# Productivity, Growth and Progress

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## Michael Brennan – Chair – Productivity Commission

Thank you. It is a great pleasure to have been asked here today by the conference organisers.

There is an American economist named Timothy Taylor, who famously asks his first year students to consider the following thought experiment:

Imagine that you can choose between two scenarios – you can earn the current average income today (around $70,000 in the US) or you could choose to go back in time to 1900, and receive exactly the same annual amount - $70,000.

The point being that if you earned $70,000 in 1900 you would be extremely rich – literally in the top fraction of the top 1 per cent of income earners, which probably means a mansion, servants, and maybe a life of relative idleness.

So which would you choose?

It turns out that when students really think about it, two thirds would prefer to be an average income earner today.

Why? Because although it doesn't give you servants and a private rail carriage, it does give you a car and air conditioning and indoor plumbing. And a vaccine for polio, and a much lower likelihood of dying in childbirth.

The way I think about it, you could be the richest person in the world in 1900, but sooner or later you still have to go to the dentist.

When you reflect on that, 2019 starts to look a lot more attractive.

That choice encapsulates what economic progress is really all about.

The real reason we prefer 2019 to 1900 isn't that we have more stuff.

It's that we have qualitatively different stuff – refrigeration, air travel, TV, smartphones, the internet and statins. And of course drinking water at the turn of the tap.

If economic progress was just a matter of having more of what we have today, it would still be something, but you start to wonder: is it all worthwhile – worth the environmental cost? Does it just leads to more consumerism?

And that is often how the debate about economic growth plays out.

And part of the challenge we have when we try to sell the notion of productivity.

The very term conjures up an image of working harder – wringing ever more output from our existing inputs.

Doing more with less, and having more of the same, and making greater demands on scarce natural endowments like water or arable land.

In reality, the reason we focus on productivity is that it opens up new value and new possibilities – as yet unimagined.

And many of these are intangible goods and services that don't involve physical inputs (like the invention of a new drug, or irrigation technologies that result in us using less water).

Here is a second reflection: that the choice between 2019 and 1900 is very stark for us, but it is worth remembering that for most of human history that thought experiment would have made no sense whatsoever.

Because for most of human history, income/wealth and economic wellbeing did not change at all from one century to the next. Humans were, by modern standards, dirt poor for millennia, and had no basis to expect the future would be any different.

Then, suddenly around the year 1800, incomes in the western world shot up - astronomically – and have increased around 16 times since then (with many other nations catching up since then).

This rise in incomes is what economist Deidre McCloskey describes as the great fact and it is indeed one of the most extraordinary facts about human history.

Yet the process by which this rapid growth occurred (and by which countries like Japan and Singapore emulated it in an even shorter period) is not particularly well understood.

Perhaps surprisingly it's not even the primary focus of the economics profession.

The point is: productivity and economic growth aren't everything, but they're still a pretty big deal.

But, returning to the present day, we find that – unfortunately, productivity growth in Australia has slowed materially from its recent peaks in the 1990s.

In 2018-19, labour productivity – the level of output per hour worked in the 'market sector' fell by 0.2 per cent:

- That compares with a long run average of 2 per cent growth.
- It has now averaged below 1 per cent per annum for the last five years.

This is partly because we have been adding less to the capital stock in recent years.

But our multi-factor productivity (MFP for short) which takes account of both labour and capital inputs has also been sluggish in recent years.

Australia is not alone in this. The productivity slowdown is a global phenomenon, and there is no consensus about what has caused it:

- Some point to the fact that recent technological innovations are pretty incremental compared with the transformative inventions of the past (electricity, the personal computer or the internal combustion engine).
- Some see the culprit as the corporate focus on cost-cutting, ahead of investment in research and development (R&D).
- Some think that the shift towards services – which tend to be labour intensive has led to lower measured productivity.

So what should we do about it?

There is a school of thought that we could be on the cusp of another great productivity surge as artificial intelligence starts to diffuse – with a broad range of applications across the economy.

On this view, artificial intelligence (AI) is what is known as a General Purpose Technology (GPTs) – that is, a technology which is pervasive, can be improved over time and can spurn a lot of complementary innovations.

The steam engine, electricity and the personal computer are examples of GPTs.

They generally involve a time lag between the initial invention and the roll out of the technology in a range of practical applications, and a corresponding time lag before they show up in the productivity statistics. That was certainly the experience with the use of electricity in manufacturing and the impact of computers across a range of industries.

But even if a general purpose technology like AI is the next big thing, it doesn't lift productivity all by itself an economy needs to be well positioned to make use of technology – to be flexible enough to change business models or product lines to take advantage of new technological opportunities.

So policy has a role in fostering higher productivity. Such has been Australia's experience in the past.

In the period following the Second World War, Australia's global productivity ranking slipped – from being in the top 5 in 1950 to being around 14th place by the early 1980s.

That relative economic decline was part of the motivation for the reform agenda of the 1980s and 1990s.

That agenda, as you know, included the floating of the Australian dollar, the gradual reduction of import tariffs, the corporatisation, and in some cases, privatisation of some government business enterprises and the introduction of competition into many areas of the economy.

By the 1990s, Australia achieved the highest rates of multi factor productivity growth it had seen for some time.

We arrested, and then started to partially reverse, the decline in Australia's relative productivity ranking.

I acknowledge that there is considerable debate about the causal link between the reform process and the high productivity growth achieved in the 1990s – evidence of the imperfect link which I mentioned before.

Indeed, global productivity surged in the 1990s in part due to that lagged effect of computers which was a general purpose technology which took time to show up in the productivity stats.

When we look back on that reform era in Australia, what was it that we were trying to achieve?

Many of the reforms were aimed at improving the efficiency of resource allocation in the economy.

That is to say, there was a strong sense in the early 1980s that, with our high tariffs, sectors shielded from competition and our inefficient government businesses, both capital and labour were being misallocated – that they were tied up in unproductive areas and could be more productive if we allowed them to shift to more efficient sectors of the economy.

And those efforts were successful.

Looking at our situation in 2019, we still have some areas where resources are allocated inefficiently, but a lot fewer of them.

What are they?

- The financial sector - where our work on superannuation and banking suggest some misallocation of resources.
- The super industry - involves higher costs than it needs to, suggesting that the industry is taking up resources that might be better employed elsewhere
- Energy - where we have arguably not got pricing, costs, investment or reliability quite right yet.

- The health sector - where we arguably have too many resources focused on the acute sector rather than alternative pathways which could avoid hospitalisations.
- Anti-dumping - which remains an overused back door protectionist measure.
- We still have some professional monopolies.
- There's always the risk of poorly planned and executed infrastructure projects.

But in other areas, our problems are not so much to do with an inefficient allocation of resources across the economy.

They reflect a new challenge.

It's a challenge of capability and dynamism: how we generate new ideas (new products, services, business models and production processes) and diffuse them effectively through the economy.

To achieve that, we need:

- Institutions that foster and encourage ideas generation.
- Market structures that reward new ideas and diffuse innovations rapidly.
- Mobility of people, capital and goods.
- An education system which builds strong human capital – that is, a workforce which is both skilled and adaptable.
- A health system that supports wellness and thereby encourages high levels of workforce participation and productivity.
- Regulations – of product markets, financial markets and labour markets – which are measured and proportionate, well targeted and still provide scope for innovation and risk taking.
- A capable and value-focused public sector – which cooperates to deliver real world outcomes for individuals, rather than siloed structures delivering mass produced outputs.

Is this any different to the past?

In some cases, not much: we will often need the same types of policy which characterised past waves of reform.

Like using the power of markets and competition.

But there will be other cases where we have to be alive to the shortcomings of markets – and to understand where they are less likely to work effectively.

And it's not always about getting government out of the way, because in many cases, government is inevitably front and centre – as a deliverer of the relevant services such as in education, training and health care.

Or at the very least a co-producer in a mixed market.

We probably need more emphasis on how to foster entrepreneurship.

This is not easy, as entrepreneurship (like creativity in general) is a pretty mysterious process that is hard to manufacture or replicate.

But it is fundamental to economic progress, even though conventional economics has struggled to accommodate or model the role that entrepreneurship plays in a modern economy.

Another key element will be data – a large, new renewable asset that we are only beginning to understand.

There are some estimates that the world now generates in two days the amount of data that was generated in the entire year 2002.

Add to that the ongoing fall in the real cost of computing and data storage, and you have significant new opportunities to unlock the power of data – for machine learning, for medical research, for policy analysis and for individual empowerment.

Two things which the Productivity Commission (PC) has recommended and which have been taken up by the Government are:

- The creation of a Consumer Data Right – effectively a property right over consumer data to create new opportunities for digital disruption and consumer choice, starting in the banking sector.
- New arrangements to free up data release by governments, via trusted intermediaries or custodians, to help ensure that government and administrative data is made more widely available.

By their nature, it is hard to estimate the gains to gross domestic product (GDP) which can come from these actions – they could be small or they could be transformative.

Another focus for future reform is our cities.

Cities represent different things to different people. To an economist, a city is essentially a large labour market.

It allows firms to locate nearby to one another and access huge pools of specialised workers, who in turn get the benefit of multiple potential employers.

That improves the quality of matches between firm and employee. But it also does something more – and more mysterious: it creates knowledge spill-overs.

The interactions between skilled workers helps generate new ideas and speeds their diffusion through the economy.

That's why economic research is increasingly pointing to the productivity benefits that can come from well-functioning cities.

By well-functioning, we mean cities that can affordably house workers and connect them to high productivity jobs, and which are dynamic in that the city will change shape to reflect the emergence of new economic opportunity.

This is why policy makers are paying more attention to:

- land use planning and zoning, which can restrict new business opportunities
- taxes like stamp duty, which can inhibit worker mobility
- the efficiency of infrastructure investment, but also how we use and price it – which is not a new issue in water, but it's radical when it comes to roads.

The water sector is an interesting example of the sort of shift in the reform debate which I have tried to sketch out.

In the 1980s, the main problem in urban water was one of efficiency.

Water businesses were close to government, such that regulation, ownership, pricing and investment decisions were often blurred together.

There were concerns that capital investment decisions were not necessarily efficient and pricing was not calibrated to recover efficient costs, including a return on capital.

Governance was often murky…

So what did we do?

We structurally separated policy making from service delivery, introduced stronger governance of water authorities and brought in independent pricing regulation based on the building block methodology.

All this has served the sector and the community very well.

And there is nothing about our future challenges that suggests we should walk away from these fundamental principles.

In fact, efficient capital investment remains as big a challenge as ever, given the demands of population growth and a changing climate and thus the eventual need for new supply augmentation in our big cities.

But policy makers, and all the relevant players, now have to grapple with the emerging challenge of how we better integrate planning and investment decisions.

How do we better manage stormwater flows, to maintain the environmental quality of waterways, but also as a source of water for the landscape and public spaces?

What are the options for using treated wastewater which are actually cost effective?

How do you value and fund projects which contribute to urban cooling and green open spaces?

At the PC, our inclination is that the answer is not for water service providers (or economic regulators) to start becoming policy makers or urban architects.

But we do need to think about how we better integrate planning and policy making to meet these new challenges. How we bring together:

- water service providers
- urban planners
- environmental regulators
- economic regulators
- local governments.

Respecting the distinct roles of each, to ensure we have genuinely integrated water cycle management.

We have been thinking a great deal about these issues in our water 'off season' – between reviews of the Murray-Darling Basin Plan (MDBP) and the next review of the National Water Initiative (NWI).

Jane Doolan and Jack Knowles have specifically asked me to thank you all for the valuable input you have provided to them and the team in this endeavour.

Since taking on the functions of the National Water Commission (NWC), we have wanted to make sure that we remain active in the debate and maintain a presence between formal reviews.

I know it's not quite the NWC, but I want to assure you that we are taking our responsibilities to the sector very seriously.

And I think the research we will put out on integrated water cycle management – which is due for release late this year or early next – will help develop a framework for how jurisdictions can think about and better organise their efforts.

So it's an exciting time, even if, as a nation, we are challenged by low productivity growth.

We need to keep focused on defining and delivering a reform agenda if we are to keep boosting living standards. And that's not easy. But you have to optimistic.

And whenever it gets hard, you just have to remember it could all be a lot worse. You could be going to the dentist in 1900.