

# Dynamics of export competitiveness of India and China: a study of HS 6-digit manufacturing exports

Export  
competitiveness  
of India and  
China

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## Abstract

**Purpose** – The export competitiveness has only calculated on only two aspects either comparatively advantageous or comparatively disadvantageous products for India or China. There is not any thorough study that has been undertaken for Indian manufacturing sector at a segregated level along with that of China. So, in the light of these shortcomings, the purpose of this study is to analyse the dynamics of export competitiveness of Indian manufacturing sector *vis-à-vis* its emerging counterpart, China in the global market.

**Design/methodology/approach** – A modified revealed comparative advantage index has been used in two different phases of 2001–08 and 2010–18 to find the dynamic pattern of manufacturing exports of India and China in the world market.

**Findings** – The study revealed that India has shown a positive response in increasing its competitive positioned products from low-technology to medium-technology products during the study period. There has been a decline in the competitive positioned products of China and simultaneously China's threatened product lines have shown an immense increment over the years. Moreover, Indian exports are concentrated to few low-technology and resource-intensive products, that share more than 50% of total exported value for its manufacturing in the global market, whereas, China is much diversified and the exported value is more scattered over its manufactured items.

**Research limitations/implications** – The study does not include the factors that impacted the export competitiveness of the sample economies and thus adds a limitation to this study.

**Originality/value** – As there is very limited research on dynamics of export competitiveness of Indian manufacturing exports at harmonised system 6-digit level with China, this study fulfils the gap.

**Keywords** Export competitiveness, Revealed comparative advantage (RCA), India, China, Manufacturing, Technology

**Paper type** Research paper

## 1. Introduction

The better performance of exports and trade specialisation of an economy portrays its level of competitiveness and makes it an influential state in the international market (Zaghini, 2003; Borozan and Pfeifer, 2006). The world has witnessed a dramatic change in both the composition and volume of global trade during the past few decades and so did the economies of India and China. India and China after opening up to the world market made advancement in their respective economies along with the advancement of their trading



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patterns and strategies. Both these economies benefitted with their export growth and a supportive role had been played by these exports in securing their respective foreign exchanges and meeting the international payments. China gradually integrated into the world market after reforming her economy in 1978. Since then, the rise of Chinese products is very common in almost every part of the globe. Unlike India, China has mostly invested in manufacturing industries and, therefore, this sector has a very good contribution in the Chinese GDP and has a rising share in the world market as well. Based on comparative advantage in labour wages, China transformed itself into a huge manufacturing hub. In 2011, China took the lead in manufacturing production and left behind the USA and thus took the first spot in the global market of manufacturing. It is also looking to be a world manufacturing powerhouse by 2025 by using every resource to boost the manufacturing competitiveness (Lee *et al.*, 2018). Likewise, the Indian economy was relatively a closed economy till early 1990s with high import tariff rates more than 80% and some 90% tradable commodities were protected by qualitative restrictions (Chadha *et al.*, 2003). The Indian economy reformed its trade structure in 1991 and progressively cut down the tariff rates as well as non-tariff barriers, paving a way for openness to global trade. However, the economic progress of India has mostly been attributed to its service sector that is considered the strongest part of Indian economy, and hence, less attention had been given to the manufacturing or industrial structure as a part of international trade liberalisation. The manufacturing competitiveness is hence a need for Indian economy to gain the international market like its emerging rival, China.

With the dawn of globalisation, along with the strategies of liberalisation and privatisation, the whole world has become a big manufacturing hub. However, only limited commodities in the modern world are actually enjoying absolute and comparative advantage. Most of the newly developed countries are now emerging as new hub of production and challenging conventionally endowed countries, as far as exports and their competitiveness are concerned. Export competitiveness has significantly emerged as an important part of export strategy of any nation. Competitiveness has been defined as the set of institutions, policies and factors that determine the level of productivity (World Economic Forum, 2013–14). Export Competitiveness can thus be defined as the policies and factors of any nation that enable the economy to expand its exports in the world market efficiently than its rival counterparts. Besides this, trade specialisation arising from competitive advantage must continue with the trade pattern to enhance productivity and progress of the economy (Kling, 2016). Specialisation in trade has also been bringing benefits and creating new policy challenges for the economies of the globe (Johansson and Olaberria, 2014).

Two giant economies of Asia, viz. India and China, have shown a meteoric rise over the past few decades mainly with the opening up of their respective economies to the global market and has been purposively selected for this study with many reasons, mentioning few. Firstly, it is not possible to study globalisation without taking into account these emerging economies of India and China (Huchet *et al.*, 2007). The astonishing economic renovation of the two Asian Giants has made the world to think and consider them as the leading economies, not by choice but by the figures these nations have produced in terms of trade and GDP. The said nations are not only large but have a strong domestic market, which has got ample space for diversified industrialisation and trade. These economies are known for their emerging markets because of their economic performance and potential for hasty growth. There are many unfavourable similarities between these two economies, considering few such as poverty and low standard of living that affect large populace in these economies. However, both these economies enjoy a large pool of workforce and abundant natural resources.

Secondly, the developed economies have often witnessed meltdowns, and hence, there is a need to focus on emerging and developing economies such as India and China. Both these economies have got absorption power as well as potential to create and innovate in new dimensions such as technology, manufacturing and software. This study would help in earmarking areas where India is confronted with difficulties in coping up with the pace of China as far as export competitiveness is considered. The Prebisch–Singer hypothesis provides a theoretical base for the developing countries to focus and trade the manufactured goods (Pal, 2014). Given the prediction regarding long-term deterioration of terms of trade of the developing nations such as India, a trade deficit economy, it becomes necessary to focus on the export competitiveness of its manufacturing sector in the world market.

Thirdly, the Indian economic growth has been mainly attributed to the service sector, when there is also an untapped potential of manufacturing as well. The main exports have been low-technology-based product lines and India has tried hard to find a way to share advanced high-value added products to the world market. So, this study is going to find out what dynamic transformation has taken place in Indian manufacturing in contrast to China in the world market. So, in the context of many structural changes of trading pattern in India and China after Chinese accession to WTO in 2001, this study would be analysing the dynamics of export competitiveness of these economies in their manufacturing products in two different phases of 2001–08 and 2010–18, deserting the global crisis impacted period of 2009.

## 2. Review of literature

The literature on export competitiveness is voluminous but few important and recent studies that would reflect the past background of this study are highlighted in Table 1. Apart from recent researches, other studies include Jones (1994), Murtha and Lenway (1994), Enright *et al.* (1999) and Pillania (2009), which studied export competitiveness at country levels. Similarly, Mitchell *et al.* (1993), Alon and Fetscherin (2007), Fetscherin *et al.* (2010) and Alon *et al.* (2011) studied export competitiveness at the industry levels. The firm-level export competitiveness researches include Salomon and Shaver (2005), Batra and Khan (2005), Pillania (2006), Yip *et al.* (2006) and Srivastava (2006).

Most of the empirical research is related to only few aspects of export competitiveness and very limited research is found on the dynamic pattern of export competitiveness of Indian manufacturing along with the fastest emerging economy of China. Following early entry into the low-technology products, China has steadily upgraded its export production to medium and high-technology products. However, India remained at the backfoot in exporting the high-value added product lines to the world market. China was found competitive in unskilled and labour-intensive products such as textiles, apparel and shoes in the early years after its reforms in 1978 when other Asian economies such as Japan and Korea were comparatively advantageous in high technology production. China gradually absorbed the competitive structure and the shifting of comparative advantage took place more rapidly after it joined World Trade Organisation in 2001. Most of the global manufacturing is now being produced in China (Krueger, 2020). India, on the other hand, experienced a poor export performance because of the negative impacts of the pre-reforms period which provided a poorer economic base for India. However, after 1991, India progressed smoothly and gained competitiveness in their traditionally competitive low-technology products such as textiles and garments along with some high value-added manufacturing such as chemicals and pharmaceuticals (Batra and Khan, 2005; Ganai and Sarin, 2020). Other studies found that India had been comparatively competitive in carpets, silk and pearls. Besides this, the empirical research also shows that India has notably shown a rise in the chemical and engineering products, whereas the traditional export basket of textiles and leather products share a declining percentage in India's

**Table 1.**  
Summary of review  
of literature on  
export  
competitiveness of  
India and China

Reference	Country/region	Period	Methodology	Results
Ganai and Bhat (2021)	India and China	2001–18	Dynamic RCA	Dynamic competitiveness increased for both the economies, but Chinese products showed more responsiveness than India's to declining demand
Ganai and Mir (2021)	India and China	2010–18	LFI, regression and variance analysis	India moved from 109 to 133 high-tech specialised products during the period, whereas China moved from 200 to 247. Both nations share a significant structural stability in the global market
Abdullahi <i>et al.</i> (2021)	Nigeria	1995–2018	Relative export competitiveness (REC) and short-run regression	Higher per-capita income positively impacted REC, while higher domestic prices significantly reduced the REC of cocoa products
Sheetal <i>et al.</i> (2020)	15 Major sugar-producing nations, including India and China	2001–18	RCA, Hirschman Herfindahl index	RCA is high for seven to nine sugar categories, in spite of the stern regulations in major markets such as EU and the USA
Narayan and Bhattacharya (2019)	India	1961–2012	REC index	Relative export competitiveness in rice, wheat and cotton worsened over time. However, green revolution improved REC for rice and cotton for India
Ahmad, Kunroo and Sofi (2018)	India and China	1985–2012	RCA and bilateral RCA	India is moving towards engineering and high-technology products, while China has much wider high-technology embedded base than India
Li (2018)	India and China	2010–16	RCA, export similarity index, trade integration index	India mainly exports primary and semi-furnished goods to China, while China gives back advanced high-tech manufactured products to India. Both nations can make huge benefit by implementing the OROB strategy
Bojniec and Ferto (2017)	European Union	2000–2011	Normalised RCA	Larger trade costs declined probability of the competitive advantage of agri-food exports, whereas economic development and export diversification of such agri-foods increased over time
Kathuria (2013)	India and Bangladesh	1995–2013	RCA	India is trailing in its clothing export competitiveness to Bangladesh
Pillamia <i>et al.</i> (2012)	India	2001–05	RCA	India had remained more competitive in the traditional industries such as gums, carpets, silk, etc.

**Note:** OROB = One road one belt  
**Source:**

export market (Pillania *et al.*, 2012; Kathuria, 2013; Pal, 2014). After 2001, India remained in the manufacturing deficit because of the increasing imports of high-technology products such as automatic data processing machines, specialised industrial machinery, aircrafts and electric machinery which remained in top list of India's import basket (Chaudhuri, 2013). So, the major findings of the previous studies follow that India is still running on its traditional exports and has been trying its best to shift its competitive base towards more advanced production processes. To find out whether India has successfully transformed itself from a low-technological production base towards a high-value added production in the global competitiveness forum, this study is an attempt to find the answer. It remains very essential for the emerging economies to specialise in more sophisticated and high-technology production to gain a better and higher economic growth. It is also said that, economies become what they produce (Hausmann *et al.*, 2007). Moreover, there is not any thorough study that has been undertaken for Indian manufacturing sector at a segregated level of harmonised system (HS) 6-digit classification of product lines along with the China. Dynamics of export competitiveness of Indian manufacturing sector divided into various sub-categories is being analysed *vis-à-vis* its emerging counterpart, China, in the global market. This study would find out the change that has occurred in Indian manufacturing product lines against China over a period of 2001–18. Such a study would be helpful in reflecting whether manufactured product lines of India are gaining the competitive advantage or lagging behind China in the global market. Apart from this, the product lines of Indian manufacturing would be identified that needs to be guarded, to make them competitive in the global market.

So, in the light of these shortcomings, dynamics of export competitiveness of Indian manufacturing sector *vis-à-vis* its emerging counterpart, China, in the global market is the only focus of this paper.

### 3. Data and methodology

This study covered the time period from 2001 to 2018. Manufactured product lines have been taken as classified under the harmonised system (HS) 6-digit international trade classification. Following Lall (2000), the UN Trade Statistics correspondence tables were used to convert standard international trade classification 3-digit classification into various categories of HS 6-digit classification of manufacturing, which are described as follows:

- resource-based manufactures, which include agro-based manufacturing and resource-intensive manufacturing;
- low-technology manufacturing, which includes textile products and other low-technology products;
- medium-technology manufacturing, which includes automotive products, engineering products and processing products; and
- high-technology products.

Data for the study have been taken from UNCOMTRADE.

#### 3.1 Method I: revealed comparative advantage index

Bella Balassa (1965) developed a technique of revealed comparative advantage index (RCA), also known as Balassa index. The RCA index is used to compare a country's world export share of a commodity, with the country's total export share in total world exports. If RCA value comes to be greater than 1, that means country is having comparative advantage in that particular commodity and vice versa.

The RCA index is mathematically shown as:

$$RCA_{cg} = \frac{X_{cg} / X_c}{X_{wg} / X_w}$$

where:

- $RCA_{cg}$  = revealed comparative advantage of country  $c$  in product  $g$ ;  
 $X_{cg}$  = exports of commodity  $g$  by country  $c$ ;  
 $X_c$  = total exports of country  $c$ ;  
 $X_{wg}$  = world exports of commodity  $g$ ; and  
 $X_w$  = total world exports.

Accordingly, country  $c$  exhibits RCA in the export of good  $i$  if  $RCA_{cg}$  is greater than 1.

However, this index is not meant to capture future comparative advantage of a country, as RCA indices are based on actual static data, which cannot therefore show the future trend of competitiveness. To overcome this limitation, average difference has been taken for two different phases of 2001–08 and 2010–18, ignoring the 2009 period as it exhibited the impact of recession on the export growth of both India and China along with the world market. For Phase 1 (2001–08), RCA is calculated for average periods of 2001–05 with respect to (w.r.t.) 2006–08 and, similarly, for the second phase (2010–18), average values of RCA are taken for 2010–15 w.r.t 2016–18. Average values of RCA would give the suitable results regarding the changes that took place in the competitive levels of economies in question from first phase to second.

Therefore, following [Mahmood \(2004\)](#), modified RCA method is used in this study to identify various dynamic positions under which the products would emerge and are discussed as follows.

### 3.2 Competitively positioned product lines

This is the most preferred product line and products in this dynamic position share an RCA index greater than 1 and also display a consistent improvement over time because of positive external as well as internal conditions. In this dynamic position fall the products that show:

- RCA value remains greater than 1 in the average time period of 2006–08; i.e.  $RCA_{2006-08} > 1$  for any exported product line.
- Besides this, difference between RCA value of any exported product in an average time period of 2006–08 and an average period of 2001–05 is positive or greater than zero; i.e.  $RCA_{2006-08} - RCA_{2001-05} > 0$ .

### 3.3 Threatened product lines

In this dynamic position are the products that reflect an RCA of product lines but simultaneously display a declining trend of competitiveness over the years. Such exported products had an RCA value greater than 1, but because of unfavourable demand conditions in the world market, RCA index is displaying a deteriorating trend over the time period. In this category fall the products that show as:

- $RCA_{2006-08} > 1$  for the concerned product line.
- However, difference between averages of RCA in 2006–08 and 2001–05 is negative for the concerned product line, i.e.  $RCA_{2006-08} - RCA_{2001-05} < 0$ .

### 3.4 Emerging products

This dynamic position represents those products that are currently comparatively disadvantageous, but because of the positive response in the world market, such product starts increasing the competitive level. Therefore, such products are exhibiting RCA values less than 1, which however starts rising but does not match the rising share of the same product in global market. It is therefore a situation where a country needs to enhance the production ability to catch the rising share in the world market.

This dynamic position has been further sub-divided into two more categories, which are as follows:

#### (1) Tier 1

- It includes those exported products where  $RCA_{2006-08} < 1$ , but equals to 0.5 or  $> 0.5$  in the average period of 2006–08.
- Besides this, the difference between the average values of RCA in 2006–08 and 2001–05 is positive for the concerned product lines, i.e.  $RCA_{2006-08} - RCA_{2001-05} > 0$ .

#### (2) Tier 2

- It includes products where  $RCA_{2006-08} < 0.5$ .
- Also, the difference between the averages of RCA in 2006–08 and 2001–05 is positive for the concerned exported products, i.e.  $RCA_{2006-08} - RCA_{2001-05} > 0$ .

### 3.5 Weakly positioned (WP) products

The most unpreferred dynamic position is including those products where country's share of exported commodity has contracted in the world market. These products display RCA values less than 1 and further goes on declining because of non-conductive global and domestic factors. This dynamic position is also sub-divided into two sub-groups based on strength and trend values, which are:

#### (1) Tier 1

It includes those exports that exhibit as:

$RCA_{2006-08} < 1$ , but equal to 0.5 or  $> 0.5$  in the same period.

- Also, the difference between the average values of RCA in 2006–08 against 2001–05 is negative for the concerned exported product, i.e.  $RCA_{2006-08} - RCA_{2001-05} < 0$ .

#### (2) Tier 2

- In this category, RCA follows as follows:  
 $RCA_{2006-08} < 0.5$ .
- Besides this, the difference between the averages of RCA in 2006–08 and 2001–05 is negative for the concerned exported product, i.e.  $RCA_{2006-08} - RCA_{2001-05} < 0$ .

Similarly, for second phase of 2010–18, RCA values have been calculated on average basis of 2016–18 against 2010–15. This modified RCA approach has two main advantages for the exported product lines of India and China. Firstly, it will diagnose the strength and limitation of India's manufacturing exports profile against China in the world market in two different phases, pre-recession and post-recession. Secondly, it allows an assessment of the extent of competitiveness of China's manufactured exports against India in the world market.



### 3.6 Method II: Lafay index of international specialisation

Lafay index (LFI), first adopted in 1992 by Lafay, is used to demonstrate the degree of product specialisation of an economy in the world market. As RCA compares only the national export data of a commodity with that of the total world exports of the same commodity, LFI takes into account both the imports and exports, which therefore captures the intra-industry trade flows as well. Thus, the LFI takes into account these effects by considering the difference between each item's normalised trade balance and the overall normalised trade balance. Finally, the LFI weights the contribution of each product according to its importance in the trade.

For a given country  $i$  and for any given product  $j$ , the LFI is defined as follows:

$$LFI_j^i = 100 \left( \frac{x_j^i - m_j^i}{x_j^i + m_j^i} - \frac{\sum_{j=1}^n (x_j^i - m_j^i)}{\sum_{j=1}^n (x_j^i + m_j^i)} \right) \frac{x_j^i + m_j^i}{\sum_{j=1}^n (x_j^i + m_j^i)}$$

where  $x_j^i$  and  $m_j^i$  are the exports and imports of country  $i$  of product  $j$ , towards and from rest of the world, respectively, and  $n$  is the number of items.  $LFI$  is the LFI of international specialisation. According to this index, the country is specialised in particular product if it comes out to be positive, and if its value comes out to be negative, then there exists de-specialisation. Higher positive value of the index means higher degree of specialisation. However, Bugamelli (2001) proposed that the value of LFI touches the upper and lower limits of plus 50 and minus 50, respectively. Approaching towards positive side would reflect higher degree of product specialisation and approaching towards the negative side would reflect the other way.

## 4. Results and discussion

Owing to methodology, various dynamic positions absorbed numerous products in their grip and analysed in the following categories.

### 4.1 Competitively positioned products

Table 2 reflects that, on an average, a total of 3,631 HS 6-digit-level manufactured products were exported by India during 2001–08 and only 615 items remained in the most preferred dynamic category of “competitively positioned (CP)” product lines constituting around 17% of its total manufactured exports. On the other hand, China during the same period exported a total of 3,836 manufactured products to the world market, out of which 1,023 were “CP” as shown in Table 3, which constituted around 27% of total exported manufactured products. During 2001–08, India remained quite competitive in textile products, sharing 28% of total competitive positioned products followed by resource-based manufactures (RBMs) (19.5%), processing products (15.9%) and other low-technology exports (12.5%). These manufacturing categories constituted around 76% of total competitive positioned product lines, which therefore reflects that India had been quite competitive in resource and labour-intensive along with low-technology production except a share of 15.9% that included the medium-technology processing products.

As for China, like India, textile exports shared the highest percentage of 24.4 of total CP products followed by other low-technology exports (20.6%), engineering exports (16%), RBMs (13.1%), processing products (11%) and high-technology products (10.3%). Thus, China, like India, was heavily dependent on the labour-intensive and low-technology



								Export competitiveness of India and China
Product line	India	CP	TPL	EP1	EP2	WP1	WP2	
Resource-based	2001-08	120 (19.5)	69 (15.5)	29 (11.8)	124 (14.2)	28 (11.8)	183 (15.1)	
	2010-18	189 (21.2)	66 (18)	46 (14)	140 (11.9)	18 (12.4)	161 (14.7)	
Agro-based	2001-08	41 (6.7)	15 (3.4)	25 (10.2)	128 (14.6)	18 (7.6)	164 (13.5)	
	2010-18	72 (8.1)	21 (5.7)	38 (11.6)	193 (16.4)	11 (7.6)	148 (13.5)	
Automotive	2001-08	5 (0.8)	12 (2.7)	4 (1.6)	22 (2.5)	0	13 (1.1)	
	2010-18	12 (1.3)	7 (1.9)	7 (2.1)	26 (2.2)	1 (0.7)	14 (1.3)	
Engineering	2001-08	73 (11.9)	31 (7)	44 (17.9)	180 (20.5)	29 (12.2)	203 (16.7)	
	2010-18	102 (11.4)	33 (9)	66 (20.1)	221 (18.7)	17 (11.7)	166 (15.2)	
Processing	2001-08	98 (15.9)	47 (10.6)	30 (12.2)	99 (11.3)	26 (10.9)	161 (13.3)	
	2010-18	122 (13.7)	47 (12.8)	29 (8.8)	141 (11.9)	0	137 (12.5)	
High-tech	2001-08	29 (4.7)	21 (4.7)	34 (13.8)	114 (13)	19 (8)	130 (10.7)	
	2010-18	62 (7)	17 (4.6)	43 (13.1)	141 (11.9)	13 (9)	123 (11.2)	
Textiles	2001-08	172 (28)	168 (37.8)	36 (14.6)	77 (8.8)	70 (29.4)	147 (12.1)	
	2010-18	224 (25.1)	119 (32.4)	41 (12.5)	126 (10.7)	43 (29.7)	158 (14.4)	
Other low-tech	2001-08	77 (12.5)	81 (18.2)	44 (17.9)	132 (15.1)	48 (20.2)	211 (17.4)	
	2010-18	108 (12.1)	57 (15.5)	58 (17.7)	192 (16.3)	42 (29)	187 (17.1)	
Total	2001-08	615 (100)	444 (100)	246 (100)	876 (100)	238 (100)	1212 (100)	
	2010-18	891 (100)	367 (100)	328 (100)	1180 (100)	145 (100)	1094 (100)	

**Notes:** CP: competitively positioned products; TPL: threatened products; EP: emerging products with Tier 1 and Tier 2; WP: weakly positioned products with Tier 1 and Tier 2; numbers in parenthesis are the percentage values in the corresponding dynamic position  
**Source:** Calculated by author

								Export competitiveness of India and China
Product line	China	CP	TPL	EP1	EP2	WP1	WP2	
Resource-based	2001-08	134 (13.1)	100 (13.4)	48 (11)	107 (13.5)	30 (17.5)	148 (23.2)	
	2010-18	167 (17.2)	113 (11.1)	40 (11.1)	101 (16.1)	32 (10.5)	152 (21.4)	
Agro-based	2001-08	37 (3.6)	39 (5.2)	32 (7.3)	146 (18.4)	13 (7.6)	145 (22.7)	
	2010-18	58 (6)	50 (4.9)	35 (9.7)	148 (23.5)	26 (8.5)	158 (22.2)	
Automotive	2001-08	9 (0.9)	8 (1.1)	10 (2.3)	26 (3.3)	0	5 (0.8)	
	2010-18	10 (1)	14 (1.4)	5 (1.4)	16 (2.5)	5 (1.6)	17 (2.4)	
Engineering	2001-08	164 (16)	52 (7)	118 (27.1)	162 (20.5)	31 (18.1)	62 (9.7)	
	2010-18	178 (18.4)	126 (12.3)	96 (26.7)	94 (14.9)	50 (16.3)	61 (8.6)	
Processing	2001-08	113 (11)	68 (9.1)	62 (14.2)	127 (16)	23 (13.5)	84 (13.2)	
	2010-18	111 (11.4)	91 (8.9)	50 (13.9)	91 (14.5)	44 (14.4)	109 (15.3)	
High-tech	2001-08	105 (10.3)	67 (9)	44 (10.1)	80 (10.1)	19 (11.1)	62 (9.7)	
	2010-18	89 (9.2)	103 (10.1)	36 (10)	75 (11.9)	28 (9.2)	63 (8.9)	
Textiles	2001-08	250 (24.4)	246 (33)	44 (10.1)	41 (5.2)	31 (18.1)	81 (12.7)	
	2010-18	193 (19.9)	301 (29.5)	38 (10.6)	40 (6.4)	66 (21.6)	73 (10.3)	
Other low-tech	2001-08	211 (20.6)	166 (22.3)	78 (17.9)	103 (13)	24 (14)	51 (8)	
	2010-18	164 (16.9)	224 (21.9)	59 (16.4)	64 (10.2)	55 (18)	78 (11)	
Total	2001-08	1023 (100)	776 (100)	436 (100)	792 (100)	171 (100)	638 (100)	
	2010-18	970 (100)	1022 (100)	359 (100)	629 (100)	306 (100)	711 (100)	

**Notes:** CP: competitively positioned products; TPL: threatened products; EP: emerging products with Tier 1 and Tier 2; WP: weakly positioned products with Tier 1 and Tier 2; numbers in parenthesis are the percentage values in the corresponding dynamic position  
**Source:** Calculated by author

products during 2001–08, but unlike India, China shared around 37% of medium- and high-technology products as well in the most preferred and CP category.

During the post-recession period of 2010–18, India exported an average total of 4,005 manufactured products to the world market and 891 commodities remained in the most preferred competitive position, constituting about 22% out of total manufactured exports, as reflected in Table 2. Thus, an increase of 5% from the previous phase of 2001–08 was relatively gained by India during 2010–18. On the other hand, China exported 3,997 manufactured products, out of which only 970 were CP, constituting about 24% of total manufacturing exports during 2010–18, sharing relatively 3% less than the previous phase of 2001–08. The highest share in the CP category in 2010–18 retained the same chronology in case of India as it was during 2001–08. However, there has been a slight decline in percentage points in these manufacturing categories, which include textiles (25.1%), RBM (21.2%), processing (13.7%) and other low-technology products (12.1). Thus, a decline of 3% is seen in textiles while an increase of 2% points is visible in RBM from its previous phase of 2001–08. Besides this, the share of medium-technology products, including engineering and processing, has declined by few percentage points during 2010–18 from its previous phase of 2001–08.

During 2010–18, China's highest percentage in the CP products is again retained by the textiles (19.9%), followed by engineering products (18.4%), RBM (17.2%), other low-technology products (16.9%), processing (11.4%) and high-technology products (9.2%). China has somehow made an improvement in reducing the share of low-technology products in this competitive position and increased the share of medium-technology products. However, there has been a decline in the high-technology products as well from the previous phase of 2001–08, as can be seen in Table 3. This shows that China has been hit more adversely by the global crisis of 2008–09 than that of India.

The HS 6-digit commodities that showed consistency in the category of most preferred dynamic position of "CP" for these eight different sub-categories of manufacturing exports from 2001–08 to 2010–18 for India and China are reflected in Appendices 1 and 2, respectively.

#### *4.2 Threatened product lines*

In this dynamic position of threatened product lines, products show although a comparative advantage in the world but that competitive trend is on a decline over the years. During 2001–08, a total of 444 products out of 3,631 were in this dynamic position for the Indian economy, constituting around 12% of its total manufacturing. China, on the other hand, shared 776 out of total 3,836 manufactured exports in 2001–08, constituting around 20% of its total manufacturing. The highest percentage in this dynamic position for India during 2001–08 was held by textiles (37.8%) followed by other low-tech products (18.2) and RBM (15.5%). Similarly, during the same period, China's top shareholder had been textiles (33%) followed by other low-tech products (22.3%) and RBM (13.4%).

Similarly, in the second phase of 2010–18, India exported a total of 4,005 manufactured commodities, out of which 367 constituting around 9% that remained in this dynamic position. The top sharing sectors remained the same as in first phase, with a slight change in the percentage values. Similarly, China had around 26% of total manufactured exports in the threatened product category, which shows a rise from the previous phase of 2001–08, unlike India that restricted its products from falling into threatened category. However, the top sharing sectors remained the same for China, as was in first phase of 2001–08, and only difference is that engineering products replaced the third spot holder RBM during 2010–18.

#### 4.3 *Emerging products: Tier 1*

This dynamic position includes those products that show a competitive disadvantage at present but simultaneously shows an inclining trend of gaining comparative advantage over the years, paving way to become perfectly competitive in the market in near future. Based on degree of strength and RCA values, these emerging products (EPs) are further subdivided into Tier 1 and Tier 2, owing to methodology.

In the first tier, India moved from 246 to 328 products from first phase to second. Against India, China moved from 436 to 359, thus showing a decline over the two periods of study. Product lines such as engineering shared 17.9% during 2001–08 for India in this dynamic category and moved up to 20.1% during 2010–18. Similarly, other low-tech products moved from 17.9% to 17.7% and high-tech products from 13.8% to 13.1% during these two periods. On the other hand, China has the highest share of EPs to engineering (27.1%) in 2001–08, which declined to 26.7% in the second phase.

#### 4.4 *Emerging products: Tier 2*

In this dynamic position, India moved from 876 to 1,180 products from 2001–08 to 2010–18 against China's 792 to only 629 during the same period. The top shareholders for India remained engineering products, followed by other low-tech products and RBM during both the phases of 2001–08 and 2010–18. As for China, engineering, agro-based and processing products retained the highest percentage in this dynamic position. The chronological order can be seen from tables for India and China, respectively.

Thus, there has been a decline in the total EPs for China in post-recession period of 2010–18, whereas India has emerged undoubtedly after the recession period of 2008–09 and that too in the medium technology products. This is an achievement where India needs to work hard to gain the competitive level of such product lines in the world market.

#### 4.5 *Weakly positioned products: Tier 1*

Weakly positioned (WP) products are also divided into two different sub-groups; Tier 1 and Tier 2, based on the average RCA values, owing to the methodology. Tier 1 included 238 products for India during 2001–08, which declined to 145 during 2010–18. On the other hand, China increased its products in this dynamic position from 171 in 2001–08 to 306 products in 2010–18. So, there has been a shift from WP products to emerging category for India, whereas other way for China. Thus, India is showing a positive response in gaining the competitiveness in the world market and can give a better positioned products in near future because of its increased share in EP lines. Besides this, the highest share during 2010–18 for China in this dynamic position is retained by textile products (21.6%) followed by other low-tech products (18%) and engineering goods (16.3%). As for India, the highest share during 2010–18 has been retained by textile products (29.7%) followed by other low-technology products (29%) and RBM (12.4%).

#### 4.6 *Weakly positioned products: Tier 2*

This dynamic position is the most unfavourable for any economy as it reflects the worsening trend of comparative advantage of product lines over the years. India had a total of 1212 WP Tier 2 products out of total 3,631 products, constituting around 33% of total exported manufactures during 2001–08. During 2010–18, India shared 1,094 out of 4,005 total exported manufactures as WP Tier 2, sharing around 22% of total manufactured exports, thus declining relatively 11% from its previous phase of 2001–08. Major shareholders remain other low-technology products (17.1%) followed by engineering (15.2%) and textiles (14.4%).

On the other hand, China had 638 out of total 3,836 products in this dynamic position during 2001–08, constituting about 16% of total manufactured exports. This number increased up to 711 out of total 3,997 products during 2010–18, sharing around 18% of total manufactures. Besides this, the highest percentage share has been attributed to agro-based manufactures (22.2%), followed by RBM (21.4%) and processing products (15.3%).

Thus, it can be concluded that India has been on a coarsening trend in its competitive structure, which is reflected by the increasing share of EPs and simultaneously declining the share of WP products, which has been otherwise for China after the global crisis period of 2008–09. However, India has still a lot to go to reach the Chinese influence in global market, because the market share is proportionately high for Chinese exports than India, which describes the export structure of China is better than India.

### 5. Degree of product specialisation for India and China

Although sectoral changes define the competitive structure of manufacturing exports in the world market and a huge number of products have been included in the comparatively advantageous category, however, only few commodities actually add up the total value of manufactured exports. Based on the degree of specialisation, using the LFI, the top 40 specialised products during 2001 and 2018 for India and China are shown in Appendices 3 and 4, respectively.

India's total manufacturing export value during 2001 was US\$28.85bn, out of which the top 40 products share around US\$15bn, which constituted 52% of total exported value. Besides this, the first 4 commodities among these top 40 products, which include HS 710239 (diamonds, worked, but not mounted), HS 711319 (articles of jewellery and parts thereof, of precious metal other than silver), HS 610910 (T-shirts, singlets and other vests of cotton, knitted or crocheted) and HS 620630 (women's or girls' blouses, shirts and shirt-blouses of cotton) shared around 27% of total exported value for India. Also, the top 200 products based on the degree of specialisation had a share of 75% of total exported value for India in 2001. However, during 2018, US\$254.19bn was total exported value of manufactured products for India. The top 40 products during 2018 shared 50% of total exported value for Indian manufactures, out of which first 4 products, HS 271019 (medium oils and preparations, of petroleum or bituminous minerals, not containing biodiesel), HS 710239 (diamonds, worked, but not mounted), HS 271012 (light oils and preparations, of petroleum or bituminous minerals which  $\geq 90\%$  by volume) and HS 711319 (articles of jewellery and parts thereof, of precious metal other than silver) shared 32.47% of total exported value of manufacturing. Also, top 200 specialised products shared 70% of total exported value of Indian manufacturing.

The degree of specialisation for various influential products for India has declined in 2018 against its 2001 level. Products like HS 710239 (diamonds, worked) and HS 610910 (T-shirts, etc.) have shown a decline in the degree of specialisation for India in 2018 from its 2001 level. However, the average LFI value almost remained the same for the major products in 2018 against the 2001 level. Also, few new products came up as top specialised ones for India in 2018 such as HS 271019 (medium oils and preparations, of petroleum or bituminous minerals, not containing biodiesel) and automotive products such as HS 870322, HS 870323 and HS 871120, which include products such as motor cars and vehicles along with few chemical products (HS 380893, HS 380891 and HS 290220), as can be seen in [Appendix 3](#). Besides this, one engineering product, HS 841112 (turbojets) and two high-technology products (HS 880330, parts of aeroplanes and HS 854511, electrodes of graphite) were also in top 40 specialised products for India in 2018. Therefore, India is trying to move from low-technology products towards medium and high-technology product lines and could only

gain if it increased the production capability of the EPs along with the already competitive positioned product lines in the world market.

On the other hand, China's top 40 products during 2001 and 2018, based on degree of specialisation, are depicted in [Appendix 4](#). The total exported value of Chinese manufacturing was US\$191.89bn and share of top 40 products during 2001 remained 32% only out of total exported value. Besides this, top 200 products could contribute only 54% of total exported value to China's manufacturing exports. The first 4 products among top 40 specialised commodities for China in 2001 could only contribute around 7% of total value. During 2018, total exported value of Chinese manufactured products remained US \$2277.72bn and China again could not contribute a huge share of its top 40 products and remained at 31% only, while as top 200 products shared again a percentage value of 54 out of total exported value of manufacturing. So, China almost remained on a similar trend in 2018 as in 2001. Besides this, the top four products in 2018 shared only 13% of total exported value for China.

As for China, it has shifted its export base towards more advanced and high-technology product lines in 2018 from low-technology and resource-intensive products in 2001. Furthermore, the average degree of specialisation has also increased for China in 2018 against its 2001 level. Products such as cellular mobile phones (HS 851712) and automatic data processing machines (847130) remained the most effective high-technology products for China, along with few engineering products.

Based on the percentage values of top most shareholders, India is concentrated to only few products and that too the resource-based and low-technology product category. Only two products can be seen from high technology, which represent themselves in top 40 products for India during 2018 apart from few medium-technology products. However, China has made an incredible structural change in 2018 from its 2001 level. The top 40 products mostly include high-technology followed by medium tech products. The share is also very segregated for China, unlike India, which has exported value concentrated on few products only. Thus, India has a challenging facet ahead if it could not divert its resources to other forms of manufacturing. The economic complexity index (ECI) rankings for India and China at HS 6-digit classification are shown in [Table 4](#). ECI shows relatively the knowledge intensity in creating quality production and simultaneously diversifying such production. [Table 4](#) somehow depicts the similar pattern and replicates that although India had a higher ECI rank during 2001 than China, it could not make any major transformation for its export base and remained much behind afterwards. It also shows that China had moved its manufacturing base towards more sophisticated and advanced product lines.

This study therefore supports the recent past literature of [Ganai and Bhat \(2021\)](#), [Ganai and Mir \(2021\)](#) and [Ahmad, Kunroo and Sofi \(2018\)](#), which reflected the same pattern of export competitiveness, which has somehow increased for both India and China. Also, the

Year	2001	2010	2018
<i>India</i>			
Value	0.08	0.28	0.49
Rank	46	50	43
<i>China</i>			
Value	-0.02	0.70	0.92
Rank	53	31	30

**Table 4.**  
Economic complexity  
index

**Source:** OECD ECI rankings

trend towards the medium and high-tech products is also emerging for India, whereas China has already taken a lead in such advanced products. However, this study contradicts in fewer aspects that says, although India is emerging in medium- and high-technology products, the exported value of such medium- and high-technology products is quite low and only two high-technology products are in the list of top 40 specialised products for India. So, in actual stance, India still runs on low-technology and resource-intensive products that generate the exported revenue for Indian economy in the global market. As for China, after the global recession of 2008, the CP products have shown a decline as most of the manufactured exports are moving towards threatened category, which goes in contrast with the past literature.

## 6. Conclusion and implications

This study discusses the dynamic export competitiveness of Indian manufacturing along with China in two different phases of 2001–08 and 2010–18. It has been revealed that India has been slowly moving from low-technology export base towards the medium-technology products. Besides this, the EPs are also on the rise for medium technology, and simultaneously India is declining its share of WP products from pre-recession period to post-recession. However, China has reduced share of its competitive positioned products from first phase to second and simultaneously the share of threatened products increased during the same period. The study also found that although India has started to increase its export competitiveness of medium technology products, the maximum share of total exported value still remains with low-technology and resource-intensive products. India is still concentrated on only few products in the international market and more than 32% of exported value of manufactures is shared by top 4 specialised products and more than 50% of total exported value is shared by top 40 specialised products. However, it is not the same way for China, where export value is scattered over numerous product lines. So, India needs to divert its resources to produce EPs at a pace and more efficiently in the world market. Besides this, India has lot more to go to reach where China has already made a mark of its own.

This study would be beneficial for policymaking to focus on those manufactured products of the sample economies that are in an emerging phase and that too in medium and high-technology production along with already CP commodities, like China has already gained comparative advantage in the global market. Moreover, changes in specialisation pattern in these emerging economies can have implications for changing the factors of production to enhance the productivity level in those products which could generate spillovers. For instance, textiles have been India's one of the major manufacturing sectors that shares a long past, but is relatively on decline from 2001 to 2018. Thus, policy focus should be on such sectors along with already competitive low-technology products and RBMs, which could make India a manufacturing hub of such product lines in the international market.

## References

- Abdullahi, N.M., Zhang, Q., Shahriar, S., Kea, S. and Huo, X. (2021), "Relative export competitiveness of the Nigerian cocoa industry", *Competitiveness Review: An International Business Journal*, Vol. ahead-of-print No. ahead-of-print, doi: [10.1108/CR-03-2021-0036](https://doi.org/10.1108/CR-03-2021-0036).
- Ahmad, I., Kunroo, M.H. and Sofi, I. (2018), "An RCA analysis of India–China trade integration: present, potential and prospects", *Foreign Trade Review*, Vol. 53 No. 1, pp. 49–58.



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- Alon, I. and Fetscherin, M. (2007), "Measuring global industry competitiveness using the Specialization-Growth matrix: the case of China", paper presented at the Euro-Asia Management Studies Association (EAMSA) Annual Conference on the Rise of the Asian Multinational Firm: Implications for Management, Competition and Cooperation, Leeds, 29-30, November.
- Alon, I., Fetscherin, M. and Johnson, J.P. (2011), "An integrated framework for export competitiveness: evidence from the global alcoholic beverages industry", *European Journal of International Management*, Vol. 5 No. 2, pp. 99-121.
- Balassa, B. (1965), "Trade liberalization and 'revealed' comparative advantages", *The Manchester School*, Vol. 33 No. 2, pp. 99-123.
- Batra, A. and Khan, Z. (2005), "Revealed comparative advantage: an analysis for India and China", Indian Council for Research on International Economic Relations, New Delhi, Working Paper No. 168.
- Bojnec, S. and Ferto, I. (2017), "The duration of global Agri-food export competitiveness", *British Food Journal*, Vol. 119 No. 6, pp. 1378-1393.
- Borozan, D. and Pfeifer, S. (2006), "Unveiling Croatian international competitiveness through export performance", available at: <http://bib.irb.hr/prikazi-rad?&lang=EN&rad=276327>
- Bugamelli, M. (2001), "International specialization patterns of the euro area and the main European countries", Discussion Paper No. 402, Italian Central Bank, Rome.
- Chadha, R., Brown, D., Deardorff, A. and Stern, R. (2003), "Computational analysis of the impact on India of the Uruguay round and the Doha development agenda negotiations", in Mattoo, A. and Stern, R. (Eds), *India and the WTO*, Oxford University Press, World Bank, Oxford, Washington, DC.
- Chaudhuri, S. (2013), "Manufacturing trade deficit and industrial policy in India", *Economic and Political Weekly*, Vol. 48 No. 8, pp. 41-50.
- Enright, M., Scott, E. and Leung, E. (1999), "Hong Kong's competitiveness beyond the Asian crisis: an overview", Working paper, Research Department, HKTDC, Hong Kong.
- Fetscherin, M., Alon, I. and Johnson, J.P. (2010), "Global export competitiveness of Chinese industries", *Asian Business and Management*, Vol. 9 No. 3, pp. 401-424.
- Ganai, S.G. and Sarin, V.S. (2020), "An RCA account of India's export competitiveness", *Research Journal of Humanities and Social Sciences*, Vol. 11 No. 2, pp. 104-110.
- Ganai, S.G. and Bhat, A.S. (2021), "Dynamic comparative advantage of India and China: a study of manufacturing exports", *Indian Journal of Economics and Development*, Vol. 17 No. 4, pp. 871-878.
- Ganai, S.G. and Mir, A.H. (2021), "Trade specialisation and structural stability of India and China: a study on high-tech manufacturing exports", *IASSI Quarterly*, Vol. 40 No. 3, pp. 490-524.
- Hausmann, R., Hwang, J. and Rodrik, D. (2007), "What you export matters", *Journal of Economic Growth*, Vol. 12 No. 1, pp. 1-25.
- Huchet, J.F., Richet, X. and Ruet, J. (2007), *Globalisation in China, India and Russia, Emergence of National Groups and Global Strategies of Firms*, Academic Foundation New Delhi, New Delhi.
- Johansson, A. and Olaberria, E. (2014), "Global trade and specialisation patterns over the next 50 years", OECD Economic Policy Paper.
- Jones, G. (1994), "Big business, management and competitiveness in twentieth century Britain", *Japan Business History Review*, Vol. 29 No. 1, pp. 31-55.
- Kathuria, L.M. (2013), "Analysing competitiveness of clothing export sector of India and Bangladesh, dynamic revealed comparative approach", *Competitiveness Review: An International Business Journal*, Vol. 23 No. 2, pp. 131-157.
- Kling, A. (2016), *Specialisation and Trade- A Re-Introduction to Economics*, CASO Institute, Washington, DC.



- 
- Krueger, A.O. (2020), *International Trade, What Everyone Needs to Know*, Oxford University Press, NY.
- Lall, S. (2000), "The technological structure and performance of developing country manufactured exports, 1985-98", *Oxford Development Studies*, Vol. 28 No. 3, pp. 337-369.
- Lee, H.T., Choi, H., Kim, Y. and Lee, J. (2018), "China's manufacturing development and its implications for Korea", KIEP Research Paper, World Economy Brief.
- Li, K.K. (2018), "China and India trade competition and complementarity: analysis of 'belt and road' background", *Modern Economy*, Vol. 9 No. 7, pp. 1213-1227.
- Mahmood, A. (2004), "Export competitiveness and comparative advantage of Pakistan's non-agricultural production sectors: Trends and analysis", *The Pakistan Development Review*, Vol. 43 No. 4II, pp. 541-561.
- Mitchell, W., Shaver, J.M. and Yeung, B. (1993), "Performance following changes in international presence in domestic and transition industries", *Journal of International Business Studies*, Vol. 24 No. 4, pp. 647-670.
- Murtha, T.P. and Lenway, S.A. (1994), "Country capability and the strategic state: how national political institutions affect multinational corporations' strategies", *Strategic Management Journal*, Vol. 15, pp. 113-129.
- Narayan, S. and Bhattacharya, P. (2019), "Relative export competitiveness of agricultural commodities and its determinants: some evidence from India", *World Development*, Vol. 117, pp. 29-47.
- Pal, P. (2014), *International Trade and India*, Oxford University Press, New Delhi.
- Pillania, R., Fetscherin, M., Alon, I. and Johnson, M.P. (2012), "Export competitiveness patterns in Indian industries", *Competitiveness Review: An International Business Journal*, Vol. 22 No. 3, pp. 188-206.
- Pillania, R.K. (2006), "Leveraging knowledge for sustainable competitiveness in SMEs", *International Journal of Globalisation and Small Business*, Vol. 1 No. 4, pp. 23-35.
- Pillania, R.K. (2009), "Competitiveness and emerging markets", *Business Strategy Series*, Vol. 10 No. 2, pp. 90-95.
- Salomon, R.M. and Shaver, J.M. (2005), "Learning by exporting: new insights from examining firm innovation", *Journal of Economics & Management Strategy*, Vol. 14 No. 2, pp. 431-460.
- Sheetal, S., Kumar, R. and Shashi, S. (2020), "Export competitiveness and concentration analysis of major sugar economies with special reference to India", *Journal of Agribusiness in Developing and Emerging Economies*, Vol. 10 No. 5, pp. 687-715.
- Srivastava, D.K. (2006), "Determinants of competitiveness in Indian public sector companies: an empirical study", *Competitiveness Review*, Vol. 16 Nos 3/4, pp. 212-222.
- Yip, G.S., Rugman, A.M. and Kudina, A. (2006), "International success of British companies", *Long Range Planning*, Vol. 39 No. 3, pp. 241-264.
- Zaghini, A. (2003), "Trade advantages and specialization dynamics in acceding countries", *European Central Bank, Working Paper Series*, No. 249.

## Appendix 1

HS code	Other low-tech products (India)
340600	Candles and the like
360500	Matches (excluding pyrotechnic articles of heading 3604)
392329	Sacks and bags, including cones, of plastics (excluding those of polymers of ethylene)
482010	Registers, account books, notebooks, order books, receipt books, letter pads, memorandum pads, . . .
482210	Bobbins, spools, cops and similar supports of paper pulp, paper or paperboard, whether or not . . .
701010	Glass ampoules
701090	Carboys, bottles, flasks, jars, pots, phials and other containers, of glass, of a kind used . . .
701790	Laboratory, hygienic or pharmaceutical glassware, whether or not graduated or calibrated (excluding . . .
701810	Glass beads, imitation pearls, imitation precious or semi-precious stones and similar glass . . .
702000	Articles of glass, n.e.s.
720837	Flat-rolled products of iron or non-alloy steel, of a width of $\geq 600$ mm, in coils, simply . . .
720839	Flat-rolled products of iron or non-alloy steel, of a width of $\geq 600$ mm, in coils, simply . . .
720916	Flat-rolled products of iron or non-alloy steel, of a width of $\geq 600$ mm, in coils, simply . . .
721061	Flat-rolled products of iron or non-alloy steel, of a width of $\geq 600$ mm, hot-rolled or cold-rolled . . .
722211	Bars and rods of stainless steel, only hot-rolled, only hot-drawn or only hot-extruded, of . . .
722220	Other bars and rods of stainless steel, not further worked than cold-formed or cold-finished
722240	Angles, shapes and sections of stainless steel, n.e.s.
722860	Bars and rods of alloy steel other than stainless, cold-formed or cold-finished and further . . .
730721	Flanges of stainless steel (excluding cast products)
730791	Flanges of iron or steel (excluding cast or stainless products)
730840	Equipment for scaffolding, shuttering, propping or pit-propping (excluding composite sheet piling . . .
731100	Containers of iron or steel, for compressed or liquefied gas (excluding containers specifically . . .
731589	Chain of iron or steel (excluding articulated link chain, skid chain, stud-link chain, welded . . .
732591	Grinding balls and similar articles for mills, cast (excluding such articles of non-malleable . . .
761210	Collapsible tubular containers, of aluminium
761410	Stranded wire, cables, plaited bands and the like, of aluminium, with steel core (excluding . . .
761490	Stranded wires, cables, ropes and similar articles, of aluminium (other than with steel core . . .
820520	Hammers and sledge hammers with working parts of base metal
820713	Rock-drilling or earth-boring tools, interchangeable, with working parts of sintered metal . . .
820740	Tools for tapping or threading, interchangeable
830610	Bells, gongs and the like, non-electric, of base metal (excluding musical instruments)
940360	Wooden furniture (excluding for offices, kitchens and bedrooms and seats)
940490	Articles of bedding and similar furnishing, fitted with springs or stuffed or internally filled . . .
960190	Worked bone, tortoiseshell, horn, antlers, coral, mother-of-pearl and other animal carving . . .
960891	Pen nibs and nib points

**Notes:** Technological classification is based on [Lall \(2000\)](#); n.e.s: nor else where specified

**Source:** Author's calculation

**Table A1.**  
Consistent  
competitive products  
of India during 2001–  
08 and 2010–18 for  
India

CR

**Table A2.**  
Consistent  
competitive  
manufactured  
products during  
2001–08 and 2010–18  
for China

HS code	High-tech products (India)
284150	Chromates and dichromates; peroxochromates (excluding sodium dichromate and inorganic or organic . . .
293721	Cortisone, hydrocortisone, prednisone “dihydrocortisone” and prednisolone “dehydrohydrocortisone”
293942	Pseudoephedrine “INN” and its salts
294110	Penicillins and their derivatives with a penicillanic acid structure; salts thereof
294150	Erythromycin and its derivatives; salts thereof
294190	Antibiotics (excluding penicillins and their derivatives with a penicillanic acid structure, . . .
840610	Steam and other vapour turbines for marine propulsion
841013	Hydraulic turbines and water wheels, of a power > 10.000 kW (excluding hydraulic power engines . . .
847340	Parts and accessories of other office machines of heading 8472, n.e.s.
850422	Liquid dielectric transformers, having a power handling capacity > 650 kVA but ≤ 10.000 kVA
850423	Liquid dielectric transformers, having a power handling capacity > 10.000 kVA
851120	Ignition magnetos, magneto-dynamos and magnetic flywheels, for spark-ignition or compression-ignition . . .
853210	Fixed capacitors designed for use in 50/60 Hz circuits and having a reactive power-handling . . .
854511	Electrodes of graphite or other carbon, for electric furnaces
<b>Note:</b> Technological classification is based on <a href="#">Lall (2000)</a> <b>Source:</b> Author’s calculation	

HS code	Textile products (India)
410711	Full grains leather “incl. parchment-dressed leather”, unsplit, of the whole hides and skins
410719	Leather “incl. parchment-dressed leather” of the whole hides and skins of bovine “incl. buffalo” . . .
411200	Leather further prepared after tanning or crusting “incl. parchment-dressed leather”, of sheep . . .
411310	Leather further prepared after tanning or crusting “incl. parchment-dressed leather”, of goats
420211	Trunks, suitcases, vanity cases, executive-cases, briefcases, school satchels and similar containers, . . .
420329	Gloves, mittens and mitts, of leather or composition leather (excluding special sports gloves)
420330	Belts and bandoliers, of leather or composition leather
420340	Clothing accessories of leather or composition leather (excluding gloves, mittens and mitts, . . .
510710	Yarn of combed wool containing $\geq 85\%$ wool by weight (excluding that put up for retail sale)
520512	Single cotton yarn, of uncombed fibres, containing $\geq 85\%$ cotton by weight and with a linear
520522	Single cotton yarn, of combed fibres, containing $\geq 85\%$ cotton by weight and with a linear
520524	Single cotton yarn, of combed fibres, containing $\geq 85\%$ cotton by weight and with a linear
520527	Single cotton yarn, of combed fibres, containing $\geq 85\%$ cotton by weight and with a linear
520532	Multiple “folded” or cabled cotton yarn, of uncombed fibres, containing $\geq 85\%$ cotton by weight . . .
520533	Multiple “folded” or cabled cotton yarn, of uncombed fibres, containing $\geq 85\%$ cotton by weight . . .
520547	Multiple “folded” or cabled cotton yarn, of combed fibres, containing $\geq 85\%$ cotton by weight . . .
520548	Multiple “folded” or cabled cotton yarn, of combed fibres, containing $\geq 85\%$ cotton by weight . . .
520614	Single cotton yarn containing predominantly, but $< 85\%$ cotton by weight, of uncombed fibres . . .
520823	Woven fabrics of cotton, containing $\geq 85\%$ cotton by weight and weighing $\leq 200$ g/m <sup>2</sup> , in three-thread .
520832	Plain woven fabrics of cotton, containing $\geq 85\%$ cotton by weight and weighing $> 100$ g to 200 . . .
520841	Plain woven fabrics of cotton, containing $\geq 85\%$ cotton by weight and weighing $\leq 100$ g/m <sup>2</sup> , . . .
520852	Plain woven fabrics of cotton, containing $\geq 85\%$ cotton by weight and weighing $> 100$ g to 200 . . .
520859	Woven fabrics of cotton, containing $\geq 85\%$ cotton by weight and weighing $\leq 200$ g/m <sup>2</sup> , printed . . .
520919	Woven fabrics of cotton, containing $\geq 85\%$ cotton by weight and weighing $> 200$ g/m <sup>2</sup> , unbleached . . .
540233	Textured filament yarn of polyester (excluding that put up for retail sale)
540251	Filament yarn of nylon or other polyamides, incl. monofilament of $< 67$ decitex, single, with . . .
540262	Multiple “folded” or cabled filament yarn of polyester, incl. monofilament of $< 67$ decitex . . .

(continued)

**Table A3.**  
Top 40 specialised  
products of India  
during 2001 and 2018

CR

HS code	Textile products (India)
550932	Multiple “folded” or cabled yarn containing $\geq 85\%$ acrylic or modacrylic staple fibres by weight . . .
550952	Yarn containing $> 50\%$ to $< 85\%$ polyester staple fibres by weight, mixed principally or solely . . .
550959	Yarn containing predominantly, but $< 85\%$ polyester staple fibres by weight, other than that . . .
550999	Yarn containing predominantly, but $< 85\%$ synthetic staple fibres by weight, other than that . . .
551030	Yarn containing predominantly, but $< 85\%$ artificial staple fibres by weight, mixed principally . . .
560900	Articles of yarn, strip or the like of heading 5404 or 5405, or of twine, cordage, ropes or . . .
570190	Carpets and other textile floor coverings, of textile materials, knotted, whether or not made . . .
570232	Carpets and other floor coverings, of man-made textile materials, woven, not tufted or flopped, . . .
570310	Carpets and other floor coverings, of wool or fine animal hair, tufted “needle punched”, whether . . .
570390	Carpet tiles of vegetable textile materials or coarse animal hair, tufted “needle punched”, . . .
580429	Mechanically made lace in the piece, in strips or in motifs (excluding that of man-made fibres . . .
581010	Embroidery on a textile fabric ground without visible ground, in the piece, in strips or in . . .
600390	Knitted or crocheted fabrics of a width of $\leq 30$ cm (excluding of cotton, man-made fibres, . . .
600621	Unbleached or bleached cotton fabrics, knitted or crocheted, of a width of $> 30$ cm (excluding . . .
610329	Men’s or boys’ ensembles of textile materials (excluding wool, fine animal hair, cotton or . . .
610590	Men’s or boys’ shirts of textile materials, knitted or crocheted (excluding of cotton or man-made . . .
610690	Women’s or girls’ blouses, shirts and shirt-blouses of textile materials, knitted or crocheted . . .
610719	Men’s or boys’ underpants and briefs of other textile materials, knitted or crocheted (excluding . . .
610722	Men’s or boys’ nightshirts and pyjamas of man-made fibres, knitted or crocheted (excluding . . .
610990	T-shirts, singlets and other vests of textile materials, knitted or crocheted (excluding cotton)
611120	Babies’ garments and clothing accessories of cotton, knitted or crocheted (excluding hats)
611190	Babies’ garments and clothing accessories of textile materials, knitted or crocheted (excluding . . .
611599	Full-length or knee-length stockings, socks and other hosiery, incl. footwear without applied . . .
620411	Women’s or girls’ suits of wool or fine animal hair (excluding knitted or crocheted, ski overalls . . .
620423	Women’s or girls’ ensembles of synthetic fibres (excluding knitted or crocheted, ski overalls . . .
620444	Women’s or girls’ dresses of artificial fibres (excluding knitted or crocheted and petticoats)
620690	Women’s or girls’ blouses, shirts and shirt-blouses of textile materials (excluding of silk, . . .
620811	Women’s or girls’ slips and petticoats of man-made fibres (excluding knitted or crocheted and . . .
620822	Women’s or girls’ nightdresses and pyjamas of man-made fibres (excluding knitted or crocheted, . . .
620829	Women’s or girls’ nightdresses and pyjamas of textile materials (excluding cotton and man-made . . .

Table A3.

(continued)

HS code	Textile products (India)
620892	Women's or girls' singlets and other vests, briefs, panties, négligés, bathrobes, dressing . . .
620990	Babies' garments and clothing accessories of textile materials (excluding of cotton or synthetic . . .
621600	Gloves, mittens and mitts, of all types of textile materials (excluding knitted or crocheted . . .
630231	Bedlinen of cotton (excluding printed, knitted or crocheted)
630240	Table linen, knitted or crocheted
630260	Toilet linen and kitchen linen, of terry towelling or similar terry fabrics of cotton (excluding . . .
630419	Bedspreads of all types of textile materials (excluding knitted or crocheted, bedlinen, quilts . . .
630532	Flexible intermediate bulk containers, for the packing of goods, of synthetic or man-made textile . . .
640319	Sports footwear, with outer soles of rubber, plastics, leather or composition leather and uppers . . .
640340	Footwear, incorporating a protective metal toecap, with outer soles of rubber, plastics, leather . . .
640391	Footwear with outer soles of rubber, plastics or composition leather, with uppers of leather, . . .

**Note:** Technological classification is based on [Lall \(2000\)](#)

**Source:** Author's calculation

**Table A3.**

HS code	Processing products (India)
290522	Acyclic terpene alcohols
290613	Sterols and inositols
290619	Cyclanic, cyclenic or cycloterpenic alcohols and their halogenated, sulphonated, nitrated or ...
290621	Benzyl alcohol
290712	Cresols and their salts
290721	Resorcinol and its salts
290729	Polyphenols and phenol-alcohols (excluding resorcinol and hydroquinone “quinol” and their salts, ...
291550	Propionic acid, its salts and esters
291590	Saturated acyclic monocarboxylic acids, their anhydrides, halides, peroxides and peroxyacids; ...
291634	Phenylacetic acid and its salts
291713	Azelaic acid, sebacic acid, their salts and esters
291719	Acyclic polycarboxylic acids, their anhydrides, halides, peroxides, peroxyacids and their halogenated, ...
291735	Phthalic anhydride
291811	Lactic acid, its salts and esters (excluding inorganic or organic compounds of mercury)
291813	Salts and esters of tartaric acid
291823	Esters of salicylic acid and their salts (excluding o-acetylsalicylic acid, its salts and esters)
320620	Pigments and preparations of a kind used for colouring any material or used as ingredients ...
321100	Prepared driers
321390	Artist's, student's or signboard painter's colours, modifying tints, amusement colours and ...
321519	Printing ink, whether or not concentrated or solid (excluding black ink)
340219	Organic surface-active agents, whether or not put up for retail sale (excluding anionic, cationic ...
380210	Activated carbon (excluding medicaments or deodorant products for fridges, vehicles etc., put ...
381300	Preparations and charges for fire-extinguishers; charged fire-extinguishing grenades (excluding ...
381511	Supported catalysts with nickel or a nickel compound as the active substance, n.e.s.
382430	Non-agglomerated metal carbides mixed together or with metallic binders
390319	Polystyrene, in primary forms (excluding expandable)
392062	Plates, sheets, film, foil and strip, of non-cellular poly“ethylene terephthalate”, not reinforced, ...
540720	Woven fabrics of strip or the like, of synthetic filament, incl. monofilament of $\geq 67$ decitex ...
540774	Woven fabrics of yarn containing $\geq 85\%$ synthetic filament by weight, incl. monofilament of ...
540792	Woven fabrics of yarn containing predominantly, but $< 85\%$ synthetic filament by weight, incl. ...
540794	Woven fabrics of yarn containing predominantly, but $< 85\%$ synthetic filament by weight, incl. ...
540810	Woven fabrics of high-tenacity viscose yarn, incl. monofilament of $\geq 67$ decitex and a maximum ...
550410	Staple fibres of viscose rayon, not carded, combed or otherwise processed for spinning
551612	Woven fabrics containing $\geq 85\%$ artificial staple fibres by weight, dyed
551623	Woven fabrics containing predominantly, but $< 85\%$ artificial staple fibres, mixed principally ...
580136	Chenille fabrics, of man-made fibres (excluding terry towelling and similar woven terry fabrics, ...
720211	Ferro-manganese, containing by weight $> 2\%$ of carbon
720219	Ferro-manganese, containing by weight $\leq 2\%$ carbon
720241	Ferro-chromium, containing by weight $> 4\%$ of carbon
720719	Semi-finished products of iron or non-alloy steel containing, by weight, $< 0,25\%$ of carbon, ...
721899	Semi-finished products of stainless steel (excluding of rectangular [other than square] cr ...
860290	Rail locomotives (excluding those powered from an external source of electricity or by accumulators ...
860729	Brakes (other than air brakes) and parts thereof, for railway or tramway locomotives or rolling ...

**Table A4.**  
Top 40 specialised  
products of China  
during 2001 and 2018

**Note:** Technological classification is based on [Lall \(2000\)](#)  
**Source:** Author's calculation



HS code	Agro-based products (India)
020421	Fresh or chilled sheep carcasses and half-carcasses (excluding lambs)
040590	Fats and oils derived from milk and dehydrated butter and ghee (excluding natural butter, ...
071220	Dried onions, whole, cut, sliced, broken or in powder, but not further prepared
170191	Refined cane or beet sugar, containing added flavouring or colouring, in solid form
170199	Cane or beet sugar and chemically pure sucrose, in solid form (excluding cane and beet sugar ...
170230	Glucose in solid form and glucose syrup, not containing added flavouring or colouring matter ...
190300	Tapioca and substitutes therefor prepared from starch, in the form of flakes, grains, pearls, ...
200799	Jams, jellies, marmalades, purées or pastes of fruit, obtained by cooking, whether or not containing ...
240399	Chewing tobacco, snuff and other manufactured tobacco and manufactured tobacco substitutes, ...
400520	Compounded rubber, unvulcanised, in the form of solutions or dispersions (excluding rubber ...
400821	Plates, sheets and strip, of non-cellular rubber
400921	Tubes, pipes and hoses, of vulcanised rubber (excluding hard rubber), reinforced or otherwise ...
401390	Inner tubes, of rubber (excluding those of a kind used on motor cars, incl. station wagons ...
440831	Sheets for veneering, incl. those obtained by slicing laminated wood, for plywood or for other ...
480220	Paper and paperboard of a kind used as a base for photosensitive, heat-sensitive or electrosensitive ...
480254	Uncoated paper and paperboard, of a kind used for writing, printing or other graphic purposes, ...
482390	Paper, paperboard, cellulose wadding and webs of cellulose fibres, in strips or rolls of a ...

**Note:** Technological classification is based on [Lall \(2000\)](#)

**Source:** Author's calculation

**Table A5.**

HS code	Resource-based products (India)
270710	Benzol “benzene” containing > 50% of benzene (excluding chemically defined)
271019	Medium oils and preparations, of petroleum or bituminous minerals, not containing biodiesel, . . .
271099	Waste oils containing mainly petroleum or bituminous minerals (excluding those containing polychlorinated
271210	Petroleum jelly
280540	Mercury
282490	Lead oxides (excluding monoxide “litharge, massicot”)
282919	Chlorates (excluding sodium)
282990	Perchlorates; bromates and perbromates; iodates and periodates (excluding inorganic or organic . . .
283190	Dithionites and sulfoxylates (excluding sodium)
283220	Sulphites (excluding sodium)
283330	Alums
283340	Peroxo sulphates “persulphates”
283720	Complex cyanides (excluding inorganic or organic compounds of mercury)
290220	Benzene
290243	P-Xylene
290290	Cyclic hydrocarbons (excluding cyclanes, cyclenes, benzene, toluene, xylenes, styrene, ethylbenzene . . .
290420	Derivatives of hydrocarbons containing only nitro or nitroso groups
290930	Aromatic ethers and their halogenated, sulphonated, nitrated or nitrosated derivatives
290950	Ether-phenols, ether-alcohol-phenols and their halogenated, sulphonated, nitrated or nitrosated . . .
291100	Acetals and hemiacetals, whether or not with other oxygen function and their halogenated, . . .
291219	Acyclic aldehydes, without other oxygen function (excluding methanal [formaldehyde] and ethanal . . .
291422	Cyclohexanone and methylcyclohexanones
291423	Ionones and methylionones
291429	Cyclanic, cyclenic or cycloterpenic ketones, without other oxygen function (excluding cyclohexanone, . . .
291439	Ketones, aromatic, without other oxygen function (excluding phenylacetone [phenylpropan-2-one])
292111	Methylamine, dimethylamine or trimethylamine and their salts
292112	Diethylamine and its salts
292145	1-Naphthylamine “alpha-naphthylamine”, 2-naphthylamine “beta-naphthylamine” and their derivatives;
292146	Amfetamine “INN”, benzfetamine “INN”, dexametamine “INN”, etilametamine “INN”, fencametamine
292149	Aromatic monoamines and derivatives; salts thereof (excluding aniline, toluidines, diphenylamine, . . .
292151	O-Phenylenediamine, m-phenylenediamine, p-phenylenediamine or diaminotoluenes and their derivatives; . . .
292229	Amino-naphthols and other amino-phenols, their ethers and esters; salts thereof (excluding ..
292239	Amino-aldehydes, amino-ketones and amino-quinones; salts thereof (excluding those containing . . .
292320	Lecithins and other phosphoaminolipids, whether or not chemically defined
292419	Acyclic amides, incl. acyclic carbamates and their derivatives and salts thereof (excluding . . .
292421	Ureines and their derivatives; salts thereof
292800	Organic derivatives of hydrazine or of hydroxylamine

Table A6.

(continued)

HS code	Resource-based products (India)
293311	Phenazone “antipyrin” and its derivatives
293341	Levorphanol “INN” and its salts
293352	Malonylurea “barbituric acid” and its salts
293353	Allobarbital “INN”, amobarbital “INN”, barbital “INN”, butalbital “INN”, butobarbital “INN”, ...
293372	Clobazam “INN” and methypyrion “INN”
293491	Aminorex “INN”, brotizolam “INN”, clotiazepam “INN”, cloxazolam “INN”, dextromoramide “INN”, . . .
320190	Tanning extracts of vegetable origin (excluding quebracho extract and wattle extract); tannins . . .
320411	Synthetic organic disperse dyes; preparations based on synthetic organic disperse dyes of a ...
320412	Synthetic organic acid dyes, whether or not metallised and synthetic organic mordant dyes; ...
320413	Basic synthetic organic dyes; preparations based on basic synthetic organic dyes of a kind ...
320414	Direct synthetic organic dyes; preparations based on direct synthetic organic dyes of a kind ...
320417	Synthetic organic pigments; preparations based on synthetic organic pigments of a kind used . . .
320419	Synthetic organic colouring matter (excluding disperse dyes, acid dyes, mordant dyes, basic ...
320420	Synthetic organic products of a kind used as fluorescent brightening agents, whether or not ...
320500	Colour lakes (other than Chinese or Japanese lacquer and paints); preparations based on colour . . .
330125	Oils of mints, whether or not terpenaceous, incl. concretes and absolutes (excluding those of . . .
680299	Monumental or building stone, in any form, polished, decorated or otherwise worked (excluding . . .
681410	Plates, sheets and strips of agglomerated or reconstituted mica, whether or not on a support ...
690100	Bricks, blocks, tiles and other ceramic goods of siliceous fossil meals, e.g. kieselguhr, tripolite ...
690220	Refractory bricks, blocks, tiles and similar refractory ceramic constructional goods containing, . . .
690320	Retorts, crucibles, mufflers, nozzles, plugs, supports, cupels, tubes, pipes, sheaths, rods . . .
700510	Float glass and surface ground or polished glass, in sheets, having an absorbent, reflecting ...
710231	Non-industrial diamonds unworked or simply sawn, cleaved or bruted (excluding industrial diamonds)
710490	Precious and semi-precious stones, synthetic or reconstructed, worked, whether or not graded . . .

**Note:** Technological classification is based on [Lall \(2000\)](#)

**Source:** Author's calculation

**Table A6.**

HS code	Engineering products (India)
840211	Water tube boilers with a steam production > 45 t/hour
840212	Water tube boilers with a steam production ≤ 45 t/hour (excluding central heating hot water ...)
840290	Parts of vapour generating boilers and superheated water boilers, n.e.s.
840420	Condensers for steam or other vapour power units
840490	Parts of auxiliary plant of heading 8402 or 8403 and condensers for steam or other vapour power ...
840590	Parts of producer gas or water gas generators and acetylene gas generators or similar water ...
840890	Compression-ignition internal combustion piston engine “diesel or semi-diesel engine” (excluding ...)
840999	Parts suitable for use solely or principally with compression-ignition internal combustion ...
841440	Air compressors mounted on a wheeled chassis for towing
841710	Industrial or laboratory furnaces and ovens, non-electric, for the roasting, melting or other ...
841821	Household refrigerators, compression-type
841940	Distilling or rectifying plant
842611	Overhead travelling cranes on fixed support
843710	Machines for cleaning, sorting or grading seed, grain or dried leguminous vegetables
844511	Carding machines for preparing textile fibres
844629	Hand looms for weaving fabrics of a width > 30 cm, shuttle type
844819	Auxiliary machinery for machines of heading 8444, 8445, 8446 or 8447 (excluding doobies and ...)
844820	Parts and accessories of machines for extruding, drawing, texturing or cutting man-made textile ...
844832	Parts and accessories of machines for preparing textile fibres, n.e.s. (other than card clothing)
844849	Parts and accessories of weaving machines “looms” and their auxiliary machinery, n.e.s.
845590	Parts of metal-rolling mills, n.e.s.
846820	Gas-operated machinery and apparatus for soldering, brazing, welding or surface tempering (excluding ...)
846890	Parts of machinery and apparatus for soldering, brazing, welding or surface tempering, non-electric, ...
847432	Machines for mixing mineral substances with bitumen
847490	Parts of machinery for working mineral substances of heading 8474, n.e.s.
847629	Automatic beverage-vending machines, without heating or refrigerating devices
847720	Extruders for working rubber or plastics
847730	Blow-moulding machines for working rubber or plastics
847920	Machinery for the extraction or preparation of animal or fixed vegetable fats or oils (other ...)
851430	Electric industrial or laboratory furnaces and ovens (excluding resistance heated, induction, ...)
853310	Fixed carbon resistors, composition or film types (excluding heating resistors)
854419	Winding wire for electrical purposes, of material other than copper, insulated
854460	Electric conductors, for a voltage > 1.000 V, insulated, n.e.s.
854620	Electrical insulators of ceramics (excluding insulating fittings)
890590	Light-vessels, fire-floats, floating cranes and other vessels, the navigability of which is ...
900110	Optical fibres, optical fibre bundles and cables (excluding made up of individually sheathed ...)

Table A7.

**Note:** Technological classification is based on [Lall \(2000\)](#)

**Source:** Author's calculation

Appendix 2

HS code	High-technology products (China)
284990	Carbides, whether or not chemically defined (excluding of calcium or silicon and inorganic . . .
293622	Vitamin B1 and its derivatives, used primarily as vitamins
293623	Vitamin B2 and its derivatives, used primarily as vitamins
293624	D-Pantothenic or DL-pantothenic acid “Vitamin B3 or B5” and their derivatives, used primarily . . .
293625	Vitamin B6 and its derivatives, used primarily as vitamins
294110	Penicillins and their derivatives with a penicillanic acid structure; salts thereof
294150	Erythromycin and its derivatives; salts thereof
294190	Antibiotics (excluding penicillins and their derivatives with a penicillanic acid structure, . . .
847050	Cash registers incorporating a calculating device
847329	Parts and accessories of non-electronic calculators for accounting machines, cash registers . . .
847330	Parts and accessories of automatic data-processing machines or for other machines of heading . . .
847340	Parts and accessories of other office machines of heading 8472, n.e.s.
850132	DC motors and DC generators of an output > 750 W but ≤ 75 kW
850212	Generating sets with compression-ignition internal combustion piston engine “diesel or semi-diesel . . .
850511	Permanent magnets of metal and articles intended to become permanent magnets after magnetisation . . .
851120	Ignition magnetos, magneto-dynamos and magnetic flywheels, for spark-ignition or compression-ignition . . .
851130	Distributors and ignition coils of a kind used for spark-ignition or compression-ignition internal . . .
851712	Telephones for cellular networks “mobile telephones” or for other wireless networks
851761	Base stations of apparatus for the transmission or reception of voice, images or other data
851822	Multiple loudspeakers, mounted in the same enclosure
851850	Electric sound amplifier sets
852352	Cards incorporating one or more electronic integrated circuits “smart cards”
852859	Monitors, not incorporating television reception apparatus (excluding with cathode ray tube . . .
852869	Projectors, not incorporating television reception apparatus (excluding of a kind solely or . . .
852871	Reception apparatus for television, whether or not incorporating radio-broadcast receivers . . .
852872	Reception apparatus for television, colour, whether or not incorporating radio-broadcast receivers . . .
853110	Burglar or fire alarms and similar apparatus
853190	Parts of electric sound or visual signalling apparatus, n.e.s.
853922	Filament lamps of a power ≤ 200 W and for a voltage > 100 V (excluding tungsten halogen filament . . .
854011	Cathode ray television picture tubes, incl. video monitor cathode ray tubes, colour
854232	Electronic integrated circuits as memories
900890	Parts and accessories for image projectors, photographic enlargers and reducers, n.e.s.
901060	Projection screens
902580	Hydrometers, areometers and similar floating instruments, barometers, hygrometers and psychrometers, . . .

**Table A8.**  
consistent  
competitive products  
of China during 2001-  
08 and 2010-18

**Note:** Technological classification is based on [Lall \(2000\)](#)

**Source:** Author's calculation

CR

	HS code	Agro-based products (China)
	020711	Fresh or chilled fowls of the species Gallus domesticus, not cut in pieces
	200390	Mushrooms and truffles, prepared or preserved otherwise than by vinegar or acetic acid (excluding . . .
	200599	Vegetables and mixtures of vegetables, prepared or preserved otherwise than by vinegar, non-frozen . . .
	200880	Strawberries, prepared or preserved, whether or not containing added sugar or other sweetening . . .
	401120	New pneumatic tyres, of rubber, of a kind used for buses and lorries (excluding tyres with . . .
	441210	Plywood, veneered panel and similar laminated wood, of bamboo, not containing particle board . . .
	441299	Laminated wood without blockboard, laminboard or battenboard (excluding of bamboo, plywood . . .
	480262	Uncoated paper and paperboard, of a kind used for writing, printing or other graphic purposes, . . .
	481032	Kraft paper and paperboard, bleached uniformly throughout the mass and containing > 95% chemically . . .
	482340	Rolls, sheets and dials, printed for self-recording apparatus, in rolls of a width ≤ 36 cm, . . .
Table A9.	<b>Note:</b> Technological classification is based on <a href="#">Lall (2000)</a> <b>Source:</b> Author's calculation	

HS code	Textile products (China)
520526	Single cotton yarn, of combed fibres, containing $\geq 85\%$ cotton by weight and with a linear ...
520527	Single cotton yarn, of combed fibres, containing $\geq 85\%$ cotton by weight and with a linear ...
520546	Multiple “folded” or cabled cotton yarn, of combed fibres, containing $\geq 85\%$ cotton by weight ...
520623	Single cotton yarn containing predominantly, but $< 85\%$ cotton by weight, of combed fibres and ...
520625	Single cotton yarn containing predominantly, but $< 85\%$ cotton by weight, of combed fibres and ...
520832	Plain woven fabrics of cotton, containing $\geq 85\%$ cotton by weight and weighing $> 100$ g to 200 ...
520849	Woven fabrics of cotton, containing $\geq 85\%$ cotton by weight and weighing $\leq 200$ g/m <sup>2</sup> , made ...
520921	Plain woven fabrics of cotton, containing $\geq 85\%$ cotton by weight and weighing $> 200$ g/m <sup>2</sup> , ...
520939	Woven fabrics of cotton, containing $\geq 85\%$ cotton by weight and weighing $> 200$ g/m <sup>2</sup> , dyed (excluding ...
520941	Plain woven fabrics of cotton, containing $\geq 85\%$ cotton by weight and weighing $> 200$ g/m <sup>2</sup> , ...
520949	Woven fabrics of cotton, containing $\geq 85\%$ cotton by weight and weighing $> 200$ g/m <sup>2</sup> , made of ...
520959	Woven fabrics of cotton, containing $\geq 85\%$ cotton by weight and weighing $> 200$ g/m <sup>2</sup> , printed ...
521029	Woven fabrics of cotton, containing predominantly, but $< 85\%$ cotton by weight, mixed principally ...
521039	Woven fabrics of cotton, containing predominantly, but $< 85\%$ cotton by weight, mixed principally ...
521049	Woven fabrics of cotton, containing predominantly, but $< 85\%$ cotton by weight, mixed principally ...
521119	Woven fabrics of cotton, containing predominantly, but $< 85\%$ cotton by weight, mixed principally ...
521139	Woven fabrics of cotton, containing predominantly, but $< 85\%$ cotton by weight, mixed principally ...
521142	Denim, containing predominantly, but $< 85\%$ cotton by weight, mixed principally or solely with ...
521149	Woven fabrics of cotton, containing predominantly, but $< 85\%$ cotton by weight, mixed principally ...
521211	Woven fabrics of cotton, containing predominantly, but $< 85\%$ cotton by weight, other than those ...
540110	Sewing thread of synthetic filaments, whether or not put up for retail sale
540219	High-tenacity filament yarn of nylon or other polyamides (excluding sewing thread, yarn put ...
540220	High-tenacity filament yarn of polyesters (excluding that put up for retail sale)
540233	Textured filament yarn of polyester (excluding that put up for retail sale)
540246	Filament yarn of polyester, incl. monofilament of $< 67$ decitex, single, untwisted or with a ...
540247	Filament yarn of polyester, incl. monofilament of $< 67$ decitex, single, untwisted or with a ...
540249	Synthetic filament yarn, incl. synthetic monofilament of $< 67$ decitex, single, untwisted or ...
540252	Filament yarn of polyester, incl. monofilament of $< 67$ decitex, single, with a twist of $> 50$ ...
540262	Multiple “folded” or cabled filament yarn of polyester, incl. monofilament of $< 67$ decitex ...

(continued)

Table A10.



HS code	Textile products (China)
540269	Multiple “folded” or cabled synthetic filament yarn, incl. synthetic monofilament of < 67 decitex . . .
540332	Yarn of viscose rayon filament, incl. monofilament of < 67 decitex, single, with a twist of . . .
540600	Man-made filament yarn, put up for retail sale (excluding sewing thread)
550921	Single yarn containing ≥ 85% polyester staple fibres by weight (excluding sewing thread and . . .
550922	Multiple “folded” or cabled yarn containing ≥ 85% polyester staple fibres by weight (excluding . . .
550941	Single yarn containing ≥ 85% synthetic staple fibres by weight (excluding sewing thread, yarn . . .
550942	Multiple “folded” or cabled yarn containing ≥ 85% synthetic staple fibres by weight (excluding . . .
550969	Yarn containing predominantly, but < 85% acrylic or modacrylic staple fibres by weight, other . . .
551012	Multiple “folded” or cabled yarn containing ≥ 85% artificial staple fibres by weight (excluding . . .
551090	Yarn containing predominantly, but < 85% artificial staple fibres by weight, other than that . . .
560391	Nonwovens, whether or not impregnated, coated, covered or laminated, n.e.s., weighing ≤ 25 . . .
560392	Nonwovens, whether or not impregnated, coated, covered or laminated, n.e.s., weighing > 25 . . .
560500	Metallised yarn, whether or not gimped, being textile yarn, or strip or the like of heading . . .
560600	Gimped yarn, gimped strip and the like of heading 5404 or 5405; chenille yarn, incl. flock . . .
560749	Twine, cordage, ropes and cables of polyethylene or polypropylene, whether or not plaited or . . .
560750	Twine, cordage, ropes and cables, of synthetic fibres, whether or not plaited or braided and . . .
560900	Articles of yarn, strip or the like of heading 5404 or 5405, or of twine, cordage, ropes or . . .
570241	Carpets and other floor coverings, of wool or fine animal hair, woven, not tufted or flocked, . . .
570330	Carpets and other floor coverings, of man-made textile materials, tufted “needle punched”, . . .
580220	Terry towelling and similar woven terry fabrics (excluding those of cotton, narrow woven fabrics . . .
580421	Mechanically made lace of man-made fibres in the piece, in strips or in motifs (excluding fabrics . . .
580500	Hand-woven tapestries of the type Gobelin, Flanders, Aubusson, Beauvais and the like and needle-worked . . .
580710	Labels, badges and similar articles, of textile materials, in the piece, in strips or cut to . . .
590110	Textile fabrics coated with gum or amylaceous substances, of a kind used for the outer covers . . .
590390	Textile fabrics impregnated, coated, covered or laminated with plastics other than poly“vinyl . . .
590700	Impregnated, coated or covered textile fabrics; painted canvas being theatrical scenery, studio . . .
591140	Straining cloth of a kind used in oil-presses or for similar technical purposes, incl. that . . .
600121	Looped pile fabrics of cotton, knitted or crocheted
600192	Pile fabrics of man-made fibres, knitted or crocheted (excluding “long pile” fabrics)
600410	Knitted or crocheted fabrics, of a width of > 30 cm, containing ≥ 5% by weight elastomeric . . .

Table A10.

(continued)

HS code	Textile products (China)
600624	Printed cotton fabrics, knitted or crocheted, of a width of > 30 cm (excluding warp knit fabrics . . .
600632	Dyed fabrics, knitted or crocheted, of synthetic fibres, of a width of > 30 cm (excluding warp . . .
600634	Printed fabrics, knitted or crocheted, of synthetic fibres, of a width of > 30 cm (excluding . . .
600644	Printed fabrics, knitted or crocheted, of artificial fibres, of a width of > 30 cm (excluding . . .
610441	Women's or girls' dresses of wool or fine animal hair, knitted or crocheted (excluding petticoats)
610451	Women's or girls' skirts and divided skirts of wool or fine animal hair, knitted or crocheted . . .
610461	Women's or girls' trousers, bib and brace overalls, breeches and shorts of wool or fine animal . . .
611231	Men's or boys' swimwear of synthetic fibres, knitted or crocheted
611241	Women's or girls' swimwear of synthetic fibres, knitted or crocheted
620442	Women's or girls' dresses of cotton (excluding knitted or crocheted and petticoats)
701940	Woven fabrics of glass fibres made from roving's
<i>HS CODE</i>	<i>OTHER LOW-TECH PRODUCTS (China)</i>
391810	Floor coverings, whether or not self-adhesive, in rolls or in the form of tiles and wall or . . .
391890	Floor coverings of plastics, whether or not self-adhesive, in rolls or in the form of tiles, . . .
482369	Trays, dishes, plates, cups and the like, of paper or paperboard (excluding of bamboo paper . . .
701810	Glass beads, imitation pearls, imitation precious or semi-precious stones and similar glass . . .
711719	Imitation jewellery, of base metal, whether or not plated with precious metal (excluding cuff . . .
721049	Flat-rolled products of iron or non-alloy steel, of a width of $\geq 600$ mm, hot-rolled or cold-rolled . . .
721061	Flat-rolled products of iron or non-alloy steel, of a width of $\geq 600$ mm, hot-rolled or cold-rolled . . .
721621	L sections of iron or non-alloy steel, not further worked than hot-rolled, hot-drawn or extruded, . . .
722530	Flat-rolled products of alloy steel other than stainless, of a width of $\geq 600$ mm, not further . . .
722720	Bars and rods of silico-manganese steel, hot-rolled, in irregularly wound coils
722830	Bars and rods of alloy steel other than stainless, not further worked than hot-rolled, hot-drawn . . .
722840	Bars and rods of alloy steel other than stainless, not further worked than forged (excluding . . .
730419	Line pipe of a kind used for oil or gas pipelines, seamless, of iron or steel (excluding products . . .
730423	Drill pipe, seamless, of a kind used in drilling for oil or gas, of iron or steel (excluding . . .
730539	Tubes and pipes having circular cross sections and an external diameter of > 406.4 mm, of iron . . .
730611	Line pipe of a kind used for oil or gas pipelines, welded, of flat-rolled products of stainless . . .
730630	Tubes, pipes and hollow profiles, welded, of circular cross section, of iron or non-alloy steel . . .
730711	Tube or pipe fittings of non-malleable cast iron
730723	Butt welding tube or pipe fittings of stainless steel (excluding cast products)
730791	Flanges of iron or steel (excluding cast or stainless products)
730799	Tube or pipe fittings, of iron or steel (excluding cast iron or stainless steel products; flanges; . . .
730820	Towers and lattice masts, of iron or steel

(continued)

Table A10.

HS code	Textile products (China)
730840	Equipment for scaffolding, shuttering, propping or pit-propping (excluding composite sheetpiling . . .
731210	Stranded wire, ropes and cables, of iron or steel (excluding electrically insulated products . . .
731290	Plaited bands, slings and the like, of iron or steel (excluding electrically insulated products)
731300	Barbed wire of iron or steel; twisted hoop or single flat wire, barbed or not and loosely . . .
731414	Woven cloth, incl. endless bands, of stainless steel wire (excluding woven products of metal . . .
731419	Woven cloth, incl. endless bands, of iron or steel wire (excluding stainless and woven products . . .
731431	Grill, netting and fencing, of iron or steel wire, welded at the intersection, plated or coated . . .
731450	Expanded metal, of iron or steel
731581	Stud-link of iron or steel
731600	Anchors, grapnels and parts thereof, of iron or steel
732111	Appliances for baking, frying, grilling and cooking and plate warmers, for domestic use, of . . .
732189	Stoves, heaters, grates, fires, wash boilers, braziers and similar domestic appliances, of . . .
732410	Sinks and washbasins, of stainless steel
732490	Sanitary ware, incl. parts thereof (excluding cans, boxes and similar containers of heading . . .
732611	Grinding balls and similar articles for mills, of iron or steel, forged or stamped, but not . . .
761090	Structures and parts of structures, of aluminium, n.e.s. and plates, rods, profiles, tubes . . .
761410	Stranded wire, cables, plaited bands and the like, of aluminium, with steel core (excluding . . .
761490	Stranded wires, cables, ropes and similar articles, of aluminium (other than with steel core . . .
810390	Articles of tantalum, n.e.s.
820239	Circular saw blades, incl. slitting or slotting saw blades and parts thereof, of base metal, . . .
820551	Household hand tools, non-mechanical, with working parts of base metal, n.e.s.
821194	Blades of base metal for table knives, pocket knives and other knives of heading 8211
821290	Parts of non-electric razors of base metal (excluding safety razor blades and razor blade blanks . . .
830241	Base metal mountings and fittings suitable for buildings (excluding locks with keys and hinges)
830249	Base metal mountings, fittings and similar articles (excluding locks with keys, clasps and . . .
830400	Filing cabinets, card-index cabinets, paper trays, paper rests, pen trays, office-stamp stands . . .
830520	Staples in strips, of base metal
831130	Coated rods and cored wire, of base metal, for soldering, brazing or welding by flame (excluding . . .
940310	Metal furniture for offices (excluding seats)
940330	Wooden furniture for offices (excluding seats)
940370	Furniture of plastics (excluding medical, dental, surgical or veterinary and seats)
940410	Mattress supports for bed frames (excluding spring interiors for seats)
940421	Mattresses of cellular rubber or plastics, whether or not covered
950300	Tricycles, scooters, pedal cars and similar wheeled toys; dolls' carriages; dolls; other toys; . . .
950590	Festival, carnival or other entertainment articles, incl. conjuring tricks and novelty jokes, . . .
950629	Water-skis, surfboards and other water-sport equipment (other than sailboards)
960329	Shaving brushes, hair brushes, nail brushes, eyelash brushes and other brushes for use on the . . .
960630	Button moulds and other parts of buttons; button blanks
960711	Slide fasteners fitted with chain scoops of base metal
960719	Slide fasteners (excluding fitted with chain scoops of base metal)
960720	Parts of slide fasteners

Table A10.

(continued)

		Export competitiveness of India and China
HS code	Textile products (China)	
960920	Pencil leads, black or coloured	
960990	Pencils, pastels, drawing charcoals, writing or drawing chalks and tailors' chalks	
961220	Ink-pads, whether or not inked, with or without boxes	
961390	Parts of lighters, n.e.s.	
961620	Powder puffs and pads for the application of cosmetics or toilet preparations	
<b>Note:</b> Technological classification is based on <a href="#">Lall (2000)</a>		<b>Table A10.</b>
<b>Source:</b> Author's calculation		

HS code	Engineering products (China)
691010	Ceramic sinks, washbasins, washbasin pedestals, baths, bidets, water closet pans, flushing ...
732211	Radiators for central heating, non-electrically heated and parts thereof, of iron or steel ...
840420	Condensers for steam or other vapour power units
840731	Spark-ignition reciprocating piston engine, of a kind used for the propulsion of vehicles of ...
841430	Compressors for refrigerating equipment
841590	Parts of air conditioning machines, comprising a motor-driven fan and elements for changing ...
841780	Industrial or laboratory furnaces and ovens, non-electric, incl. incinerators (excluding those ...
841790	Parts of industrial or laboratory furnaces, non-electric, incl. incinerators, n.e.s.
841810	Combined refrigerator-freezers, with separate external doors
841821	Household refrigerators, compression-type
841829	Household refrigerators, absorption-type
841830	Freezers of the chest type, of a capacity $\leq 800$ L
841960	Machinery for liquefying air or other gases
842410	Fire extinguishers, whether or not charged
842420	Spray guns and similar appliances (other than electrical machines, appliances and other devices ...
842489	Mechanical appliances, whether or not hand-operated, for projecting, dispersing or spraying ...
842511	Pulley tackle and hoists, powered by electric motor (other than skip hoists or hoists of a ...
842531	Winches and capstans powered by electric motor
842611	Overhead travelling cranes on fixed support
842630	Portal or pedestal jib cranes
842810	Lifts and skip hoists
843131	Parts of lifts, skip hoists or escalators, n.e.s.
844314	Letterpress printing machinery, reel fed (excluding flexographic printing machinery)
844315	Letterpress printing machinery (excluding flexographic printing and reel fed machinery)
844513	Drawing or roving machines
844530	Textile doubling or twisting machines
844859	Parts and accessories of machines of heading 8447, n.e.s.
845019	Household or laundry-type washing machines, of a dry linen capacity $\leq 6$ kg (excluding fully-automatic ...
845090	Parts of household or laundry-type washing machines, n.e.s.
845140	Machines for washing, bleaching or dyeing textile yarns, fabrics or made-up textile articles ...
845290	Furniture, bases and covers for sewing machines and parts thereof; other parts of sewing machines
845420	Ingot moulds and ladles, of a kind used in metallurgy or in metal foundries
845510	Mills for rolling metal tubes
845521	Hot or combination hot and cold metal-rolling mills (excluding tubes mills)
845522	Cold-rolling mills for metal (excluding tube mills)
846781	Chainsaws for working in the hand, with self-contained non-electric motor
846810	Hand-held blow pipes, gas-operated, for soldering, brazing or welding
846890	Parts of machinery and apparatus for soldering, brazing, welding or surface tempering, non-electric, ...
847439	Machinery for mixing or kneading solid mineral substances, incl. those in powder or paste form ...
847529	Machines for manufacturing or hot working glass or glassware (excluding machines for making ...
847690	Parts of automatic goods-vending machines, incl. money changing machines, n.e.s.

Table A11.

*(continued)*

HS code	Engineering products (China)
847740	Vacuum-moulding machines and other thermoforming machines for working rubber or plastics
848010	Moulding boxes for metal foundry
848020	Mould bases (other than of graphite or other carbon, ceramic materials or glass)
848071	Injection or compression-type moulds for rubber or plastics
850990	Parts of electromechanical domestic appliances, with self-contained electric motor, n.e.s. . . .
851030	Hair-removing appliances with self-contained electric motor
851539	Machines for arc welding of metals, incl. plasma arc welding, neither fully nor partly automatic
851633	Electric hand-drying apparatus
851690	Parts of electric water heaters, immersion heaters, space-heating apparatus and soil-heating . . .
851930	Turntables "record-decks"
851981	Sound recording or sound reproducing apparatus, using magnetic, optical or semiconductor media . . .
851989	Sound recording or sound reproducing apparatus (excluding using magnetic, optical or semiconductor . . .
852713	Radio-broadcast receivers capable of operating without an external source of power, combined . . .
852791	Radio-broadcast receivers, for mains operation only, combined with sound recording or reproducing . . .
852792	Radio-broadcast receivers, for mains operation only, not combined with sound recording or reproducing . . .
852799	Radio-broadcast receivers, for mains operation only, not combined with sound recording or reproducing . . .
854470	Optical fibre cables made up of individually sheathed fibres, whether or not containing electric . . .
854620	Electrical insulators of ceramics (excluding insulating fittings)
890120	Tankers
902820	Liquid meters, incl. calibrating meters therefor
910700	Time switches with clock or watch movement or with synchronous motor
910890	Watch movements, complete and assembled, with hand winding only
911012	Incomplete watch movements, assembled
940210	Dentists', barbers' or similar chairs having rotating as well as both reclining and elevating . . .

**Note:** Technological classification is based on [Lall \(2000\)](#)

**Source:** Author's calculation

**Table A11.**

HS code	Resource-based products (China)
110812	Maize starch
270810	Pitch obtained from coal tar or from other mineral tars
271312	Petroleum coke, calcined
280450	Boron; tellurium
280620	Chlorosulphuric acid
281111	Hydrogen fluoride “hydrofluoric acid”
282010	Manganese dioxide
282200	Cobalt oxides and hydroxides; commercial cobalt oxides
282739	Chlorides (excluding ammonium, calcium, magnesium, aluminium, nickel and mercury chloride)
282741	Chloride oxides and chloride hydroxides of copper
283210	Sodium sulphites
283322	Sulphate of aluminium
283522	Mono- or disodium phosphate
283524	Phosphates of potassium
283526	Phosphates of calcium (excluding calcium hydrogenorthophosphate “dicalcium phosphate”)
284290	Salts of inorganic acids or peroxyacids (excluding of oxometallic or peroxometallic acids, ...
290329	Unsaturated chlorinated derivatives of acyclic hydrocarbons (excluding vinyl chloride “chloroethylene”, ...
291419	Acyclic ketones, without other oxygen function (excluding acetone, butanone “methyl ethyl ketone” ...
291440	Ketone-alcohols and ketone-aldehydes
291450	Ketone-phenols and ketones with other oxygen function
291990	Phosphoric esters and their salts, incl. lactophosphates; their halogenated, sulphonated, nitrated ...
292019	Thiophosphoric esters “phosphorothioates” and their salts; their halogenated, sulphonated, ...
292143	Toluidines and their derivatives; salts thereof
292151	O-Phenylenediamine, m-phenylenediamine, p-phenylenediamine or diaminotoluenes and their derivatives; ...
292229	Amino-naphthols and other amino-phenols, their ethers and esters; salts thereof (excluding ...
292241	Lysine and its esters; salts thereof
292411	Meprobamate “INN”
292419	Acyclic amides, incl. acyclic carbamates and their derivatives and salts thereof (excluding ...
292423	2-Acetamidobenzoic acid “N-acetylanthranilic acid” and its salts
292429	Cyclic amides, incl. cyclic carbamates and their derivatives; salts thereof (excluding ureines ...
292519	Imides and their derivatives; salts thereof (excluding saccharin and its salts, glutethimide ...
292690	Nitrile-function compounds (excluding acrylonitrile, 1-cyanoguanidine “dicyandiamide”, fenproporex ...
293020	Thiocarbamates and dithiocarbamates (excluding inorganic or organic compounds of mercury)
293090	Organo-sulphur compounds (excluding thiocarbamates and dithiocarbamates, thiuram mono-, di- ...
293319	Heterocyclic compounds with nitrogen hetero-atom[s] only, containing an unfused pyrazole ring, ...
293321	Hydantoin and its derivatives
293361	Melamine
293369	Heterocyclic compounds with nitrogen hetero-atom[s] only, containing an unfused triazine ring, ...

Table A12.

(continued)



HS code	Resource-based products (China)
320420	Synthetic organic products of a kind used as fluorescent brightening agents, whether or not
350610	...
350699	Products suitable for use as glues or adhesives put up for retail sale as glues or adhesives, ...
680300	Glues, prepared and other prepared adhesives, n.e.s.
680800	Worked slate and articles of slate or of agglomerated slate (excluding slate granules, chippings ...
681189	Panels, boards, tiles, blocks and similar articles of vegetable fibre, of straw or of shavings, ...
681293	Articles of cellulose fibre-cement or the like, not containing asbestos (excluding corrugated ...
681299	Compressed asbestos fibre jointing, in sheets or rolls (excluding of crocidolite asbestos)
681591	Fabricated asbestos fibres; mixtures with a basis of asbestos or with a basis of asbestos and ...
700232	Articles of stone or other mineral substances, n.e.s. containing magnesite, dolomite or chromite
700529	Tubes of glass having a linear coefficient of expansion $\leq 5 \times 10^{-6}$ per kelvin within a temperature ...
700719	Float glass and surface ground and polished glass, in sheets, but not otherwise worked (excluding ...
700991	Toughened "tempered" safety glass (excluding glass of size and shape suitable for incorporation ...
701590	Glass mirrors, unframed (excluding rear-view mirrors for vehicles, optical mirrors, optically ...
810920	Clock or watch glasses and similar glasses, glasses for non-corrective spectacles, curved, ...
	Unwrought zirconium; zirconium powders

**Note:** Technological classification is based on [Lall \(2000\)](#)

**Source:** Author's calculation

**Table A12.**

HS code	Processing products (China)
290522	Acyclic terpene alcohols
290544	D-glucitol “sorbitol”
290549	Tri- and other polyhydric acyclic alcohols (excluding 2-ethyl-2-“hydroxymethyl” propane-1,3-diol . . .
290619	Cyclanic, cyclenic or cycloterpenic alcohols and their halogenated, sulphonated, nitrated or . . .
290621	Benzyl alcohol
291511	Formic acid
291539	Esters of acetic acid (excluding ethyl, vinyl, n-butyl and dinoseb [ISO] acetates)
291620	Cyclanic, cyclenic or cycloterpenic monocarboxylic acids, their anhydrides, halides, peroxides, . . .
291639	Aromatic monocarboxylic acids, their anhydrides, halides, peroxides, peroxyacids and their . . .
291719	Acyclic polycarboxylic acids, their anhydrides, halides, peroxides, peroxyacids and their halogenated, . . .
291811	Lactic acid, its salts and esters (excluding inorganic or organic compounds of mercury)
291816	Gluconic acid, its salts and esters
291830	Carboxylic acids with aldehyde or ketone function but without other oxygen function, their . . .
291899	Carboxylic acids with additional oxygen function and their anhydrides, halides, peroxides and . . .
310540	Ammonium dihydrogenorthophosphate “monoammonium phosphate”, whether or not mixed with diammonium . . .
320720	Vitrifiable enamels and glazes, engobes “slips” and similar preparations of the kind used in . . .
321390	Artist's, student's or signboard painter's colours, modifying tints, amusement colours and . . .
330730	Perfumed bath salts and other bath and shower preparations
380110	Artificial graphite (excluding retort graphite, retort carbon and goods of artificial graphite, . . .
380130	Carbonaceous pastes for electrodes and similar pastes for furnace linings
380190	Preparations based on graphite or other carbon in the form of pastes, blocks, plates or other . . .
381210	Prepared rubber accelerators
392043	Plates, sheets, film, foil and strip, of non-cellular polymers of vinyl chloride, containing . . .
392093	Plates, sheets, film, foil and strip, of non-cellular amino-resins, not reinforced, laminated, . . .
540741	Woven fabrics of yarn containing ≥ 85% by weight of filaments of nylon or other polyamides, . . .
540751	Woven fabrics of yarn containing ≥ 85% by weight of textured polyester filaments, incl. monofilament . . .
540761	Woven fabrics of yarn containing ≥ 85% by weight of non-textured polyester filaments, incl. . . .
540771	Woven fabrics of yarn containing ≥ 85% synthetic filament by weight, incl. monofilament of . . .
540773	Woven fabrics of yarn containing ≥ 85% synthetic filament by weight, incl. monofilament of . . .
550410	Staple fibres of viscose rayon, not carded, combed or otherwise processed for spinning
550620	Staple fibres of polyesters, carded, combed or otherwise processed for spinning
551219	Woven fabrics containing ≥ 85% polyester staple fibres by weight, dyed, made of yarn of different . . .

Table A13.

(continued)

HS code	Processing products (China)
551299	Woven fabrics containing $\geq 85\%$ synthetic staple fibres by weight, dyed, made of yarn of different . . .
551339	Woven fabrics containing predominantly, but $< 85\%$ synthetic staple fibres by weight, mixed . . .
551341	Plain woven fabrics containing predominantly, but $< 85\%$ polyester staple fibres by weight, . . .
551422	Woven fabrics containing predominantly, but $< 85\%$ polyester staple fibres by weight, mixed . . .
551513	Woven fabrics containing predominantly, but $< 85\%$ polyester staple fibres by weight, mixed . . .
551519	Woven fabrics containing predominantly, but $< 85\%$ polyester staple fibres by weight, other . . .
551613	Woven fabrics containing $\geq 85\%$ artificial staple fibres by weight, made of yarn of different . . .
551624	Woven fabrics containing predominantly, but $< 85\%$ artificial staple fibres by weight, mixed . . .

**Note:** Technological classification is based on [Lall \(2000\)](#)

**Source:** Author's calculation

**Table A13.**

Technology	Manufacturing Category	HS Code	Product Description (India)	LFI 2001
Resource-intensive	Resource-based	710239	Diamonds, worked, but not mounted or set (excluding industrial diamonds)	6.02
Low-tech	Others	711319	Articles of jewellery and parts thereof, of precious metal other than silver, whether or not . . .	1.16
Low-tech	Textiles	610910	T-shirts, singlets and other vests of cotton, knitted or crocheted	0.61
Low-tech	Textiles	620630	Women's or girls' blouses, shirts and shirt-blouses of cotton (excluding knitted or crocheted . . .	0.54
Low-tech	Textiles	630492	Articles for interior furnishing, of cotton (excluding knitted or crocheted, blankets and travelling . . .	0.49
Low-tech	Textiles	420310	Articles of apparel, of leather or composition leather (excluding clothing accessories, footwear	0.46
Low-tech	Textiles	610510	Men's or boys' shirts of cotton, knitted or crocheted (excluding nightshirts, T-shirts, singlets . . .	0.42
Resource-intensive	Resource-based	260111	Non-agglomerated iron ores and concentrates (excluding roasted iron pyrites)	0.39
Low-tech	Textiles	520511	Single cotton yarn, of uncombed fibres, containing $\geq 85\%$ cotton by weight and with a linear .	0.34
Resource	Resource-based	294200	Separate chemically defined organic compounds, n.e.s.	0.33
Low-tech	Textiles	520710	Cotton yarn containing $\geq 85\%$ cotton by weight, put up for retail sale (excluding sewing thread)	0.32
Low-tech	Textiles	630790	Made-up articles of textile materials, incl. dress patterns, n.e.s.	0.29
Low-tech	Textiles	640610	Uppers and parts thereof (excluding stiffeners and general parts made of asbestos)	0.27
Low-tech	Textiles	620442	Women's or girls' dresses of cotton (excluding knitted or crocheted and petticoats)	0.26
Low-tech	Textiles	520521	Single cotton yarn, of combed fibres, containing $\geq 85\%$ cotton by weight and with a linear . . .	0.26
Resource-intensive	Agro-based	170199	Cane or beet sugar and chemically pure sucrose, in solid form (excluding cane and beet sugar	0.24

Table A14.

*(continued)*

					Export competitiveness of India and China
Technology	Manufacturing Category	HS Code	Product Description (India)	LFI 2001	
Low-tech	Textiles	620443	Women's or girls' dresses of synthetic fibres (excluding knitted or crocheted and petticoats)	0.24	
Resource-intensive	Resource-based	680223	Granite and articles thereof, simply cut or sawn, with a flat or even surface (excluding with . . .	0.23	
Low-tech	Textiles	500720	Woven fabrics containing $\geq 85\%$ silk or schappe by weight	0.21	
Low-tech	Others	732393	Table, kitchen or other household articles and parts thereof, of stainless steel (excluding . . .	0.20	
Resource-intensive	Agro-based	401120	New pneumatic tyres, of rubber, of a kind used for buses and lorries (excluding tyres with . . .	0.18	
Low-tech	Textiles	640351	Footwear with outer soles and uppers of leather, covering the ankle (excluding incorporating ....	0.18	
Low-tech	Textiles	520942	Denim, containing $\geq 85\%$ cotton by weight and weighing $> 200$ g/m <sup>2</sup> , made of yarn of different . . .	0.18	
Low-tech	Textiles	570110	Carpets and other textile floor coverings, of wool or fine animal hair, knotted, whether or . . .	0.18	
Low-tech	Textiles	420231	Wallets, purses, key-pouches, cigarette-cases, tobacco-pouches and similar articles carried . . .	0.17	
Medium	Processing	540710	Woven fabrics of high-tenacity yarn, nylon, other polyamides or polyesters, incl. monofilament . . .	0.16	
Low-tech	Others	732394	Table, kitchen or other household articles and parts thereof, of iron other than cast iron . . .	0.16	
Low-tech	Textiles	520811	Plain woven fabrics of cotton, containing $\geq 85\%$ cotton by weight and weighing $\leq 100$ g/m <sup>2</sup>	0.16	
Low-tech	Others	721049	Flat-rolled products of iron or non-alloy steel, of a width of $\geq 600$ mm, hot-rolled or cold-rolled . . .	0.16	
Resource-intensive	Resource-based	710399	Precious and semi-precious stones, worked, whether or not graded, but not strung, mounted or . . .	0.16	
Low-tech	Textiles	520790	Cotton yarn containing predominantly, but $< 85\%$ cotton by weight, put up for retail sale (excluding . . .	0.16	
Low-tech	Textiles	620462	Women's or girls' trousers, bib and brace overalls, breeches and shorts of cotton (excluding . . .	0.15	
Low-tech	Others	732599	Cast articles of iron or steel, n.e.s. (excluding articles of non-malleable cast iron and . . .	0.15	
(continued)					Table A14.

CR

Technology	Manufacturing Category	HS Code	Product Description (India)	LFI 2001
Low-tech	Textiles	570231	Carpets and other floor coverings, of wool or fine animal hair, woven, not tufted or flocked, . . .	0.15
Low-tech	Textiles	630419	Bedspreads of all types of textile materials (excluding knitted or crocheted, bedlinen, quilts . . .	0.14
Resource-intensive	Resource-based	320417	Synthetic organic pigments; preparations based on synthetic organic pigments of a kind used . . .	0.13
Low-tech	Textiles	420221	Handbags, whether or not with shoulder straps, incl. those without handles, with outer surface	0.13
Low-tech	Textiles	570500	Carpets and other textile floor coverings, whether or not made up (excluding knotted, woven . . .	0.13
Low-tech	Textiles	620640	Women's or girls' blouses, shirts and shirt-blouses of man-made fibres (excluding knitted or . . .	0.12
Low-tech	Textiles	610831	Women's or girls' nightdresses and pyjamas of cotton, knitted or crocheted (excluding T-shirts,	0.12

**Table A14.** **Note:** Technological classification is based on [Lall \(2000\)](#)  
**Source:** Author's calculation

Technology	Manufacturing category	HS code	Product description (India)	LFI 2018
Resource-intensive	Resource-based	271019	Medium oils and preparations, of petroleum or bituminous minerals, not containing biodiesel,	4.28
Resource-intensive	Resource-based	710239	Diamonds, worked, but not mounted or set (excluding industrial diamonds)	2.64
Resource-intensive	Resource-based	271012	Light oils and preparations, of petroleum or bituminous minerals which $\geq 90\%$ by volume "incl.	2.07
Low-tech	Others	711319	Articles of jewellery and parts thereof, of precious metal other than silver, whether or not . . .	1.65
Medium	Automotive	870322	Motor cars and other motor vehicles principally designed for the transport of persons, incl. . . .	0.48
Resource-intensive	Resource	290243	P-Xylene	0.30
Medium	Automotive	871120	Motorcycles, incl. mopeds, with reciprocating internal combustion piston engine of a cylinder	0.28
Medium	Automotive	870323	Motor cars and other motor vehicles principally designed for the transport of persons, incl. . . .	0.28
Low-tech	Textiles	610910	T-shirts, singlets and other vests of cotton, knitted or crocheted	0.26
Medium	Automotive	870899	Parts and accessories, for tractors, motor vehicles for the transport of ten or more persons, . . .	0.24
Medium	Engineering	841112	Turbojets of a thrust > 25 kN	0.23
Medium	Automotive	870321	Motor cars and other motor vehicles principally designed for the transport of persons, incl. . . .	0.23
High-tech	High-tech	880330	Parts of aeroplanes or helicopters, n.e.s. (excluding those for gliders)	0.20
Resource-intensive	Resource-based	290220	Benzene	0.19
Low-tech	Textiles	630260	Toilet linen and kitchen linen, of terry towelling or similar terry fabrics of cotton (excluding . . .	0.15
High-tech	High-tech	854511	Electrodes of graphite or other carbon, for electric furnaces	0.15
Medium	Processing	720719	Semi-finished products of iron or non-alloy steel containing, by weight, < 0,25% of carbon, . . .	0.14
Low-tech	Textiles	520523	Single cotton yarn, of combed fibres, containing $\geq 85\%$ cotton by weight and with a linear . . .	0.14
Low-tech	Textiles	630419	Bedspreads of all types of textile materials (excluding knitted or crocheted, bedlinen, quilts . . .	0.13
Medium	Processing	720241	Ferro-chromium, containing by weight > 4% of carbon	0.13
Resource-intensive	Resource-based	294200	Separate chemically defined organic compounds, n.e.s.	0.13
Low-tech	Textiles	540233	Textured filament yarn of polyester (excluding that put up for retail sale)	0.13
Resource-intensive	Agro-based	170199	Cane or beet sugar and chemically pure sucrose, in solid form (excluding cane and beet sugar	0.12

(continued)

Table A15.

Technology	Manufacturing category	HS code	Product description (India)	LFI 2018
Low-tech	Textiles	640391	Footwear with outer soles of rubber, plastics or composition leather, with uppers of leather,	0.12
Low-tech	Textiles	520524	Single cotton yarn, of combed fibres, containing $\geq 85\%$ cotton by weight and with a linear . . .	0.12
Medium	Processing	720230	Ferro-silico-manganese	0.12
Resource-intensive	Resource-based	260112	Agglomerated iron ores and concentrates (excluding roasted iron pyrites)	0.12
Resource-intensive	Resource-based	680223	Granite and articles thereof, simply cut or sawn, with a flat or even surface (excluding.	0.12
Low-tech	Others	711311	Articles of jewellery and parts thereof, of silver, whether or not plated or clad with other	0.12
Medium	Processing	380893	Herbicides, anti-sprouting products and plant-growth regulators (excluding goods of subheading	0.11
Medium	Processing	380891	Insecticides (excluding goods of subheading 3808.50)	0.11
Low-tech	Textiles	630532	Flexible intermediate bulk containers, for the packing of goods, of synthetic or man-made textile	0.11
Low-tech	Textiles	630492	Articles for interior furnishing, of cotton (excluding knitted or crocheted, blankets and travelling	0.11
Resource-intensive	Resource-based	320416	Synthetic organic reactive dyes; preparations based on synthetic organic reactive dyes of a . . .	0.10
Resource-intensive	Agro-based	401170	New pneumatic tyres, of rubber, of a kind used on agricultural or forestry vehicles and machines	0.10
Low-tech	Others	732599	Cast articles of iron or steel, n.e.s. (excluding articles of non-malleable cast iron and . . .	0.10
Resource-intensive	Resource-based	320417	Synthetic organic pigments; preparations based on synthetic organic pigments of a kind used	0.10
Low-tech	Textiles	610990	T-shirts, singlets and other vests of textile materials, knitted or crocheted (excluding cotton)	0.10
Low-tech	Textiles	611120	Babies' garments and clothing accessories of cotton, knitted or crocheted (excluding hats)	0.09
Low-tech	Textiles	621143	Women's or girls' tracksuits and other garments, n.e.s. of man-made fibres (excluding knitted	0.09

**Note:** Technological classification is based on [Lall \(2000\)](#)  
**Source:** Author's calculation

Table A15.



## Appendix 4

## Export competitiveness of India and China

Technology	Manufacturing category	HS code	Product description (China)	LFI 2001
High-tech	High-tech	847160	Input or output units for automatic data-processing machines, whether or not containing storage . . .	1.06
Low-tech	Textiles	640399	Footwear with outer soles of rubber, plastics or composition leather, with uppers of leather . . .	0.49
Low-tech	Textiles	640299	Footwear with outer soles and uppers of rubber or plastics (excluding covering the ankle or . . .	0.42
Medium	Processing	860900	Containers, incl. containers for the transport of fluids, specially designed and equipped for . . .	0.41
Low-tech	Textiles	420212	Trunks, suitcases, vanity cases, executive-cases, briefcases, school satchels and similar containers, . . .	0.41
Medium	Engineering	852190	Video recording or reproducing apparatus, whether or not incorporating a video tuner (excluding . . .	0.38
Low-tech	Textiles	420310	Articles of apparel, of leather or composition leather (excluding clothing accessories, footwear . . .	0.38
Low-tech	Textiles	611030	Jerseys, pullovers, cardigans, waistcoats and similar articles, of man-made fibres, knitted . . .	0.30
Low-tech	Textiles	610910	T-shirts, singlets and other vests of cotton, knitted or crocheted	0.29
Low-tech	Textiles	640319	Sports footwear, with outer soles of rubber, plastics, leather or composition leather and uppers	0.23
High-tech	High-tech	847170	Storage units for automatic data-processing machines	0.22
Low-tech	Textiles	620462	Women's or girls' trousers, bib and brace overalls, breeches and shorts of cotton (excluding . . .	0.22
Low-tech	Textiles	611020	Jerseys, pullovers, cardigans, waistcoats and similar articles, of cotton, knitted or crocheted . . .	0.21
Medium	Engineering	890190	Vessels for the transport of goods and vessels for the transport of both persons and goods . . .	0.21
Low-tech	Others	711319	Articles of jewellery and parts thereof, of precious metal other than silver, whether or not . . .	0.20
High-tech	High-tech	850440	Static converters	0.20
Low-tech	Textiles	611090	Jerseys, pullovers, cardigans, waistcoats and similar articles, of textile materials, knitted . . .	0.19

(continued)

**Table A16.**

CR

Technology	Manufacturing category	HS code	Product description (China)	LFI 2001
High-tech	High-tech	851711	Line telephone sets with cordless handsets	0.19
High-tech	High-tech	847150	Processing units for automatic data-processing machines, whether or not containing in the same . . .	0.19
Low-tech	Others	392640	Statuettes and other ornamental articles, of plastics	0.19
Low-tech	Textiles	640419	Footwear with outer soles of rubber or plastics and uppers of textile materials (excluding . . .	0.16
Low-tech	Others	950510	Christmas articles (excluding candles and electric lighting sets, natural Christmas trees and . . .	0.16
Low-tech	Others	392690	Articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s (excluding . . .	0.16
Low-tech	Textiles	640219	Sports footwear with outer soles and uppers of rubber or plastics (excluding waterproof footwear . . .	0.16
Low-tech	Others	940490	Articles of bedding and similar furnishing, fitted with springs or stuffed or internally filled . . .	0.16
High-tech	High-tech	900653	Cameras for roll film of a width of 35 mm (excluding instant print cameras, single lens reflex . . .	0.15
Low-tech	Others	940360	Wooden furniture (excluding for offices, kitchens and bedrooms and seats)	0.15
High-tech	High-tech	847330	Parts and accessories of automatic data-processing machines or for other machines of heading . . .	0.14
Resource-intensive	Agro-based	160419	Prepared or preserved fish, whole or in pieces (excluding minced, merely smoked and salmon, . . .	0.13
Low-tech	Others	732393	Table, kitchen or other household articles and parts thereof, of stainless steel (excluding . . .	0.13
Medium	Engineering	841451	Table, floor, wall, window, ceiling or roof fans, with a self-contained electric motor of an . . .	0.13
Low-tech	Others	950691	Articles and equipment for general physical exercise, gymnastics or athletics	0.12
Low-tech	Textiles	420329	Gloves, mittens and mitts, of leather or composition leather (excluding special sports gloves)	0.12
Resource-intensive	Resource-based	680223	Granite and articles thereof, simply cut or sawn, with a flat or even surface (excluding with . . .	0.12

Table A16.

(continued)

					Export competitiveness of India and China
Technology	Manufacturing category	HS code	Product description (China)	LFI 2001	
Low-tech	Textiles	630260	Toilet linen and kitchen linen, of terry towelling or similar terry fabrics of cotton (excluding . . .	0.12	
Low-tech	Textiles	610990	T-shirts, singlets and other vests of textile materials, knitted or crocheted (excluding cotton)	0.12	
Low-tech	Others	691110	Tableware and kitchenware, of porcelain or china (excluding ornamental articles, pots, jars, . . .	0.12	
Medium	Engineering	851650	Microwave ovens	0.11	
Resource-intensive	Agro-based	401120	New pneumatic tyres, of rubber, of a kind used for buses and lorries (excluding tyres with . . .	0.10	
Low-tech	Others	940320	Metal furniture (excluding for offices, seats and medical, surgical, dental or veterinary . . .	0.10	

**Note:** Technological classification is based on [Lall \(2000\)](#)

**Source:** Author's calculation

**Table A16.**

CR

Technology	Manufacturing category	HS code	Product description (China)	LFI 2018
High-tech	High-tech	851712	Telephones for cellular networks "mobile telephones" or for other wireless networks	2.82
High-tech	High-tech	847130	Data-processing machines, automatic, portable, weighing ≤ 10 kg, consisting of at least a . . .	1.88
High-tech	High-tech	851762	Machines for the reception, conversion and transmission or regeneration of voice, images or . . .	0.70
Low-tech	Others	950300	Tricycles, scooters, pedal cars and similar wheeled toys; dolls' carriages; dolls; other toys; . . .	0.49
High-tech	High-tech	847330	Parts and accessories of automatic data-processing machines or for other machines of heading . . .	0.45
High-tech	High-tech	847150	Processing units for automatic data-processing machines, whether or not containing in the same . . .	0.35
Low-tech	Textiles	640299	Footwear with outer soles and uppers of rubber or plastics (excluding covering the ankle or . . .	0.31
High-tech	High-tech	852872	Reception apparatus for television, colour, whether or not incorporating radio-broadcast receivers	0.30
Low-tech	Others	711319	Articles of jewellery and parts thereof, of precious metal other than silver, whether or not . . .	0.23
Low-tech	Textiles	640419	Footwear with outer soles of rubber or plastics and uppers of textile materials (excluding . . .	0.22
Resource-intensive	Resource	271019	Medium oils and preparations, of petroleum or bituminous minerals, not containing biodiesel, . . .	0.21
Low-tech	Others	950450	Video game consoles and machines (excluding operated by any means of payment)	0.21
Medium	Process	860900	Containers, incl. containers for the transport of fluids, specially designed and equipped for . . .	0.21
Medium	Engineering	890190	Vessels for the transport of goods and vessels for the transport of both persons and goods . . .	0.20
Low-tech	Textiles	611030	Jerseys, pullovers, cardigans, waistcoats and similar articles, of man-made fibres, knitted . . .	0.20
Medium	Engineering	841510	Window or wall air conditioning machines, self-contained or "split-system"	0.19

Table A17.

(continued)

Technology	Manufacturing category	HS code	Product description (China)	LFI 2018
Low-tech	Textiles	420212	Trunks, suitcases, vanity cases, executive-cases, briefcases, school satchels and similar containers,	0.19
High-tech	High-tech	850440	Static converters	0.19
High-tech	High-tech	852852	Monitors capable of directly connecting to and designed for use with an automatic data processing	0.18
Low-tech	Others	730890	Structures and parts of structures, of iron or steel, n.e.s. (excluding bridges and bridge-sections, . . .	0.17
Low-tech	Others	940161	Upholstered seats, with wooden frames (excluding convertible into beds)	0.17
Low-tech	Others	392690	Articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s (excluding . . .	0.16
Low-tech	Others	940320	Metal furniture (excluding for offices, seats and medical, surgical, dental or veterinary . . .	0.16
Resource-intensive	Agro	401120	New pneumatic tyres, of rubber, of a kind used for buses and lorries (excluding tyres with . . .	0.15
Medium	Engineering	854442	Electric conductors for a voltage ≤ 1.000 V, insulated, fitted with connectors, n.e.s.	0.15
High-tech	High-tech	854140	Photosensitive semiconductor devices, incl. photovoltaic cells whether or not assembled in . . .	0.15
Low-tech	Others	940490	Articles of bedding and similar furnishing, fitted with springs or stuffed or internally filled . . .	0.14
Low-tech	Others	940360	Wooden furniture (excluding for offices, kitchens and bedrooms and seats)	0.13
Low-tech	Textiles	620462	Women's or girls' trousers, bib and brace overalls, breeches and shorts of cotton (excluding . . .	0.13
High-tech	High-tech	850760	Lithium-ion accumulators (excluding spent)	0.13
Low-tech	Textiles	420292	Travelling-bags, insulated food or beverage bags, toilet bags, rucksacks, shopping-bags, map-cases,	0.12
Medium	Engineering	691010	Ceramic sinks, washbasins, washbasin pedestals, baths, bidets, water closet pans, flushing . . .	0.11
Medium	Engineering	890120	Tankers	0.11
Low-tech	Textiles	420222	Handbags, whether or not with shoulder straps, incl. those without handles, with outer surface . . .	0.11

(continued)

**Table A17.**

CR

Technology	Manufacturing category	HS code	Product description (China)	LFI 2018
Medium	Process	540752	Woven fabrics of yarn containing $\geq 85\%$ by weight of textured polyester filaments, incl. monofilament . . .	0.11
High-tech	High-tech	854370	Electrical machines and apparatus, having individual functions, n.e.s. in chapter 85	0.11
High-tech	High-tech	853950	Light-emitting diode “LED” lamps	0.11
Low-tech	Others	691110	Tableware and kitchenware, of porcelain or china (excluding ornamental articles, pots, jars, . . .	0.11
High-tech	High-tech	844331	Machines which perform two or more of the functions of printing, copying or facsimile transmission, . . .	0.11
High-tech	High-tech	847149	Data-processing machines, automatic, presented in the form of systems “comprising at least . . .	0.11

Table A17.

**Note:** Technological classification is based on [Lall \(2000\)](#)  
**Source:** Author’s calculation

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