



## Chinese Manufacturing in an Age of Resource Price Volatility

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In China, as in the rest of the world, the costs of labor, energy and other commodities rose relentlessly in recent years. Although the global economic slowdown has relieved some cost pressures in the near term, costs will likely resume their upward climb over the long run -- a trend with major implications for the country's manufacturing base. Will Chinese manufacturers lose out to even lower-cost markets, such as Vietnam? Or will rising prices for resources push manufacturers to find new and better sources of comparative advantage?

In this article, part of a special report on the challenges facing China's manufacturing sector, experts from Wharton and The Boston Consulting Group (BCG) discuss how the rising cost of resources over the long term will affect Chinese manufacturers, and how companies inside and outside of China can best profit from those changes.

China's rise to become a leader in global manufacturing began when the country started opening its markets to the West 30 years ago. The combination of a vast pool of relatively low-cost labor and government incentives set to encourage foreign investment proved irresistible to many Western companies. The advantages were so compelling that by early 2000 most MNCs either had set up their own operations in China or were using the country's contract manufacturers. Companies that didn't make the jump faced the daunting challenge of selling to buyers who had come to expect "the China price," which was typically far lower than what high-cost manufacturers in developed countries could charge -- one-third to one half lower than what goods made in the U.S. cost, for instance.

### Short-term Advantage, Long-term Threat

This cost advantage was so significant that it more than offset increases in the cost of energy or commodity prices. Until the downturn in the world economy and plummeting oil prices, some observers had even argued that then-rising energy costs could make China more competitive in the short run, since government energy subsidies would make the country's factories immune to the increase. Commodity prices didn't matter much to Chinese competitiveness initially. "If the cost of everything else is the same for everybody else in the world, then lower labor costs go a long way toward building an advantage for your manufacturing sector," explains [John Zhang](#), a professor of marketing at Wharton. But then a rise in transportation costs began to offset the domestic cost advantages -- especially for goods that were traveling to distant markets such as the U.S.

Fearful of choking off the 8% to 11% in economic growth that was bringing prosperity to millions of Chinese every year, the government began to cap energy prices. Policymakers hoped that by holding prices below world-market levels, they could keep the economy moving forward and manage the public mood -- always a key concern in a country of 1.3 billion. "It perpetuates inefficiency, but it also, at least in the short term, minimizes social unrest," says [Marshall Meyer](#), a professor of management at Wharton whose research focuses on China. That's important, notes Meyer, who believes that "mass disturbances are by far the greatest concern of the Chinese government." That makes maintaining stability a crucial issue, which government officials believe, almost certainly correctly, requires ongoing levels of strong economic growth to paper over cracks in the political and social infrastructure.

The world's largest country by population may have a middle class now of more than 100 million, but hundreds of millions still struggle. Even as the country has grown richer, industrialization is causing



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tremendous growing pains, and sometimes the cracks show. The number of major incidents of social unrest grew by 50% over the previous two years, to 87,000 incidents, according to a 2006 U.S. Congressional Research Service report. In recent years, some of these incidents have been more like battles than simple demonstrations -- such as a clash between 1,500 villagers and 500 police over a request to the government to fire the village chief for corruption.

Like a bicycle, the Chinese economy needs momentum and balance, says Benjamin Pinney, a principal in BCG's Shanghai office. "You really have to reach a certain speed and keep yourself steady."

Against this backdrop, while Chinese companies may have faced rising delivery costs for exports, government subsidies protected them somewhat from the hike in energy costs. Many countries protested that this encouraged energy consumption and added cost pressures to the rest of the world, but only when the Olympics neared did the government risk unpopularity at home and let prices shoot upward. In June 2008, the government allowed a general increase that raised prices for gas and diesel fuels some 18%, while allowing a rise in electricity rates of just 5%.

In hindsight, with energy prices down, at least for the moment, the government's bet seems to have paid off. The country did continue growing throughout the period of record-breaking prices, and social unrest stayed somewhat under wraps. But China experts say the struggle to keep energy prices low may have come at a high cost to Chinese manufacturing in the long run because the subsidies encourage more energy consumption today. "There is not a lot of incentive for companies to try to adopt new technologies and become more innovative," Pinney says.

In the short run, this has been a good thing for manufacturers. Controlled energy prices provide a free hedge against an important set of costs. Typically subsidies apply only to state-owned companies, depending also on how important the company is to a particular local government. But such support may also lead to some wrong investment turns in development, both for individual companies and for the economy as a whole. Government policies that indirectly encourage energy demand -- such as stoking the appetite for automobiles -- reduce the amount of investment available to other sectors, explains Zhang. "In the long run, the government could be trapping you."

It can also be difficult to wean an economy off such subsidies. If energy prices are eventually allowed to float freely, then companies that have no experience in hedging their own commodity purchases could face a painful shift if prices were to spike again. While the largest companies have the skill to develop hedging expertise, says Victor Du, a principal in BCG's Shanghai office, smaller players may find such changes difficult to execute. "Those tens of hundreds of small players just do not have such a capability," he explains. "This is a problem not only at this moment, but potentially for the future."

Higher energy prices slow down growth in the short run but may make economies more competitive in the long run. More importantly for China, they can be an important policy tool in pushing particular industries away from low-value exports that generate a lot of waste to higher value goods that produce less waste. Higher energy prices are like a negative subsidy -- a kind of tax that punishes companies that produce the wrong things in the wrong way. Faced with these negative incentives, companies such as China's highly polluting small cement producers would find reasons to either leave the business or merge to become cleaner, more efficient companies.

## **Go West, Young Company**

More generally, rising costs, particularly for labor and environmental protection, have led some coastal manufacturers to develop new plants in cheaper markets. Already, Meyer estimates, 10% of Taiwanese-owned companies operating on the coast have moved either inland or abroad.

Vietnam is also gaining as China loses its wage advantage, and is often positioned in the press as a "new" China. But with just 84 million people and a limited supply base, BCG experts believe Vietnam is best suited for smaller-scale operations in areas with a developed industry focus and infrastructure. "There is no way you can move all these products over," says David Lee, a partner and managing director at BCG's Beijing office. The garment industry in China employs 14 million people alone, he notes -- double Vietnam's total number of industrial workers.

Du contends that companies looking for a manufacturing base may have to pay the rising wages, simply

because there's no other market that can match China when it comes to combining a large labor market with strong infrastructure. Another issue is logistics. Direct labor costs might be lower in Vietnam, but those savings could be more than offset by the much higher cost of getting goods from the factory to the ship. Moreover, if local suppliers aren't able to meet global quality standards, companies may have to import raw materials and components from China, which would further boost costs. While moving part of production to Vietnam or another country might help diversify some risks, Du doesn't believe it's desirable. In fact, he says, it's often not even technically feasible -- given how much more skilled labor is available within China, and the growing importance of the country as a market in its own right -- to try to shift production out of the country entirely. "You may shift some manufacturing to India or Mexico or Eastern Europe, but you still must maintain at least a portion of the product in China," he says.

Others argue that the next big home for manufacturing will still be in China -- but in second-tier inland cities, although a push earlier in the decade to attract foreign manufacturers into the more western reaches of China met with limited success. Nevertheless, the list of interior province advantages would include easier access to coal and other domestic sources of energy, lower labor costs and possibly less rigid enforcement of environmental regulations. Lee argues, too, that it is much easier to adapt to a new province than an entirely new country.

Skilled labor should not be difficult to find, since many workers there have spent time in coastal factories. "Many workers have returned home to plant crops or raise pigs," in response to rising government agricultural subsidies, Lee says. Many more remain on tap. Du notes that many workers now on the coast moved there from the interior. In Shanghai, for example, a number of workers are originally from interior provinces who moved east for work, and who would also return home if the right opportunity came along -- "as long as there's a good incentive."

### **Look to Self and Suppliers**

Before making a decision to close or move Chinese plants, experts say, manufacturers operating their own factories or working with contract factories should take a closer look at their own shop floors and those of their suppliers. Often, relatively simple changes can give a huge boost to efficiency, says David Michael, a BCG senior partner and director of its Beijing office. "If you're going to improve, you've really got to get your suppliers to improve their efficiencies."

Not all the improvements will be difficult to accomplish. Frequently, Michael says, the tweaks are "basic stuff," operational snags long left uncorrected because low wages made it easy to solve many problems. Whatever the challenge, the most cost-effective solution in the past often was to simply place another body on the line, reducing the need to optimize other elements of the manufacturing process. Until recently, he says, the wage differential was high enough that "you didn't have to work to really optimize your operations."

This kind of optimization may be the single-best source of labor savings. A 2004 study by the Conference Board and China's National Bureau of Statistics, for example, found that even as the country's overall economy grew by double digits, China actually lost 15 million manufacturing jobs between 1995 and 2002 across 26 of China's 38 major industries. Analysts assigned the job loss not to plants moving to countries with lower-cost labor, but to jobs engineered out of existence through greater efficiency.

And those formerly employed workers? It's the oldest story in industrialization: Just as the U.S. shifted from a manufacturing to a service economy as productivity and efficiency grew, China is likely to follow the same path. As the manufacturing sector becomes more productive and more innovative, it will continue to need fewer people per unit of output, says Pinney. "Eventually, those people will be absorbed by the service sector, and life is going to get better for everybody."

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