

ISSN 2454-5597



ISFIRE WORKING PAPER SERIES

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Working Paper-12
<http://iire.in/ojs/index.php>
Issue-July 2015

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EXPORT PERFORMANCE OF INDIA'S MANUFACTURING INDUSTRIES

Sheetal J. Chaddha¹
L. G. Burange²

Abstract:

The aim of the paper is to assess the export performance of the industries in the Indian manufacturing sector since liberalization. To analyze the change in the long term trend, pattern and composition of exports of manufacturing industries, the study covers the period between 1990-91 and 2013-14. The paper reorganizes trade data as per the Harmonised System (HS) classification into industry classification (ISIC Rev.3). It examines the contribution of volume and unit value to the growth in manufacturing exports. Growth in volumes has mainly influenced the rise in exports of manufacturing industries. However, results point out to a lack-luster performance of manufacturing exports, with traditional exports such as textiles witnessing below average growth. Nonetheless, the composition of India's manufacturing export basket is undergoing change with industries like chemicals, machinery and auto parts showing greater promise. The commodity concentration of India's manufacturing exports is also gradually declining.

Key words: Indian manufacturing industry, India's exports, Growth in India's manufacturing exports, commodity concentration of manufacturing exports, manufacturing exports.

JEL Code: F10, F14, L60

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1. Introduction:

A review of the manufacturing sector of India and its export performance *per se*, indicates existence of an untapped potential, which gets sucked in a whirlpool of domestic constraints. A number of research papers have pointed out that it is chiefly the ‘limitations’ in the domestic economy, which is impeding India’s manufacturing sector to outperform in the international arena. In spite of years of planning and of late the inclination towards globalization, India has still not arrived as a strategic and strong player in the world market. India’s share in world exports still continues to be in the region of 1.5 per cent to 2 per cent. Kalirajan and Singh (2007) explain that when it comes to comparing the export performance of India and China, India loses out completely. India is still not in a position to cater to the demands of the rich world, as efficiently as China. While China managed to reduce its domestic constraints and has realized almost 85 per cent of its export potential, India still lingers on at less than 70 per cent. India’s share in global manufacturing hovers around 2 per cent, while that of China is a whopping 22 per cent (Bhunia, 2014). Redesigning trade, industry and infrastructure policy which is geared towards removing the domestic impediments to export is mandatory.

In essence, a holistic abolition of bottlenecks is essential to benefit from the path of globalization. In fact, India is even unable to seek benefit from Foreign Direct Investments (FDI). Inward FDI flows are supposed to aid the development process of a developing country. Literature in international trade suggests that FDI, under conditions of free trade, assist in technology transfer and thereby help in augmenting exports of medium and high-tech industries. India however, has failed to attract the kind of FDI that is more efficiency seeking and focused on exports. Aggarwal (2002) suggests that Indian firms which have received equity from foreign firms have not managed to increase exports of high tech industries. It is only in low-tech industry exports where they have exhibited a good performance vis-à-vis firms with no foreign equity infusions. Results by Burange and Chaddha (2008) support the trend that India’s comparative advantage chiefly lies in Heckscher-Ohlin (standard technology) goods as compared to Product Cycle (high tech) goods. It is principally, the inability of the country to integrate completely with the global economy and ‘within the border constraints’ that are the chief causes of this pattern.

It has also been pointed out that industrial productivity, as measured by total factor productivity (TFP) has not shown much growth in the post-reform period. Under-utilization of capacity that was created during the investment boom in the mid-1990s is seen as a contributor to the slow growth in productivity (Goldar, 2004). Even FDI has failed to enhance TFP argue Burange and Thakur (2014). India has only selectively benefitted from productivity spillovers through FDI. Horizontal spillovers,

which could help Indian firms to improve production techniques and increase TFP were negative. In fact, competition from FDI was negatively impacting TFP of domestic firms. India has only benefitted from vertical spillovers from FDI. Nonetheless, as Veeramani (2012) explains that there has been a slight structural shift in India's exports. Capital intensive goods are contributing more to the export basket as compared to labour intensive items.

In light of the above, it is crucial to understand, which industries are actually contributing to Indian exports, while which others are pulling them down. However, majority of the studies relating to India's export pattern are based on data as per the trade classifications. The export aspect of Indian manufacturing can be better understood with a study based on the industrial classification of trade data. Results from the study can therefore aid in policy making, which is also the core objective of the paper.

2. Methodology:

The aim of this paper is to assess the export performance of the industries in the Indian manufacturing sector since liberalization. This requires export data as per the industrial classification. However, export data published by the DGCI&S is available in the Harmonised System of Classification (HS). The HS classification is output based, which categorizes commodities on the basis of consumption or output. The industrial classification, on the other hand, categorizes products on the basis of their manufacturing activity. For e.g. while the HS classification will categorize textiles, based on the output and stage of processing, the industrial classification will categorize the manufacturing activity of textiles, which uses an input based classification method. For the industrial sector, India follows the *International Standard Industrial Classification of All Economic Activities* (ISIC) and adopted Revision 3. of this classification in 1998 (which the paper uses). This implies that any study, which assesses the export performance of the Indian industry, will have to first obtain export data as per ISIC classification. (The ISIC system of classification is based on the following structure- at the 1 digit level; the codes are tabulated as alphabets. At the 2 digit level they are referred to as 'Divisions' and at the 3 and 4 digit level are called as 'Groups' and 'Classes' respectively). Unavailability of this type of data proved a major hurdle for the study. In order to overcome this problem, the study first reorganized HS export data as per the Standard Industrial Trade Classification (SITC) with concordance between HS codes and SITC codes as presented by the UN Trade Classification Registry. After converting HS02 data classification to SITC 3 classification, the data was again rearranged as per the ISIC Rev.3 classification. The Europa Ramon Classification (EUROSTAT) provided the

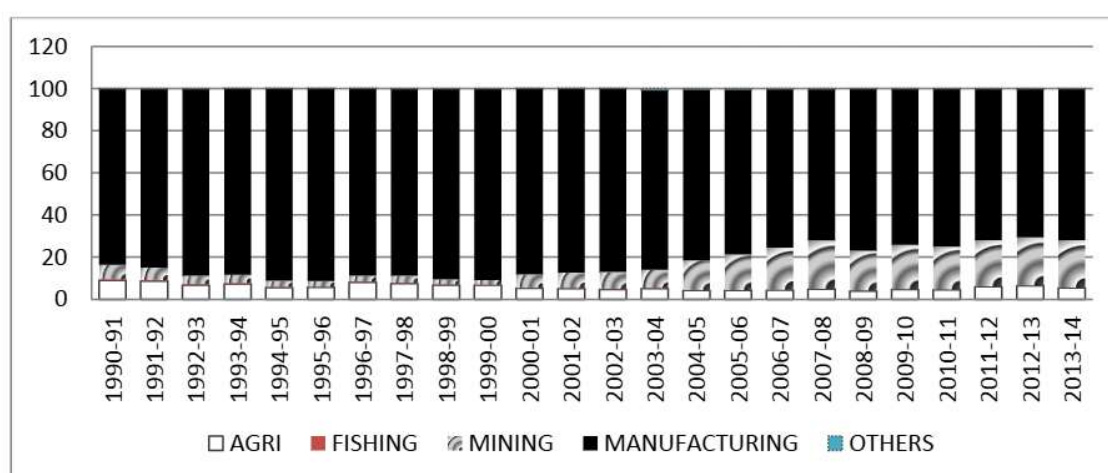
concordance between SITC codes and ISIC Rev. 3. This exercise helped in arranging export data in the HS classification to export data as per the ISIC classification.

To analyze the change in the long term trend in exports of the Indian manufacturing industries, the study covers the period between 1990-91 and 2013-14. In order to assess the contribution of quantity and unit value to the growth in India's manufacturing exports, Laspeyres's volume and Pasache's unit value indices are constructed, with 1999-2000 as the base year. The Compound Annual Growth Rate (CAGR) for quantity and unit value indices is calculated using the log-lin method. The commodity concentration of exports for Indian manufacturing industries is computed using Michaely's (1958) commodity concentration index.

3. Export Performance of Economic Activities:

Agricultural exports from India have reduced from 9 per cent in 1990-91 to about 5.4 per cent in 2013-14 (Figure 1). This is a reflection of the poor state of agriculture in the country. Of significance is the decline in the share of manufacturing exports from India. The sector commanded a lion's share in the export basket contributing to 91 per cent of India's export earnings in 1994-95. However, this trend continued only until 2002-03. Since then, manufacturing is consistently giving way to mining and by 2013-14; its share declined to 71 per cent (Table 1). In fact, the share of manufacturing in India's GDP remains range bound between 13 to 16 per cent and there appears to be a great unexploited potential for competitive manufacturing waiting to be tapped (CRIS, 2009).

Figure 1: Percentage Share of Economic Activities in India's Exports (1990-91 to 2013-14)



On the other hand, in 1990-91, share of mining in India's export basket was a mere 6.8 per cent. Since 2004-05, its share escalated to a whopping 14 per cent and by 2013-14, it zoomed to almost 23 per cent of India's total export earnings. India's exports of petroleum products have risen sharply in the last two decades. Extraction of crude petroleum and natural gas (G 111), mainly undertaken by private sector oil refineries have majorly contributed to this trend.

Table 1: Percentage Shares of Economic Activities in India's Exports (1990-91 to 2013-14)

YEAR	AGRICULTURE	FISHING	MINING	MANUFACTURING	OTHERS
1990-91	9.01	0.57	6.81	83.49	0.12
1991-92	8.69	0.42	5.94	84.86	0.09
1992-93	6.72	0.49	4.03	88.67	0.08
1993-94	7.38	0.42	3.76	88.38	0.06
1994-95	5.58	0.34	2.91	91.11	0.05
1995-96	5.67	0.25	2.72	91.32	0.05
1996-97	8.06	0.37	2.73	88.77	0.07
1997-98	7.52	0.33	3.33	88.73	0.10
1998-99	6.72	0.30	2.42	90.46	0.10
1999-00	6.73	0.32	2.03	90.82	0.10
2000-01	5.20	0.24	6.28	88.20	0.08
2001-02	5.10	0.25	7.32	87.27	0.06
2002-03	4.67	0.23	8.00	87.05	0.05
2003-04	5.15	0.23	8.58	85.22	0.81
2004-05	4.24	0.21	14.04	81.00	0.51
2005-06	4.24	0.19	16.81	78.28	0.49
2006-07	4.42	0.18	19.97	75.08	0.37
2007-08	4.84	0.14	22.95	71.73	0.34
2008-09	3.93	0.12	19.04	76.72	0.19
2009-10	4.72	0.14	20.94	74.04	0.16
2010-11	4.51	0.13	20.35	74.87	0.14
2011-12	6.06	0.12	21.84	71.83	0.15
2012-13	6.48	0.14	22.72	70.57	0.09
2013-14	5.40	0.21	22.44	71.82	0.14

Source: Own Calculations

4. Export Performance of India's Manufacturing Industries:

The performance of manufacturing exports can be assessed with respect to the diversification of the export basket and the contribution of quantity and unit value to growth in the value of exports. The following sections deal with both the issues.

4.1 Commodity Concentration of Manufacturing Exports:

It is expected that with the passage of time and as the economy develops, the commodity concentration of trade reduces. An attempt at developing the commodity concentration index for India's manufacturing exports is made. The study uses the following formula by Michaely (1958)

As per the measure,

$$C = \sqrt{\sum \left(\frac{x_i}{X} \right)^2} * 100, \quad \text{-----} \quad (1)$$

Where,

C = Commodity Concentration,

x_i = Export or import value of the i^{th} commodity,

X = Total value of exports.

Thus, values closer to 100 depict a higher level of commodity concentration and vice-versa.

The results suggest that the commodity concentration of India's manufacturing exports has seen some decline during the study period (Table 2). The monopoly of textiles and apparel in India's export basket has given way to other entrants, which indicates diversification into newer categories. Nonetheless, textiles have been India's key export item since time immemorial and India also enjoys comparative advantage in the same (Burange and Chaddha, 2008). An employment generator for the Indian population, it is about time that India redresses the issue.

4.2: Growth in Manufacturing Exports:

India's manufacturing exports have grown at a CAGR of about 16 per cent in the 24 year period from 1990-91 to 2013-14, with 1999-2000 as the base year. As indicated by Figure 3, rise in volumes, has mainly contributed to the value growth of

manufacturing exports. The contribution of unit value in fuelling exports has been negligible, thereby suggesting competitiveness in the international markets. Table 3 reveals that in terms of quantity, India's manufacturing exports have witnessed a CAGR of 10.57 per cent, while unit value growth has been a mere 4.84 per cent. Although, volume indices were consistently higher than unit value right through the 24 year period, a striking rise in the quantity index is seen especially since 2005-06. The steep and sudden movement in the volume index in 2002-03 is mainly attributed to rise in exports of manufacturing of diamond studded gold jewelry (3691). Improvement and recovery in demand from US and Europe contributed to this trend. Yet again in 2010-11, the spurt in exports of transport equipment (3511), particularly dredgers led to a jump in the volume index. In both these years, the unit value index has seen a significant drop, especially in case of these Divisions. Thus, the unit value index has witnessed a very gradual rise over the years, unlike the volume index

Table 2: Commodity Concentration of India's Manufacture Exports

YEARS	COMMODITY CONCENTRATION INDEX
1990-91	29.42
1991-92	27.88
1992-93	26.33
1993-94	25.79
1994-95	28.33
1995-96	28.17
1996-97	26.57
1997-98	27.15
1998-99	29.18
1999-00	30.47
2000-01	27.96
2001-02	27.22
2002-03	27.24
2003-04	26.20
2004-05	26.36
2005-06	25.32
2006-07	23.65
2007-08	23.43
2008-09	24.58
2009-10	26.68
2010-11	27.88
2011-12	25.87
2012-13	23.41
2013-14	22.57

Figure 2: Commodity Concentration of India's Manufacture Exports

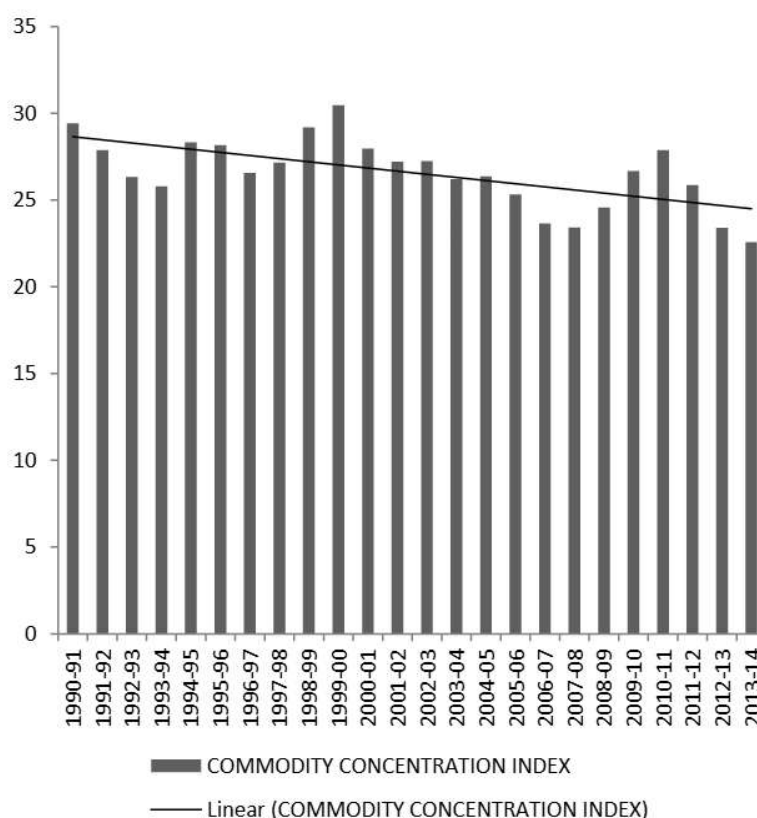
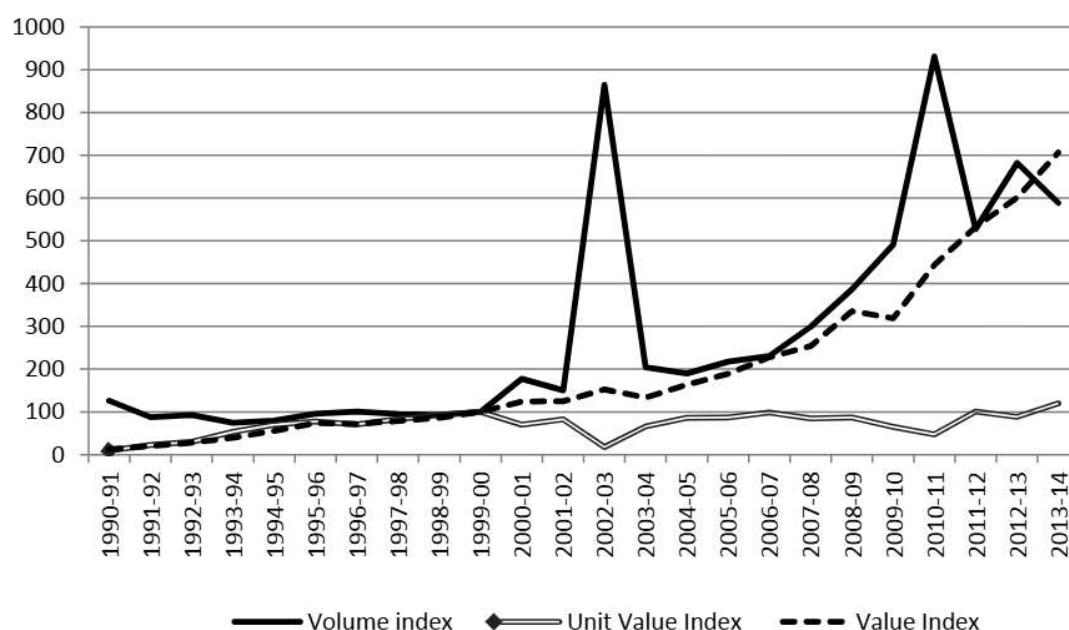


Figure 3: Quantity, Unit Value and Value indices of India's Manufacturing Exports



In order to appreciate the propellers behind the rise in exports in the last decade and the under performers, and better understand the changing pattern of manufacturing exports, these have been classified into three categories – A) Laggards B) Leaders, and C) Upcoming. The following paragraphs deal with these three categories in greater depth.

- A) **Laggards:** An overall perspective on manufacturing exports from India suggests that in general, exports have grown at a measly pace of 16 per cent in the 24 year period. Under performance of certain sectors has contributed to this trend.

These comprise traditional exports which had monopolized India's export basket since time immemorial, but are gradually losing steam. At the 2 digit level of ISIC classification, traditional manufacturing exports of textiles (D 17, apparel (D 18) and manufactures of leather (D 19) have performed dismally with growth of less than even 10 per cent (Table 4)

- **Textiles & Apparel:** As Figure 4 highlights, textiles (D17) and apparel (D18) exports from India are witnessing lackluster growth. Textile exports have grown at about

9 per cent, while apparel exports have grown at a CAGR of merely 6 per cent. Both volume and unit value growth in case of these Divisions has been similar. While the growth in exports has been slow, 2003-04 was specifically a bad period with negative growth. The growth in cloth and spun yarn production itself had dipped in that year, owing to a large number of challenges faced by the industry (GOI, 2004). It is the exports of spun and woven textile fibres (C 1711) which have seen slow growth. Similarly, poor growth in exports of wearing apparel, except fur (C 1810) has led to a declining share of apparel in India's exports. Dearth of weaving, spinning and processing units in the country coupled with the inability to enjoy economies of scale is playing spoil sport for the sector.

Table 3: Quantity, Unit Value and Value indices of India's Manufacturing Exports

Year	Volume Index	Unit Value Index	Value Index
1990-91	127	10	12
1991-92	88	23	20
1992-93	93	30	28
1993-94	75	53	40
1994-95	80	70	56
1995-96	96	77	74
1996-97	101	71	71
1997-98	95	83	79
1998-99	93	93	86
1999-00	100	100	100
2000-01	177	70	124
2001-02	150	83	125
2002-03	864	18	153
2003-04	204	65	134
2004-05	190	86	164
2005-06	217	87	189
2006-07	230	99	227
2007-08	299	85	254
2008-09	387	87	336
2009-10	491	65	319
2010-11	931	48	444
2011-12	528	101	533
2012-13	682	88	601
2013-14	589	120	706
CAGR (%)	10.57	4.84	15.92

As far as ready-made garments are concerned, along with other problems, absence of skilled labour is impacting exports of this category (CRIS, 2009). Competition from China and Bangladesh in the international markets is also very tough.

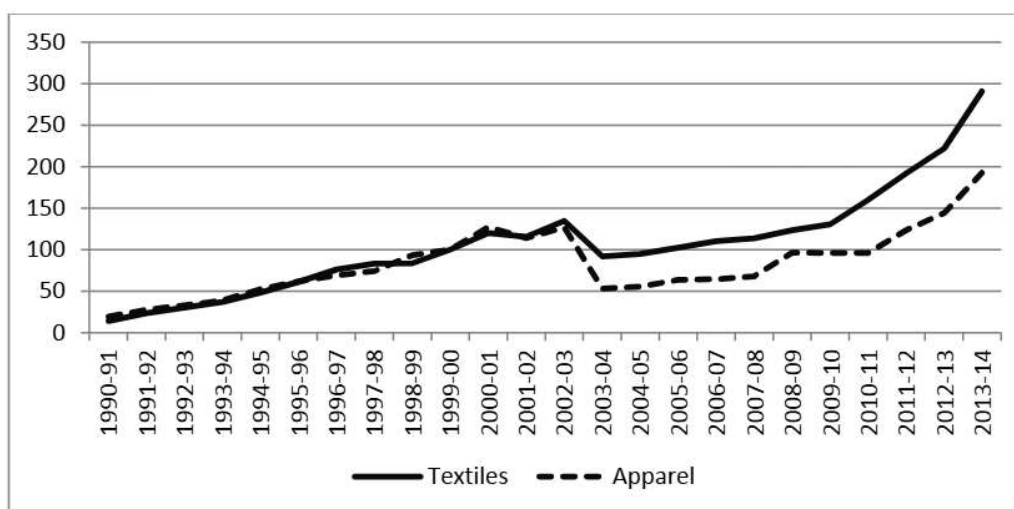
Table 4: CAGR of Quantity, Unit Value and Value of Manufacturing Exports at ISIC 2-Digit Level (1990-91 to 2013-14)

(Per cent)

Code	Description	Volume	Unit	Value
15	Manufacture of food products and beverages	8.37	6.20	15.09
16	Manufacture of tobacco products	6.22	9.00	15.78
17	Manufacture of textiles	4.48	4.79	9.49
18	Manufacture of wearing apparel; dressing and dyeing of	2.97	2.91	5.97
19	Tanning and dressing of leather; manufacture of luggage,	1.31	5.89	7.28
20	Manufacture of wood and of products of wood and cork,	7.76	7.22	15.54
21	Manufacture of paper and paper products	15.60	3.49	19.63
22	Publishing, printing and reproduction of recorded media	14.54	2.43	17.32
23	Manufacture of coke, refined petroleum products and	37.94	5.66	45.75
24	Manufacture of chemicals and chemical products	12.03	7.42	20.35
25	Manufacture of rubber and plastics products	13.54	3.41	17.42
26	Manufacture of other non-metallic mineral products	15.70	-4.82	10.12
27	Manufacture of basic metals	11.38	9.48	21.93
28	Manufacture of fabricated metal products, except	8.07	9.32	18.14
29	Manufacture of machinery and equipment n.e.c.	14.68	6.45	22.08
30	Manufacture of office, accounting and computing	16.55	-1.11	15.25
31	Manufacture of electrical machinery and apparatus n.e.c.	19.23	3.31	23.17
32	Manufacture of radio, television and communication	1.90	14.72	16.91
33	Manufacture of medical, precision and optical	19.46	4.03	24.26
34	Manufacture of motor vehicles, trailers and semi-trailers	9.87	6.98	17.54
35	Manufacture of other transport equipment	28.61	-3.37	24.28
36	Manufacture of furniture; manufacturing n.e.c.	10.34	8.56	19.78
Total	Manufacturing Total	10.57	4.84	15.92

Contributing to about 1.9 per cent of India's GDP and 12 per cent to the manufacturing output of the country, textiles, is an extremely important sector for the economy. In spite of its significance, the sector faces a number of problems which have resulted in other countries grabbing India's share in the international market. Obsolete technology, dearth of skilled labour, rising cotton prices for Indian manufacturers, escalating dependence on imported processed fabrics, poor infrastructure and small and fragmented nature of the players who are starved of adequate funds and latest know-how represents the true picture of India's oldest sector.

Figure 4: Value indices of India's Export of Textile and Apparel Manufactures



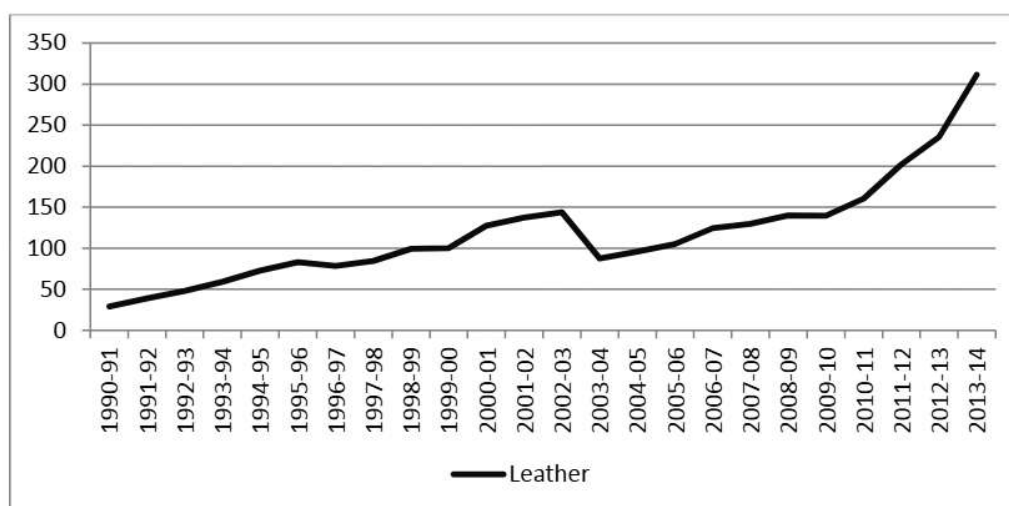
In fact, India's popular Technology Upgradation Fund Scheme (TUFS) also seems to be favoring the spinning sector as compared to weaving and processing activities which have led to India losing out in the value chain. Redressal of these issues is the one and the only way that India can continue to retain and increase her presence in the international market and successfully compete with China (CRIS, 2009).

➤ **Leather:** Blessed with an abundant livestock population, India is a renowned player in leather products in the world. Unfortunately however, leather exports from India have also experienced slow growth to the tune of 7.28 per cent per annum. In fact, 2003-04 saw a period of negative growth. Growth in terms of quantity has been negligible at less than 2 per cent in the 24 year period, while unit value has contributed slightly higher at about 5 per cent. It is only since then; some turnaround is seen in the sector.

Falling exports of tanned leather (1911) have played a crucial role in the poor show of the category. Increased cost of production, poor capacity utilization in tanneries, obsolete technology in small unorganized tanneries and increased demand for raw hide are some of the challenges faced by the tanning industry. Coupled with this, is the below average growth of leather footwear (C 1920), handbags and luggage of leather (C 1912). It is the slow growth on the export front of this category of items which has led to a dismal performance of manufacturing exports of India. Although, leather footwear comprises a huge chunk of the sector's export tables, its CAGR has been less than 8 per cent. While China has left India far behind in the export of leather footwear, certain bottlenecks within the sector will have to be addressed, if

India does not want to lose out completely. A highly unorganized domestic market for hides and skins has resulted in poor recovery rates of 5.5 per cent as compared to China's 24 per cent. In fact, India has to import raw hides in spite of having an abundant population of goats, cattle and sheep.

Figure 5: Value indices of India's Export of Leather Manufactures

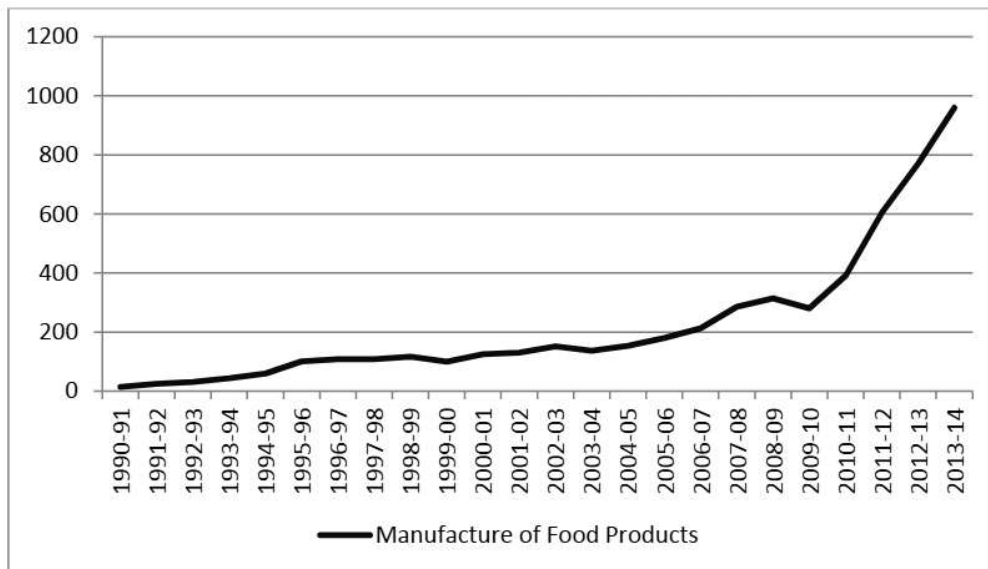


Unscientific handling of animals, lack of modern technology and prevalence of majorly unskilled labour has led to poor recoveries from animals. The leather factories, even those present in clusters face a lot of water shortage which is a prominent impediment since leather processing is extremely water intensive. Drainage facilities are very poor and there is scarcity of Common Effluent Treatment Plants which add to the woes of the sector. Moreover, in comparison to China, India is far behind in the value chain.

➤ **Food Products:** In case of this category, (D 15) volume exports have been slightly higher than unit value exports. It is mainly processed and preserved fish and fish products (1512) and vegetable and animal fats and oils (1514) that have led the export of the Division into below average growth of 15 per cent. Other category of products in the agro foods segment including processed foods is still a sunrise sector. Exports from these have not come forth in a big way from the country. The agriculture sector suffers from inadequate infrastructure resulting in colossal wastages. Absence of sufficient cold storage impacts the quality of the produce. Use of traditional technology and improper supply chain facilities have all contributed to the poor plight of the sector. In consequence, India is unable to provide adequate food security to its vast domestic population, leave alone augmenting exports. Traditional farming technologies and unskilled labour further compounds the problem, since

producers are unable to supply specific grades and quality of food inputs required by food processors abroad (CRIS, 2009). However, since 2009-10, the Division has witnessed a rising trend. Exports of preserved meat (1511) and manufactures of grain mill (1531) are definitely showing some promise.

Figure 6: Value indices of India's Export of Manufactures of Food Products



B) Leaders:

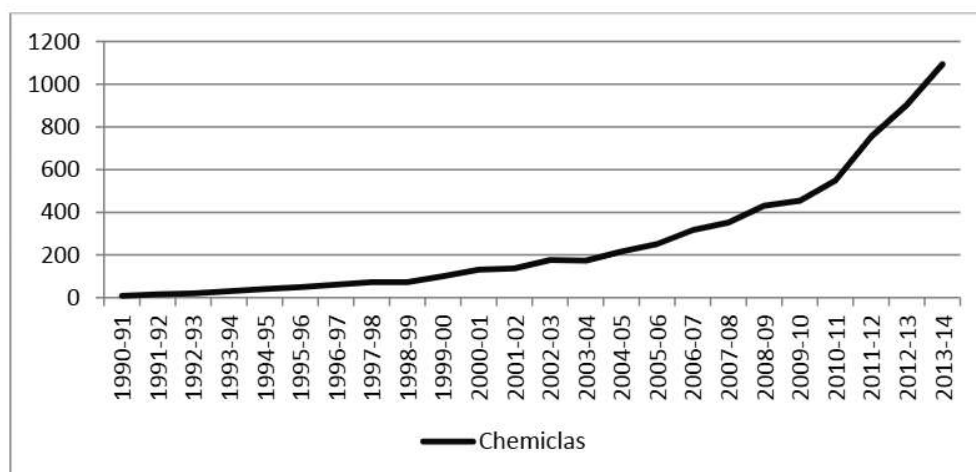
Manufactures, which display above average growth and have been instrumental in keeping the Indian manufacturing story alive are termed as 'Leaders'. India has definitely proved its mettle in the following products and further encouragement to them through eliminating all domestic bottlenecks is the way forward.

➤ **Chemicals:** Chemicals (D 24), is one of the fastest growing manufacturing export item from India, with a CAGR of 20 per cent (Figure 7). Even in the domestic economy, the sector has grown faster than manufacturing as a whole. One of the oldest industries, it ranks 12th in the world in terms of production. Chemicals, account for almost 13 per cent of India's manufacturing output, with a capacity utilization of over 80 per cent.

On the export front, volume growth has contributed to the Division. Manufactures of pharmaceuticals, medicinal chemicals (2423), other chemicals

(2429), manmade fibers (2430) and primary plastics (2413), have immensely fuelled the trend. Since 2008-09, the growth in exports has accelerated.

Figure 7: Value indices of India's Export of Manufactures of Chemicals



Exports of basic chemicals (2411) on the other hand have slowed down. Considerable FDI inflows, to the tune of 9.48 per cent of total flows into India between 1991 and 2013, encouraging government policies, industrial delicensing, 100 per cent FDI approval, continuous pruning of the reserved list of production for the small sector and availability of low cost technically skilled manpower have together aided in upgrading and modernizing the sector. Firms within the industry have also undertaken several initiatives since the liberalization of the 1990s. Increasing global presence, forming strategic alliances, managing supply chains in export markets, cutting costs and entering into technical agreements with multi-nationals are some of the strategies followed by Indian firms to augment exports (EXIM, 2007).

Nonetheless, India is still a marginal player in world trade of chemicals. If India has to increase its presence in the global arena, it will have to broaden its scope and venture into knowledge and specialty chemicals on a massive scale. These have great potential in the global markets, with increasing growth rates. On the other hand, basic chemicals are a maturing segment in the international market. India is seeing immense growth in specialty chemicals segment since the past few years, however, that is not sufficient. The number of patents filed by India is far below USA and China. The timing for India to capture market share is becoming increasingly favorable as the global industry is gradually looking eastwards. Infact, Asia is emerging as an important destination for chemical companies across the world.

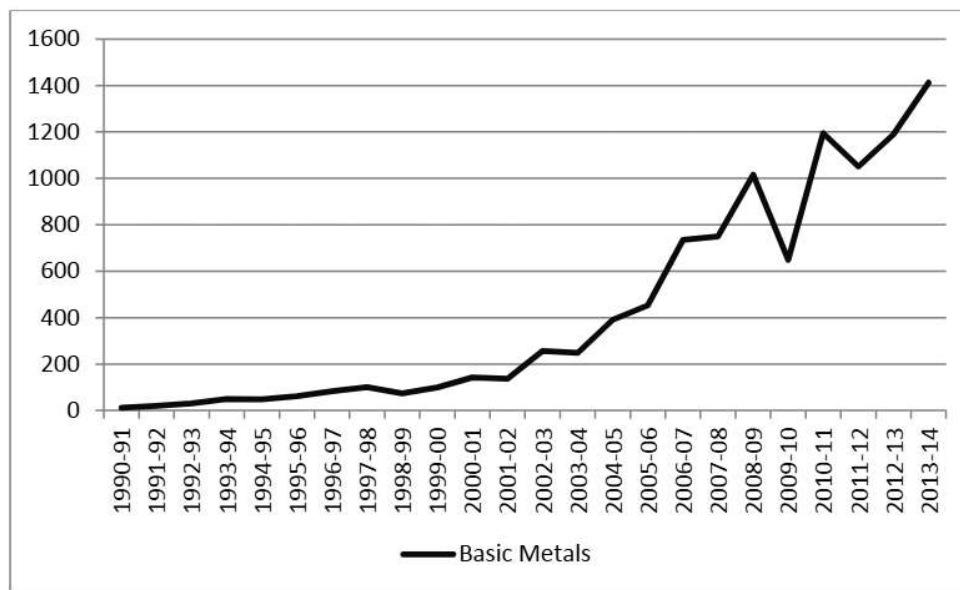
Hence, the next phase of high export growth in the chemicals industry is possible only if certain problems are addressed. These include, common infrastructure development, industry consolidation to overcome the small and fragmented nature of firms, focused emphasis on R&D since chemicals is a knowledge based industry, increasing use of information technology, improving technological competence, reduction in cost disadvantages and greater focus on export markets (KPMG, 2003). Ensuring feedstock availability, supporting new technologies, rationalizing taxes and duties, facilitating land acquisition are some of the issues which the government will have to expedite if India has to take advantage of its strengths. High quality output, competitive pricing, second largest pool of scientists and engineers and a young English speaking workforce are some of the core drivers for the industry (GOI, 2012). Thus, if talent is provided attractive career paths and the Indian chemical industry seriously focuses on R&D, then India will make optimum use of the opportunity that is knocking at its doors.

➤ **Basic Metals (D 27):** In spite of wide fluctuations in export growth (Figure 8), the sector has clocked an average compound growth of a good 22 per cent, mainly due to volumes. Since 2004-05, there has been an uptrend in exports (Figure 8). Rising global demand and higher international prices assisted this uptrend. Although there were certain fluctuations with periods of slow growth, the overall performance of the sector has placed it in the category of 'Leaders'. Both, basic iron and steel (C 2710) and precious and non-ferrous metals (2720) have aided exports of the sector from India. Prior to liberalization, production of iron and steel were mainly dependent on domestic demand. A slowdown in the domestic economy resulted in decline in domestic demand and increased exports. However, since liberalization, the export scene of the sector has seen a revolution. Not only has production capacity expanded, but exports have witnessed a rising trend. Delicensing, deregulation and de-reservation brought a sea change in exports. Capacity expansions and setting up of new plants has catapulted India to the top five producers in the world, helping it to attain self-sufficiency in the domestic market and augmenting exports (GOI, 2015a). Since 2007-08, the Indian steel industry entered a new phase of development on the back of rising demand. In fact, India has become the third largest producer of crude steel in the world.

However, India should not rest on laurels, since the export basket is mainly concentrated in manufactures of iron and steel. Due to negligible exploration budgets and absence of private sector participation, India's abundant resources remain unexplored. While the sector contributes immensely to the exchequer, there is hardly any reverse flow into the sector. The government's exploration budgets are dismal. If actions are not taken rapidly, the near future may see a shortage of the basic raw

material to produce steel and other metals. India's share in global exploration budgets is an embarrassing 0.5 per cent, in comparison to Canada (19 per cent), Australia (12 per cent) and even developing countries like China and Brazil (4 per cent). The growth in demand for metals is outdoing the growth in mineral exploration which is definitely a matter of concern.

Figure 8: Value indices of India's Export of Manufactures of Basic Metals

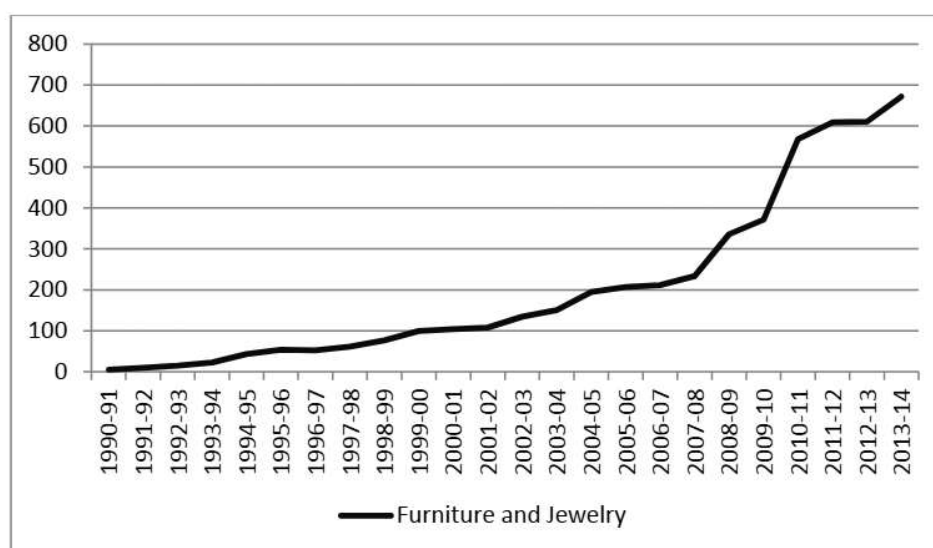


Although there have been modifications in the regulatory framework for the benefit of the sector, still issues relating to transparency, governance, lack of adequate investments, land acquisitions, inadequate databases on mineral concessions, poor state of investment in geosciences, local community distrust and dearth of funding options for exploration companies are posing a severe challenge to optimal exploration of India's geologically mineral abundant landscape. Proactive management of these issues is mandatory, if India has to diversify its export basket into other metals and continue exporting the current items (Ernst and Young, 2011)

➤ **Manufactures of Jewelry:** Since time immemorial, India is seen as an important sourcing country for manufactures of diamond and semi-precious gem stone jewelry from the world over. Due to its excellence in the art of cutting and polishing diamonds, the Indian industry has gained popularity in the international market. In terms of volume, 90 per cent of the world's diamonds are processed in India. Low cost and skilled manpower who are adept in the art of diamond cutting and polishing have helped India to emerge as a competitive player in the world.

The sector contributes more than 20 per cent to the export earnings of India and the manufacturing of jewellery industry (C 369) has witnessed an average export growth of about 20 per cent, with volume growth slightly higher than unit value growth. However, a look at Figure 9 suggests that since 2009-10, growth has picked up tremendously.

Figure 9: Value indices of India's Export of Manufactures of Furniture & Jewelry



If India has to continue to maintain its dominance in the global market, it has to proactively strategize for the same. From a highly unorganized, fragmented and family managed orientation, the industry will have to transform itself into a new upgraded, tech savvy and branded image. China and other diamond producing African countries may also pose a threat to India in the future. A number of plants are now being set up in China, owing to rising domestic demand as well as improving workmanship of the labour there. Similarly, African countries are now looking into entering the value chain, rather than merely being source countries for rough diamonds. With low technology absorption, the sector still continues to operate with traditional manual methods. This will have to be replaced by skilled, machine-savvy workers. Since the labour intensity of the sector is high, it is crucial to train the workforce in the use of technology for product development, innovation and design. Again, recessionary trends in the major export markets of the developed world suggest product diversification. Imitation and fashion jewellery, is an option that India will have to explore to tide this slide in demand. Rising demand for platinum jewellery, presents yet another opportunity for India. However, India does not have the facilities and the technology required for the extraction of platinum in the country.

This should be seriously addressed, in wake of the product mix shifting to platinum based jewellery. Coupled with this, gold mining and production should also be encouraged in the country, since India's presence in the area is minimal (EXIM, 2010)

C) Upcoming Export Industries

Machinery (D 29), electrical machinery and equipment (D 31), motor vehicles C 34) and transport equipment (D 35) may be classified as the emerging exports of India. These have witnessed sound growth and show immense promise for India.

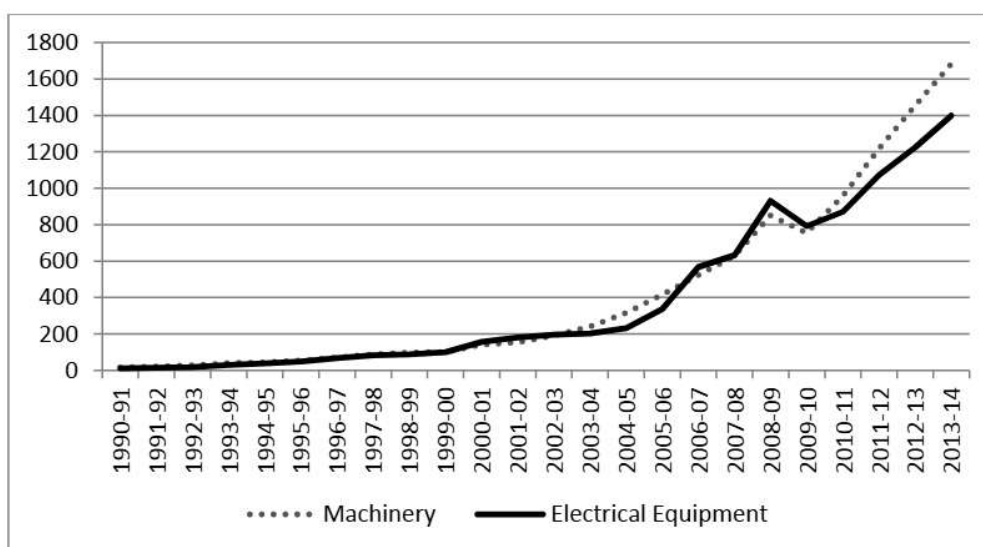
➤ **Machinery and Electrical Equipment:** Displaying a CAGR of 22 per cent and 23 per cent respectively, machinery (D 29) and electrical equipment (D 31) are increasingly emerging as an important contributor to India's exports. As a sector, the capital goods industry comprised 18 per cent of world trade in manufactures in 2006. In the machinery segment, India's share in world exports is to the tune of 1.5 per cent (EXIM, 2008). The Indian industry produces a broad range of products, including heavy machinery. However, on the export front, it is primarily general purpose machinery comprising pumps and compressors (C 2912), bearings, gears and driving elements (C 2913), and other machinery which have seen massive growth. Machinery for construction and mining (2924) has also performed well in the international market. Switch gears and control gears have also been star exports from India since the past few years.

On the other hand, electric motors and insulated wires and cables have propelled exports of the electrical equipment sub-segment. As is evident from Figure 10, while the late 90s saw a slightly slow export growth, since 2004-05 there has been a steady rise in exports. Domestic production too had seen a turnaround during the same period as per the EXIM (2008) study. Capacity expansions and technology imports aided the growth of these industries in the post-reform period, thereby making them potential earners for India (Rani and Jemol, 2004). Delicensing, FDI, technology up-gradation, increasing competitiveness in product designing and testing facilities, tie-ups with technology suppliers and augmenting emphasis on R&D are some of the key drivers of export growth.

The growth in exports of machinery and electrical equipment point out to certain lean periods where exports have dipped. There was a simultaneous dip in domestic output during these periods due to low growth of value-added. Thanks to the incentives given during the reforms, fixed capital of these industries increased, but value addition was slow. Competition and tariff reductions also led to slow growth in

production at certain times. The sector also witnessed a cyclical recessionary phase between 1994 and 2001, thereby impacting exports. Since a large number of SMEs are involved in production, technological competence is difficult to attain. Indigenous manufacturers face stiff competition from imports of second hand capital goods under the Export Promotion Capital Goods scheme. However, since 2004, prospects of the sector began to look up. To further brighten its prospects, India will have to diversify into new markets as well as act as service providers, where after sales service is provided continuously in the form of technical support.

Figure 10: Value indices of India's Export of Manufactures of Machinery & Electrical Equipment

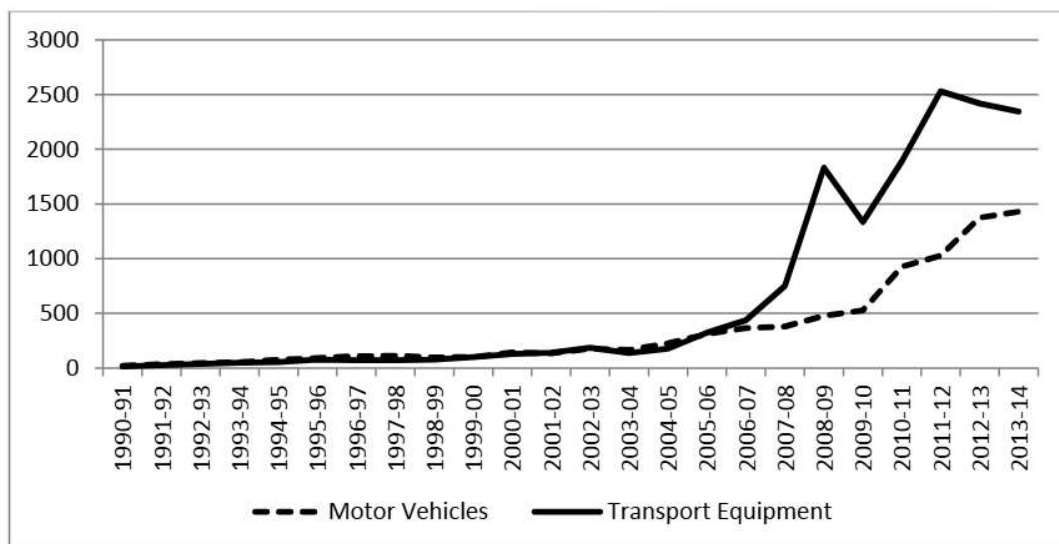


➤ **Transport Equipment and Motor Vehicles:** By far the best performer, transport equipment (D 35) has registered immense growth to the tune of 24 per cent during period of the study (Table 4). On the back of escalating volumes, the sector is indeed reserving a place in India's manufacturing basket. Unit value on the other hand, has registered negative growth, thereby suggesting rising competitiveness. There has also been a rapid change in the composition of exports within the division. In the early 1990s, it was only transport equipment n.e.s which was the major export driver. However, since the mid-90s, aircraft and spacecraft equipment (3530) and ship repairing and building (3511) has contributed phenomenally to the growth of the sector. Rising global seaborne trade shifting shipbuilding bases to low cost emerging nations, government support have all promoted the sector in India. In fact, Indian yards are progressing from small vehicles to bulk carriers. Setting up of new capacities and expansion of existing ones has further spruced growth. India's competitive advantage lies in its cheap labour, even in

comparison to China and Korea. Components can be locally sourced due to competitive steel manufacturing, light engineering and Information Technology Enabled Service industries. India stands a chance to propel itself to growth in this area. However, stringent regulatory framework, high duties and availability of finance are some of the challenges that have to be addressed in order to benefit from the opportunities the sector offers (KPMG, 2010).

Higher growth in volumes has also spruced up the export scene of motor vehicles (D 34). Parts and accessories of motor vehicles (C 3430) have exhibited a good export performance over the years. India's auto components industry has indeed made waves in the international market. Contributing significantly to the exchequer and providing direct and indirect employment to more than 1.3 crore people, the entire automobile space has emerged as a strong sector even in the

Figure 11: Value indices of India's Export of Manufactures of Motor Vehicles & Transport Equipment



domestic market. Capacity additions have been carried out at a rapid pace since liberalization and the country is now capable of producing various categories of vehicles (GOI, 2006). Especially since 2000, one can discern a rising trend in exports from these industries (Figure 11). In fact, India has displayed its potential by its ability to produce the entire range of quality auto components at competitive prices. Global equipment manufacturers have acknowledged India's expertise and engineering skills and many have set manufacturing and R&D centers to take advantage of this opportunity. Owing to this, Indian auto industry now has access to cutting edge technology. The globalization of the auto industry and slow but steady

slackening European manufacturing hub has played a critical role in aiding India (KPMG, 2010).

However, this is not sufficient to sustain the pace of growth the sector has seen in the recent past. India's share in global exports of the auto sector is still miniscule. This sector will have to be nurtured with care, if the country has to arrive on the auto map of the world. While low labour costs and exchange rates can augment growth to an extent, long term competitiveness can be attained only through product and process innovation. Application of green technology and intense research in alternative bio fuels is the next big wave that India will have to ride. This will enhance and sustain the competitive edge. Training workforce and creating centers for excellence is also essential for long term success.

5. Conclusions:

The paper points out to a lack luster performance of manufacturing exports, throwing light on the declining share of manufacturing sector in India's industrial exports. It also highlights the enhanced performance of Mining exports in country's export basket. Nonetheless, India's manufacturing basket has seen some diversification with traditional exports like textiles giving way to chemicals and machinery. In terms of growth, manufacturing exports have registered a CAGR of 16 per cent, mainly backed by rise in volumes. The role of unit value in pushing value growth has been far lesser at about 5 per cent.

In this context, it appears that India has lost out on the manufacturing opportunity to China. However, all does not seem to be lost. The global trend of outsourcing continues to escalate and India can still capitalize on this. 'Leading' manufactures such as chemicals, basic metals and jewelry are sectors where India has already made its presence felt. Similarly, 'Upcoming' sectors such as machinery, electrical equipment and motor vehicles and transport equipment are emerging as successful contributors to manufacturing exports. It is primarily the downfall of India's traditional exports such as textiles and leather and to some extent food products, which is fueling the slide in performance of manufactures and therefore they have been termed as 'Laggards'.

A broader view of the entire manufacturing export scene suggests that although India is establishing itself in certain sectors mentioned above, it is still a long way off from gaining a position of importance in the world trade. In many of the sectors (leading and upcoming), India is still a marginal player in the world market. Nonetheless, the off shoring story in global manufacturing still continues to exist and

going forward, India still has an opportunity to exploit its potential. It is believed that auto, chemicals, electronic and electrical products are crucial sectors from the off shoring point of view and fortunately India possesses the capabilities to gain from this trend (CII, 2004). In order to accomplish this, a multi-pronged focused approach is the way out. A study on barriers to high performance growth, (in totality as well as sector-specific) needs to be carried out. Certain obstacles to good performance have been pointed out throughout the paper. These mainly include fragmented nature of businesses, infrastructure constraints, lack of focus by businesses, inability to develop the demographic dividend of India, by imparting relevant industry oriented skills, dearth of product and process innovation, transparency and governance issues, land acquisition problems and unavailability of adequate raw material. It is observed that these hurdles are majorly faced by all the sectors and until these are addressed in a proactive manner, India will continue to lag behind other countries in the manufacturing arena. An effective control mechanism will have to be set in where 360 degree monitoring and immediate plugging in of 'systemic leakages' are carried out. While issues and hurdles remain old and classic, newer ways of addressing them will have to be explored.

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