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Overview of India' Export Performance: Trends and Drivers

Shameek Mukherjee

Economics & Social Science

Indian Institute of Management Bangalore

shameek.mukherjee@iimb.ernet.in

Shahana Mukherjee

Economics & Social Science

Indian Institute of Management Bangalore

shahana.mukherjee@iimb.ernet.in

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Overview of India' Export Performance: Trends and Drivers¹

Shameek Mukherjee and Shahana Mukherjee²

Abstract

Exports have played an increasingly important role in India's economic growth in the last two decades. This paper analyses the performance of India's exports and the various economic factors which have contributed to its growth. Since manufactured exports comprise a significant share of India's aggregate (merchandise) exports, the paper also provides an overview of the export performance of three important commodities; namely, gems and jewelry, cotton and electronic goods and concludes with key policy changes which could have a bearing on the current trends seen in these sectors.

Keywords: export performance, manufacturing sector, export competitiveness, trade policy reforms

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² Shameek and Shahana were Academic Interns in the Economics and Social Sciences Area of IIM Bangalore during 2010-11. At present, Shameek is a Senior Associate at Genpact, Bangalore and Shahana is a Research Assistant under Professor Rupa Chanda.

1 Introduction

The Indian economy has gained considerable momentum over the last one decade, by achieving and sustaining an annual GDP growth rate of over 7 percent. This high growth rate can be in part attributed to the growing contribution of the export sector to the economy.

The Second World War severely impacted the economic stability of many countries, however, India's economic performance remained less affected as its GDP continued to grow at 3.5 percent per annum while the per capita income averaged at 1.3 percent per annum, a phenomenon better known as the "Hindu rate of Economic growth" and this growth rate persisted till 1979-80 (Virmani 2004).³ India's international trade policy following her independence in 1947 focused on being self-sufficient, which also implied minimal reliance on international trade as a source of income. An alarming large number of people were living in abject poverty and the central government sought to improve the well-being of people by adopting the strategy of 'import-substituting' industrialization. To implement this, the government developed a complex, extensive and often costly system of price controls and quantitative restrictions.

It was during the eighties that the government undertook expansionary fiscal and monetary policies. The growth surged at an average annual rate of 5.8 percent; well above the Hindu rate of growth. But this rapid expansion was supported by a large current account deficit. A mounting deficit, coupled with high inflation (at 13.5 percent) and the Gulf war led India to a balance of payment crisis in 1991. Following the crisis, the Indian economy was opened up to foreign participation for the first time, in an attempt to improve the efficiency and competitiveness of Indian industries. Post 1991, the gradual liberalization of the Indian economy characterized by such policy reforms created a conducive environment for India's exports to flourish and evolve into an engine of social and economic growth. Hence, the last two decades have witnessed India transform from a closed economy to a considerable player in the global market.

³ The 'Hindu rate of growth' is term used often to refer to the low rate of annual growth prior to 1991. This rate persisted for nearly three decades, between 1950 and 1980, a period which was characterized by high levels of protectionist and interventionist policies in India.

http://www.pbs.org/wgbh/commandingheights/shared/mini_textlo/int_meghnaddesai.html#4
(last accessed on 26.1.2012).

India's susceptibility to international crises became evident when the financial crisis of 2008 had an impact on India's economic performance. The financial turmoil had a dampening effect on global demand and slowed down capital inflows which affected India's export sector. The impact of the crisis was felt most acutely in job oriented sectors which experienced up to a 70 percent fall in their growth rates and affected other segments as well. This had a cascading effect on overall economic growth, as India's GDP growth rate fell from 9 percent in 2007-08 to 7.1 percent in 2008-09. The impact of this crisis on the export sector was evident as India's exports which had previously grown at nearly 20 percent between 2002 and 2008 plummeted to a negative 20.3 percent in 2009-10.⁴ Though India had previously experienced a negative growth in its exports, such a prolonged period of decline had not been witnessed in over two decades.⁵ It is evident from the preceding discussion that India's export performance and economic growth are closely inter-linked. Over time, the export sector has grown to be a significant earner of foreign exchange and a major contributor to India's national income. Further, the performance of this sector is highly dependent on domestic as well as global factors. As a consequence of this, domestic as well as international economic policies have a bearing on the overall export performance of India.

This paper analyses India's export performance and changes in its composition over time. The paper also identifies India's main export commodities and investigates the relevance and competitiveness of these commodities in major export markets. It finally highlights key policy changes which could impact local production as well as international demand for these exports.

The paper is organized as follows: Section 2 presents a discussion of India's export performance, including a discussion of the evolution in the structure of India's exports over time, followed by the sectoral composition and relative competitiveness of India's exports. Section 3 analyses India's manufacturing sector performance with special focus on three commodities and related trade policies. Section 4 summarizes the main findings of the paper and concludes.

⁴ The steep decline is reflected by the quarterly figures, which reveal that the exports registered a negative growth of 40 percent in the early quarterly of FY 2008-09 and the decline in growth continued till the third quarter of FY 2009-10.

⁵ The period between 1985-86 witnessed a serious decline in exports by 9.9 percent and this persisted for over a year.

2 India's export performance

2.1 India's overall export trends

India's aversion to international trade and reliance on domestic factors to fuel growth during the fifties meant that exports played a smaller role and this is evident from the following table, where India's exports lost its world market share between 1951-1960 and 1961-70.⁶ Till the mid seventies, India's policy was restrictive and focused on developing the domestic industry, while tightening control on foreign trade (using quantitative restrictions as a tool). High levels of protection coupled with an overvalued domestic currency resulted in a growing demand for imports and discouraged exports. Moreover, India's exports also suffered because export incentives were only available to a limited number of manufacturing industries and selected agricultural exports (which were subjected to export duties at varying rates).⁷

The table below reveals that the period between 1961 and 1970 had higher imports (as a share of GDP), compared to exports which may have contributed to a growing foreign exchange shortage. Additionally, high levels of inflation and budget deficits coupled with the India-Pakistan war severely affected foreign aid and led to a foreign exchange crisis, which resulted in the devaluation of the rupee in 1966.⁸

⁶ The first quinquennial plan (1951-56) focused on increasing the saving rate in India, while the second five year plan under P.C. Mahalanobis emphasized heavy industrialization and 'import-substituting' policies as an engine of growth.

⁷ Athukorala, Prem Chandra (2008).

⁸ The US and other countries had stronger support for Pakistan. Hence, when the war broke out in 1965, most countries withdrew their aid to India and this further necessitated devaluation. (Johri, Devika and Miller, Mark) www.ccsindia.org/policy/money/studies/wp0028.pdf (last accessed on 2.10.2011).

Table 1: India: Export and Import growth (%)

Period	Average annual growth rate over period	Import	Percent of GDP		Share of India's export in world export (%)
	Export		Export	Import	
1951-60	0.7	8.6	6.3	8	1.4
1961-70	4.6	0.3	4.2	5.8	0.9
1971-80	6.8	8.7	5.8	6.7	0.5
1981-90	6.1	3.9	6.5	8.4	0.5
1991-97	11.4	14.4	9.9	10.6	0.6

Reproduced from Economic Policy reforms and the Indian Economy (2002), p. 13

Due to the occurrence of two major oil shocks in the seventies, India experienced a rise in the import cost of oil and thus a shrinking foreign exchange reserve position. The pressure to earn foreign currency led the government of India to adopt export promotion policies in the form of export subsidies (such as duty drawback, subsidized credit and direct subsidies).⁹ During this time, the end of the Bretton Woods system led to a depreciation of the floating pound sterling. The Indian rupee, which was pegged to the British pound at the time also depreciated, a fact which probably contributed to the rise in growth of Indian exports relative to global exports.¹⁰ This period was also characterized by a stronger import substitution strategy and greater government control over economic activities, a strategy which was maintained even after the occurrence of the India-Pakistan war in 1971 and the first oil price shock.¹¹ India's overall trade, however, experienced a setback between 1979 and 1981, as the import cost of crude oil more than doubled, following the oil-price shocks. The Indian rupee steadily appreciated by almost 20 percent between 1979 and 1986 and had an adverse impact on its export competitiveness.

⁹ Sharma, Kishore (2002)

¹⁰ Srinivasan, T.N. (2001)

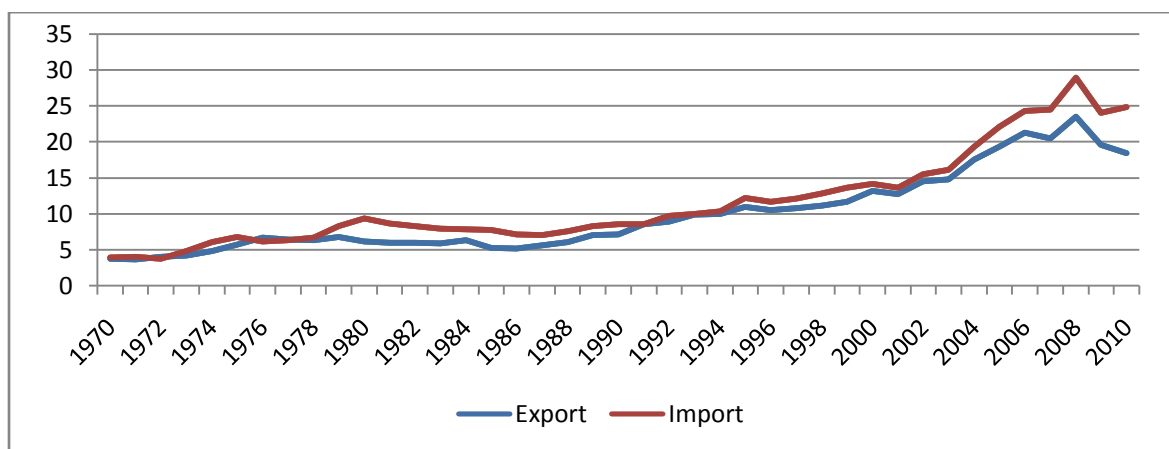
¹¹ Acharya, Ahluwalia, Krishna & Patnaik (2003)

However, the situation reversed in 1987 with a gradual decline in the value of the rupee, though it remained overvalued till 1991 (in terms of the real effective exchange rate).¹²

It is interesting to note that in the early eighties, when world exports grew at 2.7 percent per year; Indian exports grew at a higher rate of over 6 percent. Nonetheless, India's share in world merchandise exports fell to less than 1 percent from as much as 2.1 percent in 1951.¹³

The liberalization of the Indian economy following the balance of payment crisis resulted in major policy and exchange rate changes, which had a favourable impact on India's trade, as seen in Figure 1.¹⁴ The figure reveals a sharp increase in the share of exports and imports between 1990 and 2008. Share of exports in India's GDP increased from 7.13 percent to 23.48 percent in 1990 and 2008, while the share of imports (in GDP) rose from 8 percent to 29 percent in the same period.¹⁵

Figure 1: Export and Import share (%) in India's GDP



Source: Author's calculations based on World Development Indicators (WDI) and United Nations (UN) Comtrade database

<http://data.worldbank.org/data-catalog/world-development-indicators> (last accessed on 5.9.2011)

<http://comtrade.un.org/db> (last accessed on 2.9.2011)

¹² Ghosh, Arunava (2006) http://www.globaleconomicgovernance.org/wp-content/uploads/ghosh-pathways_india.pdf (last accessed on 1.10.2011).

¹³ Srinivasan, T.N. (2001) and Joshi, V. & Little, I.M.D. (1994).

¹⁴ The policy changes were a combination of tariff and non-tariff barrier reductions along with a devaluation of the Rupee, which are discussed at length in the next section.

¹⁵ http://commerce.nic.in/publications/anualreport_chapter3.asp (last accessed on 4.10.2011).

India's export performance since 1991 has fluctuated. The East Asian Crisis of 1997 had a serious impact on India's exports, which registered a negative growth of 2.33 percent in the same year. Since the ASEAN countries and Japan were most acutely affected by the crisis, their respective currencies lost value, which also meant that the Indian rupee appreciated against these currencies (due to interest rate differentials). In 1997, for the first time after liberalization, India's exports registered a negative growth of 2.33 percent.¹⁶ The situation for India worsened when its competitor countries (in ASEAN) devalued their currencies amidst the crisis, which reduced the competitiveness of India's exports in the international market for textile and electronics commodities, where India directly competed with ASEAN exports in overseas markets.¹⁷ India's imports also suffered and reduced by 2.44 percent due to weak domestic demand, lower industrial activity and a lower unit value of imports.¹⁸

In 2001-02, India faced another setback in its exports, at large, due to the semi-recession faced by the US; one of India's biggest trading partners. The terrorist attack on the World Trade Centre caused a net loss of 0.25 percent of US GDP and also had an impact on India's exports, which grew only at 5 percent that year.¹⁹ The slowdown of the US economy permeated to other economies including the ASEAN countries, which were recovering from the 1997 crisis.

The next major setback for India's exports was the global crisis of 2008. The collapse of large investment banks around the world coupled with high oil prices and rising inflation led to a global recession. India's trade deficit dampened in 2009-10 with a negative import growth (-0.78 percent) for the first time in more than two decades while exports were also impacted, registering a negative growth rate of 2.9 percent in 2008-09.

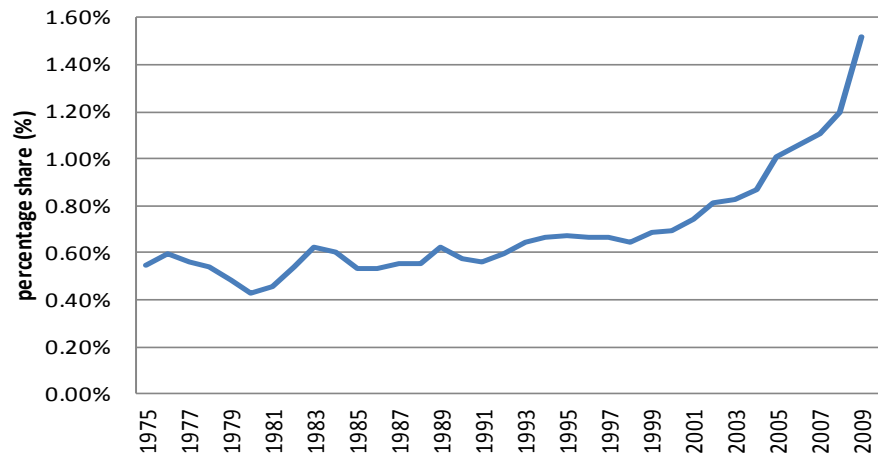
¹⁶ Refer to Figure 1 in Appendix section.

¹⁷ Economic Survey of India, Ministry of Finance, 1998-99.

¹⁸ Economic Survey of India, , Ministry of Finance, 1998-99.

¹⁹ Economic Survey of India, Ministry of Finance, 2001-02.

Figure 2: India: Merchandise exports share in world exports



Source: Author's calculations based on United Nations (UN) Comtrade database <http://comtrade.un.org/db> (last accessed on 2.9.2011)

Even though the export sector plays a significant role in the domestic economy by contributing close to 25 percent to India's GDP (in 2009), its contribution to world exports continues to remain minimal, at a mere 1.5 percent of world exports in 2009 (however, this share has improved since the economic reforms of 1991). Between 1991 and 2009, India's share in world exports rose from 0.56 to 1.52 percent. But overall, the economic reforms implemented in India did not have a significant impact on India's position in the world export market, unlike the reforms implemented in countries like China, South Korea or Taiwan.²⁰

This may be in part due to the unusual development model followed by India. The transition phase for East-Asian economies was characterized by a reduced dependence of the economy on the agriculture sector and increased emphasis on the labour-intensive manufacturing sector. Economies have traditionally developed a strong manufacturing base and over time moved towards a capital and skills- oriented services sector. However, Thirlwell (2006) states that India has followed a different trajectory. Following the economic reforms in 1991, the Indian economy made a transition from being agriculture-driven to being considerably service oriented. The manufacturing sector, which had been the prime engine of growth for countries such as China or South Korea, was not as strengthened in India and its development was constrained by a

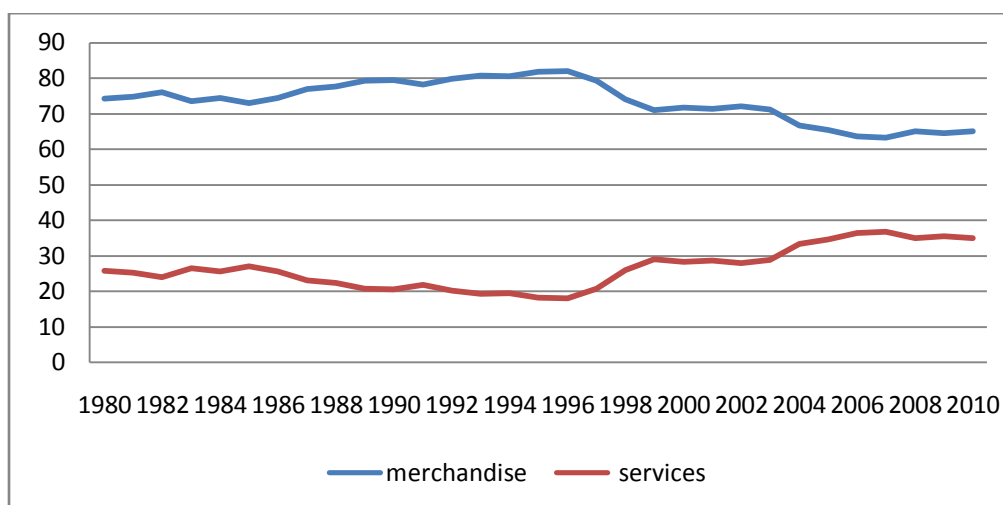
²⁰ Athukorala, Prema-Chandra (2008).

combination of factors. As a consequence of this, the Indian economy was not able to fully exploit its potential comparative advantage in the sector.

2.2 Sectoral composition of Exports

Merchandise exports comprise a major portion of India's exports to the world, as seen in Figure 3. However, a decline in its share and thus a rise in the contribution of services is visible post 1996. India has experienced a rapid growth in its services sector in the last decade and this is likely to continue in the near future. A combination of demand and supply side factors has influenced the growth of services in India. High income elasticity for final product services fueled demand, whereas increased levels of foreign direct investment and constant supply of technically skilled workforce ensured the necessary resources for the growth of the services sector.²¹ Additionally, India was able to seize the opportunities offered by the growth in foreign demand, arising from the Y2K-related requirement for IT skilled professionals and later followed by large-scale off-shoring of business processes.²²

Figure 3: India- Goods (merchandise) and Services share (%) in total exports



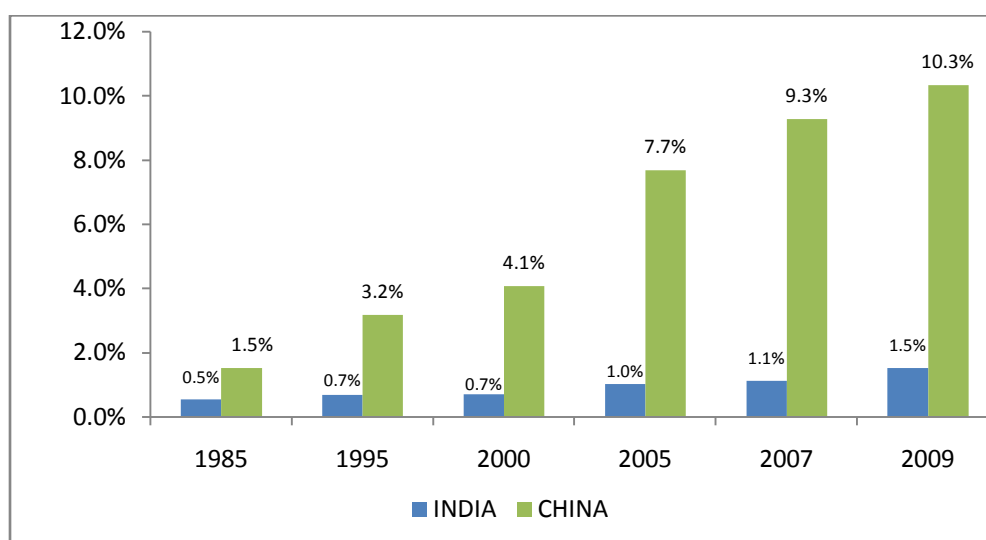
Source: Author's calculations based on UNCTAD (United Nations Conference on Trade and Development) database http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx?sCS_referer=&sCS_ChosenLang=en (last accessed on 25.8.2011).

²¹ Banga, Rashmi (2005).

²² Thirlwell, Mark (August, 2006).

A comparison of India's export composition with that of its competitors reveals a major point of difference. While for India, services has grown to be a major contributor to its world exports, some of its key competitors like China, Brazil and South Africa continue to earn close to 90 percent of their export revenue through merchandise exports alone.²³ Therefore, the merchandise component plays a bigger role in the exports of other emerging economies, a fact which could explain why India's share in world merchandise exports has remained low, as seen in Figure 4. Figure 4 also reveals how China has become a leading market for merchandise exports and also highlights the difference between India and China's market positions. Between 1995 and 2009, China's share in world merchandise exports has risen from 3.2 percent to 10.3 percent, whereas India's share rose from a mere 0.7 percent to 1.5 percent in the same period.

Figure 4: Share in world merchandise exports



Source: Author's calculations based on UNCTAD (United Nations Conference on Trade and Development) database http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx?sCS_referer=&sCS_ChosenLang=en (last accessed on 27.8.2011)

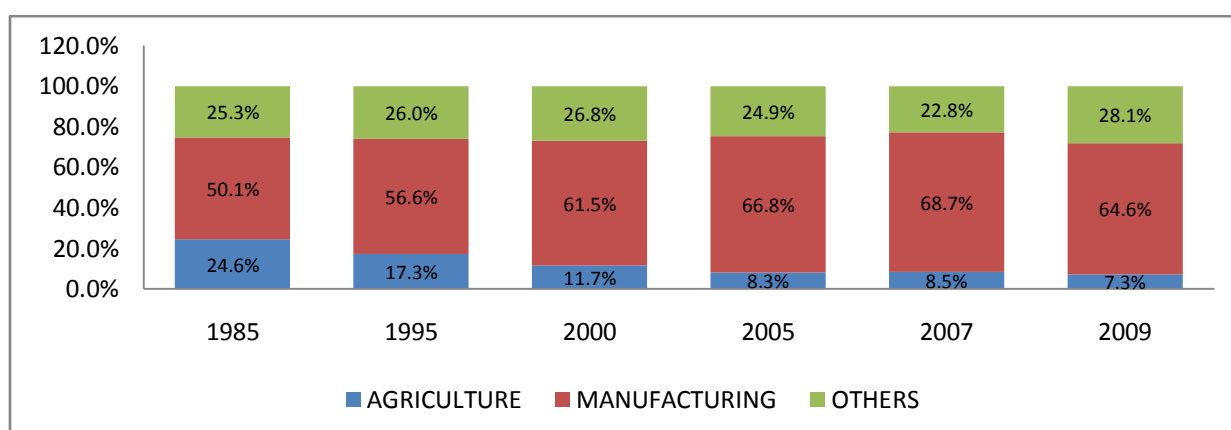
Despite the growing contribution of services exports, merchandise exports continue to dominate India's exports and it is therefore important to understand the composition of the latter. As Figure 5 reveals, a major portion of India's merchandise exports is comprised of manufactured exports. Though agriculture was a major component till the early years following independence,

²³ Refer to Figure 2 in the Appendix section.

a shift towards manufactured exports occurred due to the industrialization which took place during that time. Figure 5 reveals that the contribution of manufactured exports had already surpassed that of agriculture exports by over 7.5 percent by 1975 and that the gap has widened over time.

The share of agriculture has fallen more rapidly post trade liberalization, which may, in part be because an important goal of agricultural policy was to achieve self sufficiency in agriculture and this limited the scope of trade. However, technological developments and macroeconomic policy reforms (following the Uruguay Round agreement) have contributed to changes in international trade of agriculture.²⁴ In 2005, while India’s agricultural export was almost US\$9.3 billion, the import was US\$ 5.5 billion, making India a net exporter of food.

Figure 5: Sectoral contribution of India’s total merchandise exports



Source: Author’s calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db> (last accessed on 4.9.2011)

In recent years, agricultural exports have annually grown by over 15 percent due to higher exports of rice, cotton and soya bean, amongst other commodities. India’s agricultural imports as

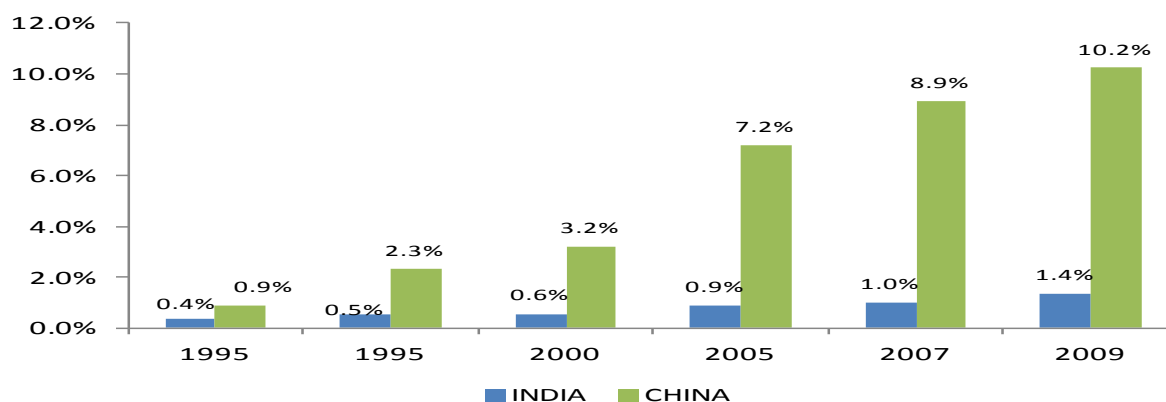
²⁴ The Uruguay Round was the 8th round of multilateral trade negotiations, conducted within the framework of the General agreement on tariffs and trade (GATT), between 1986 and 1994. While the earlier rounds were mainly focused on tariff and non-tariff issues, this round emphasized on agriculture trade, even though it contributed a small share (13 percent) in total merchandise trade. In Uruguay round it was agreed that subsidies on exports of agricultural commodities would be reduced over a six year period by 36 percent, below the base period of 1986-90. Additionally, the number of subsidized exports was to be cut down to 21 percent. Domestic farm support would be reduced by 20 percent in developed countries and by 13 percent in developing countries. For more information, see Sandiford working paper on the GATT and Uruguay Round.

a share of its total imports have also risen from 1.7 percent in 2000 to 2.6 percent in 2009, which could be partially attributed to a sharp increase in the imports of edible oil over the same period.

The manufacturing sector contributes the largest share to India’s merchandise exports. In particular, it is seen from Figure 5 that the sector’s share increased from 50 percent in 1985 to over 64 percent in 2009. A closer look suggests that the annual growth in India’s manufactured exports has been cyclical in nature.²⁵ The economic reforms introduced in 1991 (following the balance of payments crisis) had a significant impact in improving the efficiency of the sector. Consequently, these reforms had a positive impact on manufactured exports which grew by 19.13 percent between 1991 and 1992 and continued to grow consistently at a CAGR of nearly 13 percent till 1997.

Despite the importance of the manufacturing sector to the Indian economy, the sector’s exports have had a minimal impact on the global scale, as seen in Figure 6. India’s share in world manufacturing exports increased from 0.6 percent to 1.4 percent between 2000 and 2009, whereas China tripled its contribution from 3.2 percent to over 10 percent in the same period.

Figure 6: Share of manufactured exports in world (manufacturing) exports



Source: Author’s calculations based on United Nations (UN) Comtrade database <http://comtrade.un.org/db> (last accessed on 5.9.2011)

²⁵ Refer to Figure 5 in the Appendix.

Figure 6 reveals the magnitude of China's market power in world manufactured exports. During the reform period, India's manufacturing sector was transformed from a non-competitive market (which would operate on large margin but low sales) to a competitive one (with low margin but high volumes), which gave India an advantage over China. However, compared to China, India has made minor progress in exporting manufactured goods between 1990 and 2009.

Regardless of their unique socio-economic history, China and India are large economies representing large populations. Though the difference between exports of these two countries always existed, the gap was narrower in 1980, when China initiated the first set of reforms. The years which followed witnessed China building a strong manufacturing base which contributed significantly to the domestic GDP as well as global manufacturing exports, whereas the Indian manufacturing sector made a less visible impression on the global scale. A number of factors may explain this difference between the efficacies of the manufacturing sectors of the two countries, and some of these are identified below.²⁶

The large share of manufacturing in a country's GDP can be explained by a combination of government policies which promote industrial growth and a high investment rate which keeps the demand for materials and machineries high. Although India's saving and investment rate has improved over the years, it continues to considerably lag behind China.

The Chinese government liberated the agricultural sector in the early stages of their reform plan. An example of this was a special programme named 'Township and Village Enterprises' (TVE), which was primarily responsible for initial labour-intensive rural industrialization in China. As a result of this, an important portion of labour was released from the agricultural sector and channelized into the manufacturing domain. This meant higher rural incomes, which stimulated the demand for consumer goods (met by rural enterprises). India's approach, however, has been different and it has been a policy priority of the Indian government in recent years to address the need for higher levels of public investment in agriculture.

²⁶ Gerhaeusser, K. (2010).

Moreover, the Chinese government had supported small and medium sized enterprises (SMEs) and policies were designed to encourage firms to expand their operations. However, SMEs in India had incentives to remain small as certain sectors had been exclusively reserved for these categories. As these sectors were highly protected, there was little fear of competition and minimal need to grow and realize economies of scale. Moreover, regulatory frameworks, and labour laws, in particular, were often biased against larger firms. Access to credit was yet another challenge for many SMEs which compounded the problem further and they consequently depended on informal markets for resources.

Another advantage of the Chinese economy was in the form of labour reforms which reduced rigidities and made the labour market flexible. This resulted in firms hiring labour without worrying about the implications of an economic slowdown. The flexibility of the Chinese market ensured that retrenched labour would secure similar jobs in other firms. In comparison to China, India continues to have a rigid labour market which hampers efficient utilization of human capital in the manufacturing sector. Additionally, unlike China, India has not been able to effectively mobilize labour from rural areas, primarily due to low skills of the rural population. China on the other hand, has succeeded in doing so due to a large number of technical training institutes which provide a bulk of the labour force with the appropriate technical education needed for small and medium scale firms in China's manufacturing sector. As a result of this, the manufacturing sector has employed a growing workforce over time.

The Chinese economy also opened up to foreign direct investment (FDI) in export oriented sectors during the seventies, whereas the Indian economy liberalized two decades later. Evidence also suggests that China adopted a more comprehensive and pro-active approach to attract FDI and focused on export oriented FDI (which brought in better technological knowledge) whereas India's emphasis was on FDI in its domestic market rather than exports. As a result of this, FDI gave an impetus to China's exports and provided the manufacturing sector with strong incentives to expand production.

Thus, a number of factors have contributed to the high productivity of China's manufacturing sector, whereas India has been relatively less successful in developing these key features.

2.3 Competitiveness of Indian Exports

International competitiveness is the ability of an economy to compete in the global market by either producing goods at a lower cost and/or selling them at a cheaper price than competitor countries.

The Revealed Comparative Advantage (RCA) method developed by Balassa (1965) is a commonly used measure of export competitiveness. RCA is calculated as the ratio of a country's export share in world trade for a specific commodity or a group of commodities. In particular, the RCA for country 'i' and commodity 'j' (vis-à-vis the world) is given as:

$$RCA_{ij} = (X_{ij}/X_{wj}) / (X_i/X_w)$$

Where,

X_{ij} = 'i' th country's export of commodity 'j'

X_{wj} = world export of commodity 'j'

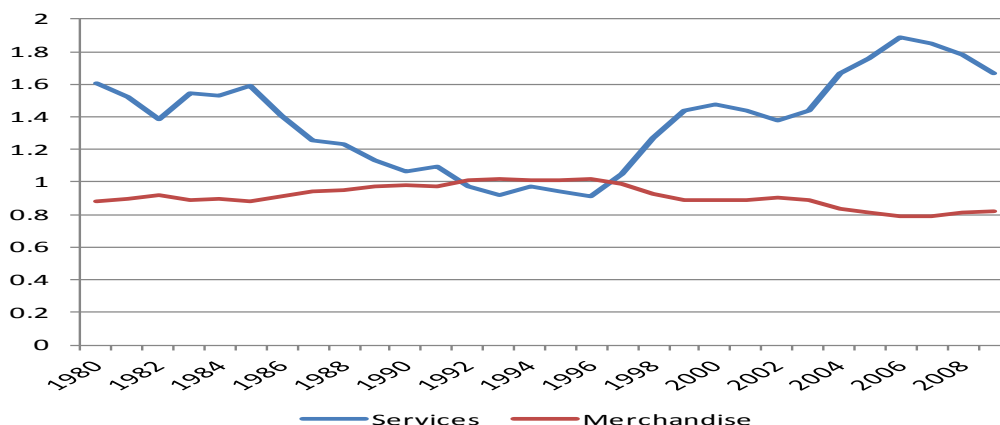
X_i = total exports of country 'i'

X_w = total world export

An RCA (for a commodity) greater than unity implies that a country's export of the commodity has a larger share in world exports (of that commodity), relative to the country's (aggregate) export share in world exports and in this case, the country is said to have a revealed comparative advantage in exports of the commodity.²⁷

²⁷ The advantage of this method is that it takes into consideration the intrinsic advantage of a particular export commodity and is consistent with changes in an economy's relative factor endowment and productivity. A criticism, however, is that it cannot distinguish the change in factor endowment and significant changes in the trade policies of a country (Batra, Amita & Khan, Zeba (2005)).

Figure 7: India- RCA in goods (merchandise) and services exports



Source: Author's calculations based on UNCTAD (United Nations Conference on Trade and Development) database http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx?sCS_referer=&sCS_ChosenLang=en (last accessed on 25.8.2011)

As Figure 7 reveals, India has a clear comparative advantage in services exports to the world and its competitiveness has improved since 1996. For services in particular, India's competitiveness remains higher than that of many other emerging markets.²⁸

However, India's RCA for merchandise exports has always stayed below unity, which suggests that merchandise exports have remained low and not gained a larger share in world exports (relative to total exports). The merchandise exports of emerging economies like Brazil, China and South Africa perform better as they have higher RCAs and are thus more competitive than India's merchandise exports.²⁹

2.4 Government Initiatives

Even though India's manufacturing exports have resurged since 2001 and grown at a steady rate of over 25 percent between 2002 and 2008, the manufacturing sector has not performed as well, as seen in Figure 9 where the share of manufacturing (value added) in GDP has remained stagnant. In contrast, the services sector has performed well and contributed significantly towards India's economic growth. Moreover, India's performance in services exports has been

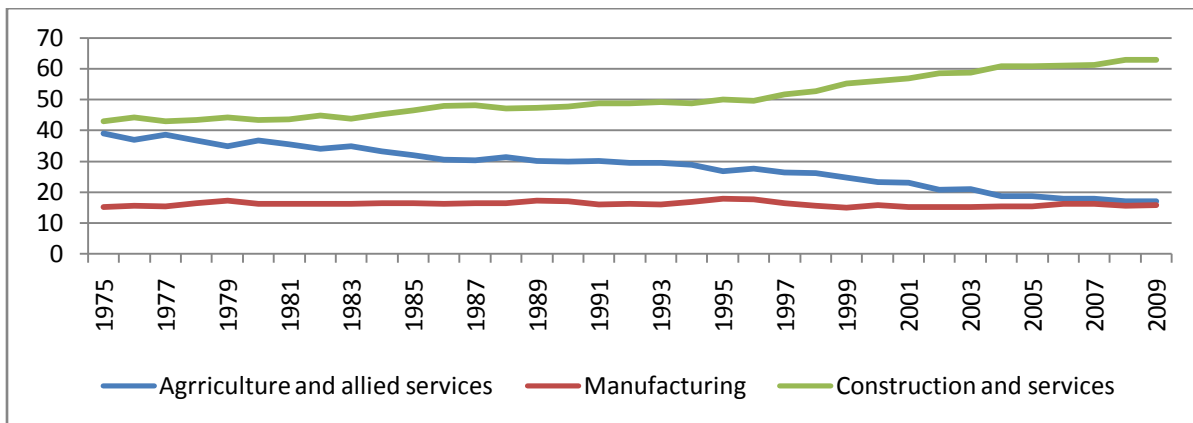
²⁸ Refer to Figure 3 in the Appendix section.

²⁹ Refer to Figure 4 in Appendix.

stronger than most other emerging economies for which their manufacturing sector has been the main driver.

Between 1975 and 2004, the share of agriculture sector in GDP declined while that of the industrial and services sectors rose. However, the contribution of the manufacturing sector remained the same and increased marginally from 14 percent to 16 percent. This is in stark contrast with China, which has a manufacturing sector contributing to 35 percent of its GDP and the figures are similar for many other countries.³⁰ It is therefore important to examine the role of government policy in shaping India’s manufacturing sector performance.

Figure 9: Sectoral shares (%) in India’s GDP



Source: Author’s calculations based on United Nations National Accounts Main Aggregates Database <http://unstats.un.org/unsd/snaama/selbasicFast.asp> (last accessed on 29.8.2011)

A historical review of government initiatives reveals that the policies designed by the Indian government have been instrumental in shaping the development of international trade. As India has progressively moved towards becoming a more open economy, policies have evolved to support trade and increase the volume of exports. As manufactured exports form a sizeable share of India’s total exports, the sector is of key importance to the economy. However, the average performance of the manufacturing sector (reflected by the considerably low share of its contribution to the GDP) has for long, been a cause of concern.

³⁰ The manufacturing (value added) share in GDP is more than 30 percent for countries like South Korea, Malaysia or Indonesia. Latin American countries like Brazil and Argentina too have a higher share of nearly 24 percent of GDP (Kumar, Rajiv & Sen Gupata, Abhijit (2008)), (last accessed on 12.8.2011).

In recent years, the Indian government has acknowledged the severity of this issue and taken an important policy initiative in 2011 by approving the New Manufacturing Policy. This policy is aimed at building the capacity of the sector, strengthening its contribution to the GDP (from 16 percent to 25 percent) as well as improving the international competitiveness of the manufacturing sector. The initial industry reactions to the NMP has been positive and it is expected that a proper execution of the NMP will be beneficial for the Indian economy as it can generate large-scale employment for nearly a hundred million workers in the next ten years.³¹ The implementation of the policy will involve the establishment of a number of National Manufacturing Investment Zones (NMIZ) which will have features such as a progressive exit policy, strong physical infrastructure, investment incentives and business-friendly approval mechanisms to support the production in these units.³² Though the implementation of the NMP may take time, this policy is expected to provide a strong impetus to India's manufactured exports in the near future.

However, the policy environment in India was not as conducive to international trade in the past. India's foreign trade policy had been largely restrictive till the early eighties, in order to protect the domestic market from international competition. However, several attempts were made in the mid-eighties to break away from the restricted external sector regime. Export promotion policies in the sixties and seventies were introduced in the form of compensatory support (CCS), duty drawbacks (DDS) and market development assistance (MDA), among others.³³ Additionally, a few export promotion councils were established along with commodity boards and specialized service institutions. This was also the time when the government allowed a 25 percent increase in the capacity of manufacturers without any license.³⁴ Further, the asset limit under the MRTP Act was raised from Rs. 20 crores to Rs. 100 crores while the MRTP clearances were entirely waived off for a few industries. During this period, the government also introduced several export incentives which included a reduction of foreign exchange controls to import raw material from

³¹ <http://www.displaysearchblog.com/2011/11/indian-government-approves-new-manufacturing-policy/> (last accessed on 7.2.2012).

³² dipp.nic.in/NMP_DiscussionPaper/NMP_DiscussionPaper_2010.pdf (last accessed on 7.2.2012).

³³ Bhatt, P.R. (2005).

³⁴ The original limit for requirement of a license was between Rs. 3.5 crore to Rs. 50 crores in backward areas and Rs. 15 crores in all other areas.

foreign countries and also a provision of Replenishment (REP) licenses to exporters, which permitted the import of goods from the restricted list.

Medium and large firms were allowed in the eighties to invest in industries reserved for the small-scale sectors (on the condition that 75 percent of their output would be exported) and this provided an impetus to Indian exports. The EXIM (export-import) policy adopted by the Indian government for the period 1985-88 focused on the abolition of automatic licensing and the inclusion of 201 items of industrial machinery in the list of (permitted) imports under open general license (OGL). The policy also increased the minimum limit for the import of capital goods against import replenishment licenses (from the initial Rs. 1 lakh to Rs. 2 lakh) for registered exporters.³⁵

The Indian economy, however, continued to be resistant towards imports and this was reflected in the existing (import-weighted) tariff rates, which were at an average of 87 percent in 1990-91 (with rates on certain imports exceeding 300 percent). Domestic consumer goods, in particular, were protected as tariff rates on imports of consumer goods were at a high of 164 percent. Additionally, the Indian government resorted to the use of non-tariff barriers (NTB), which were applicable on 65 percent of all imports (90 percent of which were imported by the manufacturing sector) in 1990. The government was also skeptical about the impact of foreign investment and therefore limited FDI to specific areas of the economy and placed an upper limit of 40 percent on (foreign) equity participation.³⁶

India reacted to the balance of payments crisis in 1991 with a series of reforms intended to open up the economy to foreign participation. The current account was to be less influenced by the balance of external payments and more by exchange rates. The list of (imported) commodities which were subjected to quotas was shortened, though a number of consumer goods were still bound by quantity restrictions. Further, the rupee was depreciated by 22.8 percent relative to a basket of other currencies, a step which devalued the real effective exchange rate (REER) by 16.3 percent. Additionally, temporary measures such as foreign exchange licensing, export-based

³⁵ Bhatt, P.R (2005).

³⁶ Joshi, V. & Little, I.M.D. (1994).

imports, import compression and a dual exchange rate system were introduced for a short period of time in an attempt to increase export competitiveness.

There were also changes in the NTBs on imports. The monopoly of government agencies for canalized imports of 50 commodities (except petroleum and agricultural products) was abolished. A phased reduction in the maximum rate, the average rate as well as the dispersion of tariff rates was implemented. The maximum tariff rate was reduced from 355 percent in 1990-91 to 45 percent in 1997-98 and the (imported-weighted) average tariff rate was reduced from 87 percent in 1990-91 to 24.6 percent in 1996-97. Over time, the average (weighted) share of imports for all sectors covered by NTBs has reduced from 95 percent in 1988-89 to 62 percent in 1998-99 and further to 24 percent in 1999-00.

The restrictions were also eased on Indian exports, as the restricted export list was modified with an abolition of taxes on certain mineral and agricultural exports. Further, the share under quantitative restriction was reduced from 93 percent (of total tradable GDP) in the pre-reform period to 66 percent 1995.³⁷

Thus, the trade policy reforms in India initiated in 1991 have been instrumental in orchestrating the transition of the Indian economy from a protectionist approach to an open market conducive for higher volumes of international trade.

3 India's key manufactured exports

3.1 Composition of Manufactured exports

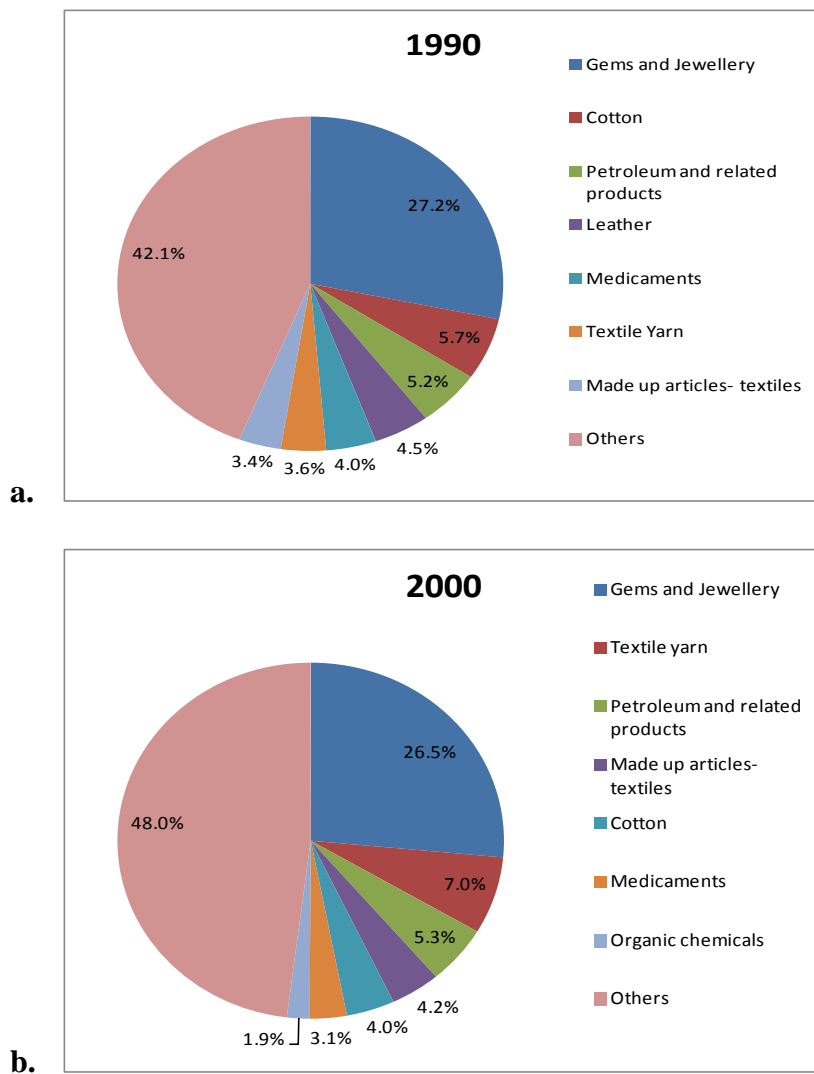
Since manufactured goods constitute a majority of India's merchandise exports, it is important to analyze the composition of manufactured exports to identify India's key export commodities.

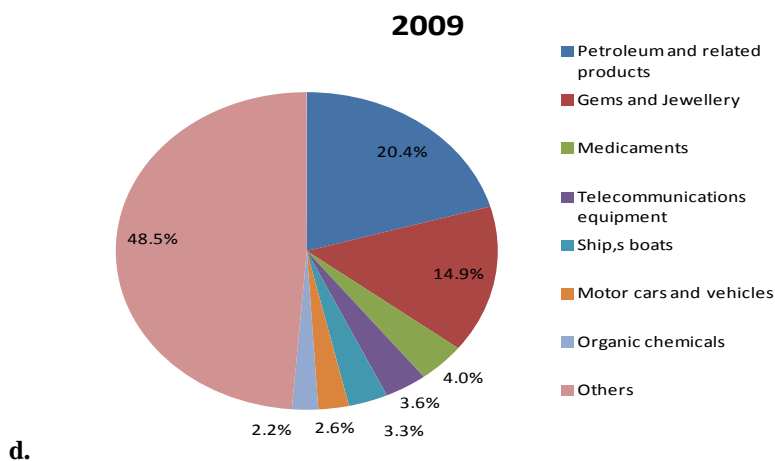
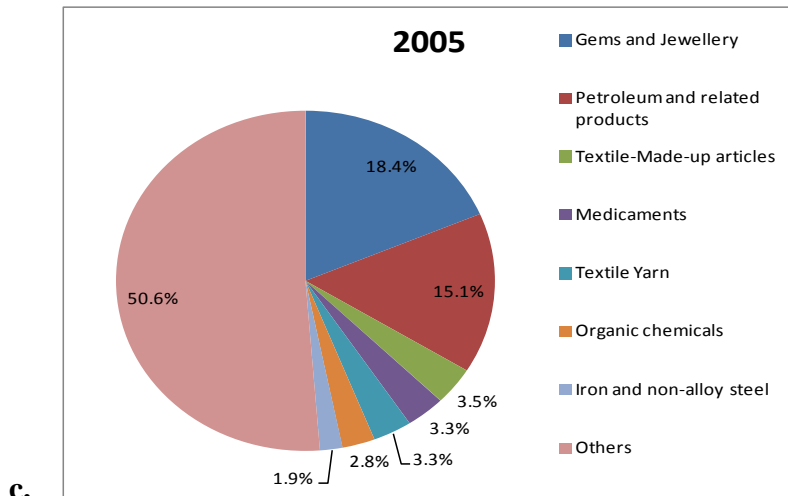
The following figure shows the distribution of top manufactured goods exports and reveals certain changes in its composition over time.

³⁷Pursell,G & Sharma, A(1996) and <http://www.econ.yale.edu/~srinivas/IntegratingIndia.pdf>(last accessed on 22.9.2011).

Petroleum and related products have continued to be a major component of India's manufactured exports between 1990 and 2009 and their contribution has increased from 5.3 percent in 1990 to over 14 percent in 2009. Other than petroleum, gems and jewelry has been an important export commodity throughout the period, though its share in manufacturing exports has declined from 27.2 percent in 1990 to 15 percent in 2009. It is also seen that cotton, which was traditionally an important export item for India, has declined in its contribution, from 5.7 percent in 1990 to under 1 percent in 2009.

Figure 10: Composition of India's manufactured exports





Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db> (last accessed on 16.7.2011)

Overall, the figure depicts a structural shift in India manufactured exports, away from cotton and textile oriented exports and towards more technique and technology-based items such as pharmaceutical products (medicaments), telecommunication equipments etc.

The following discussion focuses on three commodities which have played an important role in India's manufactured exports between 1975 and 2009. The commodities identified are:

- *Gems and jewelry* which contribute over 16 percent to India's exports and is a high labour-intensive as well as an import-intensive industry;
- *Ready-made Garments (RMG) Cotton* which contributes nearly 6 percent to India's exports and is highly labour intensive;

-Electronic goods which is an upcoming industry and employs a large number of technically-skilled workers.

In addition to contributing an important share to India's exports, the selected industries also represent a combination of traditional as well as contemporary exports of India. Moreover, as the following discussion will reveal, there is a distinct variation in the structure of these industries. While cotton and gems and jewelry are labour-intensive industries, electronic goods production relies considerably on capital-intensive techniques. Other areas of divergence include the import-intensity of production and the extent of policy intervention, both of which vary across the selected industries. An analysis of these industries will consequently present various facets of India's manufactured exports.

3.2 Gems and Jewelry (with special reference to Diamond exports)

3.2.1 Industry and trade overview

Gems and jewelry has been an important industry for the Indian economy. It is one of the fastest growing industries and a leading earner of foreign exchange for India. The gems and jewelry sector covers a wide range of items which include diamonds, precious and semi-precious stones, in addition to gold, silver, studded and costume jewelry.³⁸ The gems and jewelry industry in India is mostly concentrated in the unorganized sector and employs around 2 million workers.

An important feature of this industry is that it contributes a large share to India's total exports as well as to the country's imports (averaging over 9 percent of total imports since 1997).³⁹ The main component of India's gems and jewelry export is cut and polished diamonds. Rough and uncut diamonds are imported and processed in India and finally exported in the form of diamond jewelry for final consumption. It is this feature that makes the industry highly import-intensive in nature.

The importance of this industry for Indian exports is evident from Figure 11. Its contribution to Indian exports has steadily grown since 1975 and is responsible for nearly 15 percent of India's

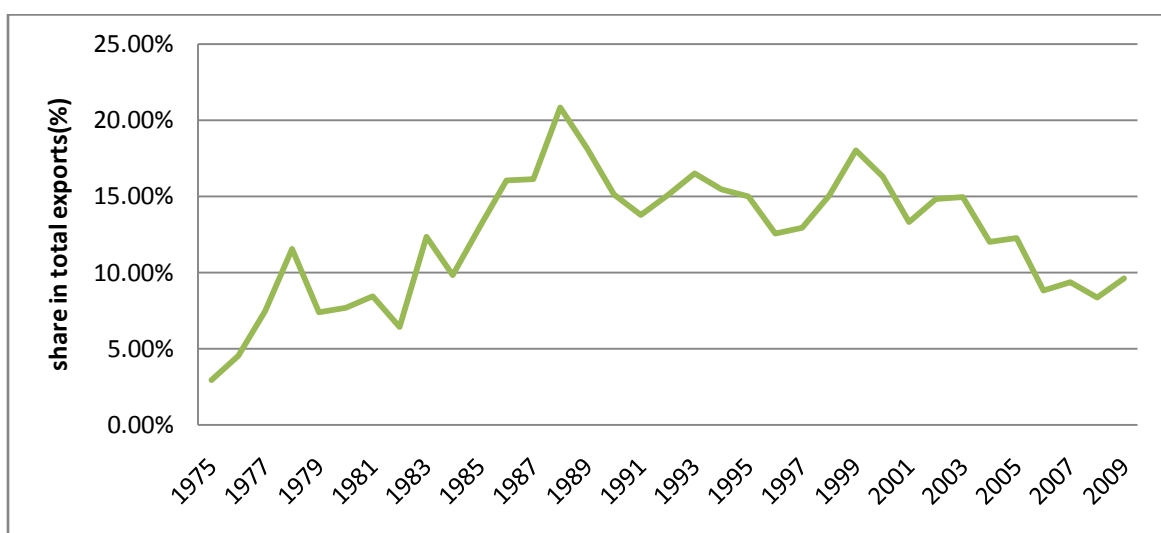
³⁸ The ICRA industry report on the Indian Gems and Jewelry Industry (last accessed on 15.8.2011).

³⁹ Refer to Figure 6 in the Appendix.

total exports since 1986. As a commodity, it has the (single) highest share in Indian merchandise exports and is therefore, one of the most significant industries for India.

The diamond segment contributes a major share of nearly 70 percent of the total (gems and jewelry) export and thus the remainder of the analysis focuses on the performance of Indian diamond exports. However, the latter's share has declined since 2008, in part, due to the economic meltdown which reduced the import demand from USA and other trading partners of India.

Figure 11: Gems and Jewelry share (%) in India's total exports



Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db> (last accessed on 20.9.2011)

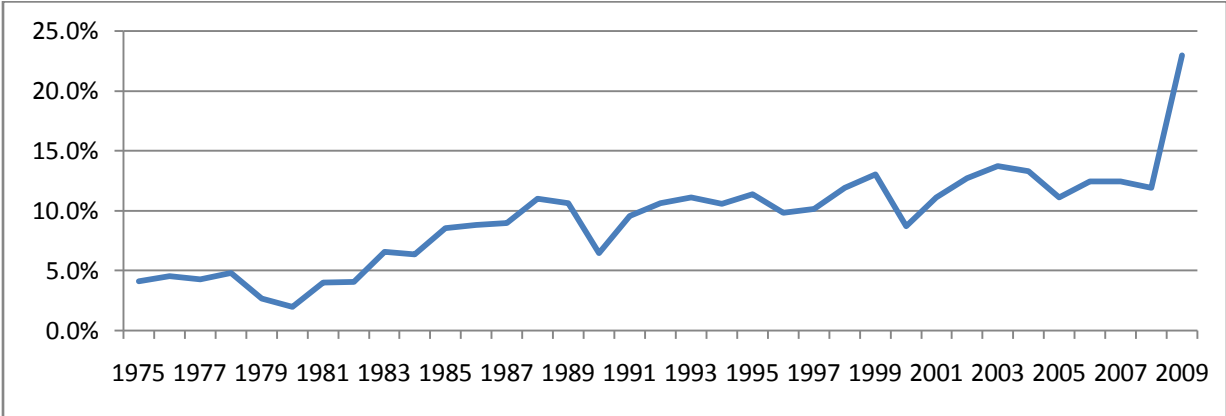
Major producers of diamonds in the world are Southern Africa, Canada, Australia and Russia. Around 10 percent of the world's total diamonds belong to the gemstones category, which are processed and set in diamond jewelry. A unique feature of diamonds is that, unlike gold, silver or platinum, they do not have an internationally set standard price. The price is determined based of physical attributes (such as cut, color, clarity and carat (weight)). Like other forms of (valuable) jewelry, diamonds are a luxury item and consequently have a highly elastic demand in the market. In this industry, India has a comparative advantage in labour-intensive activities like gem cutting and polishing. Therefore, Indian companies operate at a beneficial level in the value chain where they import rough diamonds, which are processed and exported for final consumption as diamond jewelry. The Indian Gems and Jewelry industry plays an important role

in the value chain as it contributes 60 percent to the value share and 85 percent to the volume share.

3.2.2 India’s position in the world export market

India’s position in the world market for gems and jewelry exports is seen in Figure 12. The figure reveals that India has always been an important source market for gems and jewelry and its significance has grown considerably over time. Indian exports performed particularly well in 2009 and India became a leading exporter of gems and jewelry, with a market share exceeding 23 percent. India’s diamond exports, which form the major share of aggregate (sector) exports, too have an important share in the world market (diamond exports), which has grown from 13.4 percent in 2000, to 20.1 percent in 2009, as seen in Table 2.

Figure 12: India’s share in World exports of Gems and Jewelry



Source: Author’s calculations based on United Nations (UN) Comtrade database <http://comtrade.un.org/db> (last accessed on 20.9.2011)

Table 2: Major exporters of Diamonds and their share in world exports (%)

2000		2005		2009	
Exporting country	market share	Exporting country	market share	Exporting country	market share
Belgium	25.9%	Belgium	18.7%	India	20.1%
Israel	19.3%	Israel	18.5%	Israel	14.0%
India	13.4%	India	13.9%	Belgium	13.4%
UK	13.1%	UK	10.7%	USA	12.1%
USA	8.5%	USA	10.0%	Hong Kong	9.8%
Botswana	4.6%	Hong Kong	5.2%	UAE	9.3%
Hong Kong	3.8%	Botswana	3.8%	UK	6.7%
South Africa	3.5%	UAE	3.6%	Botswana	2.6%
Switzerland	1.9%	South Africa	3.1%	Canada	2.1%
China	1.1%	Singapore	2.0%	China	1.8%

Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db> (last accessed on 22.9.2011)

India's main competitors in the diamond industry are Israel and Belgium, and both these countries have a technological advantage in the processing of raw diamonds. India has traditionally specialized in the processing of small diamonds, whereas Belgium and Israel have had the advanced technology to work with larger diamonds. Since the market for small-sized diamonds is relatively small, India's share in the world market has usually been lower than that of Israel and Belgium.

Table 2 reveals the change in market share since 2000. It is seen that India's market share remained unchanged and well below Israel and Belgium's share between 2000 and 2005. In 2009, however, India's share rose considerably above that of Belgium and Israel, which could partly be due to the stronger impact of the sub-prime crisis of 2008 on the demand for large sized diamonds, which resulted in a decline in market share for Israel and Belgium.

3.2.3 Direction of Trade

a. The Unites States

The US has been the largest importer of diamonds for a long time and accounts for more than 18 percent of world diamond imports. Therefore, it has always been a key trading partner for India in this sector. The US has a two tier market for diamond jewelry which consists of a potentially growing market for (low value) diamond jewelry and the older market for large-diamond

jewelry. Large-sized diamonds (or solitaires) are considerably expensive and thus this segment of diamond jewelry is highly priced.

Table 3 shows a disaggregation of the two segments of the US diamond market. Israel is evidently the most important source market for all diamond imports by the US, though its share has declined over the years, from 52.7 percent in 2005 to 44.6 percent in 2009. India is the second most important exporter of diamonds for the US, and its share in the US market has steadily risen from 20 percent in 2005 to 24.8 percent in 2009. The table also reveals that India is the only country which has consistently exported a higher value of diamonds or registered a positive growth every year since 2005.

Table 3: US imports of cut and polished diamonds from the World

	Value						Growth		Volume						Growth	
	2005	2006	2007	2008	2009	2010	2009	2010	2005	2006	2007	2008	2009	2010	2009	2010
< 0.5 carats	2,651	2,690	2,460	1,996	1,654	1,367	-17.1%	31.7%	11,020	11,275	9,539	7,959	7,164	5,853	-10%	33%
India	1,817	1,776	1,655	1,427	1,150	1,056	-19.4%	49.8%	8780	8,563	7,392	6,521	5,762	5,075	-11.60%	
Israel	425	426	380	267	198	141	-25.7%	5.9%	843	843	696	512	400	278	-21%	3%
Belgium	197	203	204	118	127	63	7.4%	-25.8%	530	526	494	295	344	157	16.5%	-30.20%
UAE	23	35	25	18	30	11	64.7%	-56.0%	92	131	122	69	153	49	121%	-57.30%
Hogn Kong	58	70	33	25	24	12	-5.0%	-21.3%	228	390	132	157	239	100	52.3%	-19.20%
Switzerland	18	25	1	1	3	0	406.5%	-34.3%	34	54	2	1	1	1	10.4%	1521%
Russia	1	5	2	3	3	1	-5.1%	-62.1%	2	5	3	5	3	2	-40.40%	-25.00%
South Africa	2	2	2	4	10	9	139.7%	43.2%	5	3	4	12	2	0	-85.70%	-79.30%
China	13	16	36	34	18	12	-46.7%	-5.6%	79	63	68	110	26	20	-76.50%	22.00%
Others	95	130	122	82	92	62	11.2%	19.1%	426	696	625	276	233	170	-16%	23%
> 0.5 carats	12,724	13,759	15,657	16,996	10,791	10,422	-36.5%	61.6%	5,977	5,791	5,944	4,957	3,675	3,287	-25.90%	46.70%
India	1,262	1,480	2,031	2,450	1,934	2,389	-21.0%	111.4%	1,340	1,385	1,691	1,442	1,114	1,305	-22.7%	92.5%
Israel	7,672	8,141	9,101	9,116	5,354	4,982	-41.3%	51.4%	3,069	2,863	2,846	2,209	1,666	1,355	-24.60%	28%
Belgium	2,623	2,601	2,800	3,125	2,131	1,913	-31.8%	54.3%	1,161	1,121	982	929	640	432	-31.10%	17.6%
UAE	64	111	79	124	60	28	-51.5%	-13.2%	50	83	54	33	34	8	2.5%	-57%
Hogn Kong	162	154	87	361	76	69	-79.0%	27.8%	83	66	31	77	27	31	-65.20%	99%
Switzerland	138	191	238	383	238	200	-38.0%	77.9%	17	11	13	19	23	9	22.3%	-24%
Russia	126	132	185	178	137	55	-23.0%	-9.5%	58	54	73	58	58	14	0.3%	-10.10%
South Africa	336	559	712	759	533	498	-29.8%	62.0%	46	78	85	55	35	42	-37.10%	152%
China	29	61	94	103	33	38	-68.4%	67.2%	12	30	41	51	13	13	-74.00%	43%
Others	314	329	330	396	295	252	-25.6%	15.8%	142	93	130	84	66	57	-21.80%	38%
Total	15,375	16,449	18,117	18,992	12,445	11,789	-34.50%	57.40%	16,997	17,065	15,483	12,916	10838	9,140	-16.10%	37.60%
India	3,080	3,256	3,686	3,876	3,084	3,445	-20.4%	89%	10,120	9,949	9,083	7,963	6,876	6,379	-13.70%	52%
Israel	8,097	8,567	9,482	9,383	5,552	5,123	-40.80%	50%	3,912	3,708	3,542	2,720	2,066	1,634	-24.10%	23%
Belgium	2,820	2,804	3,003	3,243	2,258	1,976	-30.40%	49.10%	1,691	1,647	1,476	1,224	984	610	-19.60%	-0.10%
UAE	87	146	104	143	90	39	-36.70%	-31.30%	142	213	175	102	187	57	82.70%	-57.80%
Hogn Kong	220	224	120	386	100	81	-74.10%	17.4%	311	456	163	234	266	131	13.7%	-6.10%
Switzerland	156	217	239	384	241	200	-37.20%	77%	50	65	15	20	24	10	21.8%	1.8%
Russia	127	137	187	182	140	56	-22.60%	-12.10%	60	58	76	63	61	17	-3.00%	-12.40%
South Africa	338	561	714	764	543	506	-20.90%	62%	52	82	89	68	36	42	-46%	134%
China	41	76	130	137	51	50	-63.10%	40.30%	91	93	109	161	39	32	-75.80%	29.60%
Others	409	460	451	495	386	314	-21.90%	16.40%	432	568	794	755	361	160	-52.20%	-17.30%

Reproduced from an ICRA Report on the Indian Gems and Jewelry Industry (October 2010), p. 30

Large diamonds comprise a major share of the US market and the concentration has intensified from 82.7 percent in 2005 to 86.7 percent in 2009. It is therefore seen that the import of smaller diamonds by the US is increasingly phasing out.

India was predominantly an exporter of small diamonds and supplied as much as 59 percent of all small diamonds imports of the US in 2005 and this increased to 69.5 percent by 2009. In recent years, however, India has identified the potential in the large diamonds segment and has focused on increasing large diamond exports to the US. This is evident from the fact that its large diamond exports constitute 69.6 percent of its total diamond exports to the US in 2009, compared to 62.7 percent in 2005. Moreover, India's share in the US market for large diamonds has risen substantially from 9.9 percent in 2005 to 17.9 percent in 2009. It is also seen that India has succeeded in capturing some of Israel's market share in this segment, which has declined from 60.3 percent in 2005 to 49.6 percent in 2009.

Being a luxury good, the 2008 economic crisis had a severe impact on the imports of diamonds. Though imports from all trading partners fell, India experienced a drop of the least magnitude in 2009 (of 20.4 percent). In particular, the price sensitive segment of large diamonds experienced a steep fall of over 36 percent in 2009, though imports from India were again least affected, relative to Israel or Belgium.

The overall evidence suggests that India is a considerably strong player in the US diamond market. Not only has it successfully exported higher volumes (and values) of large diamonds, the relatively small impact of the 2008 crisis on India's diamond exports suggests that India has a strong foothold in this market and has performed more consistently than its competitors (Israel and Belgium) in recent years.

Indian exports of gems and jewelry (including diamonds) have performed well in the US market. The annual growth in India's gems and jewelry exports to the US has more often been higher than its competitors.⁴⁰

b. Hong Kong Special Administrative Region (SAR) and China

⁴⁰ For the annual growth in India's Gems and Jewelry exports to the US, refer to Figure 8 in the Appendix.

It is seen from Table 4 that Hong Kong has become a significant importer of diamonds since 2000. Though its share remained unchanged between 2000 and 2005 (at 6 percent of world diamond imports), this rose significantly to 10 percent in 2009 amidst the economic crisis, thus making Hong Kong the third largest importer of diamonds. Additionally, Hong Kong has succeeded the US as the main importer of cut and polished diamonds from India, with 31 percent of its import share.⁴¹

Table 4: Main World Importers of Diamonds

2000		2005		2009	
Importing Country	Market share	Importing Country	Market share	Importing Country	Market share
USA	22.8%	USA	18.7%	India	16.8%
Belgium	14.1%	India	11.8%	USA	14.5%
UK	10.7%	Belgium	11.2%	Hong Kong	10.2%
India	8.2%	UK	8.4%	UAE	10.1%
Israel	7.5%	Hong Kong	7.7%	Belgium	6.3%
Hong Kong	6.3%	Israel	6.9%	UK	5.9%
Switzerland	4.7%	UAE	6.1%	Switzerland	4.2%
Japan	4.7%	Switzerland	3.4%	Germany	3.5%
Italy	3.4%	Japan	3.4%	Israel	3.2%
Germany	2.6%	Germany	2.5%	Australia	2.7%

Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db> (last accessed on 23.9.2011)

Table 5 reveals that India is clearly the key partner for Hong Kong's diamonds imports and over 44 percent of all diamond imports have been sourced by Hong Kong since 2000. India also has a dominant position in gems and jewelry exports, which account for over 44 percent of Hong Kong's total imports for the sector.

⁴¹ Page 31, ICRA Report on the Indian Gems and Jewelry Industry(October 2010)(last accessed on 15.8.2011).

Table 5: Market share of main trading partners in Hong Kong’s Diamonds and Gems and Jewelry imports

	Market Share in Diamond Imports			Market Share in Gems and Jewelry Imports		
	Belgium	Israel	India	Belgium	Israel	India
2000	11.3%	16.7%	47.5%	10.2%	15.0%	43.4%
2005	12.3%	15.7%	44.1%	11.4%	14.5%	41.1%
2007	13.5%	15.3%	44.6%	12.5%	14.2%	41.8%
2009	14.0%	11.9%	47.6%	13.2%	11.2%	45.1%

Source: Author’s calculations based on United Nations (UN) Comtrade database <http://comtrade.un.org/db> (last accessed on 23.9.2011)

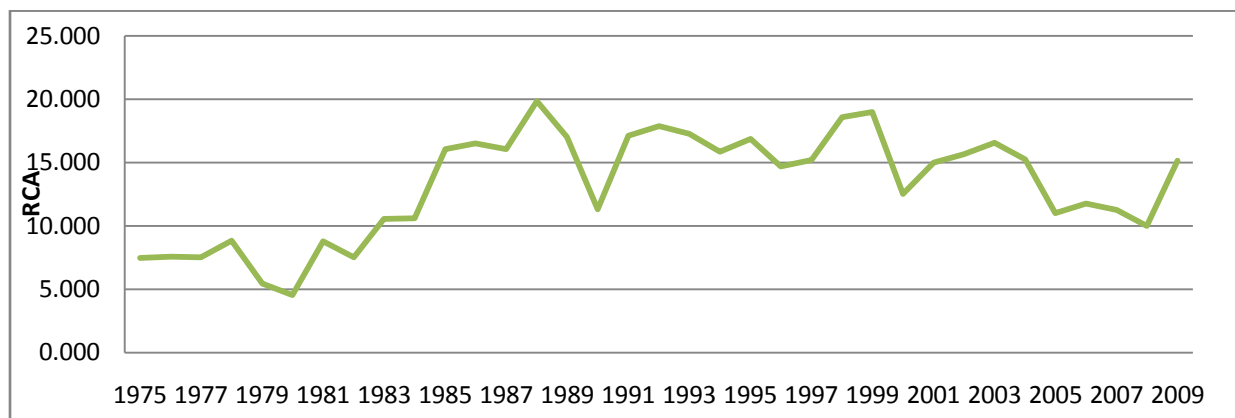
Other than the US and Hong Kong, Indian gems and jewelry are also exported to China. Chinese imports of cut and polished diamonds have increased by 87 percent between 2000 and 2009 and India is the largest exporter to this market with a share of 2 percent. A few Indian companies have also planned to begin retailing operations in collaboration with manufacturing units in China. India is also the leading exporter to EU countries, though EU imports of gems and jewelry from India have fluctuated over the years.

3.2.4 Competitiveness of Gems and Jewelry exports

The RCA for India’s gems and jewelry exports has remained considerably above unity indicating that this is a competitive export item for India. This can be attributed partially to India’s growing exports of large-sized diamonds to markets such as the US. Additionally, introduction of the Diamond Dollar Account and Green card for exporters of polished diamonds have facilitated trade competitiveness.⁴²

⁴² Under this scheme dollar transaction is allowed for purchase of rough diamonds by exporters. For more information on this scheme, refer to Burange, L.G. & Chaddha, Sheetal J. (2008).

Figure 12: RCA for India's Gems and Jewelry exports (to the World)



Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db> (last accessed on 20.9.2011)

A comparison of India's RCA with its competitors suggests that Israel and Belgium's exports are more competitive in the US market, as they contribute a larger share to US imports of gems and jewelry. However, in the case of gems and jewelry exports to Hong Kong, India is more competitive than Israel or Belgium, owing to the fact that over 40 percent of Hong Kong's gems and jewelry imports are sourced from India.⁴³

3.2.5 Key issues - Gems and Jewelry Sector

There are some persistent issues that the Indian Gems and Jewelry sector has faced for a long time. One of the main factors has been the large-scale presence of the unorganized sector in this industry. In the future, India can possibly face competition from China, as an increasing number of Indian, Belgian and Israeli diamond processors are setting up branches in China, to capitalize on cheap labour. This could pose a threat for the large-scale processing of diamonds in India. A similar threat can be expected from African countries in the near future, which have invested in developing the domestic (diamond) processing industry, in order to create better employment possibilities.⁴⁴

⁴³ Refer to Table 3 in the Appendix.

⁴⁴ ICRA Industry report on the Indian Gems and Jewelry Industry. (last accessed on 15.8.2011).

3.2.6 Government Initiatives

Government policies have been supportive of the gems and jewelry sector. The government introduced the replenishment (REP) license in the *sixties* under which producers could import the relevant raw materials without an upper limit on foreign exchange. Additionally, the 1997-2002 Foreign Trade Policy simplified a number of procedures to export diamond jewelry. Branded or partially processed jewelry could now be exported by India. Further, the customs duty (of 45 percent) on rough gemstones and semi-processed diamonds was abolished by the Union budget of 2003-04. The import tariff on cut and polished diamonds and gemstones was also reduced from 15 percent to 5 percent.

Further reforms were implemented in 2005, which included an exemption on the service tax levied on the production related to the manufacturing of cut and polished diamonds, gemstones, and other forms of (gold and other precious metal) jewelry. The EXIM policy (2002-07) reduced value addition norms on exports of plain jewelry from 10 percent to 7 percent and the subsequent policy for the period of 2004-09, allowed the import of precious metal scrap and used jewelry for melting, refining and re-export of jewelry, in order to increase the production capacity. Additionally, jewelry export was allowed on a consignment basis, which permitted domestic exporters with unsold inventory (in foreign markets) to re-import. Foreign direct investment up to 74 percent (under the automatic route) was approved by the government, for the exploration and mining of gemstones and diamonds. More recently, the Union Budget of 2008-09 reduced the net profit rate from 8 percent to 6 percent for institutions which were engaged in the diamond manufacturing and trading sector (under Benign Assessment procedure). The most recent foreign trade policy (2009-14) has implemented a new facility to permit the import of cut and polished diamonds (on a consignment basis) for the purpose of grading and certification.⁴⁵ The recent National Manufacturing Policy has identified the gems and jewelry sector as one of the thrust areas given its potential for employment creation.

⁴⁵ ICRA Industry report on the Indian Gems and Jewelry Industry. (last accessed on 15.8.2011).

3.3 Ready Made Garments (RMG), Cotton

3.3.1 Industry and Trade Overview

Cotton, textiles and garments are traditional export items and an important industry for India. India's textile industry, in particular, is the second largest textile industry in the world after China. Over time, a number of changes in the domestic and global environment have had a bearing on this industry. The Indian textile industry contributes nearly 14 percent to industrial output and 17 percent to aggregate export earnings. This industry also contributes to about 4 percent of GDP along with 9 percent of total excise collections.

It is a highly labour-intensive industry and therefore of chief importance to the Indian economy. This industry employs the largest number of workers after agriculture, around 35 million workers, and an additional 50 million people who are typically engaged in allied activities. Large scale employment of this magnitude stems from the fact that many segments of this industry operate on a very high scale. For instance, India is the largest producer of jute, the second largest producer of Silk and the third largest producer of cotton (and Cellulosic Fibre/Yarn). Consequently, this industry is visible in global trade, and contributes to 12 percent of world exports of textile fiber and yarn, and up to 25 percent of world trade in cotton yarn. The apparel industry is one of largest foreign revenue earners and in aggregate, contributes 12 percent of India's total exports.⁴⁶ The textile industry comprises of unorganized firms and manufacturers who sell the products to organized firms in India, which are in turn responsible for exporting these items. Further, the industry comprises of small as well as large-scale firms, and smaller firms have an advantage in that they have the flexibility to undertake a wider range of production.

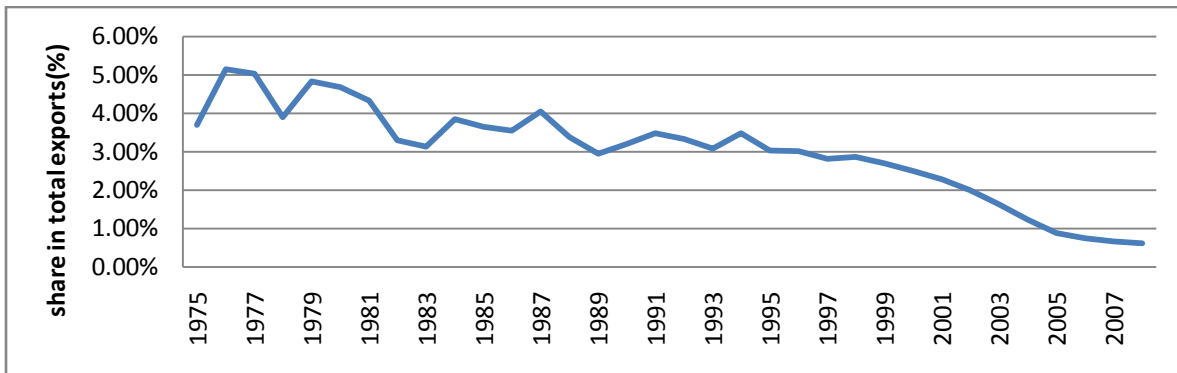
A segment of the textile industry which has been a significant contributor to India's exports is the cotton industry. Therefore, the following section analyses the performance of Indian cotton exports.

Though international trade is an important aspect of the world cotton market, there has been a decline over time, as the export-to-production ratio has fallen since the seventies. India is the

⁴⁶ <http://www.indialawoffices.com/pdf/textileindustry.pdf> (last accessed on 3.9.2011).

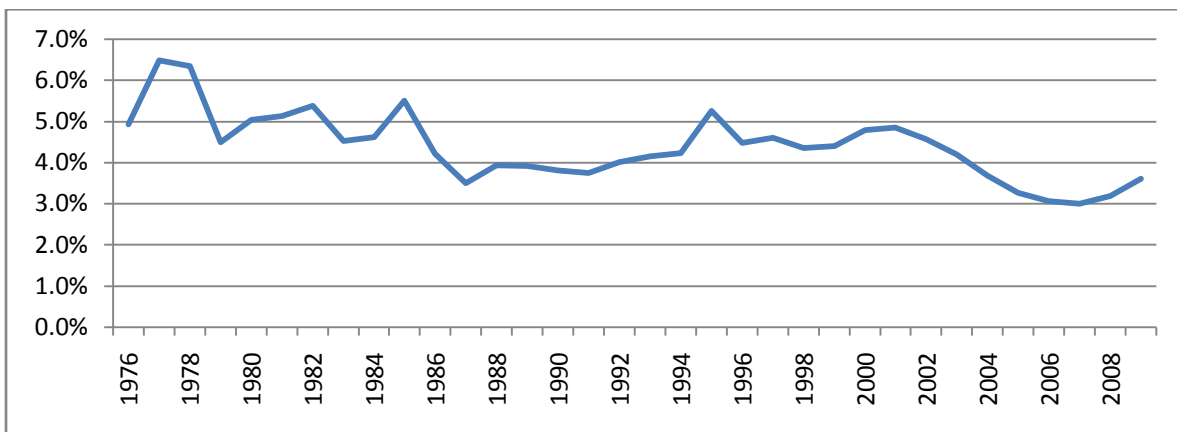
second largest producer of cotton after China, and accounted for nearly 20 percent of world production in 2007.⁴⁷ Annual growth in cotton production in India has surged since 2002, mostly due to the introduction of a new variety (Bt (*Bacillus thuringiensis*)) of cotton.

Figure 13: Share of cotton exports in India's total exports (%)



Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db> (last accessed on 1.9.2011)

Figure 14: India's share (%) in the world Cotton exports



Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db> (last accessed on 1.9.2011)

It is seen from Figure 13 that the share of cotton in India's total exports has declined from over 5 percent in 1976 to under 1 percent in 2008. Similarly, India's share in world exports of cotton has declined from a high of 6.5 percent in 1.97 to 3.2 percent in 2008. Over time, the quality inconsistency prevalent in the textile industry, in addition to an appreciating U.S. dollar have had

⁴⁷ For World cotton production between 1970 and 2007, refer to Table 1 in the Appendix.

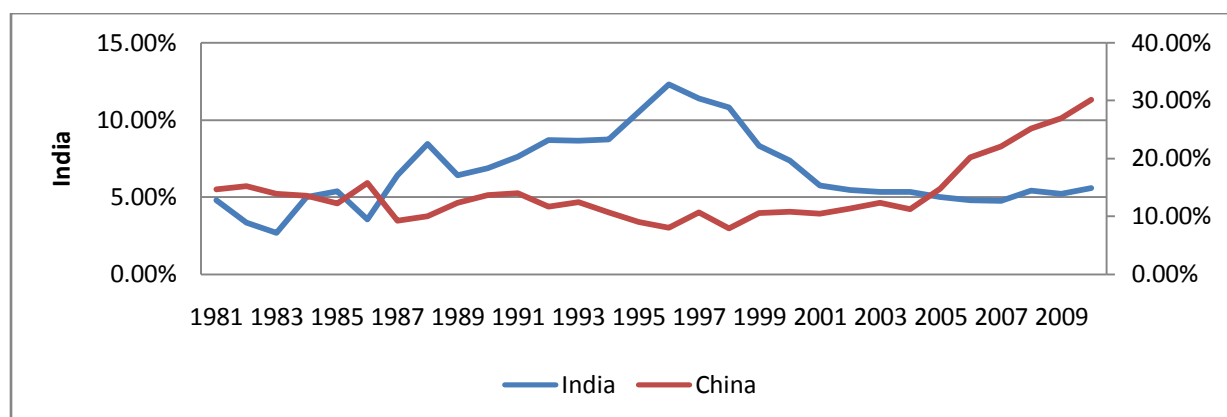
an unfavourable impact on the competitiveness on India's cotton exports (Ananthakrishna 2005).⁴⁸

The Multifibre Agreement (MFA) of 1973-74 enabled developed countries to bilaterally negotiate quotas with supplier countries, taking into account their competitiveness and the perceived threat to the domestic market (of the importing countries). During the Uruguay Round of multilateral trade negotiations (1986-93), the international community decided to integrate the MFA into the new Agreement on Textiles and Clothing (ATC). The ATC included a time table for phasing-out the quota system within a ten-year period (starting on 1 January 1995). The MFA was phased out and textiles trade was integrated into GATT provisions by 2005.⁴⁹ The purpose of the ATC was to provide developing countries more access to markets of developed countries. But countries like China, Korea and India (with a strong textiles production base) remained at a disadvantage as they had the capacity to produce and export more, but were restricted by the quotas. Smaller countries like Pakistan and Bangladesh, however, used the quota system as an opportunity to develop their industry. The elimination of the ATC brought a structural change in the pattern of textile and clothing trade. Since 1994, the export of clothing has exceeded textiles exports.

3.3.3. Direction of Trade

a. The United States

Figure 15: India and China's share (%) in the U.S. Cotton import market



⁴⁸ http://commerce.nic.in/publications/annualreport_chapter3.asp

⁴⁹ Adhikari, Ratnakar & Yamamoto, Yumiko.

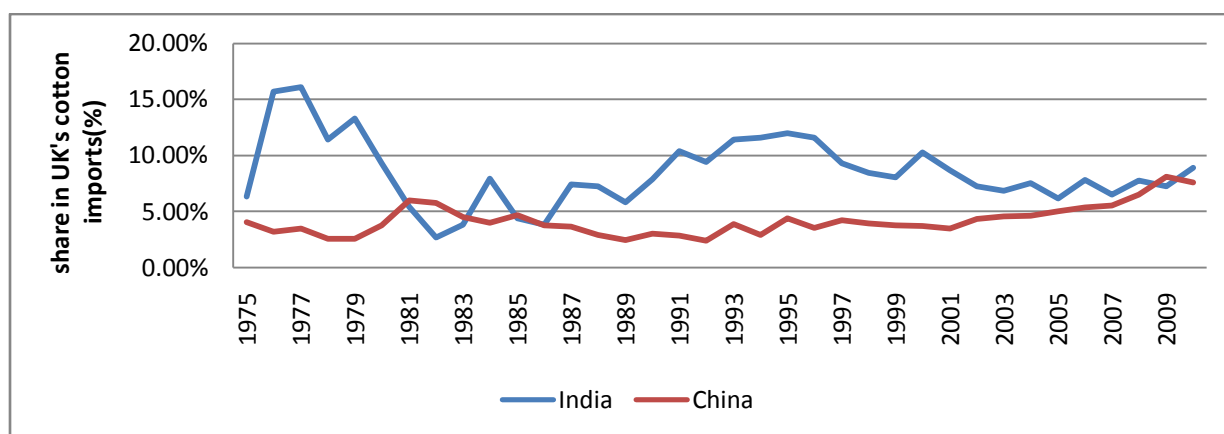
Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db> (last accessed on 1.9.2011)
 Note: Secondary (Y) Axis- China's Share in the US RMG Cotton Import Market

Over the last few years, there has been a shift in the US imports of RMG cotton products from the relatively higher cost Central American and Latin American countries towards lower- priced Asian suppliers like India, China, Vietnam, Bangladesh, Cambodia and Indonesia.

Till the implementation of the ATC, 12 percent of US imports were from India. However, this share fell sharply during the quota regime. After the elimination of the MFA, India recovered marginally, but in 2006, the rupee appreciation against the US dollar made Indian exports less competitive.⁵⁰ Since 2007, India's share has increased only marginally. China's performance in the same period however, has been phenomenal, as it has grown to contribute 30 percent of US cotton imports. Unlike India, China's cotton exports remained competitive even during the quota period. An important feature of China's (textile) sector has been its vertically integrated structure which can simultaneously execute all stages of production. Additionally, though the cost of labour is higher in China than in India, the higher productivity in this sector often converts to a better quality to price ratio.⁵¹ These factors could have cumulatively contributed to the growing share of China in US imports of cotton.

b. The United Kingdom

Figure 16: India and China's Share (%) in the UK's Cotton import market



⁵⁰ Economic Survey, 2008

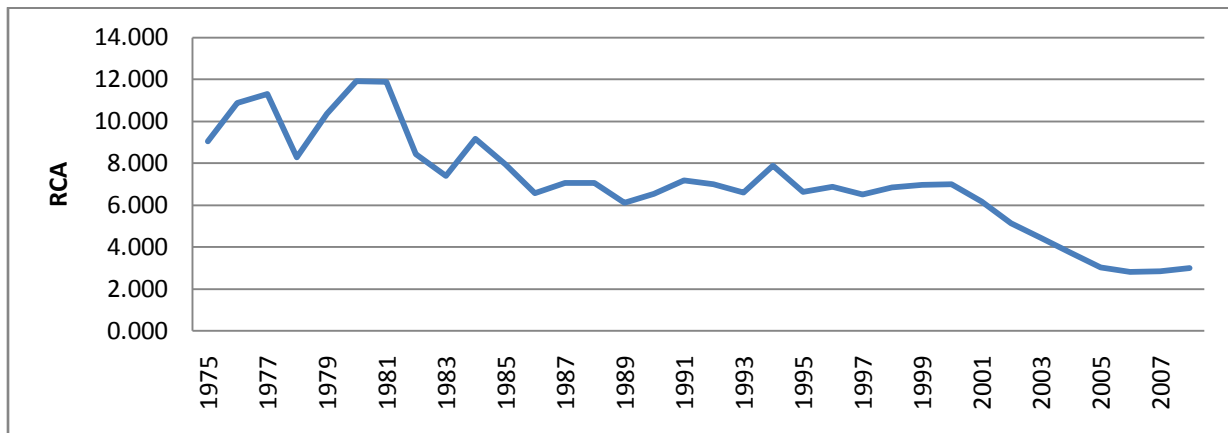
⁵¹ ICRA industry report on the Indian Textiles and Clothing Industry, (last accessed on 3.9.2011).

Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db> (last accessed on 3.9.2011)

India's cotton exports experienced a declining share in the UK market (from 1995 onwards) and in recent years, have converged with that of China at close to 8 percent. Similar to its performance in the US market, Indian cotton export share has gradually declined, while that of China's has consistently risen in the same period. China's performance was aided by the fact that Chinese firms had prepared for the end of the restrictions through substantial investment to improve infrastructure, which enabled China in raising its exports volume once the quotas were removed. Thus, the evidence suggests that China was better equipped to capitalize on the removal of the quota system and were therefore prepared to secure a stronger hold in important markets in the post- MFA period.

3.3.4 Competitiveness of RMG Cotton exports

Figure 17: RCA- India's Cotton Exports (to the world)



Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db> (last accessed on 1.9.2011)

Figure 17 reveals that India has been competitive in world exports of cotton. However, there has been a downward trend since 1995 which could be due to a possible negative impact of the ATC on India's share of cotton exports in total exports. The RCA for Indian cotton exports compared to China further suggests that Indian cotton exports have been competitive in important markets like the US and the UK.⁵²

⁵² Refer to Table 4 in the Appendix.

3.3.5 Government Initiatives- RMG Cotton

The Indian textile industry has traditionally comprised of several small and medium scale enterprises (SME). In the years following independence, the government used this sector to provide large scale employment opportunities. Thus, a few labour-intensive segments of this industry were reserved for small smaller enterprises. At the time, large scale production was not possible due to the existing restrictions on total capacity and low levels of mechanization. This constrained the production of this industry and discouraged capital investment.⁵³

However, in an attempt to improve the efficiency and productivity of this sector, the Indian government reduced the reservation of textile products from 1997. Additionally, the Technology upgradation Fund Scheme (TUFS) was launched in 1999 which enabled firms to access low-interest loans for technology upgradation. The TUFS scheme has been continued and is part of the Eleventh Plan where its allocation has been raised. The Indian government has also approved special schemes for Integrated Textile and Apparel parks (SITP). Under this Scheme, up to 26 parks have been approved and the budget provision is also widened by the government. The government adopted a cluster approach for the handloom sector in 2005-06, where 120 clusters were selected for the provision of technical assistance and were provided subsidies for technology upgradation, in addition to marketing support.⁵⁴

Foreign Direct Investment (FDI) of up to 100 percent is permitted (under the automatic route) in the Indian textile industry. The Textile Ministry has also set up an FDI cell to provide assistance and advisory support, sort out operational impediments, in addition to designing schemes to attract more FDI in this sector. In 2000, the textile policy was designed to remove the bias in policy towards the small and medium sized firms and promote modernization.

Over time, the government has made provisions for incentives by reducing the excise duty and the basic custom duty on importing of raw materials. The Union Budget of 2004-05 in particular, made changes to the CENVAT schemes for the textile sector. Every manufacturer in the textile industry had the option of choosing between the exemption route (in which no excise duty would

⁵³ http://www.cci.in/pdf/surveys_reports/indias_textile_sector.pdf (last accessed on 5.9.2011)

⁵⁴ [http://www.legalpundits.com/Content folder/THETEXTILEINDUSTRYREPORT290710.pdf](http://www.legalpundits.com/Content_folder/THETEXTILEINDUSTRYREPORT290710.pdf) (last accessed on 11.9.2011)

be payable at any stage) or the CENVAT route (in which credit could be taken for all excise duties at earlier stages).⁵⁵

Though this sector has benefitted from an increased allocation of funds through various schemes, its profitability has suffered due to increased costs of raw materials (especially cotton) and a sharp depreciation of the Indian Rupee against the US Dollar. However, a conscious reduction in the protectionist attitude is expected to have a positive impact on the cotton textile sector. Policies are designed and implemented in a way to ensure the modernization of weaving machineries. Further, as the sector becomes more competitive and driven by market forces, the overall productivity of the textile industry will be enhanced. More investment in the form of FDI will further support capital-intensive production and thereby boost the efficiency by helping to realize economies of scale. The Indian Government has provided incentives to manufacturers for establishing export zones or export parks, in the form of exemption from certain labour regulations and through provisions for land purchases, credit and taxes.⁵⁶ As in the case of gems and jewelry exports, this sector too is one of the thrust areas for the National Manufacturing Policy given its high employment intensity and implications for growth of the SME sector.

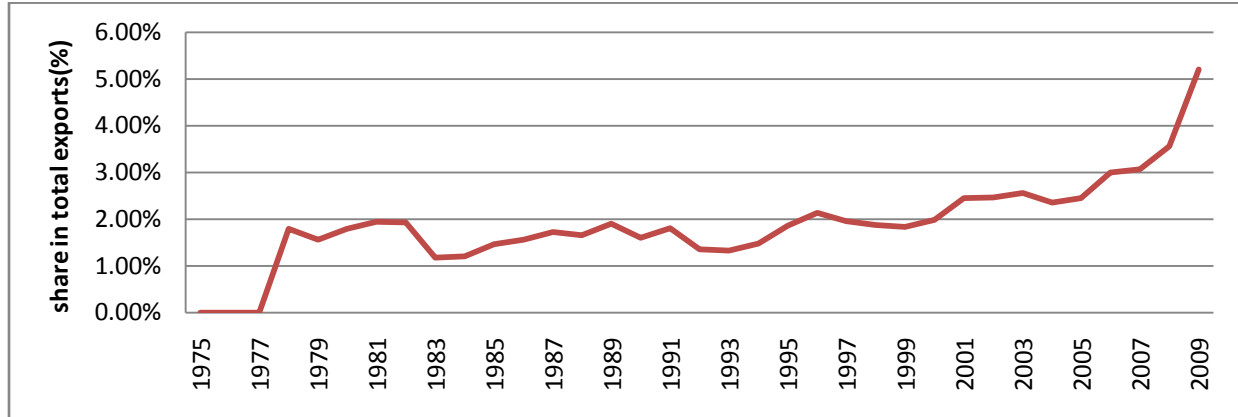
3.4 Electronic goods and IT hardware sector of India

The electronic industry in India has emerged as an important manufacturing sector in recent years and has contributed positively to the growth trajectory of the Indian economy. This industry has registered strong growth in the last ten years and has increased its contribution to India's exports, as seen in Figure 18. Although the share of the electronics industry (relative to textile or gems and jewelry) is low, its performance at the domestic level has revealed the industry's strong potential to cater to international markets. Consequently, this sector is expected to play a greater role in India's manufactured exports in the years to come.

⁵⁵ ICRA report (January, 2009) on the Indian Textiles and Clothing Industry. (last accessed on 3.9.2011)

⁵⁶ ICRA report (January, 2009) on the Indian Textiles and Clothing Industry. (last accessed on 3.9.2011)

Figure 18: Share of electronic goods exports in India's total exports (%)



Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db> (last accessed on 17.9.2011)

India has made a serious effort to develop this sector since 1960. In the first two decades, the focus was on developing space and defense technologies, which gradually moved towards consumer goods like transistor radios, Black and White television sets, calculators and other audio products. An impetus to this industry came in 1982, when the Indian government ordered thousands of color TV sets to be imported on the eve of Asian games. The growth of this sector was further aided by the introduction of computers in various government organizations in 1985 and the sector remained buoyant even during the economic crisis in the nineties.⁵⁷ The economic reforms, however, hampered the growth of the electronics industry. The steep fall in custom tariff made the sector vulnerable to international competition. In 1997, India signed a trade agreement with the WTO where India would lift all custom duties on IT hardware by 2005. In subsequent years, a few companies turned sick and had to be closed down, but others survived the competition and successfully established an identity in the international market.⁵⁸

The key segments of the Indian electronics sector include consumer electronics and telecom equipment which are the largest and cumulatively represent nearly 27 percent of total production.

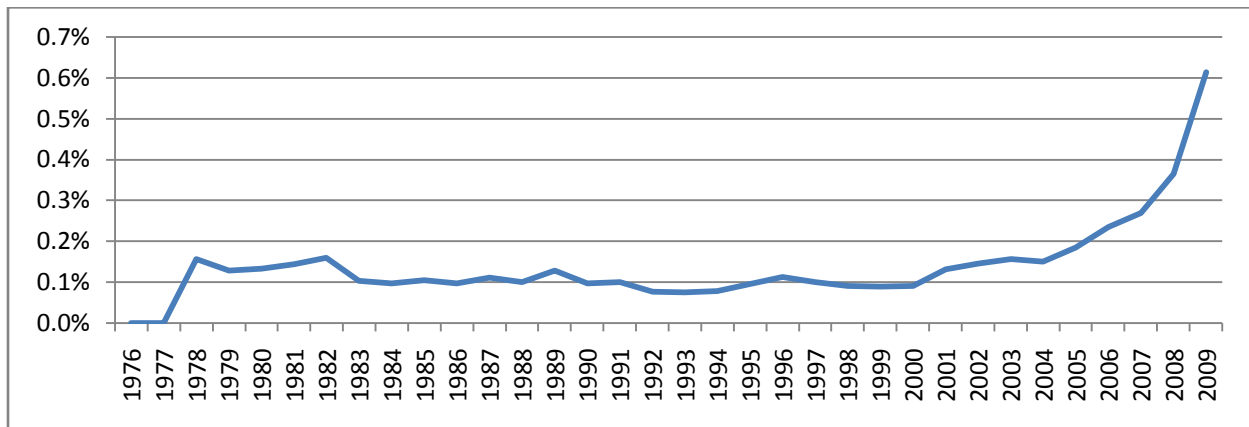
⁵⁷ http://www.cci.in/pdf/surveys_reports/electronics-industry.pdf(last accessed on 17.10.2011)

⁵⁸ http://www.cci.in/pdf/surveys_reports/electronics-industry.pdf(last accessed on 17.10.2011)

IT hardware is the fastest growing segment, with a CAGR of 21 percent.⁵⁹ Other important segments of the electronics industry include electronic components and strategic electronics.

Even though the Indian electronics market has grown at a remarkable CAGR of 25 percent in the last five years and was estimated at \$45 billion in 2010, it has a minor share in the global electronics market, accounting for just over 0.6 percent of global exports of electronic goods in 2009.⁶⁰ This may in part be explained by the fact that the Indian electronics industry exports only 5 percent of total production and the majority is intended for domestic consumption.⁶¹ In fact, the growing consumption demand of the Indian market has attracted global attention, despite the industry’s low share in world market. As income levels rise, more people in India are able to afford better lifestyles and this raises the demand for durables like television sets, mobile phones, computers, etc. Foreign players have realized this immense potential and are thus seeking investment opportunities in the Indian electronics market. The electronics industry, therefore, attracts considerable foreign investment and comprises of major multinational companies like LG, Phillips and Samsung among other international players.

Figure 19: India’s share in world export of electronics goods



⁵⁹ As per the NSDC report titled, “Human resource and skill requirements in the Electronics and IT hardware sector (2002)”.

⁶⁰ Frost and Sullivan Report on the Indian Electronics Industry (2010).
http://electronicsb2b.com/wp-content/uploads/2011/02/Part-2_Indian-Electronics-Industry.pdf
 (last accessed on 20.11.2011)

⁶¹ IBEF Report on the Indian Electronics Sector (2006).
http://www.ibef.org/download/ibefreportelectronics_june06.pdf (last accessed on 20.11.2011)

Source: Author's calculations based on United Nations (UN) Comtrade database <http://comtrade.un.org/db> (last accessed on 17.9.2011)

India's electronic exports have grown steadily over the years, largely fueled by contract manufacturing.⁶² In particular, the electronic components segment contributes the largest share to the sector's exports [the export items include passive components such as capacitors and resistors; wound components; CD-ROMS; connectors; color picture tubes and computer components/assemblies, such as head stacks, memory modules and RFID products]. The other important export segments are industrial and consumer and computer electronics.

The major export markets for Indian electronic goods are the US, UK and Singapore. The share of Indian exports in these markets, however, continues to be under 1 percent, though this has improved since 1995. China remains the dominant player in the global market for electronic exports. It has more than tripled its share in the above markets between 1999 and 2009 and supplied over 34 percent of US imports of electronic goods in 2009.⁶³

Overall, India's electronics exports have remained uncompetitive (compared to world exports), as seen in the Figure below. However, the upward trend in the RCA (for electronic exports) since 2000 is indicative of an improvement in global competitiveness over time. Factors which have contributed to this include the growing presence of global multinational companies in India and increased outsourcing of manufacturing by Indian as well as global equipment manufacturers. An important resource which has contributed and can further improve India's competitive advantage is the availability of skilled manpower at competitive costs in India. Being an industry which crucially relies on technical knowledge, this industry has the potential to absorb high quality labour from the large pool of technologically skilled workforce in India. The National Skill Development Corporation has estimated that the industry will employ between 3-3.2 million skilled workers by 2022 and 70 percent of them are likely to be absorbed into the

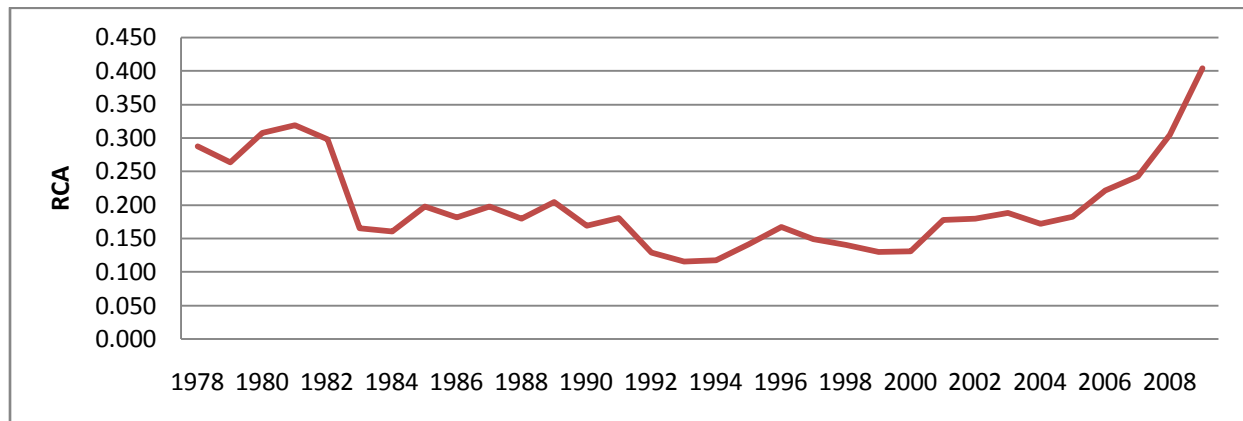
⁶² IBEF Report on the Indian Electronics Sector (2006).

http://www.ibef.org/download/ibefreportelectronics_june06.pdf (last accessed on 20.11.2011)

⁶³ Refer to Table 2 In the Appendix.

manufacturing and servicing support.⁶⁴ This industry can exploit this advantage of skilled human capital to fuel its productivity and thereby maximize exports of this sector.

Figure 20: RCA- Indian (World) exports of electronics goods



Source: Author’s calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db> (last accessed on 17.9.2011)

Economic reforms and regulatory policies have also played an important role in supporting the electronics industry. Following the economic crisis in the early nineties, industrial licensing has been virtually abolished from the electronics and IT hardware sector (excluding manufacturing electronic aerospace and defense equipment). Additionally, the Indian government signed the ITA-I agreement (as imposed by WTO and effective from March 2005) which abolished all the custom duties to facilitate trade in this sector. Under this agreement, there was no reservation for PSU’s in this industry and private investments were allowed in every segment. This sector also opened up to foreign participation and allowed foreign companies to establish operations in India under the Indian companies Act, 1956, in addition to wholly owned subsidiaries.⁶⁵

The state-level governments have continued to encourage joint ventures as they provide the advantage of established contracts, financial support and a distribution-marketing network for the Indian partner. In general, the foreign trade policy permits the import of all electronics and IT products, with the exception of some defense related items. The schemes provided for setting up Export Oriented Units for the electronics industry provide drawbacks on duties and are

⁶⁴ http://articles.economictimes.indiatimes.com/2011-03-25/news/29188550_1_hardware-industry-electronics-telecom-equipment (last accessed on 15.10.2011)

⁶⁵ Foreign equity shares in such Indian companies could be up to a 100 percent.

designed to also attract foreign participation. The Software Technology Parks of India (STPI) Scheme in particular has been a major success.

The challenges which afflict this sector result from the broader difficulties faced by the Indian manufacturing sector.⁶⁶ The policies are designed to improve the overall efficiency by attracting the most competitive firms and skilled human capital, but higher investments in research and development (R&D) can improve the productivity of this sector and subsequently its contribution to India's manufacturing exports. In this regard, the electronics sector is likely to benefit from the New Manufacturing Policy (2011). While it is expected that electronics will possibly account for a major share of India's total manufacturing by 2022, the various investment and tax incentives provided (under the NMP) for electronics, LED and semi-conductor industries can succeed in attracting many more multinational companies to India, thereby making India an important part of the global electronics supply chain.⁶⁷

4 Conclusion and scope for future work

It is evident from the preceding discussion that India has followed a development model unlike that of the East Asian Economies. While the services sector has registered remarkable growth and contributed significantly to India's GDP, the manufacturing sector has grown at a comparatively slower pace. The overall performance of the Indian manufacturing sector has widespread implications for various aspects of the economy; employment, being one of the chief areas of impact. Since this sector generates large scale employment for low and medium skilled workers, it is imperative to develop features which will create a conducive environment for industries to grow further. The paper identifies the various inadequacies which prevail within the sector. In particular, the presence of the unorganized component within industries reduces the benefits that can be derived from economies of scale. Such constraints cumulatively prevent the manufacturing sector from achieving its potential.

⁶⁶ The Ministry of Commerce Report on the Electronics Industry in India
http://www.cci.in/pdf/surveys_reports/electronics-industry.pdf (last accessed on 22.11.2011)

⁶⁷ <http://www.displaysearchblog.com/2011/11/indian-government-approves-new-manufacturing-policy/>
(last accessed on 7.2.2012)

4.1 Summary of discussion

The paper summarizes the export performance of three unique industries which comprise India's manufacturing sector and thereby reveals the heterogeneity that exists among industries within the sector. Indian gems and jewelry exports constitute a significant share of the country's aggregate exports and have also performed well internationally, thereby making India an indispensable player in this market. On the other hand, cotton exports which are a traditional export item for India have declined in importance with a falling contribution to Indian exports as well as to the global cotton market. Finally, the electronic goods industry is an upcoming sector which has grown at an impressive rate domestically and has strong potential to contribute to India's exports in the near future. In general, these sectors have performed better since trade liberalization was undertaken in 1991. The reduction and subsequent removal of export and import barriers have further supported exports and contributed towards a stronger performance.

The paper also provides a summary of changes in government policies which could explain the emerging patterns in India's exports of select manufactured products. It clearly highlights the fact that the export performance of an industry is shaped by a number of factors, including global and partner country economic conditions, costs, market structure, domestic regulations and policy incentives. While the paper addresses the industry related features stated above, India's export performance is equally likely to be affected by macroeconomic variables such as inflation, world demand (or GDP), tariff and non-tariff barriers and also exchange rates. Industry reports often discuss export competitiveness in the light of exchange rate movements, amongst other variables, and therefore suggest that this variable may be relevant in the Indian context. In particular, an RBI report suggested that fluctuation in the value of the rupee affected Indian industries asymmetrically. While labour-intensive sectors such as cotton and leather experienced a fall in export growth (due to an appreciated rupee between 2006 and 2007), high import-intensive sectors like engineering and gems and jewelry were expected to perform better during the same period, due to lower import costs.⁶⁸ Similarly, other industry reports suggested that

⁶⁸ Annual Report (2007-08) of the Ministry of Commerce and Industry: Impact of Rupee Appreciation on India's Exports http://commerce.nic.in/publications/annualreport_chapter3.asp (last accessed on 9.12.2011)

high import-intensive sectors were more exposed to international price volatility, which affected their profitability.⁶⁹

4.2 Directions for future work

Clearly, the determinants of export performance are numerous and the complexity of this issue requires an empirical investigation. This relationship needs to be explored in greater detail in future work which takes into account the various industry-specific factors discussed above alongside important macroeconomic factors such as the state of the world economy, the exchange rate, and the policy environment. In particular, it would be interesting to examine the role of exchange rate movements in influencing India's export competitiveness given the periodic bouts of appreciation of the Indian Rupee typically on account of rapid inflows of foreign capital and the concerns such movement typically raises in exporting sectors of the economy. For instance, during 2007, driven by a surge in FII inflows, the Indian Rupee appreciated significantly against the US dollar, reaching the Rs 40/dollar threshold. This led to demands from Indian industry to prevent further appreciation and calls for intervention by the RBI to prevent an adverse impact on their exports. Again, more recently, in the aftermath of the 2008 global financial crisis, similar concerns about the adverse effects on exports were voiced when the rupee temporarily appreciated against the dollar.

Hence, in a future study which delves deeper into the micro as well as macro level factors that shape export competitiveness for Indian manufactures, it would be worth testing through rigorous empirical analysis whether and to what extent exchange rate movements really affect India's export competitiveness. To date, empirical evidence in this regard is limited and there seems to be a presupposed conclusion that a depreciated rupee is good for India's exports. However, given the diverse nature of India's exports, the various structural, regulatory, industry-specific and other factors that influence competitiveness, as highlighted in this paper, can one expect such a clear cut relationship between exchange rates and export competitiveness to hold for India? How important are these other factors compared to the exchange rate? Are the implications similar across manufacturing and services, across different manufacturing

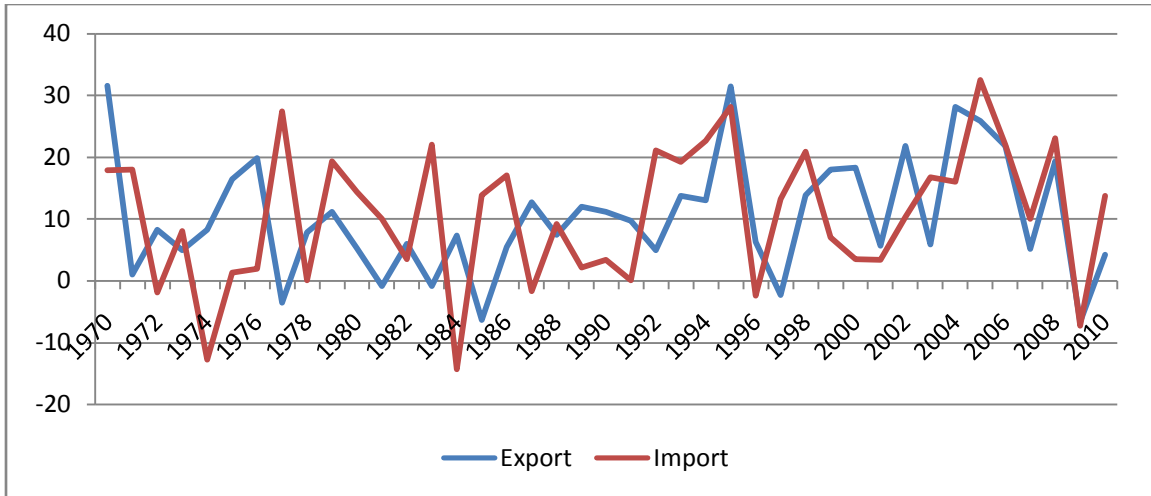
⁶⁹ The Dun and Bradstreet report on the Indian Gems and Jewelry Sector (2010)
<http://www.dnb.co.in/IndianGemsandJewellerySector/ForeignTrade.asp> (last accessed on 29.10.2011)

industries, and for import-intensive exports which might benefit from cheaper imports following appreciation? A subsequent working paper under this same research project will empirically examine these issues and attempt to arrive at some firm conclusions on the relative importance of industry-specific versus macroeconomic factors in shaping India's export competitiveness and specifically on the role of exchange rate movements in this context.

Appendix

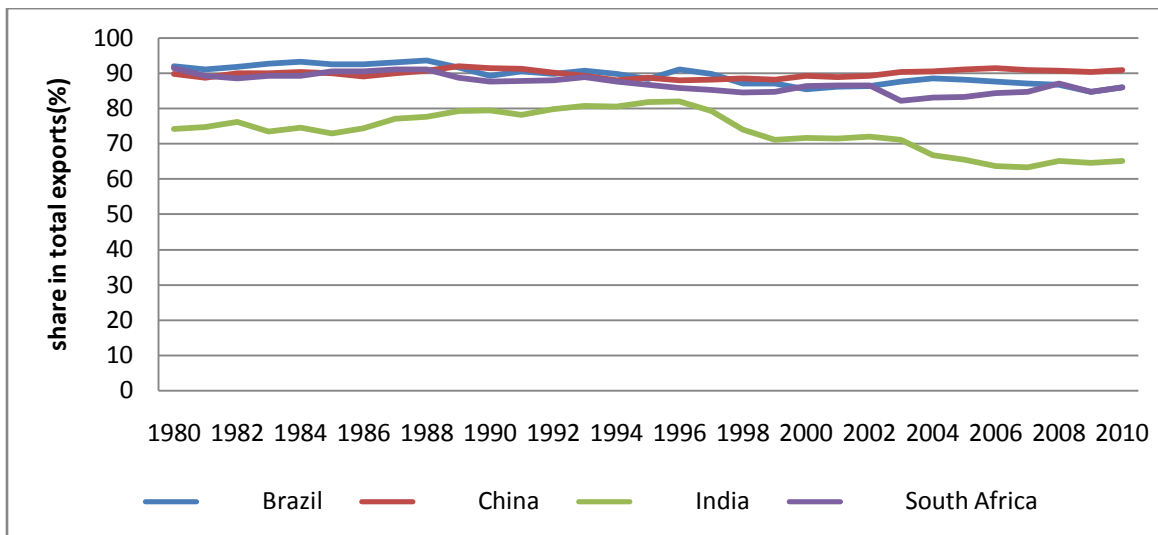
A. Overall trend

Figure 1: India- Import and Export Growth



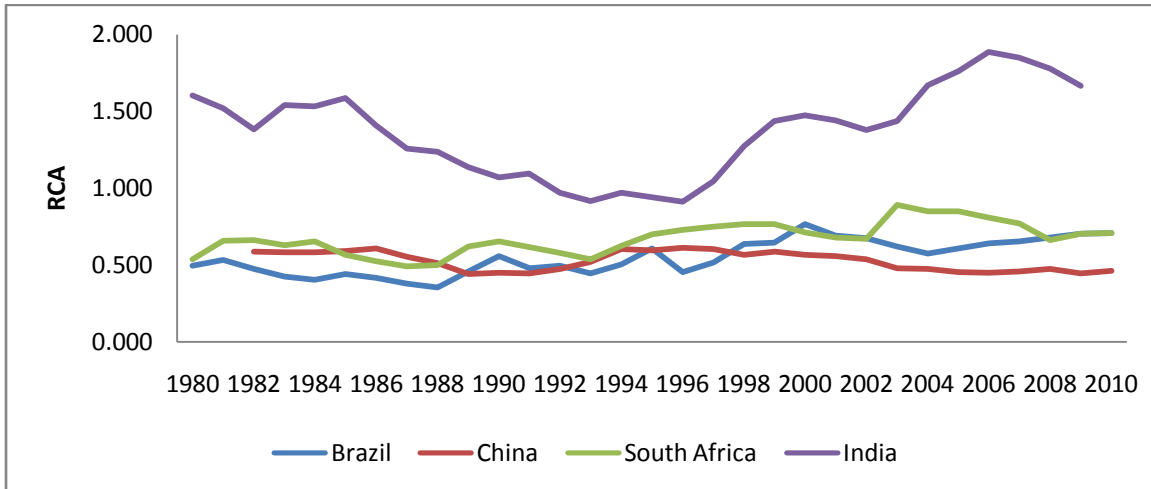
Source: Author's calculations based on World Development Indicators (WDI)
<http://data.worldbank.org/data-catalog/world-development-indicators>

Figure 2: Share of merchandise exports in total exports of emerging economies (%)



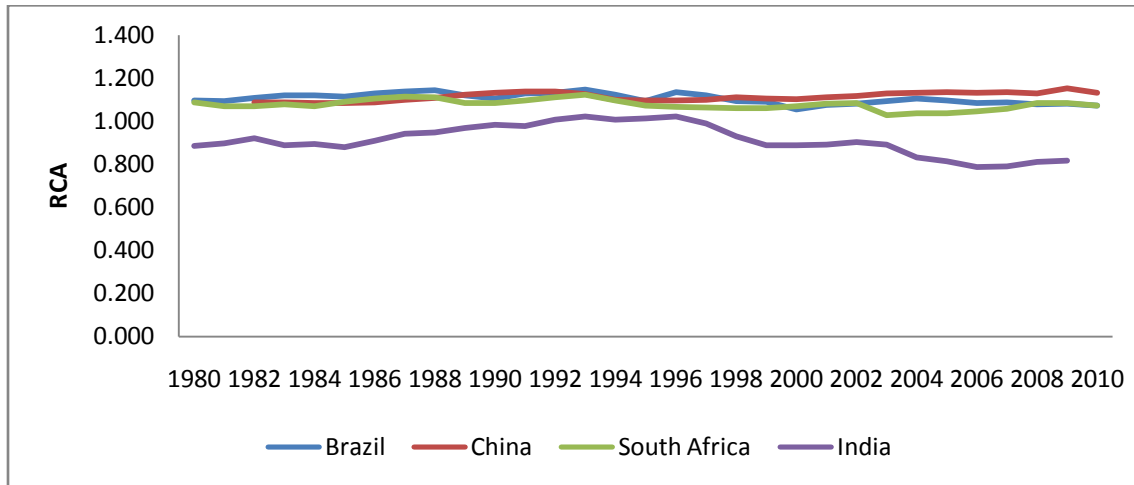
Source: Author's calculations based on UNCTAD (United Nations Conference on Trade and Development) database
http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx?sCS_referer=&sCS_ChosenLang=en

Figure 3: RCA- Services exports



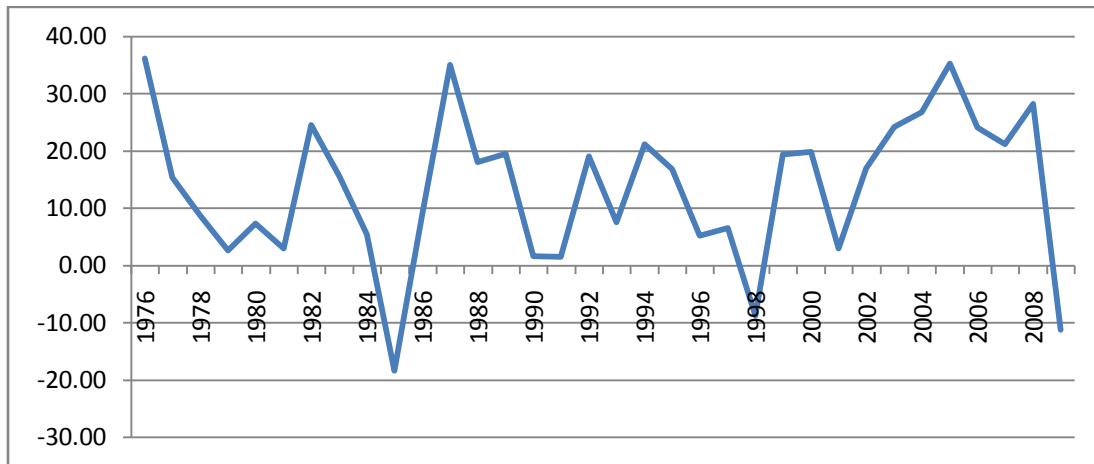
Source: Author's calculations based on UNCTAD (United Nations Conference on Trade and Development) database http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx?sCS_referer=&sCS_ChosenLang=en

Figure 4: RCA- Merchandise exports



Source: Author's calculations based on UNCTAD (United Nations Conference on Trade and Development) database http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx?sCS_referer=&sCS_ChosenLang=en

Figure 5: India- Growth in manufactured exports (%)

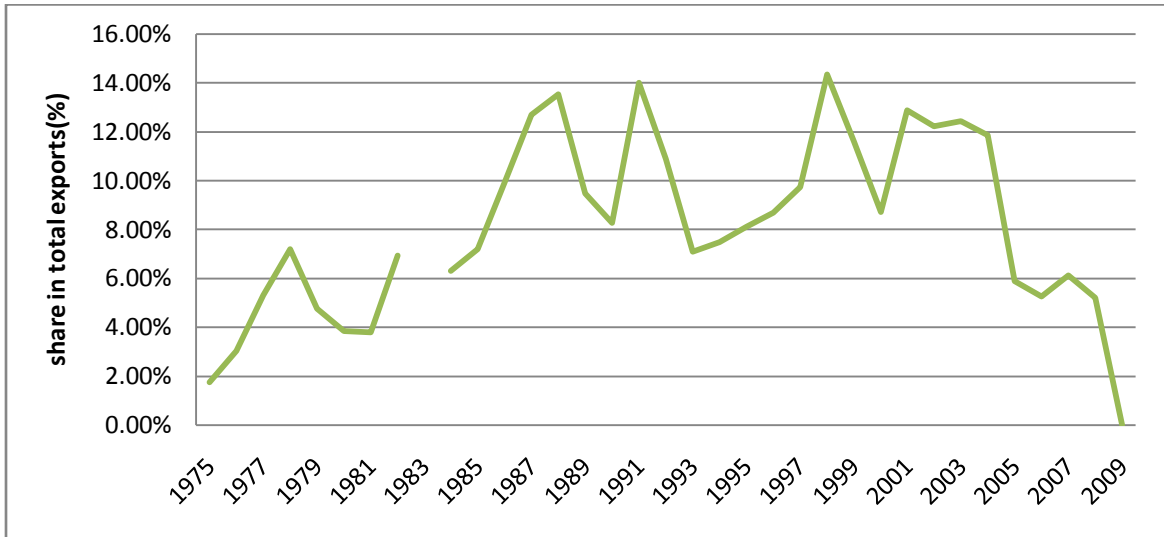


Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db>

B. Commodity-specific trends

B.1 Gems and Jewelry

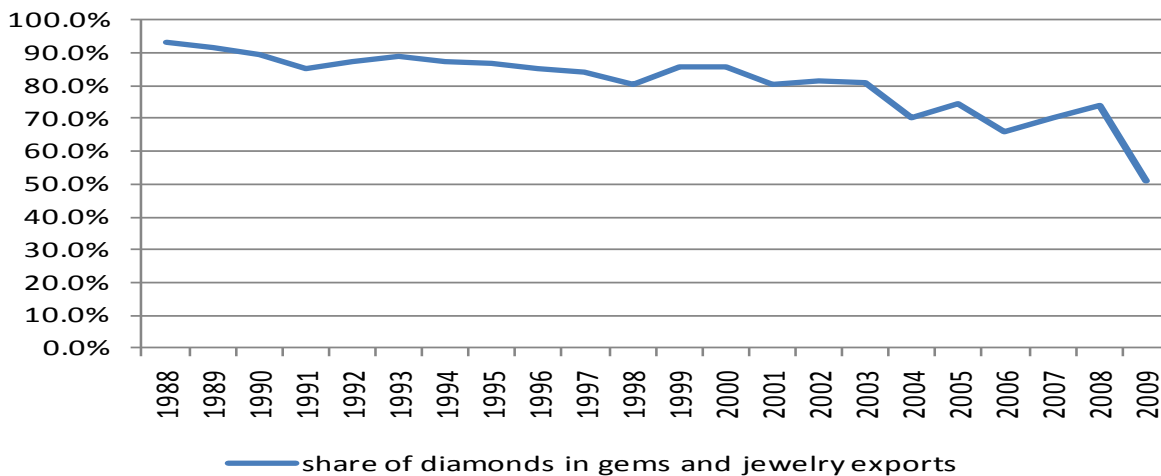
Figure 6: India's gems and jewelry imports as a share of total imports



Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db>

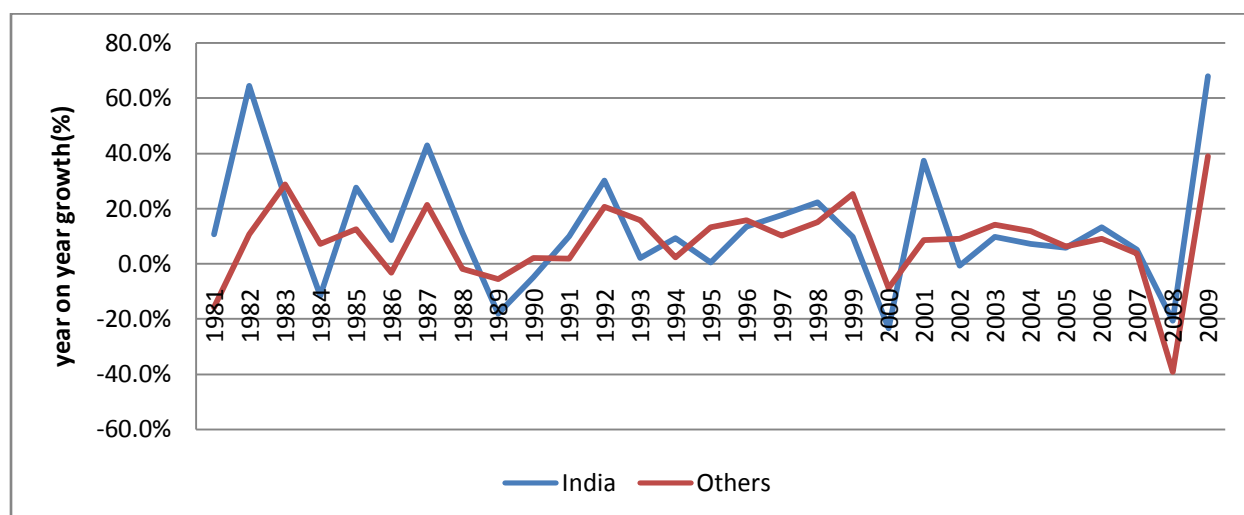
Note: The missing data point for the period 1982-83 is due to the import data (for the year 1982) which is not available and therefore not reported

Figure 7: India- Diamond exports as share of gems and jewelry exports



Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db>

Figure 8: Growth in U.S. Imports of Gems and Jewelry from India (and other countries)



Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db>

B.2 Cotton

Table 1: Major sources of World cotton production (% share)

Period Average	China	United States	India	Pakistan	Brazil	Soviet Union ¹	Turkey	Others
1970–1974	17.3	19.4	8.5	4.8	4.6	18.4	3.9	23.1
1975–1979	16.8	19.4	9.3	4.1	4.0	20.4	3.8	22.2
1980–1984	25.7	16.9	9.6	4.9	4.5	16.0	3.4	18.9
1985–1989	23.1	16.5	10.7	8.0	4.3	15.6	3.3	18.7
1990–1994	24.3	19.9	11.8	8.6	3.0	11.7	3.3	17.4
1995–1999	22.4	19.2	14.4	8.4	2.4	8.0	4.2	21.1
2000–2003	24.1	19.6	13.4	8.8	4.8	7.2	4.1	17.9
2004	25.4	19.0	15.6	9.1	4.8	6.6	3.4	16.1
2005	25.1	20.3	16.2	8.6	4.0	7.1	3.0	15.7
2006 ²	29.1	17.7	17.9	8.1	5.7	6.7	3.2	11.5
2007 ³	29.7	15.8	19.7	8.2	5.9	6.9	2.8	11.0
Ave. growth ⁴	3.3	1.7	4.6	3.7	2.6	-0.7	1.6	0.1

Source: Cotton and Wool Situation and Outlook Yearbook

Note: 1. Includes former Soviet Union republics; 2. estimates; 3. forecast; 4. 1970–2007 geometric growth of volume production

Source: <http://www.ifpri.org/sites/default/files/publications/ifpridp00801.pdf>

Table 2: India and China's market share in important (import) markets for Electronic goods

		1995		2000		2005		2007		2009	
	Country	China	India	China	India	China	India	China	India	China	India
Singapore	702	2.4%	0.2%	4.6%	0.1%	12.7%	0.1%	16.2%	0.5%	14.5%	0.6%
UK	826	1.2%	0.2%	5.5%	0.2%	10.3%	0.3%	14.7%	0.5%	18.5%	0.4%
USA	842	7.0%	0.1%	10.8%	0.1%	25.9%	0.4%	31.1%	0.5%	34.3%	0.5%

Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db>

Table 3: RCA- Gems and jewelry exports to important markets

India	Export Market/Year	1985	1990	1995	2000	2005	2007	2009
	Hong Kong			240.92	150.32	134.39	127.40	86.65
	UK	0.48	0.35	0.38	0.53	0.36	0.55	0.63
	USA	81.20	33.17	24.52	16.53	6.83	5.48	4.99

Belgium	Export Market/Year	1985	1990	1995	2000	2005	2007	2009
	Hong Kong	62.05	39.32	60.04	36.90	28.20	24.08	19.06
	UK	6.55	5.40	3.29	1.35	0.49	0.61	0.34
	USA	80.99	52.67	62.79	42.22	9.22	7.78	2.97

Israel	Export Market/Year	1985	1990	1995	2000	2005	2007	2009
	Hong Kong	92.24	60.23	107.01	67.90	48.74	39.16	30.97
	UK	2.28	2.86	10.60	4.14	5.54	8.20	6.82
	USA	118.79	74.64	86.88	77.72	51.59	44.03	29.22

Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db>

Table 4: RCA- Cotton exports (India and China)

India	Export Market/Year	1985	1990	1995	2000	2005	2007	2009
	UK	29.52	32.60	32.35	32.41	8.09	5.75	3.81
	USA	23.65	21.98	20.91	6.82	2.65	3.80	3.46

China	Export Market/Year	1985	1990	1995	2000	2005	2007	2009
	UK	48.43	19.51	8.59	2.48	1.01	0.74	0.94
	USA	51.45	18.11	4.26	1.40	0.86	1.28	1.69

Source: Author's calculations based on United Nations (UN) Comtrade database
<http://comtrade.un.org/db>

References

- Acharya, S., Ahluwalia, I., Krishna, K.L. and Patnaik, I. (2003). "India: Economic Growth, 1950-2000. ICRIER Working paper.
- Adhikari, R. and Yamamoto, Y. (2008). The textile and clothing Industry: Adjusting to the post-quota world. *South Asia Economic Journal*, Volume 8, No.2, 171-202
- Ahluwalia, M. S. (2002). Economic reforms in India since 1991: has gradualism worked? *Journal of Economic Perspectives*, 16 (3) 2002, 67-88.
- Aggarwal, A. (2001). Liberalisation, Multinational Enterprises and Export Performance: Evidence from Indian Manufacturing. ICRIER Working Paper, No. 69.
- Alessandrini, M., Fattouh, B. and Scaramozzino P. (2007). The changing pattern of foreign trade specialization in Indian manufacturing. *Oxford Review of Economic Policy*, Volume 23, Number 2, 2007, 270–291.
- Anantaram, R. and Mohammed, S. (2010). The People's Republic of China's Manufacturing sector since 1978: implications for India. An Asian Development Bank (ADB) report.
- Ananthkrishnan, P and Jain-Chandra, S. (2005). The impact on India of trade liberalization on the textiles and clothing sector. IMF Working Paper, WP/05/214.
- Athukorala, P.C. (2008). Export Performance in the Reform Era: Has India Regained the Lost Ground? ASARC Working paper 2008/03.
- Bahmani-Oskoe, M. and Mitra, R. (2007). Exchange Rate Risk and Commodity Trade between the U.S. and India. *Open Economies Review*, Volume 19, No. 1, 71-80.
- Banga, R. (2005). Critical Issues in India's Service-Led Growth. ICRIER Working Paper No. 171.
- Batra, A. and Khan, Z. (2005). Revealed Comparative Advantage: An analysis for India and China. ICRIER Working Paper No.168.

Bedi, J. S. and Cororaton, C.B. (2008). Cotton-Textile-Apparel Sectors of India: Situations and Challenges Faced. IFPRI Discussion Paper 00801, International Food Policy Research Institute, Washington DC.

Beena P.L. (2010). Exchange Rate and Export Behaviour of Indian Textiles & Clothing Sector: An enquiry for Major Destination Countries. CDS Working Paper No. 425.

Bhatt, P.R. (2008). India's Trade Competitiveness and Exchange Rate Policy. *The Journal of Applied Economic Research* 2:3, 247-264.

Bhattacharyya, R. and Mukherjee, J. (2011). Do Exchange rates affect Exports in India? SSRN Working Paper.

Bhatt,R.K. (2011). Recent Global Meltdown and its Impact on Indian Economy. IPEDR Vol.7.

Bini-Smaghi,L. (1991). Exchange rate variability and trade: why is it so difficult to find any empirical relationship? *Applied Economics*, 23, 927-936.

Blecker, R.A. and Razmi, A. (2009). Export-led growth, real exchange rates and the fallacy of composition. Working papers 2009-22, American University, Department of Economics.

Burange, L.C. and Chaddha, S.J. (2008). India's revealed comparative advantage in merchandise trade. Working Paper UDE 28/6/2008.

Cassidy, M. and O'Brien,Cassidy (2005). Export Performance and Competitiveness of Irish Economy. *Quarterly Bulletin Articles* (3), 75-95.

Chaudhuri, Sudip. (2009). Growth of Manufacturing Sector in Post-Reforms India, Some Disquieting Features. Working paper.

Chit,M.M., Rizov, M. and Willenbockel, D. (2009). Exchange Rate Volatility and Exports: New Empirical Evidence from the Emerging East Asian Economies. *The World Economy*, Vol. 33, Issue 2, 239-263.

Dasgupta, S. and Singh, A. (2005). Will Services Be the New Engine of Economic Growth in India? Centre for Business Research, University of Cambridge, Working Paper 310.

Department of Commerce, Government of India (2007-08). Impact of Rupee Appreciation on India's export (with special focus on labour intensive sector). Annual Report, Chapter 3. <http://commerce.nic.in/publications/Download%20PDF/Ch-3.pdf>

Dholakia, R.H. and Saradhi V, R. (2000). Exchange Rate pass-through and Volatility. Economic and Political Weekly, Vol. 35, No. 47, 4109-4116.

Dun and Bradstreet report on the Indian Gems and Jewelry Sector (2010) <http://www.dnb.co.in/IndianGemsandJewellerySector/ForeignTrade.asp>

EEPC India and Ernst & Young report titled "Engineering the future: An exports perspective- Strategy paper for the growth of engineering exports: 2010-2014".

Ellis, L. (2001). Measuring the Real Exchange Rate: Pitfalls and Practicalities. Research Discussion Paper, 2001-2004, Economic Research Department, Reserve Bank of Australia.

Ghsosh, Arunava (2006). Pathways through Financial Crisis: India. Global Governance 12, 413-429.

"Globalizing Indian Manufacturing – Competing in Global Manufacturing and Service Networks". Research published by Deloitte, Indian School of Business, New York University and Perdue University.

Goyal, A.(2010). Evolution of India's exchange rate regime. Indira Gandhi Institute of Development Research (IGIDR). Working paper No. 24.

Gupta, P., Hasan, R., Kumar, U. (2008). What Constrains Indian Manufacturing? Asian Development Bank, ERD Working Paper Series, No. 119.

Henry, L. (2008). India's International Trade Policy. Asia Visions 9, IFRI.

IMaCS Research and Analytics, Industry Comment: "The Indian Gems & Jewelry Industry". ICRA Report.

IMaCS Research and Analytics, Industry Comment: "The Indian Textiles and Clothing Industry". ICRA Report.

Johri, D. and Miller, M.. Devaluation of the Rupee: Tale of Two Years, 1966 and 1991. CCS Working paper No. 0028. <http://www.ccsindia.org/ccsindia/policy/money/studies/wp0028.pdf>

Joshi, V. and Little, I.M.D (1994). India: Macroeconomics and Political Economy 1964-1991. *Journal of Development Economics*, Vol. 53, Issue 1, 211-218.

Kalirajan, K. and Singh, K. (2007). A comparative Analysis of Recent Export Performances of China and India. *Asian Economic papers*, Vol. 7, No.1, 1-28.

Kumar, R. and Sengupta, A. (2008). Towards A Competitive Manufacturing Sector. ICRIER Working Paper No. 203.

Lal, A.K. and Lowinger, T.C. (2001). Nominal effective exchange rate and trade balance adjustment in South Asian countries. *Journal of Asian Economies*, 13, 371-383.

Lakshmanan, L., Chinngaihlian, S. and Rajesh R. (2007). Competitiveness of India's Manufacturing Sector: An Assessment of Related Issues. Reserve Bank of India Occasional Papers, Vol. 28, No. 1.

Liew, K.S., Lim, K.P. and Hussain H. (2003). Exchange rate and trade balance relationship: The experience of ASEAN countries. *International Trade* 0307003, EconWPA.

Mahadevan, R. (2003). Productivity growth in Indian agriculture: The role of globalization and Economic reform. *Asia-Pacific Development Journal*, Vol. 10, No. 2.

Mallick, S. and Marques, H. (2008). Exchange Rate Transmission into Industry-Level Export Prices: A Tale of Two Policy Regimes in India. *IMF staff papers*, Vol-55, No.1.

Mukherjee, D. and Majumder, R. (2007). Efficiency, Technological Progress and Regional Comparative Advantage: A Study of Organized Manufacturing Sector in India. *Asian-Pacific Development Journal*, Vol. 14, No. 2, 23-54.

National Skill Development Corporation, (2002). Human Resource and Skill requirements in the Electronics and IT Hardware Sector (2022)-A report.

Oskooee, M.B. (1986). Determinants of International Trade Flows: The Case of Developing Countries. *Journal of Development Economics*, 20 (1986), 107-123.

Pradhan, J.P., Das,K. and Paul,M. (2011). Export-Orientation of Foreign Manufacturing Affiliates in India: Factors, Tendencies and Implications. *Eurasian Journal of Business and Economics*, 4 (7), 99-127.

Pursell,G & Sharma, A(1996). Indian trade policies since the 1991/92 reforms. Mimeo, International Trade Division, World Bank.

Rajan,N.R. and Purandare, J. (2009). India's Competitiveness: the View from CEOs. Pricewaterhousecoopers (PWC) Report, India.

Rao, I. (2009). Organized the un-Organized? The Rise, Recession and Revival of the Indian Diamond Industry. Working Paper 2009-09-01, the Indian Institute of Management, Ahmedabad.

Reserve Bank of India- Annual Report (2007-08) on the Impact of Rupee Appreciation on India's Exports (with special focus on labour-intensive sectors)
http://commerce.nic.in/publications/annualreport_chapter3.asp

Sandiford, W. GATT and the Uruguay Round.

http://www.eccb-centralbank.org/Rsch_Papers/Rpmar94.pdf

Shirole,S. (2008). Impact of Financial Crisis on Financing Exports and Imports in India. Maharashtra Economic Development Council, Month Economic Digest, November 2008.

Sharma,K. (2003). Factors determining India's export performance. *Journal of Asian Economics*, 14, 435-446.

Sharma, C. and Mishra, R.K. (2011). Does export and productivity growth linkage exist? Evidence from Indian manufacturing industry. *International Review of Applied Economics*, Vol. 25, Issue 6.

Sinha Roy, S. and Pyne, P.K. (2011). Exchange Rate Pass-Through and India's export Prices. *Trade and Development Review*, Vol.4, Issue 1, 41-63.

- Smith, C.E. (1999). Exchange rate variation, commodity price variation and the implications for international trade. *Journal of Money and Finance*, 18, 471-491.
- Soman, M. (2011). Manufacturing in Perspective (2005-2011) & Prospects. Maharashtra Economic Development Council, Month Economic Digest, July 2011.
- Srinivasan, T.N. (2001). India's Reform of External Sector Policies and Future Multilateral Trade Negotiations. Yale University, Center Discussion Paper No. 830.
- Srinivasan, T.N. (2004). China and India- Economic Performance, Competition and Cooperation: An Update. *Journal of Asian Economics*, 15 (4), 613-36.
- Tendulkar, Suresh D. (1999). Exports in India's Growth Process. ICRIER Working Paper No.46.
- Thirlwell, M. (2006). Roaring Tiger or Lumbering Elephant? Assessing the performance, prospects and problems of India's Development Model. Lowy Institute paper.
- The Ministry of Finance, Government of India. Union Budget and Economic Survey.
- Wignaraja, G. (2011). Economic Reforms, Regionalism and Exports: Comparing China and India. East-West Center, Policy Studies, No. 60.
- Van Ark, B., Azeez Erumban, A., Chen, V. and Kumar, U (2008). The Cost Competitiveness of Manufacturing in China and India: An Industry and Regional Perspective. ICRIER Working Paper No.228.
- Verma, S. (2002). Export Competitiveness of Indian Textile and Garment Industry. ICRIER Working Paper No.94.
- Virmani, A. (2004). India's economic growth: From socialist rate of growth to Bharatiya rate of growth. ICRIER Working paper No. 122.
- Virmani, A. and Danish, A. (2011). J-Curve of Productivity and Growth: Indian Manufacturing Post-Liberalization. IMF Working Paper, WP/11/163.

Data Sources:

The data used in this paper has been sourced from the following databases:

1. COMTRADE Database: Annual data on aggregate and commodity-wise exports and imports

<http://comtrade.un.org/db/dqQuickQuery.aspx>

Note: The calculations for each of the sectors and commodities are based on the following classification and codes:

Sectors:

Agricultural goods and manufactured goods

Sectoral Classification - **SITC**

Sectors	Categories aggregated (SITC)
Agricultural goods	0–Food and Live Animals, 1- Beverages and Tobacco
Manufactured goods	3 – Mineral fuels, lubricants, 5– Chemicals, 6 – Manufactured goods classified by material, 7 – Machinery and Transport equipment
Others	2- Crude materials, except fuels, 4- Animal and vegetable oils, fats and waxes, 8- Miscellaneous manufactured articles, 9- Commodities and transactions not classified elsewhere in the SITC

Commodities:

Cotton, Gems and Jewelry and Electronic goods

Commodity Classification - **SITC**

Commodity	Commodity code (SITC)
Cotton	652 - Cotton fabrics, woven (not including narrow or special fabrics)
Gems and Jewelry ⁷⁰	667 – Pearls and precious and semi-precious stones, unworked or worked
Electronic goods ⁷¹ (aggregated)	716, 737, 761, 762, 763, 764, 771, 772, 773, 775, 776, 778

2. United Nations National Accounts Main Aggregates: Sectoral Composition of GDP (for India and other countries)
<http://unstats.un.org/unsd/snaama/selbasicFast.asp>
3. World Development Indicators: Share of Exports in GDP
<http://data.worldbank.org/data-catalog/world-development-indicators>
4. UNCTAD (United Nations Conference on Trade and Development) database: Share of merchandise and services in aggregate exports (for India and other countries)
http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx?sCS_referer=&sCS_ChosenLang=en
5. Reserve Bank of India- Handbook of Statistics: Annual data on the Real and Nominal Effective Exchange Rate (REER and NEER)
<http://dbie.rbi.org.in/InfoViewApp/listing/main.do?appKind=InfoView&service=%2FInfoViewApp%2Fcommon%2FappService.do>

⁷⁰ This category of gems and jewelry does not include gold and metal jewelry.

⁷¹ Electronic goods include components of industrial and electrical machinery, telecommunications and related apparatus and equipments.