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Seizing India's capital-goods opportunity

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India's domestic capital-goods sector is underdeveloped, weighed down by low investment in technology and talent. That may be changing.

As India has emerged as the world's fastest-growing large economy, it's no surprise that demand for capital goods has more than doubled in the past decade. Yet one-third of this demand has been met by imports: India imported machinery worth more than \$30 billion in 2015, making it the fourth-largest import category after crude oil, electronics, and gold. For a \$2 trillion economy, the country's capital-goods sector remains relatively underdeveloped, offering a significant business opportunity for both Indian and foreign original-equipment manufacturers (OEMs).

India's domestic capital-goods industry is weighed down by low investment in technology and talent. Most companies focus on low-value-add fabrication and assembly work, unable to move up the chain with their designs or technology. Value addition represents only about 22 percent of total output, or \$13 billion, and the capital-goods sector as a whole accounts for just 0.6 percent of India's GDP, compared with 4.1 percent for China, 3.4 percent for Germany, and 2.8 percent for South Korea (exhibit). The output of domestic capital-goods players grew by an average of 2 percent annually from 2010 to 2015, trailing the overall average of 7 percent annual economic growth.

Yet change may be on the horizon. Accelerated economic reforms have created new opportunities in the capital-goods sector, with new policies lowering barriers for domestic and foreign investment as well as for partnerships. India's ranking on the World Economic Forum's Global Competitiveness Report climbed to 55 in 2015–16, from 71 a year earlier. Encouraging manufacturing of capital goods is a critical component of the "Make in India" program.

Seven areas of opportunity

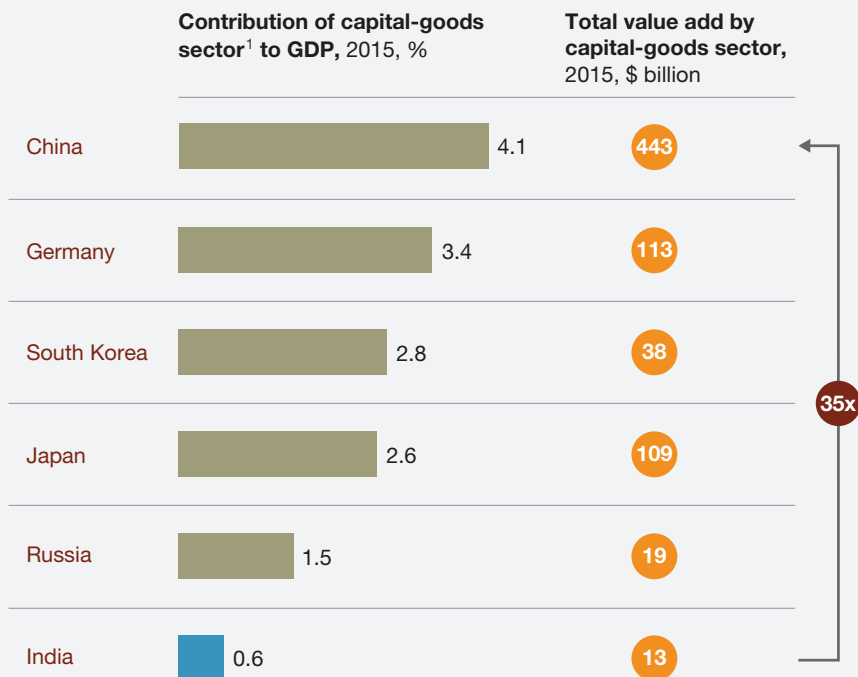
India has much more to offer global investors than just low-cost labor: OEMs can tap into the large and growing local market, build on the educated workforce, and use this base to serve global markets. We estimate that India offers 8 to 10 percent growth in the capital-goods sector, compared with 2 to 4 percent in developed markets, and have identified seven segments that could result in a \$30 billion annual revenue opportunity. If the capital-goods sector develops as we envision, it could deliver annual earnings of about \$3 billion to \$4 billion and create up to five million jobs.

1. Environmental solutions

Deteriorating air quality has forced India's policy makers to tighten emission laws. These new requirements could result in a wave of capital expenditure on effluent control and cleantech.

Exhibit

Value addition for India's capital-goods sector lags far behind other industrialized economies.



¹Subsectors included for analysis: engines and turbines, lifting and handling equipment, agricultural machinery, machine tools, metallurgy machinery and casting, machinery for mining and construction, electrical motors and generators, electricity distribution and control equipment, railway and equipment, and aircraft and spacecraft.

McKinsey & Company | Source: IHS World Industry Service

We estimate thermal power plants will need to spend roughly \$15 billion on emission-control equipment such as flue-gas desulphurization and catalytic reduction over the next five to seven years. Management of industrial water will require output water treatment and recycling and reuse systems (the government has already committed \$3 billion for the Clean Ganga project to clean India's longest river). Oil refineries upgrading equipment to meet new emission standards will require investments of up to \$5 billion during the next five years. Technical collaboration between foreign OEMs, which bring in the technology, and Indian manufacturers, which can customize it for users, could work well.

2. Building logistics infrastructure

Higher public spending on infrastructure and transportation, particularly on rail, roads, and ports, is a government priority. Spending on railways is expected to double to more than \$15 billion a year¹—rolling-stock investments will account for about \$4 billion of that total, while tracks, electrification, and station upgrades will also be major areas of investment.

¹ Estimate for the period from 2009 to 2014.

Large capital-goods makers could set up coach and locomotive manufacturing facilities in collaboration with the railways, while smaller companies could supply components and subassemblies like bogie castings, underframes, and superstructures. City metro systems are being built across India, with more than ten projects under way or planned. We expect global metro-car manufacturers to start using India as a manufacturing hub and estimate the market at \$2 billion a year by 2020. The country is set to double its port capacity over the next decade, with an estimated \$15 billion investment in as many as six new megaports and upgrades of existing facilities. And highway construction has already more than doubled to over 20 kilometers per day in the past two years, providing opportunities for material handling equipment, construction-equipment manufacturers, and engineering, procurement, and construction providers.

3. Aerospace and defense

India is estimated to require a total defense investment of \$150 billion, with two-thirds made in the next eight years. In addition, the country's 2016 defense-procurement policy requires certain percentages of indigenous manufacturing, offering opportunities for smaller domestic vendors to ally with major global players and for tier-two and tier-three vendors as public-sector defense-manufacturing enterprises outsource production to meet demand. Defense production is a vast arena, and identifying high-potential niches like airframe machining and composites manufacturing could well be a prerequisite for success. Entrants should be prepared for long gestation periods and rigorous prequalification requirements. Partnerships between global OEMs and Indian companies can be a faster go-to-market route.

4. Urbanization

Metropolitan cities with more than a million people are India's engines of growth. The McKinsey Global Institute estimates that India will have 69 such cities by 2025, and they require modern waste-management solutions such as waste-to-energy, water solutions like advanced water treatment and desalination, modern information- and communications-technology systems, and upgrades to existing urban transport. This market will only grow as cities expand, and investment is already supported by a fund of nearly \$15 billion under the Smart Cities mission and Atal Mission for Rejuvenation and Urban Transformation scheme.

5. Power generation and distribution

Investment is flowing into renewable power generation, transmission, and distribution infrastructure as new thermal power capacity takes a back seat. We expect 80 to 100 gigawatts of renewable energy to be added by 2025, much of it from increased solar capacity. This growth provides opportunities for engineering, procurement, and construction companies as well as package and component suppliers. The market is ripe for efficiency-improvement systems such as tracking solutions for solar power, but their adoption will ultimately depend on the cost-benefit payoffs. Coal production and thermal power generation in India have ramped up, but transmission and distribution infrastructure is the new bottleneck. We expect investment in grid upgrades, renewable-

energy integration, rural electrification, and smart metering. There will likely be a trend toward more automation and advanced-analytics-based solutions for controlling high transmission and distribution losses. These and related opportunities would need annual investment of about \$10 billion by 2020.

6. Basic materials

In line with targets to reduce the country's dependence on imported coal, Coal India Limited increased its output from 452 million metric tons in 2012–13 to 539 million metric tons in 2015–16. There is also a strong emphasis on beneficiation of coal. This will generate opportunities for technology upgrades such as high-capacity mining equipment, continuous miners, and automated material handling.

The cement business, which is currently oversupplied, is expected to get a boost from the infrastructure buildout. About 80 to 100 metric tons per annum is expected to be added over the next five years. These investments could generate an estimated opportunity of \$5 billion for cement-machinery players.

7. Food and agricultural infrastructure

Food consumption in India is estimated to grow at 5 percent annually—and crop yields will need to increase to meet this demand. Fertilizer demand is projected to grow from 26 million metric tons of nutrients to 27 to 29 million metric tons by 2020. Farm mechanization in India is low, at 0.8 horsepower per hectare, compared with 1.6 in Vietnam and Thailand, and 4.1 in China. The need for increasing agricultural productivity is expected to drive more mechanization. The government has allocated \$350 million in the current five-year plan (2012 to 2017) to promote the use of machinery by farmers. On the consumer side, the trend toward processed and ready-to-eat food will generate opportunities for food-processing equipment manufacturers.

Inhibitors to growth

These seven areas are by no means a comprehensive assessment of the opportunities in India's capital-goods sector, but we believe they are among the most significant. To exploit them fully, companies need to address roadblocks that have impeded growth in the past, and many are intertwined:

Risk of falling behind on technology. R&D expenditure by Indian capital-goods players is about 0.5 percent of annual revenue, on average, compared with about 5 to 6 percent in Germany. Technologies are either imported or licensed from global OEMs, while Indian companies are fabricators or assemblers.

Inadequate investments to capture growth. Incumbents invest too little in growth—about \$2.5 billion a year, representing 19 percent of value added, around half the broader-economy average of 36 percent. The industrial-goods sector has attracted few new enterprises, for example, while high cyclicality in end-use industries (such as thermal power) often deters long-term investments.

Inability to attract talent. The best technical and managerial talent often favors the services sector and other manufacturing sectors such as automotive.

Weak component supplier base. There is a shortage of high-quality component suppliers. For example, high-end machine spindles still need to be imported to meet demand.

Limited industry–government engagement. The capital-goods sector has not sufficiently leveraged the potential of government-to-government engagements.



India's capital-goods sector has been hampered by several factors and trailed growth in the broader economy, yet multiple trends are creating opportunities. While the potential gains could be significant with regard to not only profit but also job creation, fully benefiting will require Indian companies, foreign OEMs, and policy makers to work together. □

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