Unproductive production

Weakening productivity is casting doubt on the sustainability of China’s growth

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THE growth of China’s economy is staggering: it produced $9.5 trillion-worth of goods and services in 2013, nearly three times more than in 2007. But has that growth come simply from deploying more labour and capital? Or did total factor productivity (TFP)—the efficiency with which those two inputs are used—also increase? China’s future growth hinges on the answer.

A period of high growth does not necessarily involve a rise in productivity. The more people there are in employment, and the more factories and roads there are for them to use, the bigger an economy will be. But those workers and roads may not be put to good use. As long as the amount by which labour and capital grow outpaces any fall in productivity, GDP will still increase.

Growth of this sort, however, can last only so long. Neither labour nor capital are infinite. In the long run, improving the productivity with which they are used is the magic ingredient for any economy, the only path to sustainable growth. Hence the concerns about China. A series of estimates published this year have all suggested that productivity is flagging.

At the pessimistic end of the range is Harry Wu, an economist who has devoted much research to the shortcomings of China’s official economic data. He finds that since 2007 TFP has actually been a drag on the economy, denting growth by about 0.9 percentage points a year. At the more optimistic end, researchers at the World Bank think TFP added nearly three percentage points a year to growth from 2000 to 2010—but even they reckon that is 40% lower than in the 1990s. In between these two estimates are Jianhua Zhang, Chunxia Jiang and Peng Wang, two of whom are with the People’s Bank of China. They conclude that productivity increased just 1.5% a year between 1997 and 2012.

As these diverging estimates suggest, overall productivity growth, despite being central to economics, is frustratingly difficult to pin down. It cannot, after all, be seen. When comparing two workers with the same job in the same company, it is easy to determine which one produces more.
For economies, such apple-to-apple comparisons are not possible. Instead, economists get at TFP by subtracting the change in capital and labour deployed from the change in overall output. The difference (known as the Solow residual, after Robert Solow, the economist who pioneered this method) reflects the contribution of productivity to growth. In this way, the unseen becomes visible.

But the process requires several accounting somersaults. Assumptions are needed about, among other things, the size of the capital stock, the rate of capital depreciation and the level of workers’ education. Mr Wu does not trust official GDP figures and so constructs his own. Because his estimate of average annual growth for 2008-12 (6.5%) is dramatically lower than the official figure (9.3%), his calculations yield a negative Solow residual. Productivity, in other words, appears to have gone into reverse.

This conclusion looks too gloomy. For one thing, there are problems with Mr Wu’s own numbers. He relies on a selective sampling of official data and applies far-reaching yet apparently arbitrary adjustments to them, assuming, for instance, that reforms in the 1990s added only 1% to services growth. Many other economists see problems with Chinese data—lumpy growth figures are often smoothed, for instance—but not enough to justify such extensive revision, especially during the past decade when there has been a proliferation of data from China’s trading partners that can be used to verify the Chinese numbers.

But even the more sanguine estimates from the World Bank and the researchers at the central bank reveal a worrying trend in terms of TFP. It may still be positive but it has slowed, and quickly at that. All agree that a massive accumulation of capital, rather than any improvement in the efficiency with which it is used, has become the dominant engine driving China’s GDP.

In search of lost growth

How worrying is this? Some slowdown in productivity is only natural after three decades of rapid growth. The World Bank calculates that the reallocation of both labour and capital from farms to factories and from state-owned firms to private enterprise accounted for nine-tenths of TFP’s contribution to growth in 2000-10. But as the private sector grows and ever more workers flood to the cities, the returns from this are bound to diminish.

There is another, more worrying factor behind the deceleration in productivity, however: bad lending and investment decisions. Financial development, handled well, should promote growth by improving the allocation of resources. But the researchers from the central bank find a strongly negative correlation in China between growth in lending and in TFP. That is an indication that state-owned banks, which still dominate China’s financial sector, are not disbursing enough credit to the country’s most deserving companies. And the economy is consuming more and more capital. China’s incremental capital-output ratio (ICOR), a measure of how much investment it takes to achieve each percentage point of growth, rose to 5.4 in 2012 from 3.6 over the preceding two decades, according to the World Bank. Japan, South Korea and Taiwan were far more efficient
during their high-growth phases, with ICORs of 2.7-3.2.

Perhaps this should not be surprising. The Chinese government has warned about overcapacity in scores of industries from steel to textiles. Heavy capital spending gins up growth when factories are built, but it also shows up in the data as weak productivity if the factories are only partly used. Nevertheless, it is still alarming. The Communist Party has long pledged to make China’s economy more efficient. The data on TFP show that it is struggling to do that. Accumulating productive capacity is easier than putting it to productive use.


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