

Productivity seems to be one of the measures the Federal Government is using to justify its policy decisions in the lead up to the budget.

The Prime Minister Malcolm Turnbull invoked this little understood term in relation to the bill to resurrect the Australian Building and Construction Commission.

He [said](#) :

When the Australian Building and Construction Commission was last in force, productivity in the sector grew by 20%. Since it was abolished productivity has flat-lined.

Whether that is true or not depends mostly [on who you ask](#) .

That's because productivity is a very rubbery concept, enormously tricky to measure and highly politicised. In fact, of all the tasks given to national statistical agencies, measuring productivity is one of the most difficult.

## How the changing economy affects productivity

As countries like Australia move from an industrial economy to an economy that is largely made up of various services, the challenges in measuring and understanding productivity growth become more complex.

In an agricultural economy, the two resources that determine growth are land and labour, when the population rises it drives an increase in what is produced. However if labour and produce are at the same rate there is little or no increase in productivity, because productivity is when the ratio of produce increases in relation to labour.

## Budget explainer: the problem with measuring productivity

Written by The Conversation

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The creation of an industrial economy in Australia required lots of investment in infrastructure. This combined with labour, resulted in a higher rate of productivity growth than previously possible. As that higher growth rate was sustained over decades of industrialisation it allowed [incomes and living standards to rise](#).

Many economists attribute the high rate of productivity growth in the 1990s to the [rapid development of information technology](#) and telecommunications industries. There was a surge in investment in these industries as these technologies became more widely used in other industries, and were adapted for a wide variety of uses.

It's likely that [new technologies](#) like nanotechnology, molecular biology, genetic medicine, artificial intelligence, additive manufacturing (3D printing) and remote sensing will be the drivers of growth and productivity in the coming decades. These industries need highly skilled people and lots of investment.

In a [knowledge economy](#) intellectual capital is as significant as physical capital. Nowadays, investment in workforce skills and training has joined infrastructure as a driver of productivity.

Estimates of annual growth are calculated by immense amounts of data and are [typically around 1-2% a year](#), plus or minus.

It's much harder to measure the [emerging digital and knowledge economy](#) with this data, so statistical agencies are developing new sources that use information such as business tax information and other digital data. If this data is underestimating what is being produced, while the workforce is increasing, the growth rate and level of productivity will also be underestimated.

This might be part of the reason Australia seems to be in economic slowdown.

## Productivity and government policy

The reason [productivity](#) is such a central idea in both economics and politics is the role it plays in long-term economic growth and development. Productivity growth comes mainly from invention and innovation, and these in turn come mainly from new knowledge in the form of scientific and technological discoveries.

This is why the political agenda linking research, development and innovation to productivity, incomes and living standards is so attractive. It seems to be a bottomless source of growth and prosperity. This is not really the case, because productivity growth also requires substantial [investment](#).

The benefits from increasing productivity are similar to the gains from compound interest – small annual amounts can, over enough time, lead to large gains. However, because it is incremental and compounds slowly, productivity is not really suitable as a policy target. There are two main reasons for this.

First, unlike other targets such as business investment or employment, the long-term nature of productivity growth means year-to-year rates should not be used as a policy target. There is no direct method of quickly affecting productivity growth, long-term planning is always difficult because it crosses the election cycle, and government policies constantly change. Further, the [benefits](#) of improved productivity are spread very unevenly across industries and regions.

Second, there are also short-term fluctuations due to the business cycle. The productivity growth rate tends to move up and down with [GDP](#) growth rates, rising during expansions and falling in contractions.

Productivity can be used to support a wide range of policy options. It can support arguments for more infrastructure, tax breaks for business, more spending on education, energy diversification, enabling start-ups and venture capital, microeconomic reform such as competition policy and labour markets, increasing connectivity and so on.

All these policies can support improved productivity, if they are well designed and implemented. However, many of the current policy settings were put in place when we had an industrial

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economy and are not really suited to the emerging post-industrial economy of the [21st century](#) .

If raising productivity is the goal, many different policies need to work effectively and reinforce each other. And these policies will only work over the medium to long-term.

*Gerard de Valence does not work for, consult, own shares in or receive funding from any company or organization that would benefit from this article, and has disclosed no relevant affiliations beyond the academic appointment above.*

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