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Swathysree S S[1] **Parthapratim Pal**[2]

Abstract

Indian capital goods sector has grown in size since liberalization. However, India's share in global capital goods export market is meagre and India is heavily import-dependent. In this context, this paper attempts to understand the potential of trade agreements in boosting capital goods exports. We analyze the export competitiveness and dynamism of Indian capital goods to understand the market positioning and export capabilities. Further, we identify the major export and import markets of Indian capital goods. We find that the major export markets of India are countries with which India has not signed any trade agreements. On the contrary, India faces huge import inflow from countries with whom India has trade agreements. The paper finds that trade agreements are unlikely to bring much benefits to Indian capital goods. The paper highlights that trade agreements alone is not sufficient to boost capital goods exports. Indian capital goods sector needs to invest and upgrade domestic technological and production capabilities to evolve as a globally competitive export player. [3]

Keywords: Capital Goods, Free Trade Agreements, Export Competitiveness and Dynamism

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Leveraging Trade Agreements to Boost Export from Indian Capital Goods Sector

Swathysree S S and Parthapratim Pal

I. Introduction

Manufacturing sector is considered as the main engine of economic growth(Tregenna, 2009) and capital goods sector forms the core of manufacturing sector. Capital goods sector provides critical inputs like machinery and equipment to a broad base of user industries which are used directly or indirectly in the production process. Capital goods drives productivity growth across its user industries through embodied technological progress and intersectoral linkages. Capital goods sector also play a critical role in the innovation process (Rosenberg, 1963). A robust domestic capital goods sector is considered as an indicator of domestic technological capability(Baark, 1991).

India followed a planned industrialization strategy from the second five-year plan with an emphasis on the development of capital goods sector. The strength of capital goods focused industrialization strategy lies in the creation of a strong and diversified industrial base for India with numerous strategic industrial linkages (Bhagavan, 1985, p. 412). The second five-year plan followed Mahalanobis model which by an assumption of stagnant export earnings states that the determinant of the rate of growth of investment in the economy is the rate of growth of output capacity in the domestic capital goods industry(Singh & Ghosh, 1988, p. 2329). Import of capital goods was considered as a structural weakness as well as a barrier to self-reliance. To reduce import dependence and to increase production capacity, India protected its infant industries from foreign competition and restricted capital goods imports. Through state-led planned industrialization, India could build a diverse capital goods manufacturing base by 1980s. (Singh & Ghosh, 1988, p. 2329) However, India is currently a net importer of capital goods and has been witnessing a massive increase in the trade deficit over time. In the global exports market of capital goods, India's share is very low compared to countries like China.

National Manufacturing Policy of 2012 has noted that capital goods, the mother industry for manufacturing, has not grown at the desired pace and accorded special focus on the capital goods sector. Identifying the capital goods sector as a strategic sector in manufacturing to strengthen national capabilities in the long term and to tap global opportunities, government has come up with various policy measures like National Capital Goods Policy and Make in India to enhance productivity, competitiveness of the sector.

The vision of National Capital Goods Policy, 2016 is to increase the share of capital goods contribution from present 12% to 20% of total manufacturing activity by 2025, to increase the export contribution of capital goods sector at least to 40 per cent of total production, and to improve the technology depth of capital goods sector. The policy actions stated are: devising rationalized tax and duty structure to ensure cost competitiveness of the industry, adopting public procurement policy with specific provision in the contracts regarding domestic value addition, provision of technology upgrade fund and promote indigenous technology development, creating level playing field vis-à-vis the imports with restrictions on import of second hand machinery and addressing the duty disadvantages, development of manufacturing clusters with shared facilities for SMEs, enabling skill development and ensuring availability of long-term financing at competitive rates for capital good producers.[4] Make in India Version 2.0 accords renewed focus on capital goods, one of the ten champion sectors identified by the government based on the potential to drive growth of manufacturing sector and create employment opportunities. In this context, this study tries to understand how free trade agreements could be leveraged for the benefit of Indian capital goods sector.

II. Indian Capital Goods Sector

The current market size of Indian capital goods sector is Rs. 2897.5 billion[5]. Capital goods sector contributes to 12 per cent of manufacturing. The major subsectors of capital goods are machine tools, textile machinery, earthmoving and mining machinery, heavy electrical and power equipment, process plant equipment, dies and moulds, printing and packaging machinery, food processing, plastic processing machinery, and metallurgical machinery. Heavy electrical equipment industry followed by process plant equipment and earth moving and mining machinery accounts for the major share of total domestic production and market size of Indian capital goods.

As per the use-based classification of IIP data, the annual growth rate of capital goods with respect to the previous years in 2012-13 and 2013-14 period was negative, (-)3.7 per cent and (-)1.1 per cent respectively. However, the annual growth rate of capital goods has improved and is 4 per cent in 2017-18.

[4] Page No. 74, Draft National Capital Goods Policy, 2015
[5] investindia.gov.in

Table 1: Annual growth rates as per IIP (%) calculated w.r.t. previous year

Use-based category	Weight	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Primary goods	34.048	0.5	2.3	3.8	5.0	4.9	3.7
Capital goods	8.223	0.3	-3.7	-1.1	3.0	3.2	4.0
Intermediate goods	17.221	5.1	4.6	6.1	1.5	3.3	2.3
Infrastructure/ construction goods	12.338	5.4	5.7	5.0	2.8	3.9	5.6
Consumer durables	12.839	4.9	5.6	4.0	3.4	2.9	0.8
Consumer non-durables	15.329	6.1	3.7	3.8	2.6	7.9	10.6

Source: *Ministry of Statistics and Programme Implementation*

Table 2: Sectoral growth rates as per IIP (%) calculated w.r.t. previous year:

Year	Manufacturing	Manufacture of Electrical equipment	Machinery & equipment n.e.c.	Motor vehicles, trailers & semi-trailers	Other transport equipment
	(Wt=77.63)	(Wt=2.99)	(Wt=4.77)	(Wt=4.86)	(Wt=1.78)
2012-13	4.8	13.0	2.9	0.1	-0.8
2013-14	3.6	3.9	0.4	-1.0	4.3
2014-15	3.8	3.9	-0.7	3.5	6.3
2015-16	2.8	5.2	3.2	-1.5	2.3
2016-17	4.4	-4.5	7.7	0.6	4.4
2017-18	4.6	-12.4	5.6	12.6	14.0

Source: *Ministry of Statistics and Programme Implementation*

Table 3: Production data of Major subsectors of Capital Goods (Rs crore)

Category	2014-15	2015-16	2016-17
Dies, Moulds & Press Tools	14647	15000	14750
Earthmoving & Mining Machinery	17000	19375	24945
Food processing machinery	20000	15000	13000
Heavy Electrical Equipment	137198	144861	159221
Machine Tool	4230	4727	5803
Metallurgical Machinery	1260	1386	1525
Plastic Machinery	2950	3300	3690
Printing Machinery	15748	16916	16424
Process Plant equipment	18900	19000	19500
Textile Machinery	6960	6580	6650
Total Production	238893	246145	265508

Source: *Dept. of Heavy Industry*

Sectoral growth rates as per Index of Industrial Production data shows that manufacturing of electrical equipment is experiencing a deceleration from 2016-17. Manufacturing of machinery

and equipment has registered a low growth rate in 2017-18 with respect to previous year growth rate of 7.7 per cent.

III. Major concerns of Indian Capital Goods Sector

The major concern of Indian capital goods sector is the increasing reliance on imports to meet the domestic demand. Export performance of India's capital goods sector has also been modest. Though India had followed a planned industrialisation strategy with a special emphasis on the development of capital goods sector, India is currently a net importer of capital goods and India has been facing a sizeable amount of trade deficit in this sector. Out of the total non-petroleum and oil imports of India, capital goods import is the second largest import category. In the financial year 2017-18, the import share of capital goods in total non-petroleum and oil imports of India is 25 per cent whereas the share of exports is 10 per cent.

The relative performance of India's capital goods sector compared to other emerging nations like China has worsened over the years. In 1985, China and India had similar share in global exports, but the relative positions changed drastically, and since 2010, China is the leading exporter of capital goods in the world with a share of 23 per cent by 2017. On the contrary, India's share in global exports is a meagre 0.6 per cent and is the 25th largest exporter. The low share of Indian capital goods exports in the global market compared to other countries indicates that Indian manufacturers are unable to effectively tap the global opportunities.

Table 4: Capital goods: Market Size and Production in 2016-17

Category	Market Size (in Rs Cr)	Production (in Rs Cr)	Demand Supply Gap (in Rs Cr)
Dies, Moulds & Press Tools	15427	14750	677
Earthmoving & Mining Machinery	22134	24945	(2811)
Food processing machinery	16097	13000	3097
Heavy Electrical Equipment	162314	159221	3093
Machine Tool	12073	5803	6270
Metallurgical Machinery	2683	1525	1158
Plastic Machinery	3357	3690	(333)
Printing Machinery	20189	16424	3765
Process Plant equipment	24817	19500	5317
Textile Machinery	12073	6650	5423
Total Production	291164	265508	25656

Source: investindia.gov.in & Dept. of Heavy Industry

A substantial market size is necessary for the efficient working of capital goods sector. There is a huge demand supply gap in Indian capital goods sector as shown in Table 4. Increasing

imports is a clear indication of growing demand for capital goods in the domestic market which our domestic producers are unable to tap. Thus, it is important to understand the underlying reasons for the inability of domestic producers of capital goods in catering to the domestic demand. The needs of user industries of capital goods evolve over time with advancement in technology and there exists a huge technological gap between domestic and foreign producers of capital goods. National Capital Goods Policy, 2016 has identified the existence of technology gaps in sectors like textile machinery, machine tools, printing machinery. Domestically produced weaving, jute and knitting machinery in general are outdated in the technology front. In the printing machinery category, severe technology gap exists in digital printing technology and Pre-press Computer Printing Technology (CPT).[6] If the underdevelopment of domestic technological capability is preventing the domestic producers from meeting their demands, user industries are left with no choice but to rely on imports.

Indian capital goods sector is affected by the unintended outcomes of export promotion policies, namely, import of capital goods at concessional/zero duty and import of second hand capital goods. For instance, acceleration of exports is the primary focus of foreign trade policy (2015-2020) and as per the policy document, one of the means to achieve this is by importing capital goods at concessional/zero duty. A critical evaluation of this policy measure is necessary as access to cheaper imports will widen the trade deficit in capital goods and hinder the development of domestic technological capability and competitiveness of domestic capital goods sector.

National Capital Goods policy states that restriction of imports of second hand capital goods is necessary as to create a level playing field for domestic producers. Nonetheless, in the Foreign Trade Policy (2015-2020), the restriction on import of second hand capital goods are limited to the import of personal computers/laptops, photocopier machines/digital multifunction print/copying machines, air conditioners and diesel generating sets. These items can be imported against authorization. The refurbished/ reconditioned spares of capital goods can be imported freely if certificate from chartered engineer is produced stating these spares have at least 80% residual life of original spare. All other second hand capital goods can be imported freely. The unrestricted imports of second hand capital goods is possibly affecting the domestic technological upgradation. Similarly, the incentive structures for Indian exporters like Export Promotion Scheme for Capital Goods (EPCG) which facilitate import of capital goods for

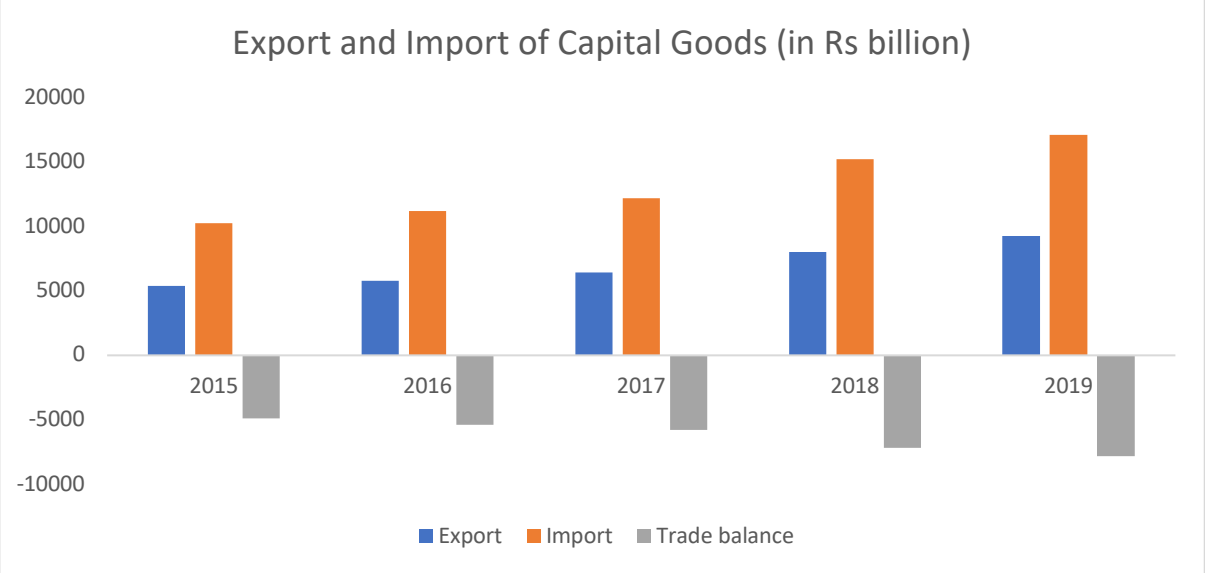
[6] Page No. 30, National Capital Goods Policy,2016

producing quality goods and services to enhance India's export competitiveness, however can affect the competitiveness of Indian capital goods producers. EPCG incentivizes cheaper import of capital goods which erode domestic markets for Indian capital goods producers.

IV. India's trade in Capital Goods

India is a net importer of capital goods and the trade deficit in capital goods has been widening over the years. The share of capital goods imports in total non-petroleum and oil imports in the financial year 2017-18 was 25% and it has increased to 28% by 2018-19. The share of capital goods exports during this time frame has increased by 1% from 10 per cent in 2017-18 to 11 per cent in 2018-19.

Fig 1: India's Trade in Capital Goods



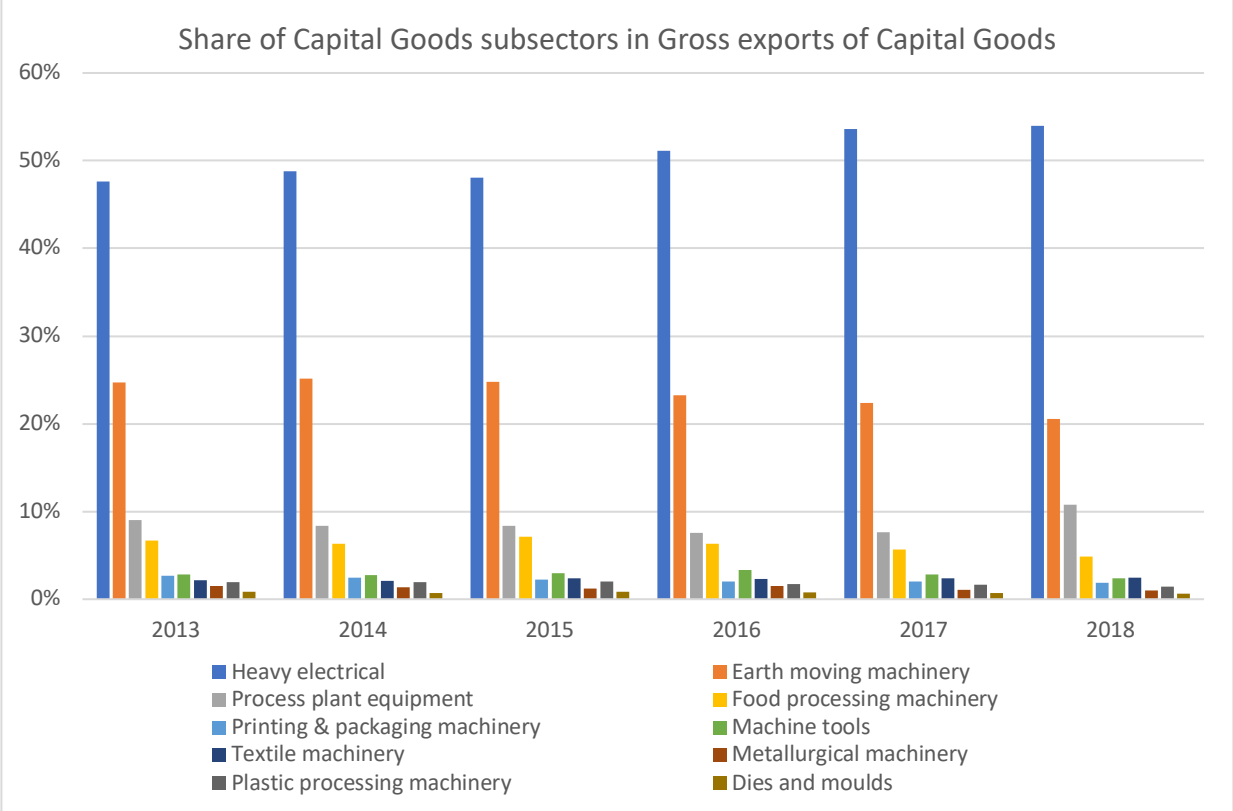
Source: CMIE Tradex database

Among the major subsectors of capital goods, heavy electrical equipment, earth moving and mining machinery and process plant equipment are the leading exporters. Heavy electrical equipment sector accounts for more than 50% share of total capital goods exports of India. The three leading sectors together account for 85% of gross capital goods exports. Heavy electrical equipment accounts for 40% of gross imports of capital goods by India followed by earth moving and mining machinery with a share of 21% and machine tools (8%). It is interesting to note that same subsectors are leading in both export and import category.

Fig 2: Share of Capital Goods Exports & Imports in India's Gross Non-POL Exports & Imports

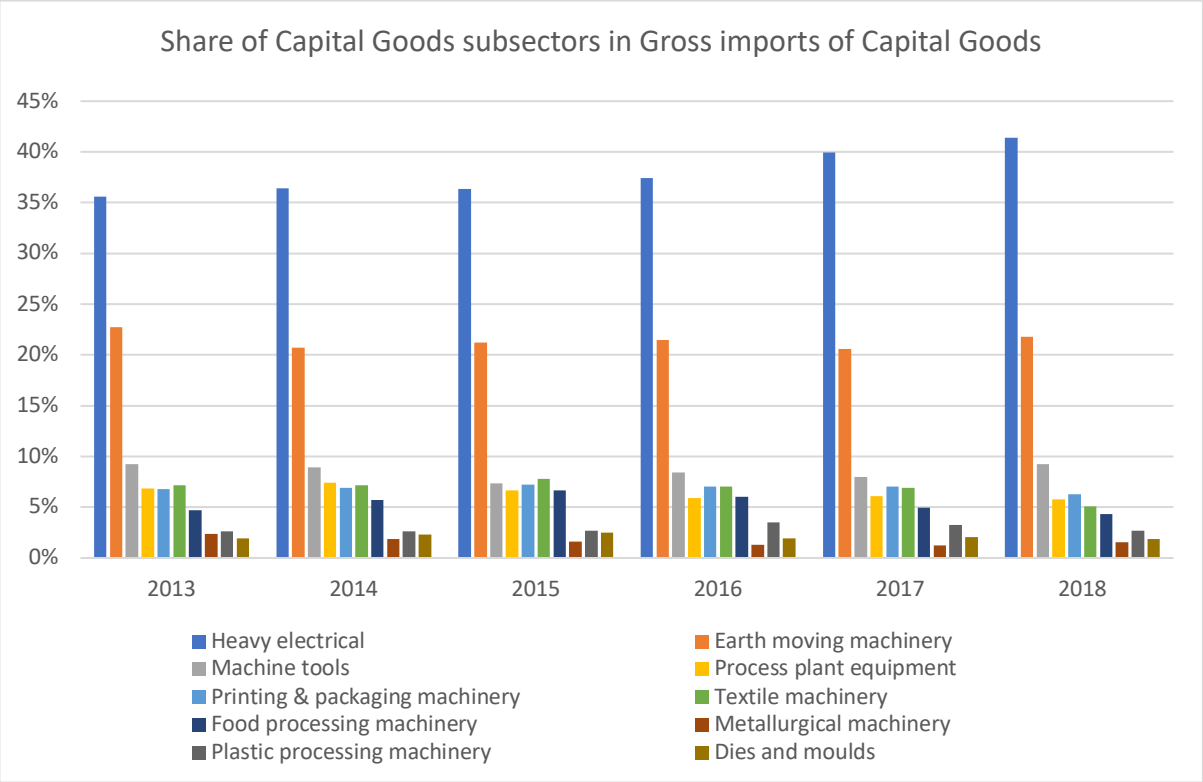
Source: *CMIE Tradex database; *2018-19 financial year: April 2018 to December 2018*

Fig 3: Share of Capital Goods subsectors in Gross exports of Capital Goods



Source: *CMIE Tradex database; *2018-19 financial year: April 2018 to December 2018*

Fig 4: Share of Capital Goods subsectors in Gross imports of Capital Goods



Source: *CMIE Tradex database; *2018-19 financial year: April 2018 to December 2018*

Table 5: Top five export destinations of capital goods under HS code 84

2014		2015		2016		2017		2018	
Country	Export	Country	Export	Country	Export	Country	Export	Country	Export
USA	15%	USA	14%	USA	14%	USA	16%	USA	19%
UAE	6%	UK	5%	UK	5%	Germany	7%	Germany	8%
UK	5%	UAE	5%	UAE	5%	UK	6%	UK	5%
Germany	4%	Germany	5%	Germany	5%	UAE	4%	China	4%
China	4%	China	4%	Turkey	4%	China	4%	Singapore	4%

Source: *CMIE Tradex database; *2018-19 financial year: April 2018 to December 2018*

Table 6: Top five import destinations of capital goods under HS code 84

2014		2015		2016		2017		2018	
Country	Import	Country	Import	Country	Import	Country	Import	Country	Import
China	32%	China	33%	China	35%	China	36%	China	30%
Germany	11%	Germany	11%	Germany	11%	USA	11%	Germany	10%
USA	9%	USA	10%	USA	9%	Germany	11%	USA	9%
Japan	8%	Japan	7%	Japan	9%	Japan	7%	Japan	8%
S.Korea	5%	S.Korea	5%	S.Korea	5%	Italy	4%	Singapore	6%

Source: *CMIE Tradex database; *2018-19 financial year: April 2018 to December 2018*

Table 7: Top five export destinations of capital goods under HS code 85

2014		2015		2016		2017		2018	
Country	Export	Country	Export	Country	Export	Country	Export	Country	Export
USA	15%	USA	15%	USA	14%	USA	15%	USA	15%
UAE	7%	UAE	9%	UAE	8%	UAE	7%	UAE	10%
Germany	5%	UK	5%	Germany	5%	China	5%	Germany	5%
UK	5%	Germany	5%	China	5%	Germany	5%	China	4%
Netherlan	4%	France	3%	UK	5%	UK	4%	UK	3%

Source: *CMIE Tradex database; *2018-19 financial year: April 2018 to December 2018*

Table 8: Top five import destinations of capital goods under HS code 85

2014		2015		2016		2017		2018	
Country	Import	Country	Import	Country	Import	Country	Import	Country	Import
China	51%	China	54%	China	57%	China	59%	China	40%
S.Korea	7%	S.Korea	7%	S.Korea	7%	S.Korea	6%	Hong Kong	17%
USA	5%	USA	4%	Malaysia	4%	USA	4%	Vietnam	8%
Germany	4%	Germany	4%	Germany	3%	Malaysia	3%	Singapore	6%
Malaysia	4%	Malaysia	3%	USA	3%	Germany	3%	S.Korea	5%

Source: *CMIE Tradex database; *2018-19 financial year: April 2018 to December 2018*

The major sources of capital goods (HS code 84 and 85) imports of India are China, Germany, USA, Japan, Italy and South Korea. The main export destinations of Indian capital goods are USA, UAE, Germany, China and UK. China is the major import source for both HS codes 84 and 85. In HS code 84, 30 per cent of our imports are from China and in HS code 85, the share is above 50 per cent till financial year 2017-18. Import of capital goods under HS code 84 and 85 from China has grown 7 per cent and 16 per cent respectively during the period from 2013-14 to 2017-18. Indian exports of capital goods under HS code 84 and 85 to China during the same period registered a growth rate of 9 per cent and 15 per cent.

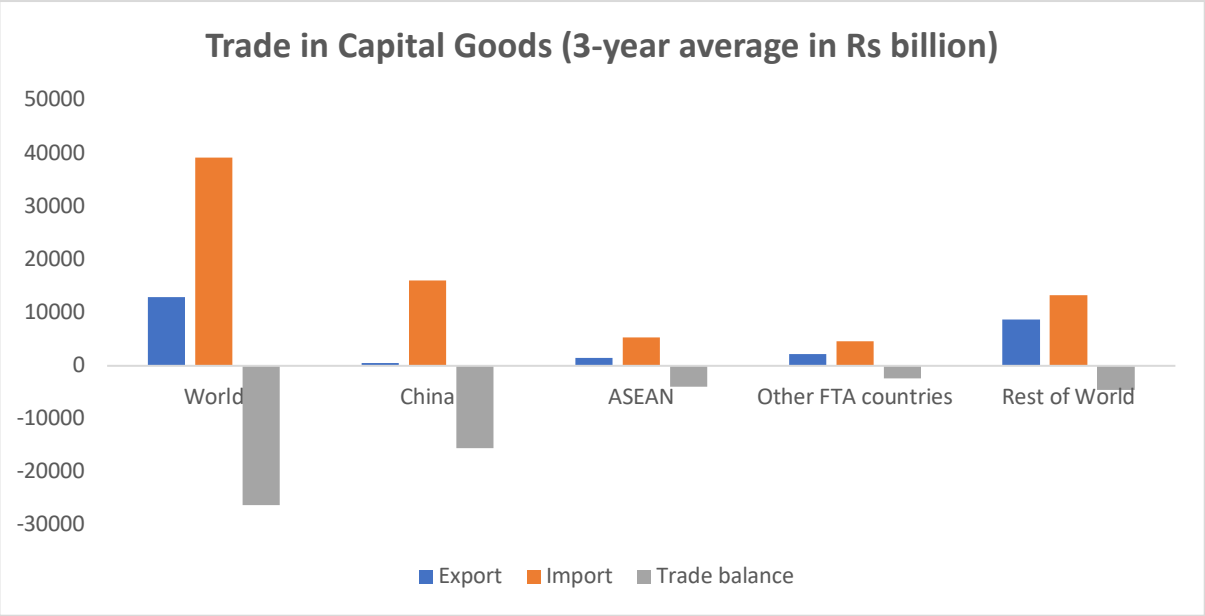
V. Trade Agreements and the Capital Goods Sector

Trade co-operation through bilateral and regional preferential/free trade agreements (RTAs/FTAs) is on the rise in recent times. These trade agreements enable trade integration and co-operation among signatories by removing trade barriers via lowering tariffs, streamlining regulations and by simplifying export and import procedures. India has trade agreements with 48 nations at present and there are multiple trade agreements under negotiation like India and European Union Trade agreement.

The Foreign Trade Policy (2015-2020) states that India should leverage the PTAs/FTAs to expand the export markets as well as to ensure access to raw materials, intermediate goods and

capital goods for stimulating domestic value addition in manufacturing. Having said that, it has also raised the concern that though there has been considerable increase in the overall trade under each FTA, the increase in imports is at a faster pace than the increase in exports. Based on statistics, Foreign Trade Policy document clearly states that India has not been able to take complete advantage of the trade agreements with Korea, Japan and ASEAN. In this context, we analyze we try to analyze India's trade in capital goods with FTA and non-FTA partners.

Fig 5: India's Trade in Capital Goods with its FTA and Non-FTA partners



Source: CMIE Tradex database

In Figure 5, we present three-year average (2017 to 2019) of India's trade in capital goods with World, China, ASEAN countries, other countries with whom India has trade agreements and rest of world (i.e., which India has trade relations but have no free trade agreements signed. We have analyzed ASEAN bloc separately from the FTA group as India runs a massive trade deficit with ASEAN countries. Also, the compound annual growth rate of imports of capital goods by India from ASEAN bloc has increased by 14.4% while India's exports to ASEAN has increased only by 10.6 per cent during the period from 2008 to 2019. India's trade deficit in capital goods with China has increased over the years. The compound annual growth rate of India's trade deficit with China in capital goods during the period 2008 to 2019 is 11.6 per cent. China accounts for 59 per cent of India's overall trade balance in capital goods (three-year average: 2017 to 2019) while ASEAN countries account for 15 per cent. India has not signed a free trade agreement with China. Thus, in the context of growing trade deficit of India in capital goods sector and its modest performance in world export market, it is essential for India

to revisit existing trade agreements as well as critically evaluate the ongoing negotiations to understand the nature of market access and tariff concessions these partners will receive and the plausible impact on domestic manufacturers of capital goods. The tariff rate of India is already way below the WTO bound tariff rates. A level playing field between domestic producers and imports is crucial for the sustenance of domestic capital goods sector. India after several rounds of negotiations decided to not be part of RCEP bloc (comprised of China, ASEAN nations, Japan, South Korea, New Zealand and Australia). The main reasons behind this decision were the growing trade deficit with RCEP nations and the concern that trade pact can lead to acceleration in the import inflow and hurt domestic manufacturing sector.

India's capital goods sector is heavily import dependent and the share of India in global exports of capital goods is very low. In this context, the study aims to understand how to leverage trade agreements of India to boost capital goods exports and substitute imports. The study aims to analyze the major trade agreements of India to examine the impact of them on exports and imports of capital goods sector. The performance of each subsector of capital goods sector in global trade is analyzed to understand the effect of existing trade agreements on them. In the context of ongoing trade agreement negotiations, it is important to understand how tariff concessions proposed as part of trade agreements affect domestic producers of capital goods.

V.1. Methodology

We carry out a ten-year trend analysis of exports, imports and trade balance to evaluate the performance of Indian capital goods sector in global trade. We classify capital goods at HS 4-digit level into two groups: products with positive trade balance and those with negative trade balance. Each of these categories are further classified into two groups with respect to the trends exhibited by the trade surplus/deficit: products with increasing trend and those with decreasing trend. The trend analysis-based classification is helpful to identify the sectors with growth potential and those where focused measures are required to reduce the trade deficit. Capital goods exports and imports are also categorized into three categories: goods exhibiting rising, falling and stagnant trend. This trend analysis enables to identify the sectors where Indian export competitiveness is rising/falling and similarly the sectors where import dependence is increasing/decreasing. The trend analysis of export, import and trade balance is carried out also for India's capital goods trade with China, other FTA countries and rest of world. Rest of world includes all other nations with

The identification of India's major export markets and import sources of capital goods is important to understand the implications of major trade agreements on domestic capital goods industry. Using CMIE Tradex data at two-digit and four-digit level of HS code classification, we identify the top ten Indian export destinations and import sources of capital goods of last five years and calculate the share of these markets in the Indian gross exports and imports of each capital good. The identification of major sources of imports is important to see how tariff concessions given as part of free trade agreements are affecting the domestic capital goods sector.

To analyze the export competitiveness of India's capital goods sector, we need to identify whether the constituents of Indian export basket are products with significant and growing global market share or products with shrinking global market share. In other words, we need to understand how capital goods exports of India are placed in terms of world market shares and the overall dynamism of the products exported. For this analysis, we classify capital goods exports into a two by two matrix based on the competitiveness, i.e., whether the global market share of India's capital good exports is rising or falling, and whether the products are dynamic (i.e., if the product's share in total world trade is rising) (Lall, 1999).

Share of India's export of particular Capital good in world trade	Share of particular Capital good in world trade	
	Rising	Falling
Rising	Optimal (Rising stars)	Vulnerable (Falling stars)
Falling	Weakness (Lost opportunity)	Restructuring (Retreat)

- Rising stars: Exports with strong competitiveness (i.e., rising world market shares) in dynamic products (which are growing faster than total trade). This is considered as optimal export positioning for a country.
- Lost opportunities: Exports with falling market shares in dynamic products and this is the weakest market position a country could be in.
- Falling stars: Exports with rising market shares in non-dynamic products and is an indicator of competitive vulnerability of a country and thus relatively undesirable position a country could in.

- Retreat are those exports with losing market shares in non-dynamic products. This indicates that country is moving away from weaker position. Since the country is restructuring itself, it is a relatively desirable position.

The distribution of Indian capital goods exports over these categories reflects the market positioning of India and its export capabilities.

V.2. Results

The ten-year trend analysis of exports, imports and trade balance of India enables to understand the performance of Indian capital goods sector in global trade. The gross exports of all subsectors of capital goods to world in the period from 2008-09 to 2018-19 is showing a positive trend. Except the imports of metallurgical machinery, all other subsectors registered an increasing trend of imports from the world during this period. This is a clear indication of rising domestic demand for capital goods. Though exports recorded a rising trend, volume of exports is minimal when compared to volume of imports, especially in the case of trade with China.

The top five capital goods exports and imports (at 4-digit level HS Code) of India is given in the tables below. The major export destinations of Indian capital goods are developed countries like USA, UK, Germany, and France, and gulf nations like UAE, Saudi Arabia, and Kuwait etc. with whom currently India does not have any free trade agreements. However, the major import sources of the top ten imported capital goods include South East Asian nations like South Korea, Japan, Philippines, Malaysia, Sri Lanka, Thailand and developed nations like USA, Germany, France, Canada, UK, Italy. India has existing trade agreements with most of these South East Asian nations.

Table 9: Top five Capital Goods exports at 4-digit level HS codes

2014-15		2015-16		2016-17		2017-18	
Category	HS Code	Category	HS Code	Category	HS Code	Category	HS Code
Earth moving	8481	Earth moving	8481	Heavy electrical	8504	Heavy electrical	8411
Heavy electrical	8504	Heavy electrical	8504	Earth moving	8481	Earth moving	8481
Heavy electrical	8407	Heavy electrical	8544	Heavy electrical	8544	Heavy electrical	8504
Heavy electrical	8544	Heavy electrical	8407	Heavy electrical	8407	Heavy electrical	8544
Earth moving	8479	Heavy electrical	8536	Heavy electrical	8411	Heavy electrical	8407

Source: *CMIE Tradex database*

Table 10: Top five Capital Goods imports at 4-digit level HS codes

2014-15		2015-16		2016-17		2017-18	
Category	HS Code	Category	HS Code	Category	HS Code	Category	HS Code
Earth moving	8479	Heavy electrical	8504	Earth moving	8481	Heavy electrical	8411
Heavy electrical	8504	Printing & Packaging	8443	Heavy electrical	8504	Heavy electrical	8504
Printing & Packaging	8443	Earth moving	8479	Earth moving	8479	Earth moving	8479
Earth moving	8481	Earth moving	8481	Printing & Packaging	8443	Printing & Packaging	8443
Earth moving	8431	Heavy electrical	8536	Heavy electrical	8411	Heavy electrical	8536

Source: *CMIE Tradex database*

At 4-digit level HS code, the top exports are mainly from heavy electrical equipment subsector of capital goods. Products with HS codes like 8411, 8481, 8504 appear both in top exports and imports of India. To break up further and understand the top exports and imports of India, we look at more disaggregated level, i.e. at 8-digit level HS codes. Products from subsectors like heavy electrical equipment and earth moving and mining machinery dominates the exports and imports.

Table 11: Top five Capital Goods exports at 8-digit level HS codes

2014-15		2015-16		2016-17		2017-18	
Category	HS Code	Category	HS Code	Category	HS Code	Category	HS Code
Heavy electrical	84071000	Earth moving	84818030	Earth moving	84818030	Heavy electrical	84111200
Earth moving	84818030	Heavy electrical	84071000	Heavy electrical	84071000	Earth moving	84818030
Earth moving	84819090	Heavy electrical	85371000	Heavy electrical	84112200	Heavy electrical	84071000
Heavy electrical	85371000	Earth moving	84819090	Heavy electrical	85371000	Heavy electrical	85389000
Heavy electrical	85389000	Heavy electrical	85389000	Heavy electrical	85389000	Heavy electrical	85371000

Source: *CMIE Tradex database*

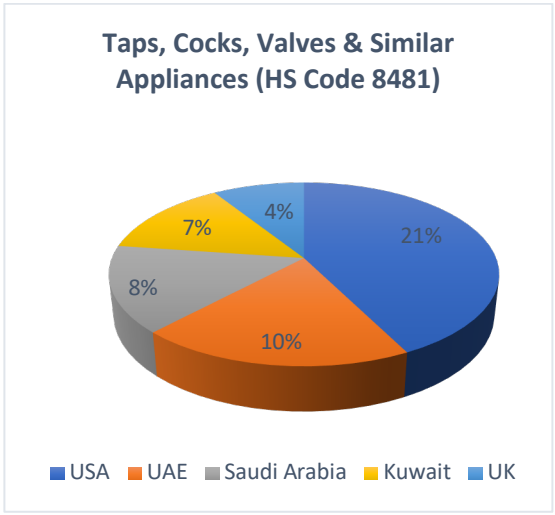
Table 12: Top five Capital Goods imports at 8-digit level HS codes

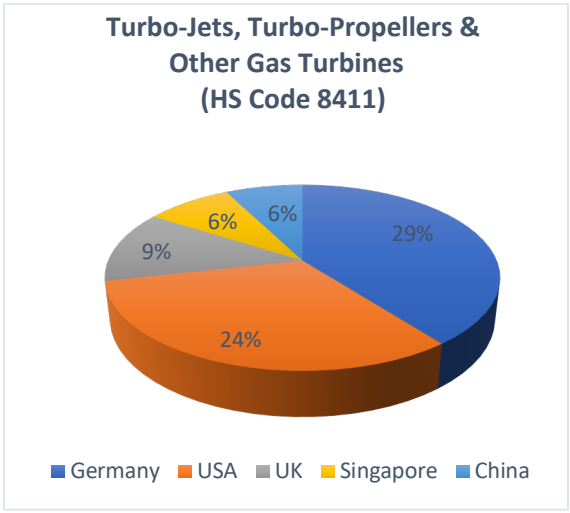
2014-15		2015-16		2016-17		2017-18	
Category	HS Code	Category	HS Code	Category	HS Code	Category	HS Code
Earth moving	84818090	Earth moving	84818090	Heavy electrical	84111200	Heavy electrical	84111200
Earth moving	84798999	Heavy electrical	84111200	Earth moving	84798999	Heavy electrical	85044090

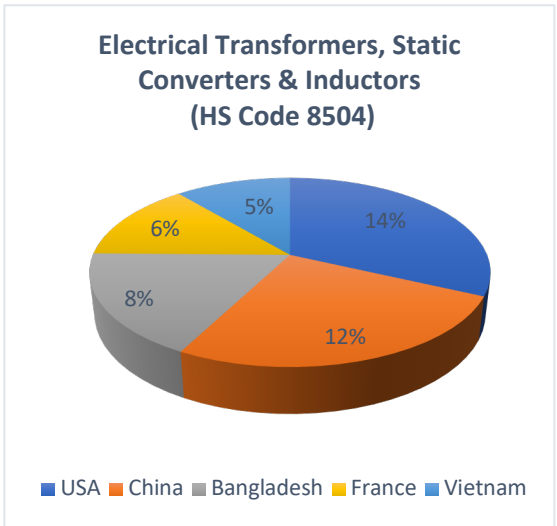
Heavy electrical	84111200	Earth moving	84798999	Earth moving	84818090	Earth moving	84818090
Heavy electrical	85389000	Heavy electrical	85389000	Heavy electrical	85030090	Earth moving	84798999
Earth moving	85044090	Heavy electrical	85044090	Heavy electrical	85389000	Heavy electrical	85389000

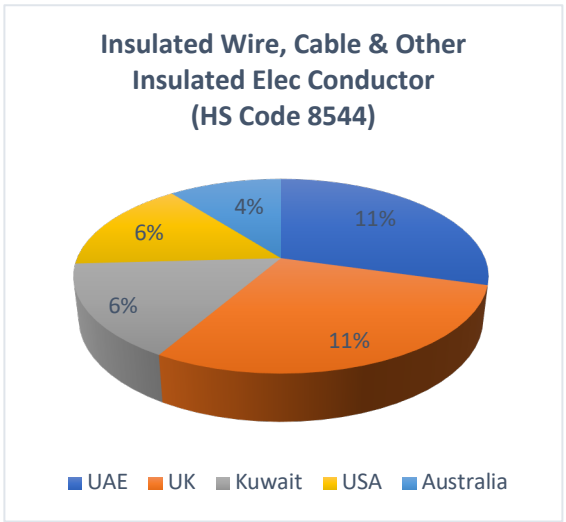
Source: *CMIE Tradex database*

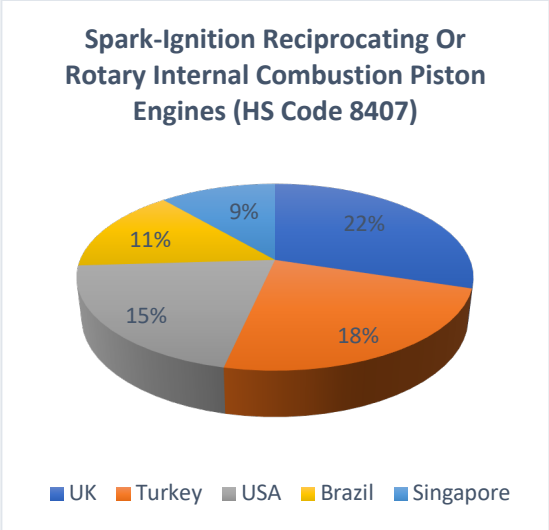
Fig 6: Major Export Destinations of top six capital goods exports of India in 2017-18

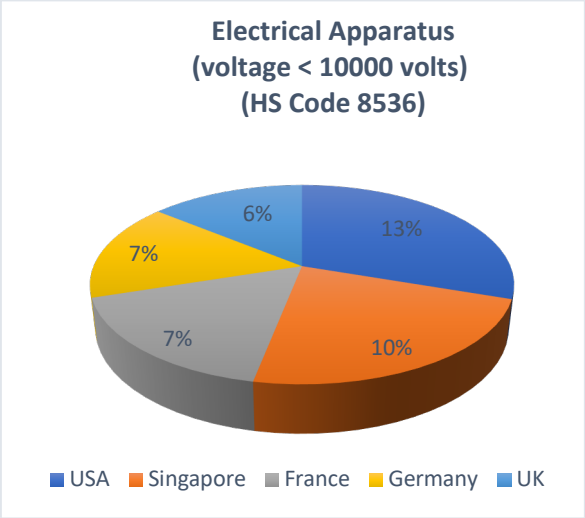






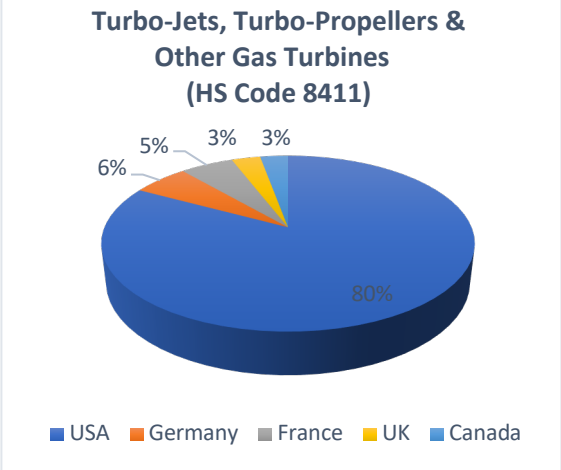


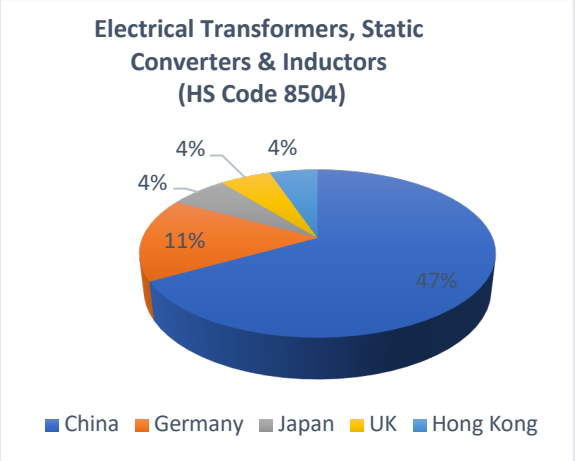


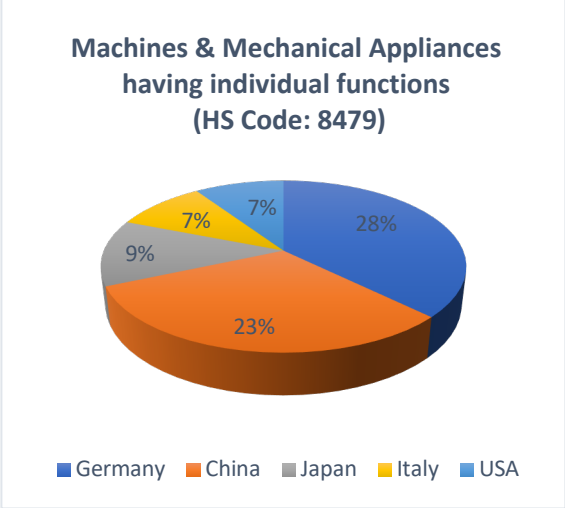


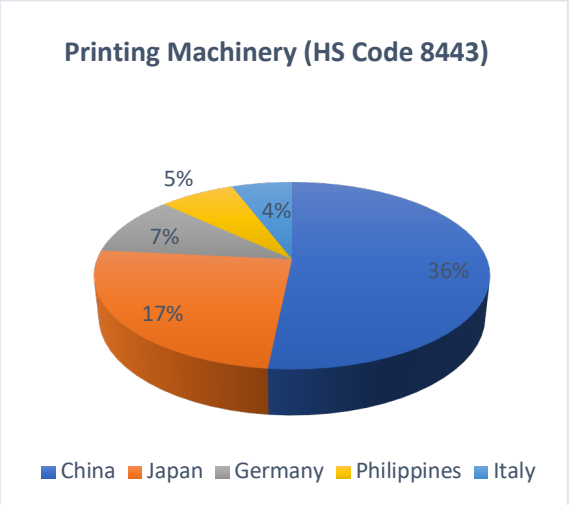
Source: *CMIE Tradex database*

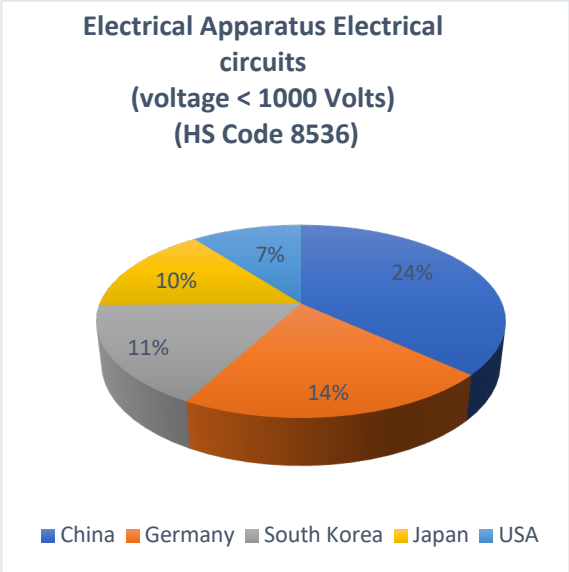
Fig 7: Major Import sources of top six capital goods imports of India in 2017-18

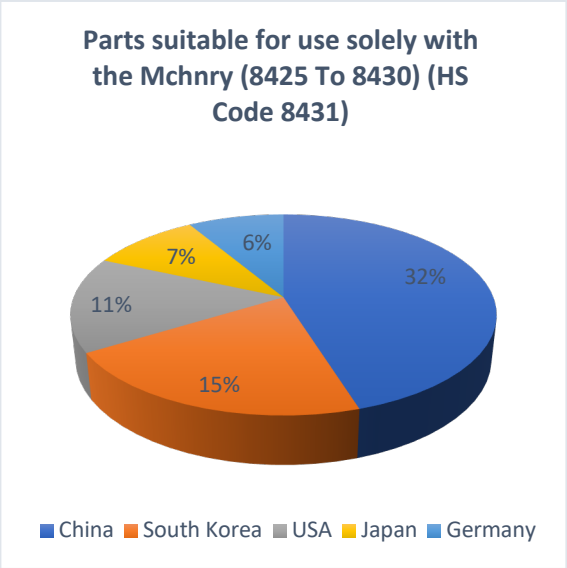






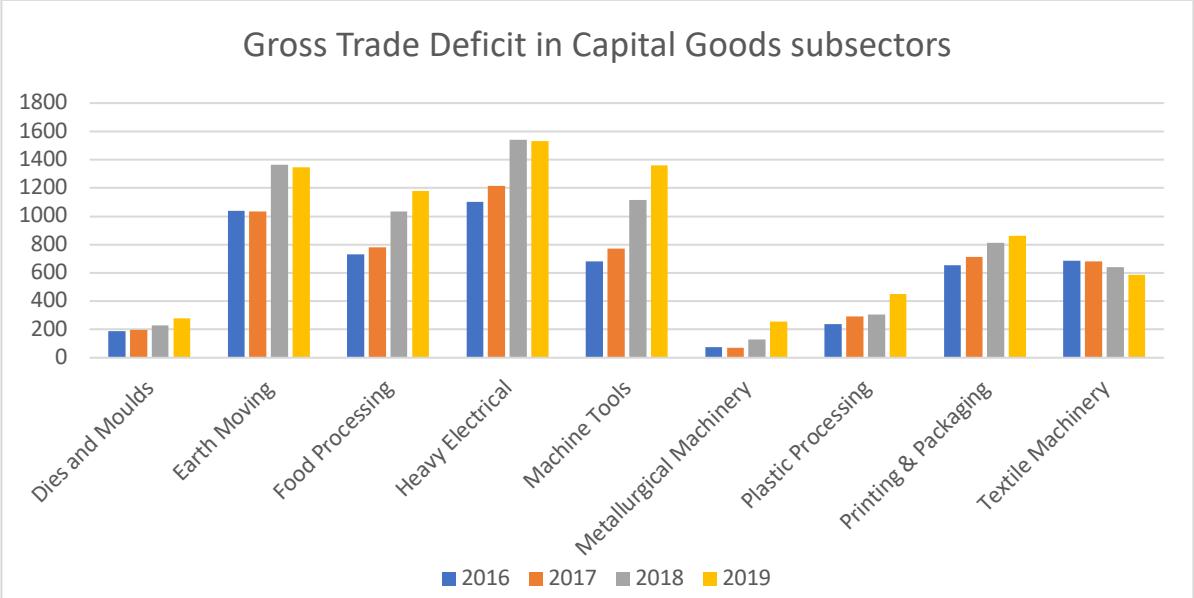






Source: *CMIE Tradex database*

Fig 8: Gross Trade deficit in subsectors of Capital Goods

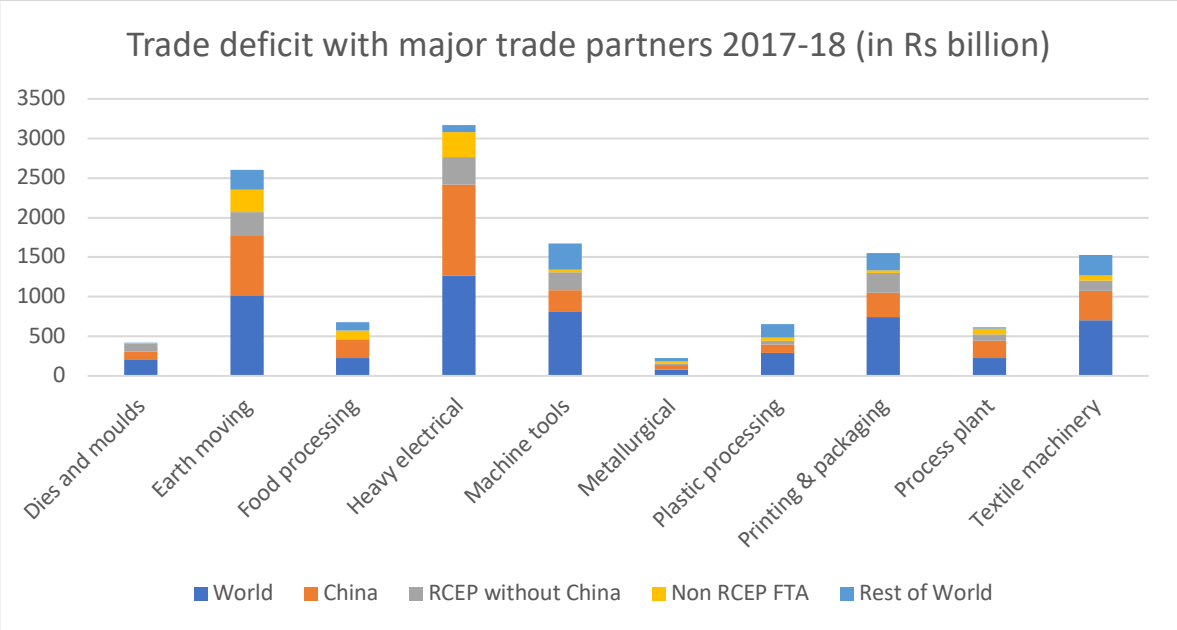


Source: *CMIE Tradex database *Absolute values are given for the ease of representation*

The gross trade balance of all subsectors across all the ten years (2008-2019) is negative. However, trend analysis shows that trade deficit of subsectors like printing and packaging machinery, textile machinery, dies and moulds, machine tools and plastic processing machinery registered a rising trend during the period 2008-09 to 2019-20. Heavy electrical equipment, earth moving, machine tools and food-processing machinery are the subsectors that contributed highest to the trade deficit in capital goods in 2019-20.

The major trade partner with whom India has trade deficit in capital goods is China. India runs a trade deficit with China in all subsectors of capital goods in the period from 2008-09 to 2018-19. Except metallurgical machinery, the trade deficit of India with China in all other major sub sectors of capital goods has been rising over the last ten years. Trend analysis when carried out at a more disaggregated level, i.e., at 4-digit level HS code, shows that India's trade deficit with China in 16 products coming under categories like heavy electrical, process plant, earth moving, metallurgical, machine tools and food processing is experiencing a falling trend[7]. In the financial year 2017-18, import from China accounted for 31 per cent of capital goods imports of India and 64 per cent of India's trade deficit in capital goods is with China. At HS code 4-digit level, in 76 products India has trade deficit with China in the financial year 2017-18.

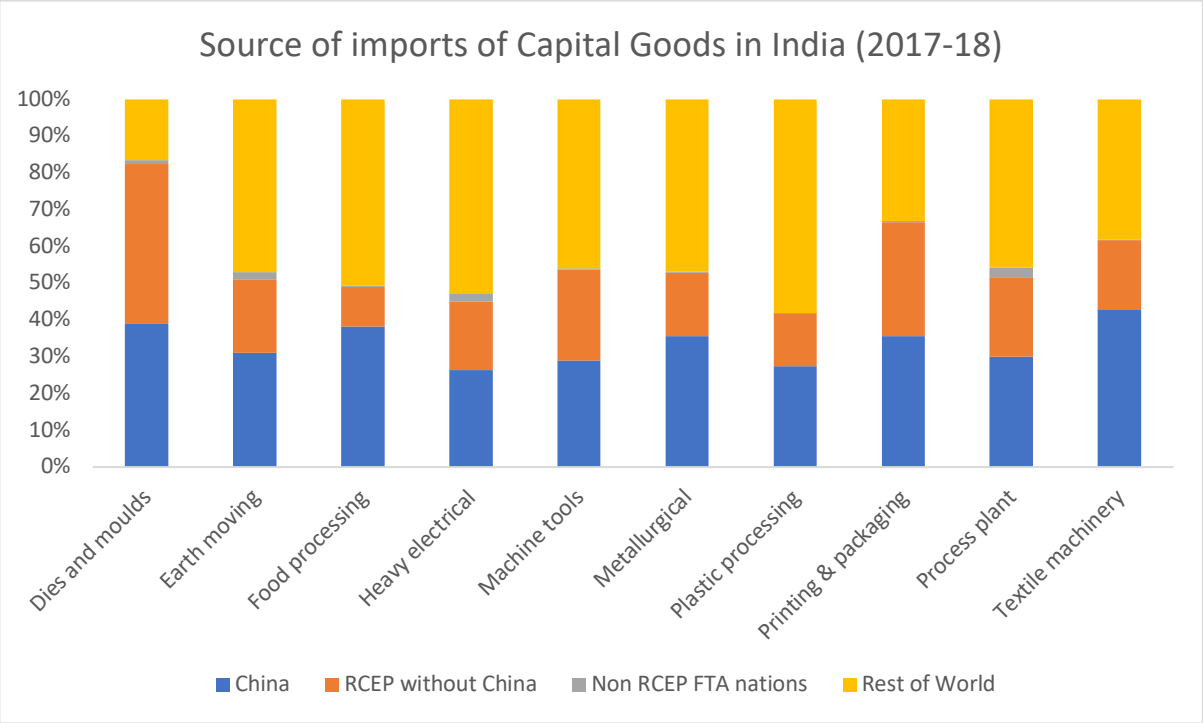
Fig 9: Trade Deficit with trade partners in major Capital Goods subsectors



Source: *CMIE Tradex database. *Absolute values are given for the ease of representation*

[7] See Appendix table: A7

Fig 10: Major sources of imports of Capital Goods subsectors (in 2017-18)

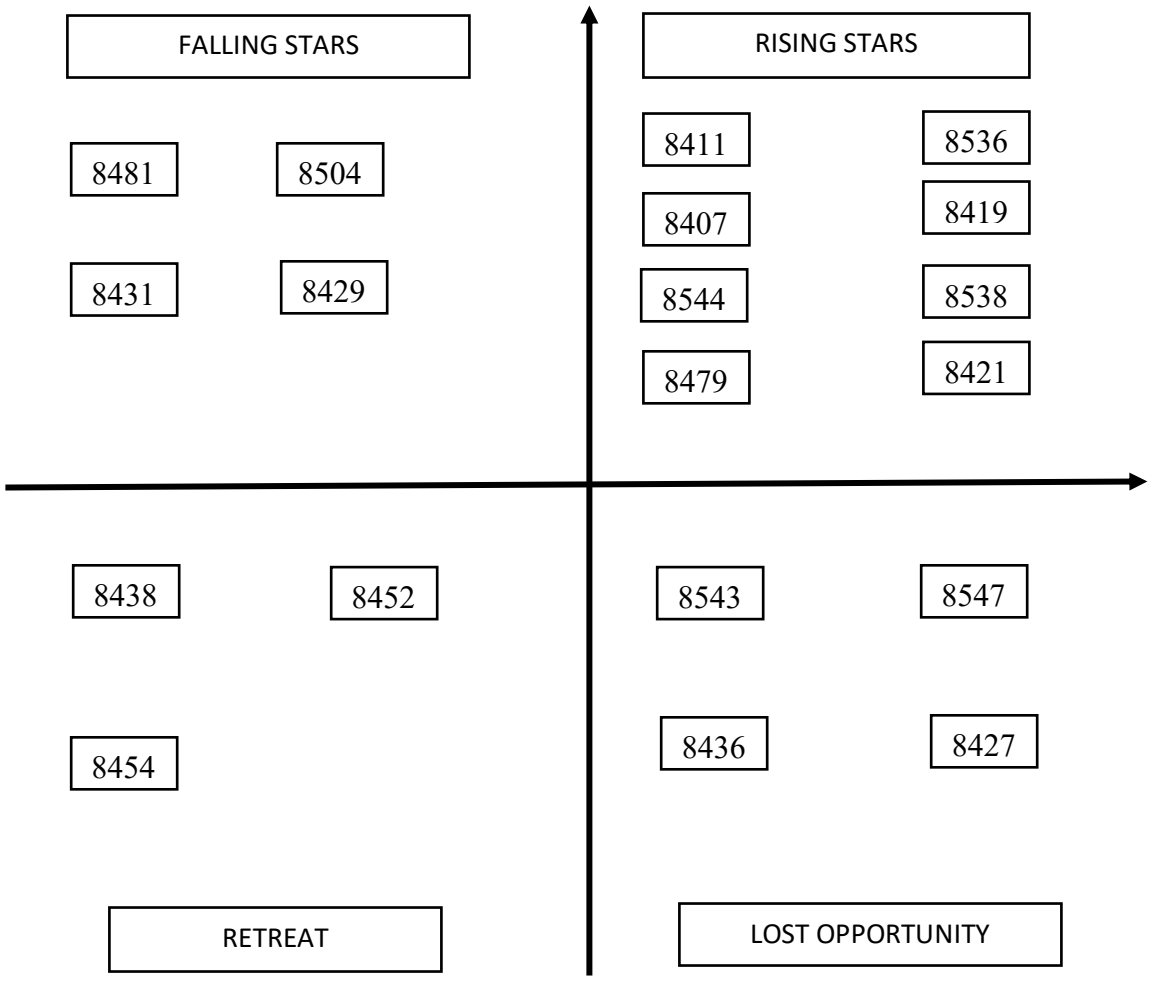


Source: *CMIE Tradex database*

V.3. Export Dynamism

The positioning of Indian capital goods in world trade of capital goods is a good indicator of the strength of export capabilities of India. The market positioning can be estimated by analyzing the change in market share of Indian exports over time and the dynamism of products exported. The change in India's share in world exports indicates whether it is competitive or not. The prospects of India in expanding the export of a particular product depends on whether the trade in that particular is increasing. This analysis is carried out for the time period from 2014 to 2017 using trade data from UN Comtrade database. Out of 77 capital goods India exports, 28% is rising stars, 56% is falling stars, 5% comes under lost opportunity category and 4% of exports comes under the retreat category.

Dynamism of Indian Capital Goods Exports (2014-2017)[8]



The corresponding HS codes of the top five capital goods exports of India in the year 2017-18 are 8411, 8481, 8504, 8544, 8407. Among these products, rising stars are 8411, 8544 and 8407 and exports of these three products has exhibited a rising trend during the period 2008 to 2018 except in the case of exports of 8411 to countries with which India has free trade agreements but not part of RCEP group. The trade deficit of India in 8504 and 8411 with world is however increasing. The trade deficit with China of four of India's top exports (products with HS codes 8481, 8504, 8544 and 8407) are increasing. In the case of ASEAN nations, trade deficit of 8481 and 8504 are rising. According to the export dynamism classification, 8481, 8504, 8431 and 8429 are falling stars, i.e., India's market share in these products are increasing but these products are non-dynamic. Products with HS code 8543, 8547, 8436 and 8427 are dynamic products whose share in world trade is increasing however India's export market share over

[8] See Appendix A8 for export dynamism classification of all capital goods at 4-digit level HS codes

time has fallen. This is an undesirable scenario for India as the opportunity to expand the exports in dynamic products is losing. In the case of products falling in the quadrant of retreat, it is a better scenario as growth prospect in these products is low.

V.4. INDIA'S FTA STATUS WITH TOP EXPORT MARKETS

In this section, we analyse India's FTA status and India's competitors'' FTA status with India's top export markets in the world. This analysis helps to gain an idea about the benefits Indian capital goods sector exporters are deriving from FTAs. For this purpose, we take India's top capital goods exports at HS 4-digit level and locate the two top export markets. Next, we check whether India has signed any trade agreements with these two countries. We also locate the top competitors of India in each of these products in these particular markets and check whether the competitors have signed trade agreements with these countries. Table 13 summarizes the result. Among the top two export markets of each of the 13 capital goods exports considered, India has signed trade agreements with only two countries, namely, Bangladesh and Singapore. This indicates that though India has signed FTA agreements with approximately 50 countries, capital goods exporters are not benefitting much from these agreements. On the contrary, as we observed domestic capital goods industry is facing huge import inflow from these FTA partners particularly ASEAN nations.

Table 13: INDIA'S FTA STATUS & COMPETITORS' FTA STATUS WITH INDIA'S TOP EXPORT MARKETS

Product	Category	Export Status	Export Market	FTA status	Competitors' FTA Status
8411	Heavy electrical	Rising star	USA	No	Brazil (Yes), Switzerland (No), Netherlands (No), Czech Republic (No)
			Germany	No	Thailand(No), Portugal (Yes), Malaysia (No), Slovakia (Yes)
8481	Earth moving	Falling star	USA	No	UK (No), France (No), Switzerland (No), Vietnam (No), South Korea (Yes)
			UAE	GCC (No)	Singapore (Yes), South Korea (GCC/No), UK (No), Germany (No)

8543	Heavy electrical	Lost opportunity	UAE	GCC (No)	Japan (No), Mexico (No), Netherlands (Yes), Spain (No)
			USA	No	Ireland (No), Netherlands (No), New Zealand (No)
8454	Metallurgical	Retreat	Bangladesh	Yes	China (No), Thailand (No)
			Iran	No	Belgium (No), Austria (No)
8407	Heavy electrical	Rising star	Turkey	No	UK (No), Japan (No), Romania (No), Italy (EU-Turkey Customs union)
			UK	No	Sweden (No), Czech Republic (No), Argentina (No)
8504	Heavy electrical	Falling star	USA	No	South Korea (Yes), Thailand (No), Italy (No), Malaysia (No)
			China	No	Hungary (No), Thailand (Yes), Malaysia (Yes), Vietnam (Yes)
8547	Heavy electrical	Lost opportunity	USA	No	Japan (No), Mexico (No), Netherlands (Yes), Spain (No)
			UAE	GCC (No)	China (No), South Africa (No), UK (No)
8438	Food processing	Retreat	Kenya	No	China (No), Netherlands (Yes), Germany (No)
			Bangladesh	Yes	China (No), Germany (No), Italy (No)
8544	Process plant	Rising star	UAE	GCC (No)	USA (No), Italy (No)
			UK	No	Portugal (No), France (No)
8479	Process plant	Rising star	USA	No	Austria (No), Belgium (No), Spain (No)

			Bangladesh	Yes	China (No), Germany (No)
8536	Earth moving	Rising star	USA	No	Malaysia (No), Philippines (No), UK (No), South Korea (Yes)
			Singapore	Yes	Philippines (Yes), Vietnam (Yes), South Korea (Yes)
8421	Process plant	Rising star	USA	No	Switzerland (No), Ireland (No), Austria (No), Netherlands (No)
			Italy	No	Poland (Yes), Netherlands (Yes), Austria (Yes)
8538	Process plant	Rising star	USA	No	Malaysia (No), Italy (No), Switzerland (No)
			UAE	GCC (No)	Italy (No), France (No), UK (No)

Source: Author's Compilation using data from UN Comtrade and Ministry of Commerce

VI. RECOMMENDATIONS

From our study it appears that trade agreements are unlikely to bring much benefits for the Indian capital goods sector. As our analysis show, the major markets for Indian capital goods are generally countries with low applied tariff rates. Therefore, the preference margin (the gap between the respective applied MFN tariff and preferential tariff) is unlikely to be very high in these markets. Tariffs on capital goods in India are also low. According to the Make in India announcements, tariffs on capital goods and equipment have been lowered to nil or 5 per cent in general[9]. In many of the major markets for Indian capital goods, exports are likely to face non-tariff measures like standards and TBTs (Technical Barriers to Trade). These are often public policy measures and are unlikely to be relaxed for FTAs. In fact, in FTAs with WTO+ and WTO-X measures[10], the non-tariff measures are likely to be higher for FTAs. These factors

[9] http://www.makeinindia.com/article/-/v/defence-indigenisation-the-way-forward

[10] WTO+: areas already covered by the WTO Agreement but the liberalization is more under the concerned FTA, WTO-X: new areas, 'beyond the WTO'

may have contributed to the apparent anomaly that FTA utilization has remained low in India is low for both exports and imports.

Chanda(2014) highlighted that very low share of imports come to India through the preferential route. Import share through preferential route ranges from around 0-1 percent in sectors such as automotives and electronics to around 20 percent for iron and steel and chemicals. On average, FTA utilization ratio for imports may be only around 5 percent. Though there has been an increase in imports from FTA partner countries, these imports have mostly come through the MFN channel. Similarly, FTA utilization has remained low for exports as well. Similar result has been suggested by Deloitte(2017) report. It states that the FTA utilization in developed countries are as high as 70-80 percent but the FTA utilization is less than three percent of the available opportunity when it comes to Indian exporters and importers.

In this context, a sector specific and granular level study of capital goods sector is warranted to understand the underlying reasons for low FTA utilization. Given that applied MFN tariff is on the rise since the budget of 2017-18, there might be some changes in the utilization ratios in the last few years. This might have strong implications for the capital goods sector. Though FTA utilization has traditionally been low in India, opening up of domestic market to FTA partners beyond MFN level will increase the threat perception for the sector. FTA partners account for 24 percent of India's trade deficit in capital goods and within that ASEAN bloc account for 15 per cent. Since India has a large and growing domestic market, demand side problems are unlikely to be a major constraining factor. It is also important to emphasize that India has not yet fully reaped the export potential to the existing FTAs. From the import side, while the government is pushing up MFN rates to incentivize domestic value addition and Make in India[11], liberalizing tariffs for the ongoing FTA negotiations does not sound like a consistent policy. Aligning with the growing protectionist tendencies across the world, India has decided not to join RCEP. Thus, in other ongoing trade negotiations also, India should be defensive about domestic capital goods sector.

Apart from this, some general recommendations for this sector are:

[11] See Budget Speech 2018-19, the Minister says: "160.In this budget, I am making a calibrated departure from the underlying policy in the last two decades, wherein the trend largely was to reduce the customs duty. There is substantial potential for domestic value addition in certain sectors, like food processing, electronics, auto components, footwear and furniture. To further incentivize the domestic value addition and Make in India in some such sectors, I propose to increase customs duty on certain items". Paragraph 160. Available here: https://www.indiabudget.gov.in/budget2018-2019/bspeecha.asp

Need to develop technology depth of domestic capital goods sector: One hypothesis why the manufacturing sector of India is not competitive due to the underdevelopment of domestic technological capabilities(Chaudhuri, 2013). Building a strong domestic capital goods sector is equivalent to investing in the foundation for future technical progress(Rosenberg, 1963). To become a globally competitive capital goods manufacturing country and achieve the export targets as mentioned in National capital goods policy, government should invest and promote the technological upgradation of domestic producers of capital goods. Free trade agreements are useful for facilitating trade seamlessly but that alone would not be sufficient for the enhancement of Indian capital goods sector. Global trade integration can help domestic producers and the economy only when a level playing field is built. Development of domestic technological capabilities is crucial for being competitive especially in the era of smart manufacturing and global value chains.

On a more long-term note, current literature suggests a strong and disruptive change in manufacturing technologies. This is largely driven by automation and data exchange. As Marr (2016) says: "Some call it the fourth industrial revolution, or industry 4.0, but whatever you call it, it represents the combination of cyber-physical systems, the Internet of Things, and the Internet of Systems"[12]. Similar views are also expressed by Baldwin(2016) and others. As these changes are likely to be very relevant for the Indian capital goods sector, they may consider adopting strategies to leverage India's strength in information technology and leapfrog to this new era of industrialization.

Need to address issue of inverted duty structure: National Capital Goods policy has identified that the prevalence of inverted duty structure on capital goods is affecting the competitiveness of exporters. The presence of inverted duty structure discourages domestic value addition. With FTA countries, India has almost nil or very low duty on finished capital goods whereas duty on raw materials required for the production of capital goods is comparatively on higher side. For instance, the preferential duty on raw materials required for plastic machinery in India-Japan CEPA is 4.8% to 6.4% while preferential duty on injection moulding machines is 2.5%. Under FTA with South Korea, when 5-10% import duty is applied on components of pressure vessels and reactors, import duty on finished goods is nil. [13]

[12] 'Why Everyone Must Get Ready For The 4th Industrial Revolution' by Bernard Marr, Forbes, April 5, 2016, available at: https://www.forbes.com/sites/bernardmarr/2016/04/05/why-everyone-must-get-ready-for-4th-industrial-revolution/#74ea54c63f90

[13] Page no: 2, FICCI Survey on Inverted Duty Structure in Indian Manufacturing Sector, June 2016

Address unintended consequences of export promotion policies like zero duty on import of capital goods and import of second-hand machinery on domestic capital goods sector: National Capital Goods Policy, 2016 states that second hand machinery imports comprise 15 to 20 per cent of production.[14] Import of capital goods at zero duty allowed under project imports erodes market of domestic capital goods producers.

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[14] Page no. 14, National Capital Goods Policy, 2016

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Appendix:

A1: Capital Goods Categories at 4-digit level HS Codes

Capital goods Categories	
Machine tools	**Product Description**
8456	Mchn-Tolls Fr Wrkng Any Matrl By Rmvl Of Matrl,By Lasr/Othr Light/Photn Beam, Ultrsonc Elctro-Dschrg,Elctro-Chmcl,
8457	Machining Centres, Unit Construction Machines (Single Station) And Multi- Station Transfer Machines For Workin
8458	Lathes (Including Turning Centres) For Removing Metal
8459	Mchn-Tools (Incl Way-Type Unit Head Mchns)Fr Drllng,Borng,Mllng,Thrdng/Tapng By Removng Mtl, Excl Laths Of Hdg No. 8
8460	Machtools For Deburng,Sharpn,Grindg, Polishing Or Oth Fnsh Metal,Or Cermets By Means Of Grinding Stones
8461	Mchn-Tools Fr Plning,Shapng,Slotng,Brochng Gear Cutng/Grndng/Finsng Etc Wrkng By Removng Mtl, Cermets N.E.S./Included
8462	Mchn-Tls Fr Wrkng Mtl By Forgn,Hammrng/ Die-Stmpng;Fr Wrkng Mtl By Bendng,Foldng, Etc;Prsses Fr Wrkng Mtl/Mtl Crbds, N
8463	Other Machine-Tools For Working Metal, Or Cermets, Without Removing Material
8464	Mchn-Tools Fr Wrkng Stone,Ceramics, Concrete,Asbestos-Cement/Like Mnrl Mtrls Or Fr Cold Wrkng Glass
8465	Mchn-Tools(Incl Mchns Fr Nailng,Staplng, Glueng/Othrws Assemblng)Fr Wrkng Wood, Cork,Bone,Hard Rubber,Hard Plastics
8466	Prts And Accssrs Suitbl Fr Use Wth Mchns Of Hdg Nos8456 To 8465,Incl Wrk/Tool Holdrs,Slf-Openg Dieheads,Etc;Tool
8467	Tools For Working In The Hand, Pneumatic, Hydraulic Or With Self- Contained Electric Or Non-Electric Motor
Textile Machinery	
8444	Mchns Fr Extruding,Drawing,Texturing Or Cutting Man-Made Textile Materials
8451	0ther Parts Of Household Laundry Type Mchnetcandmchns Fr Applyng Pst To Base Fbrc Etc;Mchns Fr Rlng,Unrlng,Fldng/Cttng T
8452	Sewng Mchns,Excl Book-Sewng Mchns Of Hdg No 8440;Furntr,Bases And Covrs Spcly Dsgnd For Sewng Mchns;Sewng Mchns Nedls

8453	Mchnry Fr Preparing,Tang/Wrkng Hides, Skins/Lthr/Fr Mkng/Repairng Footwear/Othr Articles Of Hides, Skins Etc Excl Sewng
8445	Mchns Fr Prprng Txtl Fbrs;Spng,Twstng Etc Mchnry Fr Prdcng Txtl Yrns;Mchns Fr Prprngtxtl Yrns Fr Use On Mchns Of 8446/84
8446	Weaving Machines (Looms)
8447	Knitting Mchns,Stch-Bndng Mchns And Mchns For Mkng Gmpd Yrn,Tulle,Lace,Embrdry,Trmmng, Braid/Net And Mchns for Tftng
Earthmoving & Mining Machinery	
8425	Pulley Tackle And Hoists Other Than Skip Hoists;
8426	Derricks;Crns,Incl Cable Crns;Mobl Lftng Frms,Strdl Crrs And Wrks Trcks Ftd Wth A Crn
8427	Fork-Lift Trucks; Other Works Trucks Fitted With Lifting Or Handling Equipment
8428	Other Lifting, Handling, Loading Or Unloading Machinery (For Example, Lifts, Escalators, Conveyors, Teleferics)
8429	Slf-Prpld Bulldozers,Angledozers,Graders Levlrs,Scrprs,Mchncl Shovls,Excvtrs,Shovl Loaders,Tamping Machines And Road Ro
8430	Othr Movng,Grdng,Levlng,Scrpng,Excvtng, Tmpng,Cmpctng,Extrctng/Borng Mchnry,Fr Earth,Mnrls/Ores;Pile-Drvr;Snow-Plou
8431	Prts Suitbl Fr Use Solely/Prncply Wth The Mchnry Of Hdgs.Nos.8425 To 8430
8481	Taps, Cocks, Valves And Similar Appliances For Pipes, Boiler Shells, Tanks, Vats Or The Like, Including Pressure-Reducin
8468	Mchnry And Apprts Fr Soldrng,Brazng/Weldng, W/N Cpbl Of Cutng,Excl Of Hdg No. 8515; Gas-Opertd Surface Tamprn Mchns An
8474	Mchnry Fr Sortng,Scrreng,Separtng,Washng, Crshng Etc Of Mnrl Substncs,In Solid Form Mchns Fr Shpng Mnrl Fuelandfrmng Mld
8429	Slf-Prpld Bulldozers,Angledozers,Graders Levlrs,Scrprs,Mchncl Shovls,Excvtrs,Shovl Loaders,Tamping Machines And Road Ro
8420	Calendering Or Other Rolling Machines, Other Than For Metals Or Glass, And Cylinders Therefor
8479	Mchns And Mchncl Applncs Hvng Indvdl Functns,N.E.S.
Total	
Heavy Electrical and Power Equipment	
8402	Stm/Other Vapr Gnrtng Boilrs(Excl Cntrl Htng Hot Water Boilrs Cpbl Also Of Prdcng Low Pressure Steam);Super-Heated Water
8403	Cntrl Htng Boilrs Excl Of Hdg No.8402
8406	Steam Turbines And Other Vapour Turbines

8410	Hydraulic Turbines, Water Wheels, Andregulators Therefor
8411	Turbo-Jets, Turbo-Propellers And Other Gas Turbines
8407	Spark-Ignition Reciprocating Or Rotary Internal Combustion Piston Engines
8412	Other Engines And Motors
8501	Electric Motors And Genrtrs(Excl Genrtng Sets)
8405	Prdcr/Wtr Gas Gnrtrs,Acetlen Gas Gnrtrs And Smlr Wtr Prcs Gnrtrs,W/N Wth Their Purifrs
8511	Elctrcl Igntn/Strtng Eqpmnt Fr Sprk-Igntn Etc Gnrtrs Etc And Cut Outs Of A Kind Used In Conjunction Wth Such Engin
8543	Elctrcl Mchns And Apprts,Hvng Individual Fnctns N.E.S.In This Chapter
8401	Nuclear Reactrs;Fuel Elmnts (Cartridges), Non-Irradiated,Fr Nuclr Reactrs;Mchnry And Apparatus For Isotopic Separatio
8502	Electric Generating Sets And Rotary Converters
8503	Parts Suitable For Use Solely Or Principally With The Machines Of Heading 8501 Or 8502
8504	Electrical Transformers, Static Converters (For Example, Rectifiers) And Inductors
8505	Elctro-Mgnt;Prmnent Mgnts And Artcls To Makeprmnent Mgnt;Elctro Mgntc/Prmnent Devics Elctro Mgntc Cltchs,Brks A
8532	Elctrcl Capacitors Fixd,Variable/ Adjustable(Pre-Set)
8535	Elctrcl Apprts Fr Swtchng/Protctng Elctrclcircuits Etc.(E.G. Swtchs,Fuses,Lightning Arresters Etc)Fr A Vltg Excdg 1000 V
8536	Elctrcls Apprts Fr Swtchng/Prtctng Elctrclcircuits Etc.(E.G.Swtchs Relays Etc.) For A Voltage Not Excdg 1000 Volts
8537	Bords Panls Etc Equipd Wth Two Or More Apprts Of Hdg 8535/8536,Incl Those Incorprtng Instrmnts/Apprts Of Ch 90
8538	Prts Suitbl Fr Use Solely/Principally Wth The Apprts Of Hdg No.8535,8536/8537
8544	Insulated (Incl Enamelled Or Anodised) Wire, Cable (Incl Co-Axial Cable) And Oth Insulated Elec Conductor
8547	Insltng Fttngs Fr Elctrcl Mchns Etc. Electrcl Conduit Tubing And Joints Therof Ofbse Mtl Lined Wth Insltng Matrl
Process Plant Equipment	
8417	Industrial Or Laboratory Furnaces And Ovens, Including Incinerators, Non- Electric
8514	Indstrl/Laboratory Elctrc(Incl Inductn/ Dielctrc)Furnaces Etc;Othr Indstrl/ Laboratory Inductn/Dielctrc Htng Eqp
8545	Crbn Elctrds,Crbn Brshs,Lamp Crbns Etc. Othr Artcls Of Graphite/Othr Crbn,Wth/ Wthout Mtl Of A Knd Used For Elctrcl
8439	Mchnry Fr Mkng Pulp Of Fibrous Cellulosic Mtrl/Fr Mkng/Fnshng Paper/Paperboard

8421	Centrifuges, Including Centrifugal Dryers; Filtering Or Purifying Machinery And Apparatus, For Liquids Or Gases
8418	Rfrgrtrs,Frzrs And Othr Rfrgrtng/Frzng Eqpmnt,Elctrc/Othr;Ht Pumps Excl Air Condtng Mchns Of Hdg No.8415
Dies and moulds	
8480	Moulding Boxes For Metal Foundry; Mould Bases; Moulding Patterns; Moulds For Metal (Other Than Ingot Moulds), Metal
Printing & Packaging machinery	
8443	Printng Machnry,Incl Ink-Jet Printng Mchnsexcl Hdng. No 8471; Mchns Fr Uses Ancilary To Printng.
8448	Auxlry Mchnry Usd Wth Mchns Of Hdg 8444, 8445,8446/8447;Prts And Accssrs Usd Wth This Hdg/Of Hdg 8444,8445,8446/844
8449	Mchnry Fr Mnfctr Of Finshng Of Felt Or Non-Wovns In Piece/In Shaps,Incl Mchnry Frmkng Felt Hats,Blocks Fr Mkng Hats
8441	Other Machinery For Making Up Paper Pulp, Paper Or Paperboard, Including Cutting Machines Of All Kinds
8440	Book-Binding Machinery, Including Book- Sewing Machines
8442	Mchnry,Apprts And Eqpmnt(Excl Of 8456 To 8465),Fr Type-Foundng/Type-Sttng,Fr Prprng Prntng Blks,Plts Etc;Blks
Food Processing	
8419	Mchnry,Plnt/Laboratory Eqpmnt,W/N Elctrclyheatd,Fr Heatng,Cookng,Etc,Excl Mchnry Fr Domstc Purps;Storg Wtr Heatrs,Non-El
8437	Mchn Fr Clng,Srtng Seed,Grain/Lgmns Vgtbl;Mchnry For Mlng Indstry/Fr Wrkng Of Crl/ Dried Lgmns Vegtbls,Excl Farm-Type M
8438	Mchnry,N.E.S.,Fr Indstrl Prptn/Mnfctr Of Food/Drnk,Excl Mchnry Fr Extrctn/Prprtn Ofanml/Fxd Vgtbl Fats/Oils
8476	Automtc Goods-Vendng Mchns(E.G.Postage Stamp,Cigarette,Food/Beverage Mchns), Incl Money Chngng Mchns
8478	Mchnry Prprng/Mkng Up Tobacco,N.E.S.
8434	Milking Machines And Dairy Machinery
8436	Other Agrcltrl,Hrtcltrl,Poltry/Bee-Keeping Mchnry Incl Grmntn Plnt Fttd Wth Mchncl/ Thrml Eqpmnt;Poltry Incubtrs And Bro
Plastic Processing Machinery	
8477	Mchnry for Wrkng Rubbr/Plstcs/for The Mnfctr Of Products From These Mtrls,N.E.S.
Metallurgical machinery	
8454	Cnvrtrs,Ladls,Ingot Moulds And Casting Mchns Used In Metallurgy/In Metal Foundries
8455	Metal-Rolling Mills And Rolls Therefor

A2: Exports of Capital Goods exhibiting Rising trend (2008 to 2018)

Category	World	China	RCEP (without China)	Non RCEP FTA	Rest of World
Dies and moulds	8480	8480	8480	8480	8480
Earth moving	8481 8429 8431 8479 8474 8428 8426 8425 8420 8468 8427	8481 8474 8431 8479 8430 8420 8468 8427 8429 8425	8481 8474 8431 8479 8430 8420 8468 8427 8429 8425	8481 8474 8431 8479 8430 8420 8468 8427 8429 8425	8481 8474 8431 8479 8430 8420 8468 8427 8429 8425
Food processing	8419 8438 8437 8436 8478 8434 8476	8438 8476	8438 8419 8437 8478 8436 8434	8419 8438 8437 8436 8434 8476 8478	8419 8438 8436 8437 8476 8478 8434
Heavy electrical	8411 8407 8504 8544 8536 8537 8501 8538 8511 8402 8412 8503 8535 8406 8532 8543 8410 8405 8401	8504 8411 8407 8536 8501 8537 8511 8544 8412 8532 8538 8505 8410	8411 8504 8537 8536 8402 8544 8406 8407 8511 8535 8501 8538 8410 8532 8412 8503 8543 8405 8401	8504 8407 8544 8402 8537 8535 8536 8501 8406 8410 8511 8502 8538 8405 8532 8412 8543	8411 8407 8544 8538 8536 8501 8537 8511 8412 8504 8503 8543 8532 8535 8402 8406 8401 8405 8410
Machine tools	8467	8460	8465	8462	8466

	8462 8466 8465 8460 8457 8463 8461 8456 8464 8459	8466 8457 8467 8458 8456 8465 8461 8462 8463	8467 8460 8457 8456 8462 8458	8467 8466 8458 8465 8463 8460 8461 8459 8464 8457 8456	8467 8465 8457 8461 8462 8463 8460 8456 8459 8464
Metallurgical Machinery	8455		8455 8454	8455	8455
Plastic processing	8477	8477	8477	8477	8477
Printing & packaging machinery	8448 8441 8443 8440	8448 8441 8443 8442 8440 8449	8448 8441 8440 8443	8443 8448 8442 8440 8441 8449	8448 8441 8443 8440
Process plant equipment	8421 8545 8418 8514 8439 8417	8421 8514 8545	8421 8545 8418 8514 8417 8439	8421 8418 8545 8514 8439 8417	8545 8421 8418 8514 8439 8417
Textile Machinery	8445 8451 8452 8446 8444	8445 8446 8451 8453 8452	8445 8446 8452 8451 8444 8453	8445 8451 8446 8452 8444 8453	8445 8451 8452 8446 8444 8447

A3: Export of Capital Goods with falling trend (2008 to 2018 period)

Category	World	China	RCEP (without China)	Non RCEP FTA	Rest of World
Earth moving & mining machinery	8430	8426 8428	8430 8468		8430
Food processing		8419 8437 8434	8476		

		8436 8478			
Heavy electrical	8502 8547 8403 8505	8406 8402 8502 8405 8543 8547 8407 8535 8503 8403 8401	8502 8505 8547 8403	8411 8503 8547 8403	8502 8547 8403 8505
Machine tools	8458	8459 8464	8466 8461 8459 8464 8463		8458
Metallurgical machinery	8454	8454 8455		8454	8454
Printing & packaging machinery	8442 8449		8442 8449		8442 8449
Process plant equipment		8418 8439 8417			
Textile Machinery	8447 8453	8444 8447	8447	8447	8453

A4: Imports of Capital Goods exhibiting Rising trend (2008 to 2018)

Category	World	China	RCEP (without China)	Non RCEP FTA	Rest of World
Dies and moulds	8480	8480	8480	8480	8480
Earth moving	8481 8479 8431 8428 8427 8426 8425 8420	8431 8479 8481 8426 8429 8430 8428 8427 8425 8420	8479 8481 8431 8428 8427	8431 8430 8428 8481 8429 8427 8420	8481 8479 8428 8427 8420

Food processing	8438 8419 8437 8436 8434 8476	8437 8419 8438 8436 8434 8476	8419 8438 8436 8434	8436 8478 8438	8438 8419 8438 8436 8476
Heavy electrical	8411 8504 8536 8537 8501 8407 8544 8538 8543 8511 8412 8532 8547 8505 8503 8401	8504 8501 8536 8544 8503 8532 8543 8407 8505 8511 8537 8412 8535 8411 8547 8405 8401	8536 8537 8504 8501 8538 8511 8412 8411 8543 8532 8505 8405	8407 8504 8536 8511 8538 8547 8535 8411	8411 8504 8536 8537 8407 8543 8544 8538 8501 8511 8412 8532 8505 8402 8401
Machine tools	8464 8456 8467 8466 8457 8460 8465 8463	8464 8467 8462 8456 8465 8466 8463 8461 8457 8460	8457 8466 8456 8460 8458 8467 8463	8467 8456	8456 8466 8457 8467 8464 8465
Metallurgical Machinery		8454			
Plastic processing	8477	8477	8477		8477

Printing & packaging machinery	8443 8448 8441 8442 8449	8443 8441 8448 8442 8449 8440	8443 8448 8441 8442	8442 8448	8448 8443 8442 8441
Process plant equipment	8421 8418 8439 8514	8418 8421 8439 8514	8421 8418 8514 8545	8421 8439	8421 8418
Textile Machinery	8446 8452 8447 8451 8444 8453 8445	8446 8447 8452 8451 8453 8445 8444	8446 8452 8445 8451 8453	8452 8451 8444	8444 8447 8451 8453 8446 8452

A5: Import of Capital Goods with falling trend (2008 to 2018 period)

Category	World	China	RCEP (without China)	Non RCEP FTA	Rest of World
Earth moving & mining machinery	8430 8474 8468 8429	8474 8468	8430 8429 8426 8468 8474 8425 8420	8474 8426 8479 8468 8425	8430 8474 8431 8426 8429 8468 8425
Food processing	8478	8478	8437 8476 8478	8419 8437 8434 8476	8478 8437
Heavy electrical	8406 8402 8502 8403 8410 8535 8405	8402 8406 8502 8403 8410	8502 8406 8407 8503 8402 8535 8410 8403 8401	8502 8503 8544 8501 8405 8543 8406 8412 8537 8505	8406 8503 8502 8535 8403 8410 8405

				8402 8410 8532 8403	
Machine tools	8459 8462 8461 8458	8459 8458	8462 8459 8461 8465 8464	8462 8459 8465 8457 8461 8460 8458 8466 8463 8464	8462 8459 8461 8458 8463 8460
Metallurgical machinery	8455 8454	8455	8455 8454	8455 8454	8455 8454
Plastic processing				8477	
Printing & packaging machinery	8440		8440 8449	8441 8443 8440 8449	8449 8440
Process plant equipment	8417 8545	8417 8545	8417 8439	8418 8417 8545 8514	8417 8514 8545 8439
Textile Machinery			8444 8447	8447 8445 8446 8453	8445

A6: Trade deficit in Capital Goods exhibiting rising trend (2008 to 2018)

Category	World	China	RCEP (without China)	Non RCEP FTA	Rest of World
Dies and moulds	8480	8480	8480		
Earth moving	8479 8427 8428 8431	8431 8479 8426 8481 8429 8430 8428 8427 8425	8479 8431 8481 8428 8427	8427	8427

Food processing	8438 8434	8419 8437 8438 8436 8434 8476	8419 8436		8438 8434
Heavy electrical	8504 8536 8411 8543 8547 8501 8537 8532 8505 8412	8504 8501 8503 8536 8544 8532 8538 8543 8505 8511 8537 8407 8412 8535 8547 8405 8401	8536 8537 8501 8412 8538 8511 8547 8543 8505 8532 8504	8407 8411 8503 8547 8454 8403 8401 8427	8411 8504 8547 8543 8502 8536 8537 8505
Machine tools	8464 8456 8467 8457 8466 8460 8463	8464 8467 8462 8456 8465 8463 8466 8461 8457	8466 8457 8456 8460 8458 8463		8456 8457 8466 8464
Metallurgical Machinery		8454		8454	8455
Plastic processing	8477	8477	8477		8477

Printing & packaging machinery	8443 8448 8441 8442 8449	8443 8441 8448 8442 8449 8440	8443 8448 8442 8441		8448 8443 8442
Process plant equipment	8418 8421 8418	8418 8421 8439 8514	8418 8421 8514		8421
Textile Machinery	8446 8447 8452 8444 8453 8451	8446 8447 8452 8451 8453 8444 8445	8446 8452 8451 8453		8444 8447 8453 8446 8451

A7: Trade deficit in Capital Goods with falling trend (2008 to 2018 period)

Category	World	China	RCEP (without China)	Non RCEP FTA	Rest of World
Dies and moulds				8480	8480
Earth moving & mining machinery	8429 8474 8481 8430 8468 8426 8425 8420	8474 8468 8420	8429 8430 8426 8474 8468 8425 8420 8427 8428 8481 8431 8479	8429 8474 8479 8481 8426 8428 8431 8430 8425 8468 8420	8431 8481 8474 8429 8430 8426 8425 8479 8468 8428 8420
Food processing	8419 8478 8437 8476 8436	8478	8437 8437 8438 8478 8476 8434	8419 8438 8437 8436 8476 8478	8419 8478 8437 8436 8476
Heavy electrical	8406 8402	8402 8406	8411 8402	8544 8504	8407 8544

	8407 8544 8535 8502 8503 8410 8405 8403 8401 8511 8538	8411 8502 8403 8410	8406 8407 8535 8410 8502 8544 8503 8405 8403 8401	8402 8537 8535 8536 8501 8502 8406 8410 8511 8538 8405 8543 8412 8532 8505	8503 8406 8538 8501 8412 8511 8535 8532 8402 8410 8405 8403 8401
Machine tools	8459 8462 8461 8465 8458	8460 8459 8458	8462 8459 8465 8461 8464 8467	8462 8466 8465 8458 8467 8459 8460 8463 8461 8457 8464 8456	8462 8459 8461 8465 8467 8458 8463 8460
Metallurgical machinery	8455 8454	8455	8455 8454	8455	8455 8454
Plastic processing				8477	
Printing & packaging machinery	8440		8440 8449	8443 8448 8440 8442 8441 8449	8441 8449 8440
Process plant equipment	8545 8417 8514	8417 8545	8545 8417 8439	8421 8418 8545 8514 8417 8439	8545 8417 8418 8514 8439
Textile Machinery	8445		8445 8444 8447	8445 8451 8446 8452 8444 8453 8447	8445 8452

A8: Export Dynamism Classification of all Capital Goods under major subsectors (at 4-digit level HS Code)

HS Code	Rising star	Falling star	Lost Opportunity	Retreat
8411	✓			
8481		✓		
8504		✓		
8407	✓			
8544	✓			
8479	✓			
8536	✓			
8419	✓			
8538	✓			
8421	✓			
8431		✓		
8429		✓		
8537	✓			
8501	✓			
8474		✓		
8502		✓		
8511	✓			
8545	✓			
8477	✓			
8418		✓		
8503		✓		
8445		✓		
8402		✓		
8412	✓			
8535		✓		
8430		✓		
8466		✓		
8448		✓		
8455		✓		
8438				✓
8480	✓			
8532		✓		
8543			✓	
8406		✓		
8443		✓		
8428	✓			
8426		✓		
8514		✓		
8467	✓			
8437		✓		
8410		✓		
8451	✓			

8441	✓			
8452		✓		✓
8417		✓		
8462		✓		
8547			✓	
8439		✓		
8425		✓		
8465		✓		
8458		✓		
8505	✓			
8446		✓		
8454				✓
8405		✓		
8460		✓		
8468		✓		
8436			✓	
8457		✓		
8442		✓		
8463		✓		
8420	✓			
8440		✓		
8461		✓		
8459		✓		
8434	✓			
8478	✓			
8401		✓		
8427			✓	
8476		✓		
8456	✓			
8403		✓		
8444	✓			
8464		✓		
8447	✓			
8453	✓			
8449	✓			