

China – Still No. 1 Manufacturer

Chinese manufacturing remains second to none



AMID ALL THE excitement about high tech and the push into services, it is easy to forget that China's modern economy was built on the strength of a solid and often low-tech manufacturing sector. Now manufacturing is widely thought to be in trouble. Factories are squeezed, labour costs are rising and jobs are being reshored to America. Competitors such as Germany are said to be leaving China behind by using robotics.

Chinese officials have responded in the only way they know. In May the State Council, China's ruling body, approved Made in China 2025 a costly scheme that will use mandates, subsidies and other methods to persuade manufacturers to upgrade their factories. The plan is for China to become a green and innovative world manufacturing power by 2025.

China is already the world's largest manufacturer, accounting for nearly a quarter of global value added in this sector. Research by the Wharton Business School finds that the country leads in many industries and that reshoring to the developed economies is not happening on a large scale. Even though some production is moving to countries nearer its consumers, China remains at the heart of a network known as Factory Asia. It has an excellent infrastructure and an enormous, hard-working and skilled workforce. Though wages are rising, its labour productivity is far higher than that of India, Vietnam and other rivals, and is forecast to keep growing at 6-7% a year to 2025.

Manufacturing is almost entirely controlled by private firms, both Chinese and foreign, which unlike SOEs will not be pushed by bureaucrats into making unprofitable investments subsidies may feel good but distort investment decisions: The government loves to fund flashy hardware and robotics, but there's no money for the software and data analytics needed to make proper use of it. And in any case most of these private firms are already innovating at a cracking pace without prompting from government.

A big American contract manufacturer, says product cycles have become much faster. Factories in China used to serve export markets, but are now reorganising to concentrate on the booming local market. They are sensibly investing in automation, worker training and new methods. In the process, he says, China is "moving from work engine of the world to genuine innovator".

An Irish entrepreneur, who has worked in Chinese manufacturing for two decades, believes that a huge amount of innovation is happening around manufacturing supply chains. PCH, his firm in Shenzhen, is a supply-chain manager that now helps foreign manufacturers with design and mass customisation. A private firm with revenues of over \$1 billion last year, it moves up to 10m components a day and ships merchandise worth \$10 billion a year.

Barclays Bank believes the manufacturing sector is moving from Made in China to Made by China. In the 1980s and 1990s most factories were owned by firms from Taiwan (like Foxconn) or the West (like Flex). Increasingly the sector will be run by Chinese firms. Taiwan used to dominate the market for upmarket electronics components, but now many Chinese parts suppliers are leading production facilities.

China is the world's largest market for industrial automation and robots. In many fields the latest robots elevate the nature of work because they improve safety and eliminate the need for heavy lifting. Local engineers developed China Dragon, a robot made specifically for the computer industry, which sells well globally. In many industries China is still learning from the world, say the engineers, but its electronics manufacturing is so advanced that "the world is learning from China."

Many see China pushing ahead with robots like YuMi, which was partly developed there. This affordable two-armed creation can be deployed safely next to humans on assembly lines and is able to do fine work like inspecting phones for scratches. At its factory in Shanghai, production is constantly increasing.

Foxconn claims that within five years the 30% of his labour force doing the most tedious work will be replaced by robots, releasing them to do something more valuable. The highly inventive firm, which holds many American patents, is building all its automation in-house.

Staying ahead of the game allows manufacturers to keep their best clients. Nike, a global sportswear firm, has seen a lot of its suppliers decamp to cheaper Vietnam, but still gets 30% of its components from the mainland, China.

China plan

What about the government's "**Made in China 2025**" plan? It might succeed on its more modest goals. Its immediate aims are to improve quality, productivity and digitisation, and to expand the use of numerically controlled machines. All these things are already in common use by world-class manufacturers in other countries. A push to invest might well help Chinese laggards catch up.

China's state planners also want to help companies leapfrog to the forefront of technology. Their plan involves policies to encourage the adoption of robotics, 3D printing and other advanced techniques. But factories will invest in advanced kit only if it makes commercial sense.

A visit to a middling factory in a middling city illustrates the point. The Guangneng Rongneng Automotive Trim Company in Chongqing is not a fancy place. Stock is piled hither and yon. Owned by a privately held firm, the factory makes injection-moulded and welded automotive parts, mostly for Ford. Director of operations says wages have gone up so much that he has to pay casual workers the same as they can earn in Shenzhen.

It says ABB robot on one side of an aisle that makes complex parts to go on instrument panels. Across the aisle sits a Chinese robot made which lacks the range and precision of the foreign model but is one-third the price. And plenty of the work at his firm is, and will remain, done by hand. China is heading in this direction and robots are being adopted factory to factory.

Thanks to liberalisation and China's subsequent accession to the World Trade Organisation, the country's manufacturers rose to become export powerhouses. Because exporters must compete in the global market, the weak manufacturers and traders are going out of the business.

China will continue to be a leading manufacturer although their costs are going up and they are adopting new technology to meet new challenges. Further China has so much of production capacities, which is very difficult for any other countries to match.

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