Labour in Global Production Networks in India

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INTRODUCTION

A striking feature of contemporary globalization is that a very large and growing proportion of the workforce in many global industries is now located in developing economies. From the point of view of international development, offshoring of manufacturing and service work is important because it can help to spur industrialization and upgrading processes in developing countries. Hence, many governments pin their hopes on global outsourcing as a key driver for economic development. Nevertheless, while engaging in global production networks (GPNs) is becoming an important source of income and employment generation for developing economies, it is ‘decent and productive’ employment that matters, not jobs alone.

Given the frequent criticisms of a low-wage and low-skill trap in GPNs and the fact that high-paying and skilled jobs have remained rooted in advanced economies, the complexities of the ongoing job shifts need unpacking. Using country and industry comparisons, this chapter seeks to gain a fuller understanding of the conditions under which growth is taking place through GPNs, and the extent to which this growth can be a vehicle for genuine economic and social upgrading with improved employment, sustainable incomes, and protection for workers.

The first section will offer a new conceptualization of jobs in the global economy. In the second section, we will specifically look at the cases of India and China using the framework of global value chains (GVCs). The country cases will cover a broad range of industries, including apparel as a
typical low-technology buyer-driven chain, automotive as an example of a medium-technology product in producer-driven value chains, and the information technologies (IT) sector representing high-technology goods and services. All three industries have undergone significant changes over the past decade, witnessing a rapid expansion of global outsourcing and the movement of jobs, notably to India and China. In particular, we will address two main questions: To what extent have the emerging economies of India and China succeeded in becoming trade and production hubs in diverse sectors? Do the accomplishments of India and China in these industries mark significant improvements in employment and working conditions?

THE NEW GLOBAL LABOUR MARKET

What began as simple offshore assembly work in the 1960s and 1970s has rapidly spread up and down the value chain into a wide range of goods and services. Virtually all consumer products sold by developed-country retailers today are made entirely or to a significant extent by workers in offshore factories in developing countries. Even products that require advanced manufacturing capabilities, such as hard disk drives and semiconductors, are becoming hi-tech commodities made in capital-intensive facilities in Southeast Asia and elsewhere (McKendrick et al., 2000). Certain kinds of software programming and hardware design can now be done more cheaply in places like India, Taiwan, South Korea, and the Philippines than in the United States, Europe, or Japan. A growing array of knowledge-intensive business services—such as engineering, design, accounting, legal and medical advice, financial analysis, and business consulting—are now moving offshore as well (Engardio et al., 2003).

In 2004 (January–March), it was estimated that China accounted for all US production shifts in sporting goods and toys; 40 per cent of production in electronics and electrical equipment, apparel, and footwear; and one-third of US production shifts in aerospace, appliances, household goods, and wood and paper products. Meanwhile, India was the destination for all the offshore shifts in finance, insurance, and real estate, and one-third of those in communications and IT. For 2004, total US job loss due to offshore production shifts was estimated to reach 400,000, of which 99,000 went to China and 47,000 to India (Bronfenbrenner and Luce, 2004: 29, 55).

There have been several factors that underlie the size and composition of job shifts in the global labour market. First, following the break-up of the Soviet Union in 1989 and the end of the Cold War, about 3 million workers from China, India, Russia, and Eastern Europe—half of the world’s labour force—joined the capitalist world economy, creating a labour supply shock on a scale unlike anything experienced before. Second, technological changes associated with the internet allowed a dramatic expansion of outsourcing and offshoring options in services as well as manufacturing, and this real-time connectivity has converted what were once segmented national labour markets into an integrated, global production system. Third, transnational corporation business strategies have been unrelenting in their search for new efficiencies, especially on the labour side where substantial cost gains can be found. As a result, offshore outsourcing is no longer considered merely an option, but an increasingly urgent survival tactic for companies in the developed economies’ (Roach, 2003: 6).

ECONOMIC AND SOCIAL UPGRAADING AND A TYPOLOGY OF JOBS

In order to evaluate the implications of the new global production system on the developing world, it is essential for us to know not only the quantity of jobs that are affected, but also the quality of jobs being created. The important question is whether it is possible to simultaneously improve both the quantity and quality of employment in GPNs. To examine the linkages between the two, and how they relate to a broader strategy of sustainable development, we explore further the concepts of economic and social upgrading.1

Economic upgrading is defined as ‘the process by which economic actors—nations, firms, and workers—move from low-value to relatively high-value activities in global production networks’ (Gereffi, 2005: 171). The concept of upgrading is now used beyond the manufacturing sector, including agriculture and service sectors. Basically, economic upgrading has four strands:

1. Product upgrading: introduction of a more advanced product;
2. Process upgrading: changes introduced in the production process with the objective of making it more efficient and productive;
3. Functional upgrading: a change in the mix of activities performed by a firm or a locality towards higher value added stages in the production process (for example, research and development, design, logistics, finance, or marketing);
4. Chain upgrading: a move towards a more technologically advanced production chain.

The main motivation in economic upgrading is to improve economic performance such as production, exports, profits, or technological
capabilities, whereas in social upgrading it is to enhance the capabilities and entitlements of workers as social actors and improve the quality of their employment. Social upgrading involves access to better work, which might result from economic upgrading, but it also includes enhancing working conditions via better wages, benefits, standards, social protection, social dialogue, and worker rights (at a minimum defined by core International Labour Organization [ILO] Conventions) in the value chain.

Social upgrading is comprised of two components: (i) measurable standards, which are quantifiable aspects such as category of employment (regular or irregular), wage level, contract type, social protection, working hours, and health and safety levels; and (ii) enabling rights that are less quantifiable aspects, such as freedom of association and the right to collective bargaining, non-discrimination, voice, and empowerment. The definition of social upgrading relates to the ILO’s decent work concept, which constitutes four main pillars: employment, standards and rights at work, social protection, and social dialogue. Decent work helps to frame social upgrading as it covers both quantitative and qualitative aspects of jobs (Barrientos et al., 2008).

Economic upgrading and social upgrading are interlinked, and upgrading requires a balanced and integrated approach between the two. In the best-case scenario, economic upgrading and social upgrading work hand-in-hand and it is implicitly assumed that moving up in the chain leads to higher-value added activities and higher profits, and these translate into higher wages and better work conditions. However, the two do not always work in tandem, nor do they have to come at the expense of the other.

The development trajectories and dynamics of economic and social upgrading in the GPNs of the developing world are determined by the character of jobs in GVCs—whether the jobs are mere assembly activities, advanced manufacturing of components and finished products, or product development, design, and engineering services. From a GVCs perspective, jobs are not tied to particular locations or industries, but to certain economic activities that cut across industries. Based on this classification, five types of jobs exist in the global economy (Gereffi, 2006: 9; Barrientos et al. 2008):

1. small-scale, household-based work, which usually includes agricultural production and labour-intensive or artisanal types of manufacturing;
2. low-skilled, labour-intensive assembly work in export processing and subcontracting industries, which is factory-based;
3. moderately skilled, full-package manufacturing work (original equipment manufacturing or OEM), which is associated with the production of finished consumer goods;
4. advanced production work, which usually involves original design manufacturing (ODM) and own brand manufacturing (OBM) of key components or sub-assemblies to large manufacturers; and
5. knowledge-intensive work, which is linked to the offshore provision of research and development, IT, and business process services.

Small-scale, household-based work is often found at the base of many GPNs in developing economics. The workers are small-scale producers, outgrowers in agricultural production, or homeworkers in more labour-intensive or artisanal types of manufacturing. They usually have access to their own assets and means of subsistence. Production takes place in or around the household residence, with limited separation between commercial productive activity and unpaid reproductive activity. The work involves both paid and unpaid family labour, including child labour.

Low-skilled, labour-intensive assembly jobs were generated in the first wave of offshore production in the 1960s and 1970s by the transnational corporations’ search for low-wage, labour-intensive production, especially in light consumer goods industries such as apparel, sporting goods, houseware, and toys. In many developing nations, these jobs were the first stage of export-oriented industrialization, most commonly located in export processing zones (EPZs) or in extended supply chains locally, in which plants are provided with inputs for assembly. In 1975, there were close to 80 EPZs in 25 countries; by 1997, there were 93 countries with 845 EPZs. In 2006, the figures grew to 3,500 EPZs in 130 countries. In terms of employment, the number of workers in EPZs tripled from 22.5 million in 1997 to 66 million in 2006, with China alone accounting for 60–70 percent of the global EPZ workforce—approximately 40–45 million workers (Singa Boyenge, 2007). Thus, assembly jobs continue to play a vital role in the global economy.

Assembly jobs in EPZs are useful in attracting investors, ramping up output, and meeting international quality standards for a variety of export products, and they tend to have a relatively large and positive impact on job creation, especially for female workers. However, assembly work is repetitive and fragmented, and highly vulnerable to the purchasing preferences of global lead firms. These tend to be low-skill jobs, characterized by minimal local linkages to the host economy and poor working conditions. Furthermore, they are often low paying, not unionized, and involve temporary, informal, and contract work. While women do a significant portion of low-skilled, labour-intensive assembly work, they usually have insecure, low-paid jobs. Considering the negative social features of this type of work, many developing economies are
now trying to move beyond assembly to more stable forms of integration with GVCs.

Moderately skilled, full-package production (OEM) jobs have emerged with the rise of ‘global buyers’, including giant discount chains, department stores, and brand marketers (so-called ‘manufacturers without factories’) (see Gereffi, 1994, 2005; Dolan and Humphrey, 2000). The key difference between assembly jobs and OEM jobs is who supplies the inputs and coordinates the production process: in assembly production, manufacturers in advanced industrial countries control the inputs and the orders; in full-package production, while global buyers provide the orders, developing-country suppliers coordinate the supply of inputs, make the final product, and send it to the buyer. As developing-country firms increase their coordination capacity in the full-package process, they can improve their bargaining power and gain higher margins.

The likelihood of social upgrading is a direct consequence of the relationship between suppliers and buyers. Consequently, the full-package system has clear advantages over assembly work. The introduction of product standards and company codes of labour practice by buyers has led to pressure on full-package suppliers for decent conditions with higher worker compensation, job security, and skill improvement. However, except in relatively advanced economies (such as South Korea, Taiwan, Hong Kong, and Singapore in the 1980s and 1990s), OEM firms are often not able to participate in more profitable stages such as design, product development, and branding because these activities are retained by global buyers. Besides, with growing demand by lead firms for flexibility, full-package jobs may also involve temporary, contract, or casual work.

Advanced production jobs arose in conjunction with a different set of offshore activities that emerged in the 1980s and 1990s. Lead firms in capital- and technology-intensive value chains, such as automobiles and electronics, set up international production networks not only to assemble and deliver their finished goods, but also to develop a supply base for key intermediate products and sub-assemblies. A good example of this form of production is the rise of global contract manufacturers in the electronics industry and ‘mega suppliers’ in the automotive industry (Sturgeon and Lester, 2004). The opportunities for developing-country suppliers are related to the process of supplier-oriented upgrading, which can improve technology learning and knowledge spillovers. However, large and technologically sophisticated first-tier suppliers tend to concentrate ‘good’ jobs in relatively few locations. In the case of the hard disk drive industry, design jobs remained rooted in the US, which accounted for nearly 80 per cent of the wage bill, despite the fact that 80 per cent of the jobs were in Southeast Asia (McKendrick et al., 2000). Another problem is that supplier-oriented upgrading has a built-in contradiction. The lead firms are reluctant to have suppliers learn too much, and thereby try to curtail their power to set the knowledge parameters essential for product innovation. Overall, these jobs are well-paying, productive, and relatively secure, but flexible as demand shifts.

Knowledge-intensive jobs are being created by a new wave of offshoring in services. White-collar outsourcing started with simple service jobs, like call centres and telemarketing, but it now includes more advanced business services such as finance, accounting, software, medical services, and engineering.

One of the best measures of expanding knowledge-intensive work in developing nations is newly emerging research and development (R&D) centres. In India, according to the Organization for Economic Co-operation and Development (OECD), there are over 100 R&D centres built by multinational firms and the country ranked as the sixth most-favourable location in a recent survey of the world’s largest R&D corporate investors (The Economist, 2007). In China, the figure is much higher with nearly 1,000 R&D centres (Gereffi et al., 2008: 20). Knowledge-intensive service jobs are increasingly seen as an opportunity for the developing world to attain both economic and social benefits with technological learning and knowledge spillovers, better income, and good export prospects. However, on average, the size of employment in this job category is relatively small, considering the requirements for high skills and advanced degrees, mainly in science and engineering. The McKinsey Global Institute (Farrell et al., 2005) estimates that in 2008 the number of service jobs in low-wage developing countries would reach 4.1 million, which is only 1.2 per cent of the total number of service jobs in developed countries. The unskilled majority in developing countries is excluded from the desired employment opportunities provided by knowledge-intensive work.

Figure 4.1 highlights a key dimension of our typology of work. If we compare different industries within agriculture, manufacturing, and services, all five types of work are present in each industry. However, there are significant differences in the proportions of each type of work across these industries. Within manufacturing, if we compare industries that can be classified as relatively low-tech (apparel), medium-tech (automotive), and hi-tech (electronics), the low-skilled and household-based types of work decrease and the relative importance of knowledge-intensive and highly skilled work increases. This progression at the work level is associated with economic upgrading.
From Figure 4.2, we see that in 1988, more than one-third of India's exports to the world were low-technology products (mainly textiles and apparel), followed by primary and resource-based products. In the early 1990s, following the liberalization period, low-technology products moved...
further ahead of other categories in India’s export mix, while the medium-technology manufactures (mainly automotive products) grew slowly. By 2008, nearly 40 per cent of India’s exports of $182 billion were in resource-based manufactures (mainly refined petroleum products and precious and semi-precious stones that rebounded in the late 1990s), whereas low-technology manufactures declined to 22 per cent and medium-technology manufactures were 18 per cent of the total. Thus, in the last 20 years, India did not increase the technological sophistication of its manufacturing exports, except the rise in automotive products and, to a limited extent, high-technology manufactured items (7 per cent).

Unlike India, the composition of China’s exports to the world during 1988–2008 was transformed from a profile based on low-technology and primary products to one dominated by medium- and high-technology manufactured items. In 1988, the leading product category was low-technology manufactures, mainly a wide variety of light consumer goods: apparel, footwear, toys, sporting goods, housewares, and so on. These products accounted for half of China’s overall exports in the early 1990s, and then started to decline sharply. By 2008, high-technology exports from China had increased their share to nearly 35 per cent of the country’s overall exports, and already passed low-technology exports for the top spot in China’s export mix. Furthermore, medium-technology exports increased their share to 25 per cent of China’s total exports of $1429 billion in 2006.

While both economies have increased the diversification of their export profiles in the last 20 years, it is clear that China has performed better than India in the technological sophistication of its manufacturing exports. China has experienced a more rapid and decisive growth in the share of medium- and high-technology manufactured products in its export mix.

Nevertheless, a word of caution is needed in using exports as an indicator of economic and social upgrading. The problem with export statistics is that we have no way of knowing the degree to which these economies are carrying out the labour-intensive and low-technology processes, which are associated with lower wages and poor working conditions, versus skill-intensive and high value-added tasks. We need to link more precise employment data with disaggregated trade statistics and analyse industries from the GVCs perspective. Most developing countries do not collect such data in a systematic fashion. Thus, with the data available to us, the next section carries out a cross-industry analysis for India and China.

APPAREL INDUSTRY

Prior to the phase-out of the Multi-Fibre Arrangement (MFA) in 2005, apparel had become one of the most geographically dispersed of all industries, with over 100 exporting countries and 20 million registered workers producing textiles and apparel worldwide (Gereffi and Memmodovic, 2003; UNCTAD, 2005; Dicken, 2007: Chapter 9). As in many developing countries, textiles and apparel constituted one of the largest and most dynamic sectors in the economies of India and China. In India, it is estimated to account for 4 per cent of GDP, 26 per cent of manufacturing output, 15 per cent of exports, and 18 per cent of industrial employment (Tewari, 2008). In China, despite its less strong share due to steep rise of technology-intensive manufacturing, the apparel industry still produced 2.9 per cent of GDP, 7 per cent of industrial output, and around 15 per cent of total exports in 2005 (Ramasamy and Yeung, 2008).

China’s spectacular performance in the apparel industry has been driven by global sourcing strategies. According to the most recent statistics released by the World Trade Organization (WTO), the value of Chinese textile and apparel exports jumped from less than $17 billion in 1990 to over $171 billion in 2007, increasing its share in world exports from 7.9 per cent to 25.1 per cent, and making China the world’s second-largest textile and apparel supplier and the number one apparel exporter. India has also built a strong position, but it is less dominant in the global market. India’s textile and apparel exports rose from $4.7 billion to $19.1 billion between 1990 and 2007, ranking the country as the fifth-largest textile and apparel supplier and the sixth apparel exporter.

Why has India been unable to more effectively utilize its comparative advantages in textiles and apparel, including an abundant supply of low-skilled labour, a long history of textile and apparel production, and the world’s largest land area for cotton production? Comparing these two countries, first, China has sought to leverage its huge economies of scale, illustrated by the growth of China’s mega-factories and single-product clusters called ‘supply-chain cities’ (Gereffi, 2009: 46–8). In contrast, except for a few large firms (for example, Arvind, Raymond, Gokaldas, and Karle) and some small firms organized in clusters (for example, Tiruppur), the apparel industry in India is characterized by small fragmented units reserved until 2001 under the long legacy of the government’s small-scale industry (SSI) policy.

Second, China has made major investments in infrastructure and logistics to lower transportation costs and shorten the time to market. Thus,
despite labour costs in India ($0.38/hour) being lower than those in China ($0.88/hour), Chinese firms have significantly higher competitiveness in non-labour components of their costs than their Indian counterparts. For instance, shipping containers of apparel products from Mumbai/Chennai to the east coast of the US is 37% per cent more expensive than shipping the same products from Shanghai (Adhikari and Weeratunge, 2006).

Third, China has a coherent upgrading strategy to diversify its product mix, including cotton and synthetic fibre apparel, but India has long focused on low value-added cotton-made and seasonal apparel such as summer and spring clothes with limited demand throughout the year. As long as these supply-side constraints persist, the export gap between India and China may not be narrowed in the foreseeable future.

The next issue is to identify if and how the economic gains of these countries translate into real advantages for the Indian and Chinese workers in terms of quantity and quality of employment. It is hard to say how many jobs their integration into the global apparel chain has spawned, but increased exports have undoubtedly facilitated a surge in employment. According to United Nations Industrial Development Organization (UNIDO) country statistics, this was most impressive in China, where apparel employment increased from 1.75 million in 1995 to 3.78 million in 2006, raising apparel’s share in manufacturing employment from 3 to 6 per cent. Though lagging behind China, India registered an increase in apparel jobs from 276,000 in 1998 to 449,000 in 2004, with a rise in the share of apparel employment in total manufacturing employment from 3.5 to 5.5 per cent (UNIDO, 2009).

Regarding the quality of employment, there are various aspects to consider. First, there has been a rise in real wages of apparel workers in India, as reported by a recent occupational wage survey (Gol, 2008). However, despite the wage increases, apparel workers remain among the worst paid of all workers in the manufacturing sectors of both India and China. In India, although the gap between apparel and average manufacturing wages narrowed, the ratio still corresponds to 58.7 per cent, whereas in China it is 38.7 per cent for 2003 (Ernst et al., 2005).

Second, the apparel industry is often recognized as one in which female workers predominate. In India, the gender composition in the organized apparel sector shows that the majority of workers are women, nearly 60 per cent on average, but it is much higher in certain regions, especially the southern states like Tamil Nadu and Karnataka, where respectively 84 per cent and 79 per cent of all apparel employees are female (Gol, 2008). The challenge with female apparel workers is that they are mostly concentrated in low-paying, less-skilled job categories like helper, marker, sorter, and sweeper; they also earn less than men in almost all occupations.

Third, shortened lead times by global apparel brands and retailers affect employment contracts in supplier firms, which tend towards greater use of temporary, contract, and casual workers, as well as transferring production itself through mechanisms of subcontracting to the unorganized sector—that is, home work and child labour in some instances. In the case of India, besides quick response trends, seasonal and small-scale orders, and the historical legacy of SSI policy, another underlying factor for flexible work is the country’s rigid labour laws like the Industrial Dispute Act requiring firms with more than 100 workers to get permission for lay offs. Indian firms often transfer jobs to the unorganized sector to get around such laws, leading to a polarization in the industry. While we can be more or less certain that upgrading to full-package production in India has pushed up working conditions in the large, export-oriented firms in the organized sector, a decent work deficit exists lower down in the supply chain.

Looking at China, which relied for a long time on the low-cost strategy, many firms operating in the country are now facing rapidly climbing costs, mainly due to raw material prices and wages in coastal areas, along with rivalry from emerging low-wage apparel exporters like Vietnam and Bangladesh bidding down the already razor-thin margins. However, China’s recent policy initiatives to increase value-added and address poor working conditions signal that the ‘low road’ is no longer the first option for China. ‘The List of Restricted Commodities in Processing Trade’ that came into effect in 2007 requiring the move of labour-intensive production from coastal areas to inland and undeveloped areas, and the Labour Contract Law which came into effect in 2008 to discourage the use of contract labour and support unionization, are two critical developments in China. We believe that such efforts reflect a window of opportunity for China and they will be essential for economic and social upgrading of other global apparel suppliers. In fact, among those suppliers, India will be under increasing pressure to take the ‘high road’ and ‘race to the top’ strategies.

AUTOMOTIVE INDUSTRY

Hindustan Motors of India produced its first car, the Ambassador, in the 1950s, when Toyota began to produce in Japan. After 50 years, Toyota’s car production reached 5 million units, while the output of Hindustan Motors was 18,000 cars with no change in the Ambassador’s original model (Du Pont, 2002). For China’s first automobile manufacturer, First Auto Works (FAW),
the trend was not much different from India’s. Founded in 1953 in China’s northern city of Changchun, Jilin Province, the FAW began to produce its Jiefang (Liberation) trucks in 1956 with 1,600 assembled units and this product had not been changed for nearly 30 years (Holweg et al., 2009).

However, today total vehicle output is climbing rapidly in both India and China. According to production statistics of the International Organization of Motor Vehicles Manufacturers (OICA, 2007), with its 8.9 million vehicles in 2007, China was the third-largest vehicle producer after the US and Japan, surpassing Germany; India was the tenth-largest automotive manufacturer supplying 2.3 million vehicles.

The offshore investments and ‘follow sourcing’ strategies of global firms have been of paramount importance for the restructuring and incorporation into GVCs of the Chinese and Indian automotive industries. Today, driven by the demands of the world’s leading automakers to establish local manufacturing capacity, first-tier component suppliers like Bosch, Johnson Controls, Lear, Siemens Automotive, Magna, TRW, Denso, and others have attained supply-chain consolidation and a global footprint. By the same token, India and China, with their huge and rapidly growing domestic markets, low-wages, and abundant engineering skills, became two of the largest destinations for expanding investments by global automakers, and consequently by many of their established first-tier suppliers from the late 1990s onwards (Sturgeon and Lester, 2004; Dicken, 2007: Chapter 10).

Over the past decade, the composition of Indian component exports has upgraded from the lower-value ‘after-market’ for repair parts to higher value-added parts for the auto assemblers (OEMs), particularly engine parts. While the ‘after-market’ auto parts had been dominant in the total auto component exports with a 65 per cent share in the 1990s, the OEM parts attained the leading share of 75 per cent as of 2007 (ACMA, 2008). In China, the move from the production of labour-intensive parts (like wiring harnesses and brake parts) to higher technology-intensive and value-added components (particularly engines) is being reported. In late 2003, the joint venture between the Shanghai Automotive Industry Corporation (SAIC) of China and General Motors (GM) began making engines to be installed in the 2005 Chevrolet Equinox built in Canada (International Metalworkers’ Federation, 2006, 2007).

Emerging Chinese and Indian auto companies are even coming up with their own brands and models in global markets. Chery Automobile from China already began exporting its low-price, branded cars to new markets in the Middle East and Asia. Tata Motors of India is also a successful example with many domestic designs and brands, with the Nano model launched in the domestic market in 2009 and planned for future expansion to global markets. Many Indian and Chinese automotive firms now aim to develop their own capacities in design and engineering activities.

Indeed, as a way to achieve higher design and engineering capabilities, the research centres of foreign investors are global pacemakers in India and China. In the case of China, GM is the most aggressive foreign firm in transferring technology to the country. Under the joint venture with the Chinese SAIC automotive firm, GM’s research centre in Shanghai employs 1,300 people, localizing the design of Western models. GM is now building its own research centre in China to develop hybrid technology and other designs (Bradsher, 2007).

Looking forward, expectations are for strong continued growth of the Indian and Chinese automotive industries. Yet, questions remain about the widely touted weaknesses of the two countries’ automotive sectors. While India’s automotive manufacturers are now all private firms, the state-owned enterprises of China including the ‘top three’—SAIC, FAW, and Dongfeng Motor Corporation—create vulnerability for operational efficiency and competitiveness. Also, both countries suffer from remaining trade barriers, skill shortages, and rising wages, as well as a fragmented structure of component suppliers, a majority of which are still labour-intensive and low quality with weak technological and managerial capacities.

The Chinese government called for a massive consolidation and restructuring, in its 2001–5 auto industry plan, which intended to cut 118 automakers to only three, and reduce the number of component suppliers from hundreds to five to ten large firms (International Metalworkers’ Federation, 2004). However, it is still uncertain whether the Indian component industry will achieve critical mass. Also, India’s higher cost of production due to its poor infrastructure and high electricity costs, and its sizeable but much poorer domestic market, are other chief obstacles for further growth and upgrading.

What are the social impacts of the rising automotive industry in India and China, in light of the recent global integration driven by foreign firms? Employment in the Indian automotive industry rose from 257,000 in 1998 to 337,000 in 2004, increasing the share of the automotive sector in total manufacturing employment from 3.2 to 4.2 per cent (UNIDO country statistics for India). Despite overall wage gains under global insertion, wage levels are still low in India, and remaining wage gaps between motor vehicle assembly and parts jobs are considerable. China is also reported to have very low wages. According to data for 2002, the hourly wage in China was as low as $0.50 whereas wages were $31.67 in the United States and $5.04 in
Mexico (Holweg et al., 2009). However, due to increased output and the concentration of production facilities in certain urban areas, there has been a shortage of qualified employees, and as a consequence of this, a trend of booming wages for skilled workers. As Holweg et al. (2009) mentioned, Volkswagen has complained that in Shanghai, due to the shortage of qualified managers, wage levels are catching up to European levels.

Another dimension of job quality is employment arrangements. According to the International Metalworkers’ Federation (2007), there is a widespread and growing use of contract workers in the automotive industry. Some assembly and parts-making operations in China are staffed almost entirely by workers on fixed-term contracts. In many cases, almost half of the workforce is in precarious jobs, receiving much lower compensation and social benefits than regular employees, unequal or inadequate access to facilities, and worse conditions of work. Similarly, in the case of India, a permanent worker at the Hero Honda Gurgaon operation can draw a monthly wage of up to Rs 40,000, compared to only about Rs 6,700 for contract workers, with some earning only Rs 2,200 (International Metalworkers’ Federation, 2006). However, a study by Okada (2004) shows a contrary picture about flexible employment in India, suggesting that in response to increased competition in the liberalization period of the 1990s, the demand for casual workers of component suppliers to Maruti Suzuki and Tata Motors (Telco) fell and employers increasingly chose regular long-term employment, mainly to improve product and process quality standards. There was also a clear upward shift in the educational level of the workforce (even in small suppliers) and more focus on formal in-firm training programmes.

While we can expect that the major automotive companies and first-tier suppliers would probably score well on decent work dimensions, there is less certainty with respect to labour practices in second- and third-tier suppliers both in India and China.

**IT Sector**

Offshore outsourcing in India’s IT sector is considered by many as a globalization success story. IT services have been advantageous for the Indian economy, being less capital-intensive and requiring far fewer economies of scale coupled with India’s good pool of low-wage scientists and engineers and high proficiency in English. The IT sector’s contribution to India’s GDP has steadily increased from 1.2 per cent in 1998 to 5.2 per cent in 2007. It generated around $40 billion export earnings in 2008 with a growth of 36 per cent, thereby boosting the foreign exchange reserve of the country (NASSCOM, 2008).

The difficulties of climbing the IT value chain, especially with regard to technology, are well known. Traditionally, almost all of the research and development was done in the US, and India remained largely separated from the cutting-edge activities. However, by the early 2000s, India had begun to offer higher-level services, such as systems architecture, design, and technology strategy services (Chadwick, 2003). While around 90 per cent of exports were onsite projects in the late 1980s, in 2005 this share decreased to 30 per cent as offshore development accelerated (Altenburg et al., 2008). India has gained considerable autonomy from customers in managing projects independently (ibid.). Furthermore, India has emerged as a global leader in workforce development for the knowledge workers, and its R&D labs are associated with the largest multinational and domestic IT firms (Wadhwa et al., 2008).

The IT cluster in Bengaluru (earlier Bangalore), the so-called ‘Silicon Valley of India’ that accounts for 40 per cent of India’s software exports with 140 transnational development centres and 750 large and small domestic IT firms, mirrors the rapid trend of India’s upgrading. Firms in this city reportedly moved from labour-intensive activities—including coding, testing, and maintenance—to skill-intensive and high value-adding activities, like design and requirement analyses, as well as from on-site to offshore services. The Bengaluru software cluster has benefited from public sector investments in technology-intensive industries; a significant number of engineering colleges and science and technology institutions; software technology parks established in the early 1990s with high-speed communication links; and incentives such as tax concessions, flexible labour regulations, and private sector training for global IT subsidiaries (Vijayabaskar, 2005; Wadhwa et al., 2008).

While India is the centrepiece of global IT services, China is known as the global factory for IT hardware. Particularly in its Pearl River Delta region, China is now the largest exporter of IT goods, surpassing the US and up from a world ranking of tenth in the year 2000. Indeed, the huge FDI inflow for high technology exports is the key to China’s integration in GPNs. In 2005, 88 per cent of high-technology exports from China were made by foreign-invested enterprises, which produced 58 per cent of the country’s total exports (Ernst, 2007). The largest IT product exporters are still foreign-owned in China, but similar to India’s indigenous software corporations, China has witnessed the emergence of its own IT global manufacturers, like Huawei Technologies, the major domestic telecommunication networks
provider in China, and Lenovo, which became a global IT firm with its acquisition of IBM's personal computer division in 2005, including IBM’s international research facilities.

The remarkable upgrading of China, with its exposure to foreign firms’ cutting-edge technology and management approaches, is supported by many exemplary companies as well as a wide range of highly sophisticated products. China’s export bundle now resembles a country with a per capita income that is three times higher than that of China. According to Rodrik (2006:18), ‘China has steadily moved away from being simply an assembler of components. Increasingly, production is integrated backwards and the supply chain is moving toward where the assembly is undertaken’. However, contrary to those findings, Koopman et al. (2008) argue that sophisticated or high-skilled sectors in China, such as computers, electronic devices, and telecommunication equipment, tend to have low shares of local content, particularly in foreign invested firms’ exports.

The booming growth of India’s and China’s IT and allied sectors, despite being relative newcomers, has created significant employment opportunities. In India, IT employment reportedly crossed the 2 million person mark in 2007, with an increase of about 389,000 jobs in one year (NASSCOM, 2008). Of course, 2 million jobs could appear insignificant in terms of India’s total population of 1.1 billion. In the case of China, electrical-electronic manufacturing employment (used as a proxy for IT employment) for 2002 was around 3 million people. It then rose to over 6 million employees in 2004, accounting for 35 per cent of the total world employment in this sector (ILO, 2007). As illustrated by China’s employment, the IT hardware industry generates more jobs than software. Thus, recent initiatives in India, such as the project in Hyderabad to develop a semiconductor manufacturing industry, can help India to create more jobs and also extend the country’s presence throughout the IT value chain.

Despite their large labour pools, most of the engineering graduates from India and China are not considered suitable for working in foreign firms inside the country or abroad. A 2005 McKinsey Global Institute’s survey of corporate human resource managers revealed that only about 25 per cent of the Indian engineering graduates and 10 per cent of Chinese engineers would qualify for such jobs (Farrell et al., 2005). Furthermore, adding to the bottleneck of skilled personnel, both India and China suffer an outward migration of graduates to the US and elsewhere (Tsang, 2003).

In both India and China, IT employees consist of a small and relatively well-educated portion of the labour force with technical, managerial, or communication skills and often fluency in English. IT employees are usually natives of the urban areas where the most popular IT companies are located. In India, for instance, these locations are Bengaluru, Delhi, Mumbai, Kolkata, Chennai, and Hyderabad.

Moreover, employment in IT is not gender neutral. Women tend to cluster at the lower end of the job hierarchy, leading to the feminization of certain service activities. Particularly in call centres where communication skills are critical, there are many job opportunities for females. In higher-skilled IT jobs, the challenge is that females are disadvantaged with their lower enrolment rates, especially in technical education. Even when they qualify for higher-skilled jobs with equal responsibilities as men, their returns are inequitable. Studies on India also highlight other aspects of IT jobs, such as the lack of trade unions and collective mobilization, mainly due to gaps in legislation and the individualized nature of work, and the burdens of continuous overtime and night work to meet tight project deadlines (see Rothboeck et al., 2001; Varma and Sasikumar, 2004).

CONCLUSION

While China and India have pursued distinct economic trajectories, in both countries international trade and foreign investment have played a major role in upgrading selected industries, such as apparel, automotive, and IT. Considering China’s more rapid industrialization, India certainly can learn from China’s experience. Reducing the constraints in exports by promoting large-scale production and improving competitiveness in the non-labour areas, such as infrastructure and energy, are examples of areas where India can learn from China’s policy initiatives.

Looking at the tremendous job creation in China over the past decade in all three sectors, India cannot underestimate the importance of labour-intensive manufacturing to create sustained employment and incomes for its large poor population, which still depends on agriculture. Perhaps it can be valuable to examine the potential links between the currently booming services sector and labour-intensive manufacturing in India. Yet, China also has much to learn from the Indian experience, particularly if it wants to improve its position in the global IT services sector. However, the ripple effect of current events in the US financial market on Indian IT companies, which are dependent on serving the US market, also shows the limits of IT service-oriented upgrading. In addition, the growth of India’s indigenous private sector can provide important lessons for China, which lacks such dynamism.

The analysis in this chapter reveals that India’s and China’s integration into GPNs has not been merely a race to the bottom, but it has offered considerable opportunity for creating high-quality jobs. However, delivering decent work is not an automatic outcome of global integration; indeed, a
number of structural factors exist to achieve economic and social upgrading. This chapter provides a summary of each country’s upgrading process based on its structural and factor conditions; the job, industry, and value chain characteristics; and the policies of government and international and private parties. In apparel and automotive industries, China has advantages over India mainly due to its factor endowments and proactive government policies, whereas in the IT sector, particularly with respect to IT services, India has a stronger profile with its workforce development, export orientation, and the government’s appropriate policies. However, currently the two countries face a host of new economic and social challenges, including eroding labour-cost advantages, shortage of high skills, poverty, unemployment, and the need to move high-value activities.

Production in China and India for GVCs has been linked to the emergence of a more flexible labour force, which generally includes a high share of female and migrant workers. Drawing on the lessons from the Chinese model of exports and employment promotion, India might be able to reduce economic and social problems, including a huge reliance on foreign investment and assembly work, large regional income disparities, and massive rural to urban migration associated with poor working conditions. China’s recent policy initiatives to address these issues should be borne in mind too. Nonetheless, for other developing countries, India and China are clearly atypical cases because their huge domestic markets and labour forces allow them to challenge and redefine some rules of the game in GVCs in an effort to promote indigenous innovation and sustainable local development. Adapting global lessons to local conditions is an ongoing challenge for all nations in the global economy.

NOTES

1. This section draws upon ideas discussed more fully in Barrientos et al. (2008).
2. Sanjaya Lall (2000) developed this technological classification of exports based on 3-digit Standard International Trade Classification (SITC) categories. His article provides the detailed list of products under each category.
3. The true employment including unregistered workers is much higher.
4. The hourly labour cost comparison from KPMG (2007) is: United States, $22.70; China, $1.50; and India, $1.60.
5. Nevertheless, this centre is wholly owned by GM which might reflect its control over the knowledge parameters for product innovation.
6. The auto sector is now entirely in the private sector following the decision by India’s cabinet at the end of 2006 to sell the government’s remaining 10.3 per cent stake in Maruti Udyog.

7. Computer-science and IT graduates at the bachelor’s level were nearly 220,000 in 2005–6 for India and 575,000 for China, compared to 129,000 in 2005–6 for the US (Gerffi et al., 2008: 16–17).

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