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India in the Global Supply Chain: Can Domestic Demand and Technology Skills Help It Catch Up?

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In the global economy of the early twenty-first century, the division of labor between Asia's giants is clear. China, the world's factory floor, *makes* things--everything from shoes to computers. India, the world's back office, *does* things--from fixing software glitches to chasing down credit card debt.

India's services sector may be red hot, but the same can't be said for its manufacturing. Hampered by poor infrastructure, bureaucratic red tape and restrictive labor laws, it has failed to make its presence felt globally. Between 1990 and 2005, industry's contribution to the economy remained more or less stagnant, crawling from 25% to 27%. Over the same period, the share of services ballooned from 37% to 52%. According to experts from the Boston Consulting Group, in 2005 India's manufacturing exports were 6% of GDP (\$37 billion) compared to 35% for China (\$712 billion). About 60% of Chinese manufacturing exports are by firms headquartered outside China.

"To date, India has not begun to play a big role in the manufacturing footprint of multinationals," says Sachin Nandgaonkar, a director in BCG's New Delhi office. "Though, if you compare it to five years ago, things are improving."

Beneath the surface, however, things have begun to change rapidly, according to experts at BCG and Wharton. Driven by the emergence of a vast domestic market and relatively low-cost workers with advanced technical skills, more and more multinationals are setting up manufacturing operations in India. Ford, Hyundai and Suzuki all export cars from India in significant numbers. LG, Motorola and Nokia all either make handsets in India or have plans to start, with a sizeable share of production being exported. ABB, Schneider, Honeywell and Siemens have set up plants to manufacture electrical and electronic products for domestic and export markets.

In addition, a clutch of globally competitive Indian manufacturing companies -- many of them in the automobile industry -- have inserted themselves into the global supply chain. Sundram Fasteners makes generator caps for General Motors. New Delhi-based Moser Baer has established itself as a global manufacturer of data storage media such as DVDs and CDs. An aggressive group of pharmaceutical companies -- India has about 60 plants that meet the stringent quality standards of the U.S. Food and Drug Administration, the largest number outside the U.S. itself -- are opening new markets around the world.

"Over the past five or six years, many firms have restructured their manufacturing operations and implemented world-class practices," says Arindam Bhattacharya, director and head of the industrial goods practice in India in BCG's New Delhi office. "Slowly but surely they have started building a globally competitive manufacturing base in industries like pharmaceuticals, auto components, cars and motorcycles."

Domestic Demand

India's potential manufacturing renaissance is still in its early stages, but it's already clear that it will look very different from China and East Asia. Dalip Pathak, a managing director at private equity firm Warburg Pincus, which has investments in both China and India, says China's world-class infrastructure and a government that is focused on employment generation by smoothing the way for manufacturers makes it an excellent choice for long-term investment in manufacturing.

In India, the sailing isn't quite as smooth. India's literacy rates continue to lag East Asia's and average unskilled labor productivity in India is lower than in China or Vietnam. However, there are many instances where average productivity is much higher due to superior management practices, says Bhattacharya. Restrictive labor laws -- companies that employ more than 100 workers need government permission to fire them -- make India a poor choice for large labor-intensive industries such as shoes and toys. Some parts of the economy, such as handlooms, remain reserved for inefficient small-scale industry. Expensive and unreliable electricity, poor roads, clogged ports and red tape add to the disincentives. According to the International Finance Corporation's September 2006 rankings, it takes 35 days to start a business in India, compared to 5 days in the U.S. and 18 days in the U.K. India, however, is in the same league here as China (35 days) and Thailand (33 days), but way ahead of Brazil, where it takes 152 days to start a business.

As a result, says [Saikat Chaudhuri \(http://www.wharton.upenn.edu/faculty/chaudhuri.html\)](http://www.wharton.upenn.edu/faculty/chaudhuri.html), a professor of management at Wharton, global manufacturing in India is being driven largely by domestic demand. He points to mobile phone manufacturers such as LG, Nokia and Motorola and car companies such as Ford, Hyundai and Toyota.

Some of that is changing, though. As an example, Bhattacharya offers Hyundai, which has designated its Indian plant as its only plant worldwide to make small cars, and it is shifting production from Korea to this facility. The gradual scrapping of import licensing, lowering of tariffs and a liberalized exchange rate regime have all contributed to a sustained domestic, consumption-led boom. According to BCG estimates, annual domestic car sales have shot up from 265,000 in 1995 to 820,000 in 2005; in the first eight months of the current fiscal year, domestic car sales were nearly 870,000. Indians buy more than three million new cell phones each month.

"Where domestic demand has grown, it makes sense to build a supply chain," notes Chaudhuri. "That will be the model until India can improve its infrastructure and attract more FDI." The acute price sensitivity of the Indian market also adds to the incentives to manufacture locally. Bhattacharya says the government's focus on increasing manufacturing growth through special economic zones, private participation in ports and massive investments in roads, among other things, is already paying dividends.

David Snyder, executive director for business development for Ford Asia Pacific, estimates that India's auto market, including utility vehicles, will double over the next ten years, from about 1.4 million vehicles to 2.8 million. This is a quarter of the growth -- in units -- Ford expects in China, but more than the growth of 1.3 million new vehicles it expects to see in the Asean (Association of Southeast Asian Countries) over the same period. With sales in North America, Europe and Japan expected to remain flat, Asia-Pacific as a whole -- with a focus on China, India and the Asean -- are Ford's priority growth markets.

Auto Parts: India's Showcase

As the success of firms such as auto-parts maker Bharat Forge shows, India's competitiveness lies in relatively high-end manufacturing. Indian universities turn out an estimated 400,000 engineers a year, second only to China.

In auto parts, India's showcase in manufacturing, more and more firms have upgraded their technology and processes and emerged as reliable suppliers of parts to multinationals. Over a dozen, among them Sona Koyo Steering Systems, Sundaram Clayton, and TVS Motor, part of the Chennai-based TVS group, have won the Deming prize, a prestigious Japanese award for quality. While most auto parts exported from India are simple, Toyota has begun shipping transmissions from its plant near Bangalore. Nandgaonkar points out that the decision was prompted as much by quality as by cost. "If I can have Japanese quality at a much lower cost, then why not?" he says.

In addition, India's pool of scientific talent allows its companies to de-automate, and locally design and procure, some of the more expensive aspects of auto parts manufacturing. BCG estimates that such process engineering can cut capital costs of component plants by 40-60%.


"There's limited competitive advantage in structural terms if you look at the economy compared to China," says Bhattacharya of BCG. "But a combination of strong leadership and an ability to harness brainpower in an innovative way makes these firms competitive."


Global trends may also favor India as more companies in the U.S., Japan and Europe outsource manufacturing to keep down costs. Besides auto parts, telecom equipment and pharmaceuticals, India has the potential to be competitive in such skill-intensive industries as fabricated metal products, high-end chemicals, consumer electronics and computer hardware.

Nandgaonkar of BCG says recent improvements in infrastructure and a move toward greater efficiency in Indian export parks make him optimistic. He also sees the emergence of a new generation of young entrepreneurs with global ambitions and the savvy to realize them. Pathak of Warburg Pincus adds that the lowering of interest rates in India in recent years and the advantage of well-regulated and efficient capital markets, rated among the best in Asia, also add to India's lure. "In ten years, India will have a meaningful footprint in global manufacturing," says Pathak.

"I see the story of manufacturing unfolding in India through a combination of growing domestic demand and skill-driven export competitiveness," says Nandgaonkar. "If you look at the proposed and new investments in the manufacturing sector, you'll see the numbers grow rapidly over the next five to ten years."

Chaudhuri, too, is optimistic. "Every major company has India on its radar screen," he says. "It's just a matter of timing."

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