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WORKING PAPER

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Deepening India-Korea Economic Engagement with a Focus on the Indian Manufacturing Sector

Reji K Joseph [*] ***& Ramaa Arun Kumar*** [**]

[Abstract: *This paper explores the possibilities of the deepening the India-Korea economic partnership, in the light of the global shifts, focusing on the manufacturing sector. It makes an analysis of the impact of Comprehensive Economic Partnership Agreement between the two countries that came into force in 2010, in order to capture the issues and challenges that this partnership currently face. It then identifies product groups at HS 2-digit level in which India has the potential to expand export to Korea. This paper also captures recent trends in Korean FDI into India and explores how Korean FDI into India in the manufacturing sector can be enhanced.*]
Keywords: *Trade, Investment, Free Trade Agreements, FDI, India-Korea Economic Partnership*
JEL Classification: *F13, F14, F15, E22, F21*

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1. Introduction

Until the second half of the last decade, the global economic order was largely defined by the principles of the 'Washington Consensus,' which emphasized efficiency in economic activities, limited state intervention, and the promotion of aggressive market-oriented policies. However, in recent years, the discourse surrounding the global economic order has moved away from this framework, increasingly favouring industrial policies that grant governments a more active role in shaping their economies. The escalation of trade tensions between the United States (US) and China since 2018 and the exposure of vulnerabilities of efficiency-focused global supply chains (GVCs), particularly those heavily reliant on China, prompted countries and firms to reassess the supply chain resilience. This resulted in the emergence of China plus one and friend shoring strategies. With Donald Trump's second term in the US Presidency, the international economic relations are undergoing a major transformation in which multilateral institutions such as World Trade Organization (WTO) are increasingly becoming redundant and bilateral economic arrangements are the way forward[1].

Against this backdrop, this paper examines the potential for deepening economic collaboration between India and South Korea (hereafter, Korea). Historically, Korea's economy has been deeply intertwined with China's, which has been a major catalyst for its growth. However, as China ascends the value chain and transitions from a complementary to a competitive economic relationship with Korea, Korean firms are increasingly seeking to diversify their supply chains. On the other hand, India has been actively pursuing policies to strengthen its industrial base, particularly in manufacturing, to drive economic growth and job creation. Programs such as Make in India (MII)[2] and the Production Linked Incentive (PLI) schemes aim to attract investment, foster innovation, and expand manufacturing capabilities. Several Korean companies have already

[1] A well-functioning Appellate Body is central to the effective operation of the WTO. However, the appointment of judges to this body has been stalled for years due to objections by the US. The tariff policies pursued under President Donald Trump were inconsistent with WTO rules. Nevertheless, US' trading partners have been compelled to enter into bilateral trade agreements, as the WTO has become an ineffective platform for resolving trade disputes.

[2] The MII programme, launched in September 2014, aims to increase the manufacturing sector's share in GDP by promoting both domestic and foreign investment. It seeks to foster innovation, build world-class infrastructure, develop industrial clusters, and position India as a global hub for manufacturing, design, and innovation—while prioritizing decarbonisation for sustainable socioeconomic growth. A range of measures has been introduced across capacity expansion, trade policy, corporate taxation, ease of doing business, FDI norms, quality standards, local content requirements, financial incentives, and public procurement to create a thriving manufacturing ecosystem. Currently, the MII initiative spans 27 sectors.

capitalized on the PLI scheme[3], and there is significant potential for further collaboration, with more Korean firms exploring opportunities to establish a presence in India.

This paper analyses the impact of the India-Korea Comprehensive Economic Partnership Agreement (CEPA) on India in terms of trade and investment and identifies possible areas where the partnership can be deepened.

2. India-Korea Economic Relations: An Overview

India-Korea relations have seen significant progress since the 1990s, driven by three key factors. First, the end of the Cold War, marked by the dissolution of the Soviet Union, removed the geopolitical barriers that had previously kept the two nations apart. Second, India's economic reforms initiated in 1991, including the liberalization of foreign direct investment (FDI), created a more favourable environment for Korean businesses to invest in India. Third, a growing alignment in the foreign policies of both countries further strengthened their ties. India's Look East Policy (LEP), introduced in the early 1990s[4], complemented Korea's Segyehwa policy[5], which aimed to expand Korea's global engagement (John 2022).

High-level visits between the two nations played a crucial role in solidifying their partnership. In 1993, Indian Prime Minister P.V. Narasimha Rao made a historic visit to Korea, the first by an Indian Prime Minister. One of the key goals of this visit was to attract Korean investments to India. During his visit, Rao emphasized the shared perspectives and opportunities for collaboration, stating, "Common elements in our positions and approaches to the changing international situation, particularly in Asia, provide many opportunities for India and the Republic of Korea to work together for mutual benefit... We would welcome more Korean businesses to come to India and take part in this process" (John 2022: 12).

The state visit of Korean President Kim Young-sam to India in 1996 further elevated economic relations. President Kim proposed an economic partnership framework to leverage the complementary strengths of both economies and advocated for joint efforts to promote free trade (John 2022).

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[3] The PLI scheme is a government initiative launched to boost domestic manufacturing, attract investment, and enhance export competitiveness across key sectors. It offers financial incentives to companies based on their incremental production and sales, encouraging scale and efficiency. The scheme covers 14 strategic sectors, including electronics, pharmaceuticals, and automotive components, and aims to reduce import dependence and strengthen global supply chain integration.

[4] Objective of LEP was to strengthen India's economic and strategic relations with the countries of Southeast Asia.

[5] Segyehw*a* was both an outward-looking economic strategy and a domestic reform agenda aimed at transforming South Korea into a modern, globally engaged nation.

The 1990s also saw major Korean corporations entering the Indian market, including Samsung (1995), Daewoo (1995), Hyundai (1996), and LG (1997). These firms sought to outpace their Japanese and American competitors by establishing a strong presence in India. During the 1991-2000 period, Korea became one of the leading sources of FDI in India, accounting for 3.9 per cent of total FDI inflows (Nagaraj 2003).

In the 2000s, bilateral relations gained further momentum with the second phase of India's LEP. India's then Foreign Minister, Yashwant Sinha, outlined the expanded scope of this phase during a 2003 speech at Harvard University. He explained that while the first phase of LEP was ASEAN-centered and focused on trade and investment, the second phase extended its reach from Australia to East Asia, with ASEAN at its core. This phase also emphasized broader economic and security cooperation, including safeguarding sea lanes and counter-terrorism efforts. In 2004, during Korean President Roh Moo-hyun's visit to India, the relationship was upgraded to a Long-term Cooperative Partnership for Peace and Prosperity. The two nations established a Joint Study Group (JSG) comprising government officials, economists, and business representatives to explore comprehensive economic cooperation. The JSG's recommendations led to the signing of the CEPA in 2009, which came into effect in 2010.

The CEPA is a wide-ranging agreement covering trade in goods, services, investment, public procurement, intellectual property rights, and rules of origin. It identified 11,200 tariff lines for Korea and 5,200 for India for tariff reductions or eliminations. Both countries committed to reducing or eliminating tariffs on a significant portion of each other's exports over an eight-year period, with Korea covering 90 per cent of Indian exports and India covering 81 per cent of Korean exports (Sahoo et al. 2023). The agreement was expected to boost bilateral trade and increase investment flows, particularly from Korea to India.

The relationship reached new heights during Indian Prime Minister Narendra Modi's visit to Korea in 2015, when it was elevated to a Special Strategic Partnership. In 2017, Korea further elevated India's status in its foreign policy, placing it on par with its traditional partners—the US, Japan, China, and Russia—under its Northeast Asia Plus vision (John 2022).

2.1. Prospects of deepening the economic ties between the two countries

East Asia has been one of the regions which is most profoundly shaped by globalization, particularly in the trade of parts, components, and intermediate goods. The region's GVCs are predominantly centered around China, with Korea's economic growth deeply intertwined with its participation in these networks (Nicolas 2023). Korea began investing in China in 1992, and within a decade, China overtook the US as the primary destination for Korean outward foreign direct investment (OFDI), with its share rising from 12 per cent in 1992 to 38 per cent in 2003 (Kim and Jai 2006). By 2003, China had become Korea's largest trading partner (Garcia-Herrero 2024).

However, tensions emerged in the latter half of the last decade, beginning with the controversy over the THAAD missile defense system, which strained Korea-China relations. The US-China trade tensions since 2018, coupled with supply chain disruptions during the COVID-19 pandemic, have compelled Korean companies to seek diversification in their supply sources. Scholars argue that the Korea-China economic relationship is undergoing a structural transformation due to China's ascent in GVCs, increased competition with Korean firms, and the broader geopolitical rivalry between the US and China (Wang 2024).

Recent trends in trade and investment reflect this shift. China's share in Korea's exports declined from 26 per cent in 2020 to 20 per cent in 2023, largely due to reduced semiconductor exports (Wang 2024). China's push for semiconductor self-sufficiency has heightened competition with Korea. Similarly, Korean FDI in China plummeted by 78 per cent in 2023 (Wang 2024). Leading Korean semiconductor companies are now redirecting investments to the US to capitalize on incentives under the CHIPS and Science Act. As part of a strategic realignment, Korean firms are actively exploring new partnerships to diversify their supply chains.

Korean businesses have also expanded their supply networks to other East Asian countries, particularly Vietnam, where Korea has invested a cumulative $86 billion since 1988, making it the largest investor (Lim 2024). However, recent Chinese investments in Vietnam have matched Korean levels, prompting Korean companies to consider alternative locations due to rising competition and wage costs (Fujiwara 2024).

India has emerged as a promising partner for supply chain diversification. As the global economic order evolves, India is making concerted efforts to transform its industrial sector, particularly manufacturing. Increasing the share of manufacturing in India's GDP to 25 per cent has long been a government objective. With nearly half of India's workforce engaged in low-productivity agriculture, transitioning to higher-productivity activities necessitates a strong manufacturing base.

Launched in September 2014, the MII initiative aims to elevate manufacturing's contribution to GDP by attracting both domestic and foreign investment, fostering innovation, developing world-class infrastructure, creating industrial clusters, and positioning India as a global hub for manufacturing, design, and innovation. Various policy measures have been introduced to expand capacity, reform trade policies, reduce corporate taxes, improve the ease of doing business, liberalize FDI policies, enhance quality standards, and provide financial incentives to create a conducive environment for manufacturing. The MII initiative currently encompasses 27 sectors, including 15 in manufacturing.

Additionally, the government has rolled out PLI schemes across 14 sectors, offering approximately $24 billion in incentives. By November 2023, the PLI schemes had achieved significant milestones: PLI induced additional investments of $24 billion, sales of $103 billion, exports of $38 billion and 0.8 million new jobs (Srivastava 2024). These efforts

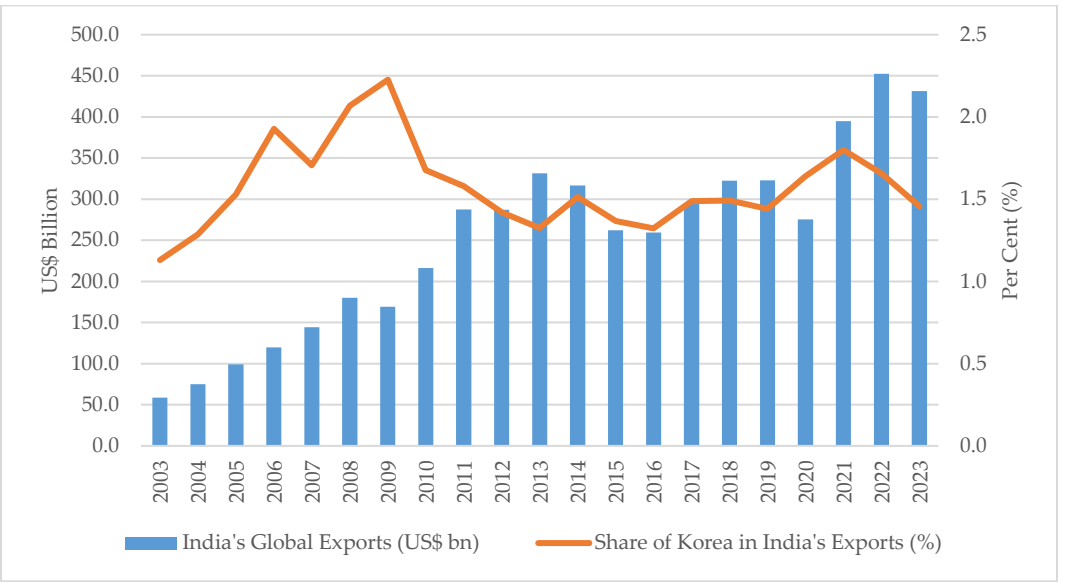
underscore India's potential as a key player in global supply chains and a strategic partner for countries like Korea seeking diversification.

3. India-Korea Trade Engagement: An Assessment of Post CEPA Period

The bilateral economic cooperation between India and Korea was placed on a strong footing with the CEPA coming into force in 2010. This agreement resulted in tariff reduction and the elimination of a large number of products by both countries. India committed 85.3% of its tariff lines and Korea 93.2% tariff lines to tariff reduction and elimination (Sahoo et al 2023). A joint Committee at the Ministerial level reviews the implementation of CEPA annually. Both the countries initiated the process of reviewing the CEPA in 2015 with a view to comprehensively upgrade the agreement to achieve full potential of the strategic partnership between the two countries. Negotiations in this regard are still ongoing.

The CEPA contains a chapter on investment apart from those on trade in goods and services. The Bilateral Investment Treaty between India and Korea had come into force in 1996[6].It was expected that CEPA would result in increased export of Indian products to Korea and more Korean FDI into India. The following figures (Figures 1 and 2) give us the trends in trade between the two countries.

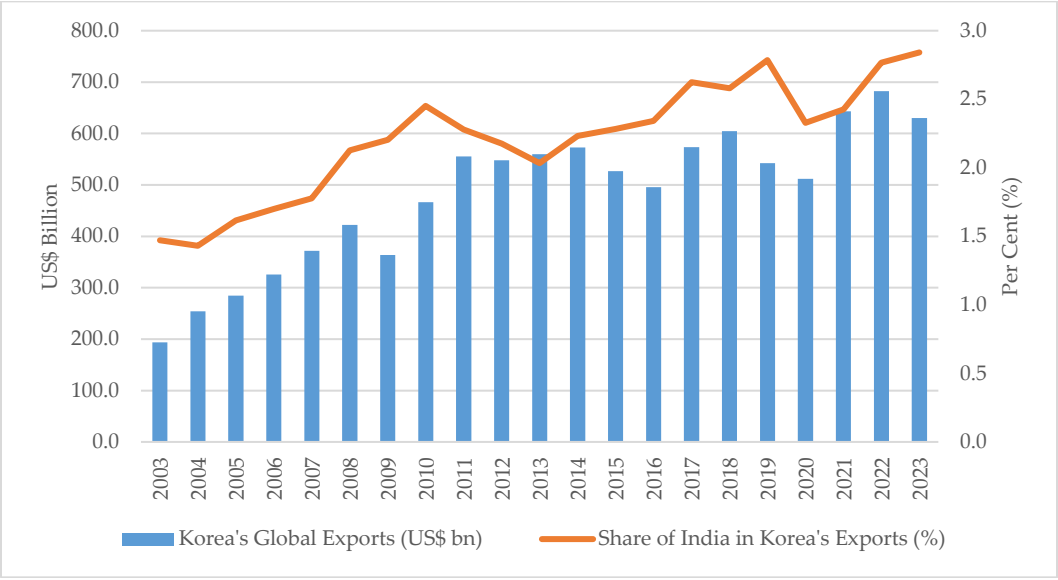
Figure 1: India's Export in Merchandise Goods



Source: Computed from the COMTRADE database accessed through WITS, World Bank

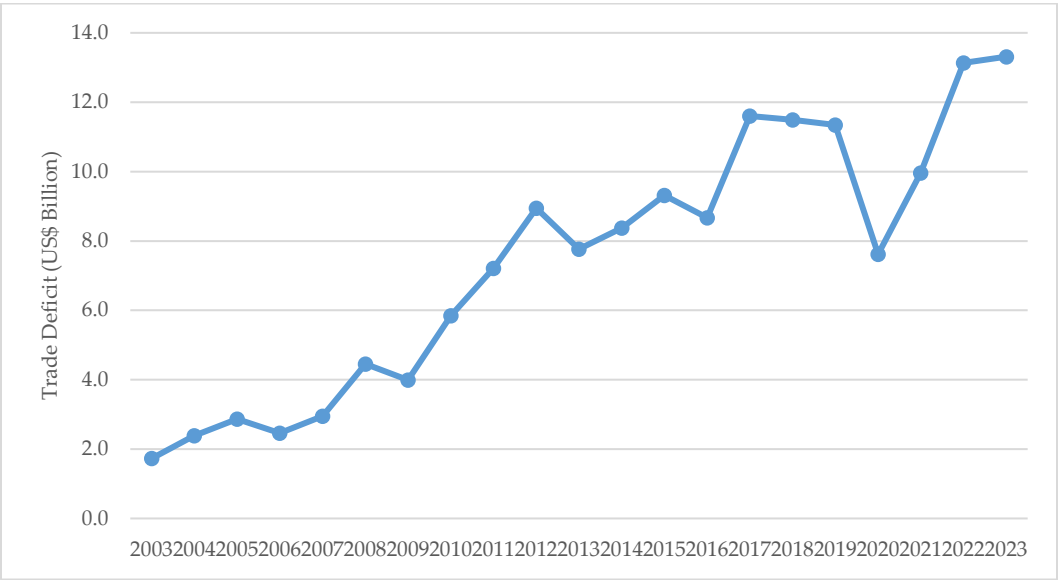
[6] This treaty was terminated by India in May 2017.

Figure 2: Korea's Export in Merchandise Goods



Source: Same as Figure 1

Figure 3: India's Trade Deficit with Korea in Trade in Goods



Source: Same as Figure 1

India's global exports has increased from $169 billion in 2009 to $431 billion in 2023. However, as against the expectations, Korea's share in India's exports declined (Figure 1). Although this share has shown some increasing trends since 2017, Korea's share is still lower than the pre-CEPA period. Korea's global exports increased from $365 billion in 2009 to $630 billion in 2023. Its export to India, as a share of its global exports, although declined

in the initial few years of the CEPA, has been increasing since 2014. As a result, the trade deficit facing India in merchandise trade has increased from $6 billion in 2010 to $13 billion in 2023, the post CEPA period (Figure 3).

3.1. Nature of Trade between India-Korea

3.1.1. Nature of Imports

As is evident from Table 4 below, major imports into India from Korea were concentrated in sectors like electronics, iron and steel, mechanical appliances, plastics, organic chemicals and automobiles. Most of these are either in nature of high to medium technology or resource-based. In order to assess a more detailed composition of the imports of India from Korea, we have divided the total imports into technological categories at SITC 3-digit level[7] by using the methodology in Lall (2000).

As it can be seen from Figure 4, India's import share from Korea has surged significantly for high-technology products, particularly in the electronic and electrical sectors. Processed medium technology products—including carboxylic acid compounds, polymers, polyacetals, and primary form plastics—have experienced more than a 100 per cent increase in imports during this period. Additionally, medium-technology products in the automotive sector have registered notable growth in their share, particularly following the implementation of the CEPA. These trends underscore India's growing reliance on technologically advanced components and materials from Korea.

Apart from technological products, the import share of resource-based manufactures from Korea has also risen. Key items in this category include:

- Ferrous waste and scrap: Imports have seen a tenfold growth since 2009, indicating a strong dependence on secondary raw materials.
- Heavy petrol/bitumen oils and residual petroleum products: These have experienced a sharp increase, reflecting India's expanding energy and industrial demands.
- Hydrocarbons and inorganic chemical compounds: Products such as oxides and halogen salts have also contributed to the rising import figures.

A further investigation into the impact of CEPA on India was undertaken based on the import surge which occurred at the HS 4-digit level. As discussed above, India's trade deficit witnessed a more than 100 per cent jump in the 13 years to the signing of CEPA, while the exports did not match the pace. To further investigate into the impact of CEPA on imports of India, we have tried to detect the HS 4-digit lines that witnessed a surge in imports which sustained into the recent years.

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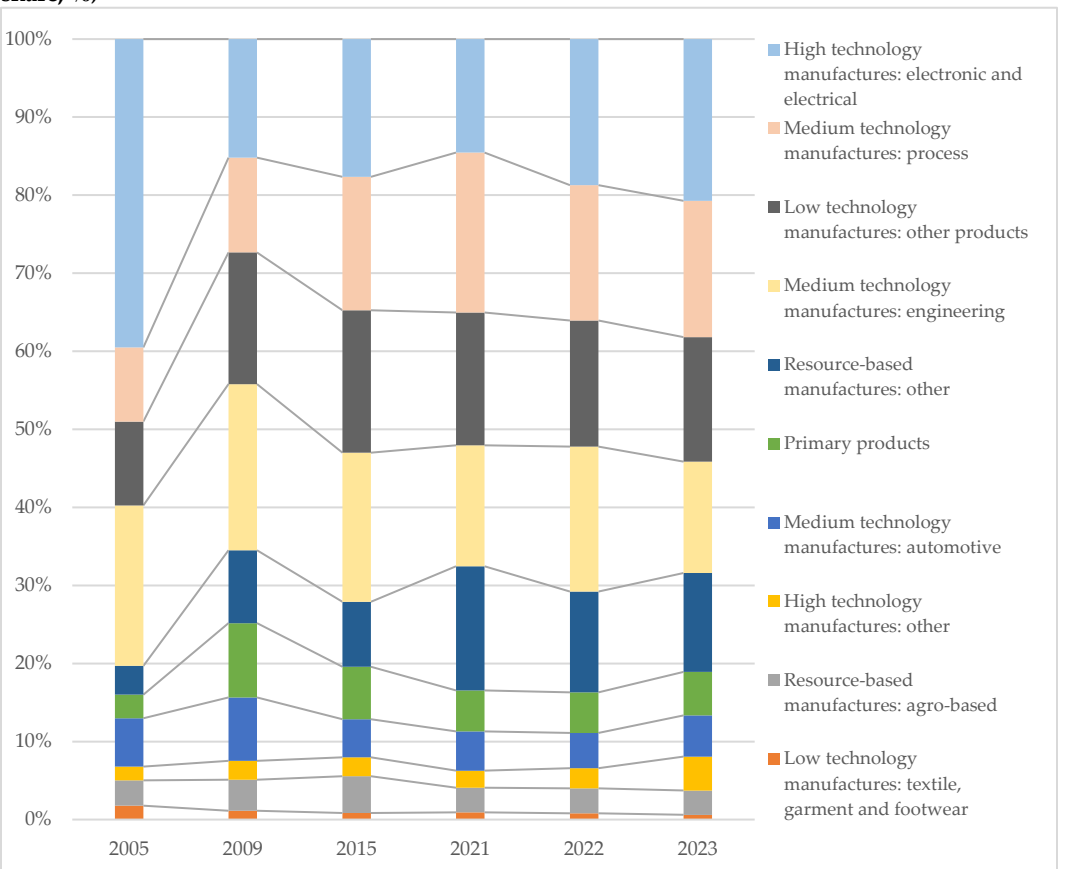
[7] Classification given by Lall (2000), available at: https://unctadstat.unctad.org/EN/Classifications.html

Figure 4: India's Imports from Korea: Technology Intensity Wise and Resource-based Wise (in share, %)



Source: Same as Figure 1

To begin with, we have examined a subset of 40 products at HS 4-digit level of India's import from Korea in 2023 that were above $ 100 million of import value in the year 2023. These lines account for 70 per cent of India's total imports from Korea in 2023. This gives weight to the recent year values of imports of products that constitute a significant share in India's imports from Korea. However, a further investigation was required to identify products that increased their market access in India post-CEPA. Two approaches were, therefore, followed to identify those products that had witnessed a surge[8] in import values post-CEPA:

1. Graphical Analysis: Using 5-year moving averages, from 2009 to 2023, we plotted the moving averages for each of these 40 products and consider those products

[8] Although there is no established methodology to identify the import surge, various studies have followed different approaches, mostly multipronged, to demonstrate the import surge in an industry or a product (Pearson and Ellyne 1985; Rakotoarisoa et al 2011; Chatuurvedi and Wali 2022; Kumar 2024; Banerjee et al. 2024)

that not only witnessed a sharp increase in the moving averages, but also that the growth was sustained, and was not a one-off rise in imports. We could identify 27 such products.

2. Secondly, we calculated the deviation of the immediate post-CEPA years moving average, that is, 2009-13 with the individual year imports values to assess whether the deviation from the moving average was substantial or not, indicating a surge. We then analysed trend in negative growth rates for the individual years in the period of 2009-2013, vis-à-vis the moving average. If the deviation was negative for three consecutive years ending the period, the product was identified as having experienced an import surge. We could identify 17 such products.

Combining the two sets of products, there was an overlap of 15 products of high import values from Korea, that showed indications of an import surge in post-CEPA years.

This methodology has been developed on the basic principles of time series trend analysis. Moving averages are favoured for their simplicity and ease of interpretation. They reduce noise in the time series and allow analysts to focus on the long-term movement of data, which is critical in identifying surges. However, the technique comes with limitations. The choice of window size is crucial—a shorter time period may capture rapid changes but also increases the risk of false positives due to noise, while a longer window might miss sudden surges. Recent literature has explored hybrid approaches, combining moving averages with methods like ARIMA models or machine learning techniques, to enhance sensitivity and reduce lag effects, which is beyond the scope of the present paper.

For the products identified, a heat map[9] diagram has been generated in Table 1 that depicts the products that have shown an import surge since the CEPA came into force. From the table, we may observe that out of 15 products, three products [HS 8207, 8431 and 9031] showed a consistent rise in imports till 2019 and fell thereafter. The other products clearly showed not only a surge in imports, but a continuous rise in the same from Korea. These products include various oils, unwrought zinc and lead, various parts of machinery and vehicles etc. Imports of HS 2707 (oils and other products, comprising of aromatic oils) increased from $14 million in 2009 to $275 million in 2023. Similarly, imports of unwrought zinc have touched $475 million in 2023, from a meagre $18 million imports in 2009. Imports from Korea for the products like centrifuges, parts of vehicles, machinery, moulding boxes, taps/valves, electric accumulators, electric lighting and electrical switches into India have also increased manifolds in the post-CEPA period.

[9] In Table 1, the heat map shows the growing magnitude of import values and the greener the cells are, the higher the import value was. Thus, a deepening of the green colour indicates rising import values for a specific HS 4-digit.

Table 1: Heatmap of Trend in Imports at HS 4-digit Products Identified with Import Surge (in $ Million)

HS 4-digit	*Moving Avg 5-yr and Graph*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*
2707	Oils and other products	14	22	12	29	34	45	19	20	91	73	86	105	161	244	275
3824	Binders for foundry moulds	5	9	16	20	26	34	47	53	74	110	86	72	108	128	112
3903	Polymers of styrene	47	92	92	113	150	150	158	142	179	207	180	126	232	244	222
7801	Unwrought lead	35	49	66	75	69	103	98	125	159	184	154	139	155	134	172
7901	Unwrought zinc	18	24	17	57	78	126	160	332	347	432	286	234	305	398	475
8207	Interchangeable tools for hand tool	13	53	53	74	122	135	153	105	125	155	209	150	120	112	114
8409	Parts suitable for use solely for Internal Combustion engines	34	47	53	55	76	84	105	99	99	101	115	128	165	145	165
8421	Centrifuges	25	30	42	52	61	75	77	62	69	76	93	96	93	108	121
8431	Parts suitable for use solely cranes, trucks and lifting machinery	38	81	117	179	136	124	147	179	177	239	171	105	191	165	151
8480	Moulding boxes for metal foundry	44	85	113	97	120	141	227	114	135	153	267	163	150	170	174
8481	Taps, cocks, valves	16	23	52	50	35	47	57	62	86	98	101	96	131	113	131
8507	Electric accumulators	4	5	8	9	12	15	15	21	52	30	32	16	46	228	225
8512	Electrical lighting or signalling	15	20	23	28	31	26	16	16	12	37	90	116	133	125	108
8536	Electrical apparatus for switching	42	59	71	94	103	115	139	133	146	138	151	112	134	157	165
9031	Measuring or checking instruments	15	29	31	42	57	58	62	70	84	116	115	78	90	97	104

Source: Same as Figure 1

3.1.2. Exports from India

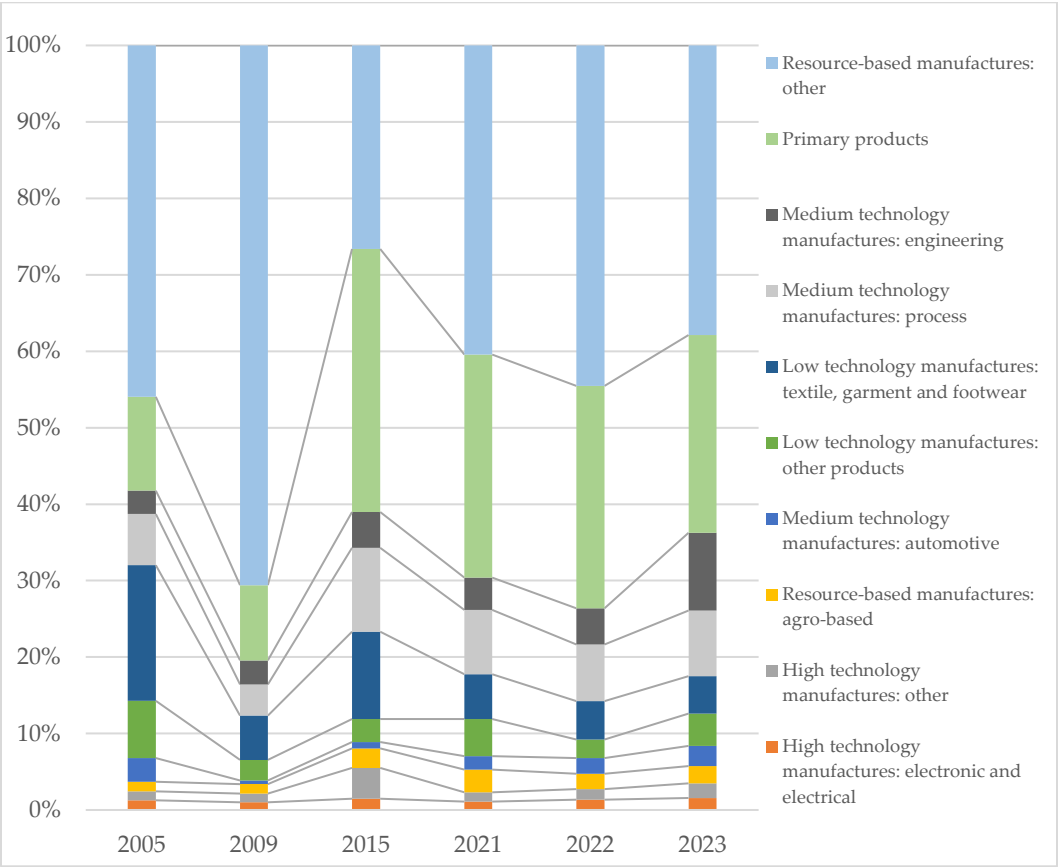
Like in the case of imports, a similar analysis was done to capture the nature of exports from India, which is presented in Figure 5. On the export side, distribution of India's exports to Korea has been lop-sided significantly towards primary products and resource-based products, accounting for approximately 64 per cent of total exports to Korea.

The share of primary products in particular, has risen manifolds from about 10 per cent in 2009 to around 26 per cent in 2023. The share of resource-based products however, having the highest share, has seen a fall in shares across the years. The share fell from 70 per cent to around 36 per cent in 2023. Share of medium technology engineering products has risen from 3 per cent to 10 per cent since 2009 to 2023.

It has been reported that India's exporters are facing a number of export restrictions in Korea in the form of non-tariff barriers. India, in response to Korea's trade policy review in the WTO has stated that "India is seeking resolution of certain trade barriers and challenges that confront our exporters in the areas of steel, engineering products, food and agricultural products such as bovine meat, fruits, vegetables etc., pharmaceutical products,

chemicals, gems and jewellery etc"[10]. Addressing such barriers is critical for Indian products to find market access in Korea.

Figure 5: India's Exports to Korea: Technology Intensity Wise and Resource-based Wise (in share, %)



Source: Same as Figure 1

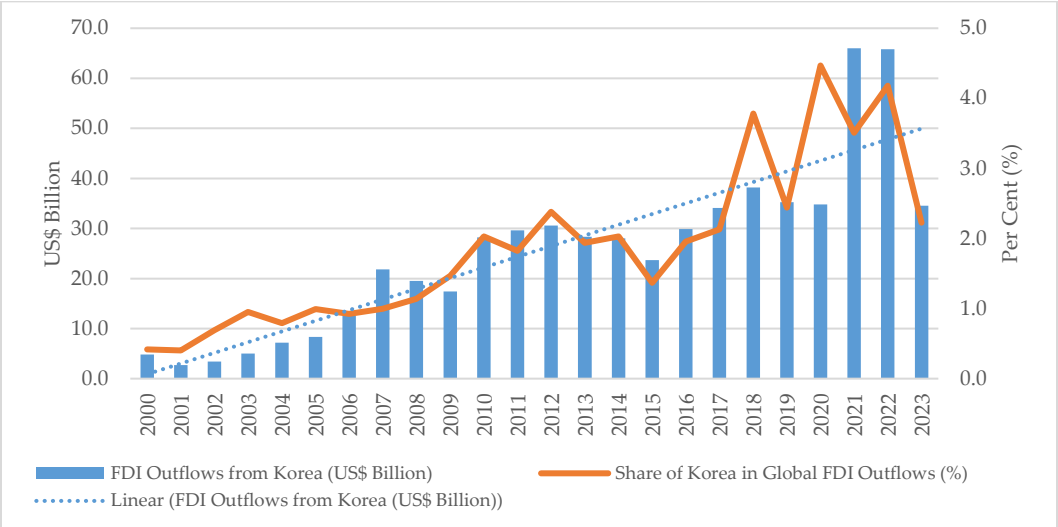
3.3. Korean Investments in India

In the 1990s, Korea had become key source of FDI inflows into India. Apart from the Bilateral Investment Treaty between India and Korea that had come into force in 1996, investment was also covered in the CEPA, which is a more comprehensive agreement on economic cooperation. It was expected that there will be an increase in Korean FDI flows into India during the post CEPA period.

There has been an increase in the FDI outflows from Korea over the years (Figure 5). And Korea's share in global outward FDI (OFDI) flows has increased to 4.5 per cent in 2020.

[10] India's response to Korea's trade policy review, WTO, 2021

Figure 5: FDI Outflows from Korea



Source: Compiled and computed from UNCTAD data on OFDI

However, Korean FDI into India did not grow as expected. During the post CEPA period, from 2010 to 2023, the Korea's share in FDI inflows into India was only less than 1 per cent (Table 2)

Table 2: Korean FDI Flows to India

Year	*Total FDI Inflows to India ($ Mn)*	*FDI from Korea to India ($ Mn)*	*Share of Korean FDI (%)*
2010	27853.3	216.0	0.8
2011	34267.6	132.5	0.4
2012	22753.9	337.7	1.5
2013	22096.8	170.2	0.8
2014	28726.0	135.8	0.5
2015	38133.0	247.5	0.6
2016	46402.0	434.9	0.9
2017	43421.5	361.5	0.8
2018	42505.8	1 005.9	2.4
2019	47516.5	857.0	1.8
2020	64589.3	416.8	0.6
2021	51339.3	317.8	0.6
2022	52345.6	252.9	0.5
2023	41324.8	385.7	0.9
Total	563275.3	5272.2	0.9

Source: Compiled and computed from FDI Newsletter (various issues), DPIIT, Govt. of India

In order to capture more details of recent trends in the Korean FDI in India, a detailed analysis of the last 10 years (1 April 2014 – 31 March 2024) is done using the FDI inflow data provided by the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry, in the FDI Newsletter. The methodology used for this analysis is given below.

The industrial sector of the individual remittances was identified by matching the product/activity reported in the FDI Newsletter with the classification provided by the National Industrial Classification 2008 (NIC 2008), Ministry of Statistics and Programme Implementation, Government of India. For this exercise, all individual remittances of at least $5 million were identified initially. At the second stage, smaller remittances involving the same combination of investors and investees were added. An attempt was also made to identify the ultimate home countries of the investors in order to get a realistic position of individual home countries. The data thus collected constitute 85.3 per cent of the total FDI inflows from Korea during this period. Total inflow from Korea during the last 10 years was US$ 4621.4 million and the investment flow that our analysis captures is US$ 3939.8 million.[11] With this exercise, we are able to identify the sector orientation, whether manufacturing or services, of Korean investments in India, industrial sectors that have received Korean FDI and Korean investors in India.

Various reports had indicated that Korean FDI into India was concentrated in the manufacturing sector. A report by FICCI (2018) pointed out that the manufacturing sector accounted for 85 per cent of Korean FDI into India. However, our analysis shows a declining share of manufacturing in the Korean FDI into India. During the last 10 years covered in our analysis, manufacturing sector accounted for 57 per cent of the Korean FDI (Table 3). But, from 2018-19 onwards, there is surge in the Korean FDI in the services sector. The share of the manufacturing sector has declined from 81 per cent during 2014/15 - 2017/18 to 47 per cent during 2018/19 – 2023/24. There is a corresponding increase in the share of FDI inflows into the services sector during the same period. This indicates a change in the sector orientation of Korean FDI into India in the last few years.

[11] The Korean FDI figures that are coming out from our analysis is higher than the FDI figures reported in Table 2. According to Table 2, the Korean FDI inflows into India, between 2013 and 2023, is $3409.9 million. However, in our analysis the Korean FDI inflows into India between 2014-15 and 20023-24 is $4621.4 million. This difference is on account of two reasons: (i) data in Table 2 is compiled for calendar year whereas data for this analysis is compiled for financial year, and (ii) our analysis traces the ultimate home country of investors and as a result some of the investments whose home country is shown as Mauritius, Hong Kong, Singapore, Cayman Islands, etc. in the official data are traced to south Korea in our analysis. For example, there are FDI inflows from E-Land Asia Holdings PTE LTD, Singapore, to E-Land Fashion India Pvt. Ltd. In our analysis the ultimate investor is the E-Land Group based in South Korea.

Table 3: Details of FDI Inflows from Korea to India during the Last 10 Years ($ Million)

P	*Manufacturing*	*Services*	*Grand Total*
2014-15	140.6	14.8	155.4
2015-16	145.0	36.5	181.5
2016-17	301.7	84.6	386.3
2017-18	300.9	76.1	376.9
2018-19	759.2	337.0	1096.2
2019-20	212.4	479.3	691.7
2020-21	75.1	157.6	232.7
2021-22	109.0	185.6	294.6
2022-23	114.9	117.7	232.7
2023-24	68.5	223.4	291.9
Grand Total	**2227.2**	**1712.6**	**3939.8**

Source: Computed from FDI Newsletter (various issues), DPIIT, compiled and processed by K. S. Chalapati Rao

In order to understand the industrial sector into which Korean FDI has come in, we have identified the industrial sector of the investment at 2-digit level of NIC 2008. There are 31 sectors into which Korean FDI has come in during the last 10 years. Their details are given below (Table 4).

Table 4: Industrial Sector of Korean FDI in India during 2014-15 to 2023-24

Manufacturing / Services	*Industrial Sector (at NIC 2-digit level) of Investment*	*Koren FDI ($ Million)*
Manufacturing	Manufacture of motor vehicles, trailers and semi-trailers	1026.1
	Manufacture of basic metals	395.2
	Manufacture of food products	183.7
	Manufacture of electrical equipment	179.9
	Manufacture of fabricated metal products, except machinery and equipment	94.9
	Manufacture of chemicals and chemical products	93.6
	Manufacture of machinery and equipment n.e.c	83.3
	Manufacture of pharmaceuticals, medicinal chemical and botanical products	71.8
	Manufacture of wearing apparel	55.6
	Manufacture of computer, electronic and optical products	38.1
	Manufacture of furniture	5.0
	Total of Manufacturing	**2227.2**
Services	Computer programming, consultancy and related activities	432.1
	Financial service activities, except insurance and Pension funding	348.1
	Information service activities	232.3
	Wholesale trade, except of motor vehicles and motorcycles	187.6
	Other financial activities	150.8

Manufacturing / Services	*Industrial Sector (at NIC 2-digit level) of Investment*	*Koren FDI ($ Million)*
	Architecture and engineering activities; technical testing and analysis	64.7
	Electricity, Gas, Steam and Air conditioning Supply	55.9
	Other professional, scientific and technical activities	50.7
	Office administrative, office support and other business support activities	37.4
	Sports activities and amusement and recreation activities	29.5
	Publishing activities	23.1
	Education	23.0
	Rental and leasing activities	19.6
	Land transport and transport via pipelines	17.1
	Motion picture, video and television programme production, sound recording and music publishing activities	10.7
	Civil engineering	9.3
	Food and beverage service activities	7.9
	Retail trade, except of motor vehicles and motorcycle	6.7
	Advertising and market research	5.9
	Human health activities	0.02
	Total of Services	**1712.6**
Grand Total		**3939.8**

Source: Same as Table 3

In the manufacturing sector, automotives and iron & steel sectors are the leading ones, which account for about close to two-third of the Korean FDI. In services, computer programming, financial services, information services and wholesale trade are the leading sectors of Korean FDI.[12]

Major Korean investments into India in the 1990s were concentrated in automobiles and electronics – Hyundai, Daewoo, Samsung and LG. Gill (2014) had analysed the Korean FDI flows to India using the FDI inflow data from 2000-01 to 2011-12 and had identified key sectors of investment. This study found that metallurgical industries, machine tools, automobile and electronics were the key sectors that attracted more than half (57 per cent) of total Korean FDI. In our analysis, as shown in Table 4, it is found that the share of these sectors in the total Korean FDI has declined to 42 percent during the period 2014-15 to

[12] There are 83 investors covered in our analysis of the last 10 years out of which 50 investors have invested in the manufacturing sector.

2023-24[13]. However, within the manufacturing sector, investments in these sectors account for 74 per cent during the same period.

Studies have pointed out Korean OFDI tend to relocate low value-added activities in foreign countries. For example, Buckley, Nigel and Jae-Yeon (2022) found that efficiency-seeking Korean OFDI is focused on transferring low value-added activities abroad while keeping high value-added activities at home. In such cases, Korean firms operating abroad, would continue to import from Korea the raw materials and finished goods, rather than making an effort to procure them locally. In the Indian contexts, the study of Francis and Murali (2020) that analysed the behaviour of Samsung India Electronics (Samsung, hereafter) found that there is a net foreign exchange outflow from Samsung due to import of raw materials, components and finished goods. They found that Samsung's net forex outflow in 2018-19 was Rs. 431.2 billion ($6.2 billion, approximately) and imports had accounted for 96 per cent of Samsung's forex spendings in that year. The imports came mostly from Korea, followed by countries like China and Vietnam where the value chains of the parent firm exist. This study also looked into the nature of imported products and found that the share of raw materials and components accounted for 55 per cent and final goods for 42.3 per cent of the imports (as in 2014-15).

As studies have found that Korean firms operating abroad tend to import raw materials and components from their home country, it is worth examining the relationship between Korean FDI in India and India's imports from Korea. It may be possible that India's imports from Korea are concentrated in those sectors where Korean firms have made a major presence in India.

In order to identify if there is any relationship between Korean investments in India in the manufacturing sector and merchandise imports from Korea, we have done an analysis of leading import items at more disaggregated level as shown in the following tables (Tables 5 and 6).

It can be seen in the table above, that imported goods at seven HS 2-digit level classification account for about three-fourth of India's imports from Korea. The combined share of these seven categories of imported items has increased from 72 per cent to 76 per cent during 2014-16 to 2021-23. In order to get a better picture of the relationship, we identified the leading products at more disaggregated level, at HS 4-digit level. For identifying the leading product categories, the criterion of either top five product categories or top few categories (less than five) which account for more than two-third share at the HS 2-digit level for 2021-23.

[13] Manufacture of motor vehicles, trailers and semi-trailers; Manufacture of basic metals; Manufacture of fabricated metal products, except machinery and equipment; Manufacture of machinery and equipment n.e.c; and Manufacture of computer, electronic and optical products.

Table 5: India's Merchandise Imports from Korea

2014-16			*2021-23*		
*2-Digit Hs Codes**	*Imports (Annual Average, $$ million)*	*Share in India's Total Imports from Korea (%)*	*2-Digit Hs Codes**	*Imports (Annual Average, $$ million)*	*Share in India's Total Imports from Korea (%)*
85	2520.9	19.5	85	4064.1	21.2
72	1699.9	13.2	72	2679.4	14.0
84	1600.1	12.4	39	2283.9	11.9
39	1286.9	10	84	1993.4	10.4
29	782.3	6.1	27	1402.9	7.3
27	768.8	6.0	29	1270.8	6.6
87	650.2	5.0	87	944.4	4.9
Total	12913.0	72.2	Total	19146.5	76.3

Source: Same as figure 1

Note: * description of the HS codes are given below.

27: Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes

29: Organic chemicals.

39: Plastics and articles thereof.

72: Iron and steel

84 : Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof.

85: Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles.

87: Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof.

Table 6: India's Merchandise Imports from Korea: Leading imported products at HS 4-Digit Level

HS 2 Digits	*HS 4 Digits*	*Description of products (Application of products)*	*2014-16*		*2021-23*	
			Import (Average Annual, in $ Mn)	*Share in the Total Import under respective HS 2 Digits (%)*	*Import (Average Annual, in $ Mn)*	*Share in the Total Import under respective HS 2 Digits (%)*
85	8517	Telephone/mobile phone parts and related equipment for communication	36.9	47.6	80.7	49.1
	8542	Electronic integrated circuits (Used in smart phones, TVs, computers, etc.)	642.7	10.1	911.2	16.3
72	7208	Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated. (These products are used for structural applications by various industries such as automotive industry (chassis, frame and body panels), construction sector, and shipbuilding).	304.6	31.4	346.2	29.8
	7225	Flat-rolled products of other alloy steel, of a width of 600 mm or more (These products are used for making high-strength parts such as suspension in automobiles, aerospace, industrial machinery, defence, etc.).	149.8	14.6	232.6	21.2
	7210	Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, clad, plated or coated.	89.1	17.6	135.6	18.4

HS 2 Digits	*HS 4 Digits*	*Description of products (Application of products)*	*2014-16*		*2021-23*	
			Import (Average Annual, in $ Mn)	*Share in the Total Import under respective HS 2 Digits (%)*	*Import (Average Annual, in $ Mn)*	*Share in the Total Import under respective HS 2 Digits (%)*
		(These products have a protective layer or coating applied to enhance properties like corrosion resistance, durability, and aesthetics used by automotive, home appliances, ship building, etc.).				
39	3907	Polyacetals, other polyethers and epoxide resins, in primary forms; polycarbonates, alkyd resins, polyallyl esters and other polyesters, in primary forms. (These products have applications in industries such as automotive (lightweight parts, fuel systems) and electronics (insulation, connectors)).	160.7	11.6	164.4	17.7
	3901	Polymers of ethylene, in primary forms. (These products have applications in industries such as automotive ((fuel tanks, bumpers) and construction ((pipes, insulation)).	95.8	17.3	158.3	16.2
	3904	Polymers of vinyl chloride or of other halogenated olefins, in primary forms. (Used by industries such as construction (pipes and fittings) and automotive (interior trim and dashboard components)).	94.0	23.7	135.5	15.2
	3903	Polymers of styrene, in primary forms. Used by industries such as food processing (food packing), electronics (casings for TVs/monitors) and automotive (dashboard, trim and grill).	55.2	11.6	124.7	10.2
	3902	Polymers of propylene or of other olefins, in primary form. (Used by industries such as packaging (bottle caps, good containers, etc.), medical devices (syringes, IV bottles, etc.), and automotive (bumper, battery cases, interior trim, etc.)).	149.6	6.9	403.4	5.9
	3909	Amino-resins, phenolic resins and polyurethanes, in primary forms. (Used for applications such as electrical components (circuit boards, insulating materials), automotive parts (brake pads, clutch facings, engine components, seat cover and headrest), and footwear (shoe soles)).	222.8	4.8	369.6	5.7
84	8431	Parts suitable for use solely or principally with the machinery of headings 8425 to 8430 (Lifting and pulling devices used in various industries for material handling, construction, transportation, and industrial applications).	62.0	9.4	130.1	8.5
	8480	Moulding boxes for metal foundry; mould bases; moulding patterns; moulds for metal (other than ingot moulds), metal carbides, glass, mineral materials, rubber or plastics. (Used in manufacturing and industrial production, particularly in casting, moulding, and forming processes).	26.8	10.0	361.0	8.2

HS 2 Digits	*HS 4 Digits*	*Description of products (Application of products)*	*2014-16*		*2021-23*	
			Import (Average Annual, in $ Mn)	*Share in the Total Import under respective HS 2 Digits (%)*	*Import (Average Annual, in $ Mn)*	*Share in the Total Import under respective HS 2 Digits (%)*
	8409	Compression-ignition internal combustion piston engines (diesel or semi-diesel engines). (Engine components used in internal combustion engines (ICEs)),	320.4	6.0	200.1	7.9
	8479	Machines and mechanical appliances having individual functions, not specified or included elsewhere in this Chapter. (For example, industrial robots for specific functions such as painting).	108.2	5.9	104.6	6.8
	8481	Taps, cocks, valves and similar appliances for pipes, boiler shells, tanks, vats or the like, including pressure-reducing valves and thermostatically controlled valves.	37.0	3.4	82.9	6.3
27	2710	Petroleum oils and oils obtained from bituminous minerals, other than crude; preparations not elsewhere specified or included, containing by weight 70 % or more of petroleum oils or of oils obtained from bituminous minerals, these oils being the basic constituents of the preparations; waste oils. (Petroleum Oils & Oils from Bituminous Minerals (Excluding Crude)).	1200.4	83.1	1996.0	75.4
29	2902	Cyclic hydrocarbons. (They are used by industries such as pharmaceuticals).	253.5	3.4	661.0	28.4
	2917	Polycarboxylic acids, their anhydrides, halides, peroxides and peroxyacids; their halogenated, sulphonated, nitrated or nitrosated derivatives. (Used by industries such as pharmaceuticals, electronics and textiles).	533.7	41.0	798.7	15.7
	2907	Phenols; phenol-alcohols. (They are used for industries such as pharmaceuticals and cosmetics).	248.7	13.8	568.6	8.2
	2926	Nitrile-function compounds. (Used by industries such as pharmaceuticals and fertilizers).	299.1	4.7	491.7	6.5
	2914	Ketones and quinones, whether or not with other oxygen function, and their halogenated, sulphonated, nitrated or nitrosated derivatives. (Used by industries such as pharmaceuticals and paints).	150.1	4.7	169.0	6.3
87	8708	Parts and accessories of the motor vehicles of headings 8701 to 8705. (Parts and accessories of tractors, motor vehicles and special purpose vehicles).	638.9	98.8	1058.0	96.5

Source: Compiled and computed by authors using Comtrade data accessed through WITS, World Bank; HS Nomenclature (2017 edition), World Customs Organization; and Generative AI applications.

Out of the 23 HS 4-digit level products covered in the above table (table 6), 14 categories[14] are either in automotive, electronics, and iron & steel sectors, which are leading sectors of Korean investments in the manufacturing sector or have applications in the automotive and electronics sectors. The import value of these 14 product categories has increased from $3.1 billion during 2014-16 (average annual) to $4.4 billion in 2021-23 (average annual). Although their share in total import in the seven HS 2-digit level (table 5) has declined from 52 per cent during 2014-15 to 45.6 per cent during 2021-23, they still account for nearly half of the imports. Our analysis indicates that India's import from Korea is concentrated in those sectors where Korean firms have made presence in India.

In the case of automotive sector, it may be argued that other automotives firms in India may also be importing parts from Korea. However, Maruti Suzuki, which is the largest automotive firm in India in terms of market share has established a strong network of local suppliers and localisation of any model that the company launches in India is a minimum of 95 per cent (The Economic Times 2015). Similarly, other leading Indian automotive firms – Tata Motors and Mahindra and Mahindra, have their own component manufacturing group firms and local supplier network. A limitation of this analysis is that it captures the import only from Korea. Considering the likelihood of Korean firms in India importing parts and components from its value chains based in other countries such as China, the actual amount of import by them would be higher.

4. Deepening the Economic Partnership

4.1. Potential sectors for expansion of exports by India

In this section, we make an attempt to identify the sectors in which India can expand exports to Korea. Using the Revealed Comparative Advantage (RCA) analysis, which is an established methodology of measuring the export competitiveness, at the HS 2-digit level product groups, we identified those sectors/product groups in which India is having a comparative advantage globally.

Introduced by Balassa (1965), RCA provides a measure of the ratio of the share of a product in a given country's export basket and the share of that product in world trade. Data has been sourced from World Integrated Trade Statistics (WITS) database. An RCA greater than 1 signifies a comparative advantage of the country in the product group in the global market.[15] We consider those product groups where India's RCA is greater than 1, and within them the product groups in which India's share in Korean imports is less than

[14] The 14 HS 4-digit level product codes are 8517, 8542, 7208, 7225, 7210, 3907, 3901, 3904, 3903, 3902, 3909, 8409, 8479, and 8708.

[15] Although, the analysis is only indicative of the potential comparative advantage, at HS 2-digit level, there is need for further disaggregated analysis into this, which is beyond the scope of the present paper.

India's share in global imports. Accordingly, we have identified 26 product groups as shown in Table 7.

Table 7: Product Groups in which India has the Potential to Expand Exports to Korea (2023)

S. No.	*HS Code (2-Digit)*	*Description*	*RCA Value*	*India's World Share (%)*	*India's Share in Korean Imports (%)*	*Korea's Global Imports ($Million)*
1	02	Meat and edible meat offal	1.1	2.3	0.006	6447
2	03	Marine Products	2.7	5.2	1.5	3,548
3	05	Animal originated products	1.2	2.4	0.7	211
4	07	Vegetables and certain roots	1.1	2.3	0.2	800
5	09	Coffee, tea, mate and spices	3.6	7.5	2.4	1077
6	10	Cereals	4.2	7.6	0.0	4135
7	17	Sugars and confectionery	4.6	6.5	1.8	901
8	27	Mineral fuels, mineral oils	1.5	3.6	2.2	68201
9	30	Pharmaceutical	1.3	2.6	0.3	9434
10	32	Tanning or dyeing extracts	2.1	3.6	3.3	1874
11	38	Chemical products n.e.c.	1.2	2.3	1.1	8678
12	40	Rubber and articles thereof	1.1	2.1	0.8	2635
13	42	Articles of leather	1.4	2.5	0.3	3870
14	54	Man-made filaments	2	3.4	2.1	954
15	55	Man-made staple fibres	2.6	4.8	3.6	522
16	57	Carpets and other textile floor cover	6.1	11.1	2.4	110
17	58	Fabrics; special woven fabrics	1.5	3.1	1.8	83
18	61	Knitted articles of apparel	1.7	3	0.6	4594
19	62	Non-knitted articles of apparel	1.9	3.8	0.5	5582
20	63	Other made up textile articles	3.9	7.4	1.2	931
21	67	Feathers and down	2.0	4.5	0.1	164
22	68	Stone, plaster, cement, asbestos	1.9	3.4	0.4	2988
23	69	Ceramic products	2.0	4.7	0.4	1764
24	71	Natural, cultured pearls	2.3	3.9	2.3	4485
25	73	Iron or steel articles	1.3	2.6	0.8	5992
26	89	Ships, boats and floating structure	1.7	3.2	0.0	928

Source: Same as Figure 1

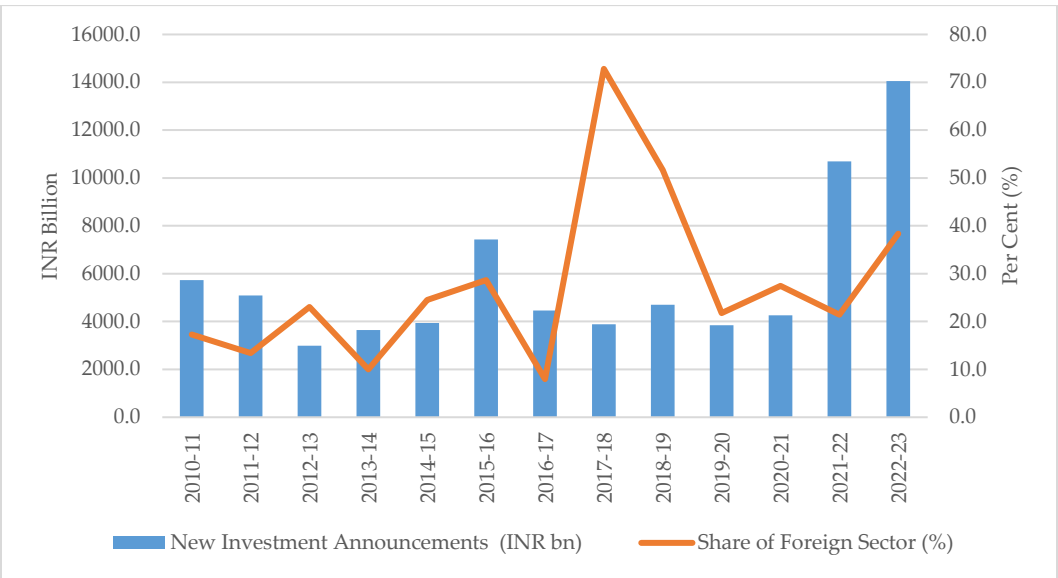
As is seen from the Table 7, India's share in Korea's market is limited in many products groups in which India has a potential to increase its presence in the Korean market. Global imports of Korea are substantial in chemicals, pharmaceuticals, apparels, rubber articles,

leather products, marine products, and articles of iron and steel. India has a much higher market share in the global market than the Korean market. Thus, under the CEPA, India should seek to understand the factors why Indian exporters have not been able to use the preferential arrangements with Korea.

4.2. Boosting Korean Investments in India

The PLI scheme, introduced in 2020-21, has generated significant interest from the private sector, as reflected in the surge of new investment announcements. Since the scheme's launch, there has been a noticeable rise in investment declarations within the manufacturing sector, as illustrated in Figure 7. Notably, 38 percent of these announced investments originate from foreign private entities.

Figure 7: New Investment Announcements in Manufacturing Sector of India



Source: Compiled and computed from Economic Outlook, CMIE

There are four Korean firms participating in the PLI scheme, as shown in Table 8. However, three of them except Kia have already been operating in India since the 1990s.[16] As we have seen in Table 2, the Korean FDI into India is merge even in the recent past. This indicates the reluctance of new major Korean firms to enter India to make it as a manufacturing base. There is great scope for more Korean firms to invest in India in the light of the Government of India's efforts to transform the manufacturing sector. Table 7 shown some of the sectors in which India is having comparative advantage globally. Some of the sectors shown in this table, for example textiles and apparels, are labour intensive sectors. Textiles and apparels are also a sector where Korea is having major firms such as Hyosung TNC. It will be a win-win situation for both Korea and India if leading Korean firms in sectors such as

[16] Kia is owned by Hyundai.

textiles and apparels invest in India, which is labour abundant, and make it a manufacturing hub for exports. Textiles and apparels is just an example, but more such sectors where the partnership between the two countries can be beneficial for both the countries needs to be identified.

Table 8: The PLI Schemes of India: Some Details

S. No.	*Sector Covered*	*Selected Beneficiaries*
1	Mobile phones and specified electronic components	*Samsung*, Foxconn
2	Selected Pharma APIs/KSMs/DIs	Aurobindo Pharma, Hetero Drugs
3	Medical Devices	Philips, Siemens
4	Automobiles and auto components	*Hyundai Motors, Kia*, Tata Motors
5	Pharmaceuticals	Sun Pharmaceutical Industries, Amneal Pharmaceuticals
6	Speciality Steel	Arcelor Mittal, Nippon Steel India
7	Telecom and networking products	Nokia, Flextronics, Foxconn
8	Electronic/Technology products	Dell, HP, Flextronics
9	White goods (ACs and LEDs)	*LG*, Daikin
10	Food products	Avgol India, Cubatics Industries, Goa Glass Fibre
11	Textile products	Paragon Apparel, Madurai Industrial Textiles
12	Solar PV modules	Adani Infrastructure, Reliance New Energy Solar
13	Advanced Chemistry Cells Battery	Ola Cell Technologies, Reliance New Energy Battery Storage
14	Drones and components	Aarav Unmanned Systems, Zuppa Geo Navigation Technologies

Source: Authors' compilation from various sources
Note: Text in italics indicates Korean firms

5. Summary and Concluding Observations

This study aims to explore the potential for deepening the India–Korea economic partnership in the context of shifts in the global economy, where multilateral organizations such as the World Trade Organization are increasingly becoming redundant, and bilateral arrangements are emerging as the norm. Recent literature suggests that there is significant scope for enhancing economic ties between the two countries, given the need for Korean firms to diversify their supply chains and the Government of India's emphasis on transforming the manufacturing sector.

As a first step in exploring this potential, the study analyses the impact of the Comprehensive Economic Partnership Agreement (CEPA) between the two countries to understand the current issues and challenges facing the partnership. The analysis shows that, in the post-CEPA period, Korea's share in India's exports has declined, while India's share in Korea's exports has increased-leading to a rise in India's trade deficit. It was also found that India experienced an import surge in 15 product groups at the HS 4-digit level during the post-CEPA period. Additionally, India's imports from Korea largely consist of high-technology and medium-technology products, whereas its exports to Korea are mainly concentrated in primary and resource-based products.

The study finds that in product groups such as pharmaceuticals and textiles & apparels, where India is a major global exporter, exports to Korea remain very low. This warrants a closer examination of Korea's import policies and practices, particularly the non-tariff measures (NTMs) that may be affecting Indian exports. There are 26 product groups at the HS 2-digit level where India has the potential to expand its exports to Korea.

The analysis of Korean FDI in India reveals that such investments were significant during the initial decades of India's economic reforms. However, since the 2000s, Korean investment flows have remained low. While foreign investors responded positively to initiatives such as Make in India and the Production-Linked Incentive (PLI) Scheme, these programmes did not attract major new Korean firms. The study also notes that Korean FDI, traditionally focused on the manufacturing sector, has recently shifted toward the services sector. Given Korea's strong manufacturing base, this trend calls for a deeper analysis of the evolving nature of Korean outward FDI. Nevertheless, there is considerable potential for Korean investment in sectors such as textiles and apparel, positioning India as a manufacturing hub for exports.

It is also found that there is a relationship between Korean investments in India and import from Korea. Investments are concentrated in sectors such as automotive and electronics and these sectors also dominate in India's imports from Korea. It appears that Korean firms in India tend to import high value-added products from Korea rather than attempting to produce them in India by engaging with local suppliers. For home economies, moving up in the value chain requires shifting of a part of the high value-added activities to their economies.

In conclusion, while the India-Korea economic partnership has witnessed some growth, the trade imbalance and limited investment flows signify areas for improvement and deepening the partnership. Strengthening the partnership requires addressing of trade barriers and encouraging Korean firms to deepen the local value chains in India. With greater bilateral engagement, both countries can transform the partnership into a deeper and mutually beneficial one.

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