TECHNOLOGY DYNAMISM: Analyses Of Changing Structure Of Trade In Organized Manufacturing Industries In India

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TECHNOLOGY DYNAMISM[1]
(Analyses Of Changing Structure Of Trade In Organized Manufacturing Industries In India)

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Abstract: The paper focuses on the impact of reforms on the industrial and trade structure in the organized manufacturing sector in India, using ASI (CSO) and UN-COMTRADE data. The period of the study is from 1980-81 to 2005-06, which is divided into the pre-reform (1980-81 to 1991-92) and post-reform (1992-93 to 2005-06) periods. The semi-logarithmic and Boyce single kinked method is used for the analyses. The results show some positive signs of structural shift within the industries, but the changes are too slow to make a dent. The slower trend growth rate of value added and exports witnessed in the post-reform period reduces the initial optimism shown while adopting these reforms. Specific policy framework for each industry concerned and investment in infrastructure, human capital and technology may lead to dynamize the export structure.

The 'new trade theory' is waning rather than gathering strength. The rise of the new trade theory was motivated to a large extent by the rising relative importance of similar-similar trade: two-way exchanges of goods among advanced economies. For the last two decades, however, the trend has been in the other direction, with rapidly rising trade between developed economies and much poorer, lower-wage economies (Krugman, 2009). It is found that developing countries are increasingly becoming exporters of high technology[2] or technology intensive products (Lall, 2001; Mani, 2004). Where India stands among these high technology exporters developing countries, is an important issue at hand.

Before analysing this, it is imperative to view the basic policies governing the industrial sector in India, in retrospect. She had protected this sector for about three decades through licensing, high tariffs, quotas, control on growth of large private domestic firms in favour of public enterprises, government direction of investment (Lall, 2001) and so on, till India adopted economic reforms[3] and embarked on dismantling controls specifically in the industrial and trade sectors with the aim of exposing Indian industries to external competition and to improve its long-term performance. But now, after having adopted reforms for about two and a half decades and after seeing the initial optimism on adopting these reforms (Pack, 1988), it is obvious to hypothesize that the reforms have a positive effect on the sectors where it has a direct impact – industry and exports. There are numerous studies conducted by various scholars to examine the impact of reforms on the growth, structure and export performance of India's industrial economy. Whereas Nagraj (1997; 2003) and Chaudhury (2002) found the manufacturing growth rate was lower in the post-reform period compared to the pre-reform period, Ahluwalia (2006) found the post-reform period fluctuating. The results although quite similar, the reasoning diverges from decline in the role of the government with regard to the former studies and slowdown in reforms as the probable reasoning presented by the latter. But all the studies analysed the diversification within the manufacturing sector by classifying it into use-based sectors.

Again, there are other sets of studies that analyse the impact of reforms on exports – Srinivasan (1998), Lall (2001), Roy (2006) and Veeramani (2007), to name a few. They all found that India does not seem to be competitive in a number of commodities and the export growth has not been distinctly higher in the post-reform period. However, the export structure is analysed by Kumar and Siddharthan (1994) and Lall (2001) using the industrial classification based on technology intensity in different industries, but they are different in using the dataset- the former study was a firm-level analyses while the latter is comprehensive, based on the organized manufacturing sector as a whole. They again converge on the basic results of their respective studies wherein they found that the Indian export structure was static and dominated by simple and undifferentiated products.

Thus, from this brief survey of literature it is found that the industrial structure and the exports structure have been analysed separately by scholars, although they are inter-related. Unless the structure of industries shifted towards high technology intensive ones, it is impossible to have technology dynamism in the exports front, which is very important in the liberalized world (Lall, 2001). Thus, the aim of this paper is to fill the gap in the existing literature.

The paper is structured in five sections. The first section describes the data sources and methodology. The second discusses the changing structure of the Indian manufacturing sector and attempts to find out whether there has been a structural shift towards more complex high technology industries for securing sustainable[4] growth. The analyses of the changing structure of exports and its destinations are discussed in the third section. The fourth section shows the relationship between the industrial and export structures. The last section concludes the study by presenting some policy frameworks.

Database and Methodology

Data Sources

Industry: The basic source of data for this is the Annual Survey of Industries (ASI) published by the Central Statistical Organization, Government of India, based on the National Industrial Classification (NIC) 2004. The study covers the period 1980-81 to 2005-06. The whole period is divided into two sub-periods – the pre-reform period from 1980-81 to 1991-92 and the post-reform period from 1992-93 to 2005-06 for a comparative analyses of the impact of reforms. The analysis is based on the data for 60 three-digit industries (industrial codes and names of the respective industries are in Appendix I) drawn from an electronic database brought out by the Economic and Political Weekly Research Foundation (EPWRF). Data for the two years, i.e. 2004-05 and 2005-06 and the data on Pharmaceuticals (NIC 2004 code 2423) were drawn directly from ASI publications. But to make a consistent data set for 1980 onwards, concordance was done for the different industrial classifications which appeared at different times – NIC 1970 (1980-81 to 1988-89); NIC 1987 (1989-90 to 1998); NIC 1998 (1998-99 to 2003-04) and NIC 2004 (2004-05 to 2005-06).

The dataset is made constant at 1993-94 prices[5] as this is the current official base year. The data on the wholesale price index (WPI) and consumer price index for industrial workers (CPI-IW) are compiled from the different volumes of *Report on Currency and Finance*, and ' taken from the Office of the Economic Advisor, Ministry of Industry, Government of India.

Trade: Export data was from UN-COMTRADE;[6] which contains the value of exports (in US$). Here again, to make a consistent dataset concordance was done between the Standard International Trade Classification SITC (1980-1987) and the International Standard Industrial Classification ISIC (1988-2006). The export data is made constant at US$ 2000-01 using International Monetary Fund – International Financial Statistics (IMF-IFS) data.

Technology: To measure the technological complexion, the detailed technological breakthrough of industries and the corresponding exports is done according to the definition of the Organization for Economic Cooperation and Development (OECD) 2007, which divides manufacturing into four categories: high technology industries (H-T), medium-high technology industries (M-H-T), medium-low technology industries (M-L-T) and low technology (L-T) according to their research and development (R&D) intensities.

Methodology

The semi-logarithmic method is used to measure the trend growth rate.

The single kinked model as propounded by Boyce (1986) is used for estimating the growth rates in the sub-periods of a time-series analysis in which only one regression equation is estimated. This method is also used by Goldar and Seth (1989). The growth rates for the two sub-periods can be estimated by fitting the single equation.

$$\text{Log } Y_1 = a_1 D_1 + a_2 D_2 + (b_1 D_1 + b_2 D_2)\, t + \square_1 \qquad \text{.....(1)}$$

where Y_1 is dependent variable

time t = 1, ..., n is broken at point k

dj = dummy variable (j = 1, 2) which takes the value 1 in the jth subgroup and 0 otherwise.

$a_1 + b_1 k = a_2 + b_2 k$ .....(2)

Substituting for a_2 and assuming

$a_1 D_1 + a_2 D_2 = a_1$, we get

$\log y_t = a_1 + b_1 (D_1 t + D_2 k) + b_2 (D_2 t - D_2 k) + u_t$ .....(3)

The estimates for b_1 and b_2 give the exponential growth rate for the two sub-periods.

To estimate the relationship between the industrial and export structures, the rank correlation method is used and the export intensity of the industries is also ascertained.

Pattern of Industrial Growth

In knowledge-driven economies, industrial success depends on learning the constant changing industrial technologies. So, countries are making an effort to maintain (developed countries) and to catch up (developing countries) the comparative advantage in 'technologically advanced industries' to have a sustained growth of their industrial sectors as these industries have the natural barrier for entry because of their complex nature and fast moving technological frontier. The simple technology intensive industries, on the other hand, based on a shallow base of capabilities, specializing in the operation of a limited number of simple activities, can lead to growth in a liberalized world economy only as long as these activities remain competitive or the resource base is large. Growth will slow down as these advantages erode and are not added to, as new entrants provide low skilled labour at lower cost, or technological progress make such simple competencies unnecessary (Lall, 2000).

To reiterate, high technology industries offer better prospects for future growth, they tend to be highly income elastic, create new demand and substitute faster for older products. Simple technologies, by contrast, tend to have slower growing markets, more limited learning potential and smaller scope for technological upgrading. They are also more vulnerable to easy entry by lower wage competitors, substitution by technical change and structural change from simple to more advanced technologies (Lall S., 2001).

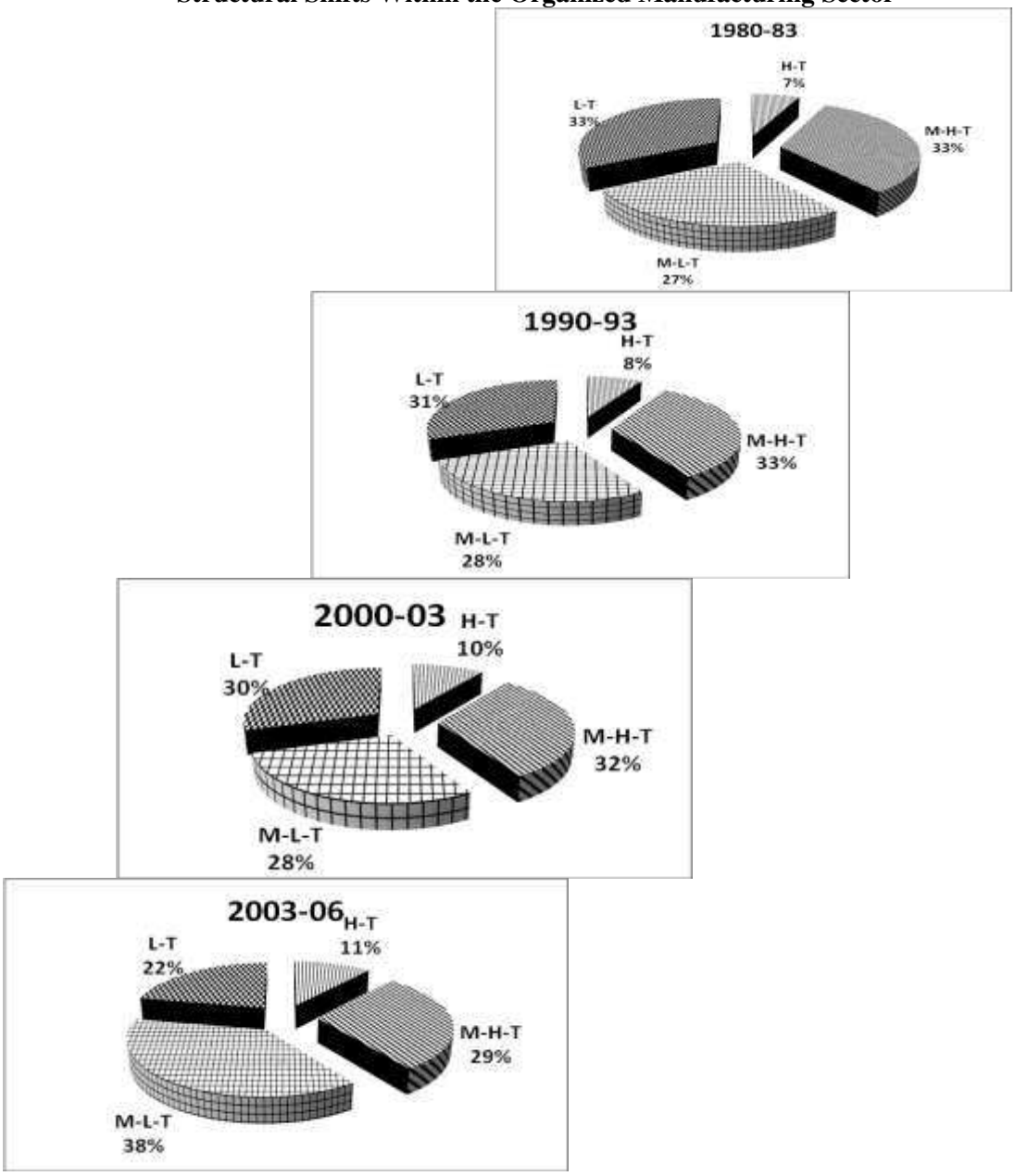
So, whether the Indian manufacturing sector has a structural shift towards more complex high technology industries for securing sustainable growth is an important issue to analyse. An attempt is made to do so in this section.

Indian Industrial Structure[7] and its Diversification

The contribution of four subgroups based on the degree of technology intensity, from high to low, viz. high technology (H-T), medium-high technology (M-H-T), medium-low technology (M-L-T) and low technology (L-T) to the total value added of the Indian organized manufacturing sector is analysed in Figure 1.

Figure 1 shows that the average contribution of high technology industry (H-T) towards the net value addition of the organized manufacturing sector for 1980-83 is 7 per cent whereas the low technology (L-T) industries contribute a whopping 33 per cent. The medium-high technology (M-H-T) industries and the medium-low technology (M-L-T) industries were respectively, high and low by a 3 per cent to 30 per cent share. However, the average of 1990-93 saw a rise of 1 per cent in the share of high technology (H-T) industries and medium-low technology (M-L-T) industries. A fall is seen in the low technology (L-T) industries of about 2 per cent to 31 per cent, whereas the medium-high technology (M-H-T) industries remained at the previous level. The decade of massive reforms saw an increase of about 2 per cent from the high technology industries, raising the total average contribution to 10 per cent during 2000-03; definitely a positive sign. However, low technology (L-T) and medium-high technology (M-H-T) industries witnessed some fall, but medium-low technology (M-L-T) industries maintained the previous level. The share of high technology (H-T) industries reached 11 per cent during 2003-06. During this period, the contribution of medium-low technology (M-L-T) industries witnessed a high of 10 per cent. This was followed by a drop in the shares of low technology (L-T) and medium-high technology (M-H-T) industries by 8 per cent and 3 per cent, respectively.

Figure 1
Structural Shifts Within the Organized Manufacturing Sector



Notes: The pie-diagram shows the results in round figures.
The average of three years is taken to overcome with the yearly fluctuations, if any.
Data Source: EPWRF CD-ROM 2004, ASI (CSO) 2004-05 and 2005-06
Source: Calculated

Table 1

Value Added and Employment (Organized Manufacturing Sector)

(Percentage)

NIC' 2004 Code	Industry	1980-83		1990-93		2000-03		2003-06	
		VA	emp	VA	emp	VA	emp	VA	emp
High Technology									
2423	Pharmaceutical	3.25	1.60	3.6	2.21	5.8	2.98	4.35	3.07
300	Office, accounting & computer machinery	0.68	0.40	0.97	0.45	0.67	0.25	1.27	0.3
321	Electronic valves & tubes	0.11	0.14	0.26	0.33	0.95	0.65	0.38	0.66
322	TV & radio transmitters	-	0.84	1.51	0.88	0.45	0.36	0.38	0.32
\323	TV & radio receivers	1.07	0.87	0.78	0.54	0.93	0.36	0.6	0.37
331	Medical appliances	0.86	0.38	0.48	0.47	0.77	0.58	0.73	0.61
332	Optical Instrument	0.03	0.03	0.02	0.05	0.08	0.07	0.11	0.08
333	Watches & clocks	0.3	0.18	0.26	0.29	0.20	0.2	3.33	0.15
353	Aircraft& Spacecrafts	0.17	0.10	0.21	0.12	0.06	0.04	0.1	0.05
Total of H-T industries		*6.51*	*4.56*	*8.15*	*5.33*	*9.93*	*5.49*	*11.3*	*5.62*
M-H-T Industries									
241	Basic chemical	5.84	2.51	6.59	2.74	8.75	3.01	6.97	2.56
242*	Other chemical products	5.17	3.15	5.31	3.84	5.05	3.73	3.75	3.53
243	Man-made fibres	-	-	0.75	0.36	0.92	0.35	0.39	0.34
291	General purpose mach.	3.27	2.08	3.08	2.55	3.07	2.56	2.87	2.63
292	Special purpose mach.	4.62	3.52	3.9	3.7	2.73	2.4	2.47	2.52
293	Domestic appliances	1.07	0.85	0.45	0.57	0.47	0.44	0.25	0.39
311	Electronic motors etc	3.29	1.35	2.75	1.75	1.37	0.94	1.56	0.95
312	Electricity distribution & Control appliances	0.39	0.49	1.03	0.59	0.87	0.65	0.87	0.77
313	Insulated wires & cables	1.27	0.52	0.97	0.57	0.55	0.49	0.32	0.45
314	Accumulators, cells etc.	0.54	0.25	0.36	0.22	0.49	0.27	0.3	0.25
315	Electronic lamps etc.	-	-	0.34	0.37	0.23	0.29	0.18	0.31
319	Other electrical equip.	0.25	0.13	0.15	0.15	0.26	0.33	0.32	0.38
341	Motor vehicles	4.87	2.54	4.38	2.84	1.65	0.94	4.1	1.01
342	Bodies for motor vehicle	0.1	0.09	0.15	0.23	0.05	0.21	0.09	0.27
343	Parts for vehicles	-	-	-	-	2.49	2.23	2.74	2.9
352	Railways & tramways etc,	2.12	2.95	1.77	3.12	0.23	0.33	0.22	0.29
359	Transport equip. n.e.c.	0.88	0.82	1.45	1.5	2.42	1.62	2.66	1.73
Total of M-H-T industries		*33.1*	*21.3*	*33.46*	*25.14*	*31.63*	*20.81*	*30.13*	*21.29*
M-L-T Industries									
231	Coke-oven products	0.65	0.33	0.45	0.49	0.24	0.32	0.55	0.38
232	Refined petroleum prod.	2.57	0.43	4.39	0.41	6.94	0.58	12.42	0.64
233	Process of nuclear fuel	-	-	0.005	-	-	-	-	-
251	Rubber products	1.76	1.16	1.94	1.44	1.72	1.38	1.24	1.49
252	Plastic products	0.67	0.67	1.28	1.29	1.79	2.03	1.48	2.35
261	Glass & glass products	0.52	0.91	0.53	0.87	0.54	0.67	0.44	0.66
269	Non-metallic mineral	3.96	4.47	4.98	5.86	4.58	5.89	3.93	5.98
271	Basic Iron ore & steel	12.36	7.87	7.97	6.74	6.79	4.81	12.51	5.07
272	Basic&non-ferrous metal	0.88	0.79	1.96	0.94	2.37	0.99	2.76	0.99
273	Casting of metals	-	0	0.97	1.63	0.71	1.35	0.69	1.43
281	Structural metal etc.	1.59	1.51	1.54	1.91	0.99	1.29	1.13	1.43
289	Fabricated metal etc.	1.41	1.44	1.39	1.69	1.73	2.4	1.55	2.73
351	Building &repair of ships	0.87	0.72	0.21	0.33	0.23	0.27	0.18	0.31
Total of M-L-T industries		*27.3*	*20.5*	*27.66*	*23.61*	*28.61*	*21.97*	*38.89*	*23.46*
L-T Industries									

151	Prod. & process of meat.	1.5	2.01	1.69	2.14	1.55	1.84	1.2	2.13
152	Dairy products	0.45	0.55	0.67	0.91	1.43	1.05	0.97	1.01
153	Grain mill products	1.15	2.77	1.23	3.75	1.55	4.11	1.22	4.11
154	Other food products	4.85	13.42	5.21	9.79	4.97	9.09	3.18	8.61
155	Beverages	0.71	0.63	1.06	0.89	1.21	1.08	1.06	1.22
160	Tobacco products	1.36	5.39	2.16	6.81	2.83	6.38	2.02	6.07
171	Spin, weaving of textiles	15.82	20.29	10.33	17.49	6.48	13.64	4.77	12.74
172	Other textiles	0.51	0.54	0.44	0.53	0.71	1.12	0.68	1.48
173	Knitted & crochet fabrics	0.22	0.24	0.39	0.5	0.63	1.13	0.61	2.01
181	Wearing apparel, not fur	0.48	0.74	1.58	1.91	2.12	4.27	1.74	5.83
182	Dressing & dying of fur	0.004	0.01	0.01	0.02	0.004	0.01	0.004	0.01
191	Leather	0.33	0.48	0.47	0.68	0.26	0.68	0.22	0.69
192	Footwear	0.38	0.53	0.66	0.99	0.56	1.19	0.41	1.32
201	Saw milling of wood	0.16	0.49	0.08	0.32	0.03	0.14	0.01	0.13
202	Wood, cork& straw	0.36	0.58	0.29	0.6	0.19	0.52	0.19	0.54
210	Paper & paper products	1.93	1.94	2.13	2.19	2.18	2.27	1.46	2.26
221	Publishing	1.42	1.48	1.15	1.37	1.0	0.68	0.93	0.67
222	Printing	0.69	0.83	0.47	0.81	0.56	0.82	0.43	0.85
223	Reprod. recorded media	-	-		-	0.02	0.03	0.003	0.03
361	Furnishing	0.34	0.34	0.1	0.24	0.26	0.33	0.24	0.38
369	Manufacturing n.e.c. jewellery	0.42	0.43	0.58	0.67	1.24	1.29	1.19	1.81
Total of L-T industries		*33.1*	*53.7*	*30.72*	*52.64*	*29.81*	*51.71*	*22.58*	*54.03*

Notes: Refer to Appendix I for industry names.
VA and EMP are value added and employment, respectively.
* means 'other chemical products' (242) does not include pharmaceuticals (2423)
The average of three years is taken to overcome the yearly fluctuations, if any.
Real value added in 1980-83 is Rs 1206990 cr; rose by 3 per cent to Rs 4927123 cr in 1990-93; rose further by 2 per cent to Rs 15054897 cr in 2000-03 and by 0.6 per cent to Rs 25054306 in 2003-06.
Total persons engaged was 6902726 thousand in 1980-83; fell to 6796260 thousand in 1990-93; rose by 0.1 per cent to reach at 7656792 thousand in 2000-03 and to 7822685 thousand in 2003-06.
Data Source: EPWRF CD-ROM, 2004 and ASI (CSO), 2005, 06
Source: Calculated

Table 1 shows the disaggregated contribution of the various three-digit industries to the total value added of the organized manufacturing sector. Among the high technology industries, pharmaceuticals (2423) [8], a four-digit disaggregated level industry of the aggregated three-digit one, viz. other chemical products (242) is highly complex in nature and the total value added throughout the period under study found this to be an important industry in the Indian manufacturing sector, as it contributed around 3 per cent in the 1980s, while it almost doubled its share in the value added during the early 2000s. In the employment front also, pharmaceutical, is an important industry, as it provides employment to around 3 per cent of the total employed in the organized manufacturing sector. The other industry which shows a rise in its share is watches and clocks (333) which rose from an average of less than 1 per cent during 1980-83 to around 3.3 per cent during 2003-06.

Amongst the medium-high technology industries (M-H-T), basic chemicals (241) is the most important industry followed by other chemical products (242) (excluding pharmaceuticals (2423)) during the 1980s. In the subsequent periods also, the contribution of basic chemicals (241) remained highly significant at about 5 per cent towards total manufacturing's value added. On the employment front too, both basic chemicals (241) and other chemical products (242) employ around 3 per cent of the total people employed in the organized manufacturing sector. The other important industry in this subgroup is motor vehicles (341) as its share in the total value added is around 4 per cent but the extent of total people employed in this industry fell by 50 per cent.

Towards the lower technological complexity level are the group of 13 medium-low technology industries (M-L-T). Basic iron ore and steel (271) is one of the largest industries in the Indian manufacturing sector. India is the fourth largest producer of iron-ore in the world. It has a large share of around 12 per cent in the early 1980s of the total organized manufacturing sector and provided employment to around 8 per cent employees. However, from 1990-03 to 2000-03, its share fell to half, but it continued to provide employment to around 7 per cent of the total employed. During 2003-06, its share again reached the level of the early 1980s.

The lowest on the technology ladder are the low-technology industries. This subgroup is the largest employment generator as it provides employment to over 50 per cent of the total people engaged in

this sector. Textiles (171) is the most important industry with a share of 16 per cent during the early 1980s, but witnessed a fall in its share subsequently to reach a mere 4.7 per cent during 2003-06. Food products industry (154) is also important in terms of both value added and employment generation.

Trend in the growth of the Manufacturing Industry

Now, it is important to analyse the trend in the growth of India's manufacturing sector, which is classified into four subgroups based on the degree of technological complexity from high to low. The trend in real net value added from 1980-2006 is estimated (Table 2) at the three-digit level of disaggregation, to analyse long-term growth trends across the industries. The period is divided into pre-reforms (1980-91) and post-reforms (1991-06), to understand the changes.

Table 2
Trend Growth rates* (Net Value Added in the Organized Manufacturing Industries

(Percentage per annum)

Industry groups	1980-06	1980- (Pre-Reform)	1991-06 (Post-Reform)
High tech**	8.87	10.85	6.29
Medium-high tech	5.75	7.68	3.14
Medium-low tech	7.68	6.82	8.98
Low tech	5.87	7.04	4.19
Manufacturing (organized)	6.6	7.25	5.33

Notes: 1. * Statistically significant at 1 per cent level.
2. ** The time period is 1980-04 due to the unavailability of data for the industry code '2423' for the last 2 years.
Data Source: EPWRF Vol II CD ROM and Annual survey of Industries 2005, 06.
Source: Calculated.

Figure 2
Trend Growth Rate Pre-Reform vs Post-Reform Period

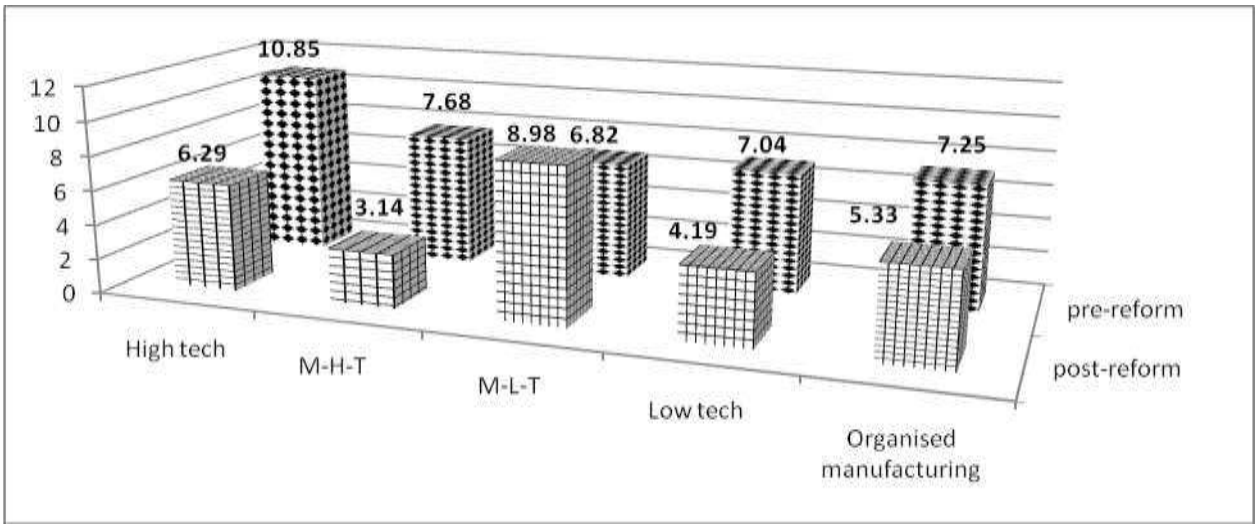


Table 2 and the corresponding Figure 2 show a significant slowdown in the growth of the entire industrial sector after the adoption of the structural adjustment programme in 1991. Except for the medium-low-technology (M-L-T) industries, all the other three subgroups showed a deceleration in the growth rate during the post-reform period.

Table 3
Trend Growth Rate at the Disaggregate Level

(Percentage)

NIC 2004 Code	Industry	Pre-Reform (1980-91)	Post-Reform (1991-06)	(1980-06)
High Technology Industries				
2423	Pharmaceutical	17.2	0.8	5.02
300	Office, accounting & computer	18.88	10.8	11.8
321	Electrical valves & tubes	12.1	8.11	10.2
322	TV & radio transmitters	21.3	2.7	9.2
323	TV & radio receivers	15.3	10.7	12.5
331	Medical appliances	2.6	10.6	7.5
332	Optical instruments	6.8	16.2	13.5
333	Watches and clocks	12.2	1.8	4.8
353	Aircrafts and spacecrafts	17.2	0.8	5.02
Medium- High Technology Industries				
241	Basic chemicals	14.9	2.4	8.4
242*	Other chemical products	11.62	1.5	6.07
243	Manmade fibres	-7.3	0.0	-10.6
291	General purpose machinery	7.8	8.1	8.0
292	Special purpose machinery	6.82	4.81	5.76
293	Domestic appliances	1.8	3.67	2.9
311	Electronic motors etc	6.9	2.3	4.3
312	Electricity distribution & control app.	18.2	10.3	13.3
313	Insulated wires & cables	12.3	0.2	4.5
314	Accumulators, cells etc	5.97	7.46	6.9
315	Electronic lamps etc.	-	9.82	-
319	Other electrical equipment	-	8.8	-
341	Motor vehicles	10.1	1.0	5.12
342	Bodies for motor vehicles	19.12	3.66	7.35
343	Parts for vehicles			
352	Railways and tramways etc.	8.98	-8.88	-3.34
359	Transport equipment n.e.c	12.75	13.4	13.08
Medium- Low Technology Industries				
231	Coke-oven products	9.75	5.65	7.03
232	Refined petroleum products	16.1	10.6	13.3
233	Process of nuclear fuel			
251	Rubber products	8.76	3.77	5.87
252	Plastic products	14.9	9.2	11.6
261	Glass & glass products	8.11	5.86	6.71
269	Non-metallic minerals	8.54	5.86	7.14
271	Basic Iron ore & steel	3.35	7.57	5.44
272	Basic & non-ferrous metal	17.2	7.78	11.8
273	Casting of metals	-	11.1	-
281	Structural metal, etc.	6.5	2.32	3.9
289	Fabricated metal, etc.	6.5	8.32	7.57
351	Building & repair of ships	-10.6	7.14	1.41
Low Technology Industries				
151	Production & process of meat	10.8	3.5	6.5
152	Dairy products	15.6	9.3	11.7

153	Grain mill products	9.1	6.6	7.6
154	Other food products	10.1	1.3	5.4
155	Beverages	9.8	4.5	6.6
160	Tobacco products	8.1	5.12	6.4
171	Spin, weaving of textiles	4.3	2.7	3.5
172	Other textiles	4.8	13.8	10.3
173	Knitted & crochet fabrics	15.4	13.2	13.9
181	Wearing apparel, not fur	26.5	8.8	~~16.3~~ →
182	Dressing & dyeing of fur	22.8	6.4	7.9
191	Leather	11.4	2.9	5.5
192	Footwear	13.5	5.2	8.1
201	Saw milling of wood	-2.2	-5.5	-4.9
202	Wood, corks & straw	3.4	1.8	2.2
210	Paper & paper products	7.3	3.6	5.12
221	Publishing	4.2	3.7	3.9
222	Printing	1.9	5.02	3.9
223	Reproduction of recorded media	-	-	-
361	Furnishing	-7.2	9.3	3.9
369	Manufacturing n.e.c. jewellery	9.7	11.5	10.8

Notes: Refer to Appendix I for industry names.

* Means 'Other chemical products' (242) does not include 'pharmaceuticals' *(2423).*

Data Source: EPWRF (2004), ASI (CSO) 2004; 2005.

Source: Calculated.

Table 3 shows the trend growth rate of the organized manufacturing sector at the disaggregated level. Within the high technology industries (H-T), the greatest fall in the trend growth rate is seen in pharmaceuticals (2423) which fell from the double digit growth to even less than 1 per cent in the post-reform period, although the data for this industry is available only till 2003-04. The other industries which saw a drastic fall in the trend growth rate are TV and radio transmitters (322), watches and clocks (333) and aircrafts and spacecrafts (353). However, amongst the nine high technology industries, only two show their trend growth rate increasing in the post-reform era. These two exceptions are medical appliances (331) and optical instruments (332).

At a slightly lower level of technological complexity, is the subgroup of medium-high technology industries. A steep fall is seen in the trend growth of basic chemicals (241), other chemical products (242 minus 2423), insulated wires and cables (313), motor vehicles (341), bodies for motor vehicles (342). All these grew at a double digit rate in the pre-reform period, but in post reform, their growth rate fell to a lower level of less than 4 per cent. The industries which show a higher trend growth rate in the post-reform era in this subgroup are man-made fibres (243), general purpose machinery (291), domestic appliances (293), accumulators, etc. (314) and transport equipment (329).

The only industrial subgroup which witnessed an overall rise in the trend growth rate in the post-reform period is the medium-low technology (M-L-T) industries. This was basically on account of the rise in the trend growth rate of its most important industry, basic iron ore and steel (271). The other industries which showed a positive growth trend in the post-reform period are casting of metals (273), fabricated metals, etc. (289) and building and repair of ships (351). The remaining industries in this subgroup also witnessed a slower trend growth rate in the post-reform period.

The lowest in the technological complexity are the low-technology (L-T) industries. This subgroup is the largest in terms of the number of 3-digit industries. They also witnessed an overall fall in the trend growth rate in the post-reform era (Table 3 and Figure 3). Only four industries in this subgroup saw a rise in their growth rate in the post-reform era. These industries are other textiles (172), printing (222), furnishing (361) and manufacturing n.e.c. jewellery (369).

The overall analyses show that very few industries (28 per cent) were able to grow at a higher growth rate in the post-reform period compared to the pre-reform period.

Table 4
Changing Pattern of Trend Growth Rate within Manufacturing Industries

Class Interval of Growth Rate (Per Cent per Annum)	3-Digit Industry Code		Number of 3-Digit Industries	
	Pre-Reform (1980-81 to 1990-91)	Post-Reform (1991-92 to 2005-06)	Pre-Reform	Post-Reform
(-)11.1 to (-)9.9	351		1	
(-)9.9 to (-)5.0	243, 361	352, 201	2	2
(-)5.0 to 0.0	201		1	
0.0 to 5.0	331, 293, 271, 171, 172, 202, 221, 222	2423, 322, 353, 241, 242*, 243, 292, 293, 311, 313, 341, 342, 251, 281, 151, 154, 155, 171, 191, 202, 210, 221, 222,	8	23
5.1 to 10.0	332, 291, 292, 311, 314, 352, 231, 251, 261, 269, 281, 289, 153, 155, 160, 210, 369	291, 314, 315, 319, 231, 252, 261, 269, 271, 272, 289, 351, 152, 153, 160, 181, 182, 192, 361,	18	19
10.1 to 15.0	321, 333, 241, 242*, 313, 341, 329, 252, 151, 154, 191, 192	300, 323, 331, 312, 329, 232, 273, 172, 173, 369	12	10
15.1 to 20.0	2423, 300, 323, 353, 312, 342, 232, 272, 152, 173	332	10	1
20.1 to 25.0	322, 182		2	
25.1 to 30.0	181		1	

Notes: Based on Table 3.
Total number of industries is 55, for which the comparable data is available.
Source: Calculated.

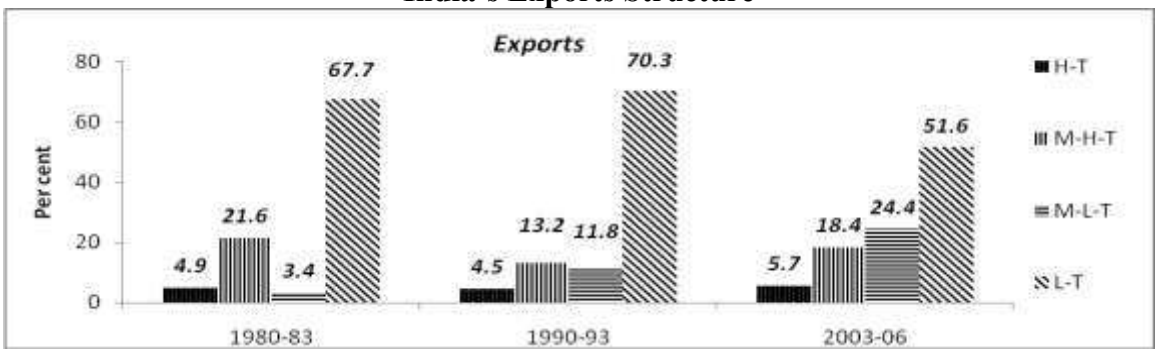
Table 4 shows that in the pre-reform period where there were 25 three-digit industries growing in the range of 10 per cent per annum to 30 per cent per annum, the number of such industries fell to only 11 in the post-reform period. There were three industries that registered growth rates ranging from over 20 per cent to 30 per cent per annum in the pre-reform period, but in the post-reform period none of the three-digit industry fell in this high growth bracket. On the other end, the number of slow growing industries (below 5 % annum) increased from 22 per cent in the former period to 45 per cent in the later period.

Exports of Manufacturing Industry

In a liberalizing world, export success is more important than ever for economic performance. It becomes directly relevant, as the means of earning foreign exchange, reaping economies of scale and specialization and accessing new technology. It is also of great indirect significance. It is an indicator of the efficiency of the industrial sector, facing more direct (because of liberalization) and intense (because of falling transport costs and the new 'rules of the game') competition then before. Insofar as industrialization remains an engine of development, structural change and technological growth and modernization, growing manufactured exports are a sign that this engine is working (Lall, 2001).

A low technology export structure is good starting for a poor, labour-surplus economy, but over time, countries have to upgrade to more technology-intensive activities. Otherwise, they can maintain export growth only by taking shares from low-technology exporters. It needs considerable technological effort, a high level of skill and, increasingly, entry into different brand-conscious segments of the market. Thus, to conclude, export structure matters. In this regard an attempt is made in this section to analyse the structure of India's exports.

Figure 3
India's Exports Structure



Data Source: UN-COMTRADE.
The total exports in 1980-83 were US$ 65,42,509 thousand; it rose by 1.45 per cent to US$ 160,36,681 thousand in 1990-93; rose again by 3.35 per cent to US$ 697,63,143 thousand in 2003-06.

Source: Calculated.

Figure 3 shows that during the early 1980s, high technology manufacturing exports from India was nearly 5 per cent, which fell by 0.5 per cent during the early 90s, but showed an increase in its share (5.7 per cent) during 2003-06. India's major exports are basically low-technology industries. It was around 70 per cent of the total manufactured exports during the 80s and 90s, but fell to 50 per cent in the 2000s. India also has several M-H-T exports but the share of M-L-T industries rose steadily from a mere 3.4 per cent during the early 80s to around 24.4 per cent in 2000.

Thus, the export structure seems to be moving in favour of M-L-T industries and very marginally bending towards H-T industries (definitely a positive sign owing to the complex and highly competitive world of high technology products).

Table 5 shows the trend growth rate of exports from India during the pre-reform period (1980-91) and post-reform period (1992-06).

Table 5
Trend Growth Rate of Exports

NIC 2004 Code	Industry	Exports		
		Pre-Reform (1980-91)	**Post-Reform (1992-06)**	1980-06
High Technology				
2423	Pharmaceutical	22.76	17.2	22.87
300	Office, accounting &	19.48	13.54	16.18
	computing machinery			
321	Electronicvalves& tubes	18.29	16.07	16.99
322	TV&radio transmitters	20.20	33.51	28.91
323	TV & radio receivers	20.56	19.96	20.20
331	Medical appliances	11.63	28.15	20.56
332	Optical instruments	11.96	18.18	16.1
333	Watches & clocks	40.35	37.30	38.40
353	Aircrafts& spacecrafts	18.65	20.80	20.08
Total High Technology		22.26	1.01	18.06
Medium-High Technology				
241	Basic chemicals	43.18	16.88	31.52
242*	Other chemical products	22.75	15.03	16.42
243	Man-made fibres	1.41	18.41	10.85
291	General purpose mach.	15.72	21.41	18.53
292	Special purpose mach.	29.56	13.2	21.05
293	Domestic appliances	-5.92	18.18	8.76

311	Electronic motors, etc.	23.24	32.84	28.53
312	Electricity distribution &	18.18	24.11	21.65
	Control appliances			
313	Insulated wires & cables	10.29	9.42	9.75
314	Accumulators, cells etc.	8.55	5.97	6.82
315	Electronic lamps etc.	13.31	24.73	21.05
319	Other electrical equip.	18.65	28.92	24.36
341	Motor vehicles	14.22	17.59	15.95
342	Bodies for motor vehicles	-8.33	-4.78	-5.73
343	Parts for vehicles	8.98	22.75	15.95
352	Railways & tramways	20.92	11.07	13.54
359	Transport equip. n.e.c	11.29	14.68	13.09
Total Medium-High Technology		17.59	20.32	16.3
Medium-Low Technology				
231	Coke-oven products	-21.1	-6.57	-9.15
232	Refined petroleum prod.	44.19	4.08	24.36
233	Process of nuclear fuel	0.3	-22.89	-22.97
251	Rubber products	37.44	13.88	24.61
252	Plastic products	50.1	20.20	33.51
261	Glass & glass products	25.73	25.11	25.36
269	Non-metallic mineral	56.83	17.23	34.99
271	Basic Iron-ore & steel	41.62	20.44	31.78
272	Basic&non-ferrous metal	95.81	2.33	41.06
273	Casting of metals			
281	Structural metal etc.	70.74	9.31	30.99
289	Fabricated metal etc.	33.51	16.29	25.23
351	Building &repair of ships	89.84	43.19	59.52
Total Medium-Low Technology		20.53	17.94	21.53
Low Technology				
151	Prod. & process of meat	75.7	3.45	40.1
152	Dairy products	-6.39	30.6	16.65
153	Grain mill products	62.41	9.97	34.85
154	Other food products	17.47	8.65	12.86
155	Beverages	98.87	16.42	37.85
160	Tobacco products	13.42	13.42	13.42
171	Spin, weaving of textiles	29.05	8.87	20.44
172	Other textiles	22.26	11.29	17.35
173	Knitted & crochet fabrics	3.76	22.14	12.41
181	Wearing apparel, not fur	59.04	0.3	33.11
182	Dressing & dyeing of fur	20.44	21.81	-21.57
191	Leather	22.75	7.04	14.79
192	Footwear	50.98	5.02	25.86
201	Saw milling of wood	-3.54	1.005	0.3
202	Wood, cork & straw	20.92	16.1	17.7
210	Paper & paper products	45.35	30.6	36.61
221	Publishing	60.8	16.88	34.98
222	Printing	13.88	24.86	21.17
223	Reprod. recorded media			
361	Furnishing	12.98	40.64	30.08
369	Manufacturing n.e.c	15.37	16.88	15.95
	Jewellery			
Total Low Technology		20.92	11.40	15.72
Total Industries		20.8	14.57	16.65

Notes: For the proper nomenclature of the industries, see Appendix I.
* Means 'Other chemical products' (242) does not include 'pharmaceuticals' (2423).
The figures are made constant at $US 2000 prices.
The respective deflators are taken from IMF-IFS data.
Data source: UN-COMTRADE
Source: Calculated.

Table 5 shows that the overall trend growth of the individual high technology exports remained at a double digit level in both the periods, with a rising trend witnessed in case of TV and radio transmitters (322), medical appliances (331) and aircraft and spacecraft (353); but the overall trend growth rate fell massively in the post-reform period.

In the case of medium-high technology (M-H-T) industries, the trend growth rate of overall exports grew from 17 per cent in the pre-reform to 20 per cent in the post-reform period. However, the rate of exports grew in general purpose machinery (191), domestic appliances (293), electronic motors (311), motor vehicles (341) and parts of vehicles (343), among others.

The case of medium-low technology (M-L-T) industries is somewhat different. Although the trend growth rate of these industries grew in the post-reform period (Tables 2, 3 & Figure 2), the trend growth of exports fell in the post-reform period for almost all industries; thus showing the overall growth rate of exports fell from 20 per cent in the former period to 17 per cent in the later period.

Similar are the trends of the overall low technology industries wherein their trend growth rate fell from 21 per cent in the pre-reform period to 11 per cent in the post-reform period. However, dairy products (152), knitted and crochet fabrics (173), printing (222), furnishing (361), and manufacturing n.e.c. jewellery (369) showed a higher trend growth rate in the post-reform period in the case of the low technology industries.

Thus, Table 5 shows that the exports of all manufacturing industries fell from 20.8 per cent in the pre-reform period to 14.6 per cent in the post-reform period.

Table 6
India's Major Exports

Sr. No	Exports		
	1980-83	1990-93	2003-06
1.	Other textiles (172)	Manufacturing n.e.c. jewellery (369)	Manufacturing n.e.c. jewellery (369)
2.	Leather (191)	Wearing apparel, not fur (181)	Refined petroleum prod. (232)
3.	Motor vehicles (341)	Spin, weaving of textiles (171)	Wearing apparel, not fur (181)
4.	Foodproducts (151,152)	Prod. & process of meat (151)	Basic chemicals (241)
5.	Other chemical products (242)	Other textiles (172)	Spin, weaving of textiles (171)
6.	General purpose mach. (291)	Other chemical products (242)	Basic iron ore & steel (271)
7.	Refined petroleum prod. (232)	Leather (191)	Other chemical products (242)
8	Special purpose mach. (292)	Basic chemicals (241)	Other textiles (172)
9.	Glass (261)	Refined petroleum prod. (232)	Prod. & process of meat (151)
10.	Basic iron ore (271)	Footwear (192)	Pharmaceutical (2423)
11.	Non-metallic minerals (271)	Pharmaceutical (2423)	Fabricated metals, etc. (289)
12.	Tobacco (160)	Fabricated metal, etc. (289)	Basic & non-ferrous metal (272)
13.	Beverages (155)	Basic iron ore & steel (271)	Grain mill products (153)
14.	Paper & paper products (210)	Grain mill products (153)	General purpose mach. (291)
15.		Other food products (154)	Knitted & crochet fabrics (173)

Notes: Refer to Appendix I for the proper nomenclature of the industries.
Figures in brackets are the NIC 2004 codes of the industries.
The results are based on the value of the quantum of exports in the respective years in decreasing order.
Data Source: UN-COMTRADE.
Source: Calculated.

Table 6 shows India's major exports during the period of two and a half decades. The major bulk of exports was from the low technology (L-T) industries. It was followed by a few products (refined petroleum (232) and basic chemicals (241)) from the medium-high technology (M-H-T) industries. The major export industry from the high-technology (H-T) segment was only pharmaceuticals (2423).

The overall picture shows that India still followed the traditional trade structure with some very minor changes.

Destination of Indian Manufactured Exports

In this subsection an attempt is made to analyse whether there was any change in the destination to which India made her exports to during the period under study. For a comparative analyses four tables are generated (Appendix II Table II.1 to II.4) to which India exported her manufactured goods in 1980, 1990, 2000 and 2006.

High Technology Exports: Table II.2 shows that in 1990 the direction of high technology exports was more towards OECD countries, wherein about 50 per cent of TV and radio transmitters (322) and 77 per cent of aircrafts and spacecrafts (353) were exported. Among the OECD countries, the USA and UK was the major destinations. In the case of office, accounting (300) and watches and clocks (333), the exports were mostly concentrated towards the East Asian countries. Table II.3 shows that in 2000 the shift of India's high technology exports was more towards the US, followed by UK and Australia. In 2000, more than 50 per cent of electrical valves (321), TV transmitters and receivers (322,323), medical appliances (331), optical instruments (322) and aircrafts and spacecrafts (353) were directed towards OECD countries. Among the developing countries, Malaysia and China were important export destinations, while Bangladesh, Nepal, Sudan and Tanzania were the important export destinations from the less developed world (LDC). In 2006, Table II.4 shows that the proportion of India's high technology exports declined comparatively to the USA, UK and Australia, while it rose to Germany and France. While OECD still remained the most important destination for exports, there was a structural shift within the group. Among the Asian Tigers, the export destination shifted more towards Singapore. Among the high technology products, pharmaceuticals (2423), an important export product (Table 6) appeared to divert towards developing and less developed countries (LDC), while optical instruments (332) also found greater markets in developing countries, especially China.

Medium-High Technology Exports: In 1980 (Table II.1) more than 80 per cent of India's chemicals (241-242); 70 per cent of machinery (291,292); and 50 per cent of vehicles (341) were exported to the Soviet Union. In 1990 (Table II.2), M-H-T exports were more to the USA, UK and Australia, followed by Egypt and Malaysia from the developing world, and Bangladesh from the less developed countries. In the case of domestic appliances (293), railways and tramways (352), transport equipment, etc. (359), developing countries, especially Malaysia, received the maximum exports from India. In the case of machinery (291-93) and transport equipment (359) the less developed countries (LDC) holds a good proportion of exports. In 2000 (Table II.3) the USA, UK and Germany were the important destinations. To Japan alone India exported 30 per cent of her accumulators and cells (313). Among the developing countries, China and Malaysia were the important destinations for motor vehicles (341) and insulated wires and cables (313) respectively amongst the LDCs. In 2006 (Table II.4), there was a structural shift towards developing and LDCs from the first world countries. China (for chemicals (241-43) and machinery (291-93)), Egypt (for basic chemicals (241)), Indonesia (for manmade fibres (243)) and South Africa (for motor vehicles (341)) became the new important destinations for exports from India.

Medium-Low Technology Exports: In 1980 (Table II.1) about 90 per cent of refined petroleum products (232); more than 50 per cent of plastics (252), glass (261), basic iron ore (271), basic and non-ferrous metals (273) and fabricated metals (289) were exported to the Soviet Union. In 1990 (Table II.2), rubber products (251), structured metals (281) and fabricated metals (289) were mostly exported to OECD countries, especially the USA, while non-metallic minerals (269) to Australia. Basic iron and steel (271) was mostly exported to developing countries such as Egypt and Brazil. The high proportion of rubber products (251) and glass (261) were largely exported to LDC. In 2000 (Table II.3). India's M-L-T exports were mostly directed towards the USA, in case of rubber products (251), plastics (252), non-metallic minerals (269), basic iron ore and steel (271) and fabricated metals (289), followed by the UK for structural metals (281), plastic products (252). Asian Tigers, were important destinations for structural metals (281) and basic and non-ferrous metals (272). Among the developing countries, China was the important destination for coke oven products (231) and basic and non-ferrous metals (272). Bangladesh amongst the LDC was an important destination for non-metallic minerals (269) and basic and non-ferrous metals (272). In 2006 (Table II.4), the exports were diversified to Belgium, Germany and Italy, apart from the basic destinations such as the USA and UK. Singapore, however, remained the biggest destination amongst the East Asian Tigers. South Africa emerged as an important destination for rubber (251), plastic (252) and basic iron ore and Steel (271); with Brazil for coke oven products (231) and glass (261); Indonesia for basic

iron ore and steel (271); while China remained an important destination for basic non-ferrous metals (272). Bangladesh and Nepal still remained the important export destinations for India's exports.

Low Technology Exports: In 1980 (Table II.1), almost all the dairy products (152) were exported to the Soviet Union along with tobacco (160) and textiles (172), although OECD countries were the basic destinations for beverages (155), textiles (172,181), leather (191) and paper (210). In 1990 (Table II.2), Japan was the important destination for processed meat (151), beverages (155) textiles (172) and wood and coke (202); UK for textiles (172) among the OECD countries. OECD countries were the important destinations for these products along with jewellery (369). Malaysia was an important destination for processed meat (151) and Nepal for paper products (210). In 2000 (Table II.3), OECD was the major destination for meat (151), dairy products (152), textiles (172-182), leather (191), footwear (192), and furnishing (361). Among these, Australia, Germany, Italy, Japan, and Sweden were prominent destinations. China for footwear (192) and Bangladesh were important destinations. In 2006 (Table II.4), OECD remained the important destination for textiles (172,173 181), leather (191) and footwear (192). Among these, Germany, Italy and UK for leather (191) and footwear (192); Spain, Italy, the USA and UK for textiles (171-73), were important destinations. Asian tigers become an important destination for leather (191) and printing (221); China for meat and dairy (151-52); Indonesia and Philippines for textiles; South Africa for beverages (155) and leather (191); Bangladesh and Nepal becomes important markets for meat (151), dairy (152), grain mill products (153) and other foods (154).

To sum up, there was a massive change in destinations for India's exports in the last two and a half decades. The disintegration of the Soviet Union in 1991, India's major export destination during the 1980s, prompted her to approach new markets. Since then, OECD countries became the major export destinations for Indian products (Report on Currency and Finance, 1998). But in the 2000s, the Indian manufacturers were exporting their production to new markets and the share of the developing and less developed countries as important export destinations increased gradually. This change in trend could be due to the relatively low technology content of India's exports, thus forcing it to rely on the Third World countries (Kowalski and Dihel, 2009). Secondly, the rapid integration of China into the world trading system as the developed countries became the largest importer of Chinese manufactures (Dahlman, 2008). Thirdly, the greater political unification of the Third World countries and the transition economies against the unfair 'new rules of the game' framed by the developed world (Stiglitz, 2006) resulted in new trade ties between India and Brazil, South Africa, Russia, Indonesia , Malaysia etc.

Relation between Trend Growth Rate and Trend Export Rate

Spearman's rank correlation coefficient is estimated to find whether the relationship between the growth of exports corresponds to the growth of value addition.

Table 8
Correlation between Trend Growth Rate of Industry and Exports

Industry	Correlation Coefficient
High technology industries	-0.73
Medium-high technology industries	0.27
Medium-low technology industries	-0.18
Low technology industries	-0.66
Total organized manufacturing	0.02

Note: The results are significant at two-tailed 95 per cent level.
Source: Calculated.

Table 8 shows that the relation between the trend growth rate of industries and the corresponding exports is positive but very low, which is evident from the low magnitude of the correlation coefficient. In case of the high technology and low technology industries, the correlation coefficient shows that the higher trend of value added in these industries are not coupled with the higher export rate. The result is similar for the medium-low technology industries, but the magnitude of this industrial group is very low. The only industrial group which shows some relationship between the growth of value added and the corresponding exports are the medium-high technology industrial group, but again the positive relationship is very low in magnitude. This shows that either the high domestic demand or the lower competitiveness of the exports in

the competitive markets abroad failed to generate higher exports in the industries which show a higher trend in value added.

To have a clear perspective as to which industries have greater exports, the exports intensity is calculated.

Table 9
Export Intensity of 3-Digit Industries

(Per cent)

NIC'04 Code	Industry	Exports intensity				*Exports intensity growth*	
		1	**2**	**3**	**4**	*5*	*6*
		1980-81	**1990-91**	**2000-01**	**2005-06**	*Pre-reform*	*Post-reform*
High Technology							
2423	Pharmaceutical	70.53	76.9	38.08	-	*6.37*	-
300	Office, accounting & computer machinery	231.78	92.66	45.04	48.81	*-139.12*	*-43.84*
321	Electronic valves&tubes	1048.57	132.23	22.09	24.36	*-916.34*	*-107.86*
322	TV & Radio transmitters	-	2.52	6.42	14.99	-	*12.48*
323	TV & Radio receivers	54.47	12.78	6.97	13.81	*-41.69*	*1.03*
331	Medical appliances	223.11	54.41	52.16	71.59	*-168.97*	*17.46*
332	Optical Instrument	924.98	335.88	86.56	152.42	*-589.09*	*-183.45*
333	Watches & clocks	9.16	5.13	35.0	39.14	*-2.02*	*34.0*
353	Aircraft & Spacecrafts	111.12	28.83	425.12	147.30	*-82.29*	*118.47*
H-T Industries		**133.02**	**63.60**	**37.35**	**115.79**	***-69.4***	***52.18***
M-H-T Industries							
241	Basic Chemicals	14.72	31.33	25.98	55.74	*16.62*	*24.4*
242	Other Chemical products	23.34	23.04	11.62	14.16	*-0.30*	*-8.87*
243	Man-made fibres	-	22.91	30.06	47.32	-	*24.41*
291	General purpose mach.	70.05	28.68	24.51	36.88	*-41.36*	*8.19*
292	Special purpose mach.	24.25	39.16	22.27	38.77	*14.91*	*-0.39*
293	Domestic appliances	84.52	10.18	10.94	27.81	*-74.33*	*17.62*
311	Electronic motors etc	10.81	5.95	19.65	20.36	*-4.85*	*14.40*
312	Electricity distribution & Control appliances	41.15	16.49	17.49	23.26	*-24.66*	*6.77*
313	Insulated wires & cables	46.61	15.39	4.89	9.88	*-31.22*	*-5.5*
314	Accumulators, cells etc.	226.59	66.02	15.43	14.46	*-160.57*	*-51.57*
315	Electronic lamps etc.	-	8.99	15.03	14.57	-	*5.57*
319	Other electrical equip.	978.33	305.86	92.4	80.10	*-672.47*	*-225.76*
341	Motor vehicles	103.22	11.59	11.97	19.12	*-91.63*	*7.52*
342	Bodies for motor vehicle	3807.11	112.44	19.47	12.06	*-3694.67*	*-100.37*
343	Parts for vehicles	-	-	21.31	33.26	-	-
352	Railways & tramways etc	7.29	3.15	5.05	5.9	*-4.14*	*2.74*
359	Transport equip. n.e.c.	400.59	27.67	14.47	10.96	*-372.92*	*-16.71*
M-H-T Industries		77.95	26.51	19.57	29.81	*-51.44*	*3.3*
M-L-T Industries							
231	Coke-oven products	43.51	0.12	0.28	2.42	*-43.39*	*2.29*
232	Refined petroleum prod.	7.26	26.54	18.66	35.78	*19.28*	*9.24*
233	Process of nuclear fuel	-	-	-	-	-	-
251	Rubber products	19.69	32.61	27.62	43.03	*12.92*	*10.42*
252	Plastic products	23.04	21.72	18.69	27.61	*-1.32*	*5.89*
261	Glass & glass products	48.04	22.73	32.81	42.72	*-25.31*	*19.99*
269	Non-metallic mineral	3.14	9.06	16.39	20.82	*5.92*	*11.76*
271	Basic Iron ore & steel	9.59	8.82	19.29	28.25	*-0.78*	*19.43*
272	Basic&non-ferrous metal	1.06	46.47	22.19	41.76	*45.4*	*-4.71*
273	Casting of metals	-	-	-	-	-	-
281	Structural metal etc.	1.02	12.50	12.99	15.36	*11.48*	*2.86*
289	Fabricated metal etc.	67.55	117.41	77.88	85.19	*49.86*	*-32.22*
351	Building &repair of ships	0.38	119.20	18.87	198.31	*118.32*	*79.11*
M-L-T Industries		14.95	22.23	22.38	34.73	*8.08*	*12.5*
L-T Industries							

151	Prod. & process of meat.	4.17	89.9	68.32	54.03	*85.77*	*-35.9*
152	Dairy products	18.75	0.39	1.91	7.80	*-18.35*	*7.41*
153	Grain mill products	6.74	31.61	19.14	31.22	*24.87*	*-0.38*
154	Other food products	39.35	17.14	8.27	6.81	*-22.21*	*-10.32*
155	Beverages	0.19	9.16	2.91	2.86	*8.97*	*-6.3*
160	Tobacco products	24.33	11.14	3.5	5.06	*-13.19*	*-6.08*
171	Spin, weaving of textiles	47.59	51.79	45.48	42.59	*4.21*	*-9.2*
172	Other textiles	1050.0	774.9	303.5	279.3	*-275.08*	*-495.62*
173	Knitted & crochet fabrics	1762.51	234.57	94.05	106.54	*-1527.94*	*-128.03*
181	Wearing apparel, not fur	47.36	955.97	318.42	265.62	*908.63*	*-690.36*
182	Dressing & dying of fur	-	8.46	1.47	3.87	-	*-4.58*
191	Leather	382.18	415.71	191.85	186.95	*33.53*	*-228.76*
192	Footwear	158.04	230.18	111.54	125.21	*72.14*	*-104.96*
201	Saw milling of wood	102.04	3.06	2.08	10.58	*-98.98*	*7.52*
202	Wood, cork& straw	52.41	20.03	16.12	21.57	*-32.38*	*1.54*
210	Paper & paper products	1.7	2.63	7.95	14.47	*0.93*	*11.83*
221	Publishing	2.58	21.59	59.76	47.33	*19.02*	*25.73*
222	Printing	4.67	5.03	5.79	11.53	*0.36*	*6.5*
223	Reprod. recorded media	-	-	-	-	-	-
361	Furnishing	20.31	17.51	14.42	51.29	*-2.79*	*33.78*
369	Manufacturing n.e.c. jewellery	12774.13	3052.22	852.95	400.39	*-9721.9*	*-2651.33*
L-T Industries		***215.85***	***123.60***	***78.59***	***84.05***	***-92.25***	***-39.55***
Total Industries		***112.04***	***59.23***	***41.29***	***47.97***	***-52.81***	***-11.25***

Note: Export intensity is total exports/ value of output*100.
Data Source: EPWRF CD-ROM, 2004 and ASI (CSO), 2005, 06 and UN-COMTRADE.
Source: Calculated.

In Table 9, export intensities were calculated for the four individual years, 1980-81, 1990-91, 2000-01 and 2005-06 to know the proportion of exports made by the industries out of their total outputs. Further for comparative analyses, the growth in the export intensities for the pre-reform period (1980-81 to 1990-91) and the post-reform period (1990-91 to 2005-06) is calculated (Table 9; Columns 5 and 6).

The analysis shows that among the high technology industries, export intensities of TV & Radio recievers (323), medical appliances (331) and watches & clocks (333) increased in the post-reform period. However, aircraft & spacecraft too rose in the post-reform period, but with massive fluctuations therein.

Among the medium-high technology industrial group, the export intensity of 53 per cent of the industries increased and has a positive export intensity growth in the post-reform period. Basic chemicals (241), general purpose machinery (291), domestic appliances (293), electronic motors (311) electricity distribution & control appliances (312) and motor vehicles (341) showed higher export intensity in the post-reform period (Table 9; Column 6).

The medium-low technology industrial group shows a positive growth rate in the post-reform period with respect to the export intensity. The export intensity of glass (251) and basic iron ore & steel (271) being the highest in the subgroup.

The case of the low technology industries is somewhat different. The export intensity of a number of industries turned negative in the post-reform period as compared to the pre-reform period. Some of these industries are production & process of meat (151), grain mill product (153), beverages (155) and textiles (171, 172, 181), leather (191) and footwear (192). On the other hand, the export intensity of paper products (210), publishing (221) and printing (222) rose in the post-reform period. However, manufacturing n.e.c. jewellery (369) showed a comparative fall in its export intensity in the post-reform period; but its overall export intensity was the highest among all industries at all points of the survey.

Thus, the overall export intensity of all industries shows that it fell in the pre-reform period, but in the post-reform period export intensity sill remained negative, although with a lower magnitude.

Conclusion and Policy Framework

The analyses in the study shows some positive signs of structural shift within the industries, but the changes are too slow to make a dent. The slower trend growth rate of value added and exports witnessed in the post-reform period reduces the initial optimism shown while adopting these reforms.

Moreover, the top slots of India's exports were still occupied by low-technology (L-T) and medium-low technology (M-L-T) industries.

To address these problems, the core problems need to be analysed. Firstly, the strategy adopted by India in1991 (economic reforms) seems to fail in yielding the desired results. The slower trend growth rates of the manufacturing sector, its exports, slower structural transformation all signal that. Secondly, India has a very limited number of highly trained knowledge workers, and poor infrastructure in terms of power supply, roads, ports and airports (Dahlman, 2008).

Since, Indian prospects depend on 'dynamizing' the export structure (Lall, 2001), it requires the formulation of correct strategy. The policy framework for the manufacturing sector engulfing the heterogeneous industries should be unique for each industry concerned, ranging comprehensively from specific 'technology generating', 'technology acquiring', 'specific capability building approaches', and also 'specific export-oriented policies'. For this, a greater and healthier role of the government is required. Thus, a correct mix of market and government (Stiglitz, 2006) should be formulated for each industry concerned, specifically for the high technology industries. Secondly, a greater amount of overall investment in infrastructure as well as in human capital and technology (Lall, 2001) is indeed required.

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Endnotes:

[1] One way of measuring the technology dynamism of a country is by observing the structure of its exports. If it is changing towards seemingly sophisticated items, then one may conclude that it is becoming technologically dynamic (Mani, 2004).

[2] For the definition of high technology refer Mani (2004) and OECD (2007).

[3] To meet the economic crisis of the early 1990s India adopted the IMF conditionality and the World Bank's Structural Adjustment policy. The licensing system was done away with; tariffs were brought down sharply; conditions were made conducive for private players. The optimism of adopting these reforms was the belief in the invisible hands of the markets.

[4]Sustainability entails that countries move up the technological ladder (Lall, 2001

5The Technical Advisory Committee on Statistics of Prices and Cost of Living (TAC on SPCL) in CSO accepted 1993-94 as the base year on December 12, 1999, which was recommended in the report under the chairmanship of Prof. Y.K. Alagh. A commission under the chairmanship of Prof. Abhijit Sen is working on formulating a new base year (2003-04), but the process of collecting the relevant data is still under way.

[6]The COMTRADE data base is the most comprehensive source of trade statistics brought out by World Bank and United Nations Statistical Division (UNSD).

[7]Structures are the outcome of accumulated (technological, managerial, and other) capabilities in each country. Capabilities develop in a slow, incremental learning process. They reflect the country's resource endowments, skill base, access to new technologies etc. (Lall, 2001).

[8] Figures in bracket are the NIC 2004 code; if otherwise stated.

[9] n.e.c means not elsewhere classified

Appendix I

NIC code	Industry
High Technology Industries	
2423	Manufacture of pharmaceuticals, medicinal chemicals and botanical products
300	Manufacture of office, accounting and computing machinery
321	Manufacture of electronic valves and tubes and other electronic components
322	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy
323	Manufacture of television and radio receivers, sound or video recording or reproducing apparatus, and associated goods
331	Manufacture of medical appliances and instruments and appliances for measuring, checking, testing, navigating and other purposes except optical instruments
332	Manufacture of optical instruments and photographic equipment
333	Manufacturing of watches and clocks
353	Manufacture of aircraft and spacecraft
Medium-High Technology Industries	
241	Manufacture of basic chemicals
242	Manufacture of other chemical products
243	Manufacture of man-made fibers
291	Manufacture of general purpose machinery
292	Manufacture of special purpose machinery
293	Manufacture of domestic appliances, n.e.c.
311	Manufacture of electric motors, generators and transformers
313	Manufacture of insulated wire and cable [insulated (including enamelled or
314	Manufacture of accumulators, primary cells and primary batteries
315	Manufacture of electric lamps and lighting equipment
319	Manufacture of other electrical equipment n.e.c.
341	Manufacture of motor vehicles
342	Manufacture of bodies (coach work) for motor vehicles
343	Manufacture of parts and accessories for motor vehicles and their engines
352	Manufacture of railway and tramway locomotives and rolling stock
359	Manufacture of transport equipment n.e.c.
Medium-Low Technology	
231	Manufacture of coke oven
232	Manufacture of refined petroleum products
233	Processing of nuclear fuel
251	Manufacture of rubber products
252	Manufacture of plastic products
261	Manufacture of glass and glass products
269	Manufacture of non-metallic mineral products n.e.c.
271	Manufacture of basic iron & steel
272	Manufacture of basic precious & non-ferrous metals
273	Casting of metals
281	Manufacture of structural metal products, tanks, reservoirs and steam generators
289	Manufacture of fabricated metal products, metal working
351	Building and repair of ships & boats
Low Technology industries	
151	Production, processing and preservation of meat, fish, fruit vegetables, oils and fats
152	Manufacture of dairy product
153	Manufacture of grain mill products, starches and starch products, and prepared animal feeds

154	Manufacture of other food products
155	Manufacture of beverages
160	Manufacture of tobacco products
171	Spinning, weaving and finishing of textiles
172	Manufacture of other textiles
173	Manufacture of knitted and crocheted fabrics and articles
181	Manufacture of wearing apparel, except fur apparel
	Dressing and dyeing of fur; manufacture of articles of fur
191	Tanning and dressing of leather, manufacture of luggage handbags
192	Manufacture of footwear
201	Saw milling and planing of wood
202	Manufacture of products of wood, cork, straw and plaiting materials
210	Manufacture of paper and paper products
221	Publishing
222	Printing and service activities related to printing
223	Reproduction of recorded media
361	Manufacture of furniture
369	Manufacturing n.e.c[9].
371	Recycling of metal waste and scrap
372	Recycling of non-metal waste and scrap

Appendix II

Table II.1 Destinaton of Indian Manufacturing Exports in 1980

NIC'04 Code	Australia	Germany	United Kingdom	Japan	United States	Other OECD	OECD	Developing countries	LDC	Soviet Union	other countries	Total
High Technology												
2423												**100**
M-H-T Industries												
241	1.86	5.51	4.6	2.46	17.99	14.37	**46.79**	**11.34**	**12.35**	13.89	**15.62**	**100**
242	0.68	0.73	1.11	2.33	2.56	3.511	**10.93**	**3.314**	**5.532**	66.04	**14.19**	**100**
243												
291	1.59	7.77	3.64	0.08	4.067	6.119	**23.27**	**18.73**	**12.9**	2.259	**42.85**	**100**
292	0.77	1.09	1.79	0.1	0.807	6.38	**10.94**	**18.28**	**5.675**	34.96	**30.15**	**100**
341	0.91	0.53	1.67	0.02	1.913	1.469	**6.516**	**19.19**	**22.35**	0.411	**51.54**	**100**
M-L-T Industries												
232					0.892	7.31	**8.203**	**0.152**			**91.65**	**100**
233												
251	2.64	0.14	3.22	0.01	17.62	10.77	**34.4**	**4.692**	**18.23**	20.81	**21.87**	**100**
252	0.1	0.18	1.4		0.462	0.388	**2.53**	**9.146**	**15.67**	4.757	**67.89**	**100**
261	0.1	0.37	0.13	0.06	5.278	0.182	**6.128**	**8.134**	**11.79**	0.039	**73.91**	**100**
269	1.79	2.57	2.47	3.86	0.37	1.027	**12.08**	**10.19**	**61.75**	0.1	**15.87**	**100**
271	0.43	0.07	0.28		14.43	0.635	**15.84**	**5.657**	**19.71**	2.756	**56.03**	**100**
272	1.05		29.4		2.563	0.076	**33.11**	**15.17**			**51.72**	**100**
273												
281												
289	0.25	1.05			8.438	2.592	**12.33**	**24.5**	**10.65**		**52.53**	**100**
351												
L-T Industries												
151	0.29	1.31	25.7	8.74	3.912	17.22	**57.13**	**10.97**	**17.83**	1.071	**13**	**100**
152	0.01			0.04		9.415	**9.462**	**7.61**	**0.023**	81.9	**1**	**100**
153												
155			4.43	2.47	45.47		**52.37**	**30.32**	**9.116**		**8.192**	**100**
160	0.06	0.08	0.11	10.6	2.126	0.541	**13.55**	**3.632**	**1.876**	35.71	**45.23**	**100**
171												
172	2.07	3.85	3.86	5.85	12.47	12.1	**40.21**	**7.866**	**1.917**	34.81	**15.2**	**100**
173												

181	2	38.1	4.36	0.33	2.563	27.74	**75.13**	**3.486**	**0.736**	13.37	**7.281**	**100**
182												
191	1.4	14.5	12.2	3.41	8.824	31.74	**72.09**	**2.308**	**0.201**	7.401	**18**	**100**
202		2.08	0.21	5.16	3.117	12.89	**23.46**	**5.624**	**10.02**	8.633	**52.26**	**100**
210	0.08	0.98	2.58		3.158	28.28	**35.08**	**3.974**	**25.42**	2.421	**33.11**	**100**
221	0.62	3.27	3.71	0.08	0.491	2.149	**10.32**	**17.15**	**23.66**	2.975	**45.91**	**100**

Notes: Those specific countries and products are chosen that have a prominent share in India's exports.

Data Source: UN-COMTRADE.
Source: Calculated.

Table.II.2.Destination of Indian manufactured exports in 1990

NIC'04 Code	*Australia*	*Canada*	*France*	*Italy*	*Japan*	*United Kingdom*	*United States*	*other OECD*[1]	***OECD***	***East Asian Tigers***[2]	*Brazil*	*China*	*Egypt*	*Jordan*	*Malaysia*	*Other Developing*[3]	***Developing***	*Afghanistan*	*Bangladesh*	*Nepal*	*Other LDC*[4]	***LDC***	***Other Countries***	***Total***
High Technology																								
2423	0.3	0.3	3.5	1.4	1.7	2.7	7.4	7.3766	**27**	**6.87**	0.1	0	0.1	0.1	1	2.3	**3.8**	0.8	0.7	1.69	1.8	**5**	**57**	**100**
300	0.4	0	0.2	0.1	0	0.7	3	7.3911	**12**	**22.4**	0	0	0		0.1	0.2	**0.5**	0	0.1	0.13	0.5	**0.7**	**64**	**100**
321	0.2	0	0.4	0.3		1.5	6.8	2.4847	**12**	**13.8**		0.3	0.2	0	0.3	2.3	**3.2**	0	0.2	0.01	0.1	**0.3**	**70**	**100**
322	0.1		0.1	0.1	0.5	3.5	6.4	51.462	**50**	**2.41**						51	**45**		0.4	0.61	1.2	**2.2**	**0.1**	**100**
323	0.4	0.3	1.3	1.7	0.1	17	1.5	6.8021	**30**	**8.86**			0		0	1.7	**3.6**	0	3.2	0.05	2.3	**5.6**	**52**	**100**
331	1.2	0.5	2	0.9	0.2	3.3	11	10.906	**31**	**4.79**	0.1		0.6	0.5	1.2	3.5	**5.5**	0	1.5	0.02	11	**12**	**46**	**100**
332	0.8	0	0.6	0	0.5	1.3	7.5	11.437	**22**	**4.1**			0.1	0.6	0.2	1.1	**1.4**	0	0.3	0.04	19	**20**	**53**	**100**
333	0.2			0.4	0.1	1.9	7.8	0	**11**	**58.7**				1.5		1.8	**3.3**		0.3		1	**1.3**	**25**	**100**
353		11	1.3		0.3	42	22	1.1566	**77**	**0.62**					6.6	0.1	**6.6**			0.18	0	**0.2**	**15**	**100**
M-H-T Industries								0								0					0			
241	0.8	0.5	1.1	4.1	3.8	7.7	13	13.047	**46**	**12.8**	0.2	0	0.6	0	0.7	12	**13**	0.1	1.6	0.14	0.5	**2.3**	**26**	**100**
242	0.5	0.2	3.3	1	1.2	2.9	5	5.2096	**21**	**5.02**	0.1	0	0.2	0.1	0.8	2	**3.5**	0.5	0.5	1.07	1.4	**3.5**	**67**	**100**
243	0.2		4.1	11	0.2	18	15	2.9955	**52**	**5.11**	0.1	0.1	0.7		0.5	5.8	**7.3**	0	1.9	0.01	0.4	**2.3**	**33**	**100**
291	1.5	0.2	0.7	0.5	0.3	7.7	17	1.8847	**30**	**3.34**	0	0	0.6	0.4	1.7	5.5	**8.4**	0.2	8.6	0.44	7.1	**16**	**42**	**100**
292	0.3	0.2	0.2	0.3	0.2	1.4	3.6	1.9814	**11**	**3.2**	0	0	0.4	1.3	1.8	12	**15**	0.2	10	0.87	3.9	**15**	**56**	**100**
293	7.5	0	1.2	2.4	0.2	3.4	1.1	4.3544	**20**	**4.3**			0	0.2	1	22	**28**		3.5	1.08	7.7	**12**	**35**	**100**
311	1.6		0	0		4.6	4.5	3.092	**16**	**5.64**	0.3		1.1		3.8	4.3	**10**		1.2	0.55	2.9	**4.7**	**63**	**100**
312	0.9	0	2.5	0.4	1.1	5.4	16	2.5241	**29**	**6.66**		0	0.3	0	13	4.9	**19**	0.1	0.6	0.14	2.6	**3.4**	**43**	**100**
313	0.1		0.1	0	0	0.3	0.1	0.7137	**1.2**	**3.56**					23	1.7	**25**		4	0.03	0.3	**4.4**	**66**	**100**
314	0.1		0			0.1	0.2	0.018	**0.4**	**0**					0.2	-1	**0.3**		0.2	0.48	0	**0.7**	**99**	**100**
315	14	0.1		0.2		3.4	3.7	0.2525	**23**	**2.71**			0.5		6.9	2	**9.9**	0.5	0	4.4	17	**21**	**43**	**100**
319	2.9		0.3	2.8	0.2	1.2	5.2	18.732	**32**	**20.1**	0.5	0.1	2.3	0.1	2.5	25	**30**		3.5	0.91	2.3	**6.6**	**11**	**100**
341	2		2.5	0.1	0	0.1	1	8.7619	**15**	**1.74**			0.2	2.7	11	6.2	**18**	0.5	5.9	2.82	12	**21**	**45**	**100**
342	0.4	0.1	0.5	3.6	0	3.3	8.7	1.002	**18**	**1.41**	0		0.4	0.1	0.1	0.3	**0.9**	0	0.3	0.11	0.2	**0.7**	**79**	**100**
343	1.7	0.5	0.7	0.5	0.3	9.2	9.8	3.2155	**26**	**8.31**		0	9.2	0.5	3.2	5	**17**	0.2	2.1	0.61	6.7	**9.6**	**38**	**100**

352	0		2		0	1.2	1.8	1.3654	**6.4**	**4.64**	0.4	0.1	8.3		15	-0	**25**		4.8		4.2	**9**	**55**	**100**
359	0.2	0	2.9	2.8	0.1	2.5	1.5	17.677	**29**	**5.68**		0.1	2.5	0	1.3	24	**28**	0.1	7.2	1.54	12	**21**	**16**	**100**
M-L-T Industries																								
231								0								0				100	0	**100**	**0**	**100**
232				0				0	**0**			0.1				-0				0.01	0	**0**	**100**	**100**
233						3	93	0	**96**							0					0		**3.6**	**100**
251	1	0.2	0.3	0.2	0.2	2	20	1.3932	**26**	**1.75**		0	3.7	0	0.3	3.7	**7.8**	29	8.4	1.29	2.8	**42**	**23**	**100**
252	0.9	0.1	2.6	7.6	0.1	3.1	5.4	3.8631	**26**	**6.21**			0.4	0	0.6	1.3	**2.9**	0.1	3.7	0.11	2.2	**6.1**	**59**	**100**
261	0.4	0.3	0.3	1	0.2	1.3	8	7.5328	**20**	**7.69**			0.2	0.1	1.2	2.5	**4.5**	0.2	14	3.32	5.6	**23**	**45**	**100**
269	3.1	2.2	0.5	1.8	13	6.4	17	4.1465	**48**	**7.38**	0.1	0.1	0.7	0	0.7	3.6	**5.9**	0.2	6.6	8.08	2.9	**18**	**20**	**100**
271	2.4	0.6	0.1	3.2	8.8	2	17	21.885	**58**	**12.2**		0	0.5	0	1.2	4.1	**6.7**		3	0.03	1.3	**4.4**	**19**	**100**
272	0.2	0	1.6	0	3.5	0.7	3.6	5.1632	**15**	**21.9**	4.4	2.6	16	0	0.1	11	**35**	0.1	1.7	0.06	0.2	**2**	**26**	**100**
273					0.1			0.034								0					0		**100**	**100**
281	0	0.8		0.3	11	12	27	1.3541	**40**	**1.25**			0.9		4.7	4.5	**11**	0.1	5	0.04	1.8	**6.9**	**41**	**100**
289	1.8	1.2	2.4	1.6		12	22	5.3867	**58**	**2.95**	0	0	1.1	0.1	1	3.1	**5.8**	0.2	0.9	0.09	2.2	**3.3**	**29**	**100**
351						0.3	0	0	**0.3**	**0.27**						0					0		**99**	**100**
L-T Industries							0							0						0				
151		0.1	2.5	2.8	27	5	7.5	11.173	**56**	**4.61**	0	0		0.9	4.1	5.1	**10**	0	0	0.06	0.8	**0.8**	**28**	**100**
152	0.3	0.1				0.1	0.6	3.7877	**6.3**	**0.51**					0.1	1.3	**4.7**	0.7	17	3.52	11	**33**	**56**	**100**
153	0.4	1.2	0.5	0.1	0	8.3	4.5	0.7195	**16**	**0.33**	0				0.1	0.1	**3.5**	0	0	0.05	0.2	**0.3**	**80**	**100**
154	0.2	1.1	0.2	0.2	0.6	2.7	6.3	6.2003	**18**	**0.29**	0		5	0.1	0.2	0.1	**6.4**	0.1	0.3	1.23	0.6	**2.2**	**73**	**100**
155	0.3	0.1	0.9		33	1.9	2.7	26.211	**64**	**25.1**						0	**0.8**		0	0.76	2.4	**3.2**	**6.6**	**100**
160		0.1	0.3		0.9	1.6	2.8	5.2566	**6.9**	**0.43**				0	0.3	0.3	**3.4**	0.3	0.6	1.22	0	**2.1**	**87**	**100**
171	0.1	0.9	3.6	6.8	2.5	15	9.6	8.1136	**49**	**6.94**	0	0	0.3	0	1.2	2.2	**4.5**	0	6.3	0.13	2.2	**8.6**	**31**	**100**
172	1.4	2	3.1	2.9	2.8	4.7	22	8.7839	**54**	**0.75**	0	0	0.3	0	0.1	0.3	**0.8**	0	0.1	0.02	1.2	**1.4**	**43**	**100**
173	1.9	0.6	3.9	1.8	0.6	7.6	3.2	5.8074	**29**	**0.27**	0		0	0	0	0.2	**0.3**	0	23	0.04	0.5	**24**	**47**	**100**
181	0.3	2.8	6.2	3.1	3.1	13	23	8.8362	**66**	**1.1**	0		0		0.1	0.8	**1.1**	0	0	0	0.5	**0.5**	**32**	**100**
182	1	0.9				9.1	2.8	0	**2.8**							0					0		**97**	**100**
191		1.5	5	20	2.9	12	8.8	9.0617	**62**	**8.19**	0.1	0			0.1	0.9	**1.2**	0	0		0	**0.1**	**28**	**100**
192	2.8	0.1	4	7.4	1.1	2	16	6.2893	**52**	**0.85**					0	0.2	**0.3**	0	0	0	0.2	**0.2**	**47**	**100**
201	1.7		0.8	19	40	4.4	2.2	13.606	**78**	**6.1**						2	**2**		0.2		-0.2		**14**	**100**
202		0.1	0.1	1.5	9.7	2.2	6.1	4.8808	**28**	**5.13**	0.1	0.1			0.2	0.8	**1.6**	0.5	2.9	2.06	-1.8	**3.6**	**61**	**100**
210	0.3	2.3	0.5	0	0.5	12	2.1	2.6414	**9**	**8.01**				0	0.7	2.5	**3.6**	0.2	7.2	15.3	-0.2	**22**	**57**	**100**
221	1.4	0.1	0.8	0.2	0.4	1.2	19	2.1887	**39**	**9.76**	0	0	0.1	0.2	1.4	2.5	**6.6**	0	1.5	0.13	7.8	**9.4**	**35**	**100**
222	1		0.3		0.1		1.7	24.605	**28**	**6.85**			0.1			0.2	**0.3**	0		0.15	2	**2.2**	**62**	**100**
223	0.1							0								0					0		**100**	**100**
361	0.5	2.8	0.5	0	5.3	3.9	6.5	1.5375	**21**	**5.08**					0.2	1.4	**9.9**		0.1	0.2	6.5	**6.8**	**57**	**100**
369	0.7	0.2	0.8	0.5	18	3	31	0.8096	**58**	**14.6**	0	0	0	0	0.1	4	**4.1**	0	0	0	0	**0.1**	**23**	**100**

Notes: 1. Those countries and products are chosen that have a prominent share in India's exports.

2. OECD is a group of 30 industrialized countries.

3. East Asian Tigers are four in numbers, of which South Korea is also the member of OECD.

Data Source: UN-COMTRADE.

Source: Calculated.

Table III.3 Destination of India's manufactured exports in 2000

	Australia	*Germany*	*France*	*United Kingdom*	*Italy*	*Japan*	*Sweden*	*Turkey*	*United States*	*Other OECD*	***OECD***	***Asian Tigers***	*Brazil*	*China*	*Indonesia*	*Malaysia*	*Other Developing Countries*	***developing Countries***	*Bangladesh*	*Nepal*	*Sudan*	*Tanzania*	*other LDC*	***LDC***	***er ries***	
High Technology																										
2423	0.8	4.6	0.74	2.24	1.45	0.99	0.03	0.96	7.4	11.9	**31.1**	**9.89**	2.45	2.01	0.45	0.8	13.5	**18.9**	1.3	2.27	0.5	1.06	6.29	**11.4**	**29.6**	**100**
300	0.58	3.98	0.39	2.2	0.56	1.2	0.21	0.13	17.9	11.5	**38.7**	**9.43**	1.84	0.72	0.38	41.3	4.15	**48.1**	0.22	0.06	0	0.08	0.44	**0.79**	**3.4**	**100**
321	5.98	5.2	0.84	3.84	3.85	2.11	0.78	0.3	25.6	19	**67.4**	**14.7**	1.81	0.3	0.2	3.9	4.74	**10.8**	0.87	0.18	0	0.01	0.31	**1.38**	**8.86**	**100**
322	0.98	1.56	2.7	6.64	2.56	0.76	1.24	0.13	20.3	13.7	**50.6**	**14.5**	0.21	3.8	0.1	0.84	3.2	**9.28**	0.64	0.65	0.01	0.56	1.26	**3.12**	**22.9**	**100**
323	1.33	5.29	0.55	8.92	1.62	0.59	0.28	0.14	14.5	9.06	**42.3**	**18.2**	0.65	2.86	0.89	0.7	3.41	**8.72**	1.31	1.15	0.07	0.11	3.18	**5.82**	**25.2**	**100**
331	0.85	5.61	5.04	5.46	1.31	8.74	0.29	1.69	16.6	9.03	**54.6**	**7.02**	0.66	3.69	0.19	1.56	7.02	**13.2**	3.46	0.5	0.37	0.4	1.73	**6.46**	**19.1**	**100**
332	0.35	2.8	2.75	8.02	0.93	0.09	11.1	0.87	24.7	11.6	**63.2**	**5.87**	0.03	1.79	0.64	1.42	5.87	**11.4**	0.3	0.04	1.12	0.43	1.49	**3.39**	**18.2**	**100**
333	0.6	0.72	0.54	5.05	0.12	0.2	0	0.03	4.25	4.53	**16**	**15.1**		0.07	0.01	0.21	2.5	**4.83**	0.03	0.07	0.03	0.18	0.43	**0.74**	**63.4**	**100**
353	8.6	8.1	16.1	9.12	0.34	0.62			30.7	6.21	**79.8**	**8.48**		0.01	0.1	0.64	4.86	**10.2**		0.07			0.01	**0.08**	**1.44**	**100**
M-H-T Industries										0							0						0			
241	0.7	5.98	1.59	4.28	4.46	2.74	0.04	2.29	10.5	18.3	**50.9**	**11.4**	2.77	6.16	3.77	0.95	17.2	**27.2**	1.96	0.21	0.11	0.28	0.43	**2.99**	**9.54**	**100**
242	1	3.96	1.85	2.29	1.44	1.59	0.06	1.18	8.77	12.1	**34.3**	**9.15**	2.11	2.07	0.5	1.35	13	**18.9**	1.28	1.69	0.42	0.72	4.87	**8.99**	**29.5**	**100**
243	0.28	3.14	2.02	4.93	10.7	0.9	0.06	15.7	2.45	23.4	**62.6**	**2.77**	1.46	0.65	1.82	0.36	27.3	**28.9**	2.06	0.57	0.04	1.32	1.17	**5.17**	**0.98**	**100**
291	1.27	6.91	2.03	15.1	2.67	0.95	0.32	1.26	16.8	7.34	**54.7**	**5.35**	0.54	0.45	1.21	1.69	10.2	**14.7**	1.59	0.71	0.9	0.36	2.8	**6.38**	**19.6**	**100**
292	0.83	6.95	1.15	3.43	4.27	1.85	0.35	1.03	16	8.12	**43.9**	**2.49**	0.45	3.11	1.73	1.35	9.69	**15.5**	6.3	1.83	0.68	0.84	3.36	**13**	**25.3**	**100**
293	0.65	12.2	0.45	1.45	1.82	0.16	0.1	1.53	9.16	2.43	**29.9**	**4.54**	0	0.32	0.53	1.17	8.73	**12.6**	1.76	0.77	1.61	0.35	4.13	**8.61**	**44.4**	**100**
311	1.8	5.73	5.42	4.6	3.31	1.65	0.86	0.15	19.2	12.5	**55.2**	**8.08**	0.16	2.66	0.25	0.65	12.8	**17.8**	3.89	0.99	0.05	0.11	2.14	**7.19**	**12.2**	**100**
312	2.87	6.61	2.34	5.34	0.93	1.02	0.78	0.4	14.1	11.5	**45.9**	**5.46**	0.66	0.55	0.39	4.01	7.73	**15.9**	2.38	0.23	0.09	0.04	1.55	**4.29**	**28.5**	**100**
313	0.61	4.02	0.4	3.87	0.93	0.39	0.45	0.35	9.51	7.69	**28.2**	**7.36**	0.04	0.07	0.14	2.08	4.12	**11.2**	1.37	0.95	10.9	0.39	1.29	**14.9**	**40.2**	**100**
314	0.35	1.96	0.5	3.45	0.57	30.9			7.95	5.21	**50.8**	**14.5**	0.01	0.17		0.49	5.64	**6.66**	1.66	0.08	0	2.7	1.53	**5.97**	**22.3**	**100**
315	1.21	4.22	2.68	12.7	1.11	0.17	1.29	0.04	24.1	10.6	**58.1**	**6.05**	0	1.47	0.82	0.5	9.68	**12.2**	2.93	1.59	0.23	0.07	2.49	**7.3**	**17.3**	**100**
319	1.44	6.85	5.62	7.2	2.69	1.58	0.73	1.56	19.9	12.5	**60.1**	**9.51**	2.01	1.93	2.33	2.14	10.5	**17.2**	0.17	0.34	0.1	0.4	1.09	**2.1**	**12.8**	**100**
341	0.77	0.97	0.24	8.06	9.06	0.11	1.39	5.17	0.07	19.3	**45.1**	**0.33**	0.02	0.02	2.06	1.68	12.8	**15**	12	3.03	0	0.42	1.58	**17.1**	**22.5**	**100**
342	0.36	4.94	1.89	10.2	4.01	0.01	0.01		20.3	32.4	**74.2**	**1.45**	0.17		0.3	0.49	3.46	**4.5**	0.31	0.11	1.3	0.21	0.37	**2.3**	**18**	**100**
343	1.4	8.5	2.0	8.7	3.9	1.3	0.1	1.1	28.7	10.	**66.3**	**3.8**	0.3	0.2	1.27	1.2	12.	**14.**	2.22	0.3	0.8	0.2	1.6	**5.3**	**11.7**	**100**

	7	8	6		7	7	4	4		2		**3**	5	6		2	1	**1**		6	4	9	3	**3**		
352	0.68	7.79	0.14	1.41	0.34		0.29	12.9	5.02	1.83	**30.3**	**1.43**			0.94	3.97	18	**22**	3.36	1.17	0.55	3.76	7.13	**16**	**30.3**	**100**
359	0.29	2.87	1.24	4.09	2.11	0.4	0.04	2.68	2.56	8.05	**24.3**	**1.17**	2.56	0.45	3.02	0.58	28	**31.6**	4.87	1.8	2.07	2.42	9.72	**20.9**	**22.2**	**100**
M-L-T Industries										0							0						0			
231	0.12								0.32	0.53	**0.97**	**1.43**		47.4		1.11	0	**48.5**	0.17	15.6			0	**15.7**	**33.9**	**100**
232	0.01	0	0.21	0.01	0.13	0.6		0.15	0.08	0.46	**1.64**	**0.39**	0.06	0	0.62	0.06	1.11	**1.23**	0.01	0.01		0.05	0.02	**0.09**	**97**	**100**
233				4.27					5.55	5.28	**15.1**						0						0		**84.9**	**100**
251	1	3.97	0.88	3.58	2.01	0.22	0.13	0.78	20.1	6.78	**39.5**	**3.41**	2.63	0.12	0.47	0.31	17.9	**21.1**	4.16	0.33	0.27	0.9	5.63	**11.3**	**24.9**	**100**
252	0.94	2.65	1.71	6.48	5.83	0.48	0.25	0.76	17.1	8.73	**45**	**5.45**	0.62	2.04	0.69	0.57	7.62	**11.5**	1.87	0.93	0.52	0.83	3.8	**7.95**	**30.4**	**100**
261	4.76	3.83	1.02	1.84	4.29	0.62	0.17	2.36	11.4	16.1	**46.4**	**4.62**	1.08	0.99	2.06	0.7	11.8	**14.9**	1.62	0.59	0.17	1.02	3.02	**6.42**	**27.9**	**100**
269	2.81	4.93	0.68	5.21	7.64	2.88	0.17	0.53	16.8	12.7	**54.4**	**4.97**	0.14	2.45	0.46	0.8	4.32	**8.16**	6.8	0.58	0.19	0.27	1.66	**9.51**	**24.2**	**100**
271	0.45	1.82	0.52	3.24	5.24	3.28	0.37	2.39	27.1	13.7	**58.2**	**7.35**	0.32	1.13	1.73	1.26	9.56	**12.4**	1.94	0.31	0.22	0.59	5.34	**8.4**	**15.9**	**100**
272	0.32	3.82	0.65	3.04	0.78	0.22	0.08	0.69	10.7	5.96	**26.3**	**26**	0.12	6.33	3.65	3.23	11.7	**21.6**	3.58	0.8	0.22	0.05	0.76	**5.41**	**24.4**	**100**
273			0.87	3.11						-4							0						0			
281	2.85	1.06	1.49	10.2	0.68	0.26	0.14		17.9	-3	**31.5**	**8.21**	0.17	0.01	1.19	0.44	15.4	**21**	2.78	1.9	0.26	0.73	1.9	**7.57**	**32**	**100**
289	2.15	3.96			1.65	0.73	0.24	0.34	25.8	20.9	**55.8**	**3.02**	0.4	0.27	0.72	1.13	8.24	**10.9**	1.45	0.14	0.58	0.33	3.56	**6.06**	**24.4**	**100**
351	0.05	0	0	0.98	0			10.2	1.69	0.47	**13.4**	**0.12**					10.3	**10.3**	0.18			0.01	7.88	**8.06**	**68.2**	**100**
L-T Industries										0							0						0			
151	0.52	1.07	2.86	3.2	1.12	24.1	0.03	0.11	12.2	9.84	**55.1**	**8.7**	0.02	5.5	3.37	4.53	12.5	**23.1**	1.03	0.03	0.05	0	0.57	**1.69**	**14.1**	**100**
152		4	1.6	0.1	0.1	0.11	0.01		51.7	5.25	**62.8**	**1.65**		0.81	0.15	0.01	1.22	**3.99**	15.8	0.74	0.05	0.16	1.64	**18.4**	**13.4**	**100**
153	0.33	0.87	2.07	7.29	0.63	0.1	0.2	0.02	4.19	2.97	**18.7**	**1.06**	0	0.01	0.04	0.96	3.58	**5.57**	10	0.86	0.01	0.07	2.64	**13.6**	**61**	**100**
154	0.44	1.85	0.52	4.97	0.33	1.28	0.01	0.2	5.56	9.22	**24.4**	**1.92**	0	0.22	0.26	1.15	11.5	**13**	3.83	0.92	0.03	0.08	2.06	**6.92**	**54**	**100**
155	0.21	0.35	1.75	3.88		1.54			2.93	28.6	**39.3**	**11**		0	0.13	0.25	8.96	**11**	0.32	6.33	0.01	0.04	1.61	**8.31**	**39**	**100**
160	0.07	1.67	0.03	1.43	0.12	2.83	7.76		20.2	-5	**29.1**	**7.12**	0	0.19	0	2.6	1.88	**4.95**	0.68	0.21	0.07	0.85	9.61	**11.4**	**47.5**	**100**
171	0.89	2.24	1.07	4.97	4.86	2.28	0.18	2.39	7.93	14.7	**41.5**	**13.1**	0.32	1.96	1.04	1.37	11.1	**15.2**	5.85	0.21	0.27	0.6	4.09	**11**	**23.4**	**100**
172	2.25	12.4	4.97	7.43	3.07	3.62	2.29	0.23	37.3	14.1	**87.8**	**1.06**	0.15	0.06	0.15	0.24	3.12	**3.69**	0.11	0.19	0.27	0.26	0.97	**1.8**	**5.85**	**100**
173	0.66	8.6	6.77	8.31	3.07	1.45	1.28	0.01	23.3	18.8	**72.3**	**0.67**	0	0.01	0	0.13	3.28	**3.66**	0.36	0.02	0.02	0.04	0.46	**0.9**	**22.5**	**100**
181	0.97	7.33	6.26	7.69	3.6	2.02	0.82	0.03	33.7	14.9	**77.3**	**1.17**	0.15	0.03	0.04	0.42	3.22	**4.02**	0.03	0.02	0.12	0.1	0.4	**0.67**	**16.9**	**100**
182	83.7								5.77	7.91	**97.4**						2.01	**2.01**					0		**0.61**	**100**
191	2.13	13.6	4.33	7.7	11.4	1.1	1.06	0.35	15.9	18.8	**76.3**	**12.1**	0.49	0.94	0.33	0.46	5.11	**7.11**	0.09	0.02	0.02	0.02	0.12	**0.27**	**5.86**	**100**
192	1.91	15.5	4.95	25.4	10.4	0.4	0.95	0.04	17.4	14	**91**	**0.81**	0.02	0.03	0.1	0.44	2.2	**2.97**	0.11	0.02	0.01	0.03	0.18	**0.35**	**4.89**	**100**
201	8.51	2.64	0.1	2.7	10.7	5.52	5.98		11.5	3.16	**50.9**	**6.45**		21.6			0	**21.6**					0		**21**	**100**
202	0.62	2.19	2.84	4.65	1.65	1.53	1.55	0.39	18.4	8.42	**42.2**	**11.9**	0.13	0.27	0.22	0.22	4.14	**5.68**	1.89	0.59	0.19	0.21	1.1	**3.98**	**36.5**	**100**
210	1.45	0.48	0.3	2.34	0.2	0.76	0.08	0.28	8.01	2.82	**16.7**	**5.13**	0.13	0.19	0.51	6.12	12	**18.9**	8.82	1.5	1.67	0.48	4.64	**17.1**	**42.4**	**100**

221	0.42	0.7	0.18	9.62	0.1	0.71	0.1	0.01	9.27	3.96	**25.1**	**54.7**	0	0.05	0.12	1.75	1.44	**3.67**	1.1	0.32	0.13	0.18	0.69	**2.43**	**14.4**	**100**
222	0.82	2.19	0.68	13.1	0.2	0.55	0.81	0.11	24.1	3.6	**46.2**	**1.88**	0.42	0.32	0.73	0.51	4.68	**6.72**	0.82	0.93	3.67	2.27	9.04	**16.7**	**28.6**	**100**
223										0							0						0						
361	3.31	3.17	4.66	22.6	3.47	0.8	0.41	0.17	24.8	15.3	**78.6**	**3.11**	0.08	0	0.02	0.2	2.93	**3.87**	0.57	0.42	0.05	0.4	1.73	**3.17**	**11.7**	**100**
369	0.45	1.15	0.48	1.93	0.48	5.23	0.05	0.05	37	14.6	**61.4**	**25.7**	0.03	0.22	0.03	0.14	2.9	**3.3**	0.05	0.01	0.02	0.02	0.08	**0.17**	**9.52**	**100**

Notes: Same as Table II.2.
Data Source: UN-COMTRADE.
Source: Calculated.

Table II.4 Destination of India's manufactured exports in 2006

	Australia	*Belgium*	*Canada*	*Germany*	*Denmark*	*Spain*	*France*	*United Kingdom*	*Italy*	*Japan*	*Netherlands*	*Turkey*	*United States*	*Other OECD*	***OECD***	***Asian tigers***	*Brazil*	*China*	*Egypt, Arab Rep.*	*Indonesia*	*Philippines*	*South Africa*	*other developing*	***Developing countries***	*Bangladesh*	*Nepal*	*other LDC*	***LDC***	***Others***	
High Technology														0													0			
2423	1	1	1	3	0	1	1	4	1	0	2	2	14	6	**35**	**2**	3	2	0	0	1	2	12	**21**	1	1	11	**14**	**28**	**100**
300	1	0	2	4	2	1	0	6	1	1	11	0	35	3	**67**	**14**	1	3	0	0	1	0	3	**8**	1	0	1	**3**	**8**	**100**
321	1	1	0	26	0	7	2	4	1	0	0	2	23	4	**72**	**14**	1	1	0	0	0	0	6	**9**	1	0	2	**3**	**3**	**100**
322	0	1	2	2	1	0	3	2	1	0	1	0	14	4	**30**	**22**	0	4	0	0	1	1	8	**15**	1	1	4	**6**	**27**	**100**
323	1	1	0	7	2	1	1	3	12	0	2	0	23	1	**54**	**3**	0	1	0	0	0	0	2	**4**	3	1	2	**7**	**32**	**100**
331	1	1	0	10	0	0	3	3	1	6	1	1	24	6	**57**	**12**	1	3	1	0	0	1	8	**15**	1	1	4	**5**	**12**	**100**
332	1	0	1	10	0	0	6	6	1	1	3	2	12	6	**49**	**4**	0	15	1	0	1	3	10	**30**	0	0	3	**3**	**14**	**100**
333	0	3	0	1	0	1	1	0	0	0	0	1	4	21	**32**	**17**	0	1	1	0	0	0	6	**7**	1	0	1	**2**	**42**	**100**
353	0	0	4	1		0	30	16	3	0	0	0	8	1	**64**	**1**		0	0	0	0	3	-4		0	1	0	**1**	**34**	**100**
M-H-T Industries														0													0			
241	0	2	2	5	0	3	1	3	3	2	2	2	11	7	**43**	**9**	2	11	1	6	1	1	15	**37**	1	0	1	**2**	**11**	**100**
242	1	1	1	3	0	1	2	4	1	1	2	2	15	5	**39**	**3**	3	2	1	1	1	2	13	**22**	1	1	9	**11**	**25**	**100**
243	0	3	1	2	0	2	0	1	4	1	0	8	7	5	**34**	**1**	10	2	8	4	1	1	20	**46**	4	0	1	**5**	**14**	**100**
291	1	1	1	6	0	1	2	8	3	1	2	1	19	4	**50**	**5**	1	5	1	1	0	1	9	**19**	1	0	5	**6**	**21**	**100**
292	2	2	1	4	0	1	1	4	2	3	1	2	16	3	**40**	**6**	1	2	1	1	0	2	9	**17**	2	1	9	**12**	**26**	**100**
293	2	1	1	2	0	1	4	3	2	0	1	0	19	3	**38**	**2**	0	0	0	1	1	1	10	**14**	2	2	5	**9**	**37**	**100**
311	1	0	1	2	0	1	0	2	1	1	8	1	46	3	**67**	**3**	0	2	0	0	0	1	7	**11**	1	0	4	**6**	**13**	**100**
312	2	1	0	6	1	1	2	12	2	1	2	1	16	4	**50**	**4**	1	3	1	0	1	1	6	**14**	0	0	4	**5**	**28**	**100**
313	0	1	0	1	1	0	1	14	0	4	1	0	14	2	**37**	**4**	0	0	0	0	1	1	9	**11**	0	1	6	**7**	**40**	**100**
314	5		0	2		5	1	6	2	1	0	1	5	4	**32**	**16**	1	1	1	1	0	3	10	**17**	5	4	4	**13**	**24**	**100**
315	1	1	0	5	0	3	4	11	2	0	2	0	8	5	**44**	**1**	0	0	3	1	0	2	4	**11**	5	3	8	**16**	**29**	**100**

319	1	3	1	8	1	1	1	5	5	2	11	1	13	8	**62**	**7**	1	1	2	2	0	3	6	**15**	1	0	1	**2**	**16**	**100**
341	0	0	0	4	0	3	0	2	7	0	1	2	0	6	**27**	**1**	0	0	3	0	0	16	14	**33**	2	1	4	**8**	**30**	**100**
342	2	0	1	7	0	0	2	17	2	0	1	0	16	8	**58**	**9**	1	0	0	0		1	3	**6**	0	0	6	**7**	**21**	**100**
343	1	2	1	7	0	1	2	7	7	1	2	2	29	10	**71**	**6**	1	1	1	1	0	4	13	**20**	1	0	2	**3**	**5**	**100**
352	1		3	1		0	1	1	1		0	0	7	1	**15**	**0**	1	0	0	0	0	1	2	**5**	0	0	77	**77**	**3**	**100**
359	0	1	0	1	0	0	1	2	2	0	0	1	1	3	**14**	**0**	1	0	2	1	3	1	23	**31**	6	4	17	**27**	**28**	**100**
M-L-T Industries																														
231	0												6	0	**6**		60		0	1	0		2	**63**	2	4	13	**18**	**13**	**100**
232	0	0	0	0		0	1	5	0	2	3	1	1	9	**23**	**24**	5	0	0	2	0	4	4	**16**	0	2	6	**8**	**33**	**100**
233				17							10		51	0	**79**								1	**1**	20		0	**20**	**0**	**100**
251	3	1	1	6	0	1	1	3	3	0	4	1	11	5	**40**	**2**	1	0	2	0	4	2	14	**23**	2	1	7	**9**	**26**	**100**
252	1	2	2	4	0	2	3	9	4	0	2	1	15	3	**50**	**3**	1	1	1	0	0	2	7	**12**	1	1	7	**9**	**26**	**100**
261	3	5	1	3	1	2	1	3	6	1	1	4	13	14	**56**	**3**	3	4	1	1	2	1	10	**22**	0	2	3	**5**	**14**	**100**
269	1	2	2	4	1	2	2	4	2	1	2	1	26	4	**55**	**1**	0	1	0	0	0	1	5	**9**	1	4	5	**10**	**26**	**100**
271	1	8	1	2	0	2	0	2	6	1	1	1	16	5	**45**	**6**	1	6	0	4	2	2	8	**22**	1	0	4	**6**	**23**	**100**
272	0	2	0	1	0	0	0	1	4	1	2	1	3	3	**20**	**18**	0	19	1	2	0	0	11	**34**	1	0	0	**1**	**29**	**100**
281	3	1	1	2	0	1	1	7	1	0	1	1	11	4	**33**	**1**	0	0	1	1	2	2	9	**15**	2	0	7	**10**	**41**	**100**
289	2	1	2	6	1	2	2	9	4	1	2	1	24	6	**61**	**4**	1	0	1	1	0	2	7	**11**	1	0	4	**6**	**19**	**100**
351	0			0		0	8	0	1	0	0	0	6	5	**20**	**56**	0						-0		0	0	0	**0**	**24**	**100**
L-T Industries																														
151	1	4	1	1	0	2	2	3	1	10	2	0	10	6	**44**	**9**	0	9	0	4	2	1	12	**29**	2	0	2	**4**	**19**	**100**
152	0	0	1	4	0	0	0	0	0	1	0	0	22	0	**30**	**2**	0	2	5	0	2	0	15	**24**	9	4	8	**20**	**23**	**100**
153	1	1	1	1	0	0	0	3	1	0	1	0	3	1	**13**	**1**	0	0	0	0	0	6	2	**8**	7	2	13	**22**	**56**	**100**
154	2	1	1	1	1	1	0	4	1	1	1	0	5	3	**21**	**2**	0	0	0	1	0	1	36	**38**	8	1	6	**16**	**23**	**100**
155	0	0	1	0	0	0	1	3	1	2	3	0	3	3	**17**	**6**		0		0	0	2	18	**20**	0	1	12	**12**	**47**	**100**
160	0	0	0	0	0	0	0	1	0	0	0	0	11	1	**14**	**2**	0	1	0	0	1	1	5	**7**	0	0	19	**20**	**57**	**100**
171	1	2	1	2	0	2	1	3	6	2	0	4	6	9	**41**	**9**	1	3	3	1	0	1	12	**21**	6	0	7	**14**	**21**	**100**
172	2	2	2	9	1	3	4	7	4	2	2	1	41	7	**87**	**1**	0	0	0	0	0	1	4	**6**	0	0	1	**1**	**5**	**100**
173	0	2	4	11	2	4	10	10	5	0	5	0	26	6	**85**	**1**	0	0	0	0	0	1	2	**3**	0	0	0	**1**	**11**	**100**
181	1	2	3	7	2	4	7	10	6	2	4	0	33	5	**85**	**1**	0	0	0	0	0	1	3	**4**	0	0	1	**1**	**9**	**100**
182	2			5		25			2			1	0	4	**39**			1			12		26	**40**			2	**2**	**19**	**100**
191	2	2	1	8	1	5	3	9	10	1	3	1	10	9	**63**	**23**	0	3	0	1	0	1	5	**10**	0	0	0	**0**	**6**	**100**
192	1	2	1	17	1	6	8	16	16	0	4	0	11	9	**92**	**1**	0	0	0	0	0	1	2	**3**	0	0	0	**0**	**5**	**100**
201	1	5	2	2	2	5	5	3	2	1	3		10	1	**42**	**1**		1		0		0	3	**4**	0	0	0	**0**	**53**	**100**
202	1	1	6	2	1	3	3	5	2	1	2	2	22	4	**55**	**1**	0	0	0	0	0	1	5	**7**	2	1	3	**6**	**32**	**100**
210	1	0	0	1	0	0	0	5	1	0	1	1	7	3	**22**	**4**	0	0	2	2	1	1	7	**12**	4	3	10	**17**	**46**	**100**
221	1	0	1	1	0	0	0	10	0	1	1	0	10	1	**26**	**46**	0	0	0	0	0	1	6	**7**	1	0	4	**5**	**16**	**100**
222	1	1	1	4	0	1	1	15	1	0	2	2	12	4	**43**	**0**	0	0	1	1	0	2	8	**12**	1	2	20	**22**	**22**	**100**
361	3	3	1	4	1	6	10	11	7	0	3	0	28	8	**87**	**1**	0	0	0	0	0	1	2	**4**	0	0	1	**1**	**7**	**100**
369	1	8	0	1	0	0	0	2	1	3	0	0	31	1	**49**	**22**	0	1	0	0	0	0	3	**4**	0	0	0	**0**	**26**	**100**

Notes: Same as Table II.2.
Data Source: UN-COMTRADE.
Source: Calculated.