China's Changing Export Structure: A Factor-Based Analysis

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While China's stellar export performance is a well-established fact, the issue of diversification of China's exports continues to be debated. There are differing opinions on the factor proportions in its exports. Some argue that exports continue to be labour-intensive, while others have found a reallocation in favour of more skill-based and sophisticated exports. This paper is an attempt to address the ongoing debate. The study finds that post-2001 China's exports have diversified. The major finding is that, based on the competitiveness analysis, the share of hi-tech manufactures has increased, while the share of unskilled labour-intensive products has gone down during 2001-06. Post-2001 hi-tech products command a share of 32% in China's total exports and 43% in China's total imports. This is indicative of the fact that imports of hi-tech parts and components are assembled in China to be exported as finished hi-tech goods.

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Over the past 20 years, China's increasing integration with the global economy has resulted in a faster growth in its exports as compared to the corresponding growth in world exports. China's export basket has diversified from an initial array of textiles and light manufactured goods to a wider spectrum that includes more sophisticated electronic goods and data processing equipment. Statistical indicators of dispersion indicate a significant increase in product diversification between 1994 and 2000 and some reversal during 2000-02 (Rumbaugh and Blancher 2004). The higher technology content of China's traditional exports during 1994 to 2001 has also been highlighted by Xu (2006), thus confirming a diversification in its export profile.

Export competitiveness and diversification are important determinants of successful integration of a country in the rapidly globalising world economy. A high degree of their achievement reflects relative cost advantages, superior product attributes and fewer trade restrictions. The determinants include price-related factors as well as qualitative attributes. The price-related factors include lower domestic wages or material costs, availability of labour, a favourable exchange rate, larger foreign direct investment (FDI) and management, and reduced cost of communication and transportation (Adams et al 2006). In addition, superior quality and product design are also believed to influence the international competitiveness of a country.

Competitiveness and diversification of a country's exports are generally evaluated by using various measures based on the growth rates of a country's exports of various categories as well as their shares in global exports. For instance, a relatively rapid growth of a country's exports vis-à-vis other countries or a rise in positive trade balance implies export competitiveness. Export diversification into non-traditional manufactured goods is desirable since international prices of primary goods and agricultural products are quite volatile and the relatively low-price periods may reduce the welfare of a country which depends heavily on such exports.

Traditionally, China enjoys a comparative advantage in labour-intensive manufactured exports. Export diversification by the large developing countries like China is a desirable phenomenon. If these countries produce mainly labour-intensive consumer goods in which they have a comparative advantage, the terms-of-trade of these goods are likely to decline, and, hence, the exporting countries would be net losers even if they export more volumes. China has learnt this and its exports have become more diversified with a rising share of manufactured goods (Bengtsson 2006).

However, there has been an ongoing debate about China's evolving export diversification. While some authors have argued that China's exports have diversified through an extensive margin others have pointed to the contrary stating that it is an intensive margin that has played a relatively significant role.

The rest of the paper is organised as follows. Section 1 presents a detailed and comprehensive review of literature. Sections 2 and 3 present the objectives and methodology and scheme of classification. Section 4 explains the concept of export dynamism. China's export and import composition and analysis of China's export dynamic products are also mentioned in this section. Section 5 provides the conclusion.

1 Review of Literature

China discovered its own relative strengths through identifying a few high-productivity activities, to begin with, and then using their success as a catalyst in pulling resources from low productivity to high productivity activities. It was through state-support and publicly funded research and development (R&D) that the erstwhile Legend Computers was transformed into Lenovo computers which purchased IBM's PC business in 2005. The domestic automobile industry was developed through requirements of indigenisation till China joined the World Trade Organisation (WTO) and had to do away with trade-related investment measures (TRIMS). However, by then the domestic component industry had become efficient enough such that it could meet much of the needs of the Chinese auto manufacturers (Sutton 2005). All this could happen because of the nature of the Chinese political system as well as the determined and positive approach of the national and local governments to encourage the worthy and discard the inefficient production units. In the absence of such a positive attitude, the new experiments would have led China into complete chaos of inefficiency. The low labour costs combined with outward orientation through successful special economic zones (SEZS) added further fizz to China's manufacturing success. China's own markets also ensured that firms could adopt scale economies. Thus, China used careful state support to nurture and mimic the free play of market forces wherever and whenever required. While government support had been conducive till China joined the WTO in 2001, it may need careful appraisal to ensure if the model needs to be changed from planning to the markets so as to sustain the demonstrated levels of economic success in the past. The past success has been on the back of government policies, export-orientation and industrial policies adopted by China.

Much of the strong export performance of China merchandise exports during the 1990s had accrued to the labour-intensive products (UNCTAD 2002). These products largely consisted of footwear, textiles and clothing, toys, travel goods and sporting goods. However, China's involvement in assembly of technology-intensive products such as telecommunication equipment and computers started increasing during the early years of 2000s. In more recent years, substantial expansions have been made in the exports of more sophisticated electronics such as office machines and automated data processing equipment and other industrial supplies.

The shift in favour of technology-intensive products became evident from the rising shares of exports of machinery and transport equipment including electronics. While such exports accounted for only 17% of the total in 1993, these reached 41% in 2003. The share of miscellaneous manufacturing declined from 42% to 28% during the same period. Based on 2-digit Standard International Trade Classifications (SITC), a significant increase in China's export diversification was observed during 1994-2000 both at in overall terms and in China's exports to the United States (US), the European Union (EU) and Japan (Rumbaugh and Blancher 2004).

Rodrik (2000) concludes that "China is an outlier in terms of the overall sophistication of its exports: its export bundle is that of a country with an income per capita level three times higher than that of China". China has been able to export high-productivity goods much at divergence from what a developing labour-abundant economy would normally be expected to achieve. There is a crucial difference between how much a country exports and what it exports. The extent to which China's sophisticated export basket has been influenced by its liberal policy regime is not apparent. China has, indeed, been adopting the policies of promotion and protection similar to what the other newly industrialised east Asian countries had done. China, in fact, has experienced extremely rapid growth in sophistication of its export basket since the early 1990s.

China's sophisticated export basket seems to have resulted from the strong demonstration effect which arises when a country discovers that there exist a number of high productivity exportables through examples set by a few successful firms. This attracts new investments and firms into these sectors and pulls up economy's resources from relatively low productivity sectors to relatively high productivity sectors. One of the more successful stories of China's export sophistication relates to consumer electronics. While low labour costs might have been one of the reasons, there are other reasons too. China has encouraged foreign investment and provided supportive and conducive policy environment to their entry, establishment and growth. Foreign investors have been provided with good infrastructure through locating them in SEZ. The success of these firms might have generated the demonstration effect on the domestic firms to transform their production activities in favour of sophisticated production. In fact, the objective of encouraging and nurturing domestic firms has been one of the major reasons at the back of attracting foreign investment.

These findings contradict those of Wood and Jorg (2001) where it was argued that China's export performance of skill-intensive products was below what would be expected on the basis of its factor endowments.

It has been observed that neither processing trade nor FDI-enabled firms have played a major role in generating the increased similarity between China's export-structure with that of high-income countries. The rising sophistication of China's exports has been facilitated through the upgradation of human capital and government policies (Wang and Wei 2008).

While not trying to exactly devise a segregation scheme for China's exports, Xu (2006) has measured the technology content of exports (TCE) of China to the US. The approach involves incorporating technology sophistication across products and the

variation of quality ranking of products across the country. The qualitative characteristic is captured with the help of a relative unit value of the country's exported good. The TCE, in turn, is determined by accounting for both technology and quality factors, in addition to a multiplier, which in turn, is an increasing function of the relative unit value index. The TCE was designed to best reflect the R&D intensities. The results have highlighted the significance of considering the variations in varieties or the quality of exports, ignoring which is likely to overestimate the technology sophistication of Chinese exports. The upgradation of export structure was assessed by comparing China's TCE with that of world under the broadest categories of traditional and newly added goods in the overall export basket. The TCE for newly added goods was found to be significantly high though with a reduction over the late 1990s. This was accompanied by a significant growth in TCE of China's traditional exports.

It has been found that the Chinese trade structure during 1993-2004 evolved due to China's integration into the international production processes through production sharing with Asian countries and specialisation in assembly operations (Lemoine and Unal-Kesenci 2004; Gaulier et al 2004). Asian trade has increasingly got centred in China affecting trade patterns of Japan and newly industrialised economies (NIEs) of Hong Kong, South Korea, Singapore and Taiwan. However, China's terms-of-trade have been declining since 1995 and there is an issue of sustainability of China's export growth in future.

Exports of machinery and electronics together have increased most rapidly. Both these sectors involve high-technology, low transport costs and potential for production sharing through "slicing up the value chain". The electronics sector has a relatively high dominance of FDI as compared with the machinery sector (Zhao et al 2007).

Using one and two-digit SITC data, Amiti and Freund (2007) have analysed the changing anatomy of China's export growth and have found a dramatic restructuring, but not much diversification over the period 1992 to 2006. The shares of agriculture and soft manufactures including textiles and apparel have gone down, while those of hard manufactures including consumer electronics, appliances and computers have gone up. The share of such goods at 20% in 1992 increased to 50% in China's exports in 2006. While there has been vast reallocation in China's export basket, yet the diversification has not increased. Exports remained highly concentrated in a small fraction of goods even though the particular goods have changed. While traditional trade theory emphasises the expansion of existing varieties (the intensive margin) as the major source of export growth, the new trade theory lays more emphasis on expansion of the number of export varieties (the extensive margin). The extensive margin is the additional source of welfare gains from trade. Using the highly disaggregated data on China's exports to the US it is found that less than 15% of the export growth was in new varieties implying a relatively small gain in an extensive margin. Thus, a large proportion of China's exports to the US accrued through an intensive margin. Though export product specialisation has increased marginally, there has been an increased diversification across export destinations. Moreover, if one excludes processing trade, there is weak evidence that the value-added of the China's exports has become more skill-intensive. Amiti and Freund point out that these results are in line with China's intensive use of its most abundant factor of production, viz, unskilled labour.

The dramatic growth of Chinese exports has attracted global attention. The traditional argument explaining such a high export growth has been the discounted price of Chinese exports, primarily on account of its labour surplus. However, recent studies have highlighted the increasing technology content of Chinese exports. Moreover, the Chinese government has expressed its intentions to augment the export mix by upgrading the processing trade. In this context, it becomes relevant to undertake a rigorous check whether the export pattern of China has diversified over the years? Is abundant labour, the only factor in China's exports success story or have there been quality improvements that have resulted from a better design and technology adoption?

2 Objectives

While China's stellar export performance is a well-established fact, the issue of diversification of its exports continues to be debated. There are differing opinions on the factor proportions in its exports. Some argue that the exports continue to be labour-intensive, while others have found a reallocation in favour of more skill-based and sophisticated exports. In fact, some recent works have differentiated between diversification and mere reallocation by observing that China's export basket has undergone a structural change, but a large portion of exports remain concentrated in a few products.

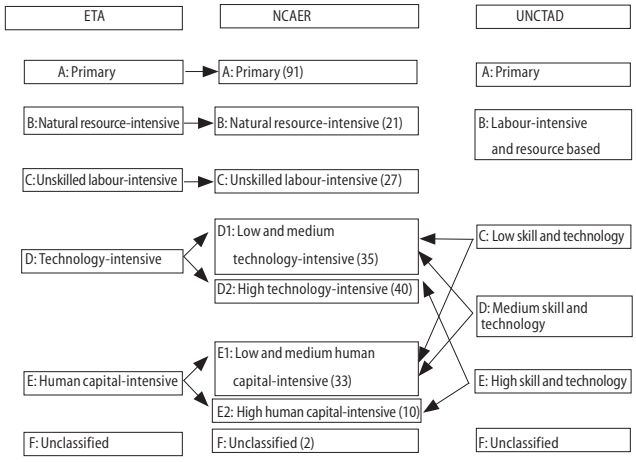
This paper is an attempt to address the ongoing debate on China's export diversification and the lessons to be drawn for India. It has undertaken a comprehensive evaluation of China's export diversification since 2001 and studies the changes in the sectoral composition of China's exports in different categories of exports based on the SITC, export classification criteria that adopts the structure of the Harmonised System (HS), so that the smallest modules of the SITC are defined by the HS subheadings. The data are extracted from Comtrade using the World Integrated Trade Solution (WITS) interface.

3 Methodology and Scheme of Classification

The items of a country's export basket may be segregated based on a mix of five factors, namely, skill, scale, resource/endowment factors, technology content and the stage of the final product stage (UNCTAD 1996). The segregation based on skill levels attempts to group industries on the basis of their requirements of skilled or unskilled manpower. Groupings based on the scale of production refer to the large, medium or small-size companies. The segregation based on endowment factors attempts to differentiate the more capital-intensive industries from the less capital-intensive ones or more labour-intensive industries from the less labour-intensive ones. The classification based on the technology content is primarily used to assess the quality of exports in the low, medium or high technology segments by accounting for the direct and indirect technology content of such exports. The segregation based on the stage of production distinguishes items by their use between raw materials, semi-finished or finished items.

Using the Empirical Trade Analysis (ETA) and UNCTAD export classification schemes, mapped to SITC Revision 3, we have designed a scheme with a view to segregating Chinese exports. The basic methodology distinguishes the main groups/categories according to their factor content. The group segregation scheme adopts the ETA scheme for product Groups A, B and C; but D and E have been subdivided into D1 and D2, and E1 and E2, respectively based on information used from the UNCTAD classification. This enables us to distinguish between the low-medium technology and high technology-intensive products on the one hand, and low-medium and high human capital-intensive products on the other (Figure 1).

Figure 1: Classification Scheme



The numbers in brackets are the SITC three-digit products that fall under the particular category.

The scheme defines exports into the categories embodying:

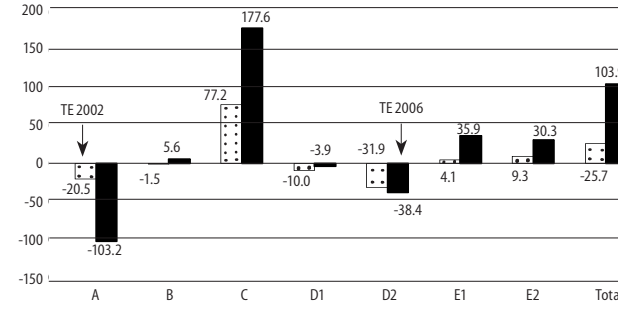
- Product Group A: Primary products (91).
- Product Group B: Natural-resource intensive products (21).
- Product Group C: Unskilled-labour intensive products (27).
- Product Group D1: Low and medium technology intensive products (35).
- Product Group D2: High technology intensive products (40).
- Product Group E1: Low and medium human-capital intensive products (33).
- Product Group E2: High human-capital intensive products (10).
- Sectors not classified according to intensity F: (2).

4 Export Dynamism

We attempt to address the debate on China's changing export composition by identifying the dynamic products in China's export basket. The exports of products of a country with fast growth over a period of time are referred to as dynamic exports. It is important to identify such performers as these would eventually contribute significantly to the overall export earnings of a nation. Moreover, their dynamism indicates the future opportunities in exports vis-à-vis other products.

The export dynamic products can be recognised by setting an arbitrary cut-off for a list of products that are sorted according to their growth rates over the given time period. The products with growth rates exceeding the cut-off are then classified as dynamic exports. In our analysis the benchmark to determine export dynamic commodities is the total export growth of China.

Figure 2: China's Groupwise Trade Balance (Billion $)



A: Primary
B: Natural resource-intensive
C: Unskilled labour-intensive
D1: Low and medium technology-intensive
D2: High technology-intensive
E1: Low and medium human capital-intensive
E2: High capital-intensive

We could have used two criteria for identifying China's dynamic export categories: (1) matching with average growth rates of China's total exports over the period 2001-06 as the benchmark; (2) matching with each year's growth rate of China's total exports during 2001-06. While the first criterion identifies dynamic products as those whose average annual growth rate during 2001-06 is above the average annual growth rate of China's total exports over the same period. The second criterion is a strict test which identifies dynamic products as the ones which have their annual growth rate above China's total annual export growth rate in each of the six years under consideration, viz, 2001 to 2006.

4.1 China's Trade Composition

We have analysed China's major trading partner countries/regions including the Association of South-East Asian Nations ASEAN-4,[1] EU-25, Newly Industrialised Economies NIE-4, Japan and the US for all product categories over the two annual average periods of the triennium ending 2002 (TE-2002) and TE-2006.[2] Within the product group categories, China has a huge trade deficit in primary products (Group A) and a high trade surplus in unskilled-labour-intensive products (Group C) (Figure 2). While it had some deficit in natural resource-based products (Group B) in TE-2002, the same had become positive in TE-2006. It has a deficit in technology-intensive products. While the deficit in low and medium technology-intensive products (Group D1) declined during TE-2002 to TE-2006 the same increased in the case of high technology-intensive products (Group D2). China has a trade surplus in human capital (skilled labour-intensive products) both in low and medium human capital-intensive products (Group E1) as well as in high human capital-intensive products (Group E2). It

Figure 3: China's Regionwise Trade Balance (Billion $)

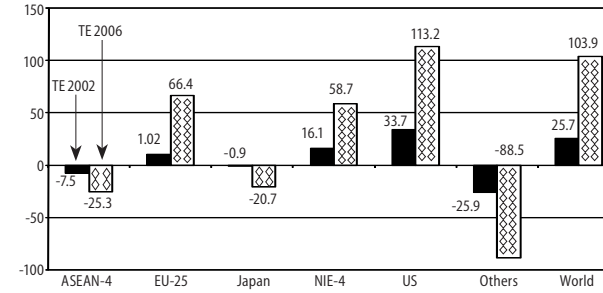


Table 1: Export Composition of China: Regionwise

	China's Exports to Corresponding Regions (Average Values in Shares)								
	TE 2002								
Regions	A	B	C	D1	D2	E1	E2	F	Total
ASEAN-4	16.8	2.9	14.2	16.0	34.5	11.1	4.5	0.0	100.0
EU-25	6.2	3.7	31.3	15.8	27.1	10.9	5.0	0.0	100.0
Japan	18.3	4.6	38.1	11.2	18.2	6.3	3.3	0.0	100.0
NIE-4	8.1	5.1	28.3	14.7	30.0	10.0	3.8	0.0	100.0
US	3.6	2.2	37.4	15.8	21.7	13.1	6.3	0.0	100.0
Others	11.9	3.7	38.2	13.8	15.6	11.8	4.0	1.0	100.0
World	9.6	3.8	33.6	14.4	23.3	10.6	4.5	0.2	100.0
						TE 2006			
Regions	A	B	C	D1	D2	E1	E2	F	Total
ASEAN-4	11.5	4.4	12.4	16.4	38.1	15.0	2.1	0.0	100.0
EU-25	4.3	3.4	24.9	14.5	36.8	11.2	4.8	0.0	100.0
Japan	14.0	5.5	28.4	14.5	25.8	8.1	3.6	0.0	100.0
NIE-4	4.7	5.2	18.1	14.4	44.8	7.5	5.2	0.0	100.0
USA	2.9	2.7	27.8	13.7	31.5	14.3	7.0	0.0	100.0
Others	7.3	4.9	33.0	15.5	19.7	14.9	3.9	0.8	100.0
World	6.1	4.3	25.9	14.6	32.1	11.9	4.9	0.2	100.0

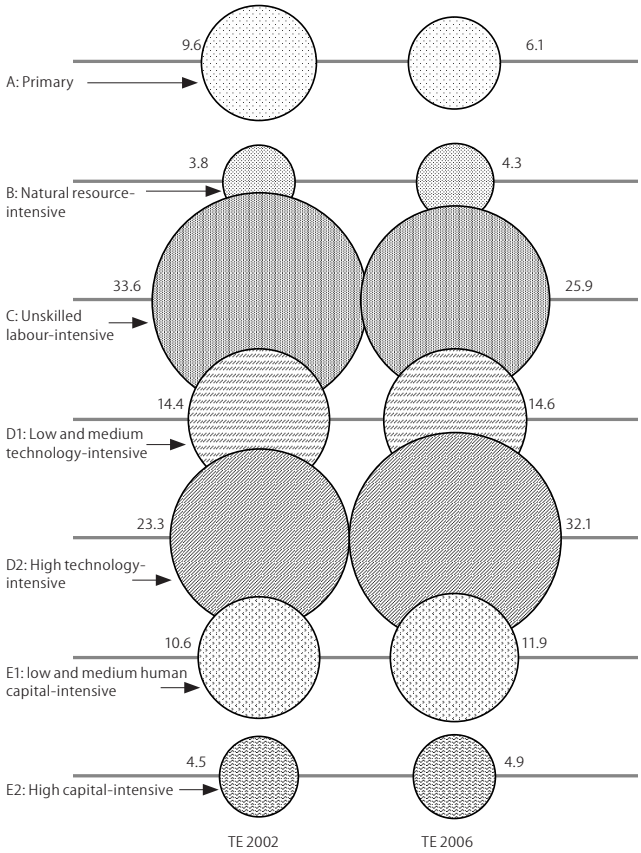
Source: UN Comtrade database.

may, thus, be noted that China continues to export relatively more of labour-intensive products (Groups C, E1 and E2) to the world in comparison with technology-intensive products (Groups D1 and D2).

China's trade surplus with the world, increased from $25.6 billion in TE-2002 to a whopping $103.9 billion in TE-2006 (Figure 3, p 133). China has an overall trade surplus with all its major trading partners taken together, it has a trade deficit with the rest-of-world. While China has a trade deficit with ASEAN-4 and Japan, it has a trade surplus with EU-25, NIES-4 and the US. There has been a sharp increase in China's trade deficit with Japan during TE-2002 to TE-2006. While China's trade surplus with EU-25 has posted a more than sixfold increase between TE-2002 and TE-2006, it has declined to one-third in the case of the US. The trade surplus with NIE-4 has also posted a smart increase. This implies that China is a net exporter to EU-25, the US and NIES-4 and a net importer from ASEAN-4, Japan and rest-of-world. Thus, China has relatively strong export penetration, vis-à-vis its imports, into the most developed countries/regions of the world, viz, the US, EU-25 and NIE-4 as compared with the less developed countries/regions.

With regard to the five major trade partner countries/regions, China has a trade surplus with most of them in labour-intensive product categories (C, E1 and E2) in TE-2006 with Japan as the only exception for Group-E1. In the case of primary products (A) China has a major trade deficit with ASEAN-4 and the US but a surplus with EU-25, Japan and NIE-4 with a relatively high surplus with Japan. In the case of technology-intensive products, China has a trade deficit with EU-25 and Japan in Group-D1 and with ASEAN-4 and Japan in Group-D2. These deficits are significant in the case of Japan (D1 and D2) and ASEAN-4 (D2). There has been a significant export penetration by China into the US and the NIE-4 in TE-2006 over TE-2002. China had a trade deficit with the rest-of-world in TE-2002 as well as in TE-2006. It has a large deficit with the rest-of-world in product Groups A and D2 followed by Group-B. It has a surplus in labour-intensive products groups (C, E1 and E2) as well in low and medium technology-intensive products (D1). This implies that China was dependent on supplies of primary products from ASEAN-4 and the US both in TE-2002 as well in TE-2006. It is the net exporter of natural-resource-intensive products to all its major trading partners except for the ASEAN-25. China is a net exporter of labour-intensive products to all its major trading partners (except Japan in Group-E1) as well to the rest-of-world.

Figure 4: China's Groupwise Export Composition (%)



4.2 Composition of Exports

One way of looking at export shares is to compute the regionwise composition of exports of various product groups (Figure 4). It may be observed that unskilled labour-intensive products

Table 2: Import Composition of China: Regionwise

	China's Imports from World and Regions (Average Values in Shares)								
						TE 2002			
Regions	A	B	C	D1	D2	E1	E2	F	Total
ASEAN-4	28.6	5.1	3.0	13.3	41.5	5.0	3.3	0.0	100
EU-25	6.9	4.9	2.9	37.1	33.3	13.5	1.4	0.0	100
Japan	3.6	2.7	8.4	29.6	39.8	14.2	1.7	0.0	100
NIE-4	5.3	4.8	12.4	20.1	45.0	10.3	2.1	0.0	100
US	18.0	2.2	1.6	19.0	52.3	6.0	1.0	0.0	100
Others	37.2	6.6	6.8	8.7	30.0	8.4	0.4	2.0	100
World	18.6	4.8	6.7	19.8	38.2	10.0	1.3	0.0	100
						TE 2006			
Regions	A	B	C	D1	D2	E1	E2	F	Total
ASEAN-4	20.6	2.6	1.5	5.7	66.0	2.9	0.6	0.0	100
EU-25	6.7	4.4	2.6	39.6	29.6	15.7	1.3	0.0	100
Japan	4.0	2.6	4.8	30.9	41.1	14.9	1.7	0.0	100
NIE-4	5.4	3.5	5.9	14.7	61.4	8.0	1.1	0.0	100
US	24.5	1.9	1.6	19.7	44.4	6.9	1.1	0.0	100
Others	40.1	5.5	2.9	9.4	35.1	5.3	1.0	0.7	100
World	22.5	4.1	3.4	17.5	42.8	8.3	1.1	0.0	100

Source: UN Comtrade.

(Group-C) and high technology-intensive products (Group-D2) are two of the most important categories of China's exports to the world. The share of Group-D2 in China's exports to the world constituted 32% in TE-2006 (up from 23% in TE-2002). The corresponding share of Group-C was 26% in TE-2006 (down from 34% in TE-2002). The corresponding change in exports of Group-A was from 10 to 6% during TE-2002 and TE-2006. The shares of Groups B, C, E1 and E2 remained relatively stable during the 2000s. In TE-2006, the share was 4% for Group-B, 15% for Group-D1, 12% for Group-E1 and 5% for Group-E2. The share of high human capital-intensive products (E2) is relatively small in China's export basket. While the share of technology-intensive products (Groups D1 and D2) was 47% in China's exports to the world, labour-intensive products (Groups C, E1 and E2) accounted for 43% of China's exports in TE-2006. However, a large chunk (26% out of 43%) of labour-intensive products was that of unskilled labour-intensive products. The corresponding shares were 38% of technology-intensive products and 49% of labour-intensive products (including 34% of unskilled-labour-intensive products), respectively in TE-2002. However, it may be observed that large chunks of China's exports to the world are either unskilled labour-intensive products (Group-C) or high technology-intensive products (Group-D2). The share of low and medium technology-intensive products (D1) is 15% and that of low and medium human capital-intensive products is 12%. High skilled human capital-intensive products (Group-E2) constitute a very small share of 5% in China's exports.

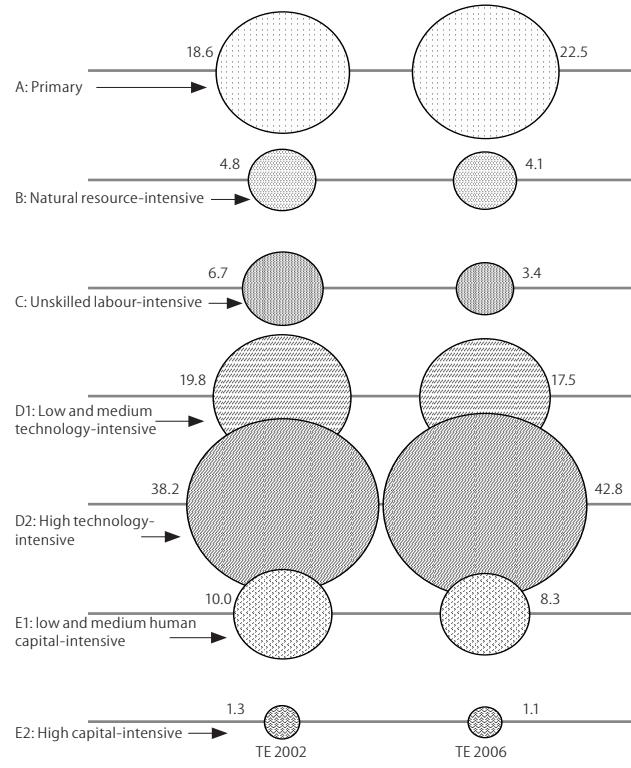
While the composition of China's exports to its major export destinations is quite in line with China's export composition to the world, there are some variations in certain regions (Table 1, p 134). The shares of exports to ASEAN-4 and Japan are relatively high within China's total exports to these destinations. The share of exports of Group-B is relatively low in China's exports to the US. The corresponding shares for Group-C are relatively low in for ASEAN-4 and NIE-4. The shares of Group-D2 are relatively high in the case of NIE-4 and ASEAN-4, and relatively low for Japan. The shares of Group-E1 are relatively low in Japan and NIE-4 and high for ASEAN-4 and the US. It may thus be noted that Groups C and D2 have important shares in China's exports to its major destinations. These are two extreme cases: one of unskilled labour-intensive products (Group-C), and the other, of high technology-intensive products (Group-D2). While the story of exports of labour-intensive products is line with factor abundance of unskilled labour in China that of technology-intensive exports is a subject of major debate. While some analysts put forward the presence of FDI-enabled firms in China as the major reason for China's success in exporting high technology-intensive products, others argue that China has become an assembly platform for hi-tech components being imported from its major trading partners including, NIE-4, the US and ASEAN-4.

Table 3: China's Dynamic Exports to World SITC 3-Digit Level (2006)

S No	Code	Product Name	Average Annual Growth of China's Export to World (%) (2001-2006)	Triennium Averages: IRCA TE 2002	Triennium Averages: IRCA TE 2006	Triennium Averages of Shares of China's Export to World TE 2002	Triennium Averages of Shares of China's Export to World TE 2006
1	764	Telecomm equipment nes	38.27	1.73	2.41	5.643	8.123
2	761	Television receivers	47.26	1.26	1.89	0.618	1.122
3	662	Clay/refractory material	48.59	0.81	1.50	0.144	0.256
4	811	Prefabricated buildings	96.24	0.13	0.76	0.006	0.043
5	745	Non-electr machines nes	41.36	0.45	0.68	0.181	0.281
6	681	Silver/platinum, etc	62.92	0.45	0.61	0.076	0.142
7	812	Sanitary/plumb/heat fixt	51.27	0.34	0.59	0.036	0.071
8	749	Non-elec parts/acc machn	32.23	0.43	0.58	0.110	0.131
9	742	Pumps for liquids	37.49	0.39	0.49	0.130	0.177
10	581	Plastic tube/pipe/hose	44.58	0.26	0.41	0.029	0.051
11	675	Flat rolled alloy steel	101.05	0.06	0.25	0.021	0.121
12	583	Monofilament rods/sticks	57.59	0.09	0.20	0.003	0.008
13	726	Printing industry machny	43.05	0.10	0.19	0.022	0.036
14	781	Passenger cars, etc	102.52	0.00	0.02	0.009	0.108
15		Total	25.78	1.00	1.00	7.029	10.670

Source: UN Comtrade.

Figure 5: China's Groupwise Import Composition



4.3 Composition of Imports

A way of looking at import shares is to compute regionwise composition of imports of various product groups (Figure 5). It may be observed that unskilled-labour high technology-intensive products (Group D2) and primary products (Group-A) are two of the most important categories of China's imports from the world. The share of Group-D2 in China's imports from the world constituted 43% in TE-2006 (up from 38% in TE-2002). The corresponding share of Group-A was 23 in TE-2006 (up from 19% in TE-2002). The share of Group-D1 declined from 20% in TE-2002 to 18% in TE-2006. The corresponding change in imports of Group-C was from 7% to 3% during TE-2002 and TE-2006. The shares of other groups remained relatively stable during the 2000s. In TE-2006, the share was 4% for Group-B, 8% for Group-E1 and 1.1% for Group-E2. The share of high human capital-intensive products, Groups E1 and E2, is relatively small in China's import basket.

While the share of technology intensive products (Groups D1 and D2) was 60% in China's imports from the world, labour-intensive products (Groups C, E1 and E2) accounted for 13% of China's imports in TE-2006. Thus, primary products and technology-intensive products together constituted more than four-fifths of China's total imports in TE-2006.

While the composition of China's imports from its major sourcing regions is quite in line with China's import composition from the world in 2006, there are some variations in certain regions (Table 2, p 134). Significant variations have been observed in Groups A, D1, D2 and E1. The shares imports of Group-A products are relatively low from EU-25, Japan and NIE-4 as compared to imports from the world. In the case of imports of Group-D1, the share of imports from ASEAN-4 is relatively low and the shares of EU-25 and Japan are relatively large. The shares of China's imports of D2 are relatively large from ASEAN-4 and NIE-4. The shares of imports of E1 are relatively high in EU-25 and Japan and relatively low in ASEAN-4. China, thus, imports large chunks of Groups A, D1 and D2 within its import basket.

4.4 Analysis of China's Dynamic Exports

An analysis of export dynamic commodities at the 3-digit level of SITC classification has also been carried out. It is found that there are 14 export dynamic commodities at the 3-digit level whose export growth is greater than the average growth rate of China's exports during each of the six years 2001-06 (Table 3, p 135). This analysis shows that electronic and electrical equipment; iron and steel products; plastic products; pre-fabricated buildings; passenger cars; and machinery and engineering goods are the export dynamic commodities. Out of 14, only two commodities have International Revealed Comparative Advantage less than one and also increasing leading to an increase in their share of China's exports to the world from TE 2002 to TE 2006. These include telecom equipment and television receivers.

5 Conclusions

The share of hi-tech products (Group-D2) is 32% in China's total exports and 43% in China's total imports. This is indicative of the fact that imports of hi-tech parts and components are assembled in China to be exported as finished hi-tech goods. Imports of hi-tech products are sourced mainly from NIE-4, Japan and ASEAN-4 and exported mainly to NIE-4, EU-25 and the US, i e, to the developed world. Even in the case of low and medium technology-intensive products (Group-D1), their share in China's imports at 18% is higher than that of their exports at 15%. In the case of unskilled labour-intensive products (Group-C) these constitute 26% share in China's exports but only 3% in China's imports. The share of low and medium human capital-intensive products is 12% in China's exports, but only 8.3% in China's imports. The corresponding numbers are 5% and 1%, respectively in the case of high human capital-intensive products.

In sum, alongside exporting primary commodities and unskilled labour-intensive products and natural resource-intensive products, China has also considerably increased and diversified its export basket by exporting more and more of low and medium and high technology-intensive products and also products of low, medium and high human capital-intensive products. But the interesting observation from the study is that this move or shift is a conscious effort on the part of China to export hi-tech commodities to its major trading partners. Although the skill content of China's exports has increased this does not necessarily mean that there has been any skill upgrading in China's production techniques. Instead, China has been importing intermediate inputs with higher skill content that it then assembles for exporting, which several studies in recent times have reported. The major finding is that, based on the competitiveness analysis, the share of hi-tech manufactures has increased while the share of unskilled labour-intensive products has gone down during 2001-06.

NOTES

1 ASEAN-4 refers to the grouping of Indonesia, Malaysia, the Philippines and Thailand; NIE-4 refers to the grouping of Hong Kong, Singapore, South Korea and Taiwan.

2 Triennium ending (TE) 2002 refers to the years 2000 to 2002. Similarly TE-2006 refers to years 2004 to 2006. Three-year averages have been taken to smooth out fluctuations in the data.

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