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A Younger India Is Flexing Its Industrial Brawn

By [KEITH BRADSHER](#)

PUNE, [India](#) — India's economic advancement no longer rests on telephone call centers and computer programmers.

Among villages with thatch-roofed huts and dirt roads on the outskirts of this city in central India, John Deere and LG Electronics have recently built factories turning out tractors and color television sets for sale in India and for export to the United States.

In Hazira, in northwestern India, where some residents still rely on camels to carry traders' goods, the Essar Group is making steel to be used for ventilation shafts in Philadelphia, high-rise structural beams in Chicago and car engine mountings in Detroit.

For decades, India followed a route to economic development strikingly different from that of countries like Japan, South Korea or China. While its Asian rivals placed their bets on manufacturing and exports, India focused on its domestic economy and grew more slowly with an emphasis on services.

But all that is starting to change.

India's annual growth in manufacturing output, at 9 percent and accelerating, is close to catching growth in services, at 10 percent. Exports of manufactured goods to the United States are now rising faster in percentage terms than China's, although from a much smaller base. More than two-thirds of foreign investment in the last year has gone into manufacturing in India, not services.

"Saying we are a back office and China is a factory is a backhanded compliment," said Kamal Nath, India's minister of commerce and industry. "It's not really correct."

Indeed, in interviews at 18 Indian factories and other businesses in 10 cities and villages scattered across the length and breadth of the nation, the picture that emerges is of a country being driven by advances in manufacturing to a much brisker pace of economic growth.

A prime reason India is now developing into the world's next big industrial power is that a number of global manufacturers are already looking ahead to a serious demographic squeeze facing China. Because of China's "one child" policy, family sizes have been shrinking there since the 1980's, so fewer young people will be available soon for factory labor.

India is not expected to pass China in total population until 2030. But India will have more young workers aged 20 to 24 by 2013; the [International Labor Organization](#) predicts that by 2020, India will have 116 million workers in this age bracket to China's 94 million.

India's young population will also make it a huge and growing market for years to come, while the engineering skills and English skills of its educated elite will make it competitive across a wide range of industries. So even though India remains a difficult place to do business, several multinationals have been placing big bets on India in hopes of taking advantage of this shifting global dynamic.

[General Motors](#) and [Motorola](#) are preparing to build plants in western and southern India. Posco of South Korea and [Mittal Steel](#) of the Netherlands have each announced plans to erect giant steel mills in eastern India, where Reliance of India will soon construct one of the world's largest coal-fired power plants.

They are finding India's labor force well suited to their goals. When LG set out in 2005 to fill 458 assembly line jobs at its factory here at a starting wage of \$90 a month, it required that each applicant have at least 15 years of education — usually high school plus technical college.

Seeking a young work force, the company decided that no more than 1 percent of the workers could have had any prior work experience. Despite the limitation, 55,000 young people met its criteria for interviews.

"In the villages there is little income," said Siddu Matheapattu, 24, in between applying sealant to refrigerator frames. "Here I can earn more."

By contrast, cities in the export-oriented Guangdong Province in southeastern China raised monthly minimum wages this summer by 18 percent, to \$70 to \$100 a month, after factories reported that they had one million more jobs than workers to fill them. Factories elsewhere in China face less severe labor shortages, but they also are being forced to raise wages.

As India has deregulated its economy, output has gradually accelerated to a growth rate of 8 percent a year, feeding a national euphoria and a few hopes of someday even beating China's annual growth of more than 10 percent.

Plenty of obstacles remain, however, notably India's weak infrastructure. China invests \$7 on roads, ports, electricity and other backbones of a modern economy for every dollar spent by India — and it shows. Ports here are struggling to handle rising exports, blackouts are frequent and dirt roads are common even in Bangalore, the center of the country's sophisticated computer programming industry.

Pervasive corruption has slowed many efforts to fix these problems. India's labor laws, little changed since they were enacted just after independence in 1947, also continue to discourage companies from hiring workers, by making it very difficult to lay off employees even if a company's fortunes sour or the economy slows.

Still, a new optimism prevails in India, bordering at times on euphoria.

"The Chinese are very good at copying things, but Indians believe in quality work, we believe in meeting pollution norms," said S. S. Pathania, the assistant general manager of the [Hero Honda](#) motorcycle factory in Gurgaon, 30 miles south of New Delhi. "I think India will pass China very soon."

An Unexpected Boom In Manufacturing

Sprawling across more than a square mile next to a gray tidal estuary, the scale of the Essar Group's complex in Hazira is already impressive. Essar has its own port to bring in iron ore and its own large gas-fired power plant for electricity. At the steel mill, giant buckets pour 150 tons of molten metal at a time to form slabs 2 yards wide and up to 10 yards long.

But the complex is just starting to grow. Essar is quintupling steel production and pushing forward a sevenfold increase in power generation, most of it for sale to a national grid desperately short of electricity.

Growth on that scale, especially in industries like steel and power but also in areas like car parts and household appliances, is what India has long lacked. Industrial production accounts for only a fifth of India's economic output, compared with two-fifths of China's. But this ratio is starting to rise in India as manufacturing, led by exports, grows faster than agriculture and even some service industries.

Until recently, legislation effectively barred companies with more than 100 employees from competing in many industries. The laws were intended to protect tiny businesses in villages, often employing women and minorities; high tariffs were placed on imports as well.

But a result was hundreds of thousands of businesses too small to be competitive; India lags behind even the impoverished Bangladesh next door in exports of garments, a big creator of jobs for China. The Indian government has responded by narrowing the list of protected industries to 326 categories of goods from 20,000 and has lowered tariffs.

Comparing factories in India to their competitors in China, many of the Indian factories are smaller but some appear more efficient.

India's stronger financial system demands higher interest rates than China's state-owned banks, making it costlier to hold the small mountains of components awaiting assembly that are often seen in Chinese factories. The Confederation of Indian Industry, a national trade group, has also been highly successful in pushing companies to adopt the latest Japanese lean manufacturing techniques.

The drawback is that the nation's manufacturing boom, built on higher-quality goods made under more modern conditions than in China, is not likely to create as many factory jobs as India needs.

The Essar steel mill, for example, has been replacing old, labor-intensive equipment with more modern gear. "We were having it all done manually, but because the customers demand very high quality, we have to do it automatically," yelled Rajesh Pandita, an Essar manager, over the roar of a house-size machine that was stretching a minivan-size coil of steel back and forth through large rollers until it was little thicker than plastic kitchen wrap.

The Whirlpool factory in Pune uses machines, not people, to fold the steel exteriors of refrigerators. It has some of the highest productivity per worker of any Whirlpool factory in the world, with just 208 line workers producing up to 33,000 refrigerators a month.

Labor laws, however, discourage flexibility. They still ban companies from allowing manufacturing workers to put in more than 54 hours of overtime in a three-month period even if the workers want to earn extra money. Firing workers is extremely difficult.

"Companies think twice, 10 times before they hire new people," said Sunil Kant Munjal, the chairman of the Hero Group, one of the world's largest manufacturers of inexpensive motorcycles.

Hero in Gurgaon, on the southern outskirts of New Delhi, and its archrival, the Lifan Group in Chongqing, a city in western China, produce comparable motorcycles but the similarity ends there. Hero markets heavily to its domestic market, protected from foreign competition by high

import tariffs, while Lifan emphasizes exports.

With scant ventilation, Lifan's factories are filled with diesel exhaust as workers test engines and ride finished bikes at breakneck speed out the doors, zigzagging past co-workers. Hero's factory in Gurgaon, where Honda holds a minority stake, has far better safety standards and excellent ventilation.

The Lifan factory pays less than \$100 a month. The heavily unionized Hero factory pays \$150 a month plus bonuses of up to \$370 a month; nearly half the workers earn the top bonus, Mr. Pathania said.

Lifan's labor force is quiescent — would-be organizers of independent labor unions face long jail terms or worse in China. Hero's workers staged a successful nonviolent protest in 2005 to call for more contract workers to be eligible for the bonuses as well.

Bad Roads and Blackouts Take a Toll on Efficiency

But the biggest question mark hanging over the rise of manufacturing in India lies in whether the country has enough roads, ports and electricity-generating plants to move huge quantities of goods and power the factories that make them.

Captain Abhay Srivastava, an operations manager at India's busiest port, was on duty on a recent afternoon when a phone call suddenly came in from the docks below. An enormous container ship from Qatar needed to slide 35 feet backward along the privately managed dock at the Nhava Sheva port near Mumbai to allow another large vessel to squeeze into the dock in front of it.

Captain Srivastava grabbed his white hard hat and dashed for the elevator. As soon as he reached the water's edge, a dozen laborers in orange jumpsuits began straining to arrange a cat's cradle of heavy, five-inch-thick ropes that would allow the ship to use its powerful winches to pull itself out of the way.

"They are efficient people; they don't speak a lot," said Captain Srivastava, who has visited most of the world's major ports either as a ship captain or for port training exercises. "You go to some places and they just stand around."

The efficiency of the Nhava Sheva port — it approaches West Coast ports in the United States in the number of containers moved per hour — shows that India is capable of producing world-class facilities.

But big as it is, Nhava Sheva is too small to handle the crush of traffic. John Deere tractors wait in a container at the dock for one to four days before being loaded on a ship.

“If this pace of growth continues, we will see more congestion at the port,” said Raj Kalathur, the managing director and chief executive of Deere’s operations in India.

Similar worries prevail in Chennai, formerly Madras. “Another four or five years, we’ll be choked,” said M. Rafeeqe Ahmed, the chairman of the Farida Group, a 9,000-employee shoe manufacturer in Chennai that needs the port for exports.

Infrastructure improvements are particularly important because manufacturing companies are buying more and more components from far-flung suppliers. Making sure all those parts arrive on time requires a reliable transportation system.

“Manufacturing is no longer done all under one roof,” said Victor Fung, the chairman of the Li & Fung Group, a large Hong Kong-based company that buys goods from factories across Asia for sale to retailers and wholesalers in the United States and Europe.

Indian officials are talking about expansion. Planning is under way for new wharves at Nhava Sheva, but the years-long task of construction has not yet started.

China has faced capacity problems, too. A surge in steel production in early 2004 overwhelmed bulk cargo ports. Inflation quintupled in a year, to 5.3 percent, as bottlenecks at ports, highways, railroads and elsewhere in China drove up companies’ costs.

The Chinese response was swift and decisive. The pace of port investment nearly tripled in six months. Work crews labored around the clock to erect more cranes and expand wharves.

The Chinese economy grew at a breathtaking pace of 11.3 percent in the second quarter of 2006, but consumer prices were just 1 percent higher in July than a year earlier.

By contrast, India is struggling with 8 percent inflation this summer as bottlenecks have appeared after three years of 8 percent growth.

Belatedly, India’s roads and ports are improving. Just four years ago, Sona Koyo Steering Systems, an auto parts manufacturer, incurred hefty financing costs to keep a month’s inventory on hand in case deliveries were delayed. Now its factory in Gurgaon makes six deliveries a day to a nearby Maruti car assembly plant; the eight-mile drive takes an hour or more because of traffic jams, but the deliveries get through.

“I’m not going to deny infrastructure is bad,” said Surinder Kapur, Sona’s chairman and managing director. “But a lot of our vendors are around us, a lot of our customers are close to us.”

India is also starting to address chronic power shortages. But it is still a serious problem in northern India, where Mr. Kapur has his steering systems factory. He receives electricity from the national grid just seven or eight hours a day. So the factory has three enormous diesel generators, one bigger than a typical Manhattan living room, operating at four times what an industrial user in the United States usually pays.

Despite such obstacles, India’s manufacturing sector appears poised for further growth. In a country where the national symbol has shifted from government bureaucrats at aging desks to call center operators in cubicles, it looks as if the next icon will be the laptop-toting engineer on a factory floor.

“The old philosophy was, ‘I should work in an office, come in at 10 and leave at 4,’ ” said Nitin Kulkarni, 35, an engineer at the Hazira steel mill. But in recent years, he added, “there has been a revolution.”

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