

China's economic slowdown: good news for the environment?

The economic growth that China has experienced since the turn of the millennium has exerted environmental pressures, domestically and globally, on a scale unprecedented in history. But now there are strong indications that China's recent development model – debt-fuelled and driven by construction and heavy industry – is faltering.

While this presents major challenges for China and for the world in terms of lower growth expectations, it also offers the prospect of a substantial decrease in the country's massive carbon emissions and endemic air pollution. Whether these decreases materialize will depend on how the Chinese government responds in a situation where the economy appears to be slowing down more than anticipated, and particularly how the government implements its recently announced grand strategy for outward investment: One Belt, One Road.



Chinese workers in Shanghai take a break sitting on rolls of steel wire.

The slowdown: how slow and how low?

The Chinese leadership has long been aware that China cannot sustain the explosive growth rates seen in the past decade. In May 2014, President Xi Jinping announced that China must adapt to a “new normal” of slower but “better quality” economic growth, with less pollution and lower thirst for energy and other resources. Nicolas Stern and Fergus Green (2015) have estimated that this new model could see China's carbon emissions peaking as early as 2025, five years earlier than President Xi promised in his joint appearance with President Obama last November.

The new official target for China's economic growth is 7%. While considerably lower than the double digits seen in the past decade (averaging 10% in 2004–2013), it is still high by international standards.

However, while China's official GDP reporting shows an economy that is still basically in line with the 7% target, there are signs that the slowdown may actually be far sharper and more sudden than the government claims.

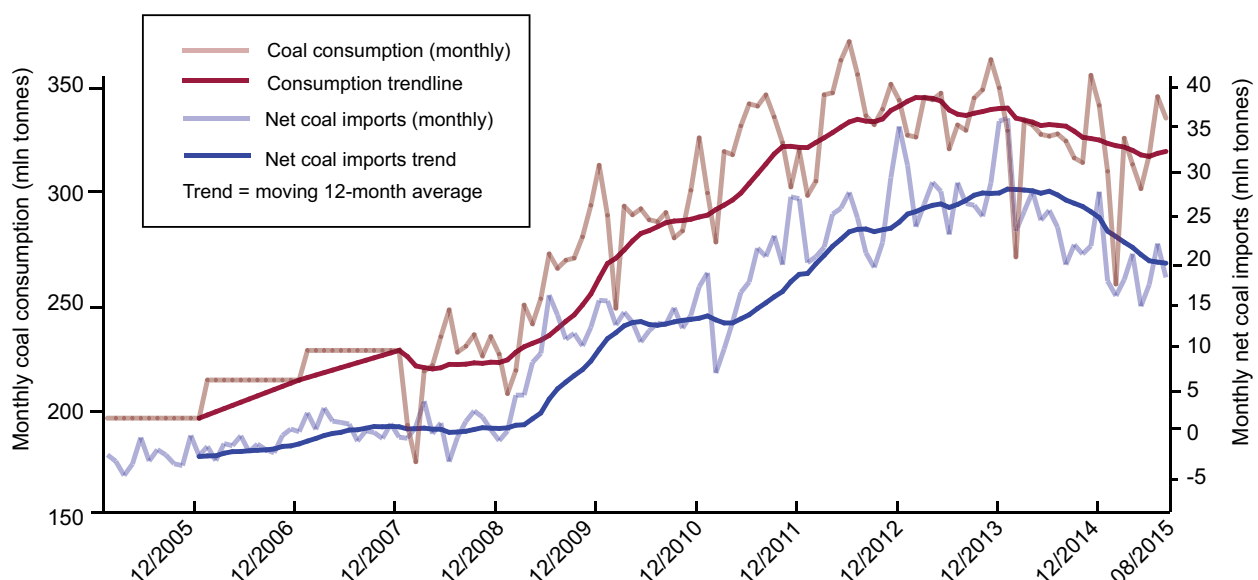


Figure 1: The rise and fall of China's coal consumption?

The figure shows monthly domestic coal consumption in China (in million tonnes, left axis), along with net coal imports (in million tonnes, left axis) from 2005 to August 2015. Note that monthly coal consumption figures for 2005–2007 are calculated based on annual figures.

Data sources: For net imports, Chinese Coal Market Network, Coal Data Center (<http://www.cctd.com.cn/datacenternew.jsp>). The coal consumption data are compiled and averaged from: Chinese Coal Market Network Coal Data Center (<http://www.cctd.com.cn/datacenternew.jsp>); Zhang H.C. et al. (2014). The fluctuation pattern of Chinese coal consumption demand and cause analysis, China Population, Resources and Environment, 24:94-101; Liu M.Z. et al. (2013). Patterns of coal demand fluctuation in China. Resources Science 35(4):681-689; China Coal Monthly, September 2011; National Bureau of Statistics of China (NBSC).

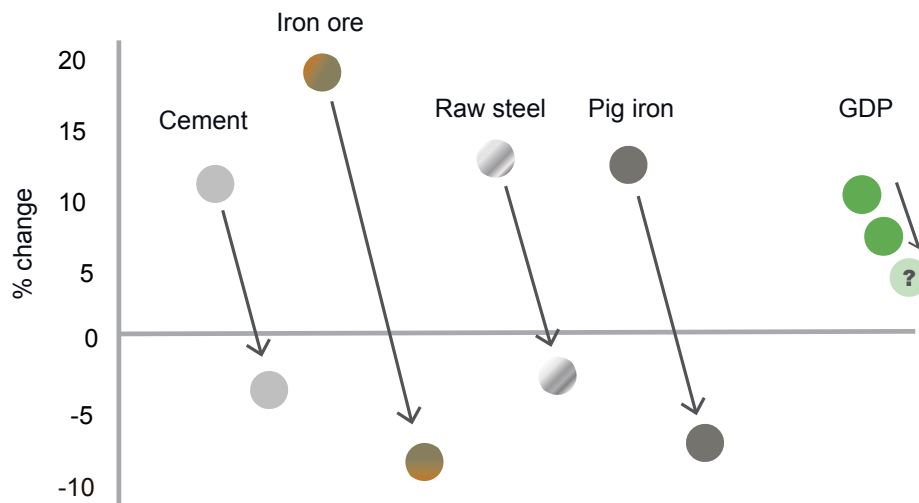


Figure 2: The slowdown in Chinese heavy industry

Comparison of annual average change in output, by volume, in 2004-2013 (left dot) with change in output in 2014-15 (right dot). Official GDP figures for the same periods included for reference.

Data sources: World Steel Association, Steel Statistical Yearbook; National Bureau of Statistics, Chinese Statistical Yearbook.

Remarkable slowdowns in China's electricity and coal consumption indicate fundamental changes in the Chinese economy. Both Chinese and international statistics indicate that coal consumption essentially stalled or even fell in 2014 (Jones 2015; Myllyvirta 2015) – an unexpected break in a long record of rapid year-on-year rises, confounding the common view that coal use would only start a slow decline in the 2020s. As Figure 1 shows, this trend seems to be continuing; however, the pattern of seasonal demand changes makes it hard to be conclusive.

This sudden stagnation in coal consumption in an economy dependent on coal for two-thirds of its total energy supply is highly significant. Since the early 2000s, heavy industry has generated more than a third of China's GDP. It has accounted for a major share of China's coal demand, either directly (e.g. demand for coking coal for steel production) or indirectly through its consumption of well over half of China's electricity output, nearly three-quarters of which is coal-powered.

Endemic overcapacity

Output figures for important heavy industrial products – cement, iron, raw steel – go a long way towards explaining this drop in demand. As illustrated in Figure 2, developments over the past 12 months display a dramatic contraction – some call it a “collapse” – in China's heavy manufacturing. Lower demand from these energy-intensive industries – in combination with the installation of over 200 TWh of non-fossil fuel electricity capacity over the year, led to a decline of coal-powered electricity generation in 2014-15. As a consequence, almost half of China's thermal coal capacity stands idle (Gronholt-Pedersen and Stanway 2015), marking the lowest capacity utilization ever recorded for thermal power in China.

Overcapacity seems to be endemic in Chinese industry. The steel industry has an estimated overcapacity of 300 million tonnes (Caijing 2014), a staggering one-third of total production capacity. Assuming that other heavy manufacturing sectors are

similarly afflicted, trimming down the redundant capacity would represent a total downward adjustment of about one-tenth of GDP.

Reconciling the slowdowns in heavy manufacturing with 7% economic growth would require unprecedented growth in other (less energy-intensive) sectors. Although China's service industry is growing and contributed almost 50% of GDP growth in the first half of the year, this is not enough to fill the gap. The IMF (2015) predicts that China's GDP growth in the coming years will fall slightly short of 7%, with a projection of 6.8% growth for 2015 and 6.3% growth for 2016 and 2020. Other observers, some from major financial institutions, estimate that real GDP growth in China will be closer to 4 or 5% (Noble 2015).

Pain of sickness, or pain of cure?

China's economic slowdown is going to be painful, not just for China but also for foreign investors and businesses that have come to depend on the decade-long commodities bull market. Therefore, a critical question for reading the future of economic policy in China is whether this is the pain of sickness or the pain of cure. Is the slowing growth and contraction in heavy manufacturing a natural result of the senior leadership's commitment to achieve the “new normal”? Or will China fall back on debt-fuelled support to maintain its high-carbon sectors?

With hindsight, it is clear that China's senior leadership has been aware of these mounting problems for almost a decade. In 2007, former Premier Wen Jiabao diagnosed China's development model as “unsustainable, uncoordinated, unbalanced, and unstable” (Zhu 2007). Nevertheless, the giant stimulus packages that were rolled out after the 2008 financial crisis made the imbalances in the development model even worse. The massive wave of debt-fuelled construction and heavy manufacturing accelerated CO₂ emissions, aggravated pollution, and further worsened problems with overcapacity, unoccupied real estate, and other non-performing investments.

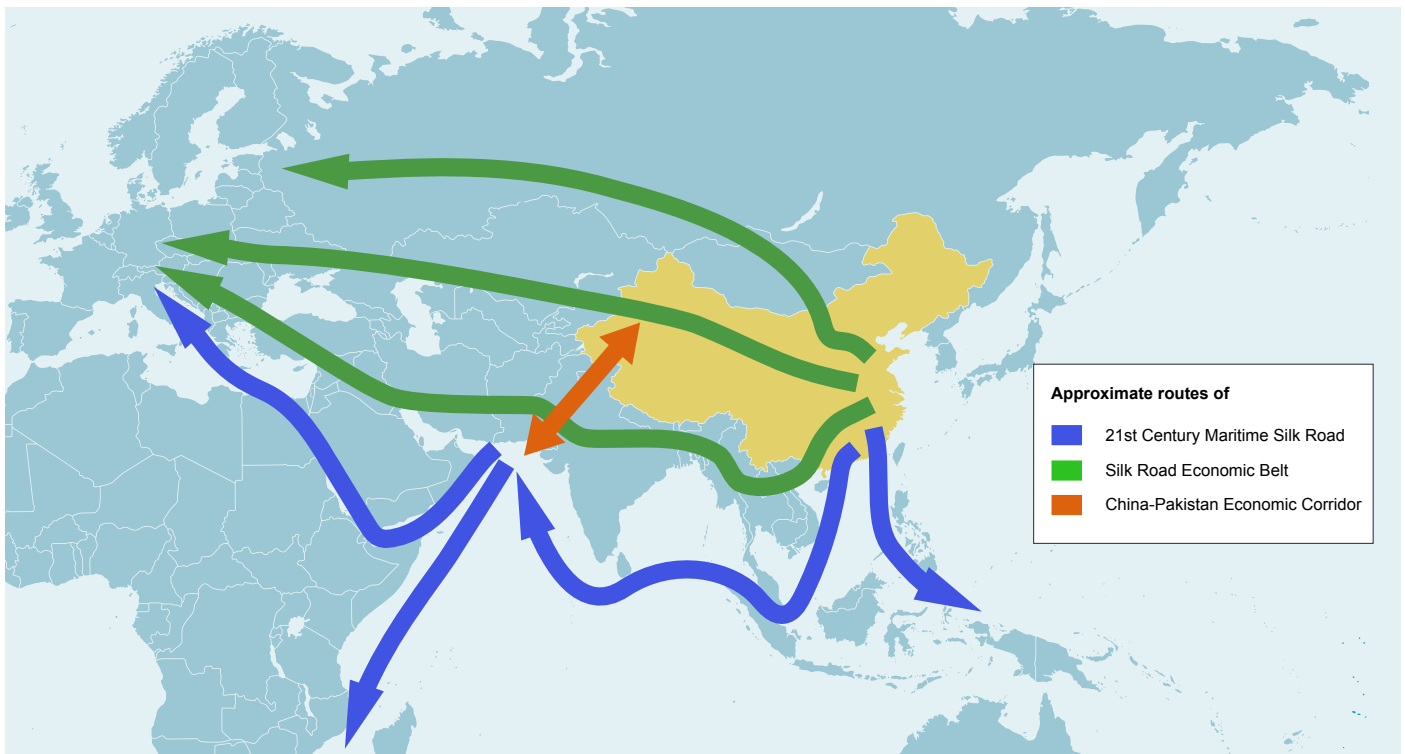


Figure 3: Indicative map of One Belt, One Road routes

One Belt, One Road is China's recently announced grand strategy of massive overseas investments. Combining overland routes across Central Asia to markets in Europe and Russia (the "Silk Road Economic Belt") – with shipping routes to the Middle East, Africa, Europe and the Pacific (the "21st Century Maritime Silk Road"), it aims to improve communications with major trading partners. The related China-Pakistan Economic Corridor, linking western China with Gwadar port in Pakistan, is also shown.

So, while high-profile speeches by senior leaders are unambiguous that reforms are aiming for slower but healthier growth (Tian 2015), there are signs that the biggest stimulus package since the 2008 financial crisis is now funding a new wave of subsidies to prop up the domestic economy (Curran 2015). For example, oversupply and subsidized production combined with repeated devaluations of the Yuan over the summer is likely to push Chinese steel exports beyond 100 million tonnes for the year – well above even the 2014 record of 94 million tonnes (Lian and Serapio Jr 2015).

China's grand strategy for global expansion

As Chinese manufacturing capacity and the country's real estate markets are plagued by massive surplus (Anderlini 2015), the leadership is looking beyond its borders for new generators of future growth. In March 2015, the government released the action plan for a grand strategy to generate new growth and boost China's influence: One Belt, One Road (OBOR) (NDRRC et al. 2015).¹ OBOR aims to generate multi-trillion dollar additional trade annually by creating corridors and trade routes, complete with infrastructure such as roads, railways, ports, pipelines and power stations, linking China to Russia, Europe and East Africa via Pakistan, and Central and Western Asia (Figure 3).

OBOR is closely related to the Chinese initiatives over the past couple of years to establish a set of new financial institutions to raise funding for infrastructure. China has itself committed a

total of about 100 billion USD to these institutions: 40 billion USD to the Central Asia-focused Silk Road Fund, 50 billion USD to a new Asian Infrastructure Investment Bank (AIIB), and 10 billion USD to the New Development Bank, which is led by the Brazil-Russia-India-China-South Africa (BRICS) grouping (Godement and Kratz 2015).

The Chinese government has stated that green infrastructure should be promoted within OBOR, and also has ambitions to develop China into a financial centre for green investment. With leading expertise and capacity in green infrastructure technologies such as high-speed trains, solar and wind power, China arguably has a lot to offer, and to gain, from low-carbon infrastructure development in neighbouring countries.

On the other hand, it has been suggested that a key rationale for OBOR is to provide an outlet for overcapacity from China's heavy industry (Goh and Qing 2015), making the implementation of the strategy far more likely to be "brown" than "green". The current 50 billion USD cooperation along the China-Pakistan Economic Corridor indicates there is considerable risk that high-carbon energy and infrastructure systems made in China could lock countries along the OBOR routes into long-term fossil fuel dependency (Chowdhary 2015).

China at a crossroads

Slower growth and contraction in heavy manufacturing is what the "new normal" is supposed to be all about: Chinese policy should now try to rebalance the economy in order to make it fit for new realities. Opening the taps of debt-financed investments and credit could provide a short-term boost for the old carbon-intensive economy, but would have enormous opportunity costs

¹ The grand strategy is mostly referred to as "One Belt, One Road" in English – a direct translation from Chinese Yi Dai Yi Lu. However, in Chinese official sources the English term is "the Belt and Road" initiative. It builds on two initiatives announced in 2013 – "the Silk Road Economic Belt" and "the 21st Century Maritime Silk Road."

when the money flows to unproductive investments and sectors with overcapacity. Similarly, supply-side driven OBOR implementation could become a very costly way of extending China's old, high-carbon economic model to neighbouring countries and beyond. The environmental consequences of this would be dramatic.

It all boils down to the question of what exactly is the essence of the “new normal”, and of OBOR. Are they about a transition to an economy where consumer demand and markets play a central role in allocating funding? Are they about a switch to less resource-intensive, more sustainable economic development? Or is the focus still on trying to reach growth targets through supply-side politics, whatever the long-term costs? And if they work in opposite directions, which one will win out? The answers to these questions have huge implications for carbon emissions, global resources, and for China itself.

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