN, IRL, ITA, JPN, KEN, KOR, LVA, LTU, MYS, MLT, NLD, NZL, NGA, POL, PRT, ROM, SGP, SVN, ESP, SWE, THA, UK, US, VNM

Source: Author's Calculations, Data from WITS

Appendix Table 5: Other Cost-Competitive Product-Market Combinations for India which has close competitor

Other Cost-Competitive Product-Market Combinations for India	Close Competitor to India
392069-Poland	
251620-Australia and UK; 722300, 730721-Belgium; 251110-Brunei and New Zealand; 520513-Cambodia; 540233, 721049-Cyprus; 702000, 680223-Estonia; 250100-Indonesia; 730630-Korea; 251320-Latvia; 722300-Netherlands; 540233-Poland	
722300-Estonia	
630532-Lithuania	
320420, 482390-Finland; 520522-Poland	
520523-Philippines	
110100, 730511-Australia; 520524-China	
251620-Austria; 730300-Croatia; 732599-Finland	
482390-Brunei; 230690-Korea	
721090-Portugal	
520524-Cambodia; 230649-Korea	
732599-Germany; 730300-Ireland	
630532-Estonia; 720810-Italy; 730300-Slovenia	
720825-Spain	
320412-Italy	
230690-Vietnam	
732599-Cyprus	
110100-Brunei; 170111-Ethiopia; 251320-Finland and Sweden	
320414-Germany; 251620-Ireland	
120220- Brunei; 151530-China; 151530-France; 151530-Netherlands	
230690-Cambodia	

Source: Author's Calculations, Data from WITS

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