

What impact is the rise of China having on technological change in the West? To answer this question, **John Van Reenen** and colleagues have tracked the innovation and productivity performance of more than half a million manufacturing firms in 12 European countries over a decade.

# Chinese ghosts in the Western machine

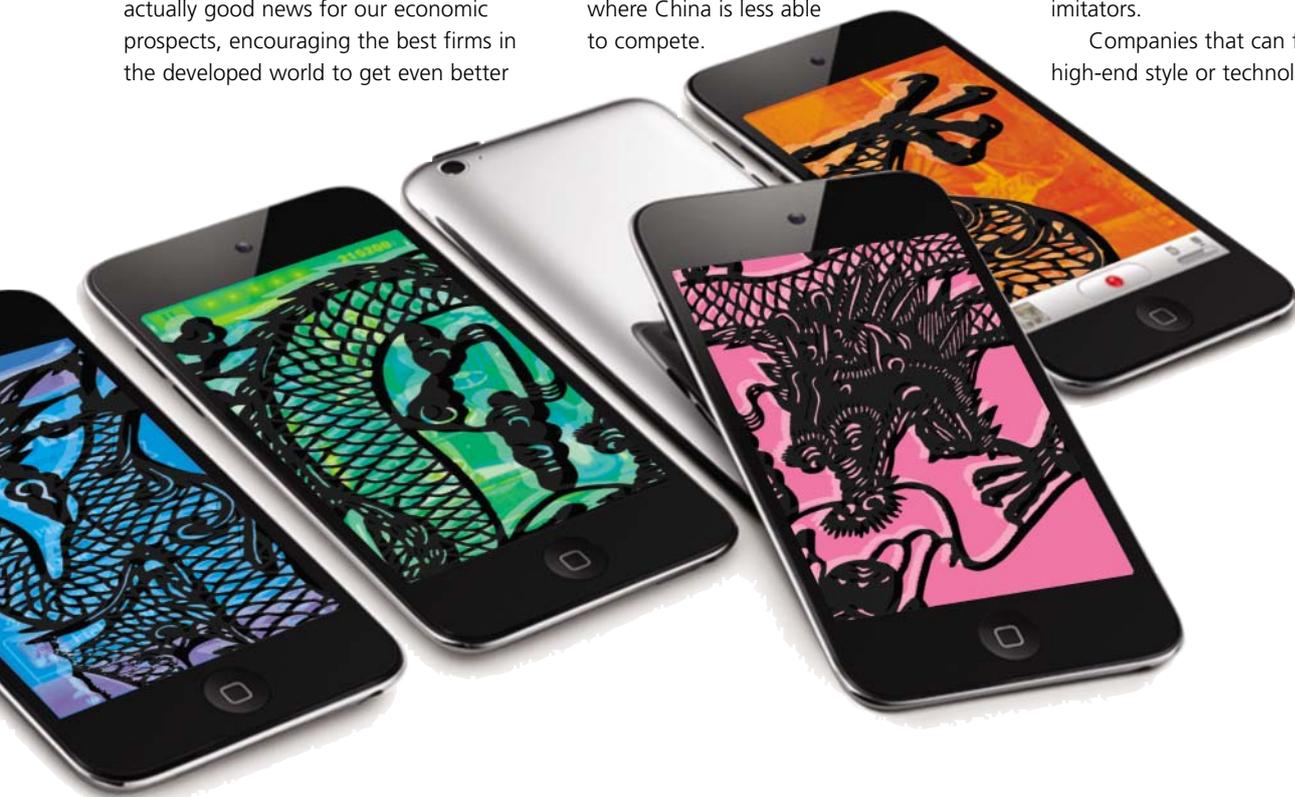
**T**win spectres are haunting Europe and the United States: the growing economic power of China; and fears about where the West's own growth will come from after the crisis. But our research suggests that the dramatic rise in Chinese exports is actually good news for our economic prospects, encouraging the best firms in the developed world to get even better

and to make the innovations that will power growth in the future.

Take footwear, a classic low-tech sector that conventional wisdom says should have all been offshored to China. Many Western shoe manufacturers have disappeared, but some are innovating in designs that serve parts of the market where China is less able to compete.

For example, Massai Barefoot Technology (MBT), which makes posture-correcting shoes, began when Karl Muller, a Swiss engineer with a bad back, relieved his condition through walking barefoot on Korean grass. He patented a design to emulate the effect, which has gone on to great success and now attracts many imitators.

Companies that can find a niche for high-end style or technology can prosper



## The dramatic rise in China's exports is good news for the West's economic prospects

in the face of stiff competition. Vermont-based Burton is a leading snowboard manufacturer, but also successfully designs and produces sportswear clothing. This year, Burton is offshoring the production of snowboards not to China, but to Innsbruck, Austria.

Firms like MBT and Burton have responded to the threat of China by investing in new technology and staff training, and by innovating in highly customised designs. Why were so few firms doing this already? The answer is that enjoying the easy life producing old goods is more attractive than coming up with new ones. But a big shock like China makes innovation relatively cheaper than continuing with business as usual.

That shock first hit when China joined the World Trade Organization in 2001 and quotas on many Chinese goods were reduced substantially. This led to a huge surge in imports and a battle between retailers and manufacturers as the latter succeeded in getting some quotas reinstated. Former European Union trade commissioner Peter Mandelson was in the thick of these 'bra wars' in 2005, as Chinese-made clothing – notably women's underwear – piled up in European ports.

These events provide natural experiments for examining the effect of Chinese competition, an opportunity that the CEP has taken. In the largest ever study of the impact of China on Western technological change, we track the performance of more than half a million manufacturing firms in 12 European countries over the past decade.

A startling finding is that 15% of technical change in Europe can be

attributed directly to competition from Chinese imports, an annual benefit of almost €10 billion to European countries. Firms have responded to the threat of Chinese imports by increasing their productivity through adopting better information technology, higher spending on research and development, and increased patenting.

But not all firms have seized the opportunity. Inefficient low-tech firms have been much more likely to shed jobs and disappear. This in itself raises productivity through the brutal force of natural selection as economic activity is reallocated away from inefficient enterprises to their more nimble-footed competitors. About a third of the overall effect of Chinese competition occurs in the form of this 'creative destruction'.

The job losses for some firms explain the political resistance to trade and why pressure is mounting to 'do something'. The announcement of another massive China trade surplus in August during an otherwise tepid global recovery has added to these fears.

But doling out export subsidies, threatening to label China a 'currency manipulator' or erecting trade barriers (such as President Obama's 35% tariffs on tyres last year) to protect the business and labour lobbies that are losing out are precisely the wrong way to go. Such measures will merely delay restructuring, drive up domestic prices and encourage industries to invest more in lobbying than innovation.

Openness improves overall prosperity, but the worry is that the burden of adjustment falls more heavily on the poor than the rich. Standard economic theory puts this down to increased pressure on the wages and jobs of unskilled workers

who are now competing with workers in Beijing rather than just Birmingham.

Previous research on this 'Heckscher-Ohlin trade effect' suggests that it has been pretty small. Our data show that a greater cause for concern is that there will be a fall in demand for the less educated because of a China-induced acceleration of technical change. The appropriate policy response is not Luddism, but increasing human capital through education and training, and easing the transition of displaced workers across jobs.

There are additional benefits of Chinese trade to those that increase the innovation rate of Western firms. For example, consumers have enjoyed lower prices. Bigger export markets have spurred investment. And offshoring has enabled devices such as the iPod – produced in China but designed in Silicon Valley – to be created, because without the availability of cheap manufacturing many of these devices would never have been developed.

China's rise is undoubtedly a political challenge. But trying to keep China down by freezing it out of the world trading system would surely have been more politically dangerous than keeping China engaged and thus aligning its economic incentives with those of the developed world.

The Chinese have a saying about haunting spectres: 'If you believe it, there will be, but if you don't, there will not'. If Europe and the United States continue to encourage belief in the danger of Chinese trade to their own economies and try to weaken China through trade barriers, the spectre of China will not disappear. On the contrary, the West's own growth will be enfeebled – and that would be unwelcome even in good times.

Chinese imports boost the European economy by almost €10 billion a year through stimulating innovation

This article summarises 'Trade Induced Technical Change: The Impact of Chinese Imports on Innovation and Productivity' by Nick Bloom, Mirko Draca and John Van Reenen, a forthcoming CEP Discussion Paper.

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