GDP Growth and Employment Implications of India's Foreign Trade

Rajiv Gandhi
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RAJIV GANDHI
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1 Introduction

This paper examines the impact of foreign trade on the growth of both the GDP and employment in India. In FY 2021-22, the last year for which detailed data for foreign trade was available at the time of writing this paper, the gross value of foreign trade, including both merchandise and services, amounted to INR 107.2 lakh crore against a GDP of INR 234.7 lakh crore. This implied that foreign trade accounted for about 45.7 percent of the GDP of which exports were 21.5 percent and imports were 24.2 percent of the GDP.

Comparing the gross value of foreign trade with GDP directly can be misleading as GDP figures are not calculated in terms of gross value of output but as output minus input, or gross value added (GVA).

Therefore, to truly understand the impact of exports on GDP, it is crucial to focus on the GVA of exports. Deducting input value will give us the GVA of exports. But as exports also have some component of imports, these need to be deducted so that we can come up with the domestic value added (DVA), which is the true additionality of exports to the Indian economy.

The DVA of exports varies from sub-sector to sub-sector, and the range is wide, from as low as 10 percent in case of petroleum products to as high as 95 percent for agricultural products and some services, as estimated by Das and Kukreja (2020).[1]

They showed that the DVA of exports has declined steadily from 84.1 percent in 2003-04 to 72.8 percent in 2013-14. Assuming the DVA of exports was at about 60 percent in 2021-22, India's DVA from exports constituted about 13 percent of the GDP for that year.

Thus increasing exports by 10 percent could enhance the GDP growth by 1.3 percent. It should be noted that the growth is not merely quantitative, but exports generally tend to diversify a country's basket of goods and services, thereby increasing its Economic Complexity Index (ECI), which is a relative measure of the knowledge intensity of an economy, developed by Prof Cesar A. Hidalgo, from the MIT Media Lab and Prof Ricardo Hausmann, from Harvard University's Kennedy School of Government.

ECI data is available in The Observatory of Economic Complexity.[2] Exports also create the demand for a larger number of educated and skilled workers and increase the overall self-confidence in the economic actors, which then spills over in positive ways for domestic production.

For employment from exports, Veeramani and Dhir (2019) estimated that the number of jobs supported by India's exports increased from 34 million in 1999-00 to 62.6 million in 2012-13. This meant that 14.9 percent of India's workers got employment due to exports.[3] India's exports moved from labour intensive items textile and apparel in the late 1990s, to more capital intensive items like automobile components and chemicals three decades later.

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[1] Das, Deb Kusum; Kukreja, Prateek (2020) : Value addition, jobs and skills: A study of India's exports, Working Paper, No. 392, Indian Council for Research on International Economic Relations (ICRIER), New Delhi, p.14

[2] Complexity Rankings :The Observatory of Economic Complexity https://oec.world/en/rankings/eci/hs6/hs96

Das and Kukreja (2020) estimated that in 2003-44, employment was 450 workers per million dollars of exports, but that it had fallen from to 183 workers per million dollars of exports in 2013-14. The workers employed per million dollars of exports continued to fall thereafter.

If we apply the same rate of reduction as prevailed between 2003-04 and 2013-14, then the number of workers per million dollars of exports is likely to be as low as 80 by 2021-22. Still increasing exports by 10 percent could generate about 60 lakh new jobs.

Vashisht (2016)[4]examined the change in skill-composition of manufactured exports between 1990 and 2014 and found that India's exports, which were dominated by low skilled labour intensive industries in 1990-91, became dominated by high skilled labour intensive industries by 2013-14. This indicated a shift in the skill composition of jobs supported by exports.

Source: Image

Das and Kukreja (2020) also showed that between 2003-04 and 2013-14 while the employment of workers with no or school education only doubled, the employment of workers with secondary school education or higher/technical education increased threefold[5]. Thus as in the case of value added, exports not only add to the quantity but also to diversity and skill intensity, improving the Economic Complexity Index.

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[3] Veeramani, C. and Dhir, G. (2019). Reaping Gains from Global Production Sharing: Domestic Value Addition and Job Creation by Indian Exports, IGIDR Working Paper No WP-2019-024, Mumbai (http:// www.igidr.ac.in/pdf/publication/WP-2019- 024.pdf)

[4] Vashisht, P. (2016) "Creating manufacturing jobs in India: Has openness to trade really helped?" Journal of Asian Economics, 42, pp 53-64

[4] Das and Kukreja (2020) , op.cit. p.14

The paper then gives an overview of India's exports by sub-sector and destination and how this has changed over the last two decades. Based on certain criteria, such as salience in exports, a higher share of DVA, a greater likelihood of generating employment per million dollars of exports and higher level of skilled employment, the paper then pinpoints sub-sectors with potential for increased exports. This includes items such as agricultural produce, processed foods, textiles and clothing, manufactured items like mobile phones and auto components, and finally services exports such as software. Tourism is an interesting sector where services are delivered locally but generate foreign exchange income from foreign tourists visiting India. All these will stimulate GDP growth and employment.

The paper then moves to suggestions for policies and programs which would enable growth of the selected sub-sectors for export promotion. Some of these are generic, such as signing more Free Trade Agreements and correcting the anomalies in the WTO agreement related to delays in dispute settlement and imposition of non-tariff barriers by importing countries. Other recommendations are more sub-sector specific suggestions related to improving cost-competitiveness, technology upgradation and overcoming infrastructural bottlenecks.

The paper then turns to imports. Another way to increase growth of the GDP and employment is to increase domestic production of commodities which are imported but can be produced in India. This is the import substitution strategy which had been put on the side for the last thirty years. However, more recent disruptions in import supply chains, geo-political turbulence, strategic reasons and the aspiration to become an "*atma nirbhar*" or self-reliant economy, have all brought the import substitution strategy back to the table.

Some commodities are hard to produce domestically, such as crude petroleum. As a large part of petroleum after refining into petrol and diesel is used for transportation, over the longer term, this can be substituted by electric vehicles (EVs), which can run on renewable energy sources like solar power.

On the other hand, some commodities like edible oils can be produced domestically with some effort. Then there are some manufactured products where India can build a comparative advantage over time, like mobile telephones. Still others need to be made because of strategic reasons, despite cost disadvantages.

The paper suggests criteria for selecting sub-sectors which can be locally produced, or substituted with domestic production, for generating growth in GDP and employment, or other reasons. The paper gives suggestions for policies and programs which would enable growth of the selected sub-sectors for import substitution, related to technology upgradation through joint ventures, conducting research and development, improving skills and capability, and improving cost-efficiency over time.

The paper ends with a conclusion that India's foreign trade policy would have to focus on both export promotion and import substitution and within each of these strategies, choose some sub-sectors which are good for GDP growth, generate skilled employment and build national capability and others for generating mass employment for relatively less skilled workers. We assert that it is possible to have such a dual objective foreign trade policy.

2 Overview of the Indian Economy

2.1 GDP – overall, growth, sectoral composition and trends

The GDP of India in 2023-24 was INR 296.6 lakh crore at current prices, as per the first advance estimates by the National Statistical Office (NSO), MoSPI, GoI.[6] The growth in GDP during 2023-24 was estimated at 8.9 percent at current prices and at 7.4 percent in constant prices with 2011-12 as the base.[7]

The Indian GDP grew, at a robust annual rate of over 8 percent pa at constant prices in the mid-2000s but growth slowed to 6 percent pa after the global financial crisis of 2007-08 as world trade decelerated quickly. By 2012-13, GDP growth had fallen to about 4.5 percent pa. There was a spurt of growth between 2014 and 2016 but the slowdown resumed after the demonetisation in 2016 and GST rollout in 2017. By 2018, the GDP growth came down to 3.9 percent pa. In the two years post-pandemic, the GDP growth rate has picked up to 7.3 and 7.4 percent at constant prices.[8]

Source: Image

[6] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1993550

[7] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1993550

[8] Dutt, A. K., & Rao, J. M. (2019). *Indian Growth: Diagnosis and Remedies (CID Working Paper No. 369). Harvard Kennedy School, Cambridge, MA, USA*. Retrieved from, https://www.hks.harvard.edu/sites/default/files/centers/cid/files/publications/faculty-working-papers/2019-12-cid-wp-369-indian-growth-diagnosis-remedies-final.pdf

2.1.1 Primary sector contribution to GDP and employment

The primary sector comprises agriculture, fishery, forestry and mining and quarrying. It accounted for 20.2 percent of the GDP in 2022-23.[9] Fishery and forestry were not very significant at about 1.5 percent of the GDP. Mining contributed to about 2.5 percent of the GDP.

Agriculture, once India's main source of income, had fallen to approximately 16.7 percent of the country's GDP as of 2022. The share of agriculture workforce has remained at almost 44 percent, increasing slightly after the COVID pandemic forced migrant workers to return from urban to their native rural areas. While the share of workers in agriculture is declining, it is still the main sector of employment.

2.1.2 Secondary sector contribution to GDP and employment

The secondary sector comprising manufacturing, utilities (electricity, gas, water supply and sewerage) and construction was 25.6 percent of the GDP in 2022-23.[10]

Between 2011 and 2021, the manufacturing sector's contribution to the GDP declined from 17 percent to 13 percent.[11]

Table 1 - Sub-Sector-wise Net Value Added in manufacturing in India

Description	Net Value Added (NVA) in Rs lakh	Share of net value added (percent)
Chemicals And Chemical Products	14291242	11.79
Basic Metals	11245137	9.27
Pharmaceuticals, Medicinal, Chemical and Botanicals	10996585	9.07
Food Products	9720207	8.02
Motor Vehicles, Trailers And Semi-Trailers	7906437	6.52
Machinery And Equipment N.E.C.	7886400	6.50
Other Industries	6524143	5.38
Other Non-Metallic Mineral Products	6419005	5.29
Textiles	5940779	4.90
Rubber And Plastics Products	5439740	4.49

Source: Annual Survey of Industries (ASI) 2019-20

[9] GoI-MoSPI (2024), Second Advance Estimates of National Income, 2023-24. https://pib.gov.in/PressReleasePage.aspx?PRID=2010223#

[10] GoI-MoSPI (2024), op. cit.

[11] World Bank open data. (2024). https://data.worldbank.org/indicator/NV.IND.MANF.ZS?locations=IN

India's manufacturing sector had a significant component of the unorganized sector, within that the household enterprise sector, which accounted for a disproportionately large share of employment (almost 80 percent)[12] but a very small share of value added in manufacturing. Approximately 65 percent of employment in the manufacturing sector came from firms with less than 10 employees.

The value added per worker in the unorganized sector was significantly lower than the organized sector. Moreover, despite the fact that real wages were rising in both organised and unorganised manufacturing, there was a decline in wage shares in value added in India. In terms of technology intensity, Nayak et al (2013) found that there was a slow though steady shift from low-technology exports to medium technology exports.

2.1.3 Services sector contribution to GDP and employment

The services sector is not only the principal sector in India's GDP, but has also contributed extensively to exports as well as provided foremost employment.[13] The services sector GVA at current prices for the services sector was estimated at 131.96 lakh crore INR in 2022-23 which was 53.33 percent of total GVA.[14]

Source: Image

The service sector accounted for 29 percent of employment in 2022-23. Moreover services accounted for around 62 percent of total employment in the organized sector; however, within the service sector, over 80 percent of the employment was in the unorganized sector. Finance, insurance, real estate, and business services and community, social, and personal services largely provide organized employment while retail and wholesale trade largely provide unorganized employment.[15] The service sector was also an important source of foreign exchange earnings and foreign direct investment.

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[12] Goldar, Bishwanath; Sadhukhan, Amit (2015) Employment and wages in Indian manufacturing : post-reform performance, International Labour Office, Employment Policy Department, ILO Working Paper no 185

[13] Patel, S (2017), A Research Paper on Role of FDI in Service Sector in growth of GDP of India, http://www.semcom.ac.in/smtr/SMTR percent20PDF/SMTR percent20OCT percent202017.pdf#page=107

[14] GoI –MoSPI (2024), op. cit.

[15] Mukherjee, A. (2013, April). The service sector in India. https://deliverypdf.ssrn.com/delivery.php?ID=099009117110029074073112100026111105039007077053 03

2.2 Trends in Employment – Overall and by Sector

As per Table 2 below taken from Mahendra Dev (2024), agriculture's share in employment declined from 73.9 percent in 1972-73 to 45.8 percent in 2022-23, which was a steep decline of 28 percent over five decades. While the share in agriculture was declining (except for a rise just after the COVID pandemic), it was still the main sector of employment.

> The share of secondary sector employment rose from 11 percent to 25 percent in five decades. This increase was mainly due to an increase in share of construction. The share of manufacturing increased initially from 10.5 percent in 1993-94 to 12.8 percent in 2022-23. There was, however, hardly any increase in manufacturing employment in the last three decades. The share of construction in employment was 2 percent higher than that of manufacturing in 2022-23.[16]

Table 2- Structural Change: Share in Employment (per cent)

	1972-73	1993-94	2004-05	2011-12	2019-20	2022-23
Agriculture and allied activities	**73.9**	**64.8**	**58.5**	**48.9**	**45.6**	**45.8**
Manufacturing	8.9	10.5	11.7	12.8	11.2	11.4
Construction	1.8	3.1	5.6	10.6	11.6	13.0
Industry (Secondary sector)	**11.3**	**14.7**	**18.1**	**24.4**	**23.7**	**25.2**
Trade, hotels and restaurants	5.1	7.4	10.2	11.4	13.2	12.1
Transport, storage and communications	1.8	2.8	3.8	4.4	5.6	5.4
Financing, real estate, business services	0.5	0.9	1.5	2.6	3.1	2.7
Community, social and personal services	7.4	9.4	7.7	8.2	8.9	8.8
Services (Tertiary sector)	**14.8**	**20.5**	**23.4**	**26.7**	**30.7**	**29.0**
Non-agriculture	26.1	35.2	41.5	51.1	54.4	54.2
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

As per the table above from Dev (224), the share of employment in the services sector increased between 1991-92 and 2022-23, from 20.5 percent to nearly 30 percent, in contrast to no growth in employment in the manufacturing sector.

Within services, sub-sectors like trade, hotels, and restaurants rose from 5.1 percent to 12.1 percent, and transport and communication increased from 1.8 percent to 5.4 percent, primarily offering informal employment. The high value financing, real estate and business services absorbed only around 2.7 percent of the workforce in 2022-23.

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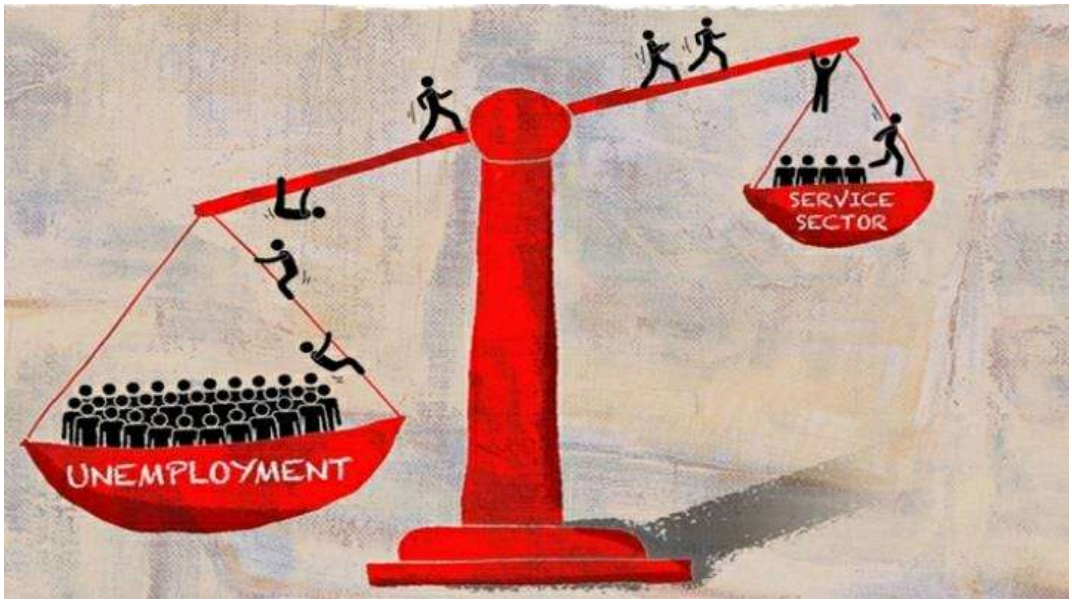
[16] Dev, S. Mahendra (2024) Economic Growth, Inclusive and Sustainable Development, 58th Annual Conference of the Indian Econometric Society (TIES), Agartala, February 22-24 , p 24.

[17] GoI-MoSPI: Periodic Labour Force Survey (PLFS) – Quarterly Bulletin for July – September 2023

[18] Mehrotra, Santosh (2023). Three Claims of Government Economists About Jobs Put to the Test https://thewire.in/labour/india-narendra-modi-jobs-unemployment

2.2.1 Youth and educated unemployment trends

India has been suffering from a historic high level of unemployment since 2018. In October 2023, the unemployment rate was 9.4 percent as per the Centre for Monitoring Indian Economy (CMIE), although the official Periodic Labour Force Survey (PLFS) put it at 6.6 percent.[17]This difference is largely because the PLFS treats unpaid workers in household enterprises as employed, which is not in line with the ILO definition of employment, where being employed means being remunerated, not merely working.[18]



Source: Image

Among the youth, unemployment was much higher than overall unemployment. State of Working India report (2023) showed unemployment was concentrated among the educated youth and is above 15 percent for all graduates. There was also a large variation in the rate of unemployment within the higher educated group across age, indicating that the problem has got greatly exacerbated in the last eight years.

Table 3 - Unemployment by education levels (percent of total persons seeking work)

	Less than 25 years	25-29 years	30-34 years	35-39 years	40 years and above
Graduate &above	42.3	22.8	9.8	4.5	1.6
Higher Secondary	21.4	10.6	5.0	3.1	2.1
Secondary	18.1	7.5	4.6	2.4	1.7
Primary or middle	15.0	5.4	3.0	2.4	2.2
Literate but below primary	10.6	3.3	1.5	2.4	2.2
Illiterate	13.5	4.3	4.0	3.4	2.4

Source: State of Working India, 2023.[19]

[19] https://azimpremjiuniversity.edu.in/publications/2023/report/state-of-working-india-2023-social-identities-and-labour-market-outcomes

3 Overview of India's Foreign Trade

Source: Image

India's total trade (value of exports and imports, both merchandise and services) in FY 2021-22 was USD 1436.59 billion or about 45 percent of the GDP.[20]

India's exports were INR 50.49 lakh crore (USD 676.53 billion) in 2021-22.[21] Exports accounted for about 21 percent of the GDP, which was USD 234.7 lakh crore (USD 2.90 trillion) at current prices.[22]

Assuming the Domestic Value Added (DVA) of India's exports was around 60 percent of the value of exports, exports DVA was about 13 percent of the GDP. The DVA of exports adds to the GDP since the output is counted in the goods and services produced within the Indian economy.

Imports in FY2021-22 were INR 56 lakh crore (USD 760.06 billion) worth of goods and services, or about 24 percent of the GDP.

Assuming the DVA of India's imports was around 10 percent at most, the foreign value added (FVA) of imports was nearly INR 50 lakh crore, which amounted to about 21 percent of the GDP. These were consumed in India but were not produced here and hence were netted off from the GDP.

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[20] Gupta, S. (2019). An Analysis of Indian Foreign Trade in Present Era. International Journal of Engineering and Management Research, 9(2). http://www.ijemr.net. DOI: 10.31033/ijemr.9.2.1

[21] Government of India (GoI)- Ministry of Commerce and Industry – Press Release 13th Apr 2023 https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1916220

[22] GoI- Ministry of Statistics and Programme Implementation (MoSPI) – Press Release 31st May 2023 https://www.mospi.gov.in/sites/default/files/press_release/PressNoteQ4_FY2022-23_31may23.pdf statement 2 page 5.

3.1 Total Trade

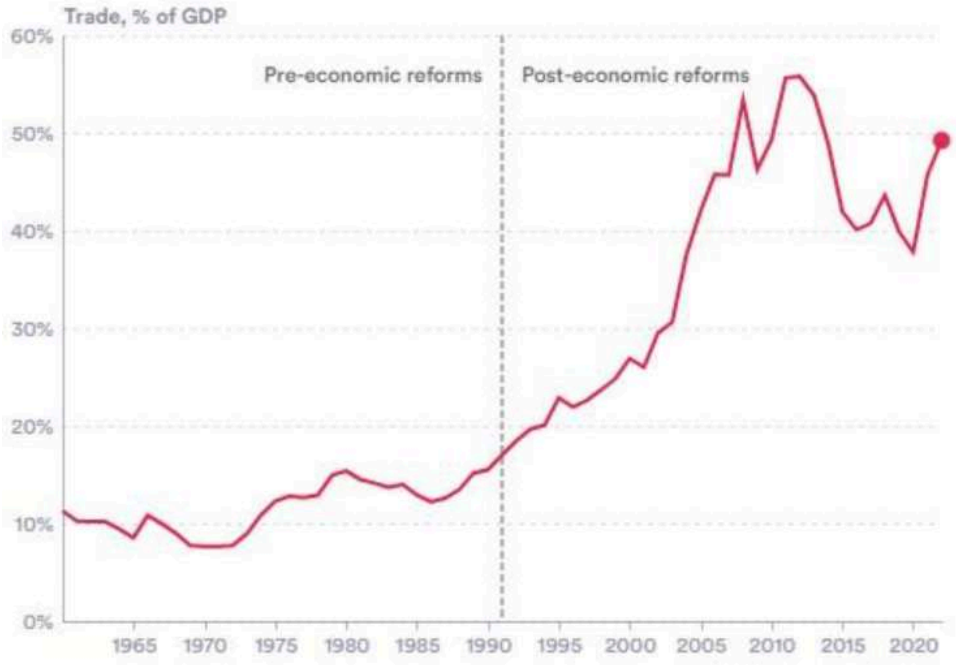
3.1.1 Trend over time

The trajectory of India's international trade over the past seven decades reflects modest beginnings from Independence in 1947 to significant expansion by the 75th year of independence. India's total trade (value of exports and imports, both merchandise and services) went up from nearly USD 2.6 billion in 1947-48 to USD 1436.59 billion.[23]

Though India's exports (both merchandise and services) grew from USD 1.23 billion in 1947-48 to USD 677 billion in 2021-22,[24] India's exports have not grown as a percentage of world exports in 75 years. India's exports were 2.6 percent of global exports in 1947-48, and went down steadily to 0.8 percent in 1970 and further to 0.4 percent in 1992.[25] Exports remained at around 0.7 percent of the world exports till the late 1990s, steadily climbing up to over 1 percent by 2010. By 2021-22, exports had gone up to 2.67 percent of world trade[26] thus reaching where we were at independence in 1947.

As can be seen from the figure 1 below, the initial three decades and a half saw a serious decline in trade as a percentage of the GDP but it took off after liberalisation in 1992.

Figure 1 – India's Trade as a percent of the GDP



Source: The Economics Observatory[27]

[23] Gupta, S. (2019). An Analysis of Indian Foreign Trade in Present Era. International Journal of Engineering and Management Research, 9(2). http://www.ijemr.net. DOI: 10.31033/ijemr.9.2.1

[24] Press Information Bureau (2023). https://pib.gov.in/PressReleasePage.aspx?PRID=1916220

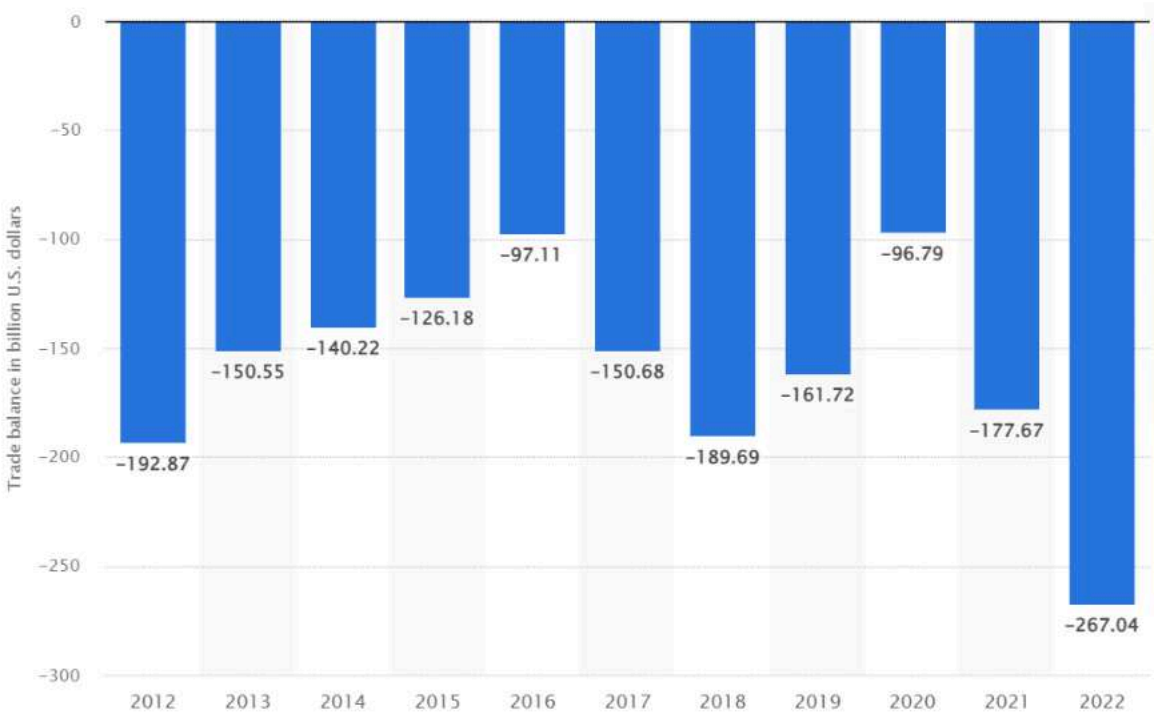
[25] https://www.nber.org/system/files/chapters/c4508/c4508.pdf p.19

[26] https://www.statista.com/statistics/1133079/india-share-in-global-exports

3.1.2 Trade deficit

Trade deficit of India barely doubled from USD 2.15 billion in 1992-93 to USD 4.23 billion in 2003-04. Once China became a member of the WTO, and Indian tariffs were reduced for imports, the trade deficit went up exponentially. In 2012-13 the merchandise trade deficit was USD 192.87 billion. While it recovered for the three year period between 2013-14 and 2017-18 due to a dramatic drop in crude petroleum prices, the trade deficit increased to $276.04 billion in 2022-23.

Figure 2- India's Merchandise Trade Deficit 2012-2022 USD billion



3.1.3 Top 10 Import and top 10 exports

As can be seen from Table 4 below, out of 98 two digit product codes of the International Harmonised System (HS-2), India's top 10 imports accounted for 80.2 percent of the total imports whereas top 10 exports of the same HS-2 digit product codes accounted for 62.1 percent of the exports.

It should be noted that this data is only for trade in merchandise, and trade in services is now a significant part, about 40 percent of the total trade of India.

This feature points to an interesting aspect of a large and complex economy – that imports and exports happen in the same HS-2 category. This is largely because exports have increasing levels of imported content, as also because value chains for most finished products are getting globalised, with different steps of the production happening in different countries.

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[27] https://www.economicsobservatory.com/how-is-indias-trade-landscape-shaping-up-for-the-future

Thus it is an old style fallacy to think of imports as opposite of exports – one bad for the country and the other good. In the 21st century we have to think of a circular relationship between foreign trade (both import and export) and the GDP. One grows as the other grows.

Table 4 - India's Merchandise Imports and Exports: HS-2 Commodity-wise FY 2021-22

S.No.	HS Code	Commodity	Imports in INR Lakh 2021-2022	% share of total imports	Exports in Rs lakh 2021-2022	% share of total exports	Net Exporter or Importer
1	27	MINERAL FUELS, MINERAL OILS AND PRODUCTS OF THEIR DISTILLATION; BITUMINOUS SUBSTANCES; MINERAL WAXES.	145,462,319	31.8	51,951,667	16.5	Net Exporter
2	71	PEARLS,PRECIOUS OR SEMIPRECIOUS STONES, METALS,C AND ARTCLS THEREOF;JEWLRY;	60,887,600	13.3	29,274,504	9.3	Net Exporter
3	85	ELECTRICAL MACHINERY AND EQUIPMENT AND PARTS THEREOF; SOUND RECORDERS AND REPRODUCERS, TELEVISION IMAGE AND SOUND RECORDERS AND REPRODUCERS,AND PARTS.	46,631,593	10.2	18,949,684	6.0	Net Exporter
4	84	NUCLEAR REACTORS, BOILERS, MACHINERY AND MECHANICAL APPLIANCES; PARTS THEREOF.	37,711,465	8.2	17,059,065	5.4	Net Exporter
5	29	ORGANIC CHEMICALS	21,261,495	4.6	16,434,765	5.2	Net Importer
6	39	PLASTIC AND ARTICLES THEREOF.	14,906,659	3.3	15,059,155	4.8	Net Importer
7	15	ANIMAL OR VEGETABLE FATS AND OILS AND THEIR CLEAVAGE PRODUCTS; PRE. EDIBLE FATS; ANIMAL OR VEGETABLE WAXEX.	14,423,944	3.2	14,735,064	4.7	Net Importer
8	31	FERTILISERS.	9,532,883	2.1	14,458,086	4.6	Net Importer
9	72	IRON AND STEEL	9,405,267	2.1	9,608,076	3.1	Net Importer
10	90	OPTICAL, PHOTOGRAPHIC CINEMATOGRAPHIC MEASURING, MEDICAL OR SURGICAL INSTRUMENTS;	8,437,319	1.8	8,043,454	2.6	Net Importer

Source: Department of Commerce, Export Import Data Bank [28]

3.2 India's exports

3.2.1 Merchandise exports

Given below is a list of the top 20 HS-2 product code categories which together accounted for 79.9 percent of India's exports in 2021-22. .

As mentioned earlier, these also constitute the top 20 HS-2 product code categories for imports and between them account for 90.7 percent of India's imports in 2021-22.

[28] https://tradestat.commerce.gov.in/eidb/ecom.asp

Table 5 - India's Merchandise Exports: HS-2 Commodity-wise FY 2021-22

Sr No	HS Code	Commodity	Exports in Rs lakh 2021-2022	% share of total exports
1	27	MINERAL FUELS, MINERAL OILS AND PRODUCTS OF THEIR DISTILLATION; BITUMINOUS SUBSTANCES; MINERAL WAXES.	51,951,667	16.51
2	71	NATURAL OR CULTURED PEARLS,PRECIOUS OR SEMIPRECIOUS STONES,PRE.METALS,CLAD WITH PRE.METAL AND ARTCLS THEREOF;IMIT.JEWLRY;COIN.	29,274,504	9.30
3	84	NUCLEAR REACTORS, BOILERS, MACHINERY AND MECHANICAL APPLIANCES; PARTS THEREOF.	18,949,684	6.02
4	72	IRON AND STEEL	17,059,065	5.42
5	29	ORGANIC CHEMICALS	16,434,765	5.22
6	85	ELECTRICAL MACHINERY AND EQUIPMENT AND PARTS THEREOF; SOUND RECORDERS AND REPRODUCERS, TELEVISION IMAGE AND SOUND RECORDERS AND REPRODUCERS,AND PARTS.	15,059,155	4.79
7	87	VEHICLES OTHER THAN RAILWAY OR TRAMWAY ROLLING STOCK, AND PARTS AND ACCESSORIES THEREOF.	14,735,064	4.68
8	30	PHARMACEUTICAL PRODUCTS	14,458,086	4.59
9	10	CEREALS.	9,608,076	3.05
10	52	COTTON.	8,043,454	2.56
11	76	ALUMINIUM AND ARTICLES THEREOF.	7,916,882	2.52
12	39	PLASTIC AND ARTICLES THEREOF.	6,743,976	2.14
13	73	ARTICLES OF IRON OR STEEL	6,593,364	2.10
14	61	ARTICLES OF APPAREL AND CLOTHING ACCESSORIES, KNITTED OR CORCHETED.	6,096,593	1.94
15	62	ARTICLES OF APPAREL AND CLOTHING ACCESSORIES, NOT KNITTED OR CROCHETED.	5,855,165	1.86
16	38	MISCELLANEOUS CHEMICAL PRODUCTS.	5,241,570	1.67
17	3	FISH AND CRUSTACEANS, MOLLUSCS AND OTHER AQUATIC INVERTABRATES.	5,142,068	1.63
18	63	OTHER MADE UP TEXTILE ARTICLES; SETS; WORN CLOTHING AND WORN TEXTILE ARTICLES; RAGS	5,036,384	1.60
19	17	SUGARS AND SUGAR CONFECTIONERY.	3,797,357	1.21
20	40	RUBBER AND ARTICLES THEREOF.	3,455,999	1.10

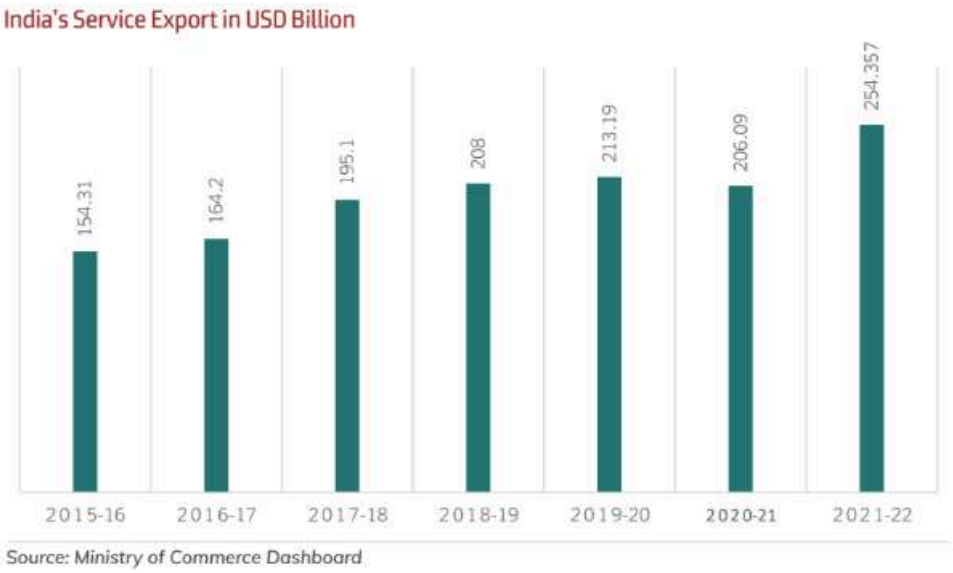
Source: Department of Commerce, Export Import Data Bank [29]

[29] https://tradestat.commerce.gov.in/eidb/ecom.asp

3.2.2 Services Exports

From 2011 to 2021, services contribution to exports increased from USD 138.07 bn to USD 309. 47bn.[30] India was eighth amongst the top ten exporters of service in the world. Information technology, in which the country is a global leader, accounted for $ 108 billion of services exports in the FY 2022-23, exporting primarily to the US, UK and the EU.[31]

Figure 3- India's Service Exports in USD billion



3.2.3 Export destinations by region

The table below indicates the destination of India's exports by region. The top four regions, together account for nearly 58 percent of the exports and the top 10 destinations account for about 90 percent of the total merchandise trade.

Table 6 - India's Merchandise Exports: HS-2 region-wise FY 2021-22

S.No.	Region	2021-2022 INR lakh	%Share
1	North America	62,901,331	20.0
2	EU Countries	48,473,959	15.4
3	NE Asia	36,727,821	11.7
4	West Asia- GCC	32,771,410	10.4
5	ASEAN	31,545,527	10.0
6	South Asia	25,535,535	8.1
7	Other European Countries	14,462,669	4.6
8	Latin America	11,131,843	3.5
9	West Africa	10,113,598	3.2
10	Other West Asia	8,064,895	2.6

Source: Department of Commerce, Export Import Data Bank[32]

3.3 India's Imports

Table 4 earlier showed that ten HS-2 product code categories accounted for 80.6 percent of India's imports in FY 2021-22. These fall into four main categories:

- essential items not sufficiently producible within India (e.g., petroleum products, aeroplanes, sophisticated defence equipment),
- goods imported for export processing (e.g., rough diamonds, gold for jewellery manufacturing), and
- Products imported due to lower cost compared to domestic production (e.g., machinery, electronics, furniture, plastics, consumer goods).
- India also imported a lot of defence equipment and arms. In FY 2019, this was about Rs 40,000 crore and since then Indian defence imports have grown. As per SIPRI, in 2023, India became the world's largest arms importer in the world.[33]

Table 7 below indicates the top 10 sources for India's exports. Again, we find that the top four destinations for exports are also the top four sources of imports and the top 10 regions are the same for imports and exports, with minor change in sequencing. This further reinforces our point that in the 21st century, we have to think of foreign trade as an integral whole and not just as exports that are desirable and imports that are undesirable.

Source: Image

[30] World Bank. (2024). World Bank open data. World Bank Open Data. https://data.worldbank.org/indicator/BX.GSR.NFSV.CD?end=2022&locations=IN&start=2011

[31] Government of India. (2022). Economic Survey 2021-22: Chapter 9 - Human Capital. Retrieved from https://www.indiabudget.gov.in/budget2022-23/economicsurvey/doc/eschapter/echap09.pdf

[32] https://tradestat.commerce.gov.in/eidb/ecom.asp

[33] SIPRI Report 2024 https://www.sipri.org/media/press-release/2024/

Table 7- India's Imports: HS-2 region-wise for FY 2021-22

S.No.	Region	2021-2022 INR lakh	%Share
1	North America	62,901,331	20.0
2	EU Countries	48,473,959	15.4
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5	ASEAN	31,545,527	10.0
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8	Latin America	11,131,843	3.5
9	West Africa	10,113,598	3.2
10	Other West Asia	8,064,895	2.6

Source: Department of Commerce, Export Import Data Bank[34]

Source: Image

[34] https://tradestat.commerce.gov.in/eidb/Icom.asp

4 Enhancing growth and employment through export promotion

Source: Image

4.1 Contribution of exports to GDP growth

To look at the contribution of exports to the GDP, rather than looking at the gross value of exports, it is more informative to look at the domestic value-added (DVA) in exports.

There is considerable variation in the foreign value-added (FVA) content across different sectors. Some, like petroleum products, have high foreign value-added shares, while others, like wood products and food, have lower import content in their exports.

Certain industries heavily rely on imported intermediate inputs, while others, like wood products, are less integrated into global value chains, possibly due to the dominance of small, unorganized units.[35]

Das and Kukreja (2020)[36] of ICRIER conducted a study of the DVA in various export sub-sectors, which is summarised in table 8 below:

[35] Chinoy, S. Z., & Jain, T. (2018, July). What Drives India's Exports and What Explains the Recent Slowdown? New Evidence and Policy Implications. NCAER https://www.ncaer.org/wp-content/uploads/2022/09/a4.pdf

[36] Das and Kukreja (2020) op. cit.

Table 8: Sector-wise Domestic Value Added (DVA) as a percentage of export value of that sector in 2013-14

Export Sub-sector	DVA as a percent of export value in 2013-14
Agricultural items	88-99%
Mining and Quarrying	66-93%
Manufacturing	54-95%
Services item	60-93%

Source: Das and Kukreja, 2020, pp-11-14

Another point to be noted is that the share of domestic value added in India's exports has steadily gone down from 84.13 percent in 2003-0478.55 percent in 2007-08 and further to 72.79 in 2013-14. The likelihood is that the DVA of India's exports now averages about 60 percent. This is not unexpected as India's exports moved from the primary to the secondary sectors and tend to have greater imported content. Services are an exception to this rule and continue to enjoy a high DVA content. This trend is shown below in Table-9.

Table 9 - Sectoral composition of DVA as share of India's total exports: 2003-04 to 2013-14

DVS (%)	2003-04	2007-08	2013-14
Agriculture and allied activities	5.06%	3.46%	7.23%
Mining and Quarrying	7.38%	6.85%	1.05%
Manufacturing	48.53%	36.00%	46.85%
Services	39.04%	53.69%	44.88%

Source: Das and Kukreja, 2020, pp-11-14

4.2 Contribution of exports to employment in various sectors

During the late 1990s and early 2000s, agriculture led in export-supported job creation, accounting for nearly half of such employment. However, its share gradually declined, reaching 40 percent by 2012-13. Despite this decline, agricultural exports consistently generated the highest number of export-supported jobs.

The services sector exports grew in the meantime and by 2012-13, accounted for 21.5 percent of the export supported employment. In the services sector, the information technology (IT) sector, comprising software as well IT enabled services, financial and legal services and transport services emerged as significant employers of individuals with technical and professional education.

Manufacturing exports, on the other hand, witnessed a notable increase in its share of export-supported jobs, rising from 26.2 percent in 1999-2000 to 38.5 percent in 2012-13. However this declined to 21.2 percent in 2018-19 and further to only 11.6 percent of export supported jobs in 2021-22.[37]

Until FY2004, labour-intensive commodities (leather and leather manufactures, textiles and readymade garments) constituted nearly 40 percent of the total manufactured exports. But their share has fallen consistently, and they accounted for roughly 20 percent of the manufactured exports over the past two decades.

Source: Image

Traditional labour-intensive manufacturing sectors have experienced a decline in export share. This decline is particularly troubling considering the crucial role these sectors play in job creation in the Indian economy. India was lagging behind countries like Bangladesh and Vietnam, particularly in knitted and woven garments.

The Economic Survey of 2021 pointed out that India exhibits a competitive advantage in labour-intensive low-skill sectors like apparel, textile articles, footwear, etc. However, its exports patterns in the past decade show that it has exported more capital-intensive products.

A majority of the workers in India, about 86 percent, have "level 1 and level 2" skills which are apt for agriculture and low-skill manufacturing. Chatterjee and Subramanian (2020) found that India is losing out US$140 billion annually due to missing low-scale manufacturing activity given its labour endowment.[38]

In contrast, the share of capital-intensive commodities (electronic goods, engineering goods and chemical and related products) went up from around 31 percent to 52 percent during the same period. This reflects that India's exports have become improved in technological content, quality, sophistication, and complexity.[39]

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[37] The Wire (Mar 2023) Share of agriculture in employment rose, manufacturing declined in 2021-22: https://thewire.in/economy/share-of-agriculture-in-employment-rose-manufacturing-declined-in-2021-22-plfs

[38] Exploring India's manufacturing exports dynamics. (July 22, 2022). orfonline.org. https://www.orfonline.org/expert-speak/exploring-indias-manufacturing-exports-dynamics

[39] Arora, M. (2023, May 30). India's export diversification saga post economic reforms. https://ies.gov.in/pdfs/final-analysis-on-Indias-export-diversification-megha-arora.pdf

4.3 Criterion for selection of sub-sectors for export led growth and employment

4.3.1 Exports with a Revealed Comparative Advantage (RCA) about to cross a threshold

How does one identify which sub-sectors to focus on to promote exports from a nation? To answer this question, we use the concept of Revealed Comparative Advantage (RCA), which was first introduced by Bela Balassa (1965).[40] The RCA Index indicates whether a country has export competitiveness in a particular product that it has to offer to the world market. The index is calculated as follows: RCA Index = (Xij / Xwj) / (Xit/ Xwt), where Xij and Xwj are the values of country i's exports of product j and world exports of product j and where Xit and Xwt refer to the country's total exports and world total exports.

A detailed analysis of the Revealed Comparative Advantage (RCA) of India was done by Ismail and Ahmed (2022),[41] at the level of Harmonised System (HS) 2 digit level (HS-2), at the standard product group level, the HS-2 digit level the HS-4 digit level and HS-6 level.

At the standard product group level they showed that in 7 out 16 groups, India's RVA had increased between 2000 and 2018, an in the remaining 9, it had reduced but was still above 1, thereby showing India still had a comparative advantage but was losing market share to other exporters. The product groups are shown in table 10 below.

It can be clearly seen that India has been making steady progress in exports of secondary products (except food products), while maintaining its comparative advantage, though on a reduced basis, in primary product groups. The two decade increase in RCA in fuels –coal, petroleum and products, chemicals both inorganic and organic, plastics and rubber products, wood products, metals and metal products, machinery, electrical equipment and transport equipment is worth pursuing.

Source: Image

[40] Balassa, Bela. 1965. "Trade Liberalisation and 'Revealed' Comparative Advantage." *The Manchester School* **33**: 99–123.

[41] Ismail, Saba, and Shahid Ahmed. 2022. "Static and dynamic RCA analysis of India and China in world economy." International Studies of Economics 17, 228–260. https://doi.org/10.1002/ise3.18

Table 10 – Change in India' RCA between 2000 and 2018 for HS Standard Product Groups

Sr No	HS Standard Product Groups	RCA 2000	RCA 2010	RCA 2018	Change 2000 to 2018
1	1–5_Animal products	2.15	1.07	1.71	Reduced
2	6–15_Vegetables, fruits, tea, coffee	3.10	1.51	1.78	Reduced
3	16–24_Food Products	0.87	0.83	0.65	Reduced
4	25–26_Minerals	3.23	2.47	0.93	Reduced
5	27–27_Fuels - coal, oil, products	0.36	1.14	1.30	Increased
6	28–38_Chemicals	1.26	1.14	1.50	Increased
7	39–40_Plastics and Rubber	0.55	0.56	0.77	Increased
8	41–43_Hides, Skin, Leather	4.02	1.70	1.67	Reduced
9	44–49_Wood and its products	0.17	0.22	0.36	Increased
10	50–63_Textiles and Clothing	4.62	2.90	2.79	Reduced
11	64–67_Footwear	1.85	1.15	1.10	Reduced
12	68–71_Stone and Glass	6.52	4.12	3.09	Reduced
13	72–83_Metals and products	1.10	1.38	1.20	Increased
14	84–85_Machinery and Electricals	0.18	0.31	0.38	Increased
15	86–89_Transport equipment	0.20	0.72	0.70	Increased
16	90–99_Miscellaneous	0.36	0.35	0.22	Reduced

Source: Authors' analysis based on data from Ismail an Ahmed (2022), Table A1

Ismail and Ahmed (2022) further showed that out of 97 product code categories at the HS-2 level, India maintained an RCA greater than 1 in 41 categories between 2000 and 2018.

However, we found that in 11 of the 41 categories, the RCA increased significantly, and in 9 out of 11 cases it went from below 1 to above 1, showing that India's comparative advantage in that category had improved beyond a critical threshold. These product code categories are listed below:

Table 11 - Product code categories for which RCA improved between 2000 and 2018

Product description	Product code	RCA 2000	RCA 2010	RCA 2018
Meat and meat products	2	1.02	1.25	1.71
Sugar and confectionary	17	0.83	1.64	1.70
Mineral fuels, oils, products	27	0.36	1.14	1.30
Inorganic Chemicals	28	0.83	1.54	1.01
Organic Chemicals	29	1.58	1.65	2.38
Explosives, crackers, matches	36	0.98	1.43	1.55
Ceramic products	69	0.37	0.53	1.53
Aluminum and articles thereof	76	0.68	0.64	1.58
Lead and articles thereof	78	0.07	1.30	3.03
Zinc and articles thereof	79	0.14	3.40	2.19
Ships, boats, floating structures	89	0.17	1.69	1.64

Source: Authors' analysis based on data from Ismail an Ahmed (2022), Table A2

Shahzeb et al (2021)[42] conducted an analysis at the HS-4 digit level and found that 375 products out 558 that India exported in 2018 had an RCA>1, meaning that India has already become a dominant exporter of that product.

At the product level, it is worthwhile to provide policy support and incentives to products where the RCA is between 0.5 and 1.0 as India could export more of these products if these are produced more cost-efficiently.

4.3.2 Exports which create employment for educated youth

Another criterion can be to select exports sub-sectors which create much needed employment for educated youth.

The table 12 below indicates the number of jobs created per million dollar of exports by different sectors.

Agriculture created the largest number of jobs per million dollars of exports, followed by mining, manufacturing and services. However, in terms of educated workers, the proportion of jobs was in the reverse order, with services at the top.

[42] Shahzeb, Syed Mohd , Himanshu Khushwaha and Tariq Masood (20121) India's Export Potential and Competitiveness with UAE: An Exploratory Study, Saudi Journal of Economics and Finance, DOI: 10.36348/sjef.2021.v05i01.002

Table 12 - Jobs created per million dollar of exports (2003-04 to 2013-14) by sector

Sectors	2003-04	2007-08	2013-14	Growth Rate (2003-04 to 2007-08) (%)	Growth Rate (2007-08 to 2013-14) (%)	Growth Rate (2003-04 to 2013-14) (%)
Agriculture	1734	1267	668	-7.54	-10.11	-9.09
Mining and Quarrying	713	190	94	-28.19	-11.10	-18.38
Manufacturing	404	144	200	-22.71	5.60	-6.79
Services	308	161	89	-15.01	-9.33	-11.65

Source: Das and Kukreja (2020), Table 6, p. 15

As can be seen from the table 13 below, by 2013-14 exports supported over 78 million jobs. Although no authoritative numbers are available, it is quite likely that number is close to 100 million by 2024, despite the lowering of number of jobs created per million dollar of exports, as shown in Table 14 below. Thus export sub-sectors which create large number of jobs (agriculture) and others which create a large proportion of educated jobs, should be promoted.

Table 13- Education category-wise number of jobs in millions supported by India's exports (2003-04 to 2013-14)

Education Level	2003-04	2007-08	2013-14	Growth Rate (2003-04 to 2013-14) (%)
No Formal Schooling	14.49	13.54	20.98	3.77
Below Secondary Education	16.89	18.88	32.64	6.81
Secondary and Higher Secondary Education	5.76	7.48	15.60	10.47
Diploma and Above	3.06	4.78	9.00	11.41
Total	40.21	44.68	78.23	6.88

Source: Das and Kukreja (2020), Table 5(a) p. 14

Table 14 - Education category-wise number of jobs per USD 1 million of India's exports (2003-04 to 2013-14)

Education Level	2003-04	2007-08	2013-14	Growth Rate (2003-04 to 2013-14) (%)
No Formal Schooling	162	57	49	-11.27
Below Secondary Education	189	79	77	-8.63
Secondary and Higher Secondary Education	64	31	37	-5.50
Diploma and Above	34	20	21	-4.70
Total	450	188	183	-8.57

Source: Das and Kukreja (2020), Table 5(b), p. 14

4.4 Criteria for selection and sub-sectors selected for export promotion

Based on the discussion so far and literature review, we suggest the following criteria for selection of sub-sectors for export led growth and employment:

a.) Salience – the sub-sector should account for at least 0.5 percent of the total exports from India in the previous year

b.) Competitive advantage in terms of cost-efficiency relative to the least cost producer in the world. Here one can look for products whose RCA has increased steadily over the last two decades, as shown in the table 7 above.

c.) High domestic value added (DVA) percentage in the export value of that sub-sector

d.) High employment coefficient (workers per USD million of exports) of that sub-sector

e.) Within employment, higher proportion of more educated workers

Using these five criteria, we have identified the following sub-sectors for export promotion:

Agricultural commodities – This included rice, wheat, cotton, sugar, spices, tea and coffee. All of these are traditionally exported but we recommend cutting down on exports of rice and sugarcane on grounds of their water-use intensity. Instead, we should add pulses and oilseeds, vegetables and fruits, particularly with organic certification; flowers, medicinal and aromatic plants. These meet the criteria of salience, high DVA and high employment. The non-traditional items also add higher proportion of skilled workers.

Processed foods – includes fish and marine products, meat, dairy products, processed vegetable and fruits, jams, preserves, pickles, ready-to-eat savouries, and so on. These meet the criteria of salience, high DVA and high employment including a reasonable share of skilled workers.

Gems and Jewellery – This is a traditional Indian export which India needs to maintain its lead in. The key here is to move to value added products such as branded jewellery so that more domestic value added and skilled employment would be generated in India

Textiles and Clothing – India used to be a leader in this sub-sector but has steadily fallen behind countries like Bangladesh, Thailand and Vietnam. Given that it is a major employer of semi-skilled workers, particularly women, this sub-sector needs to be given strategic attention to bring up India's position in the global league.

Metals and Metal Products – includes iron and steel, aluminium and their products. The key is to move to value added products such as structural steel, stainless steel, castings and foils, so that more domestic value added and employment for educated workers would be generated in India

Chemicals and Pharmaceuticals – including organic chemicals, basic chemicals, speciality chemicals, medicinal drugs and vaccines. These meet the criteria of salience, high DVA and high employment. The non-traditional items also add higher proportion of educated workers.

Automobiles and auto components – where India has made great strides in the last four decades. Domestic production, which was notoriously limited to 30,000 cars for decades, took off with the advent of Maruti Automobiles, a public sector enterprise set up in collaboration with Suzuki of Japan in 1981.

India now produces over three million automobiles, and has a vibrant auto components industry. Automobile and component exports meet the criteria of salience, high DVA and high employment. The exports will also lead to a higher proportion of educated workers.

Electronics products and components – Like automobiles, this sector has seen a turnaround from limited domestic production and highly restricted imports, to opening up of import floodgates after India became a member of the WTO, to the next stage where India assembled electronics products based on imported components, to the current stage where component manufacture, even semiconductors and ICs are made in India.

The next stage is to make India a major electronics exporter. Electronics products and components exports meet the criteria of salience and high DVA. These exports will also lead to a higher proportion of educated workers.

Services sectors – IT based services continue to lead, although India has to be cautious about the possible impact of artificial intelligence taking over many of the lower end coding jobs.

Electronics systems design, integrated circuit chip design and applied research and development, and health care and tourism are promising sub-sectors for India. Services already employ a high proportion of educated workers and as India moves to higher value added services, the demand for workers with advanced degrees will increase.

Source: Image

5 Recommendations for enhancing exports

In this section we look at what can be one to enhance India's exports, thereby reaping benefits in terms of GDP growth and employment. First we look at some issues which cut across all sub-sectors in terms of withholding exports. Then we suggest ameliorative measures. In the following chapter we will look at sub-sector specific measures for export promotion. Here we look at some generic issues for exports which cut across sectors.

Source: Image

5.1 Resolving issues vis-a-vis the WTO

India has been a member of the General Agreement on Tariffs and Trade (GATT) since 1948 and a member of the World Trade Organisation (WTO) since its inception on 1 January 1995. India had seen a steep cut in import tariffs in the years just before joining the WTO and since the weighted average tariffs have come down from about 25 percent in 2000 to between 5-10 percent in the past decade.[43] There has been a manifold rise in India's trade since 1999, from USD 86.5 bn to USD 1437 bn in 2022. India's share of world trade has also gone up from 0.6 percent in 1995 to 2.6 percent in 2022.[44]

In terms of the composition of India's exports, it has moved from the primary sector (agricultural produce and mineral ores) as the highest share to manufactured goods and services now accounting for a predominant share.

Imports of goods and services are also much more liberalised that it used to be before 1995. Though this has been a boon for consumers, it has resulted in a decline in domestic production and employment in micro and small enterprises.

Moreover, India's trade deficit has burgeoned, to over USD 150 billion by 2022. The only reason India has been able to manage despite the large trade deficit is inward remittances by overseas Indian and increased foreign direct investment (FDI). There were USD 111 billion of inward remittances and FDI of USD 71 billion respectively in 2022.

[43] https://www.macrotrends.net/global-metrics/countries/IND/India/tariff-rates

[44] https://www.ceicdata.com/en/india/trade-statistics-share-in-world-trade-and-performance-indicators-forecast-non-oecd-member-annual/in-share-in-world-exports-value-exports-good-and-services-expressed-in-usd

Thus one can surmise that joining the WTO several beneficial effects for India's economy but also created many difficulties. The persistent issues with the WTO regime are:

a.) Lowering of tariffs on many daily use products have led to a flood of imports, particularly from China and this has led to shutting down of many small and medium enterprises, For example the hand tools sector, the sports goods sector and wooden furniture sector all suffered a decline.

b.) Due to the Trade Related Intellectual Property (TRIPS) component of the WTO agreements, India has had to open its borders to international service providers with protections for copyrights, trademarks, geographical indications including appellations of origin; industrial designs; patents including the protection of new varieties of plants; the layout-designs of integrated circuits; and undisclosed information including trade secrets and test data.[45]

c.) India constantly faced opposition from other countries on certain domestic polices, such as offering minimum support prices on agricultural produce, such as wheat, rice, sugarcane and cotton, or offering subsidies for exports of certain products, such as sugar; or offering tariff protection to certain products where India wishes to build domestic production, such as mobile phones. These get escalated to the WTO Disputes Settlement Board (DSB), and some examples are described below.

Source: Image

The WTO DSB archives[46] list over 50 disputes involving India since 2016. Some disputes proceedings were initiated by India and some initiated by other countries against India.

For example in May 2018, India had filed a complaint against the US for imposing additional import duties of 25 percent ad valorem and 10% ad valorem, respectively, on certain steel and aluminium products from India, in addition to imposing quotas (quantitative limits) on imports of these items.[47] This was finally resolved through a "mutually agreed solution" in Jun 2023, nearly after five years.

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[45] https://www.wto.org/english/tratop_e/trips_e/intel2_e.htm

[46] https://www.wto.org/english/news_e/archive_e/country_subj_arc_e.htm?country1=IND&subject1=DISP

[47] https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/DS/547R.pdf&Open=True

On the other hand, India had levied 10 percent customs duty on mobile phones and some other ICT products for the first time in July 2017 and subsequently increased it to 15 percent and eventually 20 percent. The EU had initiated dispute proceedings in April 2019 relating to India's imposition of tariffs.[48] This was finally resolved with a ruling against India in Apr 23.

Another example is sugar where India's domestic price support schemes for sugar cane farmers and alleged export subsidies for sugar have led countries like Guatemala, Brazil and Australia to request WTO dispute consultations with India.[49]

In 2019, Brazil, Australia and Guatemala dragged India into the WTO's dispute settlement mechanism alleging that New Delhi's sugar subsidies to farmers are inconsistent with global trade rules. A WTO dispute settlement panel on December 14, 2021, ruled that India's support measures for the sugar sector are inconsistent with the global trade norms.

5.2 Non-Tariff Barriers

India is facing challenges in selling its products abroad because of things like strict regulations and quality standards in other countries, which are not related to tariffs. The main types of NTBs are:

- **Foreign exchange rates:** Exchange rate policies have an important effect on foreign trade. The exchange rate and the resulting foreign income are significant in determining foreign trade. Fixing the exchange rate to undervalue the domestic currency significantly reduces imports, since more Rupees would have to be paid for the same dollar priced item. On the other hand, it boosts exports since the importer pays less dollars for the same Rupee priced item. But foreign exchange cannot be changed independently of the domestic monetary policy as the real exchange rate reflects the difference in inflation rates in the two countries. In practice, other factors such as remittances by migrant workers abroad and foreign direct investments and foreign portfolio investments can offset the trade deficit.

Source: Image

[48] https://www.wto.org/english/tratop_e/dispu_e/582r_e.pdf

[49] https://www.tpci.in/research_report/major-disputes-involving-india-at-the-wto/

- **Quantitative Restrictions or quotas**: These are government-imposed trade restrictions that limit the number or monetary value of goods that a country can import or export during a particular period. Countries use quotas in international trade to help regulate the volume of trade between them and other countries.

- **Technical Barriers to Trade (TBT):** These include technical regulations, standards, and conformity assessment procedures that can make it difficult for foreign products to comply with domestic regulations. TBTs can be legitimate measures to protect health, safety, or the environment, but they can also be used as trade barriers. For example, refrigerators need to carry a label indicating their size, weight, and electricity consumption level, so that they can conform to standards related to chlorofluorocarbons (CFCs), energy consumption, etc.

- **Sanitary and Phytosanitary Measures (SPS):** These are measures related to food safety and animal and plant health. SPS measures are meant to protect human, animal, and plant life, but they can be used as barriers to trade if applied arbitrarily. For example, fruits exported from India are tested to check for the residue level of pesticides and if they exceed the permissible levels, the fruits are banned from imports.

- **Rules of Origin**: These determine the nationality of a product and are used to ensure that products benefitting from preferential trade agreements (PTA) originate from the eligible countries and not from other countries which are not part of the PTA. For example India has and PTA with ASEAN and if China (not covered by the PTA) sends goods to Indonesia (covered by ASEAN PTA) and those are merely re-exported, then China gets the benefit of lower Indian tariffs.

- **Local Content Requirements**: Mandating that a certain percentage of a product must be produced domestically or that a specific number of components must be sourced locally. This is similar to the rules of origin and typically it is required that at least 35 percent of the value added should be from the country which is exporting.

- **Intellectual Property Protection**: Inadequate or inconsistent protection of intellectual property rights (patents, copyrights, trademarks) can create trade barriers, especially in knowledge-intensive industries. This has been a big issue in the negotiations of the FTA with the UK, which is one of the largest importers of Indian professional services.

- **Carbon Border Adjustment Mechanism (CBAM),** which started in October 2023 imposes a carbon tax on imports of goods into the EU if these are produced using non-green or environmentally unsustainable technologies. It's a way to offset the lower costs of production in developing countries as they ignore the cost of environmental damage.

5.3 Increasing protection against unfair trade practices

Source: Image

WTO permits temporary protection of domestic industry through two main measures: antidumping and safeguard duties. In WTO terminology, dumping is said to occur when one or more foreign firms sell a product for less than fair value.

To counter cases of dumping, particularly by China, India established the Directorate General of Anti-dumping and Allied Duties in 2009 and it was renamed as the Directorate General of Trade Remedies (DGTR) in May 2018. It serves as an integrated single window agency for providing comprehensive and swift trade defence mechanism in India.

The DGTR handles between 30 to 50 complaints from Indian industry in a year and tries to determine whether indeed there is a case of unfair pricing by the exporting country and in that case it recommends imposition of countervailing duties (CVD). A typical example was dispute on flat rolled products of steel, plated or coated with alloy of Aluminum and Zinc, imported from China, Vietnam and S. Korea. An anti-dumping duty to the extent of 13.07 USD/ MT to 173.10 USD/MT was imposed for five years wef 15th Oct 2019.[50]

5.4 Signing more Free/Regional Trade Agreements (FTAs/RTAs)

India has signed thirteen FTAs / RTAs with various countries such as Mauritius, Argentina, Colombia, ASEAN countries, Japan and the UAE. The most recent FTA signed was with the European Free Trade Association (EFTA), comprising Switzerland, Liechtenstein, Iceland and Norway. An FTA with the UK is in advanced stages of negotiations and is likely to be signed in the second half of 2024.

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[50] https://www.wto.org/english/tratop_e/dispu_e/582r_e.pdf

India's revised Free Trade Agreement (FTA) strategy emphasizes export promotion with complementary economies, especially in the services sector like transportation and legal services. Including digital trade in FTAs further facilitates export promotion by enhancing market access and technology transfer.[51] The FTA with Australia (as of 2017-18) eliminating import duties on Indian products, forecasted bilateral trade doubling to $50 billion.

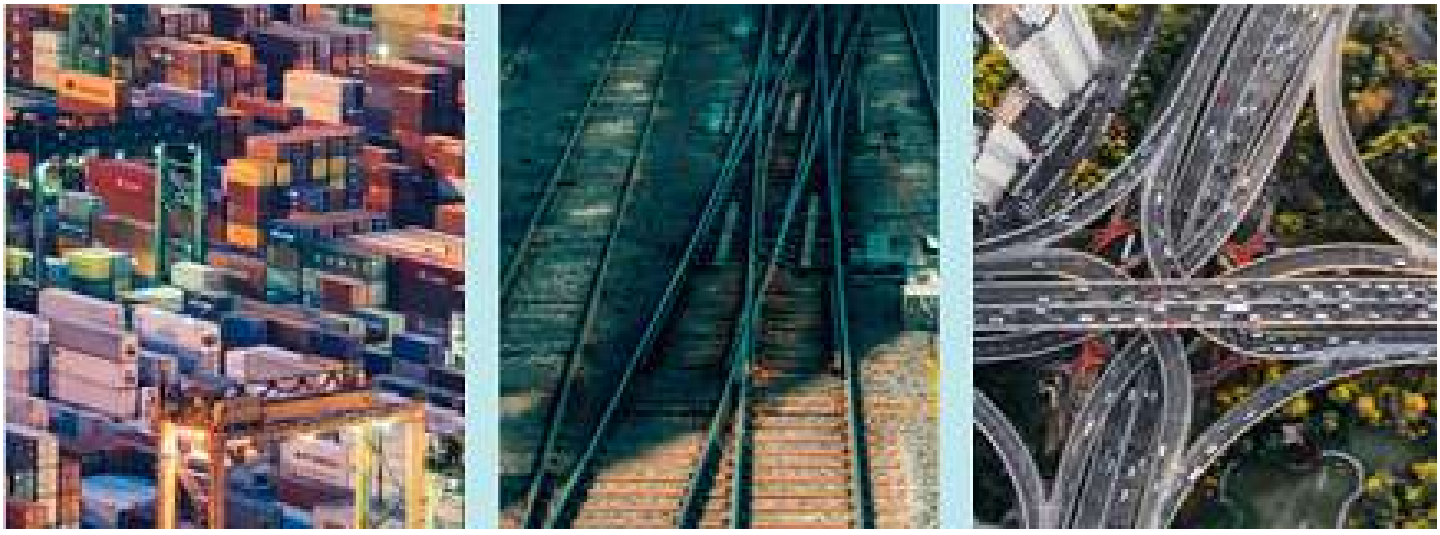
Gulf nations play a crucial role for India due to energy, trade, and remittances, offering opportunities for increased investments. The recent FTA with the European FTA had a component of an obligation of USD 100 billion worth of investment in India over 15 years by the EFTA countries, excluding their sovereign funds.[52]

5.5 Streamlining regulations and procedures

Streamlining regulations and permissions at various government levels, such as implementing a single window clearance for right of way proposals and minimizing charges, is essential for export promotion. Tax-related issues, like GST exemption or lower rates for infrastructure services, should also be addressed to make exports more competitive.

Additionally, simplifying export procedures and documentation to reduce delays and costs, as well as improving trade facilitation measures, are vital. India should learn from China's success in attracting foreign investment and focus on leveraging inbound FDI for export enhancement. Promoting value-added exports is crucial for India's export growth and economic development.[53]

5.6 Strengthening infrastructure for export promotion



Source: Image

[51] Export Promotion Measures In India, https://egyankosh.ac.in/bitstream/123456789/94472/1/Unit-6.pdf

[52] India-EFTA Trade and Economic Partnership Agreement https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2013169

[53] Kumar, S. (2017, January). Reviving And Accelerating India's Exports: Policy Issues and Suggestions. https://dea.gov.in/sites/default/files/RevivingAcceleratingIndiaExports_Issues_Suggestions230317.pdf

Export requires continuous progress in logistics infrastructure and efficiency in logistics cost. As per a recent study by the National Council of Applied Economic Research (NCAER, 2023) for the Government of India, "The five most common logistic cost components are transportation, warehousing, postal services, insurance, and administration. The aggregated logistics costs for India fall in the range of 7.8 to 8.9 percent of GDP for 2021-22."

This is for the economy as a whole not just for exports, where the costs are likely to be higher due to multi-modal transportation and several stages of loading and unloading. To boost export promotion, India must prioritize improving its logistics infrastructure.

The GatiShakti National Master Plan was launched in Sep 2022 to addresses integrated development of fixed infrastructure and network planning. Among other things, it is working to strengthen the rail and highway network and ports.

A total of 35 multi-modal logistics parks are to be set up all round the country. The National Logistics Plan (NLP) launched in Sep 2023 addressed the soft infrastructure and logistics sector development, including process reforms, improvement in logistics services, digitization, human resource development and skilling.[54]

As a large proportion of merchandise exports are shipped, port infrastructure is an important factor in exports. Port infrastructure limitations lead to reliance on trans-shipment, increasing costs and delays.

Ranked 44th in the World Logistics Performance Index, India's logistic costs are significantly higher compared to Bangladesh and Sri Lanka, mainly due to their access to deep water ports. India has established the Sagarmala scheme to increase its ports capacity and efficiency.

A National Technology Centre for Ports, Waterways and Coasts (NTCWPC) has been established in IIT Chennai at a cost of Rs. 77 Crore by the Ministry of Ports, Shipping and Waterways.

Source: Image

[54] GoI Ministry of Commerce & Industry (Sep 2023) Launch of National Logistics Plan https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1957407

6 Suggestions for enhancing exports of selected sub-sectors

6.1 Agricultural commodities and processed foods

Source: Image

As a source of livelihood, agriculture remains the largest sector of the Indian economy; contributing 13 percent of the GDP and employing nearly 45 percent of the workforce in 2021-22. We also saw that agriculture generates the largest number of jobs per million dollar of exports compared to the other sub-sectors. Thus increasing exports from the agricultural sector will generate greater number of jobs and also enhance the demand for skilled workers in agriculture, thereby increasing the average wage rate.

The country's agricultural exports scaled a peak of US$ 50 billion in 2021–22. The major commodity groups in terms of agricultural exports in 2021–22 were cereals (22.7 percent), cotton (18.4 percent), fish and crustaceans (12.4 percent), sugar and sugar confectionery (7.9 percent), coffee, tea and spices (7.5 percent), and edible meat (6.2 percent).

The share of agricultural exports GVA to total exports GVA increased from 7.12 percent in 2002–03 and reached a peak of about 14 percent in 2013–14; then it come down to 9.5 percent in 2021–22.[55] As DVA in agricultural exports is usually high – often as high as 90 percent, and it employs a lot of unskilled rural workers, enhancing agricultural exports is a desirable goal.

[56] Saxena, Raka; Devesh Kumar Pant , Purushottam Sharma , Ranjit Kumar Paul and Rohit Kumar (2023) Sustaining long-term agricultural exports from India . Current Science, Vol. 125, No. 10, 25 November 2023

Table 15: Top 10 agricultural exports (2021-22), Source: APEDA

Product	Quantity (in mn tonnes)	Value (US$ Million)
Non Basmati rice	13.09	4799.9
Basmati rice	46.3	4018.7
Buffalo meat	10.8	3171.2
Sugar and confectionary*	11.2	4603
Misc. preparations	0.62	793.08
Groundnuts	0.63	727.4
Cereal Preparations	0.4	635.75
Maize	0.28	634.85
Wheat	0.2	549.7
Processed Vegetables	0.4	501.61
Processed Fruits, Juices and Nuts	0.03	428.39
Cashew Kernels	0.007	420.43

*Note: Sugar is not handled by APEDA but included as the 11th item due to its importance

India's agricultural export basket includes various commodities, with rice leading the pack, followed by marine products, spices, bovine meat, sugar, and others. However, rice and sugar alone contribute significantly to India's total agricultural exports, covering roughly 26 percent of the total value. The heavy subsidies on rice and sugar exports have drawn criticism, with other sugar-exporting countries lodging complaints at the WTO.

6.1.1 Environmental sustainability issues in agricultural exports

On the other hand, Gulati and Juneja (2021)[56] advocate a re-examination of India's agricultural export strategy on the grounds of environmental sustainability.

India is a water-stressed country with per capita water availability of 1,544 cubic metres in 2011, down from 5,178 cubic metres in 1951...One kg of sugar has a virtual water intake of about 2,000 litres. In 2020-21, India exported 7.5 million tonnes of sugar, implying that at least 15 billion cubic metres of water was exported through sugar alone.

Another water guzzler is rice... [Likewise] exporting 17.7 million tonnes of rice means export of 35.4 billion cubic metres of water... Also, rice cultivation contributes to more than 18 per cent of the GHG emission generated from agriculture.

[56] How green are India's agri-exports? (2021, June 21). The Indian Express. https://indianexpress.com/article/opinion/columns/how-green-are-indias-agri-exports-7368002/

To counter the environmental harm of rice exports they emphasize the need to incentivize farmers to adopt water-efficient and a lower methane footprint farming practices such as alternate wetting drying (AWD), direct-seeded rice (DSR) and micro-irrigation. Other measures can also be tried such as incentivising farmers through MSP etc. to grow less water intensive crops such as pulses and oilseeds, which are significantly imported by India.

Thus, instead of rice and sugar, India can focus on export promotion and competitive advantage is by focusing on pulses and oilseeds; vegetables and fruits, particularly with organic certification; flowers, medicinal and aromatic plants. Farmers can benefit from higher profit margins due to the stability and demand of the vegetable market. Additionally, the shorter growth cycle of many of these crops allows for multiple harvests annually, leading to frequent revenue streams.

In a study, Saxena et al (2023)[57] examined the trend, composition and dynamics of India's comparative advantage in rice, crustaceans, bovine meat, cotton, pepper, cane sugar and tea. They stated that

> "India must diversify its agricultural exports beyond traditional products such as rice, tea and spices. There is a huge potential for the export of fruits, vegetables, dairy and meat products."

Source: Image

[57] Saxena, et al, (2023) op.cit.

The main recommendations for promoting agricultural exports are

- Instead of rice and sugar, India can focus on export promotion and competitive advantage is by focusing on pulses and oilseeds; vegetables and fruits, particularly with organic certification; flowers, medicinal and aromatic plants.
- Export incentives and effective export facilitation, streamlining export procedures
- Improved logistic support and infrastructure to facilitate the export of perishable agricultural commodities
- Investing in 'branding and marketing' to make the exports more attractive to international buyers.
- Capacity building of farmers, exporters and other stakeholders in quality management, packaging
- Institutional support for: market intelligence, technical assistance, infrastructure finance, Sanitary and Phytosanitary Standards (SPS) compliances.
- Digitalization can help build effective traceability systems, generating real-time information and making value chains more efficient.

A farmer activist, Kavita Kuruganti (2021)[58] identified five reforms that farmers need

- Expand the mandis (regulated marketyards) and make them farmer friendly by removing multiple forms of taxes and levies
- Support direct marketing between farmers and end-consumers, as happens in 'Rythu Bazaars'
- The warehouse receipt scheme needs to be redesigned in a manner that farmers have a right of forfeiture of their stored produce when prices do not improve
- Procurement regimes should be changed to include a diversified food basket and also lead to decentralised and further localised procurement.
- The government must invest in FPOs, not to make them into aggregators for big companies, but to make them empowered players in the market.

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[58] Kuruganti, K, (2021) Here are the reforms India's farmers really need, The Wire, https://thewire.in/agriculture/here-are-the-reforms-indias-farmers-really-need

[59] *World Bank open data*. (2024). World Bank Open Data. https://data.worldbank.org/indicator/TX.VAL.MANF.ZS.UN?end=2022&locations=AS-IN&start=2011

6.2 Manufacturing sub-sector exports

India's manufacturing exports share in its total merchandise exports decreased steadily from 76 percent in early 2000s to a level of 62 percent as of the fiscal year 2021-22.[59] In contrast, China had a 93 percent share of manufacturing in its total merchandise exports.

As of 2019-2020, the top manufacturing products by value of production in descending order were Chemicals And Chemical Products, Basic Metals, Pharmaceuticals, Medicinal, Chemical and Botanicals, Food Products, Motor Vehicles and components, Textiles, Non-Metallic Mineral Products and Rubber and Plastics.

Certain sectors, such as chemicals and chemical products, pharmaceuticals, which ranked high in terms of production, did not necessarily dominate its export portfolio. Conversely, products like petroleum products, gems and jewellery, and textiles, which are not prominent in India's industrial production, emerge as top exports.

Source: Image

There is a significant surge in global demand for medium technology items including chemicals and pharmaceuticals, machinery, auto components, electrical, and electronics goods. Despite the substantial global trade amounting to over USD 7 trillion in these sectors, India's current market share remains at a mere 1 percent. This discrepancy is particularly noteworthy given India's substantial imports of these goods, which range around USD 100-120 billion.

The Federation of Indian Exporting Organisations (FIEO) has been urging for a comprehensive analysis of the underlying factors contributing to the loss of market share. This analysis should encompass various dynamics such as reducing production costs, enhancing efficiency, ensuring quality, and fostering innovation within these sectors.

We give below some suggestions for enhancing exports in selected sub-sectors, based on various industry reports:

6.2.1 Textiles and Clothing (T&C)

India held the second-largest position in the global textile market, trailing only China. India exported $44.4 billion worth of textiles and apparel (including handicrafts) in FY22, a 41% increase as per India's textile exports data.

This sector contributed approximately 14 percent to the industrial output and 17 percent to total export earnings of India in 2020-21. The textile industry employs the largest number of workers after agriculture

India is the second-largest producer of silk, and third-largest producer of cotton worldwide, The industry encompasses various sectors including decentralized power looms, hosiery, knitting, handicrafts, and a wide range of fibres such as cotton, silk, man-made fibre, and wool.

Cotton textiles and cotton-based clothing drives a significant portion of India's textile exports. India's export price of cotton textile has been lower than that of China and Vietnam for a large part of the 2001-2009 period as can be seen from Figure 4 below:

Figure 4 – Export price comparisons – India vs China and Vietnam 2001-2009

Source: https://www.dsir.gov.in/sites/default/files/2019-11/2_8.pdf

The table below shows the comparative costs of various textile items from India and four other countries. In 2014, India was the second most cost-efficient, with Indonesia being the most efficient, as its labour costs were even lower. Since then a significant part of the T&C export industry has moved from India to countries like China, Bangladesh and Vietnam.

Table 16 – International Production Cost Comparison for Textiles, 2014

Country	Spun Yarn (US$/kg)	Woven Fabric (US$/m)	Knitted Fabric (US$/m)
China	4.51	1.13	1.07
India	3.52	0.9	0.83
Indonesia	3.33	0.82	0.79
Korea	3.71	1.03	0.9
U.S.	3.51	1.01	0.86

Source: International Textile Manufacturing Federation [60]

To counter this, several initiatives were launched to make India's textile industry globally competitive. The Amended Technology Upgradation Fund Scheme (ATUFS), launched in January 2016 with an outlay of INR 17,822 Crores, focused on upgrading technology in the textiles industry. It offered one-time capital subsidy for eligible machinery, aiming to attract new investments of about INR 95,000 crore and generate employment for 35 lakh persons by 2022.[61]

The Government of India approved seven Mega Integrated Textile Regions and Apparel (MITRA) Parks for the textile industry. Each park is expected to lead to creation of 1,00,000 jobs directly and 2,00,000 jobs indirectly. It is also estimated to attract an investment of Rs 10,000 Cr.[62]

Despite this, India's share in the global market has not increased compared to China, Bangladesh and Vietnam in the T&C sector. China is the global leader with its export share having risen to 31.3 percent as against India's export share of 3.3 percent in 2018.[63]

Vietnam has registered an annual growth of 13 percent in the clothing sector with a share of 6.2 percent of world trade. India improved its share from 3.0 percent in 2000 to only 3.3 percent in 2018.

To improve, experts suggest greater investments in research and development, promoting Indian textiles in the global market by organizing trade shows and exhibitions, buyer-seller meetings, and marketing campaigns; and find new markets.

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[60] Kim, M. (2019) Export Competitiveness of India's Textiles and Clothing Sector in the United States, *Economies* **2019**, *7*, 47. https://doi.org/10.3390/economies7020047

[61] Ahuja, Aakriti, Indian Exports in Textile and Apparel: An Analysis for the Period 2005-2020 (December 21, 2021). http://dx.doi.org/10.2139/ssrn.3990621

[62] https://www.texmin.nic.in/sites/default/files/mitra_0.pdf

[61] Analysis of trade performance and export competitiveness of Indian textile industries. (2022). IES. https://www.ies.gov.in/pdfs/Manisha-Analysis-of-trade-performance-and-export-competitiveness-of-Indian-textile-industries.pdf

6.2.2 Pharmaceutical Sector

India's pharmaceutical sector exports for the year 2021-22 stood at US$ 24 billion. India's pharmaceutical industry is the third largest pharmaceutical industry in the world, Indi is a leader in generic drugs and is known globally for lowest cost drugs. The market size of the pharmaceutical industry is expected to reach $100 billion by 2025, indicating significant growth potential.

Source: Image

India's contribution to global vaccine supply during the COVID-19 pandemic, with more than 90 countries receiving 140 crore free vaccines, underscores its significance. India produces 50 percent of the world's vaccines and supplies 20 percent to the UK and 40 percent to the USA, illustrating its dominance in this sector.

But India's heavy dependence on imports for active pharmaceutical ingredients (API), key starting materials (KSM) and basic chemicals has been rather alarming.

India has initiated the production of critical active pharmaceutical ingredients (APIs) previously imported, aiming to lessen reliance on other nations, notably China. The production linked incentive (PLI) scheme was launched in 2021 by the department of pharmaceuticals, allocating INR 15,000 crore over six years.

The government's focus lies on enhancing indigenous production of high-value pharmaceuticals and advanced medical devices to curb import dependency.[64] The government has launched a scheme to boost domestic production of key pharmaceuticals, including vitamins, anti-TB drugs, and antibiotics.

The scheme offers a 20 percent incentive for fermentation-based products and 10 percent for chemical processes in the first six years. Detailed guidelines have been developed, limiting incentives to two players in a bulk drug segment and six in each medical device segment. The selection process, based on challenges, aims to attract companies for import substitution in the pharma sector.[65]

India's pharmaceutical industry has significantly benefited from its participation in the Global Value Chains (GVCs), resulting in various advancements and improvements. One of the notable impacts of India's engagement in the GVC is the enhancement of its pharmaceutical sector's capabilities and competitiveness.

Through collaborations and alliances with global pharmaceutical companies, Indian firms have experienced rapid growth and technological innovation. Many companies have licensing agreements to introduce new technologies, particularly in the development of Novel Drug Delivery Systems (NDDS) and new drug development research (NDDR).

6.2.3 Electronics

The electronics sector is poised to become a major contributor to the country's economy, generating employment opportunities and fostering further growth in related industries.[66]

Electronics exports were expected to reach a US$19.36 billion by the end of FY 2023. The Electronics industry is increasingly finding applications in all sectors of the economy.

The current growth trend and its existing contribution to the global electronics industry indicates that the share of IT Hardware and Electronics and Manufacturing in India, in terms of output and employment, has the potential to grow manifolds, driven by its emergence in the global electronics manufacturing value chain.

India's electronics exports are experiencing a remarkable surge, driven by several factors. Government initiatives like the Production Linked Incentive (PLI) scheme offer financial assistance to electronics manufacturers, attracting major investments and boosting production. The policy aimed to replace foreign imports with domestically produced goods, starting with smartphones.

To assist domestic producers, India levied a 10 percent customs duty on mobile phones for the first time in July 2017 and subsequently increased it to 15 percent and eventually 20 percent. Though the EU had initiated dispute proceedings in April 2019 relating to India's imposition of tariffs, it was not ruled against till mid-2023. Smartphone exports in 2022-23 touched USD 10.95 billion and were USD 10.5 billion in Apr-Dec 2023-24, though still less than a third of China's USD 35.1 billion in the same period.[67]

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[64] 29 of 43 'critical' APIs now locally produced Times of India, 22 Feb 2023. https://timesofindia.indiatimes.com/india/29-of-43-critical-apis-now-locally-produced/articleshow/98133842.cms

[65] 20 percent of annual sales as incentive for import substitution of bulk drugs, devices from China. (2020, June 2). Business Today. https://www.businesstoday.in/latest/economy-politics/story/new-scheme-to-boost-bulk-drugmedical-device-manufacturing-reduce-dependency-on-china-260016-2020-06-02

[66] Briefing, I. (2023, November 20). Surge in smartphone exports from India show incentives work. India Briefing News. https://www.india-briefing.com/news/india-incentives-schemes-it-electronics-boost-manufacturing-exports-26711.html/

[67] https://economictimes.indiatimes.com/tech/technology/indias-smartphone-exports-to-us-jump-to-3-53-billion-in-april-december-fy24/articleshow/108566039.cms?from=mdr

6.2.4 Automobiles and auto components

Source: Image

The total production of passenger vehicles, two-wheelers, three-wheeler and cars of all types was 30.9 million units in 2019. This has to be contrasted with the fact that till 1985, Indi used to produce only 30,000 cars in a year. The contribution of this sector to the GDP has risen to about 7.1% in 2022-23 from 2.77% in 1992-93. The automobile industry provides direct and indirect employment to over 19 million people.[68]

In FY23, total automobile exports from India stood at 4.76 million of which two-wheelers exports stood at 3.65 million. As per the Automotive Component Manufacturers Association of India (ACMA), the exports of auto components from India in FY23 were US$20.1 billion.

The sector can be broadly divided into the large manufacturers, who are either purely foreign companies producing in India, such as General Motors, or joint ventures of India companies with foreign manufacturers such as Maruti-Suzuki and Hero-Honda. The other part of the automotive sector, mainly producing components is in the medium and small scale sector. Some of these have shown impressive growth, others are facing challenges.

A study by Mishra M et al (2023)[69] enumerated some of the challenges as follows;

- It was found that barriers such as trade agreements and export documentation, exchange rates and material inadequacies were relatively less challenging than the other barriers.
- At the next level, there are barriers such as supply chain, high international quality standards, legal barriers, skilled labour marketing capacity and information and logistics and infrastructure.
- Finally, barriers such as government policies, entrepreneurial orientation and technology and finance availability posed the most significant challenge for internationalisation of Indian SMEs.

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[68] The Automobile Sector In India, Ministry of Heavy Industries, GoI (2023) https://static.pib.gov.in/WriteReadData/specificdocs/documents/2023/feb/doc2023217160601.pdf

[69] Mahima Mishra, Akriti Chaubey, Ritesh Khatwani, Kiran Nair (2023) Overcoming barriers in automotive SMEs to attain international competitiveness. Journal of Business & Industrial Marketing, Nov 2023

The findings of this study confirm a common observation in many other sub-sectors about the inability of Indian SME sector to make an export break through. The ruling constraints seem to be the entrepreneurial limitations, which then are reflected in their inability to muster the right kind of technology and financial investments, and seek favourable government policies.

Where the entrepreneurial limitations were overcome, it was almost always by professionally or foreign educated next generation family members. Late Mr Rahul Bajaj was a very apt example of this. He studied at the Harvard Business School and converted his family auto business into one of India's largest auto companies. A business management education program for SME entrepreneurs is the need of the hour.

6.3 Services sector exports

Source: Image

6.3.1 Information Technology (IT) sector

In services, the IT sector has been a major contributor to India's export earnings. With over 17,000 firms and 5 million direct employees, the IT sector generated revenues of $227 billion in FY 2022, with export revenue accounting for $180 billion. This sector's resilience and adaptability to emerging technologies have solidified its position as a key driver of India's export-led growth and employment generation.

However, in spite of achieving a commendable growth rate of 3.8 percent in FY24, India's IT sector faced challenges, particularly in export growth. This slowdown in exports, coupled with the stronger growth of the domestic market, underscores the need to navigate potential roadblocks effectively.

India's IT sector needs to address challenges in international markets, such as increasing competition and evolving client preferences. Furthermore, the shift towards larger deal sizes, with nearly 70 percent being large deals, suggests a change in client demands and project scopes. This trend necessitates continuous adaptation and innovation to meet the evolving needs of clients effectively. To maintain its export advantage and competitiveness in the IT space, India is implementing various strategies. One key strategy is to capitalize on the growth potential in the domestic market, which is expected to contribute $54.4 billion in revenue in FY24. This focus on the domestic market provides a buffer against fluctuations in international demand and offers opportunities for sustained growth.

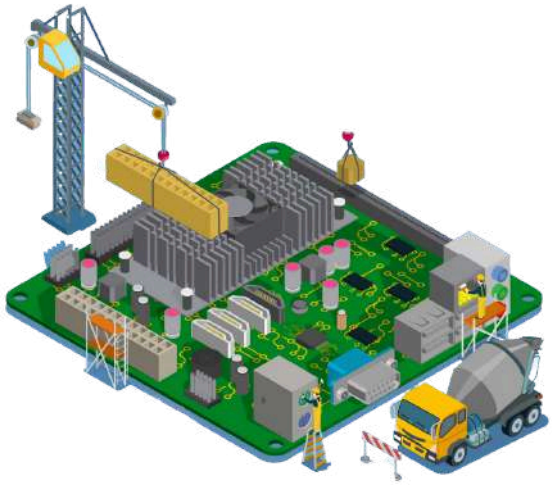
While Indian firms have attained prominent positions in the ITES sector, this has resulted in opportunities for new players concentrating on lower-value tasks. At the same time, it has constrained access to higher-value functions, thereby contributing to the formation of a more intricate international division of labour.

High-skill services demonstrate superior performance compared to low-skill and specific niche service sectors within. However, in order to optimize India's economic trajectory, there is a need to intensify efforts aimed at facilitating the transition of low-skilled individuals into the service sector, (for instance capturing part of the market share which is being lost to Vietnam, or the Philippines) as the potential to absorb this workforce exists and should be capitalised on.

> Initiatives like SEIS (Service Exports from India Scheme), STP (Software Technology Parks) scheme, PHD (Promotion of Healthcare Services and Diagnostic Industry) scheme, and DII (Design Innovation and Incubation) scheme while having committed a significant portion of the budget to this cause.
>
> Nevertheless, for these programs to yield maximum impact, they must be complemented with essential components such as qualified mentors, high-quality internships in relevant fields, and improvements in faculty and infrastructure in the areas specifically targeted by these schemes. By addressing these key facets, India can ensure a more robust and sustainable integration of low-skilled individuals into the service sector, ultimately fostering economic growth and competitiveness.[70]

6.3.2 ESD – Electronic Systems Design

According to an industry report, the Indian electronics system design and manufacturing (ESDM) market, which contributed to 2.2 percent of the global market in CY2021, is expected to contribute around 7 percent in CY2026. Even though the global ESDM market is expected to grow at a low single digit CAGR, India is going to outperform the market. The Indian ESDM industry is expected to grow at a CAGR of 32.5 percent from FY22 to FY27 as opposed to 22.2 percent CAGR recorded from FY17 to FY22.



[70] Klierbert, A. (2020, April 15). Capturing value amidst constant global restructuring? information-technology-Enabled services in India, the Philippines and Kenya. SpringerLink. https://link.springer.com/article/10.1057/s41287-020-00256-1 , p. 1074.

Additionally, there's a crucial emphasis on ensuring the availability of trained human resources in this sector to sustain growth and achieve set targets. For instance,[71] in after sales services - companies offering end-to-end solutions also offer after sales services like repairs and maintenance. It helps to build brand loyalty and long-term relationships with clients. To increase the penetration in different parts of the value chain, Indian companies have started to provide these services to their customers.

The overall ESDM market can be divided based on the process that starts from an idea and transitions through conceptualization of that idea along with mass scale manufacturing and after sales services. Market research may also be conducted to understand the requirements of the end-users. Design Services and solutions focuses on conceptualization of an idea based on customer requirements. Indian companies have started providing these services to penetrate the value chain.[72]

In response to the projected growth in the electronics industry and the consequent need for skilled workforce, the government has prioritized skill development in the Electronics System Design and Manufacturing (ESDM) sector, particularly focusing on service support functions, even before manufacturing ramps up over time.

Recognizing the potential to enhance employment in the sector, the GoI initiated the 'Scheme for Financial Assistance to select States/UTs for Skill Development in ESDM sector' in November 2013.

Under this scheme, a significant emphasis is placed on vocational skill development courses, with a target to support 90,000 individuals across selected States in five levels of skill development courses recognized by NIELIT (National Institute of Electronics & Information Technology), Electronic Sector Skill Council, and Telecom Sector Skill Council.

The scheme's total outlay amounts to Rs. 113.77 crore, with a Grant-in-Aid of approximately Rs. 100 crore. This strategic focus on the service sector within the ESDM industry is integral to the government's objective of creating job opportunities and enhancing employability. [73]

Source: Image

[71] National Institute of Electronics & Information Technology. (2017, August 21). Government of India : NIELIT-MainPage. https://www.nielit.gov.in/node/3552

[72] Electronics system design and manufacturing (ESDM) industry – Niveshaay. (2023, July 22). https://niveshaay.com/blog/2023/07/22//

[73] National Institute of Electronics & Information Technology (ESDM) article, https://www.nielit.gov.in/node/3552

6.3.3 Health Care – Medical Tourism

Source: Image

With top-notch doctors and facilities, India has become a popular destination for medical tourism. India's medical tourism has grown rapidly in recent years, with 304,000 arrivals in 2021 with foreign exchange earnings of USD 6 billion. The medical tourism market is expected to grow at a CAGR of more than 20 percent between 2023 and 2027 to more than USD 35 billion. Experts say that to fulfil this demand, Indian healthcare providers should look toward technology service providers to streamline their operations and improve patient experiences and health outcomes.

According to a report by WHO, "each dollar spent in the health sector results in an additional USD 0.77 contribution to economic growth as a result of indirect and induced effects." These effects include establishment of infrastructure and facilities, purchasing equipment as well as building skills through education and training which, in turn, translate into direct manufacturing and services outputs, leading to more jobs.[74]

Increasing public health expenditure as a percentage of GDP, not only aims to improve healthcare access and quality domestically but also has the potential to stimulate growth and employment through foreign trade.

As medical services drive demand, this creates the potential to focus on jobs and economic growth in related industries.[75]Growth in the healthcare sector can create employment opportunities across various skill levels, from healthcare professionals to support staff, and potentially leading to increased exports of healthcare services and related products.[76]

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[74] Mukherjee, A. (2013, April). The service sector in India. Asian Development Bank.

[75] Indian tourism - India's tourism sector on the rise | IBEF. (n.d.). India Brand Equity Foundation. https://www.ibef.org/blogs/india-s-tourism-sector-on-the-rise

[76] Mukherjee, Arpita, The Service Sector in India (June 2013). Asian Development Bank Economics Working Paper Series No. 352, Available at SSRN: https://ssrn.com/abstract=2282311 or http://dx.doi.org/10.2139/ssrn.2282311, p.5

6.3.4 Tourism and travel by foreigners in India

In 2019, India earned foreign exchange from tourism worth US$ 30.06 billion. In 2019, India attracted a record 10.93 million foreign tourists, in addition to 6.87 million non-resident Indians (NRIs). Due to the COVID pandemic, these numbers fell dramatically and are yet to be reached again. Nevertheless, it is an important foreign exchange earning sector for India and can thus be treated as akin to service exports.

The Indian government's efforts at attracting tourism, boosting the sectors appeal, growth and ability to generate employment is visible through the introduction of e-visas and improvement/s seen in infrastructure like airports, highways, and railways, enhancing access to various tourist spots across the country.[77]

Several significant projects are transforming road travel in India. Additionally, air transportation now covers most areas of the country. By encouraging this variety, the government and travel industry can collaborate to reduce the strain of over-tourism in popular destinations while boosting local economies in lesser known destinations.[78]

Source: Image

The government needs to not only invest in sectors like hospitality, hotels, airlines, and food and beverages, but align and integrate this with tourism creating more employment opportunities and tourism related jobs through demand side policies such as training and skill development programs as well as supply side ones of maintaining global standards for tourism infra across states, generating employment opportunities in doing so.[79]

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[77] Bisen & Tiwari, Role of Indian Tourism in Economic Growth of Country, https://journal.hmjournals.com/index.php/JSRTH/article/view/2057/2135, p.3

[78] Magow, R. (2023, December 29). India's travel and tourism sector: Steering towards a brighter future. Times of India Blog. https://timesofindia.indiatimes.com/blogs/voices/indias-travel-and-tourism-sector-steering-towards-a-brighter-future/

[79] Wintwealth. (n.d.). Has Budget 2023 Focused on the Tourism Industry? [Blog post]. Retrieved from https://www.wintwealth.com/blog/has-budget-2023-focused-on-the-tourism-industry-2/

A study[80] conducted on the gap between expectations and satisfaction levels of foreign tourists observed that India is rated highly for its rich art forms and cultural heritage.

However, irritants like cheating, begging, unhygienic conditions, lack of safety dampen the spirits of tourists.

India can be positioned on the world map only after these hygiene factors are improved along with other motivators.

However, the growth of the tourism industry relies heavily on the development of infrastructure.

Acknowledging the significance of the tourism sector, the Indian government has embarked on several initiatives to bolster infrastructure within this realm, however a combination of policy formulation, financial allocation and skill development need to be consistently prioritised by the GoI.[81]

6.4 Opening new destinations for exports

One of the strategies that can be adopted by India is to expand its footprint in those destinations which today account for only 30 percent of its exports. The criterion for selecting the regions for greater export promotion is those which have higher per capita incomes.

This is based on a study by Chinoy and Jain (2020),[82] which showed that the single most important determinant of export growth to any country is the growth in its per capita income.

The only exception we make to high per capita income criterion is in the case of our South Asian neighbours, with whom we have freight advantages more promising of these regions. Among all the regions listed in Table 8, we recommend the following for enhancing export promotion efforts:

- South Asia
- European Free Trade Association
- Latin America
- East Asia (Oceania) and
- South African Customs Union

We recommend strengthening various trade promotion efforts, such as appointing or activating the commercial/trade attachés from the Indian Trade Service in the respective Indian embassies; establishing regional foreign offices of India Trade Promotion Organisation (ITPO) and setting up bilateral trade promotion bodies like US-India Business Council for the nations/regions not having such forums.

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[80] Manjula Chaudhary (2000). India's image as a tourist destination — a perspective of foreign tourists. https://doi.org/10.1016/S0261-5177(99)00053-9

[81] Ibid.

[82] Op. cit.

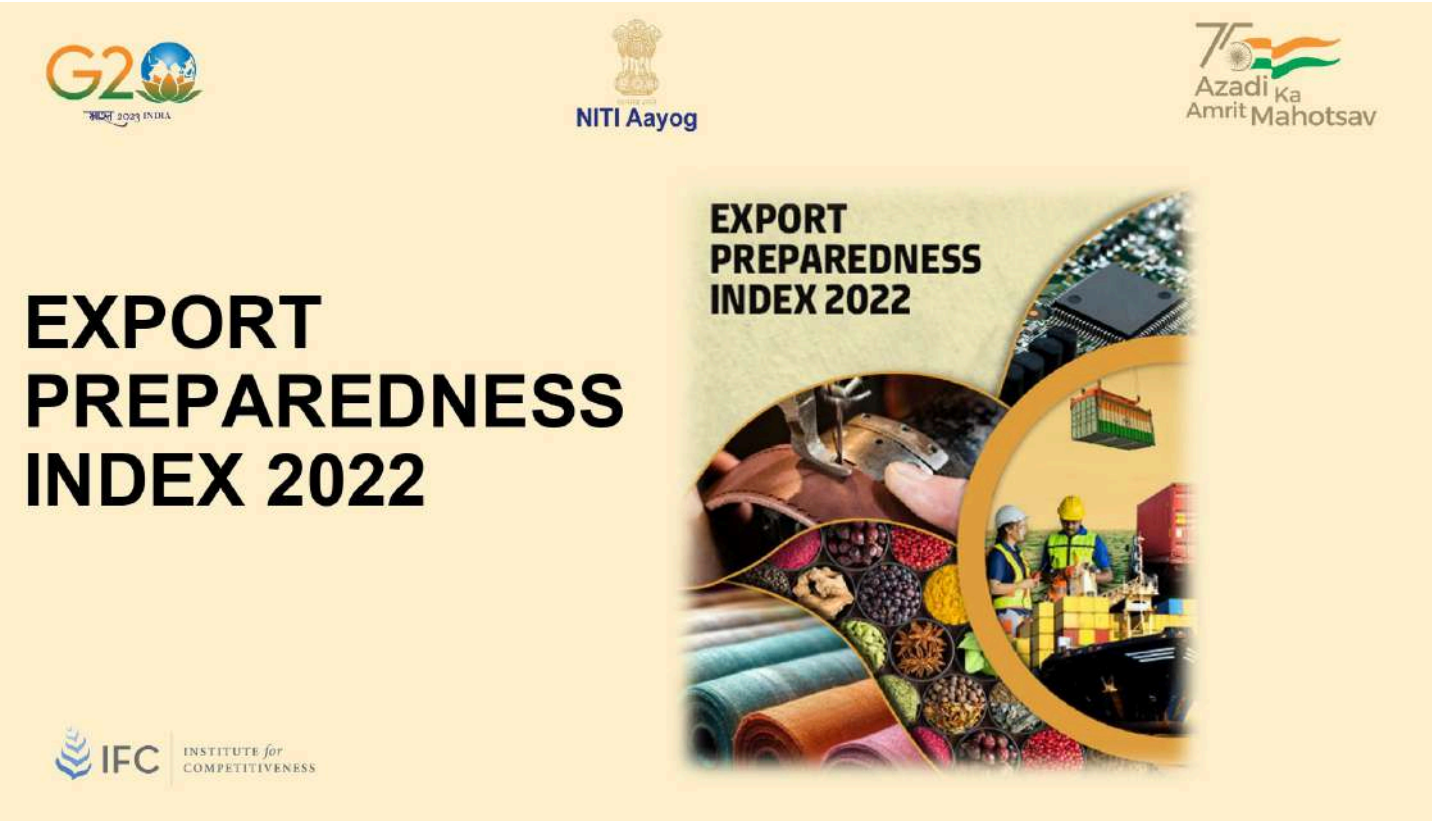
6.5 Within India, establishing more exports clusters

As per a Niti Ayog and the IFC supported study – Export Preparedness Index, 2022[83], three states – Gujarat, Maharashtra and Tamil Nadu - accounted for 55 percent of India's exports in 2021-22. At a further detailed level, it was found that top 100 districts out of 680 total districts contributed to nearly 87 percent of the total exports from India.

The top ten export clusters/districts were Jamnagar (petroleum products), Surat (diamonds), Mumbai(precious metals), Mumbai suburban (diamonds) Pune (engineering goods), Bharuch (chemicals), Kanchipuram (automotive products), Ahmedabad (pharmaceuticals), NOIDA (electronics) and Bengaluru (pharmaceuticals). Bengaluru is also a leader in software services.

Four pillars of export preparedness have been identified – policy, business eco-system, export eco-system and export performance in the study and have been scored for each state.

To enhance exports from India, it has been proposed in the above study that these four pillars should be strengthened in the next ten states and additional export clusters be developed, using Geographical Indicators (GI) and the One District One Product scheme[84]. To this we can add the need for business education and consulting services to SME exporters.



Source: Image

[83] Niti Aayog (2023) Export Preparedness Index , 2022 https://www.niti.gov.in/sites/default/files/2023-07/Export-Preparedness-Index-2022_0.pdf

[84] Ibid.

7 Possibility of growth and employment through import substitution

Source: Image

India's total imports in FY 21-22 were USD 760 bn of which merchandise imports were USD 613 bn and services imports were USD 147 bn. Top imports in FY21-22 included Petroleum Crude and Products (26.4 percent of total imports), Electronics, Telecom and Computers (9.2 percent), Gold (7.5 percent) and Vegetable Oils (3.1 percent). Import dependence of each of these can be reduced over time by either enhancing domestic production (as in electronics and vegetable oils) or moving to substitutes (for example renewable energy in place of petroleum.

In FY21-22, China (15.4 percent) and UAE (7.3 percent) and the US (7.1 percent) were significant import sources. The trade deficit with China of USD 73.3 billion was 88 percent of India's total trade deficit of USD 83.5 billion and requires focused correction. India did not join the Regional Comprehensive Economic Partnership (RCEP) Agreement, as it realised that it existing Free Trade Agreement with the ASEAN region has emerged as a major source of trade deficit, second only after the very large trade deficit with China.

7.1 Impact of Imports on GDP Growth

India's imports in terms of value represented about 24 percent of its GDP in 2022. If we exclude the Domestic Value Added (DVA) to imports (mainly in unloading, warehousing, transportation and distribution) which rarely exceeds 20 percent, net imports are about 18-20 percent of India's GDP.

Simplistically, this means that if India produced everything domestically for its current consumption, which is impossible, the GDP would be higher by 20 per cent. We must remember that India's exports have as much as 40 percent import content. Thus a "zero import" economy is absurd, but reckless imports are also not healthy.

An example of this is look at what India imports from China. India imported over USD 1 billion worth of toys from China, apart from USD 145 million worth of silk and USD 115 million worth of umbrellas, draining the foreign exchange reserves and reducing the GDP.

India is also the world's largest importer of oil seeds and RBD palm oil, which could be partly substituted with local production. As against this, there are essential imports such as petroleum products and certain types of machinery and electronics input such as integrated circuit chips.

7.2 Employment foregone due to India's imports

Tandon (2022) assessed that the employment forgone due to imports was 5.8 percent of the total employment in the economy during 1993-94. This proportion has more than trebled to 19.3 percent during 2013-14. In net terms, the employment creation effect of 8.7 million in 1993-94 has turned into a perverse effect (employment foregone) of 7.1 million in 2013-14.

Measured as a proportion of total employment, the net trade generated an employment surplus of 2.3 percent in 1993-94, and an employment deficit of (-) 1.5 percent in 2013-14. The employment foregone due to imports increased faster than the employment supported by exports.[85] These conclusions seem to be in line with what we observe while visiting a large number of industrial clusters, many of which have seen a large number of shut downs due to competition from cheaper imports.

We must caution against jumping to the conclusion that therefore all imports should be substituted with domestic production. This is not desirable. To begin with imports which feed into India's exports, such as rough diamonds for polished diamonds, must be continued. Similarly imports which are strategic or technically hard to produce within India but are needed to run the economy, will have to be continued.

Only those products where India has the possibility of cost catch-up, should be given temporary tariff protection or incentives. This means that the cost structure of Indian manufacturers cannot be more than about 5 to 10 percent of the imported costs.

Source: Image

[85] Tandon, Anjali, Employment implications of India's international trade – A macro view based on Input-Output analysis (2022). Available at SSRN: https://ssrn.com/abstract=4086034

7.3 Factors impeding India’s import substitution

Implementing import substitution effectively requires a cost-efficient domestic industrial base, which India has struggled to establish.

Long years of tariff protection and domestic incentives made India’s manufacturers cost inefficient compare to many other developing countries. With opening up of imports post WTO, this led to wiping out many Indian firms.

One reason why India has not been able to fully embrace import substitution is the lack of competitiveness and efficiency in its domestic industries. India's large and diverse economy presents logistical challenges for implementing import substitution across all sectors.

Some industries may have the capacity to produce goods domestically, while others may require significant investments in infrastructure and technology to become competitive.

India's integration into the global economy and its commitments to international trade agreements also constrain its ability to pursue import substitution policies aggressively.

Trade agreements often include provisions aimed at promoting free trade and preventing protectionist measures, which can limit India's flexibility in implementing import substitution strategies. In fact, in the short run, this could hurt the economy.

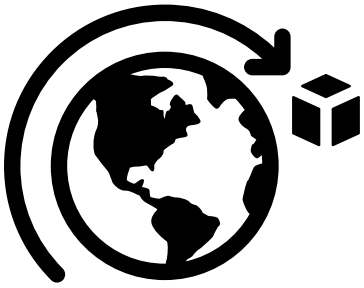
Despite efforts to protect them with import tariffs and trade barriers, many sectors face challenges such as outdated technology, inadequate infrastructure, and bureaucratic red tape.

As a result, domestically produced goods often fail to match the quality, pricing, and variety of imported alternatives. India's economic growth is stifled by uncompetitive domestic industries.

To break this cycle, urgent action is needed to attract investments, modernize technology, create a pool of skilled workers, improve entrepreneurial management capabilities, upgrade infrastructure, cut bureaucracy, and fuel innovation.

Only through comprehensive reforms aimed at enhancing competitiveness and efficiency can India realize its aspirations for import substitution.

There have been several success stories – automobile and auto components in the past and mobile phones recently – which can be replicated.



7.4 Criteria for selection and selected sub-sectors for import substitution

Based on the discussion so far and literature review, we suggest the following criteria for selection of sub-sectors for import substitution:

- Salience – the sub-sector should account for at least 0.5 percent of the total imports of India in the previous year.
- Possibility of domestic production at a cost not too much higher than the least cost producer in the world.
- Contribution to India's export effort – the imported items are necessary for an important export sub-sector – for example electronic components.
- Generating employment within India, particularly for skilled workers.
- Enhancing India's capability over the longer term – so that the Economic Complexity Index (ECI)[86] can steadily go up with its attendant benefits of higher exports, higher per capita incomes, and lower income inequality.
- Strategic reasons - where it is necessary to produce certain products within the country for reasons of national defence, meeting an emergency or other such exigencies.

Source: Image

Using these six criteria, we have identified the following sub-sectors for import substitution:

[86] Complexity Rankings :The Observatory of Economic Complexity https://oec.world/en/rankings/eci/hs6/hs96

Petroleum based fuel to be substituted by renewable energy, particularly for mobility. This meets the criteria of salience, as well as strategic reasons and may have the benefit of enhancing the ECI as renewable energy will need higher proportion of skilled workers.

Coal as a fuel to be substituted by domestically mined coal, with suitable treatment, particularly for power generation. This meets the criteria of salience, and will generate domestic employment in mining, processing and transportation.

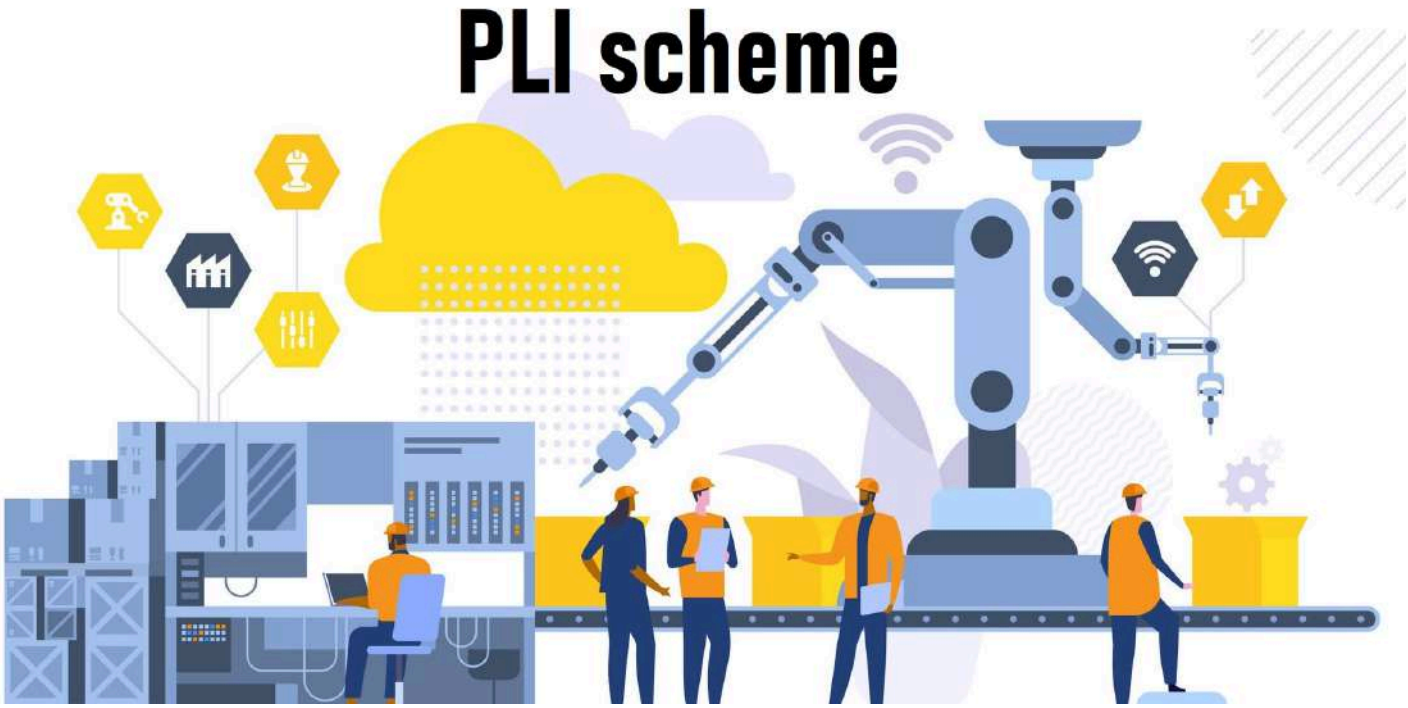
Iron and Steel imports to be substituted by domestically produced items, this meets the criteria of salience, and will generate domestic employment.

Machinery – mechanical and electrical imports to be substituted by domestically produced machinery. This meets the criteria of salience, and will generate domestic employment in as well increase the ECI score of India.

Electronics products including measuring and medical equipment and components including semiconductors and integrated circuit chips imports to be substituted by domestically produced items. This meets the criteria of salience, and will generate domestic employment in as well increase the ECI score of India.

Edible oils imports to be substituted by domestically grown edible oilseeds. This meets the criteria of salience, and will generate domestic employment in cultivation and processing of oilseeds.

7.5 The PLI scheme - Export Promotion starting with Import Substitution



Source: Image

The Government of India introduced the Production Linked Incentive (PLI) scheme to bolster the global competitiveness of manufacturing sectors. It was backed by a projected disbursement of approximately INR 2 lakh crore over the next five years, constituting 1.5 percent of the Union Budget outlay (equivalent to 0.2 percent of GDP).

Commencing with a focus on import substitution, the scheme is crafted to evolve over time, transitioning from import substitution to export promotion.

The 14 sectors in PLI are: (i) Mobile Manufacturing and Specified Electronic Components, (ii) Critical Key Starting Materials/Drug Intermediaries & Active Pharmaceutical Ingredients, (iii) Manufacturing of Medical Devices (iv) Automobiles and Auto Components, (v) Pharmaceuticals Drugs, (vi) Specialty Steel, (vii) Telecom & Networking Products, (viii) Electronic/Technology Products, (ix) White Goods (ACs and LEDs), (x) Food Products, (xi) Textile Products: MMF segment and technical textiles, (xii) High efficiency solar PV modules, (xiii) Advanced Chemistry Cell (ACC) Battery, and (xiv) Drones and Drone Components.

Aligned with the overarching objectives of 'Make in India' and 'Atmanirbhar Bharat,' the PLI scheme channels incentives to stimulate production in pivotal sectors such as electronics, medical equipment, automobiles, pharmaceuticals, and more.

Adopting a phased approach, the scheme aims to catalyze indigenous manufacturing, thereby fostering India's economic expansion and reinforcing technological self-sufficiency.[87] As per GoI, as of Nov 2023, 746 PLI applications have been approved in 14 Sectors with expected investment of over INR 3 lakh crore.

176 MSMEs are among the PLI beneficiaries in sectors such as Bulk Drugs, Medical Devices, Pharma, Telecom, White Goods, Food Processing, Textiles and Drones. Several MSMEs are serving as JV partners/ contract manufacturers for large companies.

The PLI Scheme has disbursed over INR 1.03 lakh crore of investment till November 2023, which has led to production of INR 8.61 lakh crore and employment generation (direct and indirect) of over 6.78 lakh. PLI exports were INR 3.20 lakh crore, with significant contributions from sectors such as Electronics, Telecom and Networking products, Pharmaceuticals and Food Processing.[88]

In 2014-15, mobile phone exports were a mere USD 0.19 billion. By 2022-23, India witnessed a notable increase in phone exports, reaching USD 11 billion. Imports amounted to USD 1.6 billion in 2022-23. This marked a substantial decline from USD 3.6 billion imports in 2017-18. The industry was expected to end FY24 with an estimated export of US 14.5 billion. However, this level of success has not been achieved in any other PLI supported sector yet. In most other sectors, the investments by industry took off only in 2022-23 and production, exports and employment effects will hopefully be seen in the next few years.

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[87] Deodhar, S. (2021, April). Production Linked Incentive (PLI) Scheme: Evaluation and The Way Forward. Pune International Centre. https://puneinternationalcentre.org/wp-content/uploads/2021/07/Final_Production-Linked-Incentive-PLI-Scheme.pdf , p.7

[88] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1996964

The PLI scheme has encountered challenges in achieving its intended outcomes. Issues such as the high cost of finance and power, inadequate infrastructure, supply chain inefficiencies, and limited capabilities in design, skills, and Research and Development (R&D) have persisted, posing significant hurdles to the success of the scheme. In addition, strategic incentives have not facilitated the affordability of defence contracts, as the Ministry of Defence (MoD) and defence procurement process does not have sufficient functionality to encourage private industry participation.[89]

Moreover, the guidelines of the scheme exhibit asymmetry, with firms facing penalties for not meeting targets while the government faces no consequences for delays or insufficient disbursements, result in a lack of trust between administration and businesses. Investment restrictions, particularly the exclusion of land and building investments from qualifying for PLI incentives, deter potential investors, reminiscent of past experiences such as the difficulties faced in Mega Food Parks.

Additionally, stringent disbursement conditions requiring documentary proof of prior land holdings and the need to separate greenfield investments from brownfield plants further complicate matters, encouraging firms to manipulate the system.

Furthermore, uncertainty stemming from caps on total disbursements and firm selections adds to the challenges, creating a significant discretionary element in the scheme[90], acts as a cautionary tale in the true effectiveness of the PLI in generating meaningful growth and employment.

Source: Image

[89] https://www.biogecko.co.nz/admin/uploads/

[90] Deodhar et al, p.10

8 Policies for selective import substitution

In this section, we look at the policies required to ensure successful import substitution in the sub-sectors that that been selected based on criteria identified in section 5.4 earlier.

8.1 Edible oils

In 2021-22, out of the 16.47 million tonnes of edible oils were imported, worth Rs 1.56 lakh crore. This heavy reliance on imports, particularly from Malaysia, Brazil, Argentina, and Indonesia, contributed significantly to India's import bill, accounting for 3 percent of the total.[91] Only 38.6 percent of edible oil requirement was domestically produced, s. The production of various oils in India witnessed significant growth from 2013-14 to 2022-23, as indicated in table 17 below.

Table 17: Edible Oil Production Trends (2013-14 vs. 2022-23)

Oils	Year (2013-14)	Year (2022-23)
Mustard	22.72	39.8
Soybean	14.03	18.53
Cottonseed	14.47	12.44
Rice Bran	9.3	11
Groundnut	6.75	9.91
Copra/Coconut	4.55	3.9
Palm	1.1	3.5
Others	4.8	4.3
Total	78.02	103.35

This increase presents opportunities for domestic value addition through processing and refining within the country, potentially creating employment and adding value to the agricultural sector. The 'Atmanirbhar Oil Seeds Abhiyan' has been launched to focus on crucial oilseeds such as mustard, groundnut, sesame, soybean, and sunflower and promotion of oil palm cultivation.

This initiative aims to address various aspects including the development of high-yielding varieties through research, the adoption of modern farming techniques. The Solvent Extractors Association (SEA) had suggested that the government must incentivize farmers to shift toward oil seed cultivation.[92] Furthermore, the association has suggested encouraging private partnerships with companies involved in oilseed extension programs and research activities.[93]

[91] Jhadav, R. (2024, January 16). India to allow edible oil imports at lower duty until March 2025. Reuters. https://reuters.com/markets/commodities/india-allow-edible-oil-imports-lower-duty-until-march-2025-2024-01-16/#:~:text=India percent20buys percent20palm percent20oil percent20mainly, percent2C percent20Brazil percent2C percent20Russia percent20and percent20Ukraine

8.2 Renewable Energy to partially substitute for petroleum and coal

India is a massive importer of crude oil as demand exceeds domestic production. Paradoxically India even imports coal, despite having huge reserves. India imports 82 percent of its petroleum oil needs and aims to bring that down by replacing it with local hydrocarbon exploration, renewable energy, and indigenous ethanol fuel.[94]

India has the capability to emerge as one of the top countries in terms of renewable energy. With its extensive coastline stretching over 7500 kms and situated along the Tropic of Cancer with ample sunlight, India holds immense potential for the generation of renewable energy.

Source: Image

Renewable energy contributes 30.2 percent to the total energy capacity in the country with wind energy accounting for 34 percent and solar energy for 53 percent.[95] While India currently ranks as the fourth-largest producer of wind energy worldwide, the solar energy sector holds even greater promise.

By 2022, solar power fulfilled 7 percent of the country's energy requirements, significantly mitigate carbon emissions by 2.6 percent, and curtail coal imports by 71 million tons, amounting to Rs. 33,000 crores in savings annually. These advancements not only contribute to environmental sustainability but also hold substantial economic benefits for the nation.

The solar industry faces hurdles due to heavy reliance on imports for key components. As much as 92 percent of solar panels were imported from China in FY 2022-23, though this has come down since then as domestic manufacture has ramped up.

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[92] Informist. (2024, February). INTERVIEW: Edible oil self sufficiency needs a big plan: says SEA chief. https://www.informistmedia.com/interview-edible-oil-self-sufficiency-needs-big-plan-says-sea-mehta/

[93] SEA hails plan to make India self reliant in cooking oils; seeks adequate fund to achieve goal. (2024, February 1). Hindustan Times. https://www.hindustantimes.com/business/sea-hails-plan-to-make-india-self-reliant-in-cooking-oils-seeks-adequate-fund-to-achieve-goal-101706780118854.html

[94] India launches first auction of exploration blocks under new licensing policy. (2018, January 18). The Economic Times. https://economictimes.indiatimes.com/industry/energy/oil-gas/india-launches-first-auction-of-exploration-blocks-under-new-licensing-policy/articleshow/62557212.cms?from=mdr

[95] https://www.trade.gov/country-commercial-guides/india-renewable-energy tables 1 and 2

Factors like insufficient financing and competition from low-cost Chinese imports exacerbate the challenge.

Additionally, the country is actively promoting domestic production and reducing dependence on imports across various sectors, including the electric vehicle (EV) industry. The rise in EV demand is driving growth in battery manufacturing, charging infrastructure development, and renewable energy generation.[96]

8.3 Iron and steel and machinery

Source: Image

The PLI scheme has a strategic focus on the iron and steel industry, as a way of supporting import substitution.

Companies engaged in the initial phase of the PLI scheme for this sector have pledged a substantial investment of ₹29,530 crore, contributing to a downstream capacity addition of 24.78 million tonnes.

The government's allocation of ₹6,322 crore for incentives aligns with the goal of reducing dependency on steel imports in the short run and promoting exports in the long run.[97]

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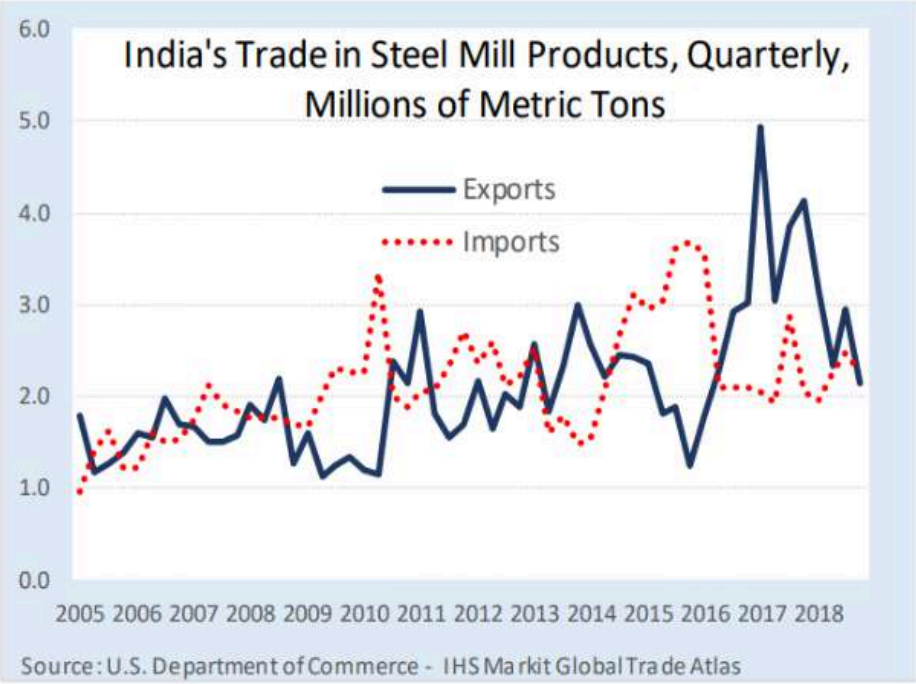
[96] Tendulkar, R. (2023, June 7). India's EV transition and import substitution strategy yield positive results, says Goldman Sachs. CNBCTV18. https://www.cnbctv18.com/market/indias-ev-transition-and-import-substitution-strategy-yield-positive-results-says-goldman-sachs-16871621.htm

[97] Mishra, T., (2023), PLI 2.0 in works for steel, to focus on import substitution. (2023, August 8). The Economic Times. https://economictimes.indiatimes.com/industry/indl-goods/svs/steel/pli-2-0-in-works-for-steel-to-focus-on-import-substitution/articleshow/102546659.cms?from=mdr

Figure 5 – India's Steel Trade 2005-2018



As domestic as well global demand for steel goes up, the benefits of PLI become clearer. Over the past decade, India has alternated between being a net steel importer and a net steel exporter, but is steadily moving towards being a net exporter (See Figure 5 below). Challenges arise from competition with China's steel exports. India had to impose a five-year anti-dumping duty targeting specific types of Chinese steel. On the other hand, the US had imposed imposed **25 percent import duty** on certain Indian steels which was successfully resolved through mutual resolution.[98]

8.4 Electronic appliances and mobile phones

By increasing local production capacity, companies aim to meet domestic demand with domestically produced goods, potentially reducing the need for importing these electronic goods. This can contribute to economic development and self-sufficiency in the manufacturing sector of the country.

In the realm of mobile handset manufacturing in India, the trajectory has been marked by a notable shift towards import substitution strategies since 2014. With the establishment of 120 mobile handset manufacturing units, the sector witnessed a pivotal transition, particularly after the closure of Nokia's plant near Chennai due to tax disputes. The focus of mobile phone production subsequently shifted to Noida, emerging as the central hub.

The import substitution strategy played a pivotal role in bolstering assembly processes, especially in cases where certain components were not manufactured locally. A significant facet of this approach involved mitigating dependency on foreign sources, notably from countries like Korea and Taiwan, in addition to China, which traditionally supplied crucial components for smartphones.

[98] Securing a robust and sustainable future for the Indian steel industry. (2020, September 11). EY US - Building a better working world. https://www.ey.com/en_in/mining-metals/securing-a-robust-and-sustainable-future-for-the-indian-steel-industry

A case in point is the transformation of Lava, a mobile phone company that previously relied on importing all phone parts from China. Quality issues emerged as a concern, prompting a strategic shift. The company embarked on a gradual process of localization, beginning with components like chargers, batteries, and earphones.

The implementation of duty barriers played a crucial role in offsetting rising labor costs, with entry-level salaries in India being substantially lower than those in China. This localization initiative proved successful for Lava, with approximately 35 percent of the company's feature phones now being localized by value. The move not only addressed quality concerns but also contributed to a more sustainable and self-reliant production model.

A report by the India Cellular and Electronics Association (ICEA) released in Mar 2024 said:

> "India is set to export around 30 per cent of its total smartphone production in the financial year 2024, The report, which looks at the smartphone production in India from 2014-2024, said that out of all the smartphones sold in India, 97 per cent were made locally within the country.
>
> During the 2014-2024 period, the sector achieved Rs 20 lakh crore cumulative smartphone production. In terms of volume, India produced 2.45 billion units of mobile phones during this ten-year period, against a target of 2.5 billion units, according to ICEA. Mobile phones have become India's 5th largest export as an individual commodity.
>
> The industry expects to end FY24 with an estimated export of Rs 1.2 lakh crore. This would mean a 7,500 per cent increase in exports over a decade," read the report. "As a next step, we have to ensure that we can shift electronics global value chains (GVCs) to India to create large-scale manufacturing jobs and increase domestic value addition. This, in turn, requires unprecedented competitiveness and factories that can operate at a scale of the kind that has never been witnessed in India." [99]

Source: Image

[99] https://www.business-standard.com/industry/news/india-to-export-30-of-its-total-smartphone-production-in-fy24-icea-report-124030701143_1.html

This growth in mobile phone manufacturing is also generating a lot of additional employment and within that skilled employment. Thus this sector fulfilled two of the important criteria – skilled employment and increasing the country's Economic Complexity Index. As per a report in the Economic Times

India's booming mobile phone manufacturing industry is likely to create 150,000 to 250,000 direct and indirect jobs in the next 12-16 months. Apple and its three contract manufacturers in India – Foxconn, Wistron and Pegatron, as well as homegrown Dixon Technologies are set to significantly expand their workforce to meet domestic and export demand... In the last three years, the Indian government's Production Linked Incentive (PLI) scheme helped generate about 500,000 jobs in the sector, according to staffing services firm Teamlease Services.[100]

The GoI introduced several initiatives to foster the manufacturing of high-technology semiconductors by attracting global investments to address the infrastructure and ecosystem gaps for such manufacturing. The India Semiconductor Mission was launched in 2021 with an outlay of Rs 76,000 crore, to build a vibrant semiconductor and display ecosystem. Three new semiconductor units were inaugurated in Mar 2024 which could create direct employment of 20,000 high tech jobs and about 60,000 indirect jobs.[101]

Source: Image

100 https://economictimes.indiatimes.com/jobs/fresher/india-mobile-phone-manufacturing-industry-likely-to-create-up-to-250000-jobs-in-next-12-16-months/articleshow/107529553.cms?from=mdr

101 https://www.india-briefing.com/news/indias-semiconductor-sector-welcomes-three-new-manufacturing-units-31434.html/

8.5 Addressing the trade deficit with China

China's exports to India rose from USD 55 billion in 2011 to USD 119 billion in 2022.[102] India's exports to China in contrast, actually declined from USD 16.7 billion in 2011 to USD 15.1 in 2022, (although these reached a high of USD 23 billion in the previous year).[103] The trade deficit with China therefore was USD 104 billion in 2022.

Source: Image

Further, there is significant discrepancy between Chinese data of exports to India and Indian data on imports from China in the same year. As per a recent report by Business Standard, China records billions of dollars more in goods leaving for India, than India records coming in. The gap has risen to $19 billion as of January, 2024, on a 12 month basis.[104]

It is educative to look at the detailed list of what India imports from China. Apart from a whopping USD 34 billion worth of electronics equipment (mostly mobile phones), machinery worth USD 22 billion and organic chemicals worth USD 13 billion, India imported over a USD 1 billion worth of toys from China, apart from USD 145 million worth of silk and USD 115 million worth of umbrellas!

This required a more detailed study for each sub-sector to figure out the cost and technology disadvantages that Indian producers may be facing compared to their Chinese counterparts. One such study was by RGICS (Mona Dikshit, 2019),[105] which had stated its argument in its title – "Chinese Goods - Make in India and Create Jobs". It gave several example of enterprises set up in India by Chinese companies, to manufacture products in India for the Indian and the global market, taking advantage of lower labour costs in India.

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[102] https://tradingeconomics.com/china/exports/india

[103] https://tradingeconomics.com/india/exports/china

[104] https://open.substack.com/pub/businessstandard/p/india-china-trade-data-discrepancy

A later study by Dikshit (2020)[106] had taken this argument further to recommend a policy to attract Chinese investments and technology to produce medium technology items for the Indian as well as the global market.

Unfortunately the border tensions and geo-political rivalry between the two countries since then led to a situation where this argument could not be advocated widely. The result has been that imports from China and the bilateral trade deficit have only increased since 2019-20 and there has been no structural corrective.

Sunitha Raju (2023), provided[107] an assessment of the impact of imports from China on Indian manufacturing and captured the multifarious dimensions of India-China bilateral trade flows. Focussing on imports which had an adverse revealed comparative advantage (RCA), that is where RCA<1, she examined their significance on India's industrial output and performance and identified factors beyond trade competitiveness. Quite counter-intuitively, her findings indicated the

> "The rise in imports from China seems to be on account of non-availability of necessary intermediate and capital goods domestically, thereby making these imports critical and complementary for production." It is clear that reducing the India-China trade deficit will require a nuanced and a win-win strategy.

Merely seeking quantitative reduction in Chinese imports, using tariffs or non-tariff barriers will be counter-productive. A similar conclusion was drawn by Ismail and Ahmed (2022) who found relatively little head-on competition between India's exports and China's exports. Thus collaboration through joint ventures with Chinese manufacturers in India to make for global markets, rather rivalry seems to be a better strategy for India.

Source: Image

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[105] Mona Dikshit (2020). Chinese Goods - Make in India and Create Jobs, RGICS, New Delhi. https://www.rgics.org/wp-content/uploads/Working-Paper-on-Chinese-Goods-Make-in-India-Create-Jobs-1.pdf

[106] Mona Dikshit (2020). India-China Trade and Investment Study Paper, RGICS, New Delhi. https://www.rgics.org/event/india-china-trade-and-investment-study-paper/

[107] Sunitha Raju (2023), Impact of imports from China on Indian manufacturing performance, *International Journal of Emerging Markets* https://doi.org/10.1108/IJOEM-02-2022-0223

9 Conclusion - ELIXIR

By and large, trade and GDP have a circular relationship and growth in one promotes growth in the other. Both export promotion and import substitution lead to GDP growth. Data on imports and exports show the two are not antithetical but complementary.

The top ten HS-2 product code categories for imports are also the top ten HS-2 product code categories for exports. Likewise the top ten destination regions for exports are also the top ten sources of imports. Thus we have to use the integrated concept of enhancement of foreign trade (exports plus imports) to achieve the goal of GDP growth.

Trade and GDP grow with each other, but employment growth requires policy direction. Higher imports do not promote higher employment and indeed reduce employment as shown by Tandon (2022) - "In net terms, the employment creation effect of 8.7 million in 1993-94 turned into a perverse effect (employment foregone) of 7.1 million in 2013-14."

Exports certainly promote employment but not all exports also promote employment proportionate to the investments made. The prime example of this is the petroleum products exports, largely by the Reliance Jamnagar Refinery. Although the value of exports in 2021-22 was Rs 387,500 crore, the Domestic Value Added was less than 10 percent, Rs 35,000 crore.

The refinery and related facilities cost over Rs 20,000 crore and generated employment for 2500 persons, amounting to Rs 8 crore per job. This is in contrast with subsectors like manufacture of clothing and footwear, where the investment required per worker was only Rs 6.5 lakh in 2018-19, may be Rs 8 lakh by 2021-22. Thus 100 jobs would get created in these sub-sectors for the same level of investment as in petroleum products.

While it is no one's case that India therefore should not make petroleum products, we must ensure that the overall investment pattern in the economy recognises the need for employment generation. We have to recognise India's peculiar problems – of having the largest number of poor people and one of the highest levels of income and wealth inequality. It also has registered a historic high level of unemployment in 45 years, and educated youth and female unemployment rates which have beaten all records.

Thus the strategy for foreign trade should simultaneously target subsectors which generate high levels of employment for the educated unemployed as well as those subsectors which generate high levels of employment for less educated but under-employed rural workers.

This means incentivising medium technology manufacturing exports. Export of low-tech products would likely face disadvantage relative to foreign lower-cost producers.

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[108] Mona Dikshit (2020). Chinese Goods - Make in India and Create Jobs, RGICS, New Delhi. https://www.rgics.org/wp-content/uploads/Working-Paper-on-Chinese-Goods-Make-in-India-Create-Jobs-1.pdf

Further India should incentivise exports in the agriculture and allied sub-sectors which generate a large number of jobs largely in rural areas for the less educated and less skilled.

By following a strategy of offering **Employment-Linked Incentives for eXport by Industries and Rural areas (ELIXIR)**, we think India's foreign trade can contribute to both GDP growth as well as employment generation on a wider basis in the economy.

For generating employment for highly educated workers, India should continue to incentivise maintaining its dominant position in IT services exports. Diversifying into high tech services that underpin manufacturing in aerospace, pharmaceuticals and automobiles, and engineering research and development can be a way forward, as suggested by Rajan and Lamba (2023)[108] in their recent book.

Source: Image

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