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## The future of Factory Asia

### A tightening grip

Rising Chinese wages will only strengthen Asia's hold on manufacturing



A SMALL factory in an industrial park outside Shanghai, churning out widgets you never see but probably use, provides a perfect snapshot of the state of global manufacturing today. Some workers at the Integrated Micro-Electronics (IMI) facility affix pieces by hand to circuit boards bound for digital displays on European stoves. Others stand at computers, guiding machines that press together components for cars' steering systems. But IMI is important less for what it makes than for what it represents. A cog in long supply chains, it produces part, but never all, of brand-name consumer goods. It has operations around the world, but makes its most money in China. And it is starting to automate its factories there as wages rise.

Cheap Chinese labour has been crucial to the building of "Factory Asia", the name given to the region's complex of cross-border supply chains. Asia first emerged as a manufacturing power in the 1960s, when Japan began exporting electronics and consumer goods. Taiwan and South Korea followed its lead. By the 1980s Japanese firms were building plants across South-East Asia. But China's opening up was the gamechanger. In 1990 Asia accounted for 26.5% of global manufacturing output. By 2013 this had reached 46.5%. China accounts for half of Asia's output today. The region's share of the global trade in intermediate inputs—the goods that are eventually pieced together into final products—rose from 14% in 2000 to 50% in 2012.

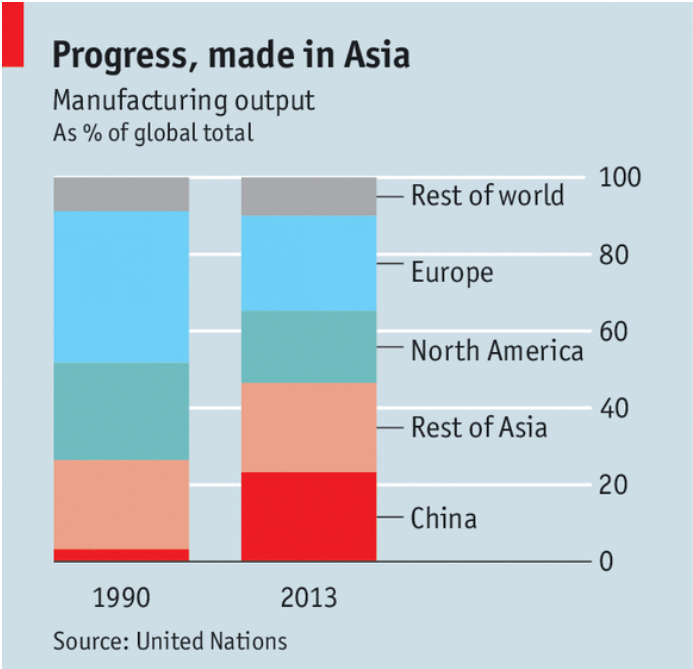
The China price is under pressure, though. Since 2001, hourly manufacturing wages in China have risen by an average of 12% a year. The yuan has risen to an all-time high against a trade-

weighted basket of currencies. Some believe this means that China's days as a manufacturing powerhouse are numbered, adding to the list of worries for an economy already weighed down by heavy debts and a property slump (see article). But whereas the housing market is built on wobbly foundations, manufacturing has under-appreciated strengths. The future of Chinese manufacturing, and of Factory Asia more generally, is bright.

A persistent myth about Chinese manufacturing is that the country is only good for assembly, with the more profitable parts of the operation, such as design and marketing, remaining in the West and Japan. According to a study published in 2010, Chinese workers contributed just 3.6% to the cost of an Apple iPhone.

But more detailed studies reveal greater two-way flows with Japan at earlier stages of production. Although Chinese-made smartphones often include chips imported from Japan, those chips typically include plastic casing and wiring imported from China. Today, 65% of the ingredients in goods China sells to the world are made at home, up from 40% in the mid-1990s. As domestic consumption rises, moreover, its own firms are getting better at designing the products its consumers want (think Xiaomi, China's smartphone giant).

By hosting more of the supply chain, China boosts its manufacturing competitiveness and attracts more investment. IMI, for instance, is headquartered in the Philippines and would have preferred to scale up its manufacturing there, where wages and worker turnover are lower. But Michael Hansson, a director, notes that after adding in other costs, such as shipping and tax, China is still cheaper—thanks to the dense cluster of suppliers and customers that IMI now has around Jiaxing, a 40-minute train ride from Shanghai.



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Despite fast-rising wages, China's factories are still far cheaper than their rich-world rivals. Many pay their employees just above the minimum wage, which at about \$270 a month in China is less

than a quarter that in America. And they are more efficient than many rivals in the developing world. McKinsey, a consultancy, found that labour productivity increased by 11% a year in China from 2007 to 2012, compared with 8% in Thailand and 7% in Indonesia. With Chinese factories just starting to pour money into automation, there is scope to improve productivity further. China became the biggest market for robots in 2013, buying 20% of all those made that year, according to the International Federation of Robotics. But it still has just 30 robots per 10,000 workers in manufacturing, compared with 323 in Japan. Foxconn, the Taiwanese firm that makes iPhones and has more than a million employees in China, says that it wants robots to complete 70% of its assembly-line work within three years.

Firms are also pursuing lower wages deeper into China. Foxconn once based its China operations mostly in Shenzhen, the manufacturing hub near Hong Kong. It now has large plants in Henan and Sichuan provinces, and is building a facility in Guiyang, one of China's poorest regions.

Cities in China's interior use tax breaks and cheap land to lure foreign investors. They also have a huge labour pool, excellent transport links and a reliable supply of inputs. Hewlett-Packard has shifted from Shanghai to Chongqing, a city of 30m people in China's southwest. Stuart Pann, an HP executive, says that wages are lower and the workforce more stable, since most employees are local (among other things, that means factories can restart quickly after the Chinese New Year, when workers return to their home villages—a perennial headache in coastal China). At HP's prodding, Chongqing built a railway line to carry products overland through Kazakhstan into Europe, reducing transit time from 35 days to 22. Today roughly one in every four laptops in the world is made there. "It would be hard to recreate what China has done," says Mr Pann. "The economics aren't there, nor are the sub-suppliers."

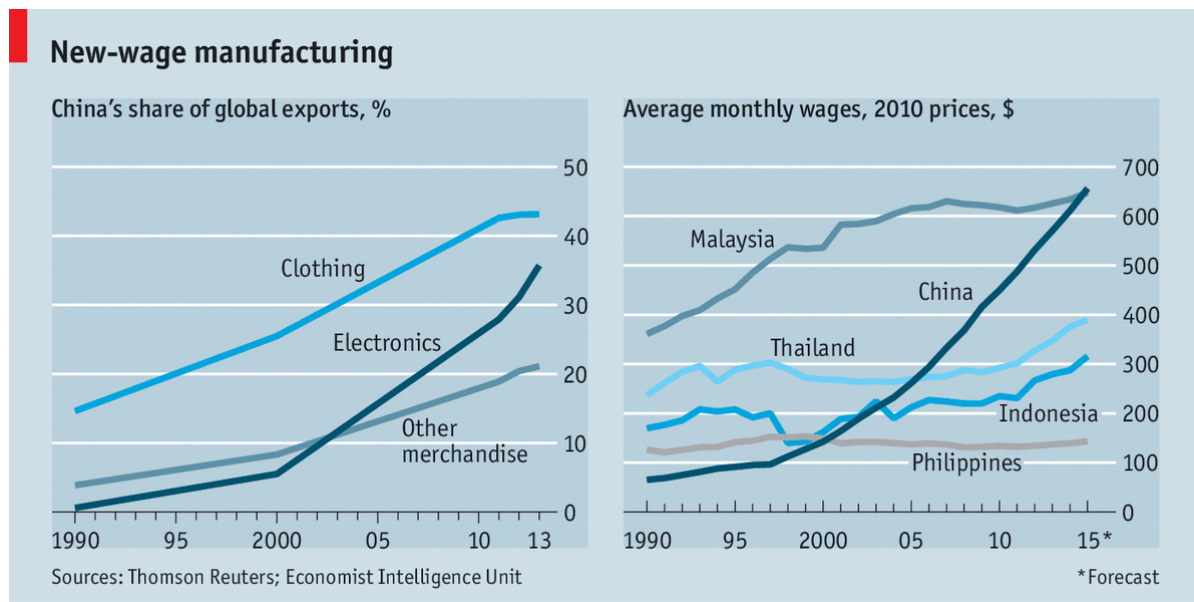
As a result, China has remained surprisingly competitive in low-end production: its share of global clothing exports, for instance, rose from 42.6% in 2011 to 43.1% in 2013, while the price of Chinese-made goods sold in America has fallen by almost 2% over the past three years. That stems partly from China's ability to control costs, not least because of its first-rate infrastructure: six of the world's busiest ten ports by tonnage are in China. But it also points to squeezed margins for Chinese factories.

China cannot hold onto such work forever, nor does it want to. The working-age population peaked in 2012, and the endless stream of people moving from country to city has slowed. Expectations have risen along with incomes; fewer young Chinese are willing to endure the same drudgery their parents did. A series of strikes and disputes over the past year—affecting factories producing goods for Nike, Adidas, IBM and Nokia—show that Chinese workers are increasingly vocal about their rights.

### **The southward haul**

Hence the incipient rise of South-East Asia, which offers a big labour pool with low wages and mostly market-friendly policy environments. The average factory worker in China earns \$27.50 per day, compared with \$8.60 in Indonesia and \$6.70 in Vietnam. Demography is another

advantage: China may be ageing rapidly, but South-East Asia's workforce is largely below the global median age of 29.7.



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The region's biggest advantage over the rest of the world as production leaves China is simple: it is nearby. For all the benefits of telecommuting, geography matters, both to ensure quick shipment of goods and to let managers hop back and forth between factories. Rising Chinese consumption is particularly helpful to manufacturers located in its environs. As the purchasing power of Chinese buyers grows, the average distance travelled by consumer-goods exports is changing, depending on whether they are shipped from Asia, Europe or North America. From 2008 to 2012, the average journey length for Asian exports fell by 4.5%, while those from Europe and North America rose by 25.9% and 13.7%, respectively. That makes transportation costs cheaper for Asian factories.

Garments are a natural first step in the spread of production out of China: they are low-skill, low-cost and highly transportable. For countries just starting to industrialise, such as Myanmar, they offer an early test of potential. Myanmar's clothing exports jumped from \$700m to \$1.7 billion between 2011 and 2014. H&M, a European retailer, recently shifted sweater production from China to the Myanmar Century Liaoyuan Knitted Wear factory, a Chinese-run facility in outer Yangon. Parts of it look surprisingly like black-and-white pictures of old garment factories: women sit at sewing machines stitching sweater arms to bodies and attaching labels to necklines. Steven Shen, the production manager, says staffing such factories in China has grown difficult: Chinese workers now have "other, better jobs". His factory runs 24 hours a day. He plans to open a similar facility in Bago, north-east of Yangon, later this year.

Advanced manufacturing, too, is starting to trickle out of China: Vietnam, Thailand and Indonesia are picking up electronics work. Indonesia's new president, Joko Widodo, has made no secret of his desire to see his country capture higher-value activities. He has vowed to use money freed by

subsidy cuts for infrastructure improvements, and has been wooing investors for his country's port system.

No one country will replace China's role in Factory Asia—the ten-country ASEAN (Association of South-East Asian Nations) region is home to 630m people, less than half China's population—but neither does any single country need to. Advances in communications technology mean that manufacturing can be sliced and diced more easily than in the past.

But the region will have to grow better integrated.