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# Foreign Direct Investment and Manufacturing Sector Export of India

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Abstract: In today's globalised economy, the majority of developing nations have identified export-led economic growth as a key growth strategy. The effectiveness of this strategy depends greatly on the influx of foreign direct investment into developing nations with capital shortages. The inflow of foreign direct investment is intended to boost technology, productivity, and ultimately exports of the host economies due to the multiple benefits experienced by multinational corporations. The statistical facts and numbers for India demonstrate that real GDP, foreign direct investment, and exports of goods and services all grew more quickly after the adoption of economic reforms. The impact of foreign direct investment on the manufacturing sector's export structure is also examined. The manufacturing sector's export statistics reveal that during the reform era, the percentage of exports from low-tech, labour-intensive manufacturing industries has decreased while the percentage of exports from high-tech sectors has increased.

**Keywords:** Gross Domestic Product, FDI, Exports

### 1. Introduction

One of the most important elements influencing the rate of economic growth of a country's economy is international trade. International trade is required because of the geographic distribution of resources and the cost advantages of production. The importance of trade for economic growth of a country has been highlighted by various researchers (Johnson, 1958; Afonso, 2001; Singh, 2010; Ulasan, 2012; Van den Berg and Lewer, 2015; Tahir and Hayat, 2020). Governments implement policy measures to increase economic growth, and the accomplishment or failure of these policy initiatives is represented through a variety of developmental indicators. The Indian government adopted the five-year plan approach to boost economic growth and guarantee the social welfare of its citizens. Many economists and detractors have discussed the success and failure of these five-year plans in the economic literature.

Governments implement policies to increase economic growth, and many developmental indicators show whether these policies were successful or unsuccessful. The Indian government chose the road of five-year plans in order to attain greater economic growth and guarantee the social welfare of its citizens. Numerous economists and others have questioned the effectiveness and failure of these fiveyear plans in the economic literature. (Ghosh, Marjit and Neogi, 1998; Gaur, 2010; Tripathi, 2013). But the truth remains that governments occasionally make different policy changes to reach their desired goals through their Five Year Plans and other policy measures. One such significant change in policy occurred in 1991 when the Indian government approved a new economic strategy intended to kick off the nation's process of liberalisation, privatisation, and globalisation. Every aspect of people's lives in India was influenced by this significant policy change. (Mahadevan, 2003).

The elimination of the industrial licence raj, encouragement of industrial competitiveness, and

improved business climate in the nation were some of the most significant aspects of the New Economic Policy of 1991. Foreign direct investment was considered a key tool for achieving that goal. To encourage the influx of foreign direct investment into the nation, the government enacted significant policy adjustments. Academic circles do have discussions, and accomplishments and shortcomings of this policy change. The effect of foreign direct investment on India's economic growth is one of several such factors that is hotly contested. Numerous studies have examined the link between foreign direct investment and economic growth using a variety of approaches. (See for example Sahoo and Mathiyazhagan, 2003; Bhat, Sundari and Raj, 2005; Chakraborty and Nunnenkamp, 2008; Jayachandran and Seilan, 2010; Ray, 2012; Bagli and Adhikary, 2014; Choi and Baek, 2017). The vast majority of these scholars supported a strong correlation between foreign direct investment and economic growth. However, there are discrepancies in results when it comes to the issue of causality.

Researchers and academics have also analysed and studied the impact of foreign direct investment on India's exports in addition to economic growth (Misra, 2012; Talwar and Mensinakai, 2017). On the basis of experiences around the world, it was argued that foreign direct investment, through its many benefits, would help the host country increase its share in global trade, and that this outcome would help the host country obtain the desperately needed foreign currency needed to meet its import demands and achieve productivity gains, which would further quicken the pace of economic growth (Blomstrom, 1991; Yeyati, Stein and Daude, 2003; Ajayi, 2006; Samuel, 2009). Therefore, an increase in exports was the other argument that was put forth for any policy initiative aimed at increasing the inflow of foreign direct investment into India.

Given these positively skewed outcomes of foreign direct investment, coupled with the need for foreign exchange to finance our import needs, the government from time to

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time frames policy measures aimed at providing a supportive environment for the inflow of foreign direct investment to India. It was with this motive of promoting India's share in global trade that the new Foreign Trade Policy 2015-20 was implemented in India. The aim of the policy was to double the country's exports of goods and services from \$465.9 billion in 2013-14 to \$900 billion by 2020. The policy also aims at increasing India's share of world exports from 2.1 percent to 3.5 percent. The government initiated schemes such as "Make in India" and "Digital India" to achieve these export targets. The focus of Make in India campaign is on creating jobs and skill enhancement in twenty-five sectors (Dev, 2014). All these initiatives were aimed at focusing on foreign direct investment as a means to finance the infrastructure and manufacturing sector investment requirements. Given this background, the purpose of the present paper is to study the nature and trend of economic growth, foreign direct investment, and exports during the post-reform period.

### **Nature and Trend of Foreign Direct Investment**

The government's emphasis on foreign direct investment to finance India's developmental needs is not new. Since Independence, the government of India has made efforts to promote foreign direct investment in India. During the prereform era, the government's objective of promoting foreign direct investments was highly regulated and restricted to selected sectors only. During this period, the stock of foreign direct investment increased from Rs. 256

crore in 1948 to Rs. 566 crores in 1964 and to Rs. 916 crores in 1974 (Hooda, 2011). However, real growth in foreign direct investment inflow came after 1991, when the government adopted a new economic policy aimed at reforming the Indian economy. The New Economic Policy of 1991 highlighted Foreign Direct Investment (FDI) as an instrument for investment in our capital-deficient country. Governments' post-1991 policies laid stress on facilitating investment in India through various investment booster initiatives such as single window clearances, minimal procedures, and cutting out red-tapism. All these initiatives have been seen as a shift from earlier import substitution strategies to export-led economic growth strategies (Nidugala, 2000; Agarwal, 2012; Mukherjee, 2012). This inward FDI is expected to help the host country by way of enhanced access to global technologies and management knowhow; an increase in market access, innovations and integration with the global market; and also help the local companies become more productive by way of a "spill over" effect (Mishra, 2011; Mukherjee, 2011; Jayakumar, Kannan and Anbalagan, 2014; Kansal and Tuli, 2015; Das, 2018). Through improved market access, increased access to global technology and managerial know-how, and an export-led economic growth plan that is anticipated to boost employment, raise income levels, and lower poverty levels, this inward FDI is anticipated to benefit the host country. The nature and trends of foreign direct investment into India during post-reform period are shown in the Table 1 ahead.

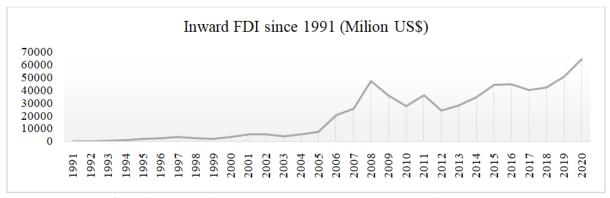


Figure 1: Growth of Inward Foreign Direct Investment in India since 1991

Source: World Development Indicators, 2022

Since 1991, annual data on foreign direct investment inflows have shown an upward trend, with some moderations after 2008 due to global recessionary tendencies. The data on FDI inflow to India shows that the FDI inflow to India grew from 236.7 million US dollars in 1990-91 to 64062 million US dollars in the year 2020-21. During this interval, the FDI touched the highest level of 43406.277 million US dollars in the year 2008-09. Since 2008-09, due to the global recession, there has been little moderation in the FDI inflows to India. However, since 2012, there has been consistent growth in FDI inflows to India. The UNCTAD World Investment Report 2022 shows that India's share of global FDI inflows has grown from 0.12 per cent in 1990-91 to 2.83 per cent in 2021-22.

There has been consistent growth in India's share of global FDI inflows.

The sector specific inflow of foreign direct investment is shown in the table. According to the table, the manufacturing sector has attracted the most FDI inflows since 2006, accounting for 24.63 percent, followed by computer services (11.88%), and financial services (11.42%). Since 2006, FDI inflows into the manufacturing sector have consistently exceeded 20%. the share of computer services in FDI inflows grows, particularly during 2020-21. Apart from the manufacturing sector and computer services, financial services and construction have been the highest FDI attracting sectors in India.

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**Table 1:** Nature and Trend of FDI inflow to India (US\$ million)

Sector	2006-2010	2011-2015	2016-2020	2006-2020
Computer Services	5, 215 (5.87)	8, 390 (7.07)	35, 717 (17.20)	49, 322 (11.88)
Construction	10, 870 (12.24)	11, 010 (9.28)	8, 537 (4.11)	30, 417 (7.33)
Education, Research & Development	589 (0.66)	885 (0.75)	2, 779 (1.34)	4, 253 (1.02)
Electricity & Energy Gen., Distribution & Transmission	4, 887 (5.50)	6, 980 (5.88)	8, 914 (4.29)	20, 781 (5.01)
Financial Services	13, 169 (14.83)	13, 011 (10.97)	21, 228 (10.23)	47, 408 (11.42)
Manufacturing	20, 080 (22.61)	40, 298 (33.97)	41, 849 (20.16)	1, 02, 227 (24.63)
Mining	1, 468 (1.65)	1, 022 (0.86)	873 (0.42)	3, 363 (0.81)
Real Estate Activities	6, 288 (7.08)	1, 052 (0.79)	1, 688 (0.81)	9, 028 (2.18)
Restaurants and Hotels	1, 665 (1.87)	5, 935 (5.00)	4, 455 (2.15)	12, 055 (2.90)
Retail & Wholesale Trade	1, 468 (1.65)	8, 806 (7.72)	19, 434 (9.36)	29, 708 (7.16)
Trading	1, 012 (1.14)	374 (0.32)	0 (0.00)	1, 386 (0.33)
Transport	1, 946 (2.19)	2, 779 (2.34)	13, 094 (6.31)	17, 819 (6.39)
Business Services	6, 349 (7.15)	6, 465 (5.45)	13, 720 (6.61)	26, 534 (6.39)
Communication Services	5, 636 (6.34)	6, 519 (5.50)	29, 202 (14.07)	41, 357 (9.96)
Others	3, 133 (3.53)	1, 201 (1.01)	1, 122 (0.54)	5, 456 (1.31)
Miscellaneous Services	5, 054 (5.69)	3, 902 (3.29)	4, 991 (2.40)	13, 947 (3.36)
Total FDI	88, 829	1, 18, 629	2, 07, 601	4, 15, 059

Note: Includes FDI through approval and automatic routes only.

Values in bracket are percentage of total.

Source: RBI various Issues.

The outcome of inward FDI was expected to be in the form of the achievement of a higher rate of economic growth and manufacturing sector exports of the country. To what extent this was achieved was analysed by looking into the data on economic growth and manufacturing sector exports of the Indian economy.

# **Economic Growth and Export of Goods and Services in India**

Due to various policy measures taken by the government during the post-reform period, the Indian economy has achieved a relatively higher rate of economic growth than in the pre-reform period. The growth of GDP and exports of goods and services during the post-reform period are shown in the figure. From the figure, it can be seen that throughout the post-reform period, the growth rate of exports of goods and services was higher than the growth of GDP per capita, except for some exceptional years post 2010. The decline in India's exports of goods and services during the 2010s was attributed to the global slowdown and protectionist policies adopted by trade partners.

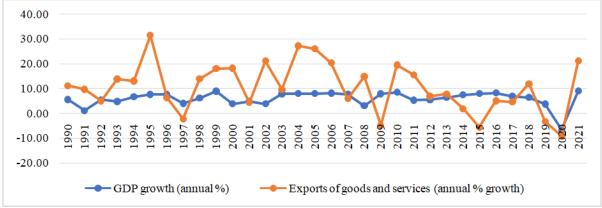


Figure 2: Growth Rate of GDP and Export of Goods and Services

Source: Author's Compilation from the WDI data

The growth of gross domestic product, per capita gross domestic product, and exports of goods and services during the post-reform period is shown in the table. From the table, it can be seen that during the post-reform period, India's GDP grew at a consistent decadal growth rate of more than 6 per cent. The overall growth rate of India's GDP for the period 1991-2020 is 6.40 per cent. Similarly, the per capita GDP also grew at a decadal growth rate of more than 4.29 per cent. The growth rate of real GDP per capita during the reform period came out to be 4.81 per

cent. During the post reform period, India's exports of goods and services also grew significantly. The export of goods and services at constant 2015 prices has grown from 30260 million US dollars in 1991 to 449037 million US dollars in 2020. The growth rate of exports of goods and services during the post-reform period was 11.29 per cent. The decadal growth rates of exports of goods and services were 12.52 per cent, 15.26 per cent, and 2.53 per cent, respectively, during 1991-2000, 2001-2010, and 2011-2020.

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Table 2: CAGR of the GDP, GDP Per Capita and Export during Post-Reform Period

Variable	1991-2000	2001-2010	2011-2020	1991-2020
GDP (constant 2015 US\$)	6.29	7.04	6.08	6.40
GDP per capita (constant 2015 US\$)	4.29	5.44	4.92	4.81
Exports of goods and services (constant 2015 US\$)	12.52	15.26	2.43	11.29
Foreign direct investment, net inflows (BoP, current US\$)	44.92	32.58	8.11	20.20

Source: Author's Compilation from the WDI data

Table results also show that over the first ten years of economic reforms, FDI rose at a rate of 44.92% while GDP and export grew at 6.29 and 12.52 %, respectively. While inbound foreign direct investment has slightly decreased during the second decade of economic reforms to 32.58 percent, during this time GDP and exports increased at rates that were significantly quicker than those of the first decade of reforms, at 7.04 percent and 15.26

percent, respectively. The third decade of economic reforms showed a sharp fall in the growth rate of FDI inflow to 8.11%. The GDP growth rate and exports of goods and services both showed a drop. The correlation coefficient was used to compare the growth of GDP and exports of goods and services with the growth of foreign direct investment. The table shows that the three variables used in the study are positively correlated.

Table 3: Correlation between FDI, GDP, Exports of Goods and Services

Variable	GDP	Exports of goods and services	Foreign direct investment, net inflows
GDP	1.00	0.973**	0.927**
Exports of goods and services	0.973**	1.00	0.922**
Foreign direct investment	0.927**	0.922**	1.00

Note: \*\* Correlation is significant at the 0.01 level (2-tailed).

Source: Author's Compilation from the WDI data.

Given the strong correlation between GDP, exports of goods and services, and FDI inflows, the analysis infers that FDI and exports of goods and services are necessary for a quicker rate of economic growth. However, one notable finding from the examination of sector-specific FDI inflows into India, as indicated in Table 1, was that the manufacturing sector in India draws the highest percentage of FDI from abroad. The study will focus on the impact of this FDI infusion on the manufacturing sector's export composition in the section that follows.

## **Manufacturing Sector in India**

The manufacturing sector holds the key to the economic development of any country. Due to its income and employment generating capabilities, the sector holds the utmost importance in any country's development. In economic literature, this sector is considered to be the engine of growth (Cantore et al., 2017; Kathuria, 2010). In India, the manufacturing sector provides employment to approximately 12 percent of the country's labour force as well as provides a transitional opportunity for the labour force in agriculture (Kapoor, 2015). In India, the growth journey of the manufacturing sector is full of ups and downs. From the initial phase of building manufacturing infrastructure in the 1950s and 1960s, to the license-permit raj of 1965-1980, to the phase of liberalisation of the 1990s, the sector has experienced various phases of development. During the pre-reform period, the performance of India's manufacturing sector remained the weakest link. However, in the reform period, significant changes at policy level to improve productivity and the capability of the sector are being made. However, despite various government initiatives to increase the share of the manufacturing sector in India's GDP, nothing significant has been achieved so far. Over the past thirty years, the share of the manufacturing sector in India's GDP has remained stagnant at around 17 per cent. During the reform period, the contribution of manufacturing sector exports to total merchandise exports has also shown a declining trend. From 73 per cent in 1990-91, the share of manufacturing exports in total merchandise exports at first rose to almost 80 per cent in 1999-2000, but since then it has seen a downward trend. In 2021-22, manufacturing exports constituted 68.07 percent of India's merchandise exports.

the National The central government launched Manufacturing Policy in 2011 with the objective of increasing the share of the manufacturing sector in GDP to 25 per cent and creating 100 million additional jobs by 2025. Apart from this, the government's campaigns like 'Make in India" are also aimed at providing a boost to the manufacturing sector by way of inviting foreign direct investment into the manufacturing sector of the country. With over 30 years of experience liberalising India's foreign direct investment regime, the need to study the change in composition of India's manufacturing sector exports based on technology intensity was felt. It is in this context that the present study tries to capture the technological shift in the composition of its manufacturing exports. This changing export composition (if evidenced) of the Indian manufacturing sector would provide an insight into the nature of changes foreign direct investment is bringing to our manufacturing base. It would further help us in identifying to what extent there is a shift from natural resource-based, low technology-intensive exports to medium and high technology-intensive exports. This will help in establishing the theoretical argument which states that in the development process there is a shift in export from low technology towards medium and high technology intensive sectors.

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## Nature of Manufacturing Sector Export in India

One of the most significant features of the manufacturing sector is its technological intensity, which varies from low technology-intensive manufacturing industries to high technology-intensive industrial units. Therefore, the study of the impact of FDI in the manufacturing sector

The paper tries to analyse how much of a shift the inflow of foreign direct investment is able to make in the structure of the manufacturing sector. Therefore, on the basis of the level of technology used in the production process, the manufacturing sector can be divided into four categories. This classification of manufacturing industries is based on the International Standard Industrial Classification of All Economic Activities (ISIC Rev. 3) as proposed by the OECD. This classification divides manufacturing activities into 23 divisions and 61 groups. This division on the basis of technology intensity is classified into four categories, namely high technology, medium high technology, medium-low technology, and low technology. The details of the industry classification based on ISIC Rev. 3 are given in the table.

**Table 4:** Classification of Manufacturing Industries Based upon Technology

High-technology industries	Medium-high-technology		
	industries		
✓ Aircraft and spacecraft ✓ Pharmaceuticals ✓ Office, accounting, and computing machinery ✓ Radio, television, and communication equipment ✓ Medical, precision, and optical instruments	<ul> <li>✓ Electrical machinery and apparatus NEC</li> <li>✓ Motor vehicles, trailers, and semi-trailers</li> <li>✓ Chemicals excluding pharmaceuticals</li> <li>✓ Railroad equipment and transport equipment NEC</li> <li>✓ Machinery and equipment NEC</li> </ul>		
Medium-low-technology industries  ✓ Coke, refined petroleum products, and nuclear fuel  ✓ Rubber and plastic products  ✓ Other nonmetallic mineral products  ✓ Building and repairing of ships and boats  ✓ Basic metals  ✓ Fabricated metal products,	Low-technology industries  ✓ Manufacturing NEC and recycling  ✓ Wood, pulp, paper, paper products, printing, and publishing  ✓ Food products, beverages, and tobacco  ✓ Textiles, textile products, leather, and footwear		
except machinery and equipment			

Source: OECD, "International Standard Industrial Classification of All Economic Activities, Rev.3 Technology intensity definition" OECD Directorate for Science, Technology and Industry

The export data on the basis of technology classification of commodities at 3 digit level for India was taken for the period 1996-97 to 2021-22 from the United Nations COMTRADE website. This data was compiled on the

<sup>1</sup>The technological intensity is measured by two indicators: R&D expenditure divided by value added and R&D expenditure divided by production.

necessitates the exploration of technology-based shifts (if any) in the structure of manufacturing sector exports in India. Traditionally, India's manufacturing sector is characterised by a labour intensive outlook (Gupta, Hasan and Kumar, 2008; Nayak, Aggarwal and Mann, 2013; Kapoor, 2015; Chandrashekar *et al.*, 2019).

basis of the four industry group classifications mentioned above to arrive at the yearly export of manufacturing industries of India in a particular year. The share of each technology-intensive industry group in India's exports is shown in Table 5. This table gives an overview of changes (if any) in the share of industry groups in India's total exports. In the year 1996-97, low-technology industries contributed more than 50 per cent of total manufacturing sector exports. Similarly, the contribution of medium-low technology intensive industries stood at 25 per cent. The share of high technology industries in India's exports in 1996 was merely 11 percent of total manufacturing exports. This shows that during the first decade of economic reform, the high technology industrial structure was not developed enough to contribute significantly to total manufacturing exports. In 1996-97, high technology industries accounted for 11% of total Indian exports; by 2021-22, this figure is expected to rise to 21.85%. This clearly shows that the contribution of high technology industries to India's exports during the reform period has increased. This increase in export share can be attributed to an increase in foreign direct investment in the manufacturing sector. Similarly, the share of the mediumhigh technology industry group in total manufacturing exports also shows an increase from 4.63 per cent in 1996-97 to 7.07 per cent. The highest increase in the growth in exports of manufacturing goods was seen in the mediumlow technology industry group.

Based upon the analysis, the study finds that in the reform period, whereas the inflow of foreign direct investment has shown consistent growth, the same is also imperative through an increase in the exports of high technology manufacturing exports from India. To what extent this changing share of exports of high technology manufacturing industries is attributed to foreign direct investment or to other factors is a matter of academic research that requires further exploration.

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**Table 5:** Share of Technology Industry in Manufacturing Export of India. (%age)

India's	High-technology	Low Technology	Medium-high-technology	Medium-low-technology	Uncategori
Export	industries	Industries	industries	industries	sed
1996-1997	11.00	53.23	4.63	25.00	6.15
1997-1998	12.09	51.87	4.33	25.12	6.59
1998-1999	11.42	51.84	3.87	26.99	5.87
1999-2000	11.73	48.25	3.70	30.56	5.76
2000-2001	12.85	45.74	3.87	31.68	5.85
2001-2002	13.44	43.53	3.83	32.83	6.37
2002-2003	13.52	40.63	3.82	33.97	8.05
2003-2004	14.72	38.01	4.37	34.82	8.08
2004-2005	14.01	31.82	4.21	38.82	11.13
2005-2006	14.58	30.84	4.51	40.53	9.54
2006-2007	15.04	28.20	4.30	42.49	9.97
2007-2008	15.40	27.28	4.05	43.55	9.72
2008-2009	17.65	24.05	4.51	43.90	9.90
2009-2010	16.40	25.11	4.80	44.24	9.45
2010-2011	15.26	22.80	4.88	47.15	9.91
2011-2012	15.28	24.56	4.71	46.89	8.56
2012-2013	16.25	26.23	5.36	47.01	5.15
2013-2014	16.62	27.50	5.50	45.35	5.03
2014-2015	17.58	27.49	6.14	45.20	3.58
2015-2016	19.94	29.53	7.12	40.64	2.77
2016-2017	19.22	28.35	7.07	41.10	4.26
2017-2018	19.93	27.51	7.46	40.55	4.55
2018-2019	21.71	25.82	7.34	41.37	3.76
2019-2020	23.80	25.04	7.30	39.61	4.24
2020-2021	25.68	27.25	6.55	34.36	6.16
2021-2022	21.85	24.55	6.33	40.80	6.47

Source: Author's Compilation

#### 2. Conclusion

Whereas it is a well-established fact that in the liberalisation era, India has witnessed relatively higher export and GDP growth rates, the effect of FDI on the manufacturing sector is a matter of debate. In the present study, the impact of foreign direct investment on exports in general and manufacturing exports in particular was studied. The research findings reveal that during the postreform period, there has been a significant increase in the inflow of foreign direct investment into India. The inflow of foreign direct investment recorded stagnation or decline post the global financial crisis of 2008 and the adoption of protectionist policies by India's trading partners. However, in recent times, owing to the supportive government policy for the inflow of foreign direct investment, the inflow of foreign direct investment has started to show signs of improvement. The sectoral composition of the inflow of FDI shows that the manufacturing sector is attracting approximately 25 per cent of FDI inflows into India. The study further finds that during the post-reform period, the growth rate achieved by the Indian economy was higher than in the pre-reform period. Similarly, exports of goods and services during this period also recorded a significant increase, with some decline during the second decade of the 21st century. Given the fact that both economic growth and exports of goods and services showed positive results during the post-reform period, an initiative to study the change in composition of India's manufacturing exports was taken. The findings reveal that during the post-reform period, the share of high technology and medium-sized industries in India's total manufacturing exports has shown an increase. Whereas the share of low-technology

industries in India's exports is declining. This shift in the composition of exports can be attributed to the inflow of foreign direct investment into India. The inflow of foreign direct investment into high technology industries has certainly yielded positive results as far as the exports from these industries are concerned. This changing composition of Indian manufacturing sector exports hints towards a general shift from natural resource-based, low technology-intensive exports. This will help in establishing the theoretical argument which states that in the development process there is a shift in export from low technology towards medium and high technology intensive sectors.

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