Services Sector Productivity

Speech to the McKell Institute, 15 April 2021

Michael Brennan, Chair

Thank you for having me here today.

I am going to talk mainly about our recently released work on services productivity, but first wanted to reflect on the nature of the Australian economy into which Sir William McKell was born and raised, in which he left school, trained as a boilermaker, entered the labour movement and ultimately the NSW Parliament.

At the time William McKell left school, at the age of 13, Australia was — along with New Zealand and Argentina — the richest country in the world in per capita terms.

That largely reflected the legacy of mining and pastoral wealth.

I was reflecting on this fact last Sunday when Melbourne played Geelong in the AFL – given that these two clubs purport to be the oldest professional clubs of any football code in the world.

Part of the reason why Australia should boast such a claim is that many Australian workers from the 1850s had Saturday afternoons off, through a combination of union activism and general affluence.

Of course, despite being rich relative to the rest of the world, the Australians of 1900 were, by today's standards, extremely poor.

One way to measure the rise in incomes since the early 1900s is to look at the amount of time that an average wage earner would need to work to pay for basic goods: in 1900 compared with today.

For example, we calculate that to purchase a bicycle in 1900 would take around 527 hours of work at the then average hourly wage (several weeks, depending on the length of the working day). in 2000 it was more like 18 hours – well under a week of full time work.

To afford a litre of milk in 1900 an average worker would toil for 30 minutes, compared to 5 minutes in 2000. A loaf of bread would 'cost' 20 minutes in 1900 compared with 8 minutes in 2000.

It is worth reflecting on that last figure in particular, as it neatly encapsulates the miracle of specialisation, automation and exchange. It takes an individual a lot longer than 8 minutes to make a loaf of bread, but in a modern market economy, eight minutes of the average worker's time (doing something other than baking) is enough to provide the wherewithal to acquire that same loaf.

As telling as these estimates are, they miss an important point – much of the rise in living standards since 1900 is measured not by the things that got cheaper or more accessible, but by the things that didn't exist then but do now: like antibiotics, air conditioning, TV, the dishwasher or the smart phone.

You can think of something like antibiotics as having an infinite cost in 1900 – no amount of toil would allow an average worker to acquire them. Today it might take a couple of hours.

As economists have noted, for services — as distinct from goods — the story is not always quite the same. Goods like bread, milk and bicycles got cheaper to produce, largely through technology and automation: using more and better capital, fewer material inputs and also less labour.

The challenge for many services is that they are labour intensive. Where labour is a fundamental input, such that it is hard to replace with capital, then logically it is equally hard to reduce the cost of the service, when measured in the hours of average worker's effort required to purchase it.

Returning to the football match (effectively a service), we estimate the cost of admission in 1900 at roughly the equivalent of 1.7 hours of the average worker's time. That compares with 1.2 today. Hardly a radical reduction.

But again, this misses an important point: A smart TV makes the match available to a much broader audience, with high resolution, replays and all manner of expert analysis in a way that wasn't available in 1900. And all this for an average or marginal cost much lower than that of general admission.

I am reminded of the thought experiment which US academic Timothy Taylor asked his first-year economics students to ponder: would you rather earn US$70,000 today – roughly the average wage – or the exact same nominal amount in 1900.

A moment's reflection tells you that $70,000 in 1900 was a princely sum – many multiples of the average wage. Probably enough to afford several houses, servants, yachts and the other accoutrements of the high life.

And yet, on further reflection, most students prefer the average income of today. Why? Because going without a yacht and a butler seems like a small price to pay for having access to modern medicine, life expectancy and a whole range of creature comforts. It is the average person in 2020 who lives the high life compared with the aristocrat of 1900.

If anything, this thought experiment suggests that our official estimates might tend to *understate* the rise in living standards over long passages of time, even if they are more accurate over shorter time periods.

A review of the US CPI in the 1990s (the Boskin review) found that CPI inflation was overestimated by about 0.6% (or equivalently, real wage growth was underestimated by about 0.6%) because of these issues of quality changes and the introduction of new and better products.

It remains one of the most startling facts about human history – perhaps the single most important economic fact – that the income of the average person in what became the 'developed world' grew slowly or not at all for centuries and then shot dramatically upwards in the last 200 years.

That dramatic rise in incomes was then repeated by a cohort of newly developed economies in an even shorter timeframe.

The specifics of that process played out differently in individual economies, but with the basic effect that I have outlined – average people being considerably better off in material terms than their equivalents 100 years ago.

For Australia, that story has had a number of chapters.

There was an initial rise in average incomes in the 19th century when mining (including the mining of alluvial gold) and agriculture dominated the economy.

We should always note that the statistics only capture the rise of the new settler economy in the Australian colonies – not the impact of the dispossession of indigenous Australians throughout that period. This is just one of those instances where the official economic statistics tell only part of the story.

Of course, there were cyclical fluctuations throughout, including the disastrous recession in the 1890s, concentrated in Victoria. But for those fully participating in the colonial economies of the day, the general trend was rising living standards – to the point, as I noted earlier, that Australians were among the richest people on Earth.

Productivity growth, and the rise in living standards from 1900 until the Second World War was more modest, particularly compared with that of the United States.

Following the Second World War, much of the world enjoyed the fruits of expanding global trade and post war reconstruction. Australia's productivity growth surged, but again, by less than many other economies – including those like Japan, Germany and western Europe, who were rapidly catching up to the global frontier (represented by the US).

Hence Australia's relative living standards declined over the period, and continued to do so up until the 1990s. It was then that Australia and the US enjoyed a brief productivity resurgence, while productivity growth in other developed economies started to slow.

And, as is well known, the last 20 years has seen a slowing of productivity growth across the developed world.

Stepping back, two overall trends emerge:

First, absolute living standards in Australia have risen strongly overall since Federation.

Second, Australia's relative position slipped between 1900 and 1990 but has risen since then. In the last 30 years, Australia's growth in per capita incomes has outstripped that of all of the G7 economies.

It is always hazardous to attribute too great a role to economic policy as the explanatory factor in driving this trend. There was a lot going on. And policy itself ebbed and flowed: we tend to impose a unifying narrative on the

events and decisions of the past which is, at best, an approximation – a simplifying or stylised schema.

But there is some truth to the schema. In the decades following Federation, Australia pursued a policy mix based on trade protection, industrial arbitration and heavily restricted non-British immigration. Those elements were inextricably linked.

To varying degrees they were dismantled in the last fifty years.

Over that period, particularly in the 1980s and 1990s, a broad reform agenda reduced trade barriers, deregulated domestic industries, corporatized several government businesses, and partially liberalised labour markets.

That story is well known.

In the background, there was another story unfolding – the gradual but inexorable change in the structure of the Australian economy.

When William McKell left school, nearly half of the Australian workforce was employed in mining, agriculture and manufacturing. These traditional goods-producing industries required physical labour and were dominated by full time male employment.

Agriculture alone represented over 25 per cent of the economy.

But manufacturing was the emerging giant of the time. By the time William McKell left Parliament in the 1940s, manufacturing had become Australia's biggest single industry, employing nearly 30 per cent of the workforce.

Hence, as a member of the Federated Society of Boilermakers, McKell was in some ways at the vanguard of economic change – the industrialisation of the Australian economy and the rise of manufacturing.

Again, this was part of a global change, with the same trend evident in the wealthy economies of Western Europe and North America.

In part, Australia's historic productivity performance can be seen through this lens. In the world of 1900, dominated by agriculture and mining, Australia's pre-eminent productivity in those two sectors placed us on top of the relative income ladder.

By contrast, Australia’s manufacturing industry never achieved the same pre-eminent productivity performance relative to those of Europe, the US and later east Asia. With manufacturing making up a larger share of output across the rich world, Australia’s relative productivity performance slipped.

In the last 70 years, another economic trend has slowly but surely taken shape — the rise of services.

Today, services make up 80 per cent of the economy and employ nearly 90 per cent of the workforce. In other words, the traditional goods sector – agriculture, mining and manufacturing – now employs a combined 10 per cent of Australian workers. This is a dramatic change compared with the Australian economy of 1900 and even 1950.

Today, to be a high productivity, high income country it is necessary to have a high productivity services sector. But how well do we understand what drives productivity in the services sector?

At the Productivity Commission, we think that is the core question of the times. Are services different in salient respects? Do they call forth different policy responses, or different points of emphasis, than the changes that drove productivity growth in the past?

The paper we released today is the start of a research agenda aimed at deepening our understanding of those issues.

A few things stand out.

One is that the growth of services, and the relative decline of agriculture and manufacturing, has occurred in virtually all rich economies. It is not specific to Australia.

Since the 1960s, manufacturing has declined as a share of GDP in the US, UK, France and Japan and since 2005 it has been falling in China, India, Malaysia and Thailand, although it has increased in Bangladesh.

This trend is observed for a range of reasons. Some of it is globalisation, as manufacturing has shifted to lower cost locations. Some if it could be due to slower productivity growth in some service industries, which has seen the price of services rise, relative to goods.

But much of it is simply the preferences of consumers in rich countries. As incomes have risen, the consumption of services like travel, health, education and child care has outpaced the increase in demand for goods.

In addition, services like legal, accounting, IT and engineering have risen in importance as inputs to business, even in industries that produce goods.

The service sector is very varied. Contrary to some perceptions, there are service industries that are relatively high paying. Many are capital intensive. Some are highly knowledge intensive.

On average, the services sector employs people with higher educational qualifications than manufacturing does, and pays more per hour.

But of course, there are some services – mainly personal services (as distinct from business or distribution services) – that fit the stereotype: more labour intensive and lower paying on average than manufacturing, and certainly mining.

These are services which are typically delivered face to face. In effect, production and consumption occur at the same time and the same place. They are less standardised and hence less amenable to mass production or economies of scale.

The human element is often so fundamental to the service that there is little scope for automation, which has been a key source of productivity growth in mining, agriculture and manufacturing. So the path to productivity growth might look different for some of these industries.

An added challenge is that of statistical measurement. When thinking about a personal service, quality is an important dimension and can be highly variable. It is hard to measure accurately.

Does a good accountant, architect, cleaner or waiter give you more service, or a better service? The two concepts are basically the same. Whereas the difference between more bananas vs. better bananas and is pretty obvious.

Of course, changes in quality have always been a measurement challenge for statistical agencies in respect of many advanced goods, like cars or computers, where price changes need to be measured against the improved quality of the product year on year. But the challenge with services is often

even greater, because of the difficulty of defining what the underlying unit actually is.

If economic progress comes about in part due to better *quality* services, then it is possible that much of the improvement will be missed in the productivity statistics (which roughly proxy changes in the volume of output per unit of input).

Our statistical agencies do an admirable job trying to get to the bottom of this. But our system of National Accounts was developed between the 1930s and the 1950s at a time when goods industries were much more significant than they are today. Arguably the concept of productivity is more intuitive in industries like agriculture (e.g. crop yields) or manufacturing than it is in something life financial services.

There is an even bigger challenge in non-market services like health and education where the underlying value of the service cannot be measured by the price paid. Yet these sectors are growing as a share of the workforce and the economy.

Where does this leave us?

One implication is that, to better understand productivity drivers in the services sector, we need to look beyond the traditional National Accounts aggregates.

Alternative data sources could provide a richer sense of how productivity (and quality) might be changing in individual service industries and firms.

In our recent work on innovations in care for chronic health conditions, the Commission took a case study approach. Rather than making top down recommendations about government policy, we went out and looked at what some successful innovators are actually doing. We tried to tell their story. We asked what these innovative approaches had in common that might provide guidance to others.

It was a bottom up approach based on understanding the specifics of what happens in individual hospitals, clinics and GP practices.

Could something similar be said of policy in general? Possibly. We might find that the policy mix required to foster productivity growth in service firms and

industries is less like the big bang reforms of the past and consists more of bespoke approaches tailored to the specifics of that industry.

That is not to downplay the importance of larger scale policy issues like trade, tax, workplace relations, skills or infrastructure. But particularly in the non-market sector, our chronic health case study suggests a big role for the multitude of small efforts made by individuals and organisations to create a more integrated, patient centred system.

Finally, we will have to overcome the natural discomfort many people feel about the intangible nature of services. Goods have a reassuring solidity, whereas services lack physical form. They lack permanence, and they are not a possession. The fact that this is true of 80 per cent of the value being transacted in our modern economy can be a source of unease.

But in a sense, this is not new. Arguably, for a long time now, almost all economic value has been intangible, even in the traditional goods industries.

This would be less true in a subsistence economy, where the value of food can be measured in its calorific content or shelter in square metres. But as we move beyond subsistence, the value of a good is no longer inherent to its physical form — it is a function of the subjective value attributed to it by customers; the need that it satisfies. Those subjective valuations aggregate up into prices, which are the objective, observable manifestation of the private intangible values expressed by countless individuals. An ounce of gold does not change from day to day, but its value does.

Many physical goods could be thought of as services in disguise; they derive their value from what they make possible. The dishwasher and washing machine replaced human labour and are really another means of providing a household service. A bit of reflection shows that the computer, television or smart phone aren’t that different. Much business strategy focuses firms’ thinking on ‘what business they are really in’ – identifying the true underlying source of value they are delivering to their customers. Often that value is intangible, even when the product is physical.

Hence the economic progress of the last century is really the story of satisfying ever expanding wants and needs – in some cases through physical goods and in others through services. Agriculture has been a huge contributor. Manufacturing has proven itself a particularly successful way of

meeting existing and emerging needs, through new, improved and cheaper products. Today, services are increasingly the means to that same end.

Whether services can meet new needs through innovation and continuous improvement — as rapidly and efficiently as agriculture, manufacturing and mining have done — is really the great economic question of our age.

It is a natural focus for the Productivity Commission. That question and its policy implications will also shape the world of young Australians entering the workforce today — the modern equivalents of the young William McKell more than a century ago.