

**TITLE: The paradoxes of economic growth**

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Productivity is easy to define, hard to measure and impossible to predict.

But there is a big difference between how much we talk about something and how much we understand about it.

For economists, productivity refers to the amount of output that can be produced per unit of input. Profit, on the other hand, fluctuates with the prices paid for inputs and the prices received for outputs.

Profit and productivity growth sometimes go hand in hand, but they need not. As the mining boom showed, the profits of that industry soared as productivity plummeted.

Similarly, while labour productivity in manufacturing has grown strongly, the profitability of manufacturing has declined to the point that Holden, Ford and many others are leaving the country.

The inverse relationship between productivity growth and profit growth is not ironic; it is the result of simple economic forces that most of Australia's politicians don't seem to understand.

As the price of thermal coal surged from \$US58 per tonne in 2004 to \$US163 in 2008, coalminers' profits soared. Those record prices and record profits induced the mining industry to dig for coal deeper underground in mines further away from ports. These mines take more workers and more machinery to extract a tonne of coal and, in turn, productivity fell.

In 2013 investment in new mines accounted for 60 per cent of new, fixed-capital investment, but the more the miners spent, the more harm they did to Australia's productivity growth. The new mines might have been profitable, but each new one needed more workers and machinery to get a tonne of coal to market than the mines we already had.

The fact that so many of Australia's politicians simultaneously called for more rapid approval of resource projects while bemoaning the slowing in productivity growth, simply shows while they like to talk about economics, they have no real understanding of it.

The same is true for the debate about population. There is no doubt increasing the number of people working in Australia leads to an increase in output. But there is also no doubt that increasing the number of people making things has nothing to do with increasing the productivity of each of those people. Just as chasing profits can drive down productivity, so too can chasing a big Australia.

Australia has the fastest population growth in the developed world. Our population grows by about a million every 2½ years. Despite spending tens of billions a year on schools, roads and hospitals, the record spending is not keeping up with the record population. Investment in new housing is often said to be a major driver of the Australian economy.

Australia is spending up big on basic services, but other countries are investing in the infrastructure of the 21st century. The NSW government saves money building tunnels too small for double-decker trains, but Asian and European governments are investing in very fast trains. And while the Abbott government questions the merits of renewable energy, developing countries embrace solar for basic energy needs.

While our national accounts tell us much about the amount of capital expenditure, they tell us nothing about the quality. Spending on new houses and roads for our bursting cities is defined as capital along with new factories and cities with free Wi-Fi.

Investing in more of the same old infrastructure to support a growing population is what economists call "capital widening" while the kind of investment in new capital that allows firms to innovate and workers to produce more output, is called "capital deepening".

It is not new investment in infrastructure that drives rapid productivity growth, it is investment in new infrastructure. Just as the mining boom has driven down our productivity growth, so too has the population boom.

Just as the mining boom drove record profits, so too does the population boom. But, whether our politicians understand it or not, productivity growth is not the same thing as profit growth.

The former drives innovation and the latter supports the status quo.

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