Dynamic Positioning of Export Competitiveness of India and China: A Study of HS 6-digit Automotive Manufacturing

Sayed Gulzar Ganai, Javid Khan and Showkat Ahmad Bhat*

This study analyses the dynamic export competitiveness of India and China with respect to their automotive manufactured products in the world market. Dynamic Revealed Comparative Advantage (RCA) has been utilised in three different phases during 2001-18 at the HS 6-digit level classification of commodities. The study found that out of the total 67 automotive products, India increased the number of automotive products in a better competitive dynamic position of 'rising star' from 14 to 23 from the first phase to the last. As for China, it slided from 18 to 15 automotive products in this competitive position during the same period. Therefore, India has taken a lead in shifting more of its automotive products in the competitive position in the world market than its Chinese counterpart. However, when it comes to the pattern of responsiveness shown by the automotive products to the demand fluctuations of the world, China took a lead better than India during the study period. The study also found that both India and China shared almost the same number of products that are comparatively in an unfavourable dynamic position of export competitiveness, which needs to be guarded to make them competitive in the world market.

Keywords: Export competitiveness, India, China, Manufacturing, Automotive products, RCA

I. INTRODUCTION

No study of globalisation is possible without taking into account the emerging economies of India and China (Huchet et al, 2007). The giant economies of Asia viz. India and China have shown a meteoric rise over the past few decades mainly due to the impact of the opening up of their respective economies to the global market. This particular period has transformed these economies from mere agrarian societies to modern industrial power houses. However, with increasing productivity and wages, China has managed to become the world's second largest economy while India's performance has been below par and too low to catch up with that of China (Bhat et al., 2006). International trade is one of the sectors that make us think yonder and is nowadays very familiar to the nations of the globe. It facilitates a proper utilisation

^{*} Ph.D. Scholar, Department of Economics, Islamic University of Science and Technology, Awantipora, J&K. Email: saiedhusyn17@gmail.com; Assistant Professor, Department of Economics, Islamic University of Science and Technology, Awantipora, J&K. Email: khanjavideco@gmail.com; Assistant Professor, Department of Economics, Islamic University of Science and Technology, Awantipora, J&K. Email: showkateco@gmail.com, respectively.

of the endowed factors and thus increases the national wealth of the country. This trade driven prosperity is well rooted since centuries but came into light first with the advent of David Ricardo's 'Comparative Advantage Theory' (1817), and then with Heckscher and Ohlin's theory (1933). The models of the latter and former gave an immense support to trade and growth and hence the outcome was imputed for the globalised era in which present world survives. These theories explicate about the differences in labour productivity (Ricardo, 1817), factor endowments (Heckscher-Ohlin, 1933), technological factors and factor abundance (Vernon, 1966) or the largescale production (Krugman, 1980) — the factors that make trade possible in the global market. Therefore, these theories portrayed comparative advantage as a pre-requisite for international trade. 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 hubs of production and are challenging the conventionally-endowed countries, as far as exports are concerned. Export competitiveness has significantly emerged as an important part of export strategy of every country. Competitiveness has been defined as the set of institutions, policies and factors that determine the level of productivity (World Economic Forum, 2013-14).

Competitiveness of exports has been studied by many researchers around the world, including a specific few (Jones, 1994; Murtha and Lenway, 1994; Enright et al., 1999; Pillania, 2009) which studied export competitiveness at country levels. Similarly, (Mitchell et al., 1993; Alon and Fetscherin, 2007; Fetscherin et al., 2010; 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; Srivastava, 2006). Besides, few recent empirical studies regarding the competitiveness of India and China include (Ganai and Sarin, 2020; Ganai and Mir, 2021; Ganai and Bhat, 2021). Most of these empirical studies are related to only a 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. The export competitiveness has been calculated on only two aspects - either comparatively advantageous or comparatively dis-advantageous products for India or China. Besides this, there isn't any thorough study that has been undertaken for Indian automotive manufacturing sector at a segregated level along with that of China. So, in light of these shortcomings, dynamics of export competitiveness of Indian automotive manufacturing sector visà-vis its emerging counterpart, China, in the global market, is the only focus and objective of this paper.

II. DATA AND METHODOLOGY

The data has been taken from UNCOMTRADE, characterised under the HS 6-digit level of commodity classification. The automotive manufacturing included 67 specific products at HS 6-digit level and the dynamics of export competitiveness of this manufacturing category is further studied in three different phases of 2001-06, 2007-12 and 2013-18. The product classification for the automotive manufacturing at HS 6-digit level has been developed by the author following Lall (2000) and UNCTAD (2020) and is shown in appendix.

The Dynamic Revealed Comparative Advantage (DRCA) index which shows the dynamic positioning of exported commodities that static RCA is usually not concerned about, has been utilised in this study, which is an extended method of Revealed Comparative Advantage index (RCA), given by Balassa in 1965. The Dynamic RCA index has been developed by Edwards and Schoer (2002), and is given by formulae as

$$\frac{\Delta RCAci}{RCA_{ci}} = \frac{\frac{\Delta X_{ci}}{X_{c}}}{\frac{X_{ci}}{X_{c}}} - \frac{\frac{\Delta X_{wi}}{X_{w}}}{\frac{X_{wi}}{X_{w}}}$$

Where; *RCAci* = Revealed comparative advantage of country *c* in product *i*.

 X_{ci} = exports of commodity i by country c; X_{c} = total exports of country c.

 X_{Wi} = world exports of commodity i; X_w = total world exports.

The first term of the right-hand side of the equation reflects the growth in the share of commodity *i* in the total trade of country *c*. Similarly, second term reflects the share of commodity *i* in world trade. Based on this method, the further dynamic positioning of products is given in Table 1:

		Table	1
Share of commodity i in country c's exports		Share of	commodity i in world exports
↑	>	↑	Rising Stars
↑		\downarrow	Falling Stars
\downarrow	>	\downarrow	Lagging Retreat
\downarrow	>	\downarrow	Leading Retreat
↑	>	↑	Lagging Opportunity
\downarrow		↑	Lost Opportunity

Table 1

Source: Edwards and Schoer (2002)

The dynamic position of commodities is categorised into six different groups as:

Rising Stars: This is the most preferred position of the exports of any economy.
 It shows that the share of country's exports for a particular commodity rises

more than the rise of the share of same commodity in the world's total exports. Consequently, world demand for such products is on the rise and is beneficial for a country's economy, thereby giving it an edge in comparative advantage besides keeping the balance of payments sheltered.

- *Falling Stars:* This is the situation when the share of a country's exports for any particular commodity is on the rise, but there is a decline in the world share for the same commodity. Subsequently, global demand goes down for the particular products and thus a country needs to cut down the exports of such commodities.
- *Lagging Retreat:* This situation arises for a particular commodity only when its share falls more than the falling share of the same product in the global market. This situation also shows the unresponsiveness of an economy to the declining world demand.
- *Leading Retreat:* This situation is the opposite of the lagging retreat, where an exported commodity's share falls but is less than the falling share of the same product in the world market. Thus, it reflects that an economy responds quickly to the demand fluctuations of the world market.
- Lagging Opportunity: This position occurs to a particular commodity when its share starts rising but doesn't match the rising share of the same product in the global market. It is therefore a situation where a country needs to enhance the production ability to catch up with the rising share in the world market.
- Lost Opportunity: This position is absolutely not preferred by any country, which is because in this situation, a country's share of the exported commodity shrinks while for the same commodity, the world market demands more of such a product and thus the global share of such products is on the rise.

Besides this, the cumulative annual growth rate (CAGR) has been calculated for the automotive manufacturing exports in India and China along with the world's total automotive exports. The CAGR is calculated using the formula as;

$$CAGR = \left(\frac{exp_t}{exp_{t0}}\right)^{1/t-t0} \tag{1}$$

Where *exp* is the total exports of automotive manufactured products and t represents the time period, which starts from the year 2001 and end at 2018.

III. RESULTS AND DISCUSSION

Table 1.1 provides an overview of the total exported value of automotive manufactured exports (in US billion dollars) along with the cumulative annual growth rate in percentage terms. It is clearly visible that both India and China share a better growth

rate than the world market. Besides this, India's CAGR has been bit higher than China in the automotive exports to the world market. However, the share of automotive exports has not been up to the mark for India, as compared to China, in the world automotive market.

Automotive Exports (USD Billion)								
Year	2001	2007	2013	2018	CAGR			
India	0.80	3.54	12.80	17.24	19.80			
China	3.53	28.03	53.74	68.82	19.09			
World	521.38	1123.45	1287.13	1471.05	6.29			

Table 1.1

Source: Author's calculation based on UNCOMTRDAE data

As both India and China showed quite high growth rates in the automotive sector, it is necessary to analyse manufacturing products through various dynamic positions attained by India and China during the three periods of study. They are discussed as below;

3.1 Rising Star

Out of the total 67 automotive manufacturing products in the HS 6-digit classification, India had 14 of its automotive products in the dynamic position of rising star during 2001-06, as shown in table 2. It therefore constituted around 21 per cent of its total automotive products in this dynamic position. As against India, China shared 18 of its automotive products, constituting around 27 per cent of total automotive products, in the dynamic position of rising star during 2001-06 and the product codes are reflected in table 3. So, it reflects that during the first phase of study, China has been comparatively more advantageous than India's automotive manufacturing in the world market.

India HS 6-digit codes for Risi	HS 6-digit codes for Rising Star (2001-06)								
870120 870333 870520 870880 8	870899	870332	870790						
870310 870410 870590 870893 8	871120	870490	870894						

Table 2

Source: Author's calculation

Table 3

China	HS 6-digit codes for Rising Star (2001-06)										
870120	870332	870390	870422	870510	870710	870870	870893	870899			
870310	870333	870410	870423	870540	870790	870880	870894	871420			

During 2007-12, India could include only 11 of its automotive products in the dynamic position of rising star, which can be ascribed to the impact of 2008 crisis that lowered the demand for such product categories in the world market and therefore declined the share of such products in this dynamic position. On the other hand, China had been more affected and hence the share of automotive products in the dynamic position of rising star came down to only eight products during the period of 2007-12. The product codes for India and China that were included in this dynamic position are reflected in tables 4 and 5 respectively for 2007-12.

			Table	e 4								
India	HS 6-digit codes for Rising Star (2007-12)											
870390	8	370520	870880	87119	90	871491	871499					
870410	8	570530	870894	87131	.0	871494						
Source: Auth	nor's Calculation											
			Table	e 5								
China		Н	S 6-digit codes	for Rising Sta	r (2007-12)							
870390	870840	870850	870880	870894	870895	871310	871495					
Courses Anth	or's Calgulation											

Source: Author's Calculation

Besides this, China and India share three products each that retained this position from the previous period of 2001-06 and are shown in bold numbers in the tables 4 and 5 respectively.

During the last period of 2013-18, India moved from 11 products during 2007-12 to 23 automotive manufacturing products in the dynamic position of rising star during 2013-18, sharing 34.33 per cent of total automotive products as reflected in table 6.

Table 6											
India	HS 6-digit codes for Rising Star (2013-18)										
870120	870423	870829	870850	870891	870894	871130	871491				
870210	870431	870830	870870	870892	870895	871310	871494				
870323	870821	870840	870880	870893	871120	871410					

Source: Author's Calculation

On the other hand, China could manage to get only 15 of its automotive products in the basket of rising star position during 2013-18, and so it appears that India has taken a lead in competitiveness of such products in the world market. The product codes that China included in the dynamic position of rising star are reflected in table 7. The rising share of India for the automotive products in the dynamic position of rising star reflects its upper hand in the competitive list against China in the world market.

China		Н	S 6-digit codes	for Rising Sta	r (2013-18)		
870323	870790	870830	870880	870892	870895	871310	871493
870331	870829	870870	870891	870894	871130	871420	

Table 7

Source: Author's Calculation

Besides this, India and China share same product of HS-870880, in the rising star position that remained in this position in all the three periods of study (as reflected in italic bold numbers in tables 6 and 7).

3.2 Falling Star

Under this undesirable dynamic position of falling star, India had 16 products of its automotive manufacturing during 2001-06. The product codes are reflected in table 8 for India during 2001-06. Against India, China shared 20 of its automotive products in this dynamic position during the same period of 2001-06, which are reflected in table 9.

			Table	0			
India		H_{i}	S 6-digit codes	s for Falling St	ar (2001-06)		
870210	870321	870323	870421	870810	870850	870892	871310
870290	870322	870324	870431	870840	870891	871110	871390

T-1-1-0

Source: Author's calculation

Table 9									
China HS 6-digit codes for Falling Star (2001-06)									
870210	870321	870323	870431	870810	870829	870891	871110	871150	871310
870290	870322	870421	870600	870821	870850	870892	871130	871190	871390

Source: Author's calculation

During 2007-12, both India as well as China jumped to the same number of 21 automotive products in the dynamic position of falling star and the product codes are reflected in tables 10 and 11 for India and China respectively. Bold numbers show the product codes of automotive exports that remained in this dynamic position from its previous phase, where India held 5 and China enlisted 9 such products during 2007-12 from their 2001-06 phase.

Table 10										
India	HS 6-digit codes for Falling Star (2007-12)									
870321	870331	870422	870590	870821	870892	871130				
870322	870333	870423	870710	870829	870899	871140				
870323	870421	870490	870790	870870	871120	871420				

Source: Author's calculation

Table 11										
China	HS 6-digit codes for Falling Star (2007-12)									
870120	870322	870423	870510	870790	870829	870893				
870210	870332	870431	870540	870810	870830	871140				
870321	870422	870490	870590	870821	870891	871150				

Source: Author's calculation

During the last period — 2013-18, India had 11 of its automotive products in this dynamic position of falling star as against China's 10 during the same period. The product codes for India and China included in falling star during 2013-18 are reflected in tables 12 and 13 respectively. Besides this, there is not a single product that remained in this dynamic position in all the three periods of study for India. However, China shared one such product shown in italic bold code in table 13 that remained in this dynamic position throughout the study period. Thus, it can be concluded that both India as well as China managed to restrict their automotive exports to the declining demand of the world market with the passage of time.

				Tal	ole 12							
India	ia HS 6-digit codes for Falling Star (2013-18)											
870310	870324	870332	870410	870422	870540	870600	870710	870899	871110			
871140												
Source:	Author's cal	culation										
	Table 13											
China			HS	6-digit cod	es for Fallin	g Star (201	3-18)					
870310	870324	870332	870410	870432	870530	870821	870899	871492	871499			
Courses	Author's cal	gulation										

Source: Author's calculation

3.3 Lagging Retreat

This dynamic position included the greatest number of items for India during 2001-06. It included 28 automotive manufacturing products, constituting around 42 per cent of total and are reflected in table 14. This entails that such products remained quite unresponsive for Indian automotive sector to the falling demand of the world's automotive manufactured products.

India HS 6-digit codes for Lagging Retreat (2001-06)									
870220	870350	870380	870600	870830	871140	871190	871491	871494	871499
870240	870360	870432	870821	870895	871150	871200	871492	871495	
870340	870370	870530	870829	871130	871160	871410	871493	871496	

Table 14

Source: Author's calculation

However, China on the other hand included only 12 automotive products in this dynamic position of lagging retreat, which shows that the responsiveness of Chinese automotive exports had been quite higher than India during 2001-06 and such product codes are reflected in table 15.

 Table 15

 China
 HS 6-digit codes for Lagging Retreat (2001-06)

 870324
 870530
 871200
 871492
 871494
 871496

 870432
 871140
 871491
 871493
 871495
 871499

Source: Author's calculation

During the second period of 2007-12, India had 25 automotive products in this dynamic position against only nine products of China during the same period. So, again in the second phase, India could not manage to restrict its automotive manufactured products to the fluctuating demand in the world market. The products are reflected in tables 16 and 17 for India and China respectively.

	Table 16								
India HS 6-digit codes for Lagging Retreat (2007-12)							·		
870120	870240	870332	870360	870431	870810	870893	871160	871492	
870210	870310	870340	870370	870510	870830	871110	871390		
870220	870324	870350	870380	870540	870891	871150	871410		
Source: A	uthor's calcu	lation							

				Table 17				
China			HS 6-dig	it codes for L	agging Retre	eat (2007-12)		
870310	870331	870333	870421	870432	870600	870899	871120	871390

During the last period of 2013-18, India listed 20 of its automotive products in the dynamic position of lagging retreat against China's 11, during the same period. The product codes are given in tables 18 and 19 for India and China respectively for the period of 2013-18. Besides this, India had nine of its automotive products that remained in this dynamic position in all the three periods of study against none for China, shown in italic bold codes in table 18.

Thus, it can be concluded that India needs to focus on these products so that they could make a better dynamic position for themselves in near future.

Table 18

				140	one 10				
India	ia HS 6-digit codes for Lagging Retreat (2013-18)								
870220	870290	870340	870360	870380	870432	870520	871160	871492	871496
870240	870333	870350	870370	870390	870510	870530	871200	871495	871499
Source: A	uthor's cal	culation							
				Tal	ole 19				
China				HS 6-digit	codes for Lag	ging Retrea	t (2013-18)		
870290		870390	8705	510	871110	8	571190	87149	95
870333		870422	8705	520	871140	8	71200		

Source: Author's calculation

3.4 Leading Retreat

Under the dynamic position of leading retreat, out of the total 67 automotive products, India shared none during 2001-06 in this dynamic position. However, China during the same period of 2001-06 included 12 of its automotive products. The product codes for China are reflected in table 20. China had been keenly watching the market fluctuations from the earlier periods, something India needs to learn from China, as is reflected by the products that are included in the leading retreat position.

		14	ble 20			
China	HS 6-di	git codes for Leadi	ng Retreat (2001-0	06)		
870220	870340	870360	870380	870840	871160	
870240	870350	870370	870830	870895	871410	

Table 20

Source: Author's calculation

During 2007-12, India could only include two of its automotive products in this dynamic position against China's 17 during the same period and such products of economies of India and China are given in tables 21 and 22 respectively. India had somehow managed to enlist few products in this dynamic position during the second period, but lagged behind in enlisting the automotive products in this better responsive dynamic position than its Chinese counterpart.

870892

871110

871130

871160

871492

871410

871420

India	HS 6-digit codes for Leading Retreat (2007-12)
870432	870600
Source:	Author's calculation
	Table 22
China	HS 6-digit codes for Leading Retreat (2007-12)

870380

870870

Table 21

Source: Author's calculation

870323

870324

870340

870350

870360

870370

870220

870240

During the last period of 2013-18, India only included one product out of the total automotive products in the dynamic position of leading retreat, as shown in table 23.

	Table 23
India	HS 6-digit codes for Leading Retreat (2013-18)
871190	

Source: Author's calculation

On the other hand, China included 12 automotive products in this dynamic position during 2013-18 and such products are reflected in table 24. Also, China had eight of its automotive products that remained in this dynamic position during all periods of study and are shown in italic bold codes in table 24. So, China took the lead in most of its automotive products that are more responsive for the demand fluctuations than India in the world market.

		Ta	ble 24			
China	HS 6-dig	git codes for Leadin	ng Retreat (2013-18	8)		
870220	870340	870360	870380	870600	871160	
870240	870350	870370	870540	870710	871496	

Source: Author's calculation

3.5 Lagging Opportunity

Under this dynamic position, India shared only one of its automotive products during 2001-06 and is reflected in table 25. Whereas, China included three of its automotive products in this dynamic position of lagging opportunity during 2001-06 and such products are reflected in table 26.

India	HS 6-digit codes for Lagging Opportunity (2001-06)
870540	

Table 25

Table 26

China	HS 6-digit codes for Lagging Opportunity (2001-06)					
870331	870590	871120				

Source: Author's calculation

During 2007-12, India had three automotive products in this dynamic position against China's four products during the same period. The product codes for India and China in this dynamic position during 2007-12 are reflected in tables 27 and 28 respectively.

Table 27

		14010 27		
India	HS 6-digit codes for Laggi	ng Opportunity (2007-12)		
870895	871200		871496	
Source: Autho	r's calculation			
		Table 28		
China	HS 6-digit codes for La	gging Opportunity (2007-1	2)	
870290	871190	871491	871493	

Source: Author's calculation

During the last period of 2013-18, India included in the basket of lagging opportunity only one of its automotive products against seven of the Chinese automotive products during the same period. The products are reflected in tables 29 and 30 for India and China respectively. Thus, India has only one such product (HS 870321) that needs to get an enhanced production to gain a better dynamic position in the world market.

			Table 29				
India	HS	6-digit codes for	r Lagging Oppor	tunity (2013-18)		
870321							
Source: Au	thor's calculat	tion					
			Table 30				
China	HS	6-digit codes fo	r Lagging Oppo	rtunity (2013-18)		
870322	870490	870810	870850	871390	871491	871494	

Source: Author's calculation

IV. LOST OPPORTUNITY

Most unfavourable dynamic position is of lost opportunity, which included eight automotive products of India during 2001-06 against only two for China during the same period. The products are reflected in tables 31 and 32 for India and China respectively.

India		HS 6-digit co	des for Lost Op	portunity (20	01-06)		
870331	870390	870422	870423	870510	870710	870870	871420
Source: A	Author's calculat	ion					
			Ta	able 32			
China		HS 6-digit c	odes for Lost C	pportunity (20	001-06)		
870490				87052	20		

Table 31

Source: Author's calculation

During the second period of 2007-12, India included only five automotive products in this dynamic position and are reflected in table 33. However, China included 8 automotive products in this dynamic position during 2007-12, as reflected in table 34.

		Table 33			
India	HS 6-digit o	codes for Lost Opportun	nity (2007-12)		
870290	870840	870850	871493	871495	

Source: Author's calculation

			Tak	ole 34				
China	1	HS 6-digit cod	es for Lost Op	portunity (200	07-12)			
870410	870520	870530	870710	871200	871494	871496	871499	

Source: Author's calculation

The last period of 2013-18 is reflected in tables 35 and 36 for India and China, which shows that India and China almost share same number of items in this dynamic position. India included 11 of its automotive products in the basket of lost opportunity against 12 automotive products of China during 2013-18.

				1 d l	ble 55					
India		HS 6-	digit codes j	for Lost Opp	portunity (2	013-18)				
870322	870331	870421	870490	870590	870790	870810	871150	871390	871420	
871493										
Source: A	Author's cal	culation								

T.1.1. 25

		Ta	able 36			
China	HS 6-diş	git codes for Lost C	pportunity (2013-	18)		
870120	870321	870423	870590	870893	871150	
870210	870421	870431	870840	871120	871410	

Thus, it can be concluded that both India as well as China made efforts to minimise the number of automotive products in this dynamic position of lost opportunity and have successfully restricted their respective automotive products to fall into this dynamic position during the first period. However, there has been a rise in the basket of lost opportunity for both these economies afterwards and such products needed to be guarded so that they can be shifted to better dynamic positions of leading retreat or rising star.

V. CONCLUSION

The automotive manufactured products have been showing high demand from the past few decades in the world market and the emerging economies of the world, India and China reflect a higher cumulative growth rate than the overall CAGR of world automotive exports in the global market. This study analyses the dynamic export competitiveness of automotive manufactured products of India and China in the world market. The results of the study found that India has more of its total automotive products in the dynamic position of rising star and the trend is positively inclining through the three periods of study and could grab few more products in the list of 'rising star' in future as well. As for China, it included only 15 of its automotive products in the dynamic position of 'rising star' during 2013-18 against 23 of India during the same period, reflecting the lead that India took vis-àvis China in including most of its automotive products in better export competitive position in the world market. However, China has been more responsive to the demand fluctuations in the world market of automotive exports and included more of its products in the dynamic position of 'leading retreat' and lesser products in the 'lagging retreat' position. Against China, India reflected the opposite and remained quite unresponsive to the declining demand fluctuations. As far as the unfavourable dynamic positions of 'falling star' and 'lost opportunity' are concerned, both India as well as China shared lesser and almost the same number of products that need to be taken care of in order to be able to shift such products in other better dynamic position.

Thus, the present study implicates that although India has comparatively a greater number of automotive products in the better competitive position than China, but a lot of products that are in the dynamic position of 'lagging retreat' need to be guarded to become more responsive for the demand fluxes in the world market, which China has already taken a lead at. However, both India and China need to focus on the products which are in the dynamic positions of 'falling star' and 'lost opportunity'.

References

- 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, UK, 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 of Economic and Social Studies, 32 (2). 99-123.
- Batra, A and Khan, Zeba. (2005), Revealed Comparative Advantage: An Analysis for India and China, Indian Council for Research on International Economic Relations, New Delhi, Working Paper No. 168
- Bhat, T.P., Guha, A., Paul, M. (2006), India and China in WTO, Building Complementarities and Competitiveness in the External Trade Sector, *Planning Commission, Govt of India*. Institute for Studies in Industrial Development
- Edwards, L. and Schoer, W. (2002), Measures of Competitiveness: A Dynamic Approach to South Africa's Trade Performance in the 1990s, *The South African Journal of Economics*, 70(6), 1008-1046.
- 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 & Management, Vol. 9 No. 3, pp. 401-24.
- Ganai, S. G and Sarin, V. (2021), An RCA account of India's Export Competitiveness, *Research Journal* of Humanities and Social Sciences, 11 (2).
- 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 of High-Tech Manufacturing Exports, IASSI Quarterly, Vol 40. No. 3
- Jones, G. (1994), Big Business, Management and Competitiveness in Twentieth Century Britain, Japan Business History Review, Vol. 29.
- Krugman, Paul. (1980), Scale Economies, Product Differentiation, and the Pattern of Trade, *The American Economic Review*, *70*(*5*), *pp*. 950-959.
- Lall, S. (2000), Export Performance and Competitiveness in the Philippines, QEH Working Paper Number 49, Queen Elizabeth House, University of Oxford. Available at http://www.qeh.ex.uk/pdf/ qehwp/qehwps 49.pdf
- 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. 647-70.
- 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. 113-29.*
- Ohlin, B. (1933), International and Interregional Trade, Harvard Economic Studies, Cambridge, MA.

- 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. 90-5.
- Ricardo, D. (1817), The Priciples of Political Economy and Taxation. Homewood, III: Irwin, 1963.
- 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. 431-60.
- Srivastava, D.K. (2006), Determinants of Competitiveness in Indian Public Sector Companies: an Empirical Study, Competitiveness Review, Vol. 16 Nos 3/4, p. 212.
- UNCTAD. (2020), Manufactured Goods by Degree of Manufacturing (SITC Rev. 3). Available at Unctadstat.unctad.org
- Vernon, R. (1966), International Investment and International Trade in the Product cycle, Quarterly Journal of Economics, 80(2),190-207.
- World Economic Forum. (2013-14), *The Global Competitiveness Report 2013-14*. Geneva: World Economic Forum.
- Yip, G.S., Rugman, A.M. and Kudina, A. (2006), International Success of British Companies" Long Range Planning, Vol. 39 No. 3, pp. 241-64.

HS Code	Automotive Products
870120	Road tractors for semi-trailers
870210	Motor vehicles for the transport of >= 10 persons, incl. driver, with compression-ignition
870220	Motor vehicles for the transport of >= 10 persons, incl. driver, with both diesel engine and
870240	Motor vehicles for the transport of >= 10 persons, incl. driver, with only electric motor for
870290	Motor vehicles for the transport of >= 10 persons, incl. driver, not with compression-ignition
870310	Vehicles for the transport of persons on snow; golf cars and similar vehicles
870321	Motor cars and other motor vehicles principally designed for the transport of persons, incl
870322	Motor cars and other motor vehicles principally designed for the transport of persons, incl
870323	Motor cars and other motor vehicles principally designed for the transport of persons, incl
870324	Motor cars and other motor vehicles principally designed for the transport of persons, incl
870331	Motor cars and other motor vehicles principally designed for the transport of persons, incl
870332	Motor cars and other motor vehicles principally designed for the transport of persons, incl
870333	Motor cars and other motor vehicles principally designed for the transport of persons, incl
870340	Motor cars and other motor vehicles principally designed for the transport of
870350	Motor cars and other motor vehicles principally designed for the transport of
870360	Motor cars and other motor vehicles principally designed for the transport of

APPENDIX

870370	Motor cars and other motor vehicles principally designed for the transport of
870380	Motor cars and other motor vehicles principally designed for the transport of
870390	Motor cars and other vehicles principally designed for the transport of persons, incl. station .
870410	Dumpers for off-highway use
870421	Motor vehicles for the transport of goods, with compression-ignition internal combustion piston
870422	Motor vehicles for the transport of goods, with compression-ignition internal combustion piston
870423	Motor vehicles for the transport of goods, with compression-ignition internal combustion piston
870431	Motor vehicles for the transport of goods, with spark-ignition internal combustion piston engine,
870432	Motor vehicles for the transport of goods, with spark-ignition internal combustion piston engine,
870490	Motor vehicles for the transport of goods, with engines other than internal combustion piston
870510	Crane lorries (excluding breakdown lorries)
870520	Mobile drilling derricks
870530	Fire fighting vehicles (excluding vehicles for transporting persons)
870540	Concrete-mixer lorries
870590	Special purpose motor vehicles (other than those principally designed for the transport of
870600	Chassis fitted with engines, for tractors, motor vehicles for the transport of ten or more
870710	Bodies for motor cars and other motor vehicles principally designed for the transport of persons
870790	Bodies for tractors, motor vehicles for the transport of ten or more persons, motor vehicles

870810	Bumpers and parts thereof for tractors, motor vehicles for the transport of ten or more persons,
870821	Safety seat belts for motor vehicles
870829	Parts and accessories of bodies for tractors, motor vehicles for the transport of ten or more
870830	Brakes and servo-brakes and their parts, for tractors, motor vehicles for the transport of
870840	Gear boxes and parts thereof, for tractors, motor vehicles for the transport of ten or more
870850	Drive-axles with differential, whether or not provided with other transmission components, .
870870	Road wheels and parts and accessories thereof, for tractors, motor vehicles for the transport .
870880	Suspension systems and parts thereof, incl. shock-absorbers, for tractors, motor vehicles for .
870891	Radiators and parts thereof, for tractors, motor vehicles for the transport of ten or more
870892	Silencers "mufflers" and exhaust pipes, and parts thereof, for tractors, motor vehicles for
870893	Clutches and parts thereof, for tractors, motor vehicles for the transport of ten or more persons,
870894	Steering wheels, steering columns and steering boxes, and parts thereof, for tractors, motor
870895	Safety airbags with inflator system and parts thereof, for tractors, motor vehicles for the
870899	Parts and accessories, for tractors, motor vehicles for the transport of ten or more persons,
871110	Motorcycles, incl. mopeds, and cycles fitted with an auxiliary motor, with reciprocating internal
871120	Motorcycles, incl. mopeds, with reciprocating internal combustion piston engine of a cylinder
871130	Motorcycles, incl. mopeds, with reciprocating internal combustion piston engine of a cylinder

871140	Motorcycles, incl. mopeds, with reciprocating internal combustion piston engine of a cylinder .
871150	Motorcycles, incl. mopeds, with reciprocating internal combustion piston engine of a cylinder .
871160	Motorcycles, incl. mopeds, and cycles fitted with an auxiliary motor, with electric motor for .
871190	Motorcycles, incl. mopeds, and cycles fitted with an auxiliary motor and side cars for motorcycles
871200	Bicycles and other cycles, incl. delivery tricycles, not motorised
871310	Carriages for disabled persons, not mechanically propelled
871390	Carriages for disabled persons, motorised or otherwise mechanically propelled (excluding specially
871410	Parts and accessories of motorcycles, incl. mopeds, n.e.s.
871420	Parts and accessories for carriages for disabled persons, n.e.s.
871491	Frames and forks, and parts thereof, for cycles, n.e.s. (excluding for motorcycles)
871492	Wheel rims and spokes, for cycles (excluding for motorcycles)
871493	Hubs and free-wheel sprocket-wheels for cycles (excluding for motorcycles and coaster braking
871494	Brakes, incl. coaster braking hubs and hub brakes, and parts thereof, for cycles (excluding
871495	Saddles for cycles (excluding for motorcycles)
871496	Pedals and crank-gear, and parts thereof, for bicycles, n.e.s.
871499	Parts and accessories, for bicycles, n.e.s.

Source: Constructed by Authors following Lall (2000) and UNCTAD (2020)