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INDIA–CHINA ECONOMIC RELATIONS: TRENDS, CHALLENGES AND POLICY OPTIONS

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The study of India-China economic relations and an assessment of the countries' future ties come with the additional task of engaging with a historicity marked both by centuries of peaceful coexistence and interchange of ideas, and war (1962). The present bilateral interaction would therefore draw immensely from these narratives, which influence the policy-making apparatus. If the current assessment of Sino-Indian relations is deemed, ex-ante, a mutually exclusive, zero-sum exercise between two rising and competing powers, it falters on a basic premise in that the present is not a frozen reality. The present, as a moment in time, is part of the continual dawning of the future.

The implication of this abstract understanding of the present is relevant, in the backdrop of this study, as the context on which the future of Sino-Indian relations would be determined freely and creatively. In other words, how the present reality of bilateral economic interaction is dealt with will, ultimately, have a bearing on future bilateral interaction. This paper aggregates the development of Sino-Indian economic relations from 1992 onwards (resumption of border trade after the 1962 war), covering patterns of trade, investment, comparative assessment of strengths and convergences therein, and the shifts in policy focus required, among other factors, to improve the health of this relationship. It would identify the problem areas as well as the future avenues for both countries to redress the current imbalances in the bilateral trade patterns as both countries move towards bigger goals (US$100 billion trade target in 2015) in the future.

The India–China Growth Story

It is customary in the post-2008 financial crisis period to stress on the impressive economic achievements of both India and China in withstanding the downturn that began in the United States (and subsequently expanded to the Euro zone). China is currently the world's largest exporter and manufacturer with 73 of the Global Fortune 500 companies and six of the world's top 10 container ports; it has witnessed a 9.9 per cent annual gross domestic product (GDP) growth since 2001

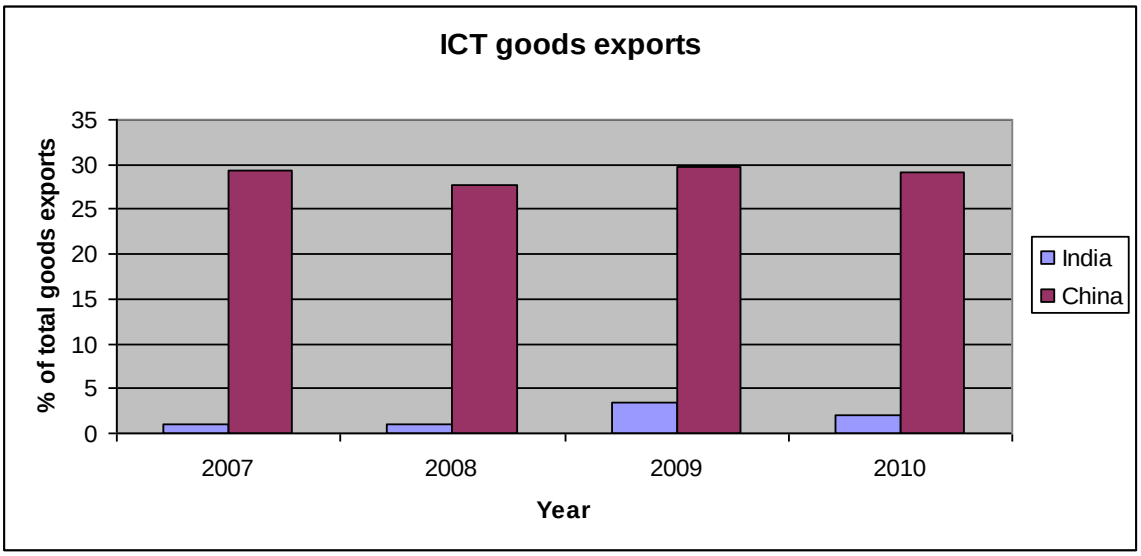
(double-digit growth figures in most years; Yuan 2012). India, albeit slower, grew at a healthy average of 7.8 per cent (Vandenbussche and Viegelahn 2012) over the last decade. The prospects of future growth are promising and *Chindia* (the neologism for the geographic–economic space of India and China) is projected to have a 10.5 per cent share of Global Domestic Product by the year 2020 (JP Morgan Chase 2007). China is forecast to grow at an average pace of 6.6 per cent until 2030, thereafter slowing to 2.3 per cent till 2060,[1] even as India is expected to grow at 6.7 per cent and 4 per cent, respectively for the two phases (Chua 2012). The combined GDP of *Chindia* (China's 27.8 per cent and India's 18.2 per cent; Mead 2012) is projected to be larger than that of the entire OECD area (based on today's membership) in 2060 (Chua 2012).

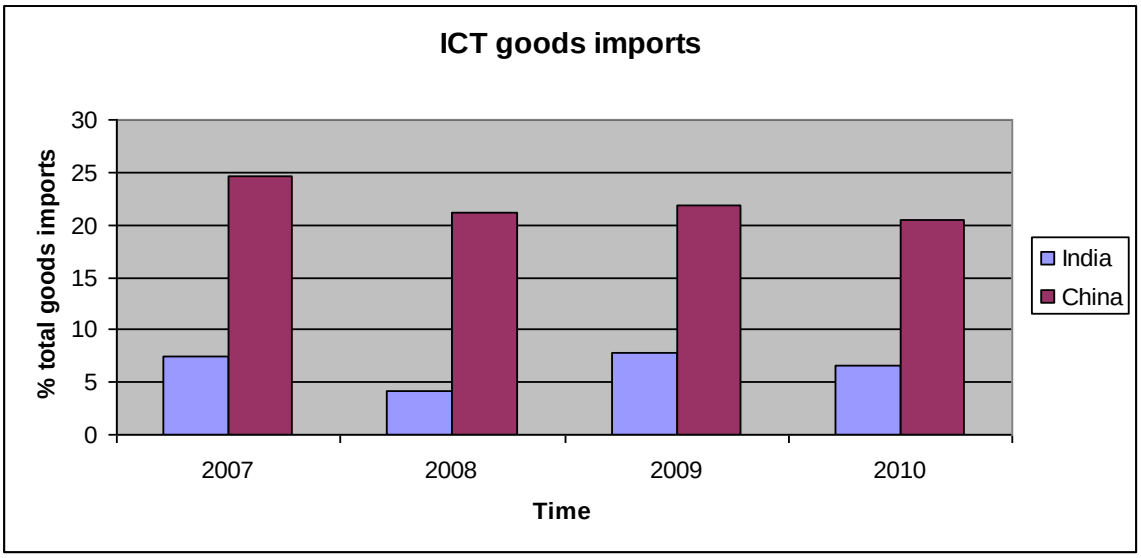
As modern India and China came into being (post-1947 and -1949, respectively), both countries had similar conditions, namely, low incomes, large rural populations, decades of self-imposed economic isolation and a high degree of central control (Syed and Walsh 2012). What differentiated the two was that China's agrarian reforms (through rising productivity) freed up labour as a vital low-cost input for the industrial sector; India was unable to achieve this synergy between agriculture and industry (half of India's workers and one-sixth of its output are still dependent on agriculture; Syed and Walsh 2012). Thus, while China was able to execute the classic pattern of moving from the primary to the manufacturing sector, India has seen growth mainly from its transition from agriculture to services (Chandrasekhar and Ghosh 2007). The development pathways for the two economies depended on infrastructure investment, exports and FDI in the case of China (with the state playing a major role), while India's standout growth was spurred by strong domestic demand and growth in services trade (with an important role for private enterprise). Services such as information technology rely on advanced technologies and satellite transmission than on the availability of utilities and good

[1] Among other reasons such as shrinkage of the labour force which China is expected to face acutely, the main factor identified for a slowdown is the "convergence effect", that is, the nearer an economy gets to the global technology frontier, the slower its growth rate becomes as the room for catch-up narrows, inducing a gradual structural slowdown. See Wang (2013) for a discussion.

roads; therefore, India was able to execute the transition from agriculture to the service sector despite inadequate basic infrastructure (Shilling 2012). Another advantage for India was its better proficiency in the English language. This meant that English-speaking engineers were able to adapt western business models to a lower-cost environment, from tasks ranging from customer service and software programming to the development of new business processes and software, legal and medical issues, and other services (Syed and Walsh 2012). Nowhere is this stark contrast most evident than in the comparison of the Information and communication technology sector (goods and services comparison; see Figure 1 (a) & (b), respectively).

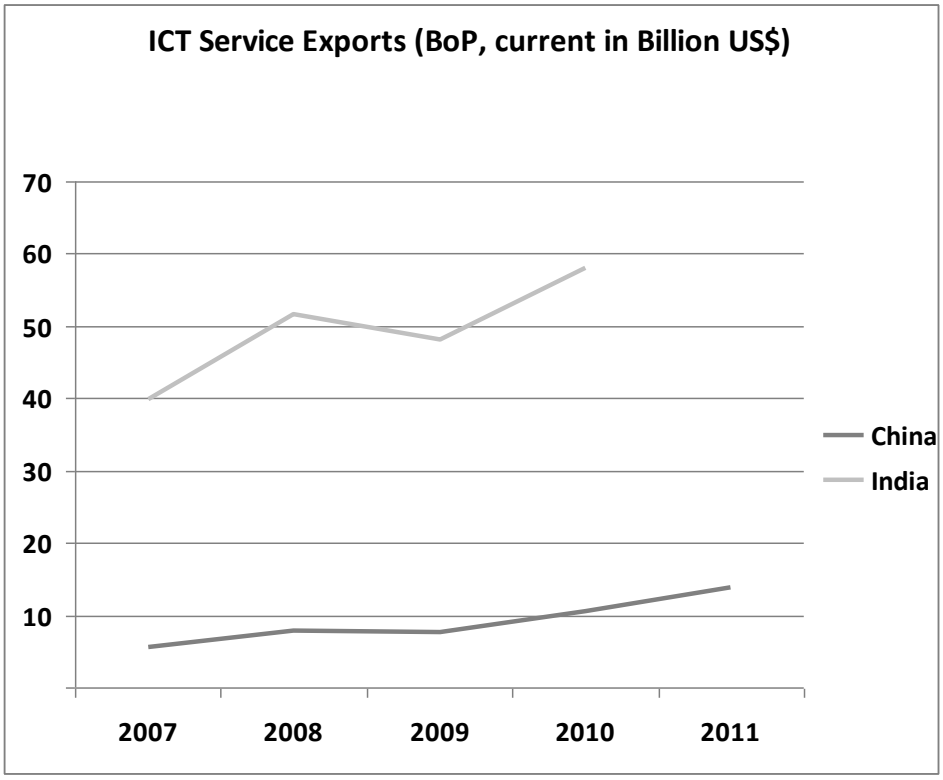
Figure 1 (a): Goods





Source: Author (based on World Bank datasets)

Figure 1 (b): ICT Services



Source: Author (based on World Bank datasets)

Bilateral Trade

China is India's largest trading partner (see Table 1) with total trade grossing US$75 billion for 2011–12. China was the fourth largest recipient of Indian goods in 2011 accounting for 5.5 per cent of India's exports in 2011; it remained the largest source of imports for India accounting for 12 per cent of the import value in 2011 (Vandenbussche and Viegelahn 2012).

Table 1: Top 10 trading partners for India (US$ million, 2011–12)

Rank	Country	Export	Import	Total Trade	Trade Balance
1	CHINA	18,076.55	57,517.88	75,594.44	-39,441.33
2	UAE	35,925.52	35,790.39	71,715.91	135.13
3	USA	34,741.60	24,470.16	59,211.75	10,271.44
4	SAUDI ARABIA	5,683.29	31,060.10	36,743.40	-25,376.81
5	SWITZERLAND	1,095.34	32,404.95	33,500.29	-31,309.61
6	SINGAPORE	16,857.71	8,600.29	25,458.00	8,257.41
7	GERMANY	7,942.79	16,275.56	24,218.35	-8,332.77
8	HONG KONG	12,931.90	10,646.93	23,578.83	2,284.96
9	INDONESIA	6,677.99	14,623.55	21,301.54	-7,945.56
10	IRAQ	763.97	18,939.63	19,703.60	-18,175.66
	Total of top 10 countries	*140,696.66*	*250,329.45*	*391,026.11*	*-109,632.79*
	India's Total	305,963.91	489,319.48	795,269.50	-183,355.57

Source: Department of Commerce datasets, Government of India (2013)

Table 2 (a) and (b) show that India's main exports to China are resource-based, while China mainly exports manufactured goods to India.

Table 2 (a): Top Exported Commodities

Code	Description	Trade Value in US$
26	Ores, slag and ash	10,642,557,951
74	Copper and articles thereof	5,500,072,447
52	Cotton	4,906,714,951
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes	1,990,824,228
29	Organic chemicals	1,618,605,465
	Other commodities	9,499,002,492

Source: UN COMTRADE datasets for 2010, 2011 and 2012

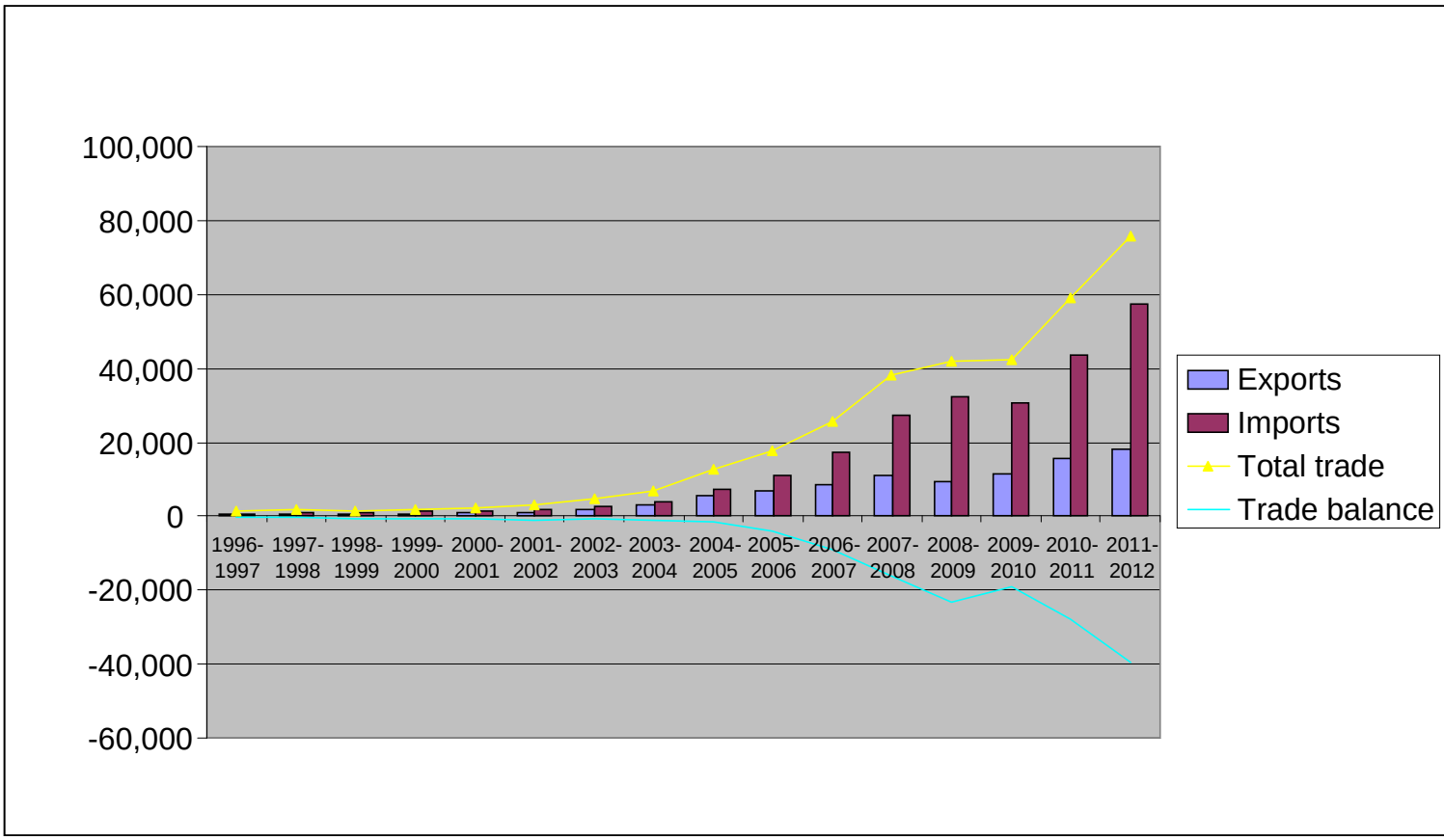
Table 2 (b): Top Imported Commodities

Code	Description	Trade Value in US$
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	24,514,867,234
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	17,011,228,036
29	Organic chemicals	7,821,846,311
99	Commodities not specified according to kind	7,675,334,055
72	Iron and steel	4,136,236,562
	Other commodities	35,572,628,947

Source: UN COMTRADE datasets for 2010, 2011 and 2012

The other defining feature is the rising trend of the trade deficit (see Figure 2).

Figure 2: India-China trade balance (US$ million)

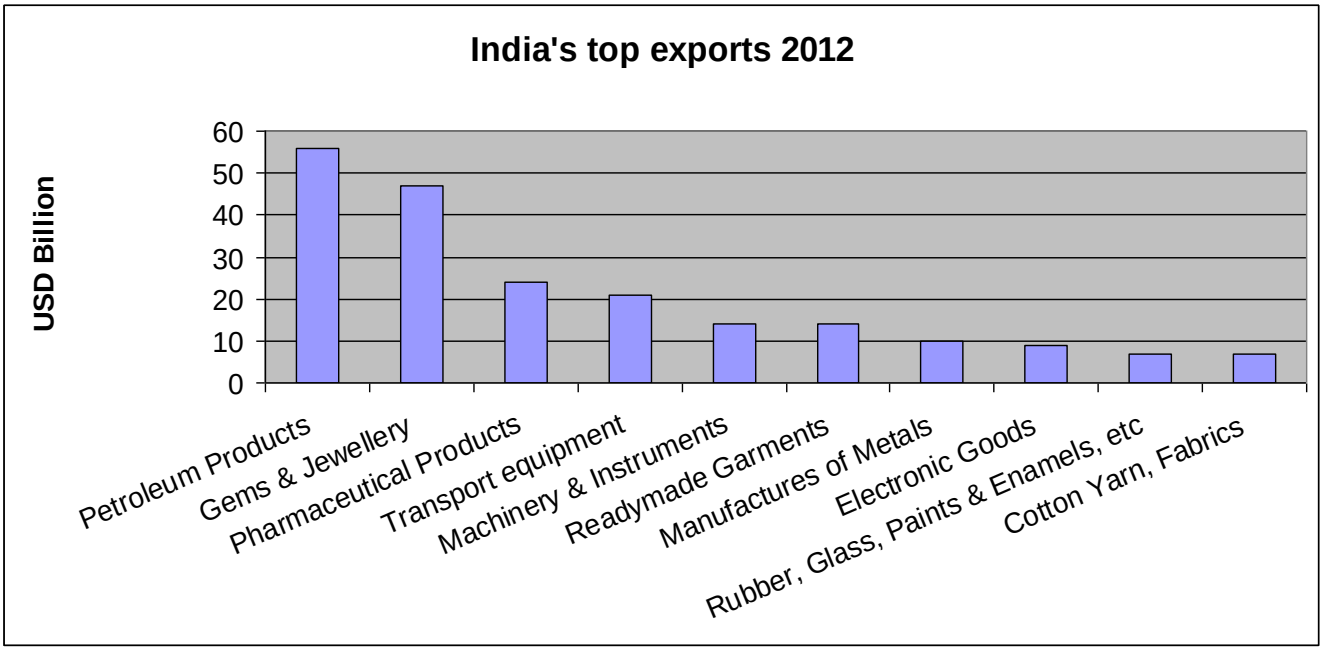


Source: Author (based on datasets from the Department of Commerce, Government of India)

Even by the admission of Chinese scholars and the top Chinese leadership,[2] both the rising trade deficit and the structure of trade are problematic. Yang and Ni (2007) note that this peculiar trade structure of resource intense exports from India limits the diversity of Indian exports and will also, over time, weaken India's export capacity. If we examine India's overall exports of goods, it becomes fairly evident that the product mix of its exports to China does not reflect the strengths which India otherwise has in its external sector (see Figure 3).

[2] Following Chinese Premier Wen Jiabao's visit to India in 2010 there was official acknowledgement of the need to reduce the trade imbalance between the two countries (MEA 2010).

Figure 3: India's global export performance



Source: Author (based on data from the Ministry of Commerce & Industry at Export-Import Bank of India 2013)

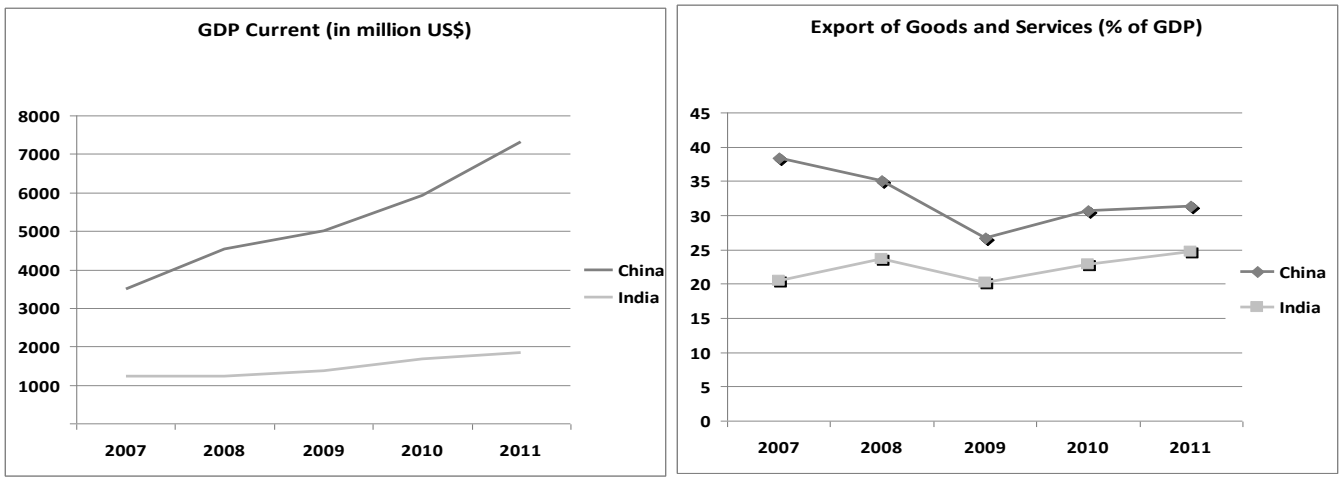
Resource-based exports are a structural cause of worry. Primary exports have limited options for value-addition and generate a limited number of jobs compared to exports of flourishing manufacturing. That the Chinese have largely imported ores and primary materials from India is an imbalance that needs to be redressed. However, in all fairness, the 'rise of China' has also ensured, by virtue of investment-driven growth, that developing economies with resource-based advantages experience a real improvement in their terms of trade, with China accounting for 65 per cent of seaborne iron ore demand in the world (and prices shooting from US$20 a ton in the last decade to over US$150 in 2011; see Bloomberg News [2012] and Indexmundi for current ore prices). Similarly, if we dissect the nature of imports from China, it becomes clear that consumption goods are present only to a small extent in Indian imports, and over 63 per cent of India's imports in 2011 belonged to the category of intermediate goods (Vandenbussche and Viegelahn

2012)[3]. This implies that much of the consequent production and sale of these intermediate goods takes place in India (Vandenbussche and Viegelahn 2012). Therefore, clearly, it is more in the area of Indian exports to China that the valid perspective of structural limitations (limited scope of value-addition and employment generation) emerges, and even though the subsequent segments identify avenues for convergence on the matter of imports from China, it must be stressed that the nature of imports from China is the "lesser evil", as it were.

Areas of Convergence

While China's economy is roughly seven times the size of the Indian economy, India's exports of goods and services accounted for 24 per cent of GDP, only slightly below China's 28 per cent (see Figure 4).

Figure 4: Comparison of select indicators: India and China



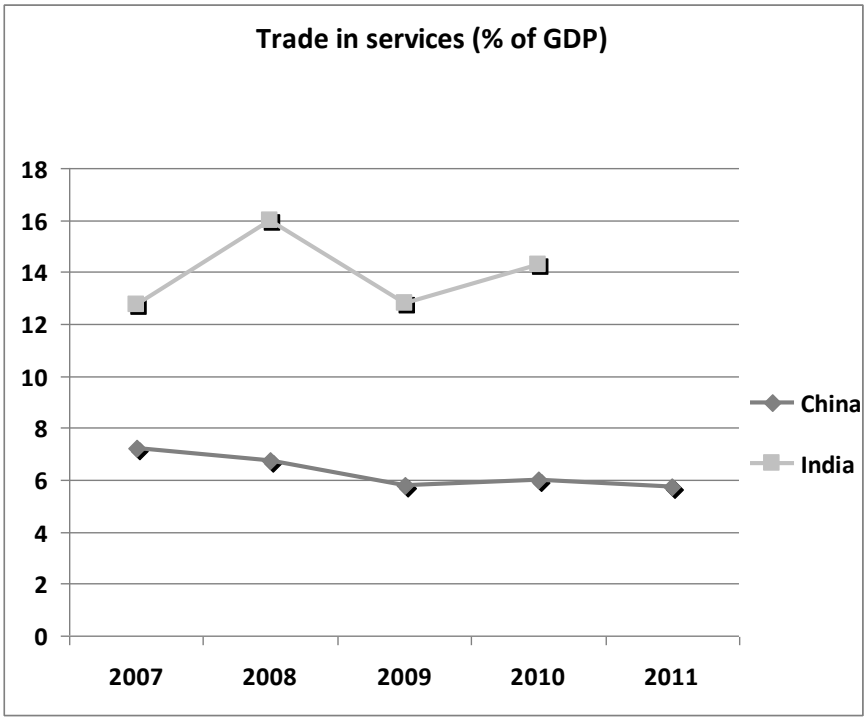
Source: Author (based on datasets from the World Bank)

The buoyancy of Indian export of goods and services is primarily from the services sector, which rose from 2 per cent to 7 per cent of GDP between 1994 and

[3] Machinery itself accounted for over 40% of imports from China, followed by chemical products (16%) and base metals (8.6%), whereas imports of textiles, for instance, has reduced from 11.9% of the import value in 2001 to only 3.9% in 2011

2011 (see Figure 5; see also Syed and Walsh [2012]). In contrast, China's strengths in manufacturing are evident from Table 3.

Figure 5: Services comparison



Source: Author (based on datasets from the World Bank)

Table 3: Key indicators of manufacturing in India and China

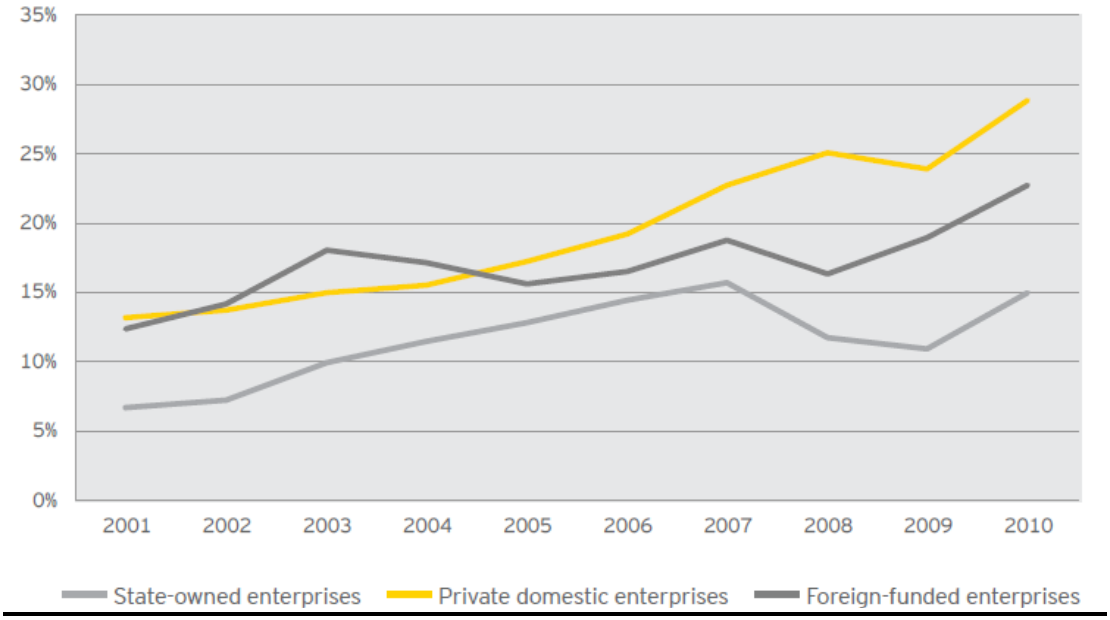
Indicator Name	Country	2007	2008	2009	2010	2011
Manufactures exports (% of merchandise exports)	China	93.07605	92.98912	93.57406	93.55065	93.29944
Manufactures exports (% of merchandise exports)	India	64.2026	62.78339	66.81665	63.76402	62.22553
Manufactures imports (% of merchandise imports)	China	68.46875	61.9303	64.37671	61.45034	56.58531

Manufactures imports (% of merchandise imports)	India	50.41076	47.03992	52.36003	50.55232	46.91266
Manufacturing, value added (% of GDP)	China	32.90504	32.65117	32.30202	29.61997	
Manufacturing, value added (% of GDP)	India	15.99097	15.42965	14.89016	14.53521	13.88993

Source: Compiled from WDI, World Bank

This is an interesting point of take-off for the future convergence of priorities for both countries, wherein the underlying strengths in manufacturing and services, for China and India, respectively, offer several practical avenues for joint development. The industrial sector in China comprises state-owned, private domestic and foreign funded enterprises. Figure 6 shows the returns on equity for most of the last decade. Private domestic enterprises clearly have been the strongest performers (Yuan 2012).

Figure 6: Return on equity of China's industrial enterprises



Source: Yuan (2012)

However, the pressure on China's manufacturing sector has been noted in recent years with rising production costs (land and labour; average wages more than double since 2007), reduced preferential treatment for new manufacturing near the east coast (re-balancing economic disparity between provinces), increased demand to move up the technology ladder, accompanied by the current 12th Five-Year Plan focus towards higher domestic consumption and away from export orientation (IBEF 2012; Yuan 2012). The rising wages of workers employed in foreign companies has resulted in the shift of low-skilled manufacturing jobs to cheaper venues such as Vietnam, Bangladesh and Pakistan (Shilling 2012).

As noted earlier in the context of India's overall exports to the world, India has niche strengths in manufacturing (refer to Figure 3) and, although smaller compared to China's manufacturing sector, the offerings are of "better quality and high-value" products (see IBEF [2012]; also see Table 4)[4]. Indian component manufacturers are known for the production of high-quality precision components whereas the Chinese competitive advantage lies in mass production (*China Business Insight* 2012).

Table 4: 2013 Global Manufacturing Competitiveness Index

Rank	**Country**	**Index score** **[10 = high; 1 = low]**
1	China	10
2	India	8.49
3	Brazil	7.89
4	Germany	7.82

[4] Farrell (2004) cites the example of innovation in Indian manufacturing using the example of Scorpio, an SUV made by Indian auto-major Mahindra, costing a fraction of the equivalent car in the United States, but which reflects efficient use of low-cost labor instead of expensive automation, and local engineering talent.

5	USA	7.69
6	South Korea	7.63
7	Taiwan	7.18
8	Canada	6.99
9	Singapore	6.64
10	Vietnam	6.50
11	Indonesia	6.49
12	Japan	6.46
13	Mexico	6.38
14	Malaysia	6.31
15	Thailand	6.24
16	Turkey	5.99
17	Australia	5.73
18	Poland	5.69
19	UK	5.59
20	Switzerland	5.42

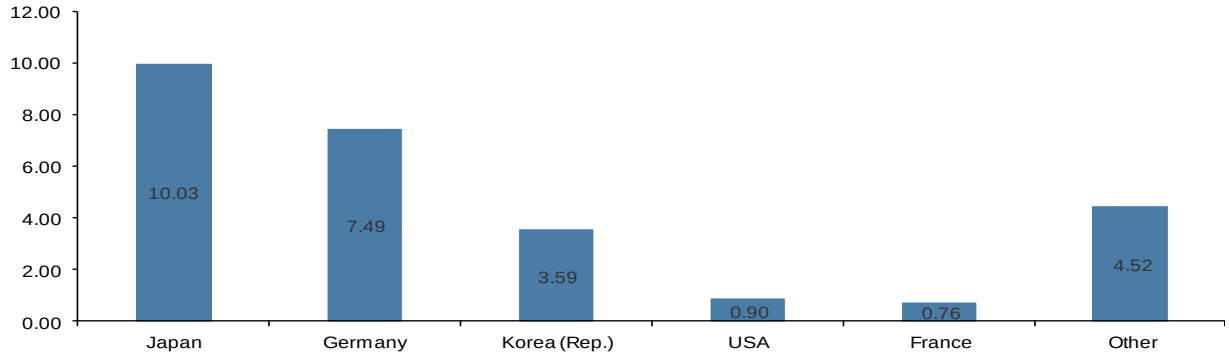
Source: Deloitte Touche Tohmatsu Limited and the U.S. Council on Competitiveness (2012)

Notes: For detailed country-level ratings for key drivers of competitiveness, see Appendix1; for detailed break-up of manufacturing value-added in the two countries compared with the rest of Asia, see Appendix 2.

In 2011, India was the sixth largest manufacturer of automobiles (cars and commercial vehicles) in the world (Deloitte Touche and the U.S. Council on Competitiveness 2012). While there are cases such as the Shanghai Automotive Industry Corporation Group (SAIC) acquiring 50 per cent stake in General Motors in

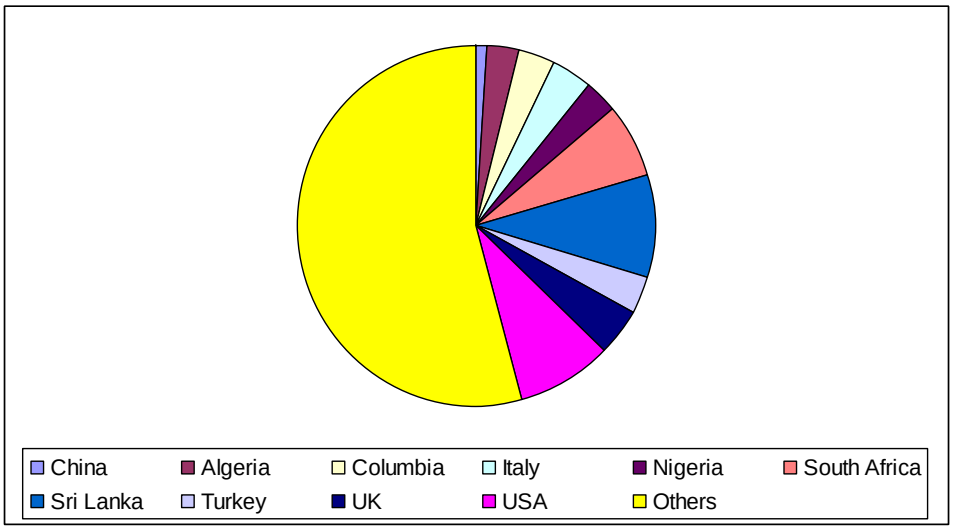
India, and the joint ventures between Mahindra and Mahindra and Jiangling Motors (manufacturing tractors in China), and Bharat Forge Ltd with FAW corporation (*China Business Insight 2012*: 21–22), China's imports in this crucial category of Indian manufacturing is unimpressive and neither is there any strategic planning towards forging supply lines that could extract the complementarities (specifically Indian engineering skills; see Figures 7 and 8). Apart from the self-selection logic of the aforementioned partnerships, if a concerted effort is made to develop regional comparative advantages in this sector, then India and China together can address the rising trade imbalance in this sector.

Figure 7: Value of car part imports to China in 2011 (US$ billion)



Source: Statista (2013b)

Figure 8: Indian export of vehicles besides railway or tramway rolling stock, and parts and accessories thereof



Export Destination	Values in US$ million
China	106.9
Algeria	332.96
Columbia	356.25
Italy	388.26
Nigeria	347.2
South Africa	714.82
Sri Lanka	1,015.37
Turkey	356.24
UK	464.88
USA	919.68
Others	5928.81
Total export of commodity	**10,931.37**

Source: Author (based on datasets from the Department of Commerce, Government of India)

Despite India's competitive strengths, Chinese investments in India do not necessarily reflect the kind of optimal partnerships that could otherwise be developed utilising India's given strengths. Table 5 shows the present pattern of FDI equity investment.

Table 5: Share of top sectors in India attracting FDI equity inflows from China (April 2000 to November 2010):

Rank	Sector	Amount of FDI equity inflows		% of FDI equity inflows from China
		in Rs. crore	in US$ million	
1	Metallurgical industries	197.66	40.76	76.83
2	Chemicals (other than fertilisers)	17.86	3.75	7.06
3	Trading	8.06	1.80	3.40
4	Industrial machinery	8.07	1.73	3.26
5	Computer software and hardware	2.36	0.59	1.12
Total		**234.01**	**48.63**	**91.67**

Source: Based on statistics supplied by Department of Industrial Policy and Promotion (DIPP), Government of India (emailed to author)

Besides FDI equity inflows, Chinese companies (majors such as Huawei, TCL and Haier) have invested capital in India, and are also taking up projects under contracts where they are important suppliers for infrastructure projects[5] (such as for power generation, for instance, by supplying machinery and setting up plants), while some have even set up R&D centres here (Guo 2010: 53–4). Indian investments in China are predominantly by the private sector[6] (mostly located in Guangzhou, Shanghai and Beijing with a major presence in high-tech industries, especially in IT/software, and pharmaceuticals; *China Business Insight* 2012). IT majors such as Infosys Technologies, HCL Technologies, Zansar Technologies, BirlaSoft, KPIT Cummins, TCS, Tech Mahindra, Mahindra Satyam, NIIT, 3i Infotech, Nucleus Software, Wipro, MindTree Consulting and Genpact all have presence in China. There are over 100 Indian companies in China even as the Indian Embassy (Beijing) website suggests "close to 100 Chinese companies" as having established operations in India (2012).

However, a recent trend that could hold the key to broadening the scope for mutually beneficial investment trends is the relatively unnoticed SME-to-SME interaction (small and medium enterprises). The case of China's Yapp, an automotive company in Yangzhou, is noted (Inchin Closer 2013). The company has a 49:51 joint venture (JV) with India's Zoom Enterprises and operates facilities in Chennai and Pune, manufacturing supplies (plastic fuel tanks) to major car makers including Volkswagen India, Ford India and Mahindra (Inchin Closer 2013). Another company, Indian Technocraft Industries, has set up a factory in Nanjing for scaffolding systems, steel boards and clamps (Inchin Closer 2013). Sundram Fasteners is also a case in point (wholly owned subsidiary in China since 2004; *China Business Insight* 2012: 22). With an initial investment of US$5 million in Zhejiang

[5] Chinese companies are estimated to be involved in projects worth US$60 billion in India; see Krishnan (2012).

[6] The Tata group, incidentally, has a long history of association with China starting from1859. See http://www.tatachina.com.cn/index.php. In 1859 a young Jamsetji Tata, the founder of the Tata group, was sent to Hong Kong to open a branch for his father's banking firm. He relocated a few months later to Shanghai, where he remained till 1863. More recently, TCS has signed a joint venture to develop a software business in China in collaboration with the Chinese government and Microsoft; Tata Steel has two rolling mills in China following its acquisition of NatSteel; Tata Refractories has opened a plant in Liaoning Province, the group's first greenfield project in China; TACO has a factory in Nanjing to make auto components for General Motors and Ford.

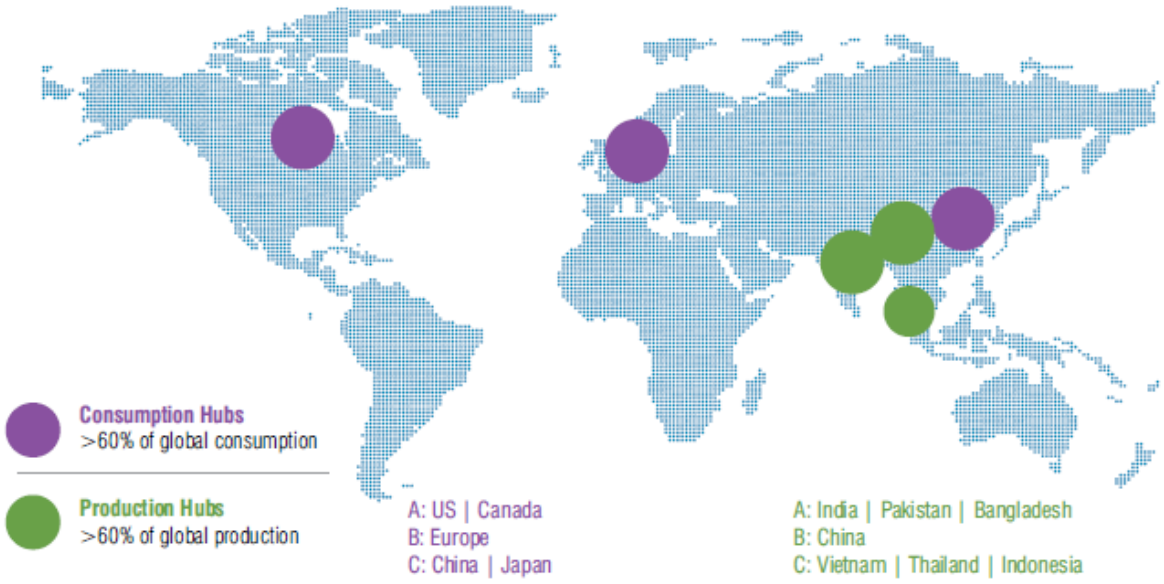
(Haiyan Economic Development Zone), the company unit manufactures and sells high tensile fasteners to the Chinese automobile industry (*China Business Insight* 2012: 22). Such JVs on either side are adding value to the market by creating jobs, building factories and through exports (*China Business Insight* 2012: 22). The SME subsector deserves special attention as the micro-small-and-medium enterprises (MSMEs[7]) in India account for about 45 per cent of the manufacturing output and 40 per cent of the total exports of the country — with a consistently higher growth rate than the rest of the industrial sector (Ministry of Micro, Small and Medium enterprises 2012:21*)*). This is an area that Chinese companies can scout for meaningful partnerships in the sectors that could generate more visibility (and goodwill) for Chinese companies in India. It will be ably supported by the changed policy framework in India under the National Manufacturing Policy (NMP; a 15-year vision document) that seeks to raise the share of the manufacturing sector to 25 per cent of GDP by 2025, and is aimed at creating 100 million new jobs in the process (*The Hindu* 2011).

Textiles and apparel is another key sector. China currently faces the unique situation wherein, despite being the world's largest textile exporter, its mills are selling off their spinning machines to Malaysia, Pakistan and Vietnam to stave off rising labour costs and manpower shortages (*Reuters* 2013). China's advantage over the years has been maintained by low costs through mass production and returns-to-scale economies. This scale is best understood in a comparison with India where the largest spinning company in India, Vardhman Group, has a capacity of 500,000 spindles; this contrasts poorly with the largest Chinese spinning company Weiqiao Textile's 3,000,000 spindles (Tang 2010). The largest weaving company in India, Arvind Mills produces 30 million metres of fabric per year, while Weiqiao Textile

[7] The Government of India has enacted the Micro, Small and Medium Enterprises Development (MSMED) Act, 2006 in terms of which the definition of micro, small and medium enterprises is as under: Enterprises engaged in the manufacture or production, processing or preservation of goods as specified:(i) A micro enterprise is an enterprise where investment in plant and machinery does not exceed Rs.2.5 million; (ii) A small enterprise is an enterprise where the investment in plant and machinery is more than Rs.2.5 million but does not exceed Rs.50 million; and (iii) A medium enterprise is an enterprise where the investment in plant and machinery is more than Rs. 50 million but does not exceed Rs.100 million (RBI 2013).

turns out 844 million metres of fabric (Tang 2010). The size of Chinese textile companies is, on average, five times larger than that of the Indian ones (Tang 2010).

Figure 9: Global textile consumption and production hubs



Source: Gugnani et al. (2012).

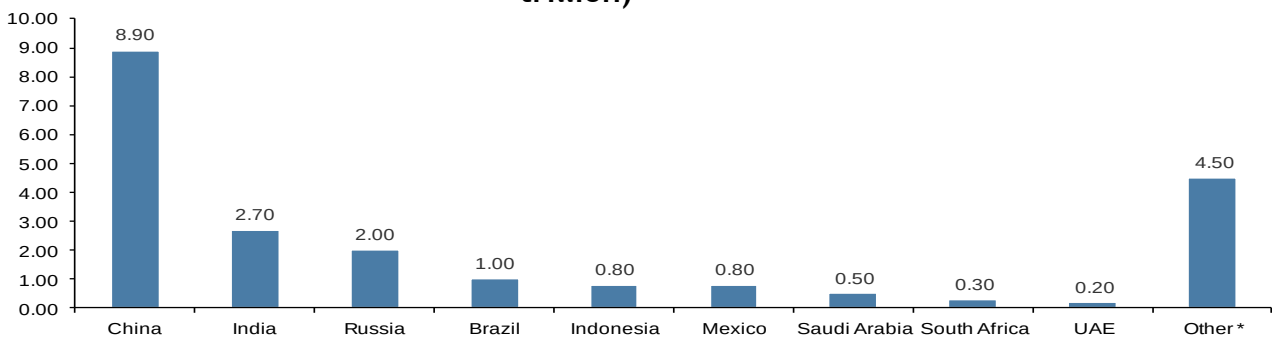
Yet the relationship is not exactly mutually exclusive or zero-sum competing. Tang (2010) points out how there are opportunities to collaborate in the area of streamlining production orientation, wherein the strength of India in small batch orders and customisation[8] can pair with the large processing capacity of Chinese companies (small orders are unattractive since rearranging working lines in huge factories may result in bigger costs). In addition, there is also the deeper history,

[8] Customized products, according to Tang (2010) bring in more profit. The example cited is that the average value of Chinese textile exports to the US in 2010 was only US$1.48 per square meter despite China's overall exports at US$38.47 billion and 26.00 billion square meters in volume. In comparison the average value of Indian exports was US$1.65 per square meter, about 12% higher than the Chinese products despite much lower export value and volume. The higher margins, it is reasoned, keep Indian companies satisfied where the operating principle seems to be that for items under US$30, leave it to China; above US$150, leave it to European companies; and the market in between give it to India.

management acumen and quality control attributed to Indian textile enterprises[9] (Tang 2010). While China lacks high quality domestic sources of textiles (as opposed to its given strengths in bulk apparel making), India is the world's largest producer of jute, the second-largest producer of silk, third-largest producer of cotton and fifth-largest producer of synthetic fibres and yarn, with a strong presence across the entire textile value chain (from fibre production to garmenting (sic); Gugnani et al. 2012: 4, 5). In the backdrop of China's rising costs, it is useful to consider collaborating on supply chains given that the global textile and apparel market was worth US$662 billion in 2011 and is projected to reach US$1,060 billion by 2021 (Gugnani et al. 2012: 4, 5; see also Figure 9).

Apart from the aforementioned sectors in manufacturing, it is useful to discuss briefly a third avenue of convergence for India and China, embedded in the proposed transformation of the Indian infrastructural landscape (government has planned outlay for infrastructure investment over the next five years at U.S$1 trillion; see Figure 10).

Figure 10: Infrastructure spending forecast of emerging markets (2008–17; US$ trillion)



Source: Statista (2013a)

[9] Indian companies a longer history: Arvind Mills (since 1931); Premier Mills (since 1949); The Raymond Group (since 1925); Lakshmi Mills (since 1910); Vardhman (since 1962). This is interesting to contrast with Chinese companies most of which have no more than 30 years of history and are still striving to standardize their manufacturing procedure and quality control because the rapid expansion.

There are several dimensions to infrastructure expansion, but it would useful to examine two key sectors where the quality of China's participation in India's growth could be vital: rail transport (specifically high-speed rail, even metro rail), and power.

In India, road transport has advanced over rail despite the lower payload and fuel efficiency, accounting for about 65 per cent of the freight market and 90 per cent of the passenger market. Among other plans, the government's focus on dedicated freight corridors in India (implying induction of only electric locomotives which are cleaner), and revamping of urban transport (metro lines) and high-speed rail offer a unique opportunity for China and India to cooperate. While foreign majors such as Alstom and Bombardier have traditionally dominated the Asian market for metro vehicles, it would be useful for Indian metro car makers such as BEML and Chinese manufacturers (chiefly, China CNR Corp Ltd and CSR Corp; the latter having won the contract for 108 metro cars in Mumbai [SCI Verkehr GmbH (2009)]) to collaborate. This could upgrade Indian manufacturing capabilities in this sector. BEML at present is only an assembler with Rotem providing the technology (Kurian and Kurup 2012). As per the *Twelfth Five Year Plan* (2012–2017), the Ministry of Railways has selected the following six corridors for conducting pre-feasibility studies for development of High Speed Rail Corridors in the country: Delhi–Chandigarh–Amritsar (450 km); Pune-Mumbai–Ahmedabad (650 km); Hyderabad-Dornakal–Vijaywada–Chennai (664 km); Chennai–Bangalore–Coimbatore–Ernakulam-Thiruvananthapuram (849 km); Howrah–Haldia (135 km); and Delhi–Agra–Lucknow–Varanasi-Patna (991 km) (Planning Commission 2013). Given that the Indian Railways and China's Ministry of Railways have signed a memorandum of understanding to enhance technical cooperation in the railway sector in 2012 (*The Economic Times* 2012), it would be useful to focus on this sector as the demand in India is only set to increase over the coming years.

The power sector is arguably the bedrock of all industrial and service outputs that run the Indian economic engine. However, inadequate availability of power generation equipment has been cited by the union power ministry to explain the

huge shortfalls in its planned capacity addition target[10]. Chinese power equipment suppliers/vendors are able to offer high-capacity equipment and are 15–20 per cent cheaper compared to equipment supplied by domestic manufacturers Bhel and L&T (Mohammad 2010). The government has envisaged capacity addition of 100,000 MW during the 12th plan, of which orders for equipment supply to projects worth 62,550 MW have already been placed on contractors; Chinese suppliers have bagged contracts worth 15,430 MW (Mohammad 2010). Chinese majors such as Shanghai Electric and China Datang Corp have long been suppliers of equipment to private companies such as Reliance power (including extending finance loans towards procurement; Inchin Closer 2012). Datang, incidentally, is one of the five largest state-owned power producers in mainland China with an installed capacity of 105,000 MW, that is, over 50 per cent of India's total generation capacity vested in one company alone (Inchin Closer 2012). The other main Chinese suppliers are Dongfang Electric and Harbin Electric, while the main Indian buyers include industrial groups such as Reliance, Essar, Adani, KSK Industries, JSW Energy and Jindal Steel & Power (Leahy 2009). The second Sino-Indian strategic economic dialogue (2012) expanded cooperation in this sector, though limited to the private sector, in the form of MoUs between Reliance Power and Guangdong Mingyang Wind Power Industry Group Co Ltd for a 2,500 MW renewable energy project (investment of US$3 billion with project financing from China Development Bank), and an agreement between Lanco Group and China Development bank for financing the US$600 billion Anpara Phase-II Power projects in Uttar Pradesh (4x660MW; *The Economic Times* 2012). Given the continual expansion in this sector, the nature of participation by Chinese companies should move away from being suppliers and project financers to domestic manufacturing of the equipment (through wholly foreign-owned enterprise (WFOE), equity joint venture (EJV), contractual or cooperative joint venture (CJV), foreign investment joint stock company (JSC), or partnership).

[10] See Mohammad (2010) for a discussion on why India could manage only half of the capacity addition envisaged for implementation during the previous 10th Five Year Plan, and is unlikely to meet its capacity target for the 11th Five Year Plan. The government had envisaged adding 78,700MW capacity. Against that, only 28,572MW was added by the end of October 2010. Also see Roy (2010) on why raising the finances for such mega-projects is a financial jigsaw.

The aforementioned convergences are not exhaustive, but the focus here has been on collaborations that could extract the most of India's competitive strengths and China's known capability. The imperative of such a cooperation has also been advanced by Chinese scholars who recognise that emerging opportunities in infrastructure (telecommunications, ports, roads, railways, oil and other infrastructure) need to evolve a model of joint cooperation that aids the 'digestion and absorption', of manufacturing products over time within India (construction of power grids, hydropower, transportation construction field, where India suffers from relative lack of scientific and technological innovation; Zhang 2007). There are promising examples such as Sany, one of the first Chinese factories in India, which makes diggers and other construction machines in Maharashtra (US$70 million investment and employing 460 locals) and is hoping to double in size. There is also Trina Solar, a solar equipment firm, which is manufacturing locally in Gujarat (*The Economist* 2012). This is also in line with the changed policy framework in China itself where the focus is on seven strategic industries (non-fossil energy, environmental technology, new fuel-powered vehicles, new materials, high-end manufacturing, biotech pharmaceuticals, and information technology) under the 12th five-year plan (2011–15; Yuan 2012). The impetus on enhancing productivity necessarily implies the reorganisation of production away from traditional manufacturing. This provides fertile ground to explore the reorganisation of production by horizontal investments and creation of supply lines in India itself as productive investment propositions. This has to be pursued as an active policy option by both countries in addition to the initiatives from the private sector. Chinese scholars point out the need for Chinese enterprises to increase the transfer of technology to India, and to promote industrial structure in India which could thereby facilitate improvements in the level of trade (Wen 2006; Zhang 2009).

Problem Areas and Future Options

The key problem areas for India and China in expanding the sphere of economic interaction can be nailed to the twin dimensions of limited market access

for India in China (proxy for protectionism), and barriers to investment in India (attributed to security concerns and allegations of "dumping" against China). The former is evident in a knowledge-intensive industry such as pharmaceuticals where, despite being ranked fourth in terms of volume and 14th in terms of value in the global pharmaceutical market, Indian companies run into market access problems in the form of lengthy and cumbersome regulatory processes in China, where it takes over 3 years for an Indian drug company to gain approval for a drug, while a similar clearance takes only around a year in the US (Das 2010). On the Indian side, Chinese companies face hurdles owing to a "securitisation" trend which has emerged in recent years, where procurement of equipment from companies such as ZTE and Huawei is restricted owing to allegations that they may contain embedded spying technology[11]. Subsequently the implicit ban was revoked and clearances were given to source products from these very companies. Ideally, serious charges of spying through compromised equipment should invoke permanent blacklisting of the concerned companies. The restrictions on Chinese equipment do not appear to emerge from these failing quality control/standards specification or any other specific adverse information. The security argument is assumed to be so innately true that it can be taken at face value. Chinese scholars have called for the Indian side to abandon the "Cold War mentality" as far as the labelling of sectors deemed "sensitive" is concerned and ask for fair treatment (Zhang 2009: 153).

Likewise, protectionism is another arena of contestation where an appeal to 'save national economic interests' is usually taken at face value. While China has initiated only four cases against India, India has initiated 147 cases against China of which 120 ended with the imposition of measures against Chinese producers, that is, roughly every fourth Indian anti-dumping case is directed towards China (Vandenbussche and Viegelahn 2012). Two studies by Aradhna Aggarwal (2002 and 2004) from the Indian Council for Research on International Economic Relations (ICRIER) merit citation. Both studies make it evident that anti-dumping charges have

[11] In 2010 of the 14 applications submitted by various Indian telecom operators, 11 were rejected for buying equipment from Chinese vendors ZTE and Huawei. See Arun S and Thomas K Thomas (2010) and Tripathy (2010).

been routinely used by Indian producers for market dominance by limiting competition from imports, and duties were primarily sought by industries that enjoy near monopoly conditions in the Indian market. In 90 per cent of the cases, the number of petitioners was between one and three i.e. enjoying near monopoly (Aggarwal 2002 and 2004). What is worrying is that anti-dumping was mostly applied on intermediate products from China (as compared to final products), and the share of consumption and capital goods imports under anti-dumping was close to zero until 2007 (consumption and capital goods are being covered since then). Applying anti-dumping measures on intermediate products presumably ultimately only affects importers and input users in a negative way (Vandenbussche and Viegelahn 2012).

It is also vital to point to some of the operational risks faced in India–China trade. Chinese scholars point to the case of Hubei Chemical Import and Export Corporation and Wuhan Chemicals Import and Export Corporation as an instance (supply of tetracycline and glycerol). After the freight arrived at the Mumbai Port, the importers refused to redeem the imports, resulting in the goods being auctioned off at great economic losses (Yang and Ni 2007). The lack of efficient trade arbitration mechanisms in the event of unscrupulous trade practices has also been pointed out (Yang and Ni 2007). The latter argument can also be applied to the poor treatment of Indian traders, such as in 2011 in Yiwu where Indian traders were held hostage for nearly 15 days over a business dispute (*NDTV* 2012).

There are several areas where policy changes are needed from both sides to nurture this partnership into a truly balanced relationship:

a) While there is a functional mechanism in the form of the Strategic Economic dialogue (with two inaugural rounds in 2011 and 2012), there is no bilateral investment promotion and protection agreement (BIPA) between India and China (see http://finmin.nic.in/bipa/bipa_index.asp).

b) There is also no dedicated business-to-business web portal for India and China (something that could be useful for dissemination of sector specific

business information, thereby promoting trade and guiding companies on either side in seeking business collaborations, coproduction opportunities, joint ventures, etc).

c) Scholars with domain expertise (as opposed to business-as-usual annual MoU meetings/exchanges) should be identified from both countries at the institutional level to promote joint study in the following key sub-sectors:

i. Study of India's relatively more advanced and market-based financial sector (both Bombay Stock Exchange [BSE] and the National Stock Exchange [NSE]) that China's secondary markets, the Shanghai and Shenzhen exchanges, could learn from. The Indian secondary markets are acknowledged to be much healthier (Zhu 2007). The study could also offer avenues for further cooperation in the area of banking reforms for China, since China's financial system (dominated by the banking sector, largely with four huge commercial banks) lags behind India's financial system (which is more balanced with a banking sector, healthy equity market, and a sizable government bond market; Farrell and Lund 2006).

ii. Study on energy cooperation aimed at avoiding resource hoarding. It has been noted that, given the energy consumption requirements of the two big countries, there should be efforts aimed at promoting cooperation in the international market, developing energy resources, and avoiding vicious competition (Zhang et al. 2006). While increased dependence on overseas energy sources has resulted in competition for asset acquisitions for overseas oil and gas resources (Zhu 2007), there have been successes in the form of Sino-Indian energy cooperation, such as the joint bidding (US$5.78 billion) in the acquisition of Petro-Canada and 38 per cent of Syria's oil and gas assets (Zhang 2009). Such cooperative bidding and joint development, it is argued, would be conducive to increased investment in higher technology and capital, apart from significant reduction in oil

exploitation and transportation costs, when pursued separately and in zero-sum competition (Yang and Ni 2007).

d) The existing institutional mechanisms could be used by both sides to create micro, small and medium enterprise Tool Rooms (MSME-TRs) such as the 10 MSME-TRs set up under Indo-German and Indo-Danish collaborations to assist small and medium enterprises in technical upgradation (Ministry of Micro, Small and Medium enterprises 2012: 45). Such tool rooms and training centres provide production, training and consultancy services in the areas of tool engineering and upgrading skilled manpower to industry which, in the context of India's lagging manufacturing would go a long way in improving the quality of the relationship.

e) Initiatives such as the grouping of Bangladesh–China–India–Myanmar BCIM should move beyond a focus on Yunnan to take full advantage of the Chengdu–Chongqing economic growth engine (twin-city special economic zone [SEZ]), which Yunnan in any case benefits from. Because the Chengdu–Chongqing region is landlocked, it is time to bring on the agenda the need for that economic powerhouse to be factored in future BCIM initiatives in order to spread the development of the regional economy from the twin-city SEZs onto the larger India–China border regions (see also Chang 2008). Similarly Guangxi province, though not directly connected to India by land, enjoys excellent connectivity with Yunnan. Guangxi is China's chief gateway to ASEAN (Nanning being the seat of the annual track 1 China–ASEAN EXPO). In due course more efforts will be needed to broaden the agenda of BCIM to incorporate these two dimensions of Guangxi and the Chengdu–Chongqing region into the larger development agenda of BCIM interaction and connectivity.

f) Chinese Premier Li Keqiang's visit to India in early 2013 has opened newer vistas for cooperation. In the true spirit of enhancing people to people contacts, city-twinning has been identified as a priority. In China, city-twinning is promoted mainly by the Chinese People's Association for Friendship with

Foreign Countries (CPAFFC) which has successfully established nearly 2000 sister pairings (cities/provinces). At present city-twinning is not serious business in India and it remains largely in the domain of the Ministry of Urban Development (with limitations on number of pairings allowed for individual cities and absence of budgetary support from the central government; the current pairings stand at 13). City-twinning is a laudable initiative as this should promote academic interaction, home-stays, civic linkages of the sort that brought together Seattle and Tokyo, for instance, post-World War II. How the latter contributed to US–Japan relations over the years is not a matter of speculation. However, in its current form, the stress seems solely on identifying a site for a Chinese industrial park in India (and some reciprocal economic activity in China). City-twinning should not be a cosmetic replacement for scouting for SEZs. Hence, along with a possible Shanghai–Mumbai sister city arrangement, a Yanan–Solapur (connected with Dr. Kotnis' service to China) arrangement should also be pursued with equal vigour, and likewise for other cities. It is that level of meaningful exchanges that could create lasting friendships. Left to cities themselves, this remarkable opportunity may just be lost. Clearly this requires attention at the highest level in India. For now, there is no direct flight between Beijing or Shanghai and Mumbai (India's commercial hub).

Any discussion on complementarities would remain incomplete without mention of the shifting demographics in both countries. Based on UN data, it is expected that India will contribute an additional 136 million people to the global labour pool by 2020; China and the US will contribute 23 million and 11 million respectively (even as Japan and Europe witness declining working populations by 8 million and 21 million respectively; Ahya and Gupta 2010: 9). A rising population alone is not sufficient for the acceleration of GDP growth — while positive demographics may be a necessary condition for strong growth, it is not a sufficient condition by itself in the absence of productive job opportunities (Ahya and Gupta

2010: 9). Even though China's age-dependency ratio[12] is estimated to reach 45.8 per cent in 2025 (up from 40 per cent in 2015), and India's will improve to 47.2 per cent in 2025 (down from 51.7 per cent in 2015; Ahya and Gupta 2010: 9), the pressure on Indian policy makers to create jobs remains acute. Unlike in China, Indian women' participation in the labour force is at lower levels (based on Gallup poll data in Crabtree and Pugliese 2012).[13]

The key sectors identified as convergence avenues in the earlier segments of this paper are also buttressed by similar strands of reasoning in Chinese scholarly writings which argue that high value-added and other industrial products (where China is decidedly ahead of India, such as in mechanical and electrical products, appliances, engineering machinery among others) should ultimately evolve into horizontal investment strategies, and India's comparative advantages in medicine, software industry product exports should find more receptivity in the Chinese domestic market conditions (Yang and Ni 2007). The collateral benefits from these initiatives would also be felt in discussions on the India–China Regional Trading Arrangement (RTA) which, since October 2007, has remained in the realm of a Joint Task Force finalising the report on the feasibility of an RTA, with no major movement on the RTA itself subsequently due to the structural impediment of a growing trade deficit.

As countries with large rural populations, common development challenges, neglected social sectors and growing inequalities, there are several non-zero sum avenues to cooperate and benefit mutually. The constant need to bridge the communication and information gap that exists between politicians, businesses and communities in both the countries should be the key to achieve the convergences highlighted in this paper.

[12] Ratio of young people under 16 and older people over 64 dependent on the working age population that is, 16 to 64 age-group.

[13]For the recent period of 2009-12, 70% of Chinese women were either employed or seeking employment compared to only 25% of Indian women. Among Indian women who are labor force participants, 15% are unemployed i.e. they are available for work and looking for jobs.

REFERENCES

Aggarwal, Aradhna. 2002. 'Antidumping Law and Practice: An Indian Perspective', Working Paper 85, http://www.icrier.org/pdf/antidump.pdf (accessed on 14 April 2012).

Aggarwal, Aradhna. 2004. 'The WTO Anti-Dumping Agreement: Possible Reform through the Inclusion of a Public Interest Clause', Working Paper No. 142, September, http://www.icrier.org/pdf/wp142.pdf (accessed on 14 April 2012)

Ahya, Chetan and Tanvee Gupta. 2010. 'India and China: New Tigers of Asia, Part III: India to Outpace China's Growth by 2013–15' (Special Economic Analysis), August. Singapore: Morgan Stanley.

Bloomberg News. 2012. 'Iron Ore Heads For Bear Market: Commodities', 4 October, http://www.bloomberg.com/news/2012-10-02/iron-ore-heads-for-longest-bear-market-in-20-years-commodities.html (accessed on 28 March 2013).

Chandrasekhar, CP and Jayati Ghosh. 2007. 'Recent Employment Trends in India and China: An Unfortunate Convergence?', *Social Scientist*, Vol. 35, No.3/4, March–April, 19–46.

Chang Jing (常静). 2008. 'Jiyu SWOT fenxi xia de ZhongYin maoyi fazhan dui woguo xinan diqu de jingji yingxiang' (基于SWOT分析下的中印贸易发展对我国西南地区的经济影响)[SWOT Analysis of Sino-Indian Trade on the Economic Prospects for Southwest China], *Hubei di er shifan xueyuan xuebao* (湖北第二师范学院学报), Vol. 25. No.2, February, 130-132.

China Business Insight. 2012. 'Indian Investment in China' March, http://www.tusiad.org/__rsc/shared/file/ChinaBusinessInsight-April-2012.pdf (accessed on 14 January 2013).

Chua, Jean. 2012. 'China, India GDPs to Exceed Entire OECD by 2060: Report', CNBC, 9 November, http://www.cnbc.com/id/49754114/China_India_GDPs_to_Exceed_Entire_OECD_by_2060_Report (accessed on 11 January 2013).

Crabtree, Steve and Anita Pugliese. 2012. 'China Outpaces India for Women in the Workforce', 2 November, http://www.gallup.com/poll/158501/china-outpaces-india-women-workforce.aspx(accessed on 19 March 2013).

Das, Soma. 2010. 'Indian Drug Firms Look to Scale the Great Wall', 15 December, http://www.financialexpress.com/news/indian-drug-firms-look-to-scale-the-great-wall/724785/0 (accessed on 24 December 2010).

Deloitte Touche Tohmatsu Limited (Deloitte) and The U.S. Council on Competitiveness. 2012. 2013 Global Manufacturing Competitiveness Index

Embassy of India, Beijing. 2012. 'Trade and Commercial Relations', http://www.indianembassy.org.cn/DynamicContent.aspx?MenuId=3&SubMenuId=0, (accessed on 08 May 2012).

Farrell, Diana and Susan Lund. 2006. 'China's and India's Financial Systems: A Barrier to Growth', *McKinsey Quarterly*, November, http://www.mckinseyquarterly.com/Chinas_and_Indias_financial_systems_A_barrier_to_growth_1878 (accessed on 24 March 2013).

Government of India, Ministry of Commerce & Industry Department of Industrial Policy & Promotion (Manufacturing Policy Section). 2011. PRESS NOTE NO. 2 (2011 SERIES) Subject: National Manufacturing Policy, 4 November.

Goyal, Anjali. 2009. 'Dedicated Freight Corridors &High Speed Rail: India's Ultra Low Carbon Mega Rail Projects', Executive Director Finance (Budget), Ministry of Railways, India, http://siteresources.worldbank.org/INTTRANSPORT/Resources/336291-1234451048011/5827121-1239045090161/Goyal_India.pdf (accessed on 12 March 2013).

Gugnani, Amit, Ruby Jain and Kanti Prakash. 2012. 'Global & Indian T&A sector and Opportunities in the Domestic Market', July, http://www.technopak.com/resources/fashion/White%20Paper-TLF-Fahion.pdf (accessed on 19 December 2012).

Guo, Yan. 2010. 'Wider fields to be explored between China and India', *China's Foreign Trade*, Vol 4, 53–54.

Inchin Closer. 2012. 'China Develops India's Power Ecosystem', 24 August, http://inchincloser.com/2012/08/24/china-developes-indias-power-ecosystem/#more-4220 (accessed on 4 January 2013).

Inchin Closer. 2013. 'SMEs Cementing Sino-Indian Relations', 17 January, http://inchincloser.com/smes-cementing-sino-indian-relations/ (accessed on 17 February 2013).

India Brand Equity Foundation (IBEF). 2012. 'China vs India: Competitive Edge Separating Reality from Hype', http://www.ibef.org/download/Competitive-Edge-Separating-Reality-from-Hype-140512.pdf (accessed on 19 January 2013).

JP Morgan Chase & Company. 2007. 'The Chindia Effect: What It Means for U.S. Companies', https://www.chase.com/ccpmweb/commercial/document/ChindiaWhitePaper.pdf (accessed on 11 February 2013)

Krishnan, Ananth. 2012. 'India, China Renew Push to Bridge Deficit Ahead of =Trade Talks', 27 October, http://www.thehindu.com/business/Economy/india-china-renew-push-to-bridge-deficit-ahead-of-trade-talks/article4038531.ece (accessed on 12 February 2013).

Kurian, Vinson and NK Kurup. 2012. 'Bombardier Bets on Capacity, Eyes Metro and Monorail Projects in Kerala', 23 September, http://www.thehindubusinessline.com/industry-and-economy/logistics/article3929458.ece (accessed on 11 January 2013).

Leahy, Joe. 2009. 'India looks to China for power', 30 March, http://www.ft.com/cms/s/0/965ce22a-1cc2-11de-977c-00144feabdc0.html (accessed online 12 February 2013)

Mead, Nick. 2012. 'Developing Economies to Eclipse West by 2060, OECD Forecasts', http://www.guardian.co.uk/global-development/datablog/2012/nov/09/developing-economies-overtake-west-2050-oecd-forecasts (accessed 19 July 2013).

Ministry of External Affairs, Government of India. 2010. 'Joint Communiqué of the Republic of India and the People's Republic of China', 16 December, http://meaindia.nic.in/mystart.php?id=530516879 (accessed 19 July 2013).

Ministry of Micro, Small and Medium Enterprises, Government of India. 2012. *Annual Report 2011-12*.

Mohammad, Noor. 2010. 'Visa Issue for Chinese Workers to Top Agenda', 14 December, http://www.financialexpress.com/news/visa-issue-for-chinese-workers-to-top-agenda/724199 (accessed on 17 December 2012).

NDTV. 2012. 'Indian Traders being Moved from Yiwu to Shanghai; Diplomatic Crisis Averted', 4 January, http://www.ndtv.com/article/india/indian-traders-being-moved-from-yiwu-to-shanghai-diplomatic-crisis-averted-163638 (accessed on 14 May 2013).

Planning Commission, Government of India. 2013. 'Twelfth Five Year Plan (2012–2017): Economic Sectors [Volume II]', New Delhi: SAGE.

Reserve Bank of India (RBI). 2013. 'FAQs: Micro, Small and Medium Enterprises', 26 September,http://www.rbi.org.in/commonman/English/Scripts/FAQs.aspx?Id=966 (accessed on 15 December 2013).

Reuters. 2013. 'China's Cotton Policy Spurs Yarn Imports, Drives Mills Overseas", 17 January, http://www.reuters.com/article/2013/01/17/china-cotton-yarn-idUSL4N0AL69E20130117 (accessed on 29 January 2013)

Roy, Robin. 2010. 'Tap Pension Funds and Insurance Firms", 15 December, http://www.financialexpress.com/news/tap-pension-funds-and-insurance-firms/724765/0 (accessed on 17 February 2012).

S, Arun and Thomas K Thomas. 2010. 'Ban on Chinese Telecom Gear is no Violation of WTO Norms: Sharma', 13 May, http://www.thehindubusinessline.com/2010/05/13/stories/2010051353720100.htm (accessed on 12 February 2011).

SCI Verkehr GmbH. 2009. 'The Asian Railway Market 2009–2014: Facts, Figures, Players, Trends', www.sci.de/fileadmin/user.../Product_information_MC-Asia.pdf (accessed on 24 February 2013).

Shilling, A Gary. 2012a. 'Why India Will Displace China as Global Growth Engine', 16 December, http://www.bloomberg.com/news/print/2012-12-16/why-india-will-displace-china-as-global-growth-engine.html (accessed on 27 January 2013).

Statista. 2013a. 'Emerging markets - infrastructure spending', http://www.statista.com/statistics/180175/infrastructure-spendings-forecast-of-emerging-markets/ (accessed on 22 January 2013).

Statista. 2013b. 'Value of car part imports to China in 2011, by country of origin', http://www.statista.com/statistics/238136/value-of-car-part-imports-to-china/(accessed on 22 January 2013).

Syed, Murtaza and James P. Walsh. 2012. 'The Tiger and the Dragon', *Finance & Development*, September, Vol. 49, No. 3.

Tang, Xiaoyang. 2010. 'Comparing Technological Innovation of Textile Industries in India and China', http://indiachinainstitute.org/wp-content/uploads/2010/03/Xiaoyang-Tang-Comparison-Textile.pdf (accessed on 14 February 2013).

The Economic Times. 2012. 'India, China ink 11 MoUs Entailing $5.2 billion Investment', 26 November, http://articles.economictimes.indiatimes.com/2012-11-26/news/35365115_1_china-ink-china-development-bank-india-and-china-today (accessed on 29 January 2013).

The Economist. 2012. 'India and China: Friend, Enemy, Rival, Investor: How can India make its Economic Relations with China less lopsided?', 30 June, http://www.economist.com/node/21557764 (accessed on 2 February 2013).

The Hindu. 2011. 'Manufacturing to Contribute 25% of GDP within a Decade', 25 October, http://www.thehindu.com/business/Industry/manufacturing-to-contribute-25-of-gdp-within-a-decade/article2570702.ece (accessed on 27 December 2012).

The World Bank. 2011. 'World Bank Approves US$975 Million Loan for the Eastern Dedicated Freight Corridor Project in India', Press Release No:2011/519/SAR, 31 May, http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/EXTSARREGTOPTRANSPORT/0,,contentMDK:22929177~menuPK:579604~pagePK:2865114~piPK:2865167~theSitePK:579598,00.html (accessed on 14 February 2013).

Tripathy, Devidutta. 2010. 'India Tightens Telecom Rules on Security Concerns', 28 July, http://in.reuters.com/article/idINIndia-50468220100728 (accessed on 11 December 2010).

UNCTAD. 2011. 'Commodities at a Glance', March, Special Unit on Commodities, http://unctad.org/en/Docs/suc20112_en.pdf (accessed on 23 February 2013).

Vandenbussche, H and ChViegelahn. 2012. 'Indian Antidumping Measures against China: Evidence from Monthly Trade Data', Discussion Paper 2012-25, http://sites.uclouvain.be/econ/DP/IRES/2012025.pdf (accessed on 12 February 2013).

Wang, Brian. 2013. 'Various Projections for the Economy of China 2030', 10 June, http://nextbigfuture.com/2013/06/various-projections-for-economy-of.html (accessed on 28 June 2013).

Wen Fude (文富德). 2006. 'ZhongYin jingmao de jingzheng yu hezuo'(中印经贸的竞争与合作)[Sino-Indian Trade and Economic Competition and Cooperation], *Jingmao Guancha* (经贸观察), No. 1, Institute of South Asian Studies Sichuan University.

Yang Wenwuand Ni Xiangqin (杨文武, 倪香芹). 2007. 'ZhongYin jingmao hezuo xianzhuang, wenti jiqi duice' (中印经贸合作现状、问题及其对策) [Sino-Indian Economic and Trade Cooperation Situation, Problems and Countermeasures], *Shehui Kexue* (社会科学), No. 9, 16-24.

Yuan, Jack. 2012. 'China's Productivity Imperative', Ernst & Young (China) Advisory Limited, http://www.ey.com/Publication/vwLUAssets/China_productivity_imperative_en/$FILE/China-Productivity-Imperative_en.pdf (accessed on 19 February 2013).

Zhang Peishen (张佩伸). 2009. 'Xianjieduan ZhongYin jingmao hezuomianlin de zhuyao wenti jijiejue duice' (现阶段中印经贸合作面临的主要问题及解决对策) [Current Problems Faced in Sino-Indian Economic and Trade Cooperation and Solutions], *Jingji Yanjiu Daokan* (经济研究导刊), No. 10, Serial No. 48.

Zhang Yanhua (张艳华). 2007. 'ZhongYin jingmao guanxi xianzhuang yu qianging' (中印经贸关系现状与前景) [Sino-Indian Economic and Trade Relations Status and Prospects], *Jingji Shi* (经济师), No.7.

Zhang Yuyan, Zhao Jianglin, Liu Xiaoxue, Wang Xiaomin(张宇燕, 赵江林,刘小雪,王小敏). 2006. 'Xinshiqi ZhongYin jingmao guanxi fazhan de zhanlue sikao' (新时期中印经贸关系发展的战略思考) [New Strategic Thinking in Development of Sino-Indian Economic and Trade Relations], *DangdaiYatai* (当代亚太), No. 8, 12-20.

Zhu Meili (朱美丽). 2007. 'Jingzheng yu hezuo zhong de shuangying: ZhongYin jingmao guanxi fenxi' (竞争与合作中的双赢——中印经贸关系分析) [Competition and Cooperation Towards a Win-Win India-China Economic and Trade Relations], *Xiaofeidaokan* (消费导刊), Xiamen daxue gonggong shiwu xueyuan (厦门大学公共事务学院), June, 28-29.

DATABASES

Ministry of Commerce, India
Ministry of Commerce (MOFCOM), China
World Bank
UNIDO
UN COMTRADE

Appendix 1

Country level ratings for key drivers of competitiveness

Selected Country/Manufacturing Competitiveness Drivers	Germany	U.S.	Japan	China	Brazil	India
Talent-driven innovation	9.47	8.94	8.14	5.89	4.28	5.82
Economic trade, financial and tax system	7.12	6.83	6.19	5.87	4.84	4.01
Cost of labor and materials	3.29	3.97	2.59	10.00	6.70	9.41
Supplier network	8.96	8.64	8.03	8.25	4.95	4.82
Legal and regulatory system	9.06	8.46	7.93	3.09	3.80	2.75
Physical infrastructure	9.82	9.15	9.07	6.47	4.23	1.78
Energy cost and policies	4.81	6.03	4.21	7.16	5.88	5.31
Local market attractiveness	7.26	7.60	5.72	8.16	6.28	5.90
Healthcare system	9.28	7.07	8.56	2.18	3.33	1.00
Government investments in manufacturing and innovation	7.57	6.34	6.80	8.42	4.93	5.09

Most competitive — Least competitive

Source: Deloitte Touche Tohmatsu Limited and U.S. Council on Competitiveness, 2013 Global Manufacturing Competitiveness Index

Scores on a 10 point scale, with 1 being "Least competitive" and 10 being "Most competitive" — adjusted for country, size, and industry.

Appendix 2

Employment, Wages and related Indicators by Industry, at current prices, for selected years

Indicator	Year/Period	India	China	Asia	Developing Countries
MVA average annual real growth rate (in %)	2000-05	7.02	10.74	8.86	6.74
	2005-10 a/	9.11	11.8	8.99	7.06
Non-manufacturing GDP, average annual real growth rate (in %)	2000-05	6.95	9.28	6.37	4.95
	2005-10 a/	8.21	10.73	7.36	5.88
MVA per capita at constant (2000) US$prices	2000	62.85	303.11	224.77	254.2
	2005	80.98	480.45	316.41	322
	2010 a/	120.18	820.02	465.97	430.09
MVA as percentage of GDP at constant (2000) US$prices	2000	14.29	32.12	22.5	19.47
	2005	14.25	33.05	24.24	20.57
	2010 a/	15.04	34.16	25.83	21.66

Source: UNIDO Statistical Input for Manufacturing Wages

ICS Occasional Paper # 6

INDIA–CHINA ECONOMIC RELATIONS: TRENDS, CHALLENGES AND POLICY OPTIONS

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The study of India-China economic relations and an assessment of the countries' future ties come with the additional task of engaging with a historicity marked both by centuries of peaceful coexistence and interchange of ideas, and war (1962). The present bilateral interaction would therefore draw immensely from these narratives, which influence the policy-making apparatus. If the current assessment of Sino-Indian relations is deemed, ex-ante, a mutually exclusive, zero-sum exercise between two rising and competing powers, it falters on a basic premise in that the present is not a frozen reality. The present, as a moment in time, is part of the continual dawning of the future.

The implication of this abstract understanding of the present is relevant, in the backdrop of this study, as the context on which the future of Sino-Indian relations would be determined freely and creatively. In other words, how the present reality of bilateral economic interaction is dealt with will, ultimately, have a bearing on future bilateral interaction. This paper aggregates the development of Sino-Indian economic relations from 1992 onwards (resumption of border trade after the 1962 war), covering patterns of trade, investment, comparative assessment of strengths and convergences therein, and the shifts in policy focus required, among other factors, to improve the health of this relationship. It would identify the problem areas as well as the future avenues for both countries to redress the current imbalances in the bilateral trade patterns as both countries move towards bigger goals (US$100 billion trade target in 2015) in the future.

The India–China Growth Story

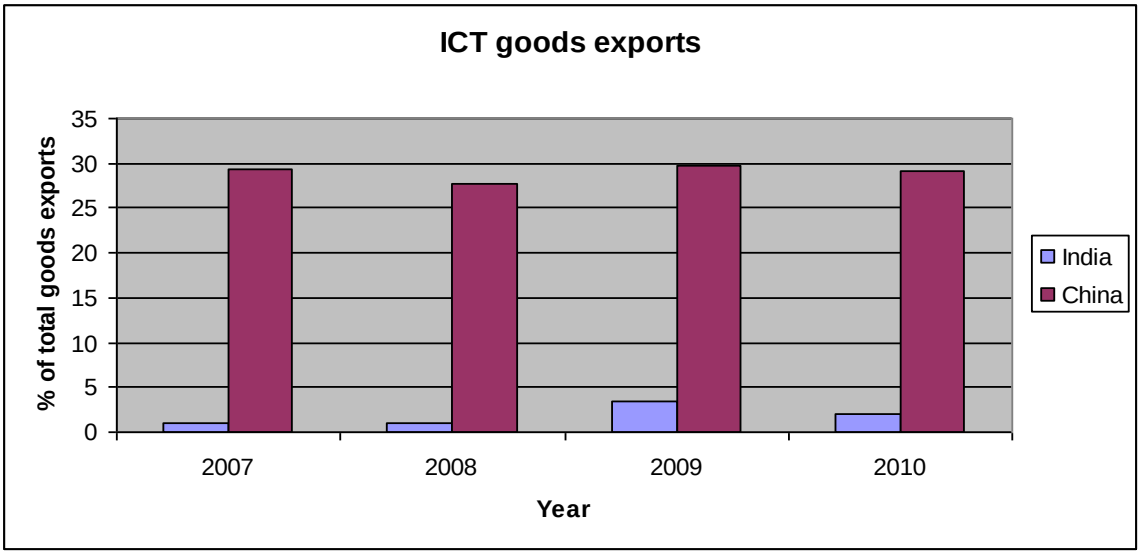
It is customary in the post-2008 financial crisis period to stress on the impressive economic achievements of both India and China in withstanding the downturn that began in the United States (and subsequently expanded to the Euro zone). China is currently the world's largest exporter and manufacturer with 73 of the Global Fortune 500 companies and six of the world's top 10 container ports; it has witnessed a 9.9 per cent annual gross domestic product (GDP) growth since 2001 (double-digit growth figures in most years; Yuan 2012). India, albeit slower, grew at a healthy average of 7.8 per cent (Vandenbussche and Viegelahn 2012) over the last decade. The prospects of future growth are promising and *Chindia* (the neologism for the geographic–economic space of India and China) is projected to have a 10.5 per cent share of Global Domestic Product by the year 2020 (JP Morgan Chase 2007). China is forecast to grow at an average pace of 6.6 per cent until 2030, thereafter slowing to 2.3 per cent till 2060,[1]

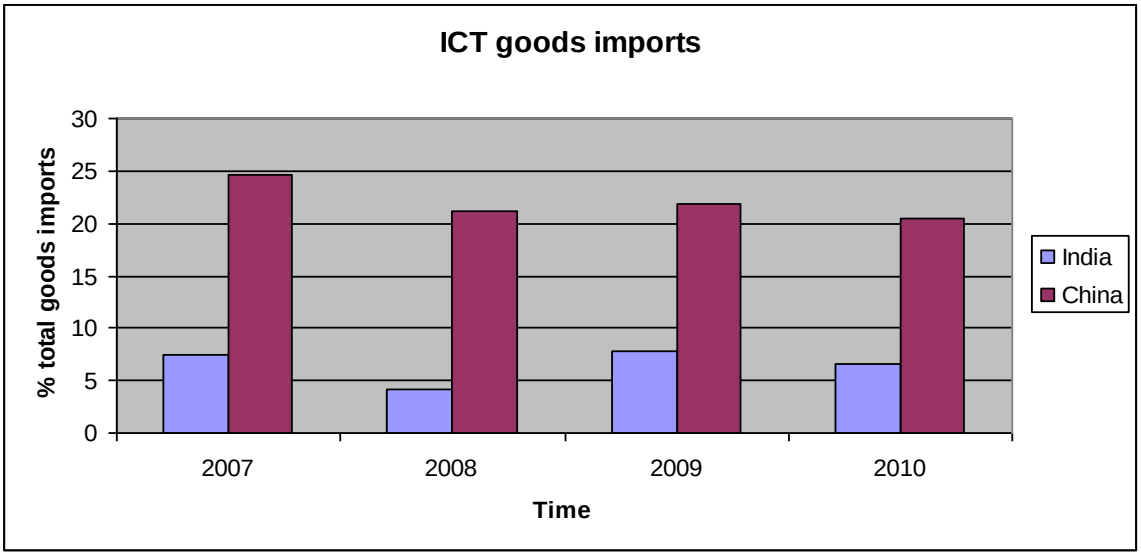
[1] Among other reasons such as shrinkage of the labour force which China is expected to face acutely, the main factor identified for a slowdown is the "convergence effect", that is, the nearer an economy gets to the global technology frontier, the slower its growth rate becomes as the room for catch-up narrows, inducing a gradual structural slowdown. See Wang (2013) for a discussion.

even as India is expected to grow at 6.7 per cent and 4 per cent, respectively for the two phases (Chua 2012). The combined GDP of *Chindia* (China's 27.8 per cent and India's 18.2 per cent; Mead 2012) is projected to be larger than that of the entire OECD area (based on today's membership) in 2060 (Chua 2012).

As modern India and China came into being (post-1947 and -1949, respectively), both countries had similar conditions, namely, low incomes, large rural populations, decades of self-imposed economic isolation and a high degree of central control (Syed and Walsh 2012). What differentiated the two was that China's agrarian reforms (through rising productivity) freed up labour as a vital low-cost input for the industrial sector; India was unable to achieve this synergy between agriculture and industry (half of India's workers and one-sixth of its output are still dependent on agriculture; Syed and Walsh 2012). Thus, while China was able to execute the classic pattern of moving from the primary to the manufacturing sector, India has seen growth mainly from its transition from agriculture to services (Chandrasekhar and Ghosh 2007). The development pathways for the two economies depended on infrastructure investment, exports and FDI in the case of China (with the state playing a major role), while India's standout growth was spurred by strong domestic demand and growth in services trade (with an important role for private enterprise). Services such as information technology rely on advanced technologies and satellite transmission than on the availability of utilities and good roads; therefore, India was able to execute the transition from agriculture to the service sector despite inadequate basic infrastructure (Shilling 2012). Another advantage for India was its better proficiency in the English language. This meant that English-speaking engineers were able to adapt western business models to a lower-cost environment, from tasks ranging from customer service and software programming to the development of new business processes and software, legal and medical issues, and other services (Syed and Walsh 2012). Nowhere is this stark contrast most evident than in the comparison of the Information and communication technology sector (goods and services comparison; see Figure 1 (a) & (b), respectively).

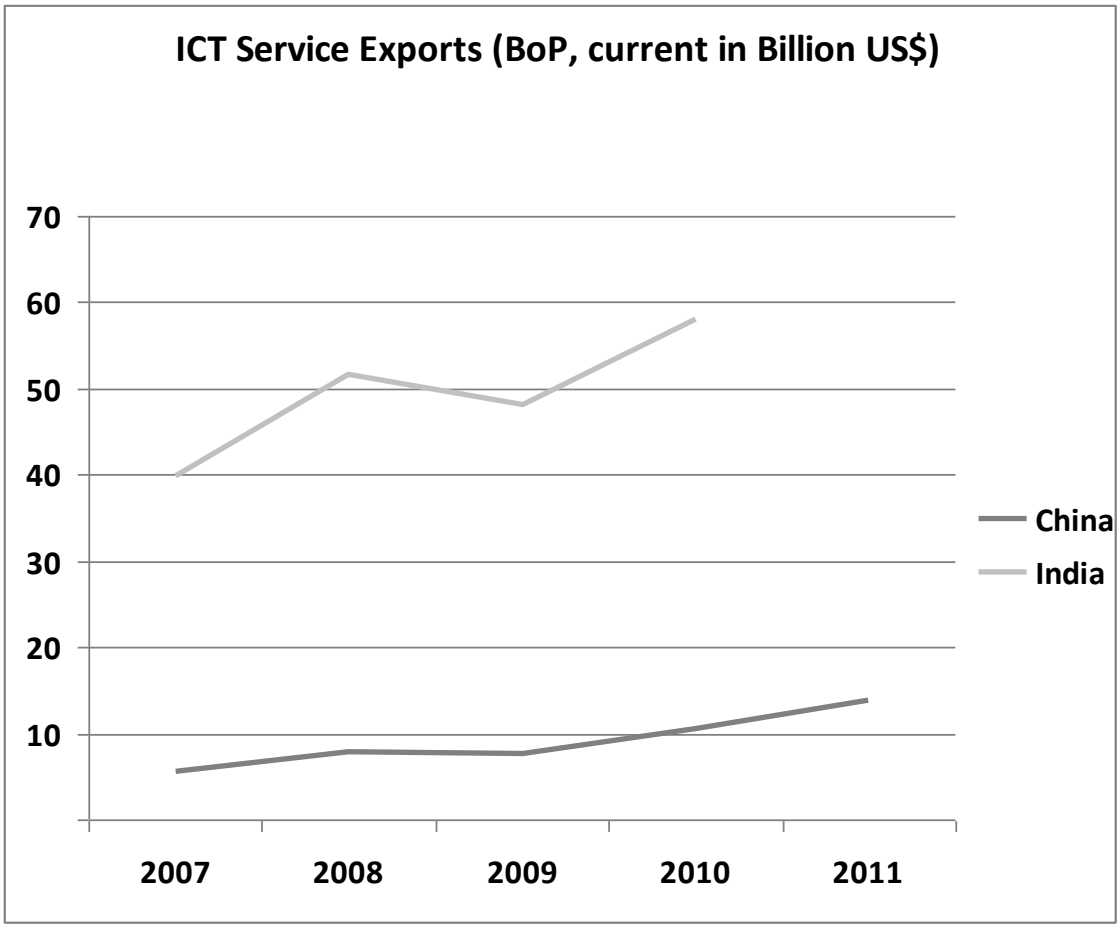
Figure 1 (a): Goods





Source: Author (based on World Bank datasets)

Figure 1 (b): ICT Services



Source: Author (based on World Bank datasets)

Bilateral Trade

China is India's largest trading partner (see Table 1) with total trade grossing US$75 billion for 2011–12. China was the fourth largest recipient of Indian goods in 2011 accounting for 5.5 per cent of India's exports in 2011; it remained the largest source of imports for India accounting for 12 per cent of the import value in 2011 (Vandenbussche and Viegelahn 2012).

Table 1: Top 10 trading partners for India (US$ million; 2011–12]

Rank	Country	Export	Import	Total Trade	Trade Balance
1	CHINA	18,076.55	57,517.88	75,594.44	-39,441.33
2	UAE	35,925.52	35,790.39	71,715.91	135.13
3	USA	34,741.60	24,470.16	59,211.75	10,271.44
4	SAUDI ARABIA	5,683.29	31,060.10	36,743.40	-25,376.81
5	SWITZERLAND	1,095.34	32,404.95	33,500.29	-31,309.61
6	SINGAPORE	16,857.71	8,600.29	25,458.00	8,257.41
7	GERMANY	7,942.79	16,275.56	24,218.35	-8,332.77
8	HONG KONG	12,931.90	10,646.93	23,578.83	2,284.96
9	INDONESIA	6,677.99	14,623.55	21,301.54	-7,945.56
10	IRAQ	763.97	18,939.63	19,703.60	-18,175.66
	Total of top 10 countries	*140,696.66*	*250,329.45*	*391,026.11*	*-109,632.79*
	India's Total	305,963.91	489,319.48	795,269.50	-183,355.57

Source: Department of Commerce datasets, Government of India(2013)

Table 2 (a) and (b) show that India's main exports to China are resource-based, while China mainly exports manufactured goods to India.

Table 2 (a): Top Exported Commodities

Code	Description	Trade Value in US$
26	Ores, slag and ash	10,642,557,951
74	Copper and articles thereof	5,500,072,447
52	Cotton	4,906,714,951
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes	1,990,824,228
29	Organic chemicals	1,618,605,465
	Other commodities	9,499,002,492

Source: UN COMTRADE datasets for 2010, 2011 and 2012

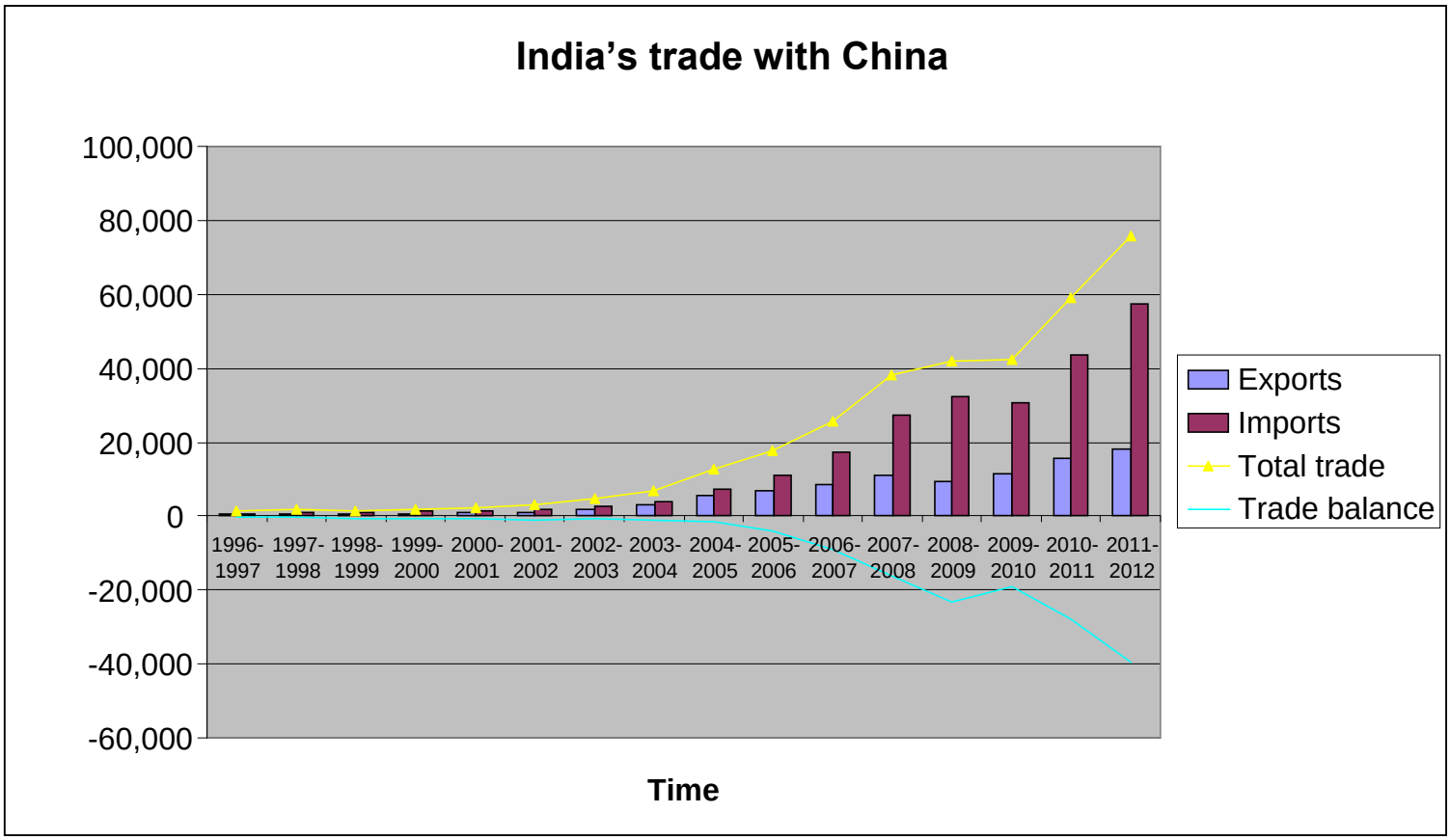
Table 2 (b): Top Imported Commodities

Code	Description	Trade Value in US$
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	24,514,867,234
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	17,011,228,036
29	Organic chemicals	7,821,846,311
99	Commodities not specified according to kind	7,675,334,055
72	Iron and steel	4,136,236,562
	Other commodities	35,572,628,947

Source: UN COMTRADE datasets for 2010, 2011 and 2012

The other defining feature is the rising trend of the trade deficit (see Figure 2).

Figure 2: India–China trade balance (US$ million)

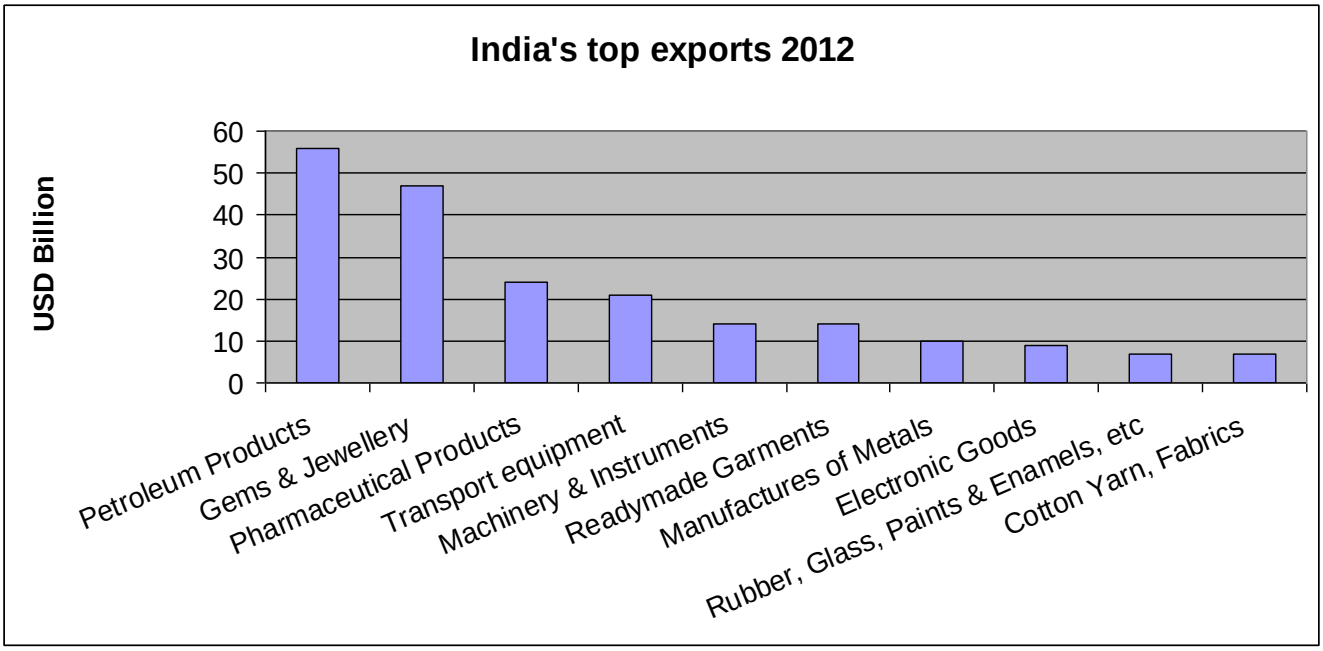


Source: Author (based on datasets from the Department of Commerce, Government of India)

Even by the admission of Chinese scholars and the top Chinese leadership,[2] both the rising trade deficit and the structure of trade are problematic. Yang and Ni (2007) note that this peculiar trade structure of resource intense exports from India limits the diversity of Indian exports and will also, over time, weaken India's export capacity. If we examine India's overall exports of goods, it becomes fairly evident that the product mix of its exports to China does not reflect the strengths which India otherwise has in its external sector (see Figure 3).

[2] Following Chinese Premier Wen Jiabao's visit to India in 2010 there was official acknowledgement of the need to reduce the trade imbalance between the two countries (MEA 2010).

Figure 3: India's global export performance



Source: Author (based on data from the Ministry of Commerce & Industry at Export-Import Bank of India 2013)

Resource-based exports are a structural cause of worry. Primary exports have limited options for value-addition and generate a limited number of jobs compared to exports of flourishing manufacturing. That the Chinese have largely imported ores and primary materials from India is an imbalance that needs to be redressed. However, in all fairness, the 'rise of China' has also ensured, by virtue of investment-driven growth, that developing economies with resource-based advantages experience a real improvement in their terms of trade, with China accounting for 65 per cent of seaborne iron ore demand in the world (and prices shooting from US$20 a ton in the last decade to over US$150 in 2011; see Bloomberg News [2012] and Indexmundi for current ore prices). Similarly, if we dissect the nature of imports from China, it becomes clear that consumption goods are present only to a small extent in Indian imports, and over 63 per cent of India's imports in 2011 belonged to the category of intermediate goods (Vandenbussche and Viegelahn 2012)[3]. This implies that much of the consequent production and sale of these intermediate goods takes place in India (Vandenbussche and Viegelahn 2012). Therefore, clearly, it is more in the area of Indian exports to China that the valid perspective of structural limitations (limited

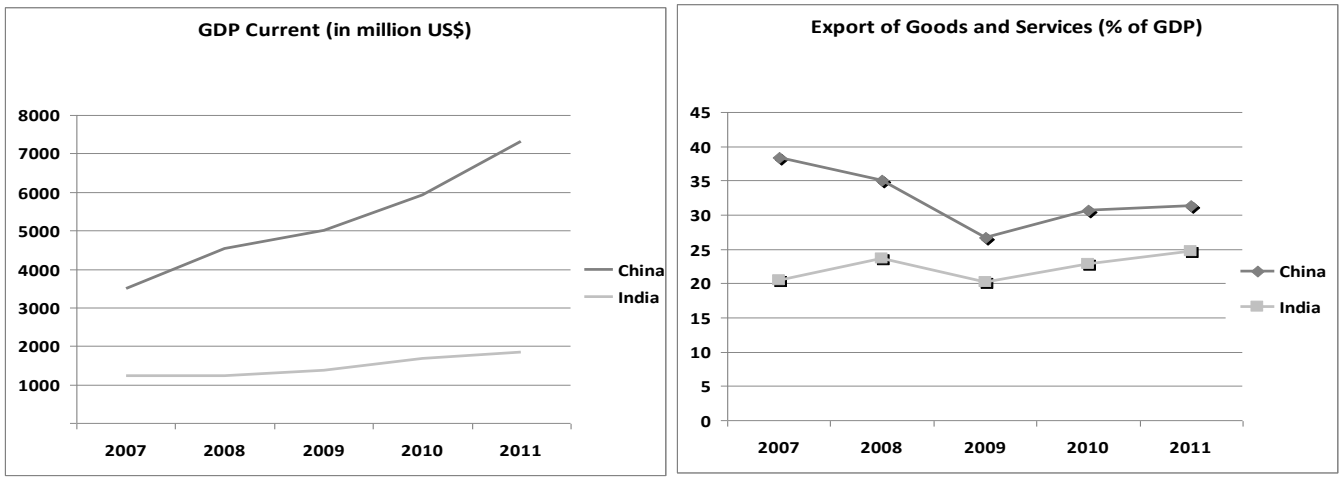
[3] Machinery itself accounted for over 40% of imports from China, followed by chemical products (16%) and base metals (8.6%), whereas imports of textiles, for instance, has reduced from 11.9% of the import value in 2001 to only 3.9% in 2011

scope of value-addition and employment generation) emerges, and even though the subsequent segments identify avenues for convergence on the matter of imports from China, it must be stressed that the nature of imports from China is the "lesser evil", as it were.

Areas of Convergence

While China's economy is roughly seven times the size of the Indian economy, India's exports of goods and services accounted for 24 per cent of GDP, only slightly below China's 28 per cent (see Figure 4).

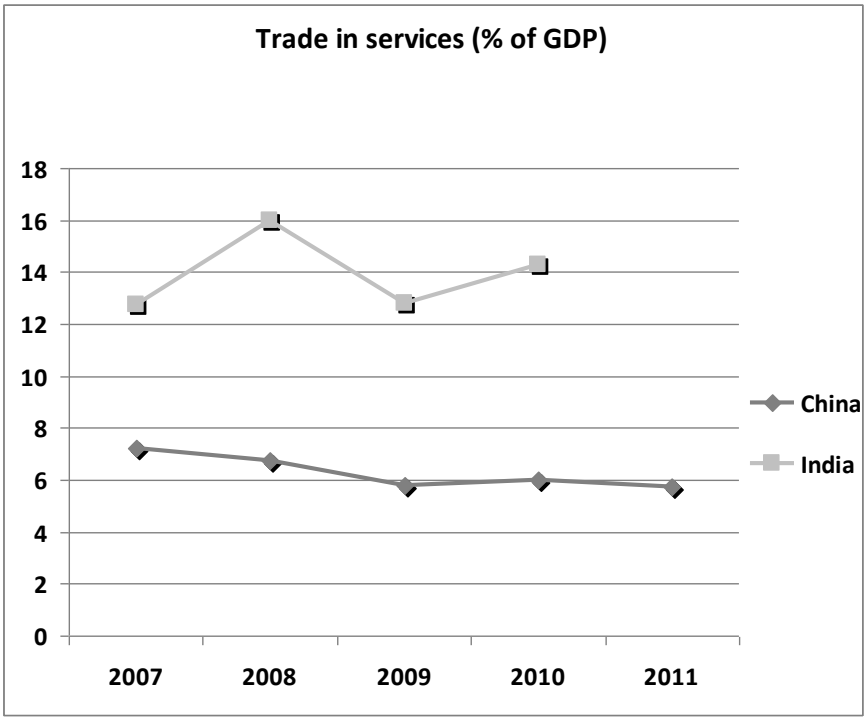
Figure 4: Comparison of select indicators: India and China



Source: Author (based on datasets from the World Bank)

The buoyancy of Indian export of goods and services is primarily from the services sector, which rose from 2 per cent to 7 per cent of GDP between 1994 and 2011 (see Figure 5; see also Syed and Walsh [2012]). In contrast, China's strengths in manufacturing are evident from Table 3.

Figure 5: Services comparison



Source: Author (based on datasets from the World Bank)

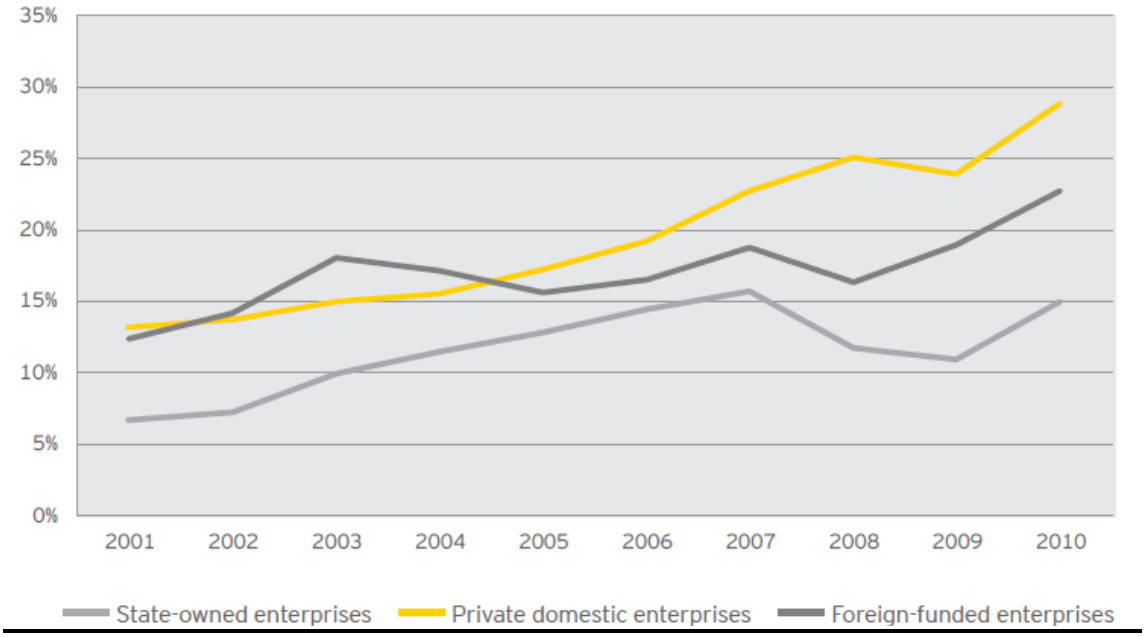
Table 3: Key indicators of manufacturing in India and China

Indicator Name	Country	2007	2008	2009	2010	2011
Manufactures exports (% of merchandise exports)	China	93.07605	92.98912	93.57406	93.55065	93.29944
Manufactures exports (% of merchandise exports)	India	64.2026	62.78339	66.81665	63.76402	62.22553
Manufactures imports (% of merchandise imports)	China	68.46875	61.9303	64.37671	61.45034	56.58531
Manufactures imports (% of merchandise imports)	India	50.41076	47.03992	52.36003	50.55232	46.91266
Manufacturing, value added (% of GDP)	China	32.90504	32.65117	32.30202	29.61997	
Manufacturing, value added (% of GDP)	India	15.99097	15.42965	14.89016	14.53521	13.88993

Source: Compiled from WDI, World Bank

This is an interesting point of take-off for the future convergence of priorities for both countries, wherein the underlying strengths in manufacturing and services, for China and India, respectively, offer several practical avenues for joint development. The industrial sector in China comprises state-owned, private domestic and foreign funded enterprises. Figure 6 shows the returns on equity for most of the last decade. Private domestic enterprises clearly have been the strongest performers (Yuan 2012).

Figure 6: Return on equity of China's industrial enterprises



Source: Yuan (2012)

However, the pressure on China's manufacturing sector has been noted in recent years with rising production costs (land and labour; average wages more than double since 2007), reduced preferential treatment for new manufacturing near the east coast (re-balancing economic disparity between provinces), increased demand to move up the technology ladder, accompanied by the current 12th Five-Year Plan focus towards higher domestic consumption and away from export orientation (IBEF 2012; Yuan 2012). The rising wages of workers employed in foreign companies has resulted in the shift of low-skilled manufacturing jobs to cheaper venues such as Vietnam, Bangladesh and Pakistan (Shilling 2012).

As noted earlier in the context of India's overall exports to the world, India has niche strengths in manufacturing (refer to Figure 3) and, although smaller compared to China's manufacturing sector, the offerings are of "better quality and high-value" products (see IBEF [2012]; also see Table 4)[4]. Indian component manufacturers are known for the production of high-quality precision components whereas the Chinese competitive advantage lies in mass production (*China Business Insight* 2012).

Table 4: 2013 Global Manufacturing Competitiveness Index

Rank	**Country**	**Index score** **[10 = high; 1 = low]**
1	China	10
2	India	8.49
3	Brazil	7.89
4	Germany	7.82
5	USA	7.69
6	South Korea	7.63
7	Taiwan	7.18
8	Canada	6.99
9	Singapore	6.64
10	Vietnam	6.50
11	Indonesia	6.49

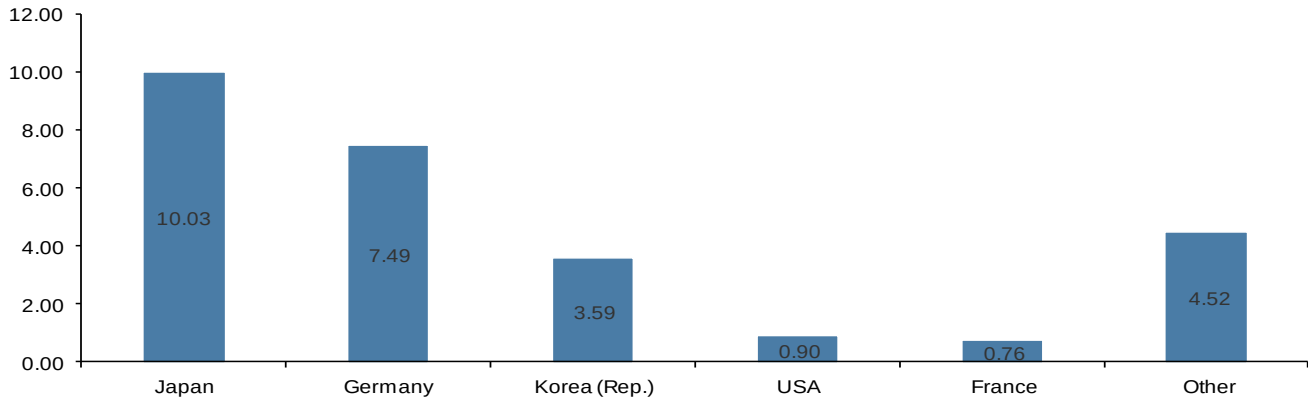
[4]Farrell (2004) cites the example of innovation in Indian manufacturing using the example of Scorpio, an SUV made by Indian auto-major Mahindra, costing a fraction of the equivalent car in the United States, but which reflects efficient use of low-cost labor instead of expensive automation, and local engineering talent.

12	Japan	6.46
13	Mexico	6.38
14	Malaysia	6.31
15	Thailand	6.24
16	Turkey	5.99
17	Australia	5.73
18	Poland	5.69
19	UK	5.59
20	Switzerland	5.42

Source: Deloitte Touche Tohmatsu Limited and the U.S. Council on Competitiveness (2012)
Notes: For detailed country-level ratings for key drivers of competitiveness, see Appendix1; for detailed break-up of manufacturing value-added in the two countries compared with the rest of Asia, see Appendix 2.

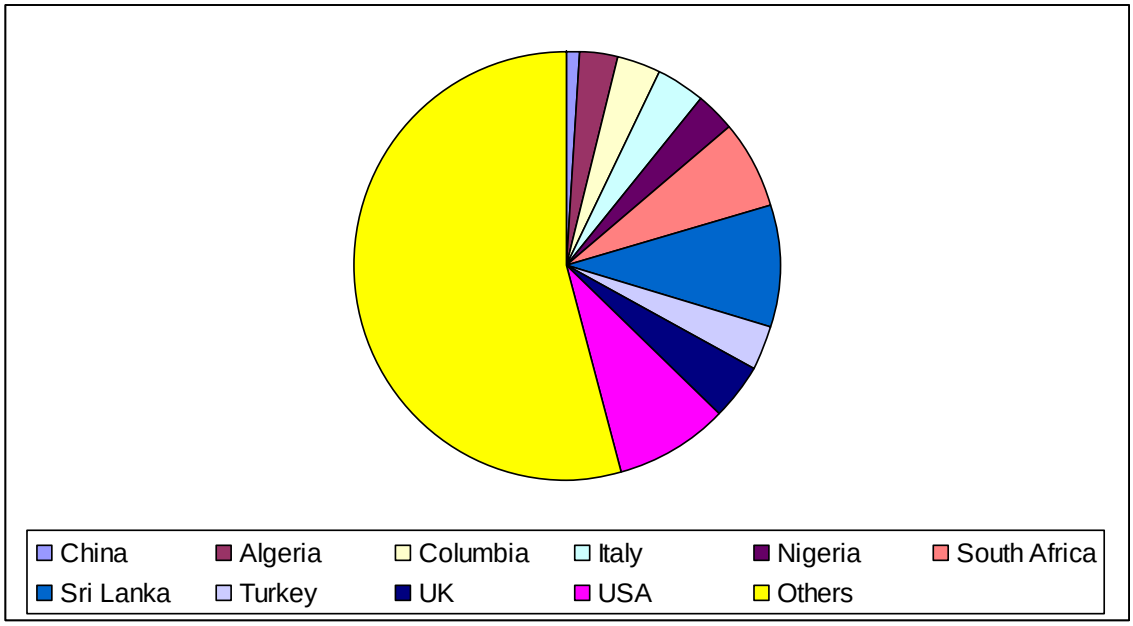
In 2011, India was the sixth largest manufacturer of automobiles (cars and commercial vehicles) in the world (Deloitte Touche and the U.S. Council on Competitiveness 2012). While there are cases such as the Shanghai Automotive Industry Corporation Group (SAIC) acquiring 50 per cent stake in General Motors in India, and the joint ventures between Mahindra and Mahindra and Jiangling Motors (manufacturing tractors in China), and Bharat Forge Ltd with FAW corporation (*China BusinessInsight 2012*, pp 21–2), China's imports in this crucial category of Indian manufacturing is unimpressive and neither is there any strategic planning towards forging supply lines that could extract the complementarities (specifically Indian engineering skills; see Figures 7 and 8). Apart from the self-selection logic of the aforementioned partnerships, if a concerted effort is made to develop regional comparative advantages in this sector, then India and China together can address the rising trade imbalance in this sector.

Figure 7: Value of car part imports to China in 2011 (US$ billion)



Source: Statista (2013b

Figure 8: Indian export of vehicles besides railway or tramway rolling stock, and parts and accessories thereof



Export Destination	Values in US$ million
China	106.9
Algeria	332.96
Columbia	356.25

Italy	388.26
Nigeria	347.2
South Africa	714.82
Sri Lanka	1,015.37
Turkey	356.24
UK	464.88
USA	919.68
Others	5928.81
Total export of commodity	10,931.37

Source: Author (based on datasets from the Department of Commerce, Government of India)

Despite India's competitive strengths, Chinese investments in India do not necessarily reflect the kind of optimal partnerships that could otherwise be developed utilising India's given strengths. Table 5 shows the present pattern of FDI equity investment.

Table 5: Share of top sectors in India attracting FDI equity inflows from China (April 2000 to November 2010):

Rank	Sector	**Amount of FDI equity inflows**		**% of FDI equity inflows from China**
		in Rs. crore	**in US$ million**	
1	Metallurgical industries	197.66	40.76	76.83
2	Chemicals (other than fertilisers)	17.86	3.75	7.06

3	Trading	8.06	1.80	3.40
4	Industrial machinery	8.07	1.73	3.26
5	Computer software and hardware	2.36	0.59	1.12
Total		234.01	48.63	91.67

Source: Based on statistics supplied by Department of Industrial Policy and Promotion (DIPP), Government of India (emailed to author)

Besides FDI equity inflows, Chinese companies (majors such as Huawei, TCL and Haier) have invested capital in India, and are also taking up projects under contracts where they are important suppliers for infrastructure projects[5] (such as for power generation, for instance, by supplying machinery and setting up plants), while some have even set up R&D centres here (Guo 2010: 53–4). Indian investments in China are predominantly by the private sector[6] (mostly located in Guangzhou, Shanghai and Beijing with a major presence in high-tech industries, especially in IT/software, and pharmaceuticals; *China Business Insight* 2012). IT majors such as Infosys Technologies, HCL Technologies, Zansar Technologies, BirlaSoft, KPIT Cummins, TCS, Tech Mahindra, Mahindra Satyam, NIIT, 3i Infotech, Nucleus Software, Wipro, MindTree Consulting and Genpact all have presence in China. There are over 100 Indian companies in China even as the Indian Embassy (Beijing) website suggests "close to 100 Chinese companies" as having established operations in India (2012).

However, a recent trend that could hold the key to broadening the scope for mutually beneficial investment trends is the relatively unnoticed SME-to-SME interaction (small and medium enterprises). The case of China's Yapp, an automotive company in Yangzhou, is noted (Inchin Closer 2013). The company has a 49:51 joint venture (JV) with India's Zoom Enterprises and operates facilities in Chennai and Pune, manufacturing supplies (plastic fuel tanks) to major car makers including Volkswagen India, Ford India and Mahindra (Inchin Closer 2013). Another company, Indian Technocraft Industries, has set

[5] Chinese companies are estimated to be involved in projects worth US$60 billion in India; see Krishnan (2012).

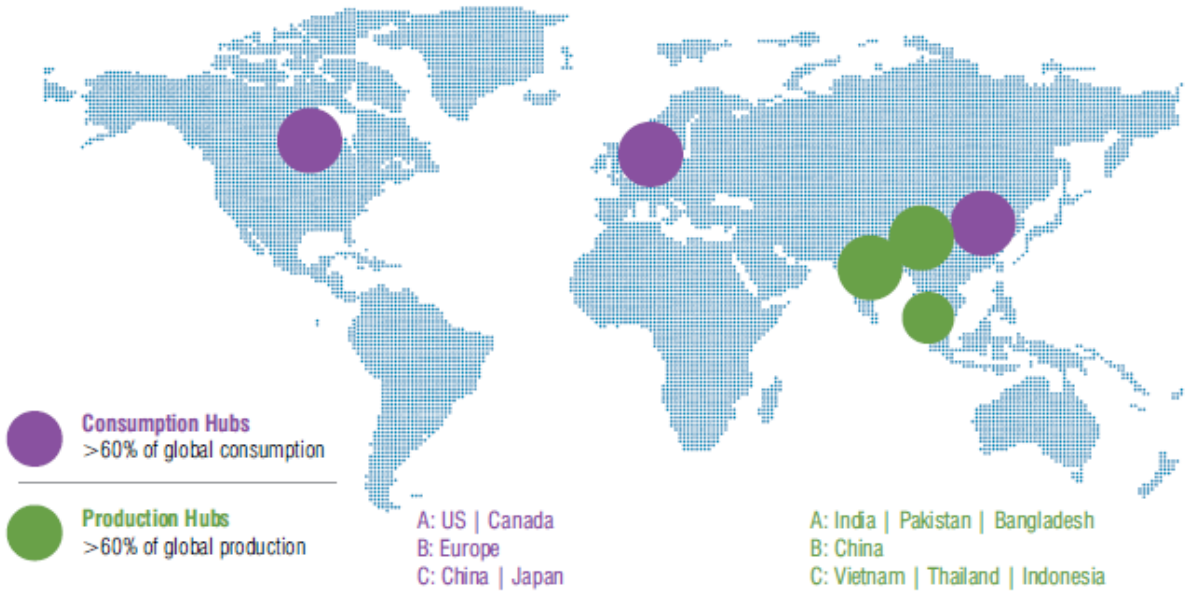
[6] The Tata group, incidentally, has a long history of association with China starting from1859. See http://www.tatachina.com.cn/index.php. In 1859 a young Jamsetji Tata, the founder of the Tata group, was sent to Hong Kong to open a branch for his father's banking firm. He relocated a few months later to Shanghai, where he remained till 1863. More recently, TCS has signed a joint venture to develop a software business in China in collaboration with the Chinese government and Microsoft; Tata Steel has two rolling mills in China following its acquisition of NatSteel; Tata Refractories has opened a plant in Liaoning Province, the group's first greenfield project in China; TACO has a factory in Nanjing to make auto components for General Motors and Ford.

up a factory in Nanjing for scaffolding systems, steel boards and clamps (Inchin Closer 2013). Sundram Fasteners is also a case in point (wholly owned subsidiary in China since 2004; *China Business Insight* 2012: 22). With an initial investment of US$5 million in Zhejiang (Haiyan Economic Development Zone), the company unit manufactures and sells high tensile fasteners to the Chinese automobile industry (*China Business Insight* 2012: 22). Such JVs on either side are adding value to the market by creating jobs, building factories and through exports (*China Business Insight* 2012: 22). The SME subsector deserves special attention as the micro-small-and-medium enterprises (MSMEs[7]) in India account for about 45 per cent of the manufacturing output and 40 per cent of the total exports of the country — with a consistently higher growth rate than the rest of the industrial sector (Ministry of Micro, Small and Medium enterprises 2012:21*)*). This is an area that Chinese companies can scout for meaningful partnerships in the sectors that could generate more visibility (and goodwill) for Chinese companies in India. It will be ably supported by the changed policy framework in India under the National Manufacturing Policy (NMP; a 15-year vision document) that seeks to raise the share of the manufacturing sector to 25 per cent of GDP by 2025, and is aimed at creating 100 million new jobs in the process (*The Hindu* 2011).

Textiles and apparel is another key sector. China currently faces the unique situation wherein, despite being the world's largest textile exporter, its mills are selling off their spinning machines to Malaysia, Pakistan and Vietnam to stave off rising labour costs and manpower shortages (*Reuters* 2013). China's advantage over the years has been maintained by low costs through mass production and returns-to-scale economies. This scale is best understood in a comparison with India where the largest spinning company in India, Vardhman Group, has a capacity of 500,000 spindles; this contrasts poorly with the largest Chinese spinning company Weiqiao Textile's 3,000,000 spindles (Tang 2010). The largest weaving company in India, Arvind Mills produces 30 million metres of fabric per year, while Weiqiao Textile turns out 844 million metres of fabric (Tang 2010). The size of Chinese textile companies is, on average, five times larger than that of the Indian ones (Tang 2010).

[7] The Government of India has enacted the Micro, Small and Medium Enterprises Development (MSMED) Act, 2006 in terms of which the definition of micro, small and medium enterprises is as under: Enterprises engaged in the manufacture or production, processing or preservation of goods as specified:(i) A micro enterprise is an enterprise where investment in plant and machinery does not exceed Rs.2.5 million;
(ii) A small enterprise is an enterprise where the investment in plant and machinery is more than Rs.2.5 million but does not exceed Rs.50 million; and (iii) A medium enterprise is an enterprise where the investment in plant and machinery is more than Rs. 50 million but does not exceed Rs.100 million (RBI 2013).

Figure 9: Global textile consumption and production hubs



Source: Gugnani et al. (2012).

Yet the relationship is not exactly mutually exclusive or zero-sum competing. Tang (2010) points out how there are opportunities to collaborate in the area of streamlining production orientation, wherein the strength of India in small batch orders and customisation[8] can pair with the large processing capacity of Chinese companies (small orders are unattractive since rearranging working lines in huge factories may result in bigger costs). In addition, there is also the deeper history, management acumen and quality control attributed to Indian textile enterprises[9] (Tang 2010). While China lacks high quality domestic sources of textiles (as opposed to its given strengths in bulk apparel making), India is the world's largest producer of jute, the second-largest producer of silk, third-largest producer of cotton and fifth-largest producer of synthetic fibres and yarn, with a strong presence across the entire textile value chain (from fibre production to garmenting (sic); Gugnani et al. 2012: 4, 5). In the backdrop of China's rising costs, it

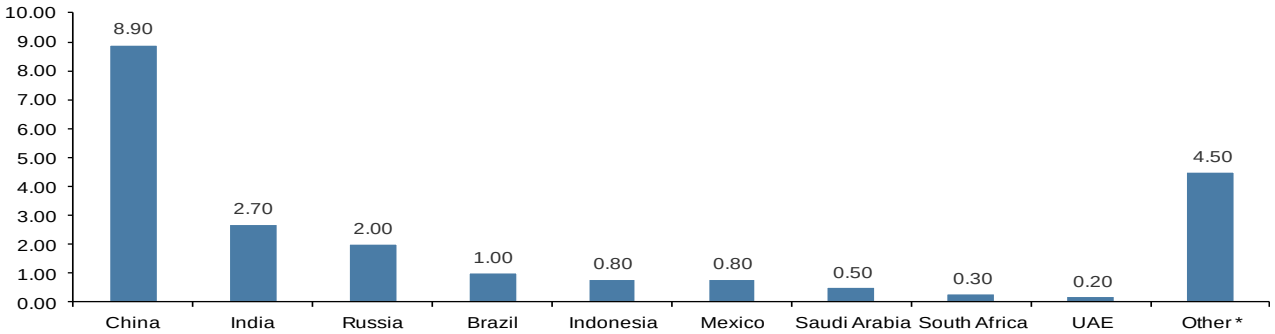
[8] Customized products, according to Tang (2010) bring in more profit. The example cited is that the average value of Chinese textile exports to the US in 2010 was only US$1.48 per square meter despite China's overall exports at US$38.47 billion and 26.00 billion square meters in volume. In comparison the average value of Indian exports was US$1.65 per square meter, about 12% higher than the Chinese products despite much lower export value and volume. The higher margins, it is reasoned, keep Indian companies satisfied where the operating principle seems to be that for items under US$30, leave it to China; above US$150, leave it to European companies; and the market in between give it to India.

[9] Indian companies a longer history: Arvind Mills (since 1931); Premier Mills (since 1949); The Raymond Group (since 1925); Lakshmi Mills (since 1910); Vardhman (since 1962). This is interesting to contrast with Chinese companies most of which have no more than 30 years of history and are still striving to standardize their manufacturing procedure and quality control because the rapid expansion.

is useful to consider collaborating on supply chains given that the global textile and apparel market was worth US$662 billion in 2011 and is projected to reach US$1,060 billion by 2021 (Gugnani et al. 2012: 4, 5; see also Figure 9).

Apart from the aforementioned sectors in manufacturing, it is useful to discuss briefly a third avenue of convergence for India and China, embedded in the proposed transformation of the Indian infrastructural landscape (government has planned outlay for infrastructure investment over the next five years at U.S$1 trillion; see Figure 10).

Figure 10: Infrastructure spending forecast of emerging markets (2008–17; US$ trillion)



Source: Statista (2013a)

There are several dimensions to infrastructure expansion, but it would useful to examine two key sectors where the quality of China's participation in India's growth could be vital: rail transport (specifically high-speed rail, even metro rail), and power.

In India, road transport has advanced over rail despite the lower payload and fuel efficiency, accounting for about 65 per cent of the freight market and 90 per cent of the passenger market. Among other plans, the government's focus on dedicated freight corridors in India (implying induction of only electric locomotives which are cleaner), and revamping of urban transport (metro lines) and high-speed rail offer a unique opportunity for China and India to cooperate. While foreign majors such as Alstom and Bombardier have traditionally dominated the Asian market for metro vehicles, it would be useful for Indian metro car makers such as BEML and Chinese manufacturers (chiefly, China CNR Corp Ltd and CSR Corp; the latter having won the contract for 108 metro cars in Mumbai [SCI Verkehr GmbH(2009)]) to collaborate. This could upgrade Indian manufacturing capabilities in this sector. BEML at present is only an assembler with Rotem providing the technology (Kurian and Kurup 2012). As per the *Twelfth Five Year Plan* (2012–2017), the Ministry of Railways has selected the following six corridors for

conducting pre-feasibility studies for development of High Speed Rail Corridors in the country: Delhi–Chandigarh–Amritsar (450 km); Pune-Mumbai–Ahmedabad (650 km); Hyderabad-Dornakal–Vijaywada–Chennai (664 km); Chennai–Bangalore–Coimbatore–Ernakulam-Thiruvananthapuram (849 km); Howrah–Haldia (135 km); and Delhi–Agra–Lucknow–Varanasi-Patna (991 km) (Planning Commission 2013). Given that the Indian Railways and China's Ministry of Railways have signed a memorandum of understanding to enhance technical cooperation in the railway sector in 2012 (*The Economic Times*2012), it would be useful to focus on this sector as the demand in India is only set to increase over the coming years.

The power sector is arguably the bedrock of all industrial and service outputs that run the Indian economic engine. However, inadequate availability of power generation equipment has been cited by the union power ministry to explain the huge shortfalls in its planned capacity addition target[10]. Chinese power equipment suppliers/vendors are able to offer high-capacity equipment and are 15–20 per cent cheaper compared to equipment supplied by domestic manufacturers Bhel and L&T (Mohammad 2010). The government has envisaged capacity addition of 100,000 MW during the 12th plan, of which orders for equipment supply to projects worth 62,550 MW have already been placed on contractors; Chinese suppliers have bagged contracts worth 15,430 MW (Mohammad 2010). Chinese majors such as Shanghai Electric and China Datang Corp have long been suppliers of equipment to private companies such as Reliance power (including extending finance loans towards procurement; Inchin Closer 2012). Datang, incidentally, is one of the five largest state-owned power producers in mainland China with an installed capacity of 105,000 MW, that is, over 50 per cent of India's total generation capacity vested in one company alone (Inchin Closer 2012). The other main Chinese suppliers are Dongfang Electric and Harbin Electric, while the main Indian buyers include industrial groups such as Reliance, Essar, Adani, KSK Industries, JSW Energy and Jindal Steel & Power (Leahy 2009). The second Sino-Indian strategic economic dialogue (2012) expanded cooperation in this sector, though limited to the private sector, in the form of MoUs between Reliance Power and GuangdoneMingyang Wind Power Industry Group Co Ltd for a 2,500 MW renewable energy project (investment of US$3 billion with project financing from China Development Bank), and an agreement between Lanco Group and China Development bank for financing the US$600 billion Anpara Phase-II Power projects in Uttar Pradesh (4x660MW; *The Economic Times*2012). Given the continual expansion in this sector, the nature of participation by Chinese

[10] See Mohammad (2010) for a discussion on why India could manage only half of the capacity addition envisaged for implementation during the previous 10th Five Year Plan, and is unlikely to meet its capacity target for the 11th Five Year Plan. The government had envisaged adding 78,700MW capacity. Against that, only 28,572MW was added by the end of October 2010. Also see Roy (2010) on why raising the finances for such mega-projects is a financial jigsaw.

companies should move away from being suppliers and project financers to domestic manufacturing of the equipment (through wholly foreign-owned enterprise [WFOE], equity joint venture [EJV], contractual or cooperative joint venture [CJV], foreign investment joint stock company [JSC], or partnership).

The aforementioned convergences are not exhaustive, but the focus here has been on collaborations that could extract the most of India's competitive strengths and China's known capability. The imperative of such a cooperation has also been advanced by Chinese scholars who recognise that emerging opportunities in infrastructure (telecommunications, ports, roads, railways, oil and other infrastructure) need to evolve a model of joint cooperation that aids the 'digestion and absorption', of manufacturing products over time within India (construction of power grids, hydropower, transportation construction field, where India suffers from relative lack of scientific and technological innovation; Zhang 2007). There are promising examples such as Sany, one of the first Chinese factories in India, which makes diggers and other construction machines in Maharashtra (US$70 million investment and employing 460 locals) and is hoping to double in size. There is also Trina Solar, a solar equipment firm, which is manufacturing locally in Gujarat (*The Economist* 2012). This is also in line with the changed policy framework in China itself where the focus is on seven strategic industries (non-fossil energy, environmental technology, new fuel-powered vehicles, new materials, high-end manufacturing, biotech pharmaceuticals, and information technology) under the 12th five-year plan (2011–15; Yuan 2012). The impetus on enhancing productivity necessarily implies the reorganisation of production away from traditional manufacturing. This provides fertile ground to explore the reorganisation of production by horizontal investments and creation of supply lines in India itself as productive investment propositions. This has to be pursued as an active policy option by both countries in addition to the initiatives from the private sector. Chinese scholars point out the need for Chinese enterprises to increase the transfer of technology to India, and to promote industrial structure in India which could thereby facilitate improvements in the level of trade (Wen 2006; Zhang 2009).

Problem Areas and Future Options

The key problem areas for India and China in expanding the sphere of economic interaction can be nailed to the twin dimensions of limited market access for India in China (proxy for protectionism), and barriers to investment in India (attributed to security concerns and allegations of "dumping" against China). The former is evident in a knowledge-intensive industry such as pharmaceuticals where, despite

being ranked fourth in terms of volume and 14th in terms of value in the global pharmaceutical market, Indian companies run into market access problems in the form of lengthy and cumbersome regulatory processes in China, where it takes over 3 years for an Indian drug company to gain approval for a drug, while a similar clearance takes only around a year in the US (Das 2010). On the Indian side, Chinese companies face hurdles owing to a "securitisation" trend which has emerged in recent years, where procurement of equipment from companies such as ZTE and Huawei is restricted owing to allegations that they may contain embedded spying technology[11]. Subsequently the implicit ban was revoked and clearances were given to source products from these very companies. Ideally, serious charges of spying through compromised equipment should invoke permanent blacklisting of the concerned companies. The restrictions on Chinese equipment do not appear to emerge from these failing quality control/standards specification or any other specific adverse information. The security argument is assumed to be so innately true that it can be taken at face value. Chinese scholars have called for the Indian side to abandon the "Cold War mentality" as far as the labelling of sectors deemed "sensitive" is concerned and ask for fair treatment (Zhang 2009: 153).

Likewise, protectionism is another arena of contestation where an appeal to 'save national economic interests' is usually taken at face value. While China has initiated only four cases against India, India has initiated 147 cases against China of which 120 ended with the imposition of measures against Chinese producers, that is, roughly every fourth Indian anti-dumping case is directed towards China (Vandenbussche and Viegelahn 2012). Two studies by Aradhna Aggarwal (2002 and 2004) from the Indian Council for Research on International Economic Relations (ICRIER) merit citation. Both studies make it evident that anti-dumping charges have been routinely used by Indian producers for market dominance by limiting competition from imports, and duties were primarily sought by industries that enjoy near monopoly conditions in the Indian market. In 90 per cent of the cases, the number of petitioners was between one and three i.e. enjoying near monopoly (Aggarwal 2002 and 2004). What is worrying is that anti-dumping was mostly applied on intermediate products from China (as compared to final products), and the share of consumption and capital goods imports under anti-dumping was close to zero until 2007 (consumption and capital goods are being covered since then). Applying anti-dumping measures on intermediate products presumably ultimately only affects importers and input users in a negative way (Vandenbussche and Viegelahn 2012).

[11] In 2010 of the 14 applications submitted by various Indian telecom operators, 11 were rejected for buying equipment from Chinese vendors ZTE and Huawei. See Arun S and Thomas K Thomas (2010) and Tripathy (2010).

It is also vital to point to some of the operational risks faced in India–China trade. Chinese scholars point to the case of Hubei Chemical Import and Export Corporation and Wuhan Chemicals Import and Export Corporation as an instance (supply of tetracycline and glycerol). After the freight arrived at the Mumbai Port, the importers refused to redeem the imports, resulting in the goods being auctioned off at great economic losses (Yang and Ni 2007). The lack of efficient trade arbitration mechanisms in the event of unscrupulous trade practices has also been pointed out (Yang and Ni 2007). The latter argument can also be applied to the poor treatment of Indian traders, such as in 2011 in Yiwu where Indian traders were held hostage for nearly 15 days over a business dispute (NDTV 2012).

There are several areas where policy changes are needed from both sides to nurture this partnership into a truly balanced relationship:

a) While there is a functional mechanism in the form of the Strategic Economic dialogue (with two inaugural rounds in 2011 and 2012), there is no bilateral investment promotion and protection agreement (BIPA) between India and China (see http://finmin.nic.in/bipa/bipa_index.asp).

b) There is also no dedicated business-to-business web portal for India and China (something that could be useful for dissemination of sector specific business information, thereby promoting trade and guiding companies on either side in seeking business collaborations, coproduction opportunities, joint ventures, etc).

c) Scholars with domain expertise (as opposed to business-as-usual annual MoU meetings/exchanges) should be identified from both countries at the institutional level to promote joint study in the following key sub-sectors:

    i. Study of India's relatively more advanced and market-based financial sector (both Bombay Stock Exchange [BSE] and the National Stock Exchange [NSE]) that China's secondary markets, the Shanghai and Shenzhen exchanges, could learn from. The Indian secondary markets are acknowledged to be much healthier (Zhu 2007). The study could also offer avenues for further cooperation in the area of banking reforms for China, since China's financial system (dominated by the banking sector, largely with four huge commercial banks) lags behind India's financial system (which is more balanced with a banking sector, healthy equity market, and a sizable government bond market; Farrell and Lund 2006).

ii. Study on energy cooperation aimed at avoiding resource hoarding. It has been noted that, given the energy consumption requirements of the two big countries, there should be efforts aimed at promoting cooperation in the international market, developing energy resources, and avoiding vicious competition (Zhang et al. 2006). While increased dependence on overseas energy sources has resulted in competition for asset acquisitions for overseas oil and gas resources (Zhu 2007), there have been successes in the form of Sino-Indian energy cooperation, such as the joint bidding (US$5.78 billion) in the acquisition of Petro-Canada and 38 per cent of Syria's oil and gas assets (Zhang 2009). Such cooperative bidding and joint development, it is argued, would be conducive to increased investment in higher technology and capital, apart from significant reduction in oil exploitation and transportation costs, when pursued separately and in zero-sum competition (Yang and Ni 2007).

d) The existing institutional mechanisms could be used by both sides to create micro, small and medium enterprise Tool Rooms (MSME-TRs) such as the 10 MSME-TRs set up under Indo-German and Indo-Danish collaborations to assist small and medium enterprises in technical upgradation (Ministry of Micro, Small and Medium enterprises 2012: 45). Such tool rooms and training centres provide production, training and consultancy services in the areas of tool engineering and upgrading skilled manpower to industry which, in the context of India's lagging manufacturing would go a long way in improving the quality of the relationship.

e) Initiatives such as the grouping of Bangladesh–China–India–Myanmar BCIM should move beyond a focus on Yunnan to take full advantage of the Chengdu–Chongqing economic growth engine (twin-city special economic zone [SEZ]), which Yunnan in any case benefits from. Because the Chengdu–Chongqing region is landlocked, it is time to bring on the agenda the need for that economic powerhouse to be factored in future BCIM initiatives in order to spread the development of the regional economy from the twin-city SEZs onto the larger India–China border regions (see also Chang 2008). Similarly Guangxi province, though not directly connected to India by land, enjoys excellent connectivity with Yunnan. Guangxi is China's chief gateway to ASEAN (Nanning being the seat of the annual track 1 China–ASEAN EXPO). In due course more efforts will be needed to broaden the agenda of BCIM to incorporate these two dimensions of Guangxi and the Chengdu–Chongqing region into the larger development agenda of BCIM interaction and connectivity.

f) Chinese Premier Li Keqiang's visit to India in early 2013 has opened newer vistas for cooperation. In the true spirit of enhancing people to people contacts, city-twinning has been identified as a priority. In China, city-twinning is promoted mainly by the Chinese People's Association for Friendship with Foreign Countries (CPAFFC) which has successfully established nearly 2000 sister pairings (cities/provinces). At present city-twinning is not serious business in India and it remains largely in the domain of the Ministry of Urban Development (with limitations on number of pairings allowed for individual cities and absence of budgetary support from the central government; the current pairings stand at 13). City-twinning is a laudable initiative as this should promote academic interaction, home-stays, civic linkages of the sort that brought together Seattle and Tokyo, for instance, post-World War II. How the latter contributed to US–Japan relations over the years is not a matter of speculation. However, in its current form, the stress seems solely on identifying a site for a Chinese industrial park in India (and some reciprocal economic activity in China). City-twinning should not be a cosmetic replacement for scouting for SEZs. Hence, along with a possible Shanghai–Mumbai sister city arrangement, a Yanan–Solapur (connected with DrKotnis' service to China) arrangement should also be pursued with equal vigour, and likewise for other cities. It is that level of meaningful exchanges that could create lasting friendships. Left to cities themselves, this remarkable opportunity may just be lost. Clearly this requires attention at the highest level in India. For now, there is no direct flight between Beijing or Shanghai and Mumbai (India's commercial hub).

Any discussion on complementarities would remain incomplete without mention of the shifting demographics in both countries. Based on UN data, it is expected that India will contribute an additional 136 million people to the global labour pool by 2020; China and the US will contribute 23 million and 11 million respectively (even as Japan and Europe witness declining working populations by 8 million and 21 million respectively; Ahya and Gupta 2010: 9). A rising population alone is not sufficient for the acceleration of GDP growth — while positive demographics may be a necessary condition for strong growth, it is not a sufficient condition by itself in the absence of productive job opportunities (Ahya and Gupta 2010: 9). Even though China's age-dependency ratio[12] is estimated to reach 45.8 per cent in 2025 (up from 40 per cent in 2015), and India's will improve to 47.2 per cent in 2025 (down from 51.7 per cent in 2015; Ahya and Gupta 2010: 9), the pressure on Indian policy makers to create jobs remains acute. Unlike in China, Indian women' participation in the labour force is at lower levels (based on

[12] Ratio of young people under 16 and older people over 64 dependent on the working age population that is, 16 to 64 age-group.

Gallup poll data in Crabtree and Pugliese 2012).[13] The key sectors identified as convergence avenues in the earlier segments of this paper are also buttressed by similar strands of reasoning in Chinese scholarly writings which argue that high value-added and other industrial products (where China is decidedly ahead of India, such as in mechanical and electrical products, appliances, engineering machinery among others) should ultimately evolve into horizontal investment strategies, and India's comparative advantages in medicine, software industry product exports should find more receptivity in the Chinese domestic market conditions (Yang and Ni 2007). The collateral benefits from these initiatives would also be felt in discussions on the India–China Regional Trading Arrangement (RTA) which, since October 2007, has remained in the realm of a Joint Task Force finalising the report on the feasibility of an RTA, with no major movement on the RTA itself subsequently due to the structural impediment of a growing trade deficit.

As countries with large rural populations, common development challenges, neglected social sectors and growing inequalities, there are several non-zero sum avenues to cooperate and benefit mutually. The constant need to bridge the communication and information gap that exists between politicians, businesses and communities in both the countries should be the key to achieve the convergences highlighted in this paper.

[13]For the recent period of 2009-12, 70% of Chinese women were either employed or seeking employment compared to only 25% of Indian women. Among Indian women who are labor force participants, 15% are unemployed i.e. they are available for work and looking for jobs.

REFERENCES

Aggarwal, Aradhna. 2002. 'Antidumping Law and Practice: An Indian Perspective', Working Paper 85, http://www.icrier.org/pdf/antidump.pdf (accessed on 14 April 2012).

Aggarwal, Aradhna. 2004. 'The WTO Anti-Dumping Agreement: Possible Reform through the Inclusion of a Public Interest Clause', Working Paper No. 142, September, http://www.icrier.org/pdf/wp142.pdf (accessed on 14 April 2012)

Ahya, Chetan and Tanvee Gupta. 2010. 'India and China: New Tigers of Asia, Part III: India to Outpace China's Growth by 2013–15' (Special Economic Analysis), August.Singapore: Morgan Stanley.

Bloomberg News. 2012. 'Iron Ore Heads For Bear Market: Commodities', 4 October,http://www.bloomberg.com/news/2012-10-02/iron-ore-heads-for-longest-bear-market-in-20-years-commodities.html (accessed on 28 March 2013).

Chandrasekhar, CP and Jayati Ghosh. 2007. 'Recent Employment Trends in India and China: An Unfortunate Convergence?',*Social Scientist*, Vol. 35, No. ¾, March–April, 19–46.

Chang Jing (常静). 2008. 'Jiyu SWOT fenxixia de ZhongYinmaoyifazhan dui woguoxinandiqu de jingjiyingxiang' (基于SWOT分析下的中印贸易发展对我国西南地区的经济影响)[SWOT Analysis of Sino-Indian Trade on the Economic Prospects for Southwest China], *Hubei di ershifanxueyuanxuebao*(湖北第二师范学院学报), Vol. 25. No.2, February, 130-132.

China Business Insight.2012. 'Indian Investment in China' March, http://www.tusiad.org/__rsc/shared/file/ChinaBusinessInsight-April-2012.pdf (accessed on 14 January 2013).

Chua, Jean. 2012. 'China, India GDPs to Exceed Entire OECD by 2060: Report', CNBC, 9 November, http://www.cnbc.com/id/49754114/China_India_GDPs_to_Exceed_Entire_OECD_by_2060_Report (accessed on 11 January 2013).

Crabtree, Steve and Anita Pugliese. 2012. 'China Outpaces India for Women in the Workforce', 2 November, http://www.gallup.com/poll/158501/china-outpaces-india-women-workforce.aspx(accessed on 19 March 2013)

Das, Soma.2010. 'Indian Drug Firms Look to Scale the Great Wall', 15 December, http://www.financialexpress.com/news/indian-drug-firms-look-to-scale-the-great-wall/724785/0 (accessed on 24 December 2010).

Deloitte Touche Tohmatsu Limited (Deloitte) and The U.S. Council on Competitiveness. 2012. 2013 Global Manufacturing Competitiveness Index

Embassy of India, Beijing. 2012. 'Trade and Commercial Relations', http://www.indianembassy.org.cn/DynamicContent.aspx?MenuId=3&SubMenuId=0, (accessed on 08 May 2012).

Farrell, Diana and Susan Lund. 2006. 'China's and India's Financial Systems: A Barrier to Growth', *McKinsey Quarterly*, November, http://www.mckinseyquarterly.com/Chinas_and_Indias_financial_systems_A_barrier_to_growth_1878 (accessed on 24 March 2013).

Government of India, Ministry of Commerce & Industry Department of Industrial Policy & Promotion (Manufacturing Policy Section). 2011. PRESS NOTE NO. 2 (2011 SERIES) Subject: National Manufacturing Policy, 4 November.

Goyal, Anjali. 2009. 'Dedicated Freight Corridors &High Speed Rail: India's Ultra Low Carbon Mega Rail Projects', Executive Director Finance (Budget), Ministry of Railways, India, http://siteresources.worldbank.org/INTTRANSPORT/Resources/336291-1234451048011/5827121-1239045090161/Goyal_India.pdf (accessed on 12 March 2013).

Gugnani, Amit, Ruby Jain and Kanti Prakash. 2012. 'Global & Indian T&A sector and Opportunities in the Domestic Market', July, http://www.technopak.com/resources/fashion/White%20Paper-TLF-Fahion.pdf (accessed on 19 December 2012).

Guo, Yan. 2010. 'Wider fields to be explored between China and India', *China's Foreign Trade*, Vol 4, 53–54.

Inchin Closer. 2012. 'China Develops India's Power Ecosystem', 24 August, http://inchincloser.com/2012/08/24/china-developes-indias-power-ecosystem/#more-4220 (accessed on 4 January 2013).

Inchin Closer. 2013. 'SMEs Cementing Sino-Indian Relations', 17 January, http://inchincloser.com/smes-cementing-sino-indian-relations/ (accessed on 17 February 2013).

India Brand Equity Foundation (IBEF). 2012. 'China vs India: Competitive Edge Separating Reality from Hype', http://www.ibef.org/download/Competitive-Edge-Separating-Reality-from-Hype-140512.pdf (accessed on 19 January 2013).

JP Morgan Chase & Company.2007. 'The Chindia Effect: What It Means for U.S. Companies', https://www.chase.com/ccpmweb/commercial/document/ChindiaWhitePaper.pdf (accessed on 11 February 2013)

Krishnan, Ananth. 2012. 'India, China Renew Push to Bridge Deficit Ahead of =Trade Talks', 27 October, http://www.thehindu.com/business/Economy/india-china-renew-push-to-bridge-deficit-ahead-of-trade-talks/article4038531.ece (accessed on 12 February 2013).

Kurian, Vinson and NK Kurup. 2012. 'Bombardier Bets on Capacity, Eyes Metro and Monorail Projects in Kerala', 23 September, http://www.thehindubusinessline.com/industry-and-economy/logistics/article3929458.ece (accessed on 11 January 2013).

Leahy, Joe (2009), "India looks to China for power", 30 March, http://www.ft.com/cms/s/0/965ce22a-1cc2-11de-977c-00144feabdc0.html (accessed online 12 February 2013)

Mead, Nick. 2012. 'Developing Economies to Eclipse West by 2060, OECD Forecasts', http://www.guardian.co.uk/global-development/datablog/2012/nov/09/developing-economies-overtake-west-2050-oecd-forecasts (accessed 19 July 2013).

Ministry of External Affairs, Government of India. 2010. 'Joint Communiqué of the Republic of India and the People's Republic of China', 16 December, http://meaindia.nic.in/ mystart.php?id=530516879 (accessed 19 July 2013).

Ministry of Micro, Small and Medium Enterprises, Government of India. 2012. *Annual Report 2011-12*

Mohammad, Noor. 2010. 'Visa Issue for Chinese Workers to Top Agenda', 14 December, http://www.financialexpress.com/news/visa-issue-for-chinese-workers-to-top-agenda/724199 (accessed on 17 December 2012).

NDTV. 2012. 'Indian Traders being Moved from Yiwu to Shanghai; Diplomatic Crisis Averted', 4 January, http://www.ndtv.com/article/india/indian-traders-being-moved-from-yiwu-to-shanghai-diplomatic-crisis-averted-163638 (accessed on 14 May 2013).

Planning Commission, Government of India. 2013. 'Twelfth Five Year Plan (2012–2017): Economic Sectors [Volume II]', New Delhi: SAGE.

Reserve Bank of India (RBI). 2013. 'FAQs: Micro, Small and Medium Enterprises', 26 September,http://www.rbi.org.in/commonman/English/Scripts/FAQs.aspx?Id=966(accessed on 15 December 2013).

Reuters. 2013. 'China's Cotton Policy Spurs Yarn Imports, Drives Mills Overseas", 17 January, http://www.reuters.com/article/2013/01/17/china-cotton-yarn-idUSL4N0AL69E20130117 (accessed on 29 January 2013)

Roy, Robin. 2010. 'Tap Pension Funds and Insurance Firms", 15 December, http://www.financialexpress.com/news/tap-pension-funds-and-insurance-firms/724765/0 (accessed on 17 February 2012).

S, Arun and Thomas K Thomas. 2010. 'Ban on Chinese Telecom Gear is no Violation of WTO Norms: Sharma', 13 May, http://www.thehindubusinessline.com/ 2010/05/13/stories/ 2010051353720100.htm (accessed on 12 February 2011).

SCI Verkehr GmbH. 2009. 'The Asian Railway Market 2009–2014: Facts, Figures, Players, Trends', www.sci.de/fileadmin/user.../Product_information_MC-Asia.pdf (accessed on 24 February 2013).

Shilling, A Gary.2012a. 'Why India Will Displace China as Global Growth Engine', 16 December, http://www.bloomberg.com/news/print/2012-12-16/why-india-will-displace-china-as-global-growth-engine.html (accessed on 27 January 2013).

Statista. 2013a. 'Emerging markets - infrastructure spending', http://www.statista.com/statistics/180175/infrastructure-spendings-forecast-of-emerging-markets/ (accessed on 22 January 2013).

Statista. 2013b. 'Value of car part imports to China in 2011, by country of origin', http://www.statista.com/statistics/238136/value-of-car-part-imports-to-china/(accessed on 22 January 2013).

Syed, Murtaza and James P. Walsh. 2012. 'The Tiger and the Dragon', *Finance & Development*, September, Vol. 49, No. 3.

Tang, Xiaoyang. 2010. 'Comparing Technological Innovation of Textile Industries in India and China', http://indiachinainstitute.org/wp-content/uploads/2010/03/Xiaoyang-Tang-Comparison-Textile.pdf (accessed on 14 February 2013).

The Economic Times.2012. 'India, China ink 11 MoUs Entailing $5.2 billion Investment', 26 November, http://articles.economictimes.indiatimes.com/2012-11-26/news/35365115_1_china-ink-china-development-bank-india-and-china-today (accessed on 29 January 2013).

The Economist. 'India and China: Friend, Enemy, Rival, Investor: How can India make its Economic Relations with China less lopsided?', 30 June, http://www.economist.com/node/21557764 (accessed on 2 February 2013).

The Hindu. 2011. 'Manufacturing to Contribute 25% of GDP within a Decade", 25 October, http://www.thehindu.com/business/Industry/manufacturing-to-contribute-25-of-gdp-within-a-decade/article2570702.ece (accessed on 27 December 2012).

The World Bank. 2011. 'World Bank Approves US$975 Million Loan for the Eastern Dedicated Freight Corridor Project in India', Press Release No:2011/519/SAR, 31 May, http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/EXTSARREGTOPTRANSPORT/0,,contentMDK:22929177~menuPK:579604~pagePK:2865114~piPK:2865167~theSitePK:579598,00.html (accessed on 14 February 2013).

Tripathy, Devidutta. 2010. 'India Tightens Telecom Rules on Security Concerns', 28 July, http://in.reuters.com/article/idINIndia-50468220100728 (accessed on 11 December 2010).
UNCTAD. 2011. 'Commodities at a Glance', March, Special Unit on Commodities, http://unctad.org/en/Docs/suc20112_en.pdf (accessed on 23 February 2013).

Vandenbussche, H andChViegelahn. 2012. 'Indian Antidumping Measures against China: Evidence from Monthly Trade Data', Discussion Paper 2012-25, http://sites.uclouvain.be/econ/DP/IRES/2012025.pdf (accessed on 12 February 2013).

Wang, Brian. 2013. 'Various Projections for the Economy of China 2030', 10 June, http://nextbigfuture.com/2013/06/various-projections-for-economy-of.html (accessed on 28 June 2013).

Wen Fude (文富德). 2006. 'ZhongYinjingmao de jingzhengyuhezuo'(中印经贸的竞争与合作)[Sino-Indian Trade and Economic Competition and Cooperation], *JingmaoGuancha* (经贸观察), No. 1, Institute of South Asian Studies Sichuan University.

Yang Wenwuand Ni Xiangqin (杨文武, 倪香芹).2007. 'ZhongYinjingmaohezuoxianzhuang, wentijiqi duice' (中印经贸合作现状、问题及其对策) [Sino-Indian Economic and Trade Cooperation Situation, Problems and Countermeasures], *ShehuiKexue* (社会科学), No. 9, 16-24.

Yuan, Jack. 2012. 'China's Productivity Imperative', Ernst & Young (China) Advisory Limited, http://www.ey.com/Publication/vwLUAssets/China_productivity_imperative_en/$FILE/China-Productivity-Imperative_en.pdf (accessed on 19 February 2013).

Zhang Peishen (张佩伸).2009. 'XianjieduanZhongYinjingmaohezuomianlin de zhuyaowentijijiejueduice' (现阶段中印经贸合作面临的主要问题及解决对策) [Current Problems Faced in Sino-Indian Economic and Trade Cooperation and Solutions], *JingjiYanjiuDaokan* (经济研究导刊), No. 10, Serial No. 48.

Zhang Yanhua (张艳华).2007. 'ZhongYinjingmaoguanxixianzhuangyuqianging' (中印经贸关系现状与前景) [Sino-Indian Economic and Trade Relations Status and Prospects], *Jingji Shi* (经济师), No.7.

Zhang Yuyan, Zhao Jianglin, Liu Xiaoxue, Wang Xiaomin(张宇燕, 赵江林,刘小雪,王小敏).2006. 'XinshiqiZhongYinjingmaoguanxifazhan de zhanluesikao' (新时期中印经贸关系发展的战略思考) [New Strategic Thinking in Development of Sino-Indian Economic and Trade Relations], *DangdaiYatai* (当代亚太), No. 8, 12-20.

Zhu Meili (朱美丽). 2007. 'Jingzhengyuhezuozhong de shuangying: ZhongYinjingmaoguanxifenxi' (竞争与合作中的双赢——中印经贸关系分析) [Competition and Cooperation Towards a Win-Win India-China Economic and Trade Relations], *Xiaofeidaokan* (消费导刊), Xiamen daxuegonggongshiwuxueyuan (厦门大学公共事务学院), June, 28-29.

DATABASES

Ministry of Commerce, India
Ministry of Commerce (MOFCOM), China
World Bank
UNIDO
UN COMTRADE

Appendix 1

Country level ratings for key drivers of competitiveness

Selected Country/Manufacturing Competitiveness Drivers	Germany	U.S.	Japan	China	Brazil	India
Talent-driven innovation	9.47	8.94	8.14	5.89	4.28	5.82
Economic trade, financial and tax system	7.12	6.83	6.19	5.87	4.84	4.01
Cost of labor and materials	3.29	3.97	2.59	10.00	6.70	9.41
Supplier network	8.96	8.64	8.03	8.25	4.95	4.82
Legal and regulatory system	9.06	8.46	7.93	3.09	3.80	2.75
Physical infrastructure	9.82	9.15	9.07	6.47	4.23	1.78
Energy cost and policies	4.81	6.03	4.21	7.16	5.88	5.31
Local market attractiveness	7.26	7.60	5.72	8.16	6.28	5.90
Healthcare system	9.28	7.07	8.56	2.18	3.33	1.00
Government investments in manufacturing and innovation	7.57	6.34	6.80	8.42	4.93	5.09

Most competitive — Least competitive

Scores on a 10 point scale, with 1 being "Least competitive" and 10 being "Most competitive" — adjusted for country, size, and industry
Source: Deloitte Touche Tohmatsu Limited and U.S. Council on Competitiveness, 2013 Global Manufacturing Competitiveness Index

Appendix 2

Employment, Wages and related Indicators by Industry, at current prices, for selected years

Indicator	Year/Period	India	China	Asia	Developing Countries
MVA average annual real growth rate (in %)	2000–05	7.02	10.74	8.86	6.74
	2005–10 a/	9.11	11.8	8.99	7.06
Non-manufacturing GDP, average annual real growth rate (in %)	2000–05	6.95	9.28	6.37	4.95
	2005–10 a/	8.21	10.73	7.36	5.88
MVA per capita at constant (2000) US$prices	2000	62.85	303.11	224.77	254.2
	2005	80.98	480.45	316.41	322
	2010 a/	120.18	820.02	465.97	430.09

MVA as percentage of GDP at constant (2000) US$prices	**2000**	14.29	32.12	22.5	19.47
	2005	14.25	33.05	24.24	20.57
	2010 a/	15.04	34.16	25.83	21.66

Source: UNIDO Statistical Input for Manufacturing Wages

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