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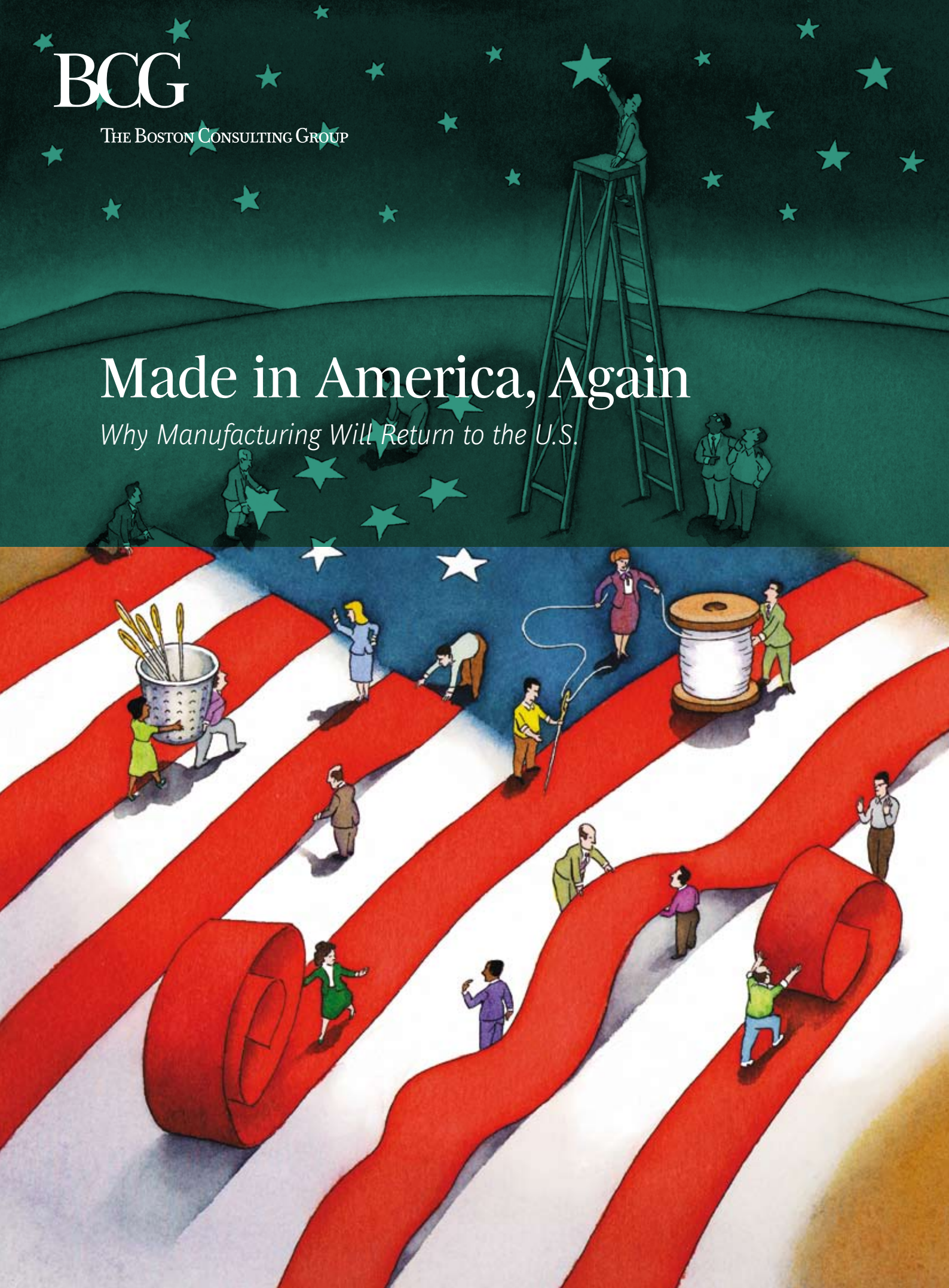
Made in America, Again

Why Manufacturing Will Return to the U.S.



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Why Manufacturing Will Return to the U.S.

Harold L. Sirkin, Michael Zinser, and Douglas Hohner

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AT A GLANCE

China's overwhelming manufacturing cost advantage over the U.S. is shrinking fast. Within five years, a Boston Consulting Group analysis concludes, rising Chinese wages, higher U.S. productivity, a weaker dollar, and other factors will virtually close the cost gap between the U.S. and China for many goods consumed in North America.

LOOK AT TOTAL COSTS

Companies should undertake a rigorous, product-by-product analysis of their global supply networks that fully accounts for total costs, rather than just factory wages. For many products sold in North America, the U.S. will become a more attractive manufacturing option.

REASSESS YOUR CHINA STRATEGY

For many products that have a high labor content and are destined for Asian markets, manufacturing in China will remain the best choice because of technological leadership or economies of scale. But China should no longer be treated as the default option.

For more than a decade, deciding where to build a manufacturing plant to supply the world was simple for many companies. With its seemingly limitless supply of low-cost labor and an enormous, rapidly developing domestic market, an artificially low currency, and significant government incentives to attract foreign investment, China was the clear choice.

Now, however, a combination of economic forces is fast eroding China's cost advantage as an export platform for the North American market. Meanwhile, the U.S., with an increasingly flexible workforce and a resilient corporate sector, is becoming more attractive as a place to manufacture many goods consumed on this continent. An analysis by The Boston Consulting Group concludes that, by sometime around 2015—for many goods destined for North American consumers—manufacturing in some parts of the U.S. will be just as economical as manufacturing in China. The key reasons for this shift include the following:

- Wage and benefit increases of 15 to 20 percent per year at the average Chinese factory will slash China's labor-cost advantage over low-cost states in the U.S., from 55 percent today to 39 percent in 2015, when adjusted for the higher productivity of U.S. workers. Because labor accounts for a small portion of a product's manufacturing costs, the savings gained from outsourcing to China will drop to single digits for many products.

- For many goods, when transportation, duties, supply chain risks, industrial real estate, and other costs are fully accounted for, the cost savings of manufacturing in China rather than in some U.S. states will become minimal within the next five years.

- Automation and other measures to improve productivity in China won't be enough to preserve the country's cost advantage. Indeed, they will undercut the primary attraction of outsourcing to China—access to low-cost labor.

- Given rising income levels in China and the rest of developing Asia, demand for goods in the region will increase rapidly. Multinational companies are likely to devote more of their capacity in China to serving the domestic Chinese as well as the larger Asian market, and to bring some production work for the North American market back to the U.S.

- Manufacturing of some goods will shift from China to nations with lower labor costs, such as Vietnam, Indonesia, and Mexico. But these nations' ability to

absorb the higher-end manufacturing that would otherwise go to China will be limited by inadequate infrastructure, skilled workers, scale, and domestic supply networks, as well as by political and intellectual property risks. Low worker productivity, corruption, and the risk to personal safety are added concerns in some countries.

The reallocation of global manufacturing will become more pronounced over the next five years, especially as companies face decisions about where to add future capacity.

This reallocation of global manufacturing is in its very early phases. It will vary dramatically from industry to industry, depending on labor content, transportation costs, China's competitive strengths, and the strategic needs of individual companies. But we believe that it will become more pronounced over the next five years, especially as companies face decisions about where to add future capacity. While China will remain an important manufacturing platform for Asia and Europe, the U.S. will become increasingly attractive for the production of many goods sold to consumers in North America.

This report, the first in a series, examines the economic trends that point to a U.S. manufacturing renaissance. It also explores the strategic implications of the shifting cost equation for companies engaged in global sourcing.

The U.S. "Decline" and Renaissance in Perspective

The death of American manufacturing has been foretold many times in the past four decades. As the only major industrialized nation not leveled by World War II, the U.S. accounted for around 40 percent of the world's manufactured goods in the early 1950s. But then, fueled by a relentless wave of imports from a reconstructed Europe and eventually from Japan, the U.S. experienced a dramatic loss of market share in industries such as color TVs, steel, cars, and computer chips. In the 1970s and 1980s, fears of the loss of U.S. industrial competitiveness were particularly acute, prompting a widespread debate over whether the nation should adopt a "Japan Inc."-style industrial policy and teach its schoolchildren to speak Japanese. Then came the rise of such East Asian Tigers as South Korea and Taiwan, which led to a massive transfer of production of labor-intensive goods, including apparel, shoes, and toys, and then of much of the U.S. computer and consumer-electronics manufacturing industry.

The U.S. suffered through many painful adjustments to these challenges. Unlike most nations, however, it quickly ripped off the Band-Aid and allowed industry to adapt. Factories closed, companies failed, banks wrote off losses, and workers had to learn new skills. But U.S. industry and the economy responded with surprising flexibility and speed to reemerge more competitive and productive than ever. By the late 1990s, American companies dominated the world in high-value industries such as microprocessors, aerospace, networking equipment, software, and pharmaceuticals. Manufacturing investment, output, and employment surged.

It may not be obvious yet, but the U.S. manufacturing sector is today in the midst of a similar process of readjustment in response to perhaps its greatest competitive threat ever—the rise of China. Since opening its doors to foreign investment and trade, China has offered a virtually unbeatable combination of seemingly limitless cheap labor (less than $1 per hour), a growing pool of engineers, a fixed currency,

and local governments willing to offer inexpensive land, free infrastructure, and generous financial incentives.

In the decade since it entered the World Trade Organization (WTO) in 2001, China has essentially become the default option for companies wishing to outsource production in order to lower costs. From 2000 to 2009, China's exports leapt nearly fivefold, to $1.2 trillion, and its share of global exports rose from 3.9 percent to 9.7 percent, according to United Nations Conference on Trade and Development data. These developments occurred in a remarkable breadth of industries, from labor-intensive assembly work to heavy industry and high-tech. China's portion of global apparel exports increased from 17.4 percent to 32.1 percent, for example. Its share of the world export market for furniture soared from 7.5 percent to 25.9 percent, for ships from 4.1 percent to 19.6 percent, for telecom equipment from 6.5 percent to 27.8 percent, and for office machines and computer equipment from 4.9 percent to 32.6 percent. In the U.S., meanwhile, the loss of some 6 million manufacturing jobs and the closure of tens of thousands of factories over the past decade has fanned frequent warnings of a manufacturing crisis.

The Tide Is Turning

Once again, however, predictions of the demise of American manufacturing are likely to prove wrong. The U.S. manufacturing sector remains robust. Output is almost two and a half times its 1972 level in constant dollars, even though employment has dropped by 33 percent. Despite the recent wave of outsourcing to China, the value of U.S. manufacturing output *increased* by one-third, to $1.65 trillion, from 1997 to 2008—before the onset of the recession—thanks to the strongest productivity growth in the industrial world. Although China accounted for 19.8 percent of global manufacturing value added in 2010, the U.S. still accounted for 19.4 percent—a share that has declined only slightly over the past three decades.

The conditions are coalescing for another U.S. resurgence. Rising wages, shipping costs, and land prices—combined with a strengthening renminbi—are rapidly eroding China's cost advantages. The U.S., meanwhile, is becoming a lower-cost country. Wages have declined or are rising only moderately. The dollar is weakening. The workforce is becoming increasingly flexible. Productivity growth continues.

The U.S. is becoming a lower-cost country, with a workforce that is increasingly flexible and productivity growth continuing.

Our analysis concludes that, within five years, the total cost of production for many products will be only about 10 to 15 percent less in Chinese coastal cities than in some parts of the U.S. where factories are likely to be built. Factor in shipping, inventory costs, and other considerations, and—for many goods destined for the North American market—the cost gap between sourcing in China and manufacturing in the U.S. will be minimal. In some cases, companies will move work to inland China to find lower wages. But this will not be an attractive option in many industries. Chinese cities in the interior provinces lack the abundance of skilled workers, supply networks, and efficient transportation infrastructure of those along the coast, offsetting much of the savings afforded by slightly lower labor costs.

When all costs are taken into account, certain U.S. states, such as South Carolina, Alabama, and Tennessee, will turn out to be among the least expensive production

sites in the industrialized world. As a result, we expect companies to begin building more capacity in the U.S. to supply North America. The early evidence of such a shift is mounting.

The manufacture of goods with relatively high labor content that are produced in high volumes will likely remain in China.

- NCR moved production of its ATMs to a plant in Columbus, Georgia, that will employ 870 people by 2014.
- The Coleman Company is moving production of its 16-quart wheeled plastic cooler from China to Wichita, Kansas, owing to rising Chinese manufacturing and shipping costs.
- Ford Motor Company is bringing up to 2,000 jobs back to the U.S. in the wake of a favorable agreement with the United Auto Workers that allows the company to hire new workers at $14 per hour.
- Sleek Audio has moved production of its high-end headphones from Chinese suppliers to its plant in Manatee County, Florida.
- Peerless Industries will consolidate all manufacturing of audio-visual mounting systems in Illinois, moving work from China in order to achieve cost efficiencies, shorter lead times, and local control over manufacturing processes.
- Outdoor Greatroom Company moved production of its fire pits and some outdoor shelters from China to the U.S., citing the inconvenience of having to book orders from Chinese contractors nine months in advance.

The reallocation of production is still in its early stages, but we believe it will accelerate in the years ahead. The impact of the changing cost equation will vary from industry to industry. Products in which labor accounts for a small portion of total costs and in which volumes are modest, such as auto parts, construction equipment, and appliances, will be among those that companies reevaluate in terms of their options for supplying the North American market. But the manufacture of goods with relatively higher labor content that are produced in high volumes will likely remain in China. Finally, companies that make mass-produced, labor-intensive products, like apparel and shoes, may move production from China to other low-cost nations. (We will assess the implications of the new manufacturing math for specific industries in the second report in this series.)

These trends do not suggest that Chinese manufacturing will decline or that multinational companies will shut their mainland plants. More Chinese production capacity will be devoted to supplying the country's enormous domestic market, which is gaining millions of new middle-class households each year, as well as other growing economies in Asia. In addition, China will continue to remain a low-cost supplier to Western Europe. And China will remain competitive in industries that have developed strong "clusters of excellence" and that have an immense installed base of production capacity and component and material suppliers.

This means that when it comes to building new production capacity, companies will likely choose to explore alternatives instead of automatically opting for China. Over

the next five years, we believe that the U.S. will be the optimal choice for many manufacturing investments aimed at serving the North American market.

The New Manufacturing Math

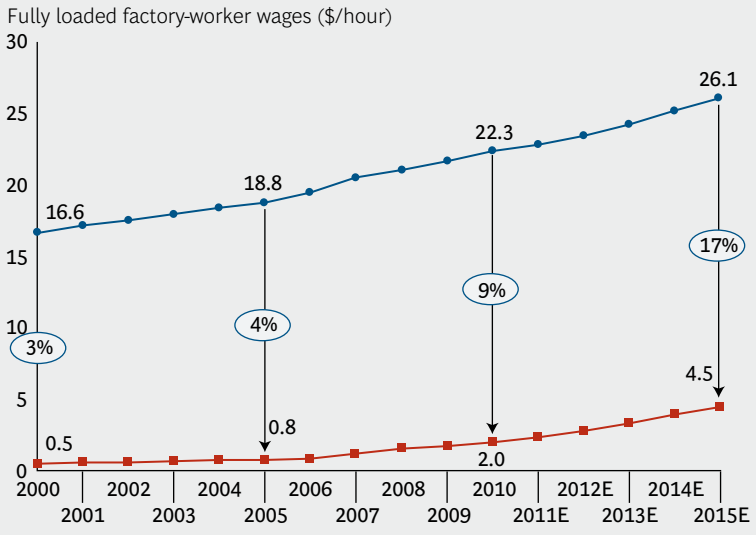
A combination of factors is starting to dramatically shift the manufacturing cost equation in favor of the U.S.

China's Rising Wages

Rising labor rates have been a fact of life in Chinese factories for years. Average wages leapt by 150 percent from 1999 through 2006, for example, a period in which China emerged as the world's workshop for a range of industries. Those increases started from a low base, but now the tipping point is in sight. For one thing, wage growth has accelerated much faster than productivity growth. From 2000 through 2005, pay and benefits for the average Chinese factory worker rose by 10 percent annually. (See Exhibit 1.) From 2005 through 2010, wage hikes averaged 19 percent per year, while the fully loaded cost of U.S. production workers rose by only 4 percent. The last few years have been especially volatile in China. In 2010, the giant contract manufacturer Foxconn International, which employs 920,000 people in China alone, doubled wages at its immense Shenzhen campus following a string of worker suicides. After a factory supplying Honda was hit by strikes last year, wages rose by 47 percent. Minimum wages rose by more than 20 percent in 20 Chinese regions, and by up to 30 percent in Sichuan province.

Exhibit 1 | China's Wage Rates Are Growing Rapidly

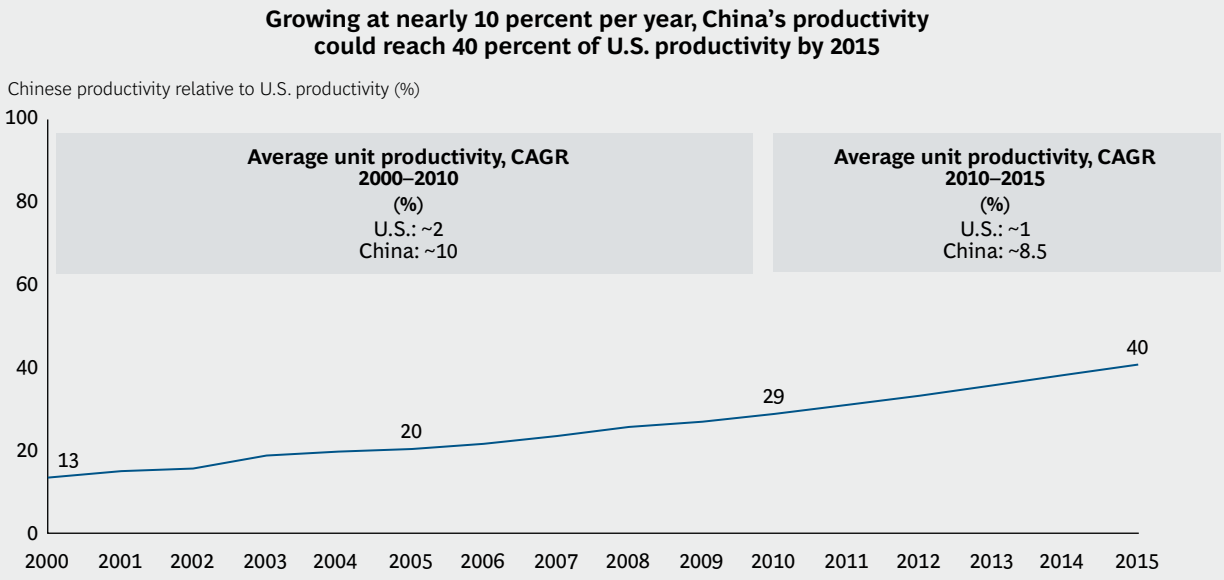
Average wages could approach 17 percent of those in the U.S. by 2015, up from 3 percent in 2000



	CAGR 2000–2005 (%)	CAGR 2005–2010 (%)	CAGR 2010–2015 (%)
U.S.	2	4	3
Ratio of average Chinese to average U.S. wage rates			
China	10	19	17

Sources: Economist Intelligence Unit; U.S. Bureau of Labor Statistics; selected company data; BCG analysis.

Exhibit 2 | China's Productivity Gains Will Lag Behind Wage Increases



Sources: Economist Intelligence Unit; U.S. Bureau of Labor Statistics; BCG analysis.
Note: All figures are based on real units.

BCG's research projects that over the next five years, the fully loaded cost of Chinese workers in the Yangtze River Delta, which includes Shanghai and the provinces of Zhejiang and Jiangsu, will rise by an annual average of 18 percent, to about $6.31 per hour. This region has the highest manufacturing output in the country and is the heart of such high-skilled industries as automobiles and electronics. Chinese compensation packages will then be equal to about 25 percent of what skilled workers are earning in the manufacturing states of the southern U.S. While this gap may still seem huge, consider that factory workers in the Yangtze River Delta averaged only 72 cents per hour in 2000, compared with $15.81 per hour in the U.S. South.

It is also possible that this trend will accelerate. Chinese labor organizations are gaining a greater ability to demand higher wages and benefits from foreign companies. The government is enacting new labor laws that give greater rights to workers, requiring, for example, that companies pay laid-off workers one month's salary in severance for every year that they worked.

Productivity Insufficient to Offset Wage Increases

One common belief is that rising Chinese productivity will compensate for rising wages. Indeed, manufacturing output per worker in China has improved by an average of 10 percent per year over the past decade, nearly five times the pace of U.S. productivity growth. Although we forecast that Chinese productivity growth will remain impressive, at 8.5 percent annually over the next five years, output per worker will increase at only half the pace of the rise in wages. (See Exhibit 2.) This means that productivity-adjusted costs are rising, which in the past was not always the case.

Exhibit 3 | Economics Will Drive Reinvestment in the U.S.

Imagine a company...	...with the following choices of location			2000	2015E
• U.S.-based auto parts supplier • Most customers are U.S. OEMs that manufacture in the U.S.	**U.S., selected southern states**	• Flexible unions/ workforce • Minimal wage growth • High worker productivity	Wage rate ($/hour)	15.81	24.81
			Productivity (%)	100	100
			Labor cost/part ($)	2.11	3.31
• Parts require eight minutes of labor, on average, in the U.S. • Labor represents one-quarter of the total cost of the part	**China, Yangtze River Delta**	• Scarce labor • Rapidly rising wages • Low productivity relative to the U.S.	Wage rate ($/hour)	0.72	6.31
			Productivity (%)[1]	13	42
			Labor cost/part ($)	0.74	2.00
			Labor cost savings (%)	**65**	**39**
			Total cost savings before transportation, duties, and other costs (%)	**16**	**10**

Sources: Economist Intelligence Unit; U.S. Bureau of Labor Statistics; BCG analysis.
[1]Average productivity difference between the U.S. and China's Yangtze River Delta. Productivity in the Yangtze River Delta region is assumed to grow at a CAGR of ~7 percent over a 2009 baseline, slightly slower than overall Chinese manufacturing productivity (~8.5%) as other regions adopt more advanced manufacturing practices.

Add in the difference in productivity itself, and the cost gap between Chinese and U.S. manufacturing shrinks much further. Adjusted for output per worker, the average cost of Chinese labor was 22 percent that of U.S. labor in 2005. By 2010, average Chinese labor costs had risen to 31 percent of the U.S. level. Although the Yangtze River Delta is more productive than other regions in China, the gap in wages is quickly closing there, as well. The hourly Chinese factory wage adjusted for productivity was $8.62 in the region in 2010, compared with $21.25 in the U.S. South. In 2015, labor adjusted for productivity will cost $15.03 an hour in the Yangtze River Delta, compared with a projected $24.81 in the U.S. South.

While it may appear that Chinese wages are still much lower, keep in mind that labor is only part of the cost of making a product. The labor content ranges from only about 7 percent for products like video cameras to about 25 percent for a machined auto part. When transportation, duties, and other costs are included, not to mention the expected continued appreciation of China's currency, companies may find that any cost savings to be gained from sourcing in China may not be worth the time and myriad risks and headaches associated with operating a supply chain extending halfway around the world.

To illustrate how the math is changing, let's look at a hypothetical part for a car assembled in the U.S. One option is to make the part in the U.S. South—say, in South Carolina. The alternative is to make it in the Yangtze River Delta. (See Exhibit 3.)

In 2000, it would have made economic sense to source the part in China, where wages were about 20 times lower. Now fast-forward to 2015. The U.S. labor cost for the part will come to $3.31. At a factory in the Yangtze River Delta, workers will still

be earning only one-quarter of their U.S. counterparts' wages. However, even with massive productivity improvements, output per worker at the Chinese factory will be only 42 percent that of a southern U.S. plant. So the Chinese labor cost for the part will be $2.00, bringing the savings down to 39 percent. Moreover, since labor represents approximately one-quarter of the total cost of making the part, the total savings will shrink further, to less than 10 percent.

Greater investment in automation would undercut the chief competitive advantage of manufacturing in China—low labor costs.

Thus, the cost savings, if any, are unlikely to be enough to justify outsourcing the part to China, once all the other costs and risks are taken into account. If this trend continues through 2020, say, the equation might even reverse itself completely—with manufacture in the U.S. being cheaper even before those added costs are considered.

The Limits of Automation

It might seem that greater investment in automation would solve the problem of China's lower productivity. Multinational companies would merely have to install the same equipment used in their factories at home. That, however, would undercut the chief competitive advantage of manufacturing in China—low labor costs. Automation reduces a product's labor content. Despite the greater productivity that automation would afford, China's total cost advantage over the U.S. would likely not increase significantly as a result.

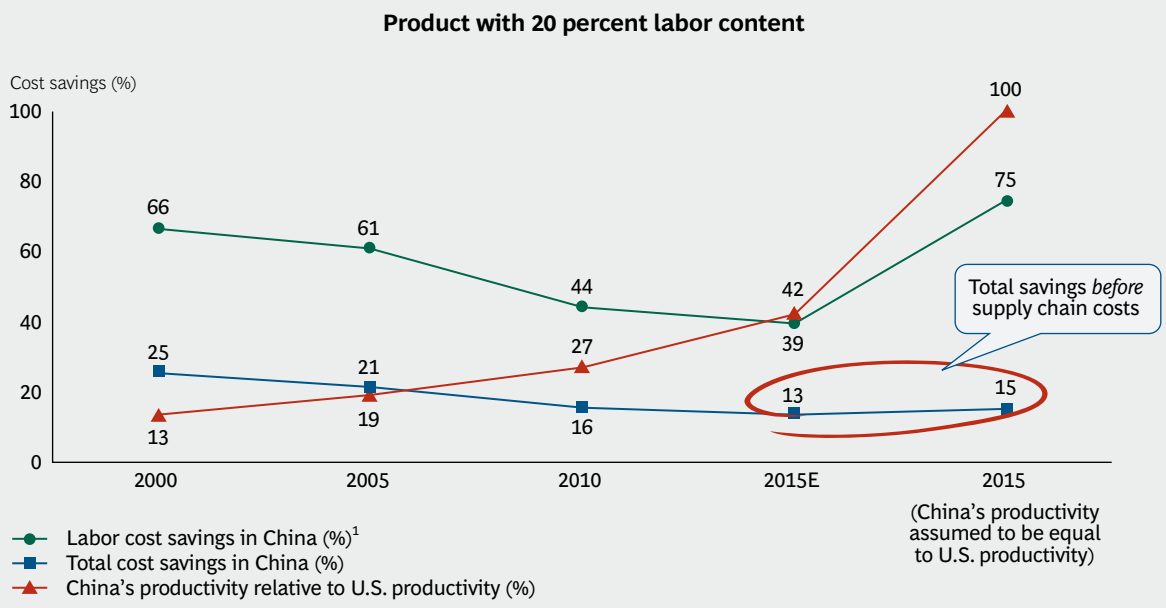
Take a kitchen appliance for which labor accounts for 20 percent of the cost. (See Exhibit 4.) In 2005, the product's labor cost in a typical Chinese factory would have been 61 percent lower than in the U.S., and the total cost before supply chain costs would have been about 21 percent lower, accounting for productivity differences. By 2015, higher Chinese wages will have shrunk that total cost advantage to 13 percent. Now assume that the factory in China installs production lines identical to those in the U.S. and that it achieves the same level of productivity. Because of the reduced labor content of the appliance and the costs of operating the advanced factory, the total savings from manufacturing in China would improve only slightly, to 15 percent, according to our analysis. Again, that is before shipping, duties, inventory costs, and other expenses. For such an appliance intended for sale in North America, many companies would probably decide to build it domestically.

Other Expenses

Labor isn't the only part of China's changing cost equation. The cost of electricity has surged by 15 percent since 2010. Rising prices for imported thermal coal and an end to preferential rates for high-energy-consuming businesses are also pushing up utility rates for industry, which consumes 74 percent of China's electricity.

In addition, industrial land is no longer cheap in China. In fact, commercial prices are dramatically higher than in most of the U.S. For example, industrial land costs $11.15 per square foot in the coastal city of Ningbo, $14.49 in Nanjing, $17.29 in Shanghai, and $21 in Shenzhen. The national average is $10.22 per square foot. Industrial land in Alabama, by contrast, costs only $1.86 to $7.43 per square foot; in Tennessee and North Carolina, the price ranges from $1.30 to $4.65. To secure low real-estate costs in China, companies will need to move inland. But in so doing, they will incur higher transportation costs and lose some of the benefits of being part of the industrial clusters that have grown up in the major coastal cities.

Exhibit 4 | Increased Automation in China Is Unlikely to Change the Cost Equation



Source: BCG analysis.
[1]Total labor cost in China divided by total labor cost in the U.S.

Transpacific shipping rates are going up, too. While ocean freight remains inexpensive, the doubling of bunker-fuel prices since early 2009 is causing rates to increase. Rising oil prices, a falloff in new shipbuilding, and a projected shortage in container port capacity in 2015 are expected to boost ocean freight rates.

The steady appreciation of the renminbi against the U.S. dollar, meanwhile, is further increasing the price of Chinese exports to the U.S. We expect that trend to continue.

Finally, there are the many costs and headaches of relying on extended supply chains. These include inventory expenses, quality control problems, unanticipated travel needs, and the threat of supply disruptions due to port closures or natural disasters. With China, there are added concerns about intellectual-property theft and trade disputes that result in punitive duties. In response to a petition by the United Steelworkers, for instance, the U.S. in 2010 began investigating subsidies of Chinese green-technology products, such as wind turbines and solar panels, for possible unfair trade practices. In September 2009, the U.S. imposed extra duties of 25 to 35 percent on certain Chinese car and truck tires under a WTO "safeguard" provision that allows countries to curb surges of Chinese imports that cause market disruptions.

Other Low-Cost Countries

It might seem reasonable for many companies to look for sourcing opportunities in other low-cost nations and to shift much of their export manufacturing from China to these cheaper locations. Fully loaded hourly manufacturing wages average $1.80

in Thailand, 49 cents in Vietnam, 38 cents in Indonesia, and 35 cents in Cambodia. There has already been a significant transfer of work in apparel, footwear, sporting goods, and other labor-intensive products to South and Southeast Asia.

Other low-cost nations won't be able to absorb all the export manufacturing that is likely to leave China. There is no replacement for China's labor force.

Other low-cost nations won't be able to absorb all the export manufacturing that is likely to leave China, however. A simple reason is that there is no replacement for China's labor force. China not only has the world's largest population (1.34 billion), it also has the highest proportion of able-bodied adults in the workforce (84 percent). Twenty-eight percent of those workers are employed by industry, far more than in Southeast Asia, indicating that China has an estimated 215 million industrial jobs. That is approximately 58 percent more than the industrial workforce of all of Southeast Asia and India *combined.* Chinese workers are also more productive than workers in other low-cost nations. Vietnamese workers earn only 25 percent of what their Chinese counterparts earn, but Chinese workers are significantly more productive, which mitigates much of the labor savings advantage. What's more, as labor markets grow tighter, wages are rising fast in low-cost Asian nations, as well.

Nor can many other low-cost nations match the first-rate infrastructure, skilled talent pool, well-developed supply networks, and worker productivity of China's coastal industrial zones. Add to that the advantageous treatment by Chinese bureaucracies, from the central government down to the villages, which have showered foreign investors in targeted industries with incentives and have speedily cut through red tape. Indeed, for the manufacturing world, China has been the opposite of a perfect storm, offering a total package unlikely to be matched by any other low-cost nation.

Mexico, on the other hand, has the potential to be a big winner when it comes to supplying North America. It has the enormous advantage of bordering the U.S., which means that goods can reach much of the country in a day or two, as opposed to at least 21 days by ship from China. Goods imported from Mexico can also enter duty-free, thanks to the North American Free Trade Agreement. In addition, by 2015, wages in Mexico will be significantly lower than in China. In 2000, Mexican factory workers earned more than four times as much as Chinese workers. After China's entry into the WTO in 2001, however, *maquiladora* industrial zones bordering the U.S. suffered a large loss in manufacturing. Now that has changed. By 2010, Chinese workers were earning only two-thirds as much as their Mexican counterparts. By 2015, BCG forecasts that the fully loaded cost of hiring Chinese workers will be 25 percent higher than the cost of using Mexican workers.

Mexico's gains will be limited, however, especially in higher-value work now done in China. Because of concerns over personal safety, skill shortages, and poor infrastructure, many companies will keep manufacturing high-end products in the U.S.

The Role of Government Incentives

Governments in Asia and Europe have used generous financial incentives to persuade multinational companies to build high-tech plants in targeted industries. Frequently they offered terms that the U.S. could not match, such as ten-year holidays from corporate taxes, cash grants, and cheap loans. In recent years, the federal government and many states have closed the gap with aggressive incentive

packages, making the U.S. more competitive in the chase for manufacturing facilities. GlobalFoundries, for example, is receiving $1.3 billion in cash reimbursements and tax breaks over the next 15 years from the State of New York to build a $4.2 billion state-of-the-art silicon-wafer plant in Malta, New York, and Nissan received a $1.45 billion loan under the Advanced Technology Vehicles Manufacturing Program managed by the U.S. Department of Energy that covered most of the company's $1.8 billion investment in a new plant in Tennessee.

While government subsidies won't make a major difference in determining whether a plant is built in the U.S. instead of in Asia, they can make the decision easier at a time when other cost factors are shifting in favor of the U.S.

China's Manufacturing Future

A U.S. resurgence will not diminish China's role as a global manufacturing power. The nation's immense domestic market, installed base across a range of capital-intensive industries, and pool of skilled talent guarantee that it will be a rising force in a range of manufacturing sectors.

Instead of pulling out of China, most multinational companies will orient more of their production to serve China and the rest of a growing Asia. In nominal terms, China's economy is projected to be about two-thirds the size of the U.S. economy by 2015. It is already slightly larger than Japan's and will be nearly twice as big in another five years. Disposable income is expected to grow by 230 percent, to $5.57 trillion. Over the next five years, China will add nearly 90 million households earning at least $9,000 per year.

China also will continue to be a major low-cost export base for Western Europe, even though the wage gap will narrow significantly. In 2010, fully loaded wage costs adjusted for productivity in the Yangtze River Delta were 25 percent of those in Western Europe. In 2015, wages in the region will be only 38 percent of those in Western Europe. This change will probably not be enough to generate a tipping point, so Europe will continue to rely on China as a primary source of manufactured products five years from now.

A U.S. resurgence will not diminish China's role as a global manufacturing power.

The Implications for Companies

The shifting cost structure between China and the U.S. will present more manufacturing and sourcing choices. For many products that have a high labor content and are destined for Asian markets, manufacturing in China will still make sense because of technological leadership or economies of scale. But China should no longer be treated as the default option.

Companies should undertake a fresh, rigorous, product-by-product analysis of their global supply networks that takes into account the total cost of production. Rather than fixate on labor rates, this analysis should factor in worker productivity, transit costs, time-to-market considerations, logistical risks, energy costs, and other expenses in a range of scenarios. Companies should also make sure that their supply chains are flexible, dynamic, and globally balanced, providing the leeway to shift

production and sourcing to other locations when the time is right. And they should weigh the many intrinsic advantages of locating manufacturing close to consumers, such as the ability to more quickly get products into the hands of customers, replace depleted inventory of popular items, and make design changes in response to market trends or customer demands.

In some cases, companies may find that now is the time it makes tactical sense to move some production away from China and into the U.S., Mexico, or Southeast Asia. Manufacturers that remain in China for economic or strategic reasons will have to find dramatic ways to improve efficiency if they are to preserve current levels of profitability in the face of double-digit annual wage hikes.

More-strategic decisions will have to be made when the time comes to consider where to build new manufacturing capacity to serve markets outside of China. Our analysis suggests that the U.S. will become an increasingly attractive option, especially for products consumed in North America. As long as it provides a favorable investment climate and flexible labor force, the U.S. can look forward to a manufacturing renaissance.

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