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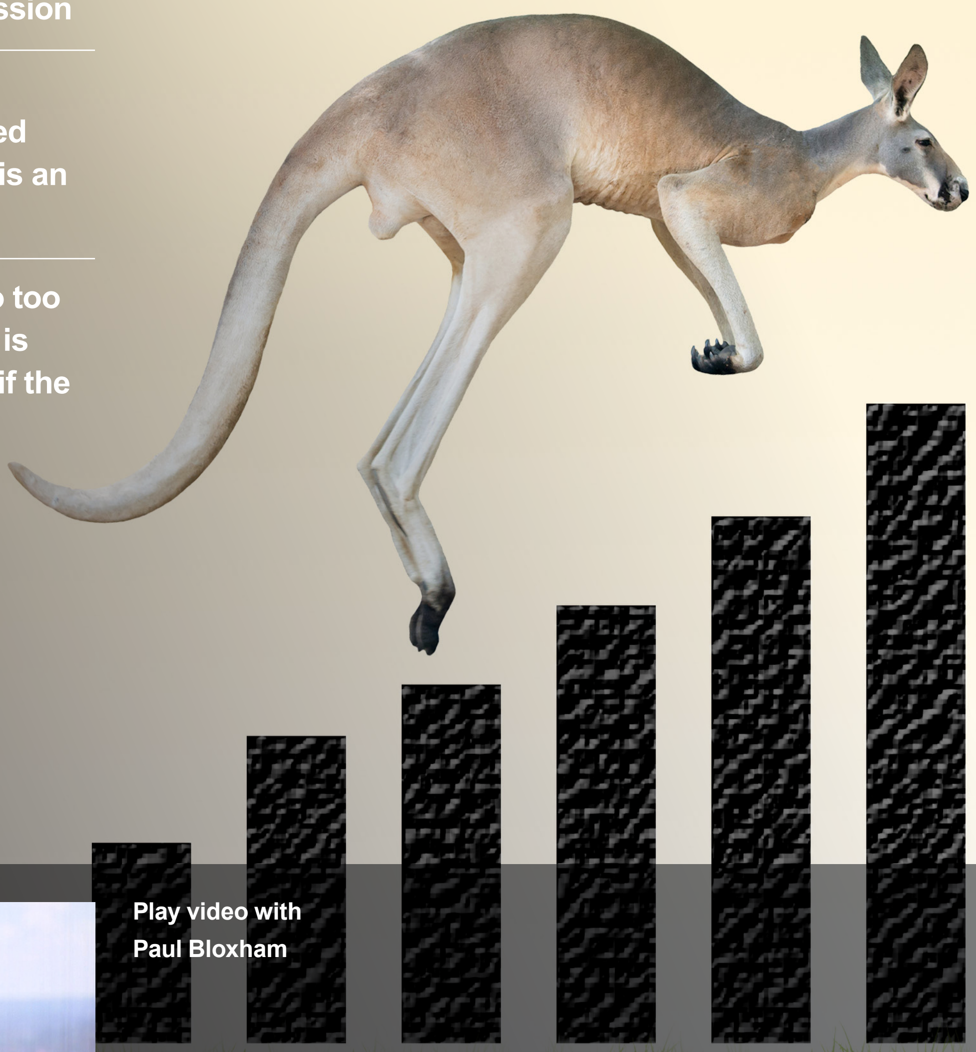
The longest boom

How Australia did it – and what it needs to keep growing

Australia is in its longest boom, with 26 years of continuous GDP growth and no technical recession

On some readings, this is the longest boom of any developed economy; by any standard, it is an impressive run

Luck has played a part and so too has good management, but it is clear that reform is a priority, if the boom is to continue



Play video with Paul Bloxham

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Executive summary

Australia's current expansion is its longest boom. GDP growth has been continuous for 26 years, with no 'technical recession' during that period. By some measures, Australia's is the longest boom of any developed economy, although there is some debate about that. What it means can also be disputed. For example, Australia has had contractions in per capita GDP, so part of the boom is due to strong population growth. Although the cycle is not dead, its amplitude has been tamed, at least for now. It is also important to understand how it happened. Luck and good management have both played a role. There may also be lessons that can help sustain growth in the future, as well as for other countries. Fiscal reform is a priority if the longest boom is to continue.

Recessions are nasty. They usually result in a rise in unemployment, which is highly positively correlated with ill-health, high crime rates, and other negative social and political outcomes. Recessions can also have lasting effects. Long-term unemployment can lead to skill atrophy, making it harder to find a job even once the economy recovers. Deep and long recessions, like the Great Recession, have had a lasting negative effect on a generation of workers.

Although not recent, examples from Australia's recessions are still powerful and worth recalling. The impact of Australia's early 1990s recession (1991) on the labour market was deep and damaging. The unemployment rate rose significantly and did not return to its pre-recession level for 14 years. It caused significant harm. For example, many middle-aged workers who lost their jobs in Victoria's manufacturing industry, which was hard hit, never worked again. Designing policy to avoid recessions has been the macroeconomist's 'Holy Grail'.

Australia's 26 years of growth are important and worth acknowledging. They will also hopefully yield lessons for the future. However, it is important to be clear about what Australia's experience is not. It does not mean that the cycle is dead. The world has had a number of periods where sensible observers claimed that this was the case. In 2003, Nobel prize-winning economist, Robert Lucas, famously stated that the 'central problem of depression-prevention has been solved', ahead of the Great Recession in 2008. Harking back to earlier days, there was a strong belief in Australia in the 1960s that the Keynesian prescription of active demand management, using fiscal policy, had solved the macroeconomic problem of that time. This was before significant recessions in the 1970s, 1980s, and 1990s. These accounts proved to be hubris.

Australia will almost certainly have a recession at some point. However, what is clear is that over the past 26 years, the volatility of Australia's economy has been much lower than at any other time in the country's history and most other countries experiences. This is worth studying. Australia has managed to dodge a number of global shocks, including: avoiding a recession during the Asian financial crisis in 1997/1998, the IT bubble of 2000, and the Global Financial Crisis of 2008/2009. Australia also avoided having a recession at the end of a housing credit and price boom in 2002/2003, during a drought of the early 2000s and at the end of the recent mining investment and commodity price boom, which peaked in 2011/2012.

Part of it has been luck. Australia's geography has become a blessing. What Australian historian, Geoffrey Blainey, famously described in 1967 as a 'tyranny of distance' from Western markets has become the 'power of proximity' as global growth has shifted towards Asia. Australia has also been fortunate to have a large stock of high-quality resources, such as iron ore, coal, and gas that have been in high demand.

However, it is not all luck. A strong rule of law has helped. While many other large mining economies, with weaker institutional foundations, have suffered from the 'resources curse', Australia has managed to benefit from its large resource endowment. Market reforms in the 1980s and 1990s, including the floating of the Australian dollar, made the economy more flexible and better able to deal with global shocks. There may be lessons for other countries. Although the Global Financial Crisis raised questions about the ability of market-based systems to deliver widespread benefits, Australia stands out as a successful market-based economy.

Good economic management has also played a role. An independent central bank with a clear mandate to flexibly target inflation has proved to be an appropriate institutional arrangement for a medium-sized commodity-producer. The RBA has adeptly managed the cycle maintaining on-target inflation and financial stability and deserves significant credit for the long boom.

There have also been challenges. In recent times it has proved difficult to run balanced budgets, with the federal budget approaching its tenth consecutive year of deficit, despite the earlier boost to national income from the mining boom. Economic reform has also proved difficult, particularly of the tax system, which is becoming increasingly inefficient. Housing supply, energy, and climate policy also need reform and policymakers ought to continue to focus on ramping up infrastructure investment. The lack of reform may, itself, be a consequence of the long boom as policymakers and voters may have become complacent. It would be disappointing to think that Australia might need a recession, with all of its damaging effects to the economy and communities, in order to motivate reform.

Eventually, Australia's long boom will end. The trigger will most likely be a negative shock from overseas. A sharp downturn in Asia, when one arrives, would prove harder for Australia to deal with than the Global Financial Crisis, which was centred on the developed world. Australia's high levels of household debt would be likely to exacerbate any downturn.

Australia needs reform to support productivity growth and prepare for the next downturn. The priority should be fiscal reform, which leads to sustained budget surpluses. Measures should include, shifting the tax mix towards more efficient taxes, such as consumption tax, and cutting back on public spending commitments that do not deliver strong economic returns.

If there is one clear lesson from the long boom it is that Australia has benefited from a key part of the policy apparatus that is used for managing the cycle and securing the economy – the Reserve Bank of Australia – being independent from the political process. With this in mind, policymakers ought to consider ceding more authority for reform of other policy areas, such as transport and social infrastructure, energy and tax policy, to independent agencies. This could involve making recommendations by agencies such as the Productivity Commission, Infrastructure Australia, or Australia's Parliamentary Budget Office, more binding. While politically challenging, the government could consider setting up an independent fiscal authority, akin to the RBA, but aimed at managing fiscal spending and taxation decisions.

As the global economy finally recovers from the lingering effects of the financial crisis, now is the time to focus on reform. It is clear that reform would help if the longest boom is to continue.

Contents

26 years of continuous growth … and counting

- GDP has risen for 26 consecutive years and there has not been a 'technical recession', or a y-o-y fall in GDP, during that period
- Per capita GDP and the unemployment rate have cycled, and there is debate about whether this is the longest developed world boom
- The striking feature is the reduction in the amplitude of the cycle relative to the past and other countries

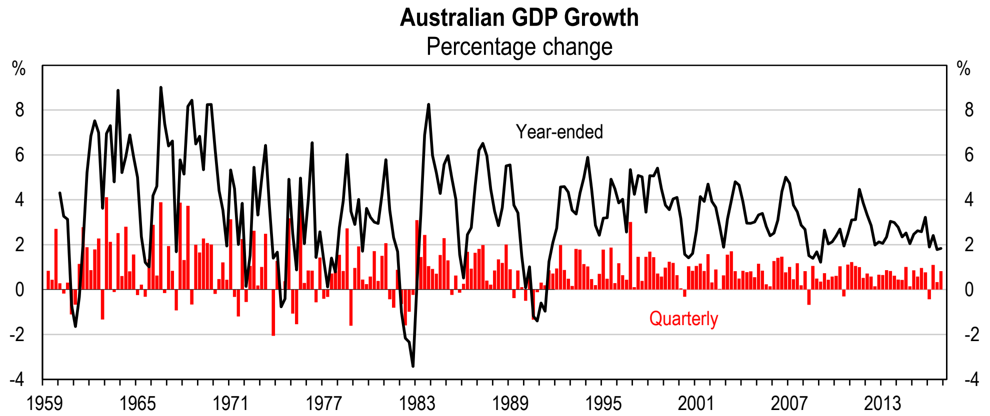
Australia's longest boom

The current boom is the longest in Australia's own history and, arguably, the longest of any developed world economy. Quite a feat! Australia has now completed 26 years of continuous year-ended GDP growth (Chart 1). It has also managed to avoid a 'technical recession' – defined as two consecutive negative quarters of GDP – during this period.

The current boom is the longest in Australia's history

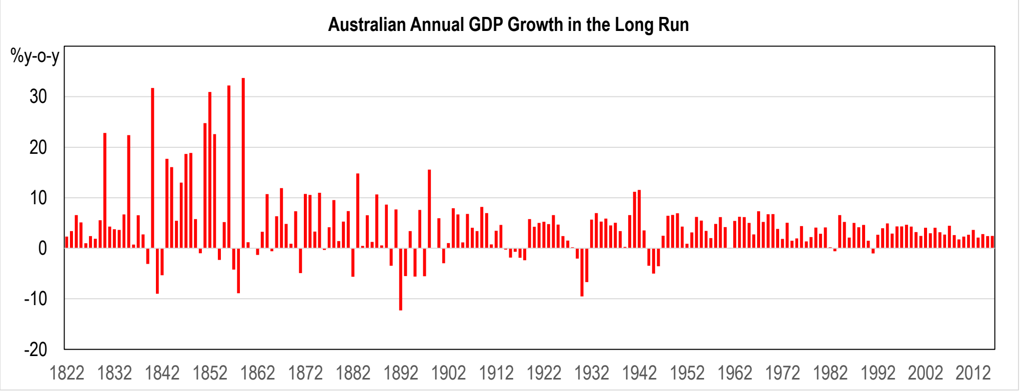
To start with, it is the longest period of continuous expansion in Australia's own history. Quarterly GDP numbers are only available from 1959. On these numbers the longest previous expansion was ten years between recessions, from 4Q 1961 to 4Q 1971. Because there are no quarterly estimates available prior to 1959, we will never know how often Australia had technical recessions in its earlier history. Although the annual numbers show that from 1947 to 1981 Australia had a long period of continuous growth in annual average terms (34 years), this period of growth was not continuous as we know from the quarterly figures that there was a 'technical recession' in 1961, making the expansion only a maximum of 14 years long (Chart 2).

1. Continuous year-ended GDP growth and no 'technical recession' for 26 years



Source: ABS

2. Australia's economy has become significantly more stable



Source: ABS, Madisson

Not always so

Australia's economic history is one of significant volatility in GDP growth

Although continuous growth is clearly impressive, the most striking (and related) feature in the numbers is how much less volatile Australia's GDP growth has been in recent years than in its history. Being a small economy and a large commodity producer, mostly of farm products in its early history, meant that, as Chart 2 shows, output in the Australian colonies was very volatile year-to-year prior to Federation in 1901.

Although measurement issues no doubt play a role in the extreme volatility of the earlier historical numbers there are also economic forces at work. The volatility of Australia's economy fell significantly after Federation in 1901. As Australian economic historian, Ian McLean, points out, this may reflect that Federation itself was a key productivity enhancing development and added to the stability of the economy (McLean 2013).

The recent period of stability is also striking when compared with Australia's modern, post-War, history. Although the 1950s and 1960s delivered a period of strong growth for Australia, as the economy benefitted from post-War rebuilding in Europe and the emergence of Japan, it was not as long as the current expansion.

The Australian economy then saw significant volatility in the 1970s and 1980s. The statistics bear out the large change in economic performance. During the 1970s and 1980s, GDP fell in 21 quarters (26% of the time), compared with only 7 quarters of decline since 1990 (6% of the time). Australia also had 5 'technical recessions' (two consecutive quarters of falling GDP) over the 1970s and 1980s, compared with only one since 1990 and none over the past 26 years.

Is it the world's longest boom?

The answer is no. There have been a number of emerging economies that have recorded periods of continuous GDP growth that have run longer than Australia's 26-year expansion.

Australia's is, arguably, the longest developed world boom

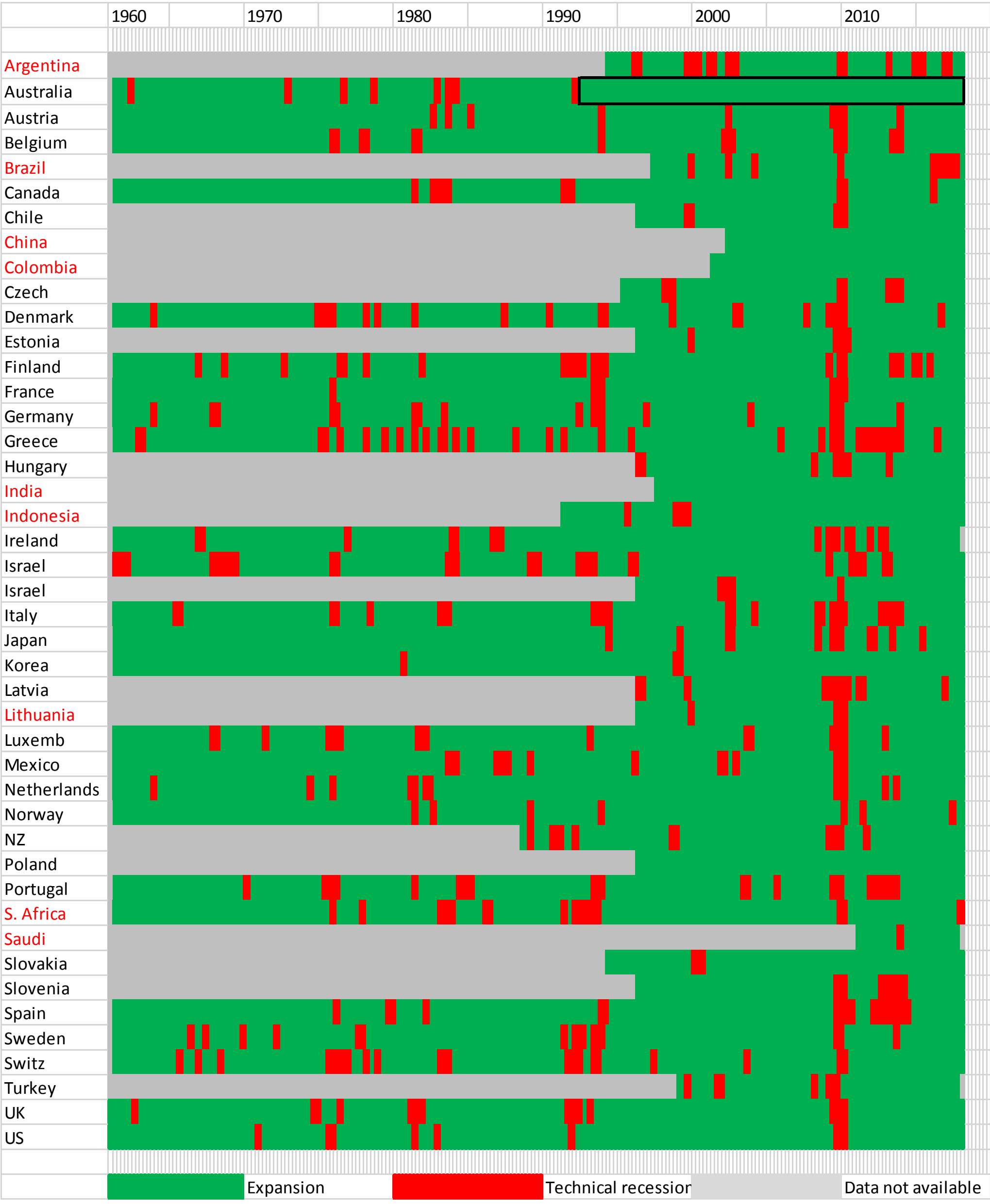
Of course, it is much easier to avoid periods of falling GDP when growth is tracking at very rapid rates. Another way to think about this is that it is much easier to grow at rapid rates when an economy is emerging and catching up on living standards of the technological leaders, as the emerging economies have been doing in recent years. When an economy is further from the technological frontier, small innovations (for example, running water and paved roads) can boost growth significantly. By comparison, Australia had the highest per capita GDP in the world in 1890, so 'catch-up' has not been a key feature of the Australian growth story.

If we narrow the focus to developed economies, where 'catch-up' is not a key driver of growth, Australia's performance is impressive.

To make an assessment we use quarterly and y-o-y GDP growth numbers published by the OECD. The OECD publishes quarterly numbers, where available, including for the 34 OECD economies plus a selection of other economies.

Australia's 26 years of expansion stands out. Chart 3 uses this OECD database and shows periods of 'technical recession', that is, two consecutive quarters of falling GDP, for these economies in red and periods of continued expansion in green.

3. Longest boom? Technical recessions across the OECD plus selected countries



Source: OECD, HSBC

Across this range of countries for the available sample, Australia's current boom is the longest period of continuous growth without two consecutive quarters of negative GDP of any economy except Japan, from 1961 to 1993, and the Netherlands, from 1981 to 2008 (issues we touch on below).

Of the 7,350 quarters in the sample, there are 827 quarters when the economies are in a recession, which is 11% of the time (one recession every nine years on average).

The poorest performer is Greece, which is in technical recession for 25% of time. The best performers are the emerging economies in the sample, such as China and India, where there have been no technical recessions. Poland's performance is also impressive, with no recessions, although the quarterly GDP figures only date from 1995 due to the country's political history.

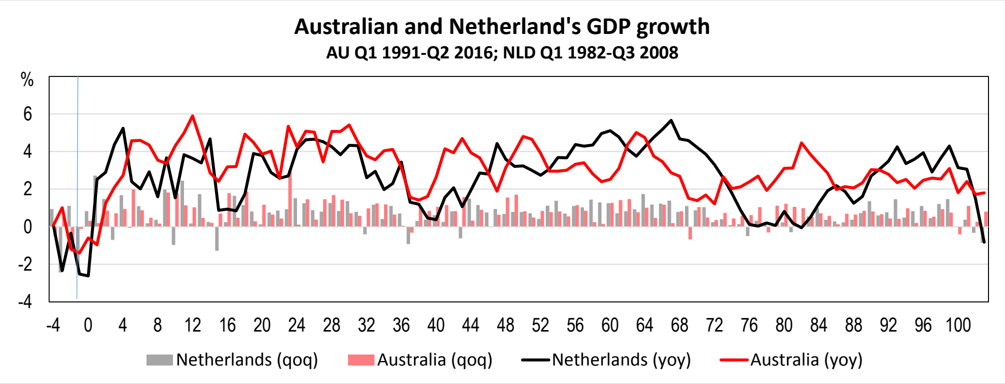
Of the developed economies, Japan and the Netherland's also had long booms

For both Japan and the Netherlands, which have had long booms (as we flagged above), there is a valid question about whether a pure 'technical recession' definition is the right approach.

Although the Netherlands did not have two consecutive quarters of negative GDP between 1981 and 2008, it did have falling y-o-y GDP in 1982 and 2003 (Chart 4). Statistics Netherlands also currently reports that Dutch GDP fell -0.01% in 2Q and 3Q 2003, so Australia may have passed the Netherland's long boom record many years ago.

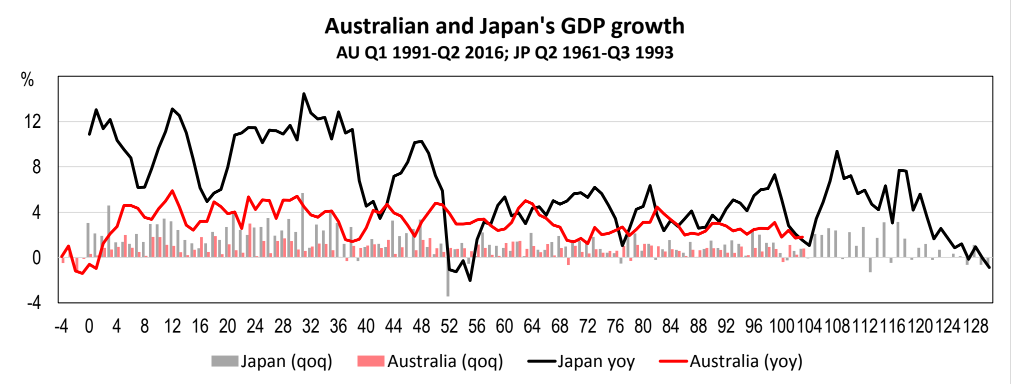
For Japan, even though it did not have a technical recession between 1961 and 1993, y-o-y GDP fell quite sharply in 1974 (-2.5% y-o-y), due to a particularly sharp fall in GDP in the first quarter of 1974 (Chart 5).

4. Australia's boom is longer than the Dutch expansion from 1982 to 2008



Source: OECD

5. Japan had a longer period without a 'technical recession', but y-o-y GDP fell in 1974

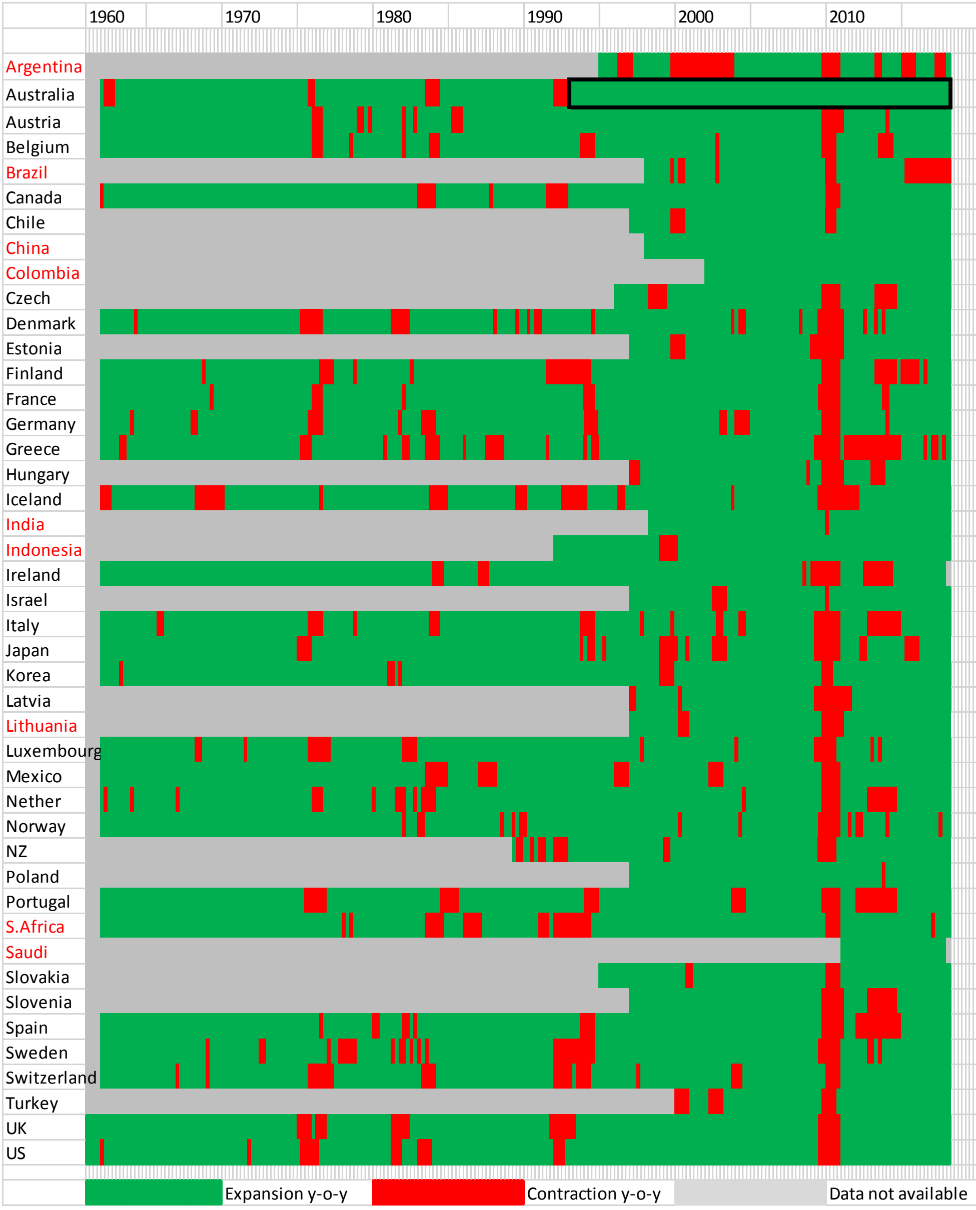


Source: OECD

For Japan, the other issue is whether the country can be thought of as a developed economy for the whole of the available history of quarterly GDP figures. Japan's per capita GDP went from 35% of US GDP in 1960 to 80% of US GDP by 1990, so the economy was clearly in the transition from emerging to developed economy over this period and thus benefitting from 'catch-up' as well as momentum from the post-War rebuild.

For completeness, Chart 6 shows expansions of the basis of y-o-y GDP growth. On this metric, Australia's recent performance is also quite impressive.

6. It is also a long stretch of growth on a year-ended (q_t/q_{t-4}) basis

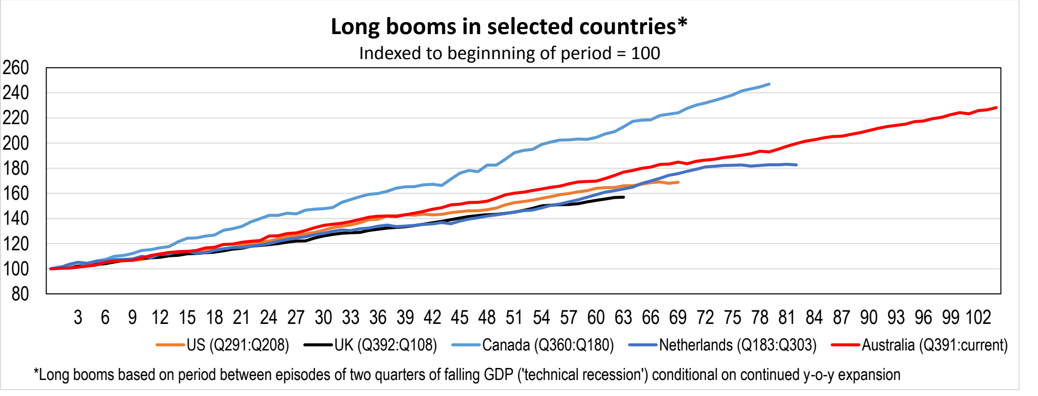


Source: OECD

Countries that have had comparable periods of continuous y-o-y GDP growth include Austria (95 quarters from 1985 to 2008), Canada (83 quarters, from 1961 to 1981), Ireland (88 quarters, from 1961 to 1979), and the Netherlands (82 quarters, from 1980 to 2003). For comparison, on this basis, the US and UK had expansions lasting 67 and 64 quarters of continuous y-o-y growth in the 1990s and early 2000s, during the Great Moderation. Australia has recently had 102 consecutive quarters of y-o-y growth.

If we look at expansions that meet both these criteria – of having both no technical recession and continuous y-o-y GDP growth – then Australia's is by far the longest boom (Chart 7). The nearest competitor is the Netherlands at 82 quarters.

7. Avoiding a technical recession and y-o-y contractions for long periods is unusual



Source: OECD

26 years of continuous growth is improbable

Whichever way these statistics are interpreted, one thing is clear: having a period of continuous growth over 26 years is rare. Using these statistics we can show how likely it is that an economy has a 26 year stretch of growth. Of course, as with most statistical approaches there are a number of ways to assess this.

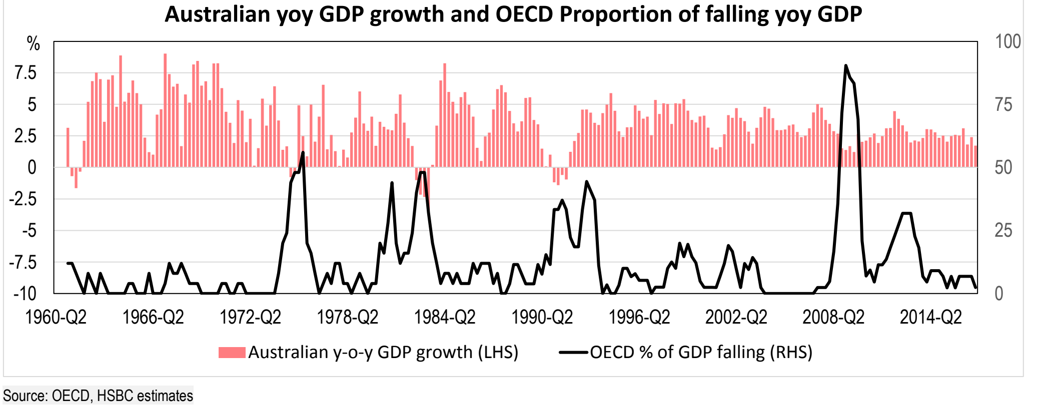
In the OECD database, recessions occur on average every nine years: Australia has not had one for 26 years

- A pure comparison across all of the countries for all of the periods published by the OECD database shows that 19% of the quarter's show of negative GDP growth. Over the past 26 years, Australia has had four negative quarters of GDP, which, at 4% of the time, which is the lowest number of quarters in this time frame.
- Compared with Australia's own history, GDP has also been much more positive than normal. From 1959 to 1991, Australia had negative quarterly GDP prints 26% of the time.
- Comparing technical recessions, that is, periods of at least two consecutive quarters of negative GDP, Australia's recent performance is also impressive. In the OECD database, the average country has a recession every nine years. By comparison, over the past 26 years Australia has not had any recessions.

Over 90% of the economies had a recession during the Global Financial Crisis

- Moving away from the 'technical recession' definition and instead looking at y-o-y growth, the Australian performance is also impressive. Over 90% of the economies in the database saw y-o-y GDP fall in 2009, during the Global Financial Crisis (Chart 8). Only a small selection of OECD economies escaped the Global Financial Crisis without a technical recession, including Australia, Korea, Poland, and Slovakia.

8. Avoiding a recession during the Global Financial Crisis was extraordinary



Source: OECD, HSBC estimates

Is GDP the right measure?

Other metrics, beyond GDP, still suggest Australia has performed well

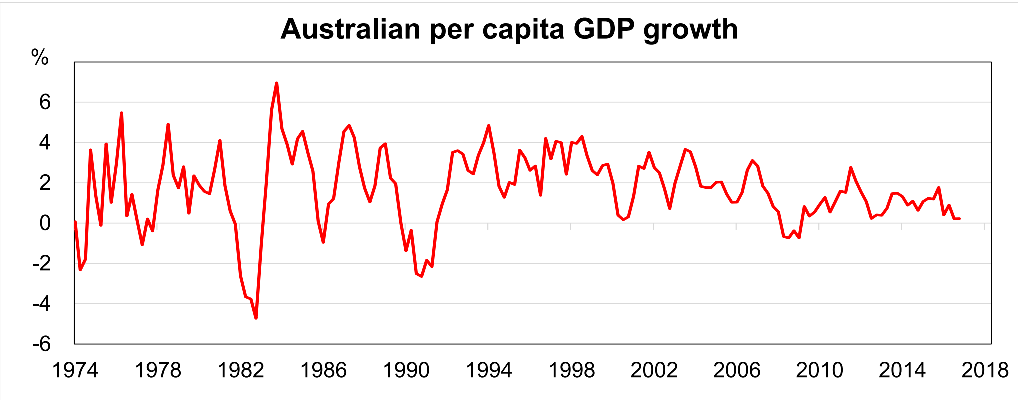
Some observers are likely to point out that these are all interesting statistical ephemera, but GDP is a pretty limited measure of overall welfare. It would also be right to remember that the cross-country comparisons on GDP could be somewhat limited by the quality of the various statistical collections that support them. Comparisons of GDP over long periods of time, even in one country, can suffer from significant measurement challenges as technology changes. How does one compare an iPhone to a desktop telephone, or a Lenovo laptop to a Commodore 64? And the dominance of these products in their respective markets are only 20 or 30 years apart.

So a healthy degree of scepticism is needed when assessing what this achievement means.

Per capita GDP looks less impressive

Even using standard available metrics it is easy to point out that overall GDP is not the full story. Indeed, a look at measures of per capita GDP shows that a key reason for Australia's outperformance is strong population growth. Australia's GDP has benefitted significantly from growth in population. Indeed, a key reason that Australia did not have a technical recession in 2009, in the early stages of the Global Financial Crisis, was that population growth was strong. It is harder for overall GDP to fall when population growth is strong.

9. Per capita GDP fell in 2008 and 2009, just after the Global Financial Crisis



Source: ABS

If recessions were defined on the basis of per capita GDP, rather than overall GDP growth, Australia would not have had such a long boom (Chart 9). But then, other countries would have had tough times on the basis of this metric as well.

The unemployment rate has still cycled

Recent cycles in the unemployment rate have been much smaller than in previous years

Much like per capita GDP, on the basis of the moves in the unemployment rate it is also hard to argue that Australia has not had distinct and significant cycles in recent years. Indeed, some observers may argue that the unemployment rate may a better indicator for determining whether Australia has had a 'recession' than GDP. It is, after all, ultimately joblessness that can have the most lasting effect on economic wellbeing rather than the growth in the quantity of overall production in the economy.

Although Australia's GDP has expanded continually for the past 26 years, the unemployment rate has had three key cycles over that period (Chart 10).

- In the early 2000s the unemployment rate rose 1.2ppts from 6.0% to 7.2% between mid-2000 and late 2001. This largely reflected the impact of the introduction of the Goods and Services Tax, in mid-2000.

10. Unemployment has cycled, although this has also been less severe recently

Source: ABS

- The next big rise in the unemployment rate was in response to the Global Financial Crisis in 2008/2009. The unemployment rate rose from 4% in early 2008 to a peak of 5.7% in early 2009.
- The last recent cycle in the unemployment rate was largely the result of the mining boom and the subsequent rebalancing of growth.

Single biggest achievement is reduced volatility

Now that we have pointed out the facts and then downplayed their significance to a degree, it is worth keeping mind that Australia's long boom is still quite an achievement.

Australia has had the lowest standard deviation of GDP of any OECD economy recently

Ultimately the main achievement is the significant reduction in volatility in economic growth. On this front, Australia has outperformed relative to its own history and that of other OECD economies. Just looking at the past 26 years, Australia has had the lowest standard deviation in y-o-y GDP growth of any of the OECD economies and below the average of the OECD as a whole (Table 11).

The volatility of Australia's GDP growth has also been significantly lower than that of comparable economies over the past 26 years and much lower than it was in Australia's own post-War history. The standard deviation of GDP growth has been 1.4ppts over the past 26 years, while it was 1.9ppts in the UK and Canada and even 2.1ppts in New Zealand. Australia has also had few quarters of contracting GDP in the past 26 years than other comparable economies and far fewer than it had had in the earlier period.

11. The volatility of Australia's GDP has been low over the past quarter of a century

	1991-2016			1960-1990		
	Standard deviation of y-o-y GDP	Range of y-o-y GDP outcomes (ppts)	Quarters of q-o-q GDP contraction (number)	Standard deviation of y-o-y GDP	Range of y-o-y GDP outcomes (ppts)	Quarters of q-o-q GDP contraction (number)
Australia	1.4	7.3	6	2.5	12.4	25
US	1.8	9.3	10	2.6	11.2	13
UK	1.9	11.1	12	2.6	13.9	13
Canada	1.9	9.9	9	2.4	12.5	8
New Zealand	2.1	9.9	16	na	na	na
OECD (aggregated)	1.5	9.6	5	na	na	na

Source: OECD; HSBC estimates

What it means

As illustrated above, what Australia has experienced in recent years is quite unique. This raises key questions. How did Australia achieve this? Are there lessons for local policymakers? Can other countries learn from Australia's experience? And, with those lessons taken, can Australia make the necessary adjustments to keep the economy growing?

Lessons from dodging shocks

- Australia avoided a recession during the Asian financial crisis, the end of the IT bubble, the end of the early 2000s housing boom…
- …the worst drought in a century, the Global Financial Crisis, and the largest mining cycle in the country's history
- Each of these episodes tested the resilience of the Australian economy and can offer lessons for the future and for other countries

Large shocks to absorb

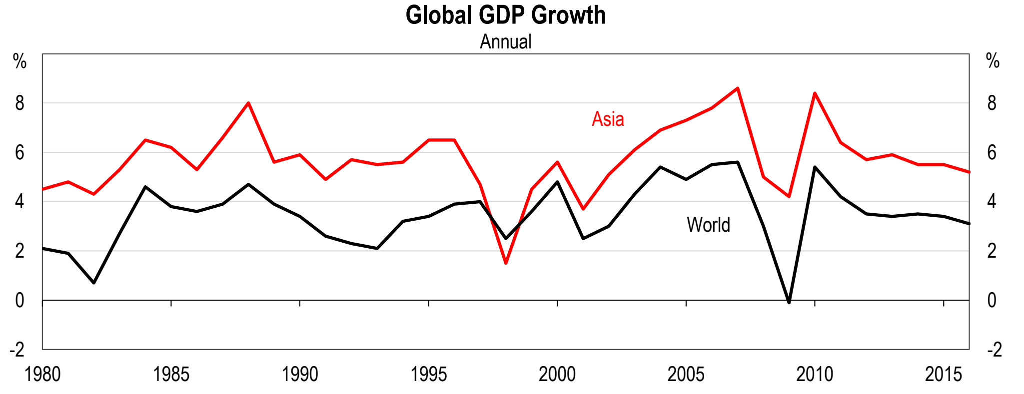
Fans of the Matrix movies, largely filmed in Sydney, will be familiar with the way in which the lead character, Neo, leans back while projectiles fly towards him, seemingly defying gravity. In the movie, it turns out that Neo is capable of this partly because the rules of the game have changed – he is in a computer programme, where gravity does not always apply – and he is also uniquely talented.

There have been many global shocks to absorb over the past 26 years

As we showed in the first chapter, Australia has seemingly 'defied gravity', dodging shocks that the world has fired its way. A key question is whether Australia is also 'uniquely talented', just lucky or has the world changed in Australia's favour? What are the lessons from this experience?

Of course, avoiding recession might be easier if the world economy had been steady over the period in question, but that has not been the case (Chart 12). Although Australia's longest boom (1991 to 2017) included the so-called 'Great Moderation', typically thought of as 1995 to 2005, there were still large shocks that Australia needed to absorb, even during that period. This period of comparative stability also ended abruptly with the single largest global downturn since the Great Depression, in the form of the Global Financial Crisis and Great Recession.

12. There are have been plenty of large global economic shocks to absorb



Source: IMF

Australia absorbed these shocks and still managed to grow. In 1997 and 1998 Australia brushed off the Asian financial crisis, despite having strong trade ties to the region. The economy then navigated the end of the IT boom and US 'tech wreck' in 2001 with relative ease.

The shocks then became more local, with an Australian housing price and household debt boom in 2002 and 2003, which ended with a fizzle rather than a bang. Australia also had a drought in the early 2000s, which hit the rural sector hard, but did not cause a national recession.

Then there was the big one: the Global Financial Crisis of 2008, an event in which GDP declined in 39 of the 44 countries in the OECD database in 2009 in y-o-y terms, as we showed in the first chapter, above.

Finally, Australia has also had to deal with the single largest mining cycle in its history in recent years. As a share of the economy, mining investment rose and fell by at least three times more than at any other time in the past. Yet despite its size, Australia did not have a recession at the end of the mining boom, as it had done at the end of almost every other mining boom in the country's history. Australia also did well by global standards, with other countries that also had large mining cycles during this period, including Brazil, Canada, and South Africa, not faring as well as Australia.

Asia's financial crisis: The art of knowing when to do nothing

The Asian financial crisis, which began in 1997, was the first major international event for the Australian economy after it emerged from the end of the early 1990s recession. It was also the first key test for a newly installed inflation-targeting regime and central bank Governor, Ian Macfarlane, who began his term in late 1996. Indeed, although the inflation-targeting regime had been used to guide the Reserve Bank's policy decisions from mid-1993, it was not until 1996 that it was formally acknowledged in the form of an agreement signed by the Governor and the Treasurer of the day, Peter Costello.

The Asian financial crisis crept up on analysts and policymakers, as is often the case with financial crises. Not long before the financial crisis, the so-called 'Asian tigers' were being lauded for their spectacular growth rates and the World Bank, amongst others, wrote about the 'Asian Economic Miracle' (1993).

The economy proved flexible in the face of the late 1990s Asian financial crisis

So when, on 4 July 1997, the Thai Baht fell sharply, it took many markets and analysts by surprise. As became apparent, a collection of Asian economies had become highly vulnerable to capital flight, having grown their economies by importing vast amounts of capital, which was borrowed in US dollar terms, on short terms. When foreign investors became worried about misallocation of investment, the foreign funds took flight and a number of economies across the region quickly became unable to fund themselves as they dealt with currency and banking crises. The contagion spread quickly and the Asian financial crisis engulfed Malaysia, Indonesia, South Korea, and the Philippines within weeks. The crisis had a significant impact on neighbouring economies, particularly Singapore and Hong Kong.

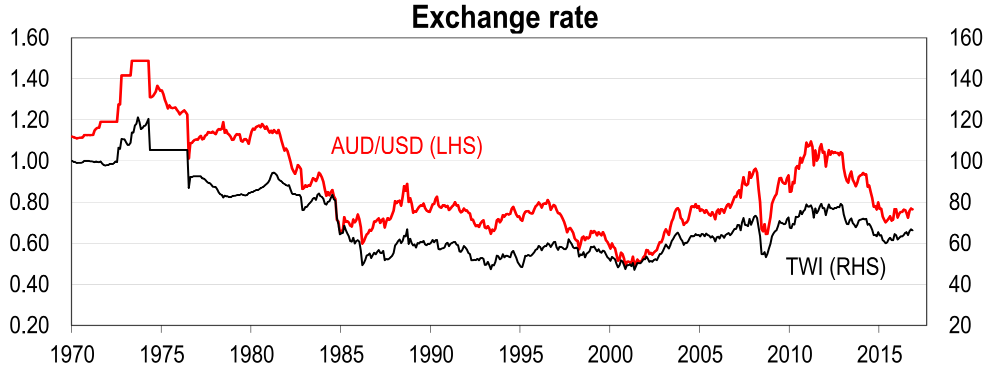
For Australia, this was far from an insignificance. Australia had strong trade ties to these economies. At the time, South Korea was Australia's second largest trading partner, receiving 9% of Australia's exports, and the collection of these four Asian economies took 20% of Australia's exports.

The reaction of Australian policymakers was patience. Although there was clear concern, it was judged quite early on that financial contagion was unlikely. The effect on Australia was likely to be economic shock, related to trade, rather than a financial one. Australia's central bank was of the view that the crisis was mostly a liquidity problem, unlike the view taken by the IMF, and even offered direct lines of credit to Thailand.

Australia was also in the fortunate position of just having emerged from recession of the early 1990s. Because it was early in the boom, Australia did not suffer from the sorts of financial imbalances that can build up during the later stages of an economic expansion. The early 1990s recession was also a significant 'balance sheet' recession for Australia, so in the lead up to the Asian financial crisis lending standards were still quite conservative and local credit growth was comparatively modest.

The key mechanism that helped Australia deal with this shock was the floating Australia dollar (Chart 13). The AUD/USD cross rate fell 17% from May 1997 to December 1997, from US78 cents to US65 cents.

13. The AUD has been Australia's single best shock absorber since the 1983 float



Source: RBA

The falling AUD acted as a shock absorber and discretionary policy was not needed

For the central bank, which had just adopted a formal inflation target, this could have been somewhat unnerving. As former Governor Macfarlane reported in a lecture after his retirement, the RBA did consider lifting the cash rate, due to concerns about the falling currency (Macfarlane 2006). Another option would have been for the RBA to consider cutting its cash rate, on fears that the negative shock could affect local confidence and thus spending and investment. In the end the RBA decided to sit still.

The policy response in New Zealand draws a contrast. The RBNZ became quite concerned about the fall in the NZD and the risk that this would put upward pressure on inflation. The central bank took measures to limit the decline in the currency and, not gaining competitiveness from that relative price adjustment, saw a recession as a result of the Asian financial crisis.

As it turns out, in retrospect doing nothing with discretionary policy and allowing the economy to adjust in response to the relative price shifts, most critically the lower exchange rate, supported growth through this period. Indeed, Australia received international recognition for its outperformance. In November 1998, Paul Krugman, a Professor at Princeton, and Asia expert, referred to Australia as a 'miracle economy'.

Lesson: A key lesson was that it is important to know when to do nothing. Attempting to fine-tune an economy, in the face of uncertainty, using blunt policy instruments can often be counter-productive. The central bank sat still and let the floating currency work, despite concerns it had about higher inflation from the lower AUD, in the end the lower currency supported the economy.

No tech, no problem...mate: It's a market economy at work

Australia's next big challenge was about what the country was not, rather than what it was. The global IT boom had begun around the same time as the Asian financial crisis and stock markets across the world had 'tech fever'. Market sentiment was 'buy tech' and sell everything else. With this, Australia was deemed low tech and a 'backwater'. In 2000, the Economist magazine labelled Australia as having an 'old economy', reliant on raising plants and animals and digging stuff out of the ground (The Economist, 2000).

A key consequence of the 'old economy' label, was that markets turned against the Australian dollar and it fell to its post-float low of US47 cents in February 2001. Although the low currency had been an important shock absorber for the economy during the Asian financial crisis, the low AUD was now becoming a concern. In a speech at the time, RBA Governor, Ian Macfarlane, stated that the Australian dollar had 'never previously shown a significant fall [in the AUD] with economic conditions as they presently are' (Macfarlane 2000). He pointed to a strong world economy, rising terms of trade, buoyant domestic economy, declining current account deficit, fiscal surplus, and rising local interest rates. In short, the AUD was out of line with fundamentals.

Limited exposure to the tech production industry helped Australia avoid the early 2000s IT bust

The run up in IT stock prices, typified by the NASDAQ hitting a then record high of 5047 in March 2000 (300% up from December 1996, when then Chairman of the Federal Reserve, Alan Greenspan, gave his 'irrational exuberance' speech), came to a sharp end in 2000. This drove the US into a downturn, which the NBER recession dating committee recognises as a recession, although it was not a 'technical recession', as we showed in the first chapter, above. Despite the low currency, Australia outperformed relative to its peers and a number of its key trading partners, precisely because Australia was not a large IT producer. In many ways the end of the IT boom was the recession that broke the mould for Australia, as it was the first time in many decades that Australia 'did not catch cold' even though the US economy 'sneezed'.

The 'tech wreck' also delivered recessions for a number of Australia's large trading partners in Asia in 2001, including Japan, Singapore, Malaysia, and Taiwan, as these countries were all large exporters of semi-conductors and demand for electronics fell sharply. Once again, and in many ways like the Asian financial crisis, Australia fared better despite a number of its key trading partners having sharp downturns. This time around, it turned out that the downturn was driven by industries largely unrelated to Australia. The local economy was not tied into the supply chain for IT products in Asia. Being a large commodity producer, Australia was more driven by the cycle in demand for energy and fixed asset investment in Asia.

Australia grew through the IT bubble bursting with relatively little harm done. In retrospect, this seems obvious, given its limited exposure to the IT sector. As it turned out, it was the use of IT products that mattered most for driving productivity growth, rather than the IT sector itself. Australia was a strong adopter of new processes and IT equipment and thus benefited from the productivity boost while not having as much exposure to the IT industry itself. As the RBA Governor had pointed out in the same speech, Australia was the third highest spender on IT as a percent of GDP, had the sixth highest PC penetration and eighth highest internet host per 1,000 people.

Lesson: A key lesson was that Australia did well not to get caught up in the latest fad. Adoption of industry policy to try to shift the economy towards more IT production, would have been unhelpful.

Recognising a housing bubble: Avoiding the fads

Hot on the heels of the end of the IT bubble, Australia was facing the risk of a bubble of its own, in the housing market. A housing price and credit boom, which had been going since around 1997, accelerated further in 2002 and 2003 and started to show the hallmarks of 'irrational exuberance'.

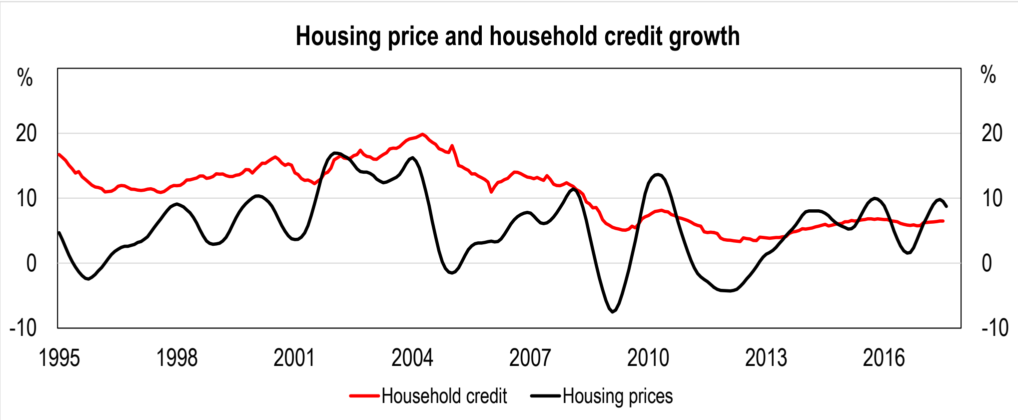
Of course, these stories were not completely unrelated. In response to the US recession, the Federal Reserve cut its policy rate sharply, from 6.50% in December 2000 to 1.75% a year later. Global interest rates followed, which had a bearing on Australia. The comparatively higher interest rates in Australia forced the AUD higher, putting downward pressure on inflation. As a result, the RBA lowered its cash rate from 6.25% to 4.25% over the same fairly short period. This helped to fuel a housing price and credit boom.

The RBA was able to recognise the risk of a housing bubble ahead of time

However, this was not the full story. Australia's upswing in housing prices and credit had run from about 1997. Over the whole period, between 1997 and 2003, Australian housing prices doubled and the household debt to income ratio rose from 98% to 149%. In the earlier period, from 1997 to 2001, it appeared that the run up was largely the result of deregulation of the financial system and a shift to lower inflation and lower nominal interest rates, both of which increased household access to credit. Keep in mind that, with lower nominal interest rates households could borrow greater amounts, prompting bigger loans and higher housing prices.

By 2002, the housing boom looked more concerning. The housing price boom had been going on for quite some time and housing price growth accelerated further in 2002 and 2003. National housing prices were rising at double-digit growth rates and household credit growth was accelerating (Chart 14). Sydney housing prices were rising at 20% a year and household debt was increasing at a similar rate. There were also tell-tale signs that the market was becoming exuberant. New lending was being dominated by investors, whose motivations were capital gains rather than home occupation. Off-the-plan property sales and property 'spruikers' were increasingly driving property market activity (spruiker is an Australian term for sales-people that sell in a dishonest or exaggerated fashion). It felt like a bubble.

14. In the early 2000s Australia had a sustained housing price and credit boom



Source: RP Data Core Logic; RBA

At the time, the received dogma amongst central banks was that you could not see a housing bubble coming. Central banks also felt emboldened by the apparent success of the US Federal Reserve in managing the IT bubble. Having watched the stock market bubble burst in the US and having been able to lift US growth by delivering loose monetary policy, the Federal Reserve under Alan Greenspan, led the charge with an asymmetric approach to monetary policy. The Fed would not seek to burst a bubble beforehand, but would loosen policy to mop up the mess afterwards. The 'Greenspan put' was alive and well.

A challenge for the local central bank was that Australia had adopted an inflation-targeting regime and the orthodox approach stipulated that simply delivering price stability should be sufficient to also deliver financial stability.

Despite this global orthodoxy, concerns were building at the Australian central bank. Many of those in senior positions in the financial authorities and banks had memories of the commercial property driven credit cycle in the late 1980s, and the way it exacerbated the 1990s recession. The late-1980s asset price bubble had been so destructive that two of the major Australian banks came close to insolvency. Collectively, the four major banks wrote off AUD17bn of bad loans (5% of total credit at the time) between 1989 and 1993.

Given the apparent constraints of the inflation targeting regime, the approach adopted by the Reserve Bank of Australia was to begin an active 'public awareness campaign' of 'open mouth operations' to make it clear that the central bank believed that the housing market was getting out of line with fundamentals.

'Leaning against the wind' of a housing boom, arguably, helped to neutralise it

RBA Governor, Ian Macfarlane, gave a number speeches in which he emphasised growing concern about the housing price boom, particularly where it was led by investors and that households should not expect the rapid pace of housing price growth to be sustained. As a result, the local media ratcheted up its coverage of housing and interest rates. The prudential regulator also sought to tighten lending standards, which gave additional 'teeth' to the central bank's jawboning (for more on this see Bloxham, P. Kent, and Robson, 2010).

The RBA also lifted its cash rate by 100bp over 2002 and 2003. Although these moves were not explicitly motivated by the housing prices boom, and were in line with forecasts for inflation, they were done with the expected positive wealth effect from the housing boom and the growing imbalances in the housing market in mind. Although the global orthodoxy suggested that central banks could not identify asset price bubbles as they inflated, and thus should not respond to them with tighter policy, it was clear that the Australian central bank was able to identify a growing risk and thus chose to 'lean against the wind', to some extent.

As it turned out, growth in housing prices and household debt slowed by 2004. As the housing boom cooled, not all parts of the country escaped unscathed. Sydney's housing market had been the most exuberant and, at the end of the boom, some of the western suburbs of Sydney also saw a sharp rise in housing loan arrears, a clear sign that there had been some misallocation of credit.

However, Australia did not have a sharp overall fall in housing prices. There was some luck involved (a topic we will return to in the next chapter). Just as Australia's housing price and credit boom ended in 2004, commodity prices began to ramp up, driven by Chinese demand, which led to a mining boom. The boost to local incomes from rising commodity prices helped to cushion the economy as the housing price boom came to its end.

Lesson: Again, not getting too caught up in global policy fads was important. It also helped to have a long memory. An orthodox approach to inflation targeting would have called for no response at all to the rising risks in the housing market. Instead the central bank leaned against the wind, at least to some degree. Importantly, by the time 2007/08 Global Financial Crisis came along, Australia had already drawn lessons from the large credit and asset price cycles in the late 1980s and early 2000s.

The worst drought in a century: A changing industrial structure

Through the early 2000s Australia's agricultural sector was also dealing with a negative shock of its own. Low rainfall in 2001 and 2002 added to already fairly dry conditions in the late 1990s. By 2003, Australia was in the midst of one of its worst droughts on record. Dry conditions were associated with the El Nino phenomenon – which describes a cycle of warm ocean water that develops in the central Pacific. For Australia, El Nino, tends to lead to drier-than-average climatic conditions. The dry conditions were particularly damaging to agricultural output due to their persistence, which drove soil moisture and dam and water reserve levels to historical lows in many regions.

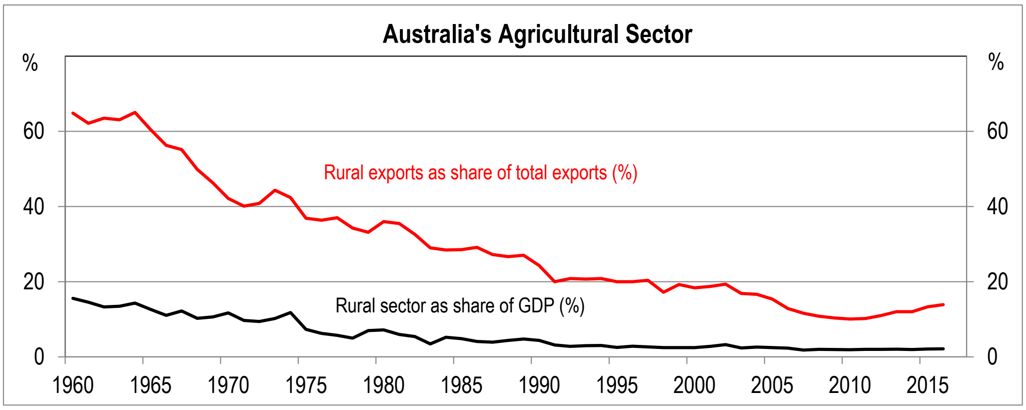
The volatile agricultural sector has become less important over time

In days gone by, when the rural sector was a much larger share of Australia's economy, much of the volatility of the output was driven by the weather (Chart 15). This helps to explain why Australia's GDP growth has become less volatile over the long run (see Charts 1 and 2 in the first chapter, above). At the beginning of the 20th century, agricultural output accounted for 20% of Australia's GDP. Even in 1960, the rural sector accounted for 17% of GDP and 74% of Australia's exports. By 2003, the rural sector had fallen to only 2.5% of GDP and rural exports were around 18% of exports. As a result, despite a deep and lasting drought, the sharp rural downturn did not have a significant effect on the overall economy.

Of course, more generally, shifts in the industry composition of the economy help to explain part of the reduction of volatility in Australia's GDP. Not only has volatile agricultural production become a smaller share of the economy, but so has the manufacturing industry, which has historically tended to be more volatile than other sectors given large inventory cycles. 'Just In Time' systems of inventory management have helped to reduce the amplitude of manufacturing inventory cycles, but in Australia's case, so has the fact that manufacturing has fallen from around 30% of the economy in the 1960s to around 6% of the economy today.

Lesson: A key lesson is the strong reminder that managing the economic cycle requires trying to understand cyclical and structural changes in economic activity. Shocks that can be a big deal in some periods can be of little significance at other times as the industrial structure of an economy changes. Of course, in retrospect these structural changes are easier to identify but in real time it is always hard to distinguish between cyclical and structural economic changes.

15. Agriculture is volatile but now only a small share of the Australian economy



Source: ABS

Avoiding the big one: Agile policy and a little luck

Of the episodes described so far, none compares in magnitude and breadth of scale to the Global Financial Crisis and Great Recession that followed. As we showed in the first chapter, across the OECD economies only Australia, Korea, Poland, and Slovakia avoided a recession in 2009. Even amongst the emerging economies, few avoided recession in 2009.

There was a large collection of factors that helped Australia to grow through this period.

First, local population growth was strong, running at 2.2% in 2008, the fastest pace of growth in at least three decades. Fast population growth supported stronger GDP growth, which made it less likely that GDP would contract. As we noted in the first chapter, per capita GDP did decline during 2009, so it can be debated as to whether Australia had a recession or not.

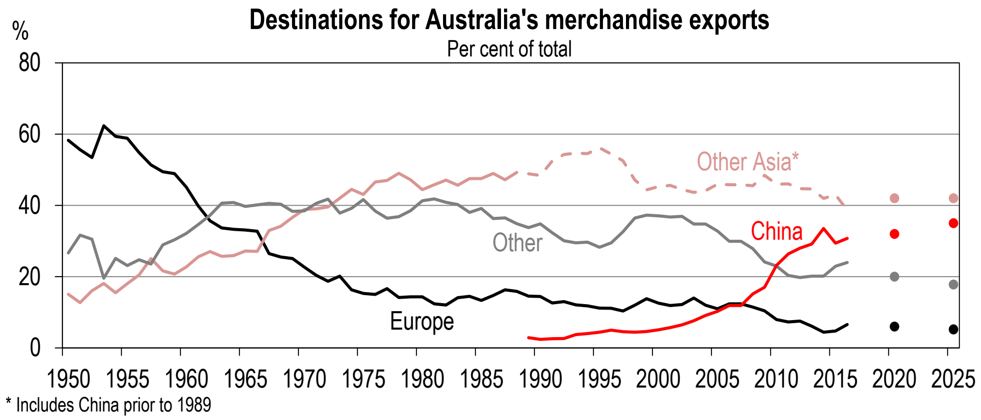
Avoiding a recession in 2008/09 involved good policy and good luck

Second, Australia has a significant trade exposure to China, where the authorities delivered a massive fiscal stimulus in response to the Global Financial Crisis, which quickly lifted commodity prices. Although global trade fell sharply in late 2008, the Chinese delivered a fiscal stimulus package worth USD586bn in November 2008, focused on infrastructure, which saw a sharp rise in commodity demand (Chart 16). The mining investment boom, which had been ramping up from 2005, gained further momentum and set forth to new heights after the Chinese policy announcement.

Third, Australia's banks had a minimal direct exposure to the sophisticated and, in many cases, inappropriately rated financial products, which were a key catalyst for the global financial crisis, such as sub-prime loans and collaterised debt obligations. This was unlike many banks in Europe and similar to the situation in Canada at the time. The lack of a direct exposure to these financial products significantly limited the financial effect on Australian banks.

The 'four pillar policy', whereby the four major banks are prevented from merging, meant less impetus for the major banks to seek quick returns from more adventurous activities. It could be argued that the more limited competition that this engendered in the local banking market resulted in a trade-off of competition against financial stability, but in the face of a large negative financial shock the Australian banks held up well. Of course, Australian banks still had an indirect exposure, given their reliance, at the time, on offshore wholesale funding markets, many of which froze during the early stages of the Global Financial Crisis.

16. China's fiscal stimulus drove Australia's mining exports and an investment boom



Source: ABS, HSBC estimates

Fourth, the RBA slashed its cash rate significantly and the Australian dollar fell a long way, substantially loosening financial conditions and improving the economy's competitiveness. Until early 2008, the RBA had been fighting an inflation break-out, with CPI inflation running well above its target band. As a result, the RBA had a policy rate at 7.25% when the Global Financial Crisis arrived, which also gave them plenty of scope to cut. Once Lehman Brothers failed, the RBA Governor did not hesitate, cutting the cash rate by 425bp in five months, to 3.00%. The AUD fell 33% in 8 months, from USD0.96 in May 2008 to USD0.64, by January 2009.

Fifth, a large local fiscal stimulus was delivered and a banking deposit guarantee scheme introduced. Earlier fiscal surpluses had allowed the Australian government to pay down its debt, such that it had a net asset position of 4% of GDP in 2008 and a well-deserved triple-A sovereign rating, which it had held since 2003. In 2006, the Treasurer of the day, Peter Costello, had remarked that Australia may not need a bond market at all, given that the debt had been paid off. The very strong fiscal position allowed the government to announce a banking deposit guarantee scheme without the market questioning its ability to do so.

The strong fiscal position going into 2008 was particularly important

The strong fiscal position also allowed the government to deliver a large fiscal stimulus package to help to offset the impact of the Global Financial Crisis. The fiscal package was one of the largest responses to the Global Financial Crisis across the developed world, with the government announcing AUD42bn worth of spending (3.3% of GDP).

The package included cash bonuses to households, with AUD1,000 cheques delivered to most Australian households just prior to Christmas 2008 and Easter 2009. This was in line with the then Treasury Secretary, Ken Henry's, advice to 'go early, go hard, and go households'. The household bonuses were akin to 'helicopter money'. The household cash bonuses, combined with sharply lower mortgage rates had a decisive effect on consumer confidence, which bounced by its second largest amount in history over the six months to September 2009.

In addition to the cash bonuses, the government announced a trebling of the first home buyer grants, increased deductions for investment, spending on insulation for Australian dwellings, and a programme to build school halls across the country.

Lesson: It is clear that Australia benefited from luck, but the key lesson from the Global Financial Crisis is that it also helps to have a big buffer. China's fiscal stimulus, Australia's large resource endowment and rebound in the mining boom were luck. Australia's timing was also quite fortunate, with population growth strong at the right time. However, having a strong fiscal position, which also supported banks access to global markets and allowed a significant local fiscal stimulus, as well as an active and competent central bank were good policy.

Managing a mining boom: Australia's great rebalancing act

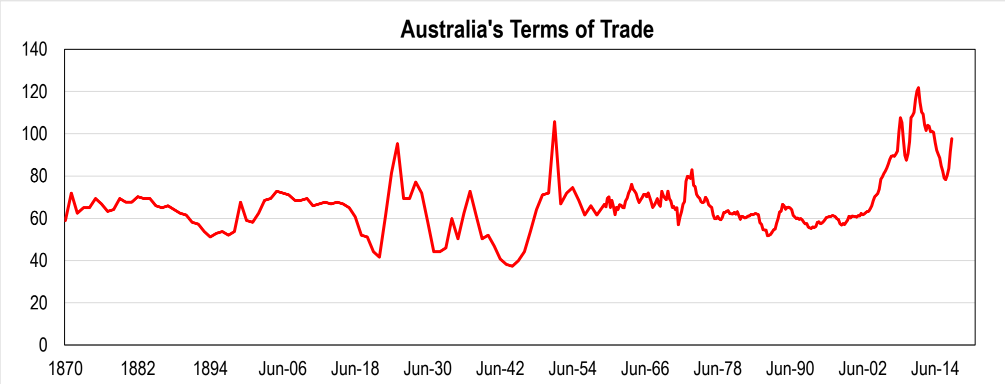
The most recent key challenge the Australian economy has faced is absorbing the impact of the largest commodity price and mining investment cycle in its history.

The mining cycle was at least three times larger than anything before it

Although commodity prices and mining investment had been rising strongly in the years prior to 2008, the Chinese fiscal stimulus delivered in response to the Global Financial Crisis, took the boom to new heights. Commodity prices got to very high levels in mid-2008, just prior to the failure of Lehman Brothers.

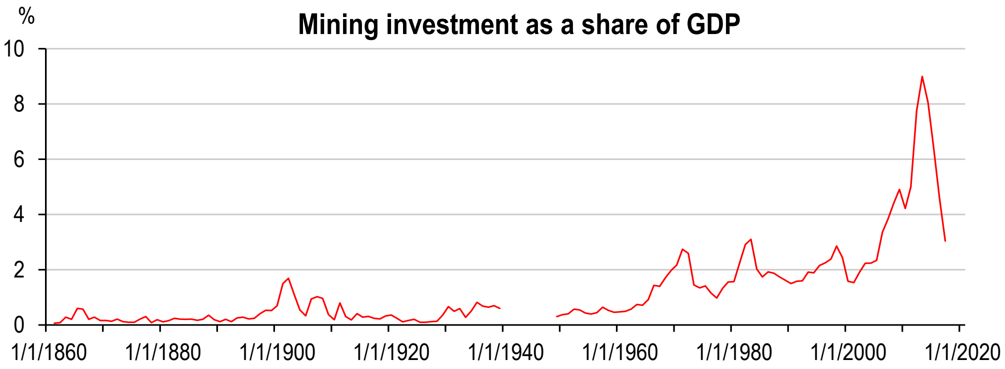
However, for Australia the ramp up in relevant prices was even larger in 2010 and 2011. Iron ore prices reached a peak of almost USD190 a tonne in February 2011, up from only USD13 a tonne at the turn of the century. Coal prices also rose to exceptionally high levels. As a result, Australia's terms of trade (the ratio of its export prices to its imports prices) rose to its highest level on record (Chart 17).

17. The 2004-14 commodities cycle has been the largest in Australia's history



Source: ABS, RBA

18. The mining investment boom that peaked in 2012 was much larger than previous ones



Source: ABS, RBA

The rise in commodity prices motivated a massive ramp up in investment in new capacity in the resources sector, including iron and coal mines and a number of large liquefied natural gas plants. Mining investment, which typically averages 1.5% of GDP in Australia and has in previous mining booms peaked at around 3% of GDP, rose to a peak of 9% of GDP in 2012. The resources sector investment boom was at least three times larger than anything else that had occurred in the history of the numbers, which go back to 1860 (Chart 18).

Good monetary policy and a flexible economy allowed the economy to absorb the mining cycle

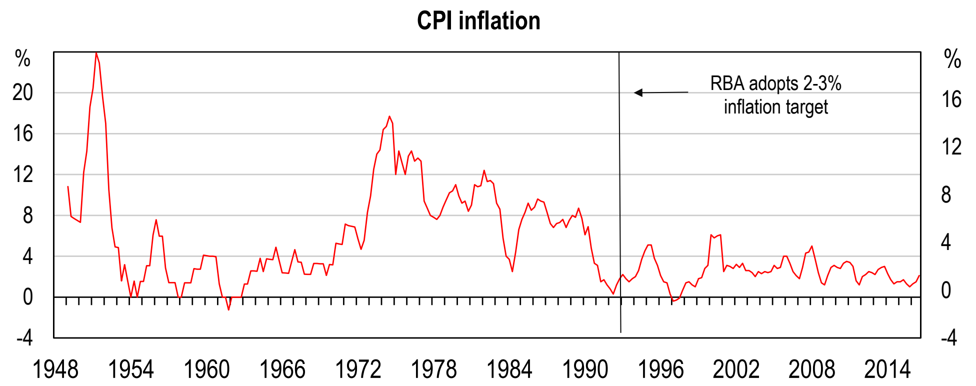
The mining boom presented opportunities and challenges. It was clearly a positive driver of economic growth and the ramp up in commodity prices boosted national incomes at a time when most other countries were in recession.

The key challenge was that previous mining booms had typically ended badly, driving the national economy into recessions. The stylised historical pattern, from the 1970s and 1980s mining booms (and earlier), was that the mining and commodity prices boom boosted incomes and activity well beyond the resources sector, leading to a broad-based boom, higher inflation, and higher wages. Then when commodity prices and mining investment eventually fell, the whole economy typically had a downturn.

This time around monetary policy was managed differently to seek to manage this cycle. The cash rate was lifted in 2009 and 2010, to head off the risk of an inflation break-out. This was done despite most other countries cutting policy rates during this time, in many cases to zero and later to below zero. As a result the AUD rose to post-float highs. High interest rates and a high AUD held back much of the non-mining economy, including housing, tourism, education exports, and the manufacturing industry, to make way for the mining boom without excessive inflation. As it turned out, the post-2008 phase of the mining boom did not drive an inflation break-out. The cash rate was then lowered from 2011 onwards, around when commodity prices peaked and mining investment started to fall, to rebalance growth back to the non-mining sectors.

To some degree, the Reserve Bank also got lucky on inflation (Chart 19). Prior to the Global Financial Crisis, the earlier mining boom had delivered an inflation break-out. By early 2008, underlying inflation was running at 5.0%, which is well above the RBA's 2-3% target band. In this way, Australia could even be said to have benefited from the Global Financial Crisis, to a degree. Without it, the RBA may very well have had to deliver a domestic recession to get inflation out of the system.

19. The inflation targeting regime helped in managing the mining cycle



Source: ABS

Australia's example shows how monetary policy can help manage a 'resources curse'

The recovery in the non-mining sectors, including some lift in manufacturing conditions, provides strong evidence that Australia does not suffer from the 'resources curse', where having a large resource endowment permanently damages other sectors of the economy (see *Does Australia have a resources curse? The challenges of managing a mining boom*, 18 August 2011). Compared to Australia's own history of mining booms, the economy has fared well in response to the mining cycle, having not had a recession. A comparison with other countries that faced a similar cycle in commodity prices and investment also shows that Australia has fared well. Countries with weaker institutions, such as Brazil and South Africa, have had a much tougher time dealing with the resources cycle. Even Canada, which has strong institutions, suffered a recession as a result of the fall in oil prices in 2014 and 2015.

The less promising aspect of the resources boom, from a policy perspective, was the lack of public saving when commodity prices were high and national income growth was strong. Although the government ran fiscal surpluses in the lead up to the Global Financial Crisis, these could have been larger. In the lead up to the Global Financial Crisis, in 2008, the economy was overheating, with inflation well above the RBA's target, partly because fiscal policy was not tight enough. In Western Australia, where the resources boom was largest, the state government did not have a single year of fiscal surplus during the mining boom.

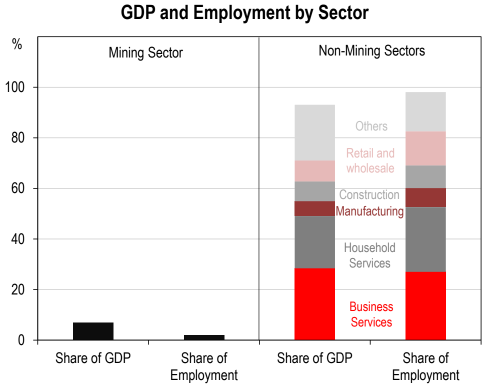
Lesson: A key lesson was that Australia had a strong policy regime for dealing with commodity price shocks. The economy proved to be flexible enough to absorb a large positive and then negative shock to the resources sector, without it delivering a national recession at its end.
A broader lesson, for further study, is the role that monetary policy can play in helping to deal with the effects of resources curses.

What's next? Services are increasingly driving growth

As the mining investment boom came to its end many observers have become concerned that Australia's main growth engine had stalled. The more downbeat observers note that the mining boom has been replaced by a housing construction boom and that this, in turn, will end at some point leaving Australia with little to drive its growth.

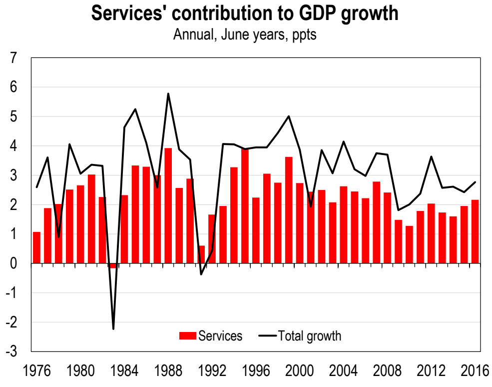
Our view is more optimistic. Although the mining sector has been a significant driver of the Australian economic cycle in recent years, it remains the case that the bulk of Australia's economy and its growth is in the services sectors (Chart 20). The services sectors account for around 75% of GDP and 80% of employment. See [Australia's next growth driver: The rise of the services sector](), 10 July 2015.

20. Services dominate GDP



Source: ABS

21. Services the largest driver of growth



Source: ABS

We expect growth to be increasingly driven by services exports to Asia

In particular, as mining investment has declined growth has been supported by a pick-up in services exports, mostly to Asia, including tourism and education exports (Chart 21). It seems clear to us that as China's economy shifts from an investment-led to a consumption-driven growth model, and its middle class incomes have risen, Australia's economy is adapting by shifting its key growth driver from mining investment to services.

Our central case sees the services sectors as continuing to support Australia's growth. Chinese tourism visits to Australia have risen from 350,000 visitors in 2009 to 1.2m visitors in 2016 and are forecast to exceed 2.5m visitors by 2024. Chinese student enrolment numbers have risen from 140,000 to 200,000 over the past four years, and we forecast that they could exceed 280,000 by 2020.

There may also be opportunities in other areas. China's demand for health services is rising strongly as its population ages. The China-Australia Free Trade Agreement (FTA), signed in 2015, specifically seeks to enhance Australian businesses' access to the onshore health and tourism markets in China.

Financial connections are also rising, albeit off a much lower base. Capital inflows associated with the mining boom have pulled back, but there has been a shift to other industries, including property. Australia is also a founding member of the Asian Infrastructure Investment Bank, increasing the scope of rising financial connections through infrastructure investment. We discuss these opportunities in greater detail here: [Australia's broadening economic links to China: Managing the opportunities and the risks](), 8 November 2016.

Lucky country or more?

- The gifts of natural resources and proximity to fast-growing Asian economies are clearly good fortune
- Good policy has also played a role, including earlier reforms in the 1980s and 1990s, and astute demand management policy
- The long boom will end at some point; economic reform could help prolong it and reduce the severity of the effects of the next recession

More than just luck

The idea that Australia has been lucky and little else, dates back a long way. In 1964, Donald Horne, an Australian journalist and social observer, published a bestselling book called 'The Lucky Country'. In it, he famously stated that 'Australia is a lucky country, run by second-rate people who share its luck'. He argued that Australia's mineral wealth had, in the 1960s, become a licence for policy complacency.

Luck has played a role, but the longest boom is more than just good fortune

There is no denying that Australia has had luck on its side. The gifts of natural resources and proximity to the fast-growing Asian economies are clearly good fortune. But just having resource wealth does not guarantee economic success. Indeed, there is a rich depth of economic literature suggesting quite the opposite. Two economists at Harvard University, Jeffrey Sachs and Andrew Warner (2001) famously showed that on average, between 1970 and 1990 countries with more natural resources grew more slowly than those without.

It is also worth recalling that being close to Asia has not always been thought of as a gift. As Australian economic historian, Geoffrey Blainey, famously wrote in 1967, Australia had, up to that point suffered from the 'Tyranny of Distance' from its own major markets. Keep in mind that in 1960, 45% of Australia's exports were sent to Europe (that number is now 6% of exports).

Beyond geographical location and a resource endowment, which support Australia's ongoing potential for growth, other lucky elements have also helped Australia to avoid a recession in the past 26 years. In particular, the economy benefited from good timing at the end of the early 2000s housing price and credit boom, as it coincided with the beginning of the upswing in the global commodities 'super-cycle', led by Chinese demand.

There was also some luck during the Global Financial Crisis. Population growth happened to be running at it fastest pace in over three decades in 2008, which supported GDP growth. The massive fiscal stimulus delivered by the Chinese authorities in 2009, in response to the Global Financial Crisis, could also be thought of as luck from Australia's perspective.

Nonetheless, having 26 years of continuous growth also seems to be a bit more than just luck. If it were all luck, then, as we pointed out in the first chapter, Australia has been very lucky indeed! No other OECD economy has a stretch of growth that lasted this long and the average OECD economy has a recession every nine years.

Getting the basics right

To start with, Australia has benefited from key fundamental features, such as a strong rule of law and population policy that has supported growth.

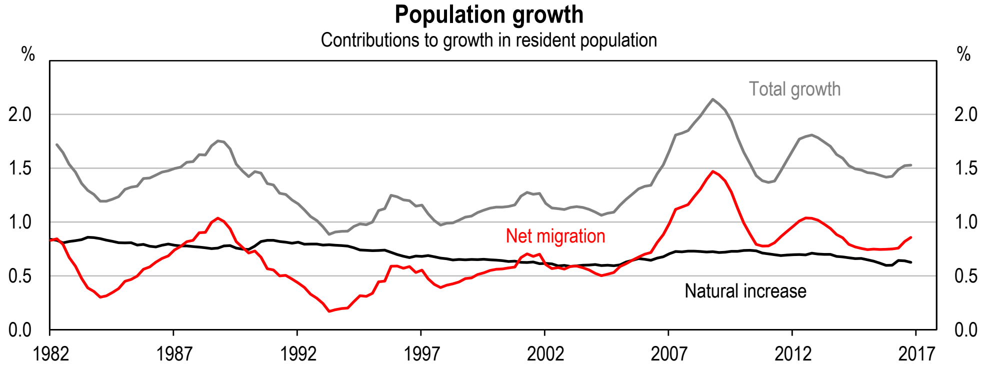
A strong rule of law may perhaps be partly due the country's origins. Australia's Federation, in 1901, was rather unique, with the country voting itself into existence, in stark contrast to the typically more violent birth of other nations (Hartcher 2011). As Henry Parkes, one of Australia's 'founding fathers' said in a famous speech, in 1889, in the lead up to Federation, 'What Americans had done by war, the Australians could bring about in peace' (Parkes 1889).

The fundamental factors, such as 'rule of law' help, but are not the whole story

Comparisons with other countries that had a similar starting point, such as Argentina, illustrate the importance of institutions. At the turn of the 20th century, Argentina had a similarly agricultural based economy with a similar level of per capita GDP and was a beneficiary of the great European migration, like Australia. At that time, comparisons were being made between Australia and Argentina and there was a healthy debate as to which economy would perform better over the coming century. With a per capita GDP of USD51,800 in Australia, versus USD12,500 in Argentina in 2016, it is clear which economy has performed better over the long term.

Australia's population policies of recent decades have also been supportive of overall growth. As we pointed out in chapter 2, a key factor that kept GDP from falling in 2008/09 was the strong population growth at the time. Strong population growth has been key feature of recent decades (Chart 22). Over the past two decades Australia's population has increased by 6m people, of which 3.5m people have been migrants. Australia's points-based system for skilled migration has also helped to meet skill shortages in certain industries and regions at various points in time which has helped to improve the flexibility of the labour market. For example, engineers and mining specialists were favoured for migration to Australia during the mining boom.

22. Population growth has been strong underpinning economic growth



Source: ABS

Economic flexibility is the key

However, just having a strong rule of law and good population policy is not sufficient to have reduced the volatility of the economic cycle in recent years. Australia has arguably had a strong rule of law for much of its history, but it is only in the past couple of decades that growth has been exceptionally stable. Population growth was also strong in earlier decades, but this did not make Australia immune to recessions.

The key feature of the recent period has been that Australia's economy has been more flexible than in the past. This has been particularly important for Australia as it is a small, open economy, which means that the shocks generally come from abroad.

Like earthquake proofing, the best strategy is to be as flexible as possible, but still to maintain structural integrity in the face of the seismic shock. Local policymakers cannot change or control the economic shocks that arrive, so the economy needs to absorb them and adjust.

Earlier reforms made the economy more flexible

Over the past two decades or so, the Australian economy has proved to be fairly flexible and certainly more flexible than it was in earlier periods. The increased flexibility of the economy came about largely due to significant reforms, mostly made in the 1980s and 1990s, which converted a closed and protected economy into an open market-based one. In the immediate post-war period Australia had a highly protected economy where many of the relative prices, including wages, the exchange rate, and many interest rates, were determined centrally.

A market-based economy has helped Australia absorb shocks

The reforms were similar to those made by US President Reagan and UK Prime Minister Thatcher. They involved privatising public assets, deregulating markets, including the labour and product markets and the financial system, and reducing trade barriers. If anything, Australia's need for reform was even stronger than that of the US and UK, given the inflexible starting point and the need to focus on trade and foreign investment for growth given Australia's lack a large domestic market.

A key catalyst for reform was the poor performance of the Australian economy through the 1970s and 1980s. By comparison, growth had been more stable through the 1950s and 1960s, as it benefited significantly from demand from commodities on the back of the European post-War rebuilding and the rise of Japan.

However, as we showed in the first chapter, although growth was solid in the 1950s and 1960s, it was still quite volatile. In addition, as former RBA Governor, Ian Macfarlane, points out, even in the 1950s and 1960s, Australia underperformed most of the OECD economies (Macfarlane 2006). In short, although Australia did well in the 1950s and 1960s, it could have done better and the lack of flexibility may have been part of the story.

Nonetheless, the real challenges came in the 1970s and early 1980s. Rampant inflation in the 1970s and 1980s eroded household wealth and caused significant distortions in the economy. This was a familiar story across the major developed economies, including the United Kingdom and the United States. In the 1970s, inflation averaged 10.1% in Australia, while it was 12.6% in the UK and 7% in the US.

Australia was in need of economic reform and the poor performance in the 1970s and early 1980s provided the necessary political motivation to make it happen. The need for reform was so great that it, seemingly, galvanised the political will to achieve it. As Australian journalist, Paul Kelly, pointed out in 'The End of Certainty (1992), 'the political story of the 1980s is how Labor and Liberal [Australia's two major political parties], once joint upholders of the old system, became joint architects of the new system'. A deterioration of the reform agenda in recent years is a key topic we address below.

Appropriate institutions to meet unique circumstances

It is also worth remembering that Australia's economy has many quite unique features. As a result, many of the reforms have needed to account for the idiosyncratic features of the Australian economy.

Commodities and large distances

The Australian economy is a developed economy, with a large services sector, but also a large resource exporter. Most countries with commodities constituting over half of their exports are in the developing world, particularly in Africa or Latin America, and have much smaller services sectors. In these ways Australia is similar to Canada and Norway.

Australia is unusual to be a developed economy but large resource exporter

Large distances are also a key unique feature of Australia. Unlike small European economies, Australia's trading partners are also a large distance away – even the ones in Asia – making it harder to specialise in components or services that form part of highly integrated supply chains. Unlike large economies, like the US or China, Australia also does not have a big enough domestic market to support large scale production. These factors all make it harder to have a large and competitive manufacturing industry.

The geographical spread of the population is also unusually large. The bulk of the population (60%) lives in the five major cities, which are a minimum distance of 725km and maximum distance of 4,300km from each other. This means that even Australia's domestic economy faces the challenges of long distances. Large firms that produce goods for the whole country need to consider each major hub as a separate market, given the significant distance between the population centres and the high transport costs between them. For example, large grocery stores need to have a whole distribution chain, from warehouses to retail outlets, in each of the major cities. This tends to favour oligopolies, where a small number of players in an industry are able to take advantage of economies of scale and some monopoly profits to absorb the larger cost of multiple supply chains.

Technology and the digital economy are helping to reduce the burden of these distances. More players are entering markets as Australia's population grows and the economy offers international entrants better growth opportunities than elsewhere. Nonetheless, the unique geography means the market differs from others.

A perpetual foreign funding requirement

Australia has also had an almost perpetual foreign funding requirement, and thus a current account deficit, in every decade of its history going back to at least 1860. It has had current account deficits in all but one year in the past sixty years. This seems to reflect that Australia has a small population, but good growth prospects, and thus that it has insufficient levels of national saving to meet all of its investment needs. Comparisons with other developed economies show that Australia has a national savings rate that is about average, while its investment rate is higher than average.

Australia has had current account deficits, on average, for its whole history

The institutional arrangements needed for an economy like these are different in many ways to other developed economies. Acknowledgement of the different forces affecting Australia, when compared with many other developed world economies, is an important and necessary attribute for policymakers. Some of these needed institutional features have developed successfully.

The free-floating exchange rate is one of these developments. An economy that is a large commodity exporter is subject to large income shocks as commodity prices move, and benefits from having an exchange rate that can act as a shock absorber. As we discussed in the second chapter this was a key mechanism for absorbing the impact of the recent massive cycle in the resources sector as well as the impact of the Asian financial crisis.

The free floating currency has, in turn, led to the development of deep and liquid markets for hedging exposures to the Australian dollar. It has also affected the business culture and local corporate balance sheet management as they have adjusted to the high volatility of the currency.

An independent inflation-targeting central bank is another institutional feature that has proven to be helpful in managing the Australian economy. Other countries also have these institutional arrangements and in the post-Global Financial Crisis world there have been many questions asked about whether these are the right arrangements. While we are not making the case for flexible inflation targeting in general, it does seem that it has been the useful system for Australia.

Australia's ready access to global financial markets has, in recent years, been underpinned by a sound government balance sheet. As we pointed out in the second chapter, the government's low debt and triple-A sovereign rating allowed public policy makers to deliver a significant fiscal stimulus and a government-backed deposit guarantee scheme in the face of the Global Financial Crisis, thereby helping to support growth.

Significant market reforms were made in the 1980s and 1990s

The market-based nature of Australia's economy owes to extensive reforms that were undertaken in the 1980s and 1990s. These reforms were made across a wide range of areas. Key reforms included opening up to trade and cutting tariffs; floating the AUD and opening up the capital account, cutting income and corporate taxes, deregulating and privatising industry, and wage reform to make the labour market more flexible.

These reforms meant that the Australian economy ticks all the boxes in economic historian, John Williamson's, 'Washington Consensus' (Table 23). Of course, unlike the emerging economies, which Williamson's prescription was describing in 1989 (particularly in LatAm), Australia had embarked upon these reforms well before they were characterised this way.

Opening up to trade
Trade liberalisation had begun earlier than a number of other reforms. Prime Minister Gough Whitlam cut tariffs by 25% unilaterally in July 1973. It was badly needed. Australia was the only country amongst the developed economies that did not see its export share of GDP rise between 1955 and 1985. Before the cuts, the effective rate of protection for manufactured goods was 35%. It was as high as 50% for cars, 80% for clothing and footwear, and 280% for some basic metals products.

Openness to trade has boosted trade and productivity

Liberalised trade gave Australian producers greater access to international markets and helped the economy to take advantage of opportunities from emerging Asia. In the 1960s Australia's export markets were mostly still in Europe, but by the early 1970s the bulk of exports were headed to Asia. Today, Australia can lay claim to having the single largest export exposure to the Asian economies across the OECD nations, including having a larger share of its exports headed to Asia than fellow OECD member states, Japan and South Korea.

However, a less obvious, but perhaps even larger benefit from reduced barriers to trade, was increased access to cheaper imports. This allowed Australian households and businesses affordable access to an ever-increasing range of manufactured goods.

More intense import-competition also put pressure on local producers to boost their productivity. Although reduced trade barriers can be thought of as one of the reasons why the manufacturing industry has shrunk as a share of Australia's economy, it is also a key reason (amongst others) that productivity growth was strong in the 1980s, 1990s, and early 2000s, as uncompetitive producers shut down in favour of operations that could compete globally.

23. Australia has a market-based economy

	Williamson's List	Australia's policy settings
1	**Fiscal policy discipline**, avoiding large deficits	The Charter of budget honesty (1998) requires the government to publish significant regular budget reporting, including a five-yearly intergenerational report.
2	**Reducing indiscriminate subsidies** and directing public spending to pro-growth services	Removal of trade barriers including industry subsidies from the mid-1970s across a range of industries through to the recent removal of car industry subsidies in 2014.
3	**Tax reform**, broadening the tax base	In 1985 a capital gains tax and fringe benefits tax were introduced; the Goods and Services Tax was introduced in 2000; the corporate tax rate fell from 49% in 1986 to 30% currently through shifts in the tax system.
4	**Market determined interest rates**	A tender system for Australian government bonds was introduced in 1982 and the bank interest rates were almost entirely market determined by 1985.
5	**Competitive exchange rates**	Floating AUD since December 1983, with no explicit central bank intervention since 2009.
6	**Trade liberalisation**	Sharply lower tariffs from 1973; progressive reduction of trade barriers; extensive trade agreements with Australia's major trading partners.
7	**Liberalisation of foreign direct investment**	Most capital controls were removed when the currency was floated in December 1983.
8	**Privatisation of state enterprises**	Many previous state enterprises have been privatised, including the Commonwealth bank (1991), Qantas Airways (1993), Telstra, (1997), Sydney Airport (2002) and Medibank (2014).
9	**Deregulation** to increase competition and encourage market entry	Policymakers deregulated many industries through the 1980s and 1990s including the airlines in 1991 and telecommunications in 1992.
10	**Legal security of property rights**	Australia has benefited from a strong 'rule of law' for most of its history.

Source: Williamson (1990), HSBC

Trade reforms have continued in recent years, although the big step changes occurred in the 1970s and 1980s.

Australia became a signatory to the World Trade Organisation when it was established in 1995 (and was previously a member of GATT). Australia has also been involved in negotiations for a number of multi-lateral trade agreements, including the Trans-Pacific Partnership and the Regional Comprehensive Economic Partnership and already has a multi-lateral agreement with the ASEAN economics and New Zealand, which has been in place since 2012. With a lack of global progress on multi-lateral trade agreements, Australia has pursued bilateral free trade agreements with its major trading partners. Australia has free trade agreements with its three largest trading partners – China, Japan, and Korea – as well as many others (see *Australia's growing links to Asia: Powering growth*, 18 July 2014).

Deregulating the financial system

An open economy needed a market-based financial system. In the early 1970s the Australian financial system was highly regulated and closed. Reform of the financial system began in the mid-1970s and gained momentum in the 1980s. Key reforms, which were proposed in the Campbell Review of 1980 were gradually implemented through the 1980s.

An open economy needed a market-based financial system

A shift to a tender system for the bond market occurred in 1982. Then came the floating of the Australian dollar in 1983, which was probably the key reform that made the Australian economy more resilient to international shocks. Importantly, other financial sector reforms were also necessary to promote the development of deeper markets, such as exchange rate forward markets, which allow the economy to absorb big changes in the Australian dollar without facing large liquidity issues. Bank controls on interest rates were almost completely removed by early 1985 and sixteen foreign banks were also issued with licences that year.

Much like in other countries, the newly liberalised financial system initially caused problems. Towards the end of the 1980s Australia saw a rapid ramp up in commercial and residential property prices fuelled by leverage. As Australian journalist, Trevor Sykes, noted in a book about the period, 'The Bold Riders', 'never before in Australian history had so much money been challenged by so many people incompetent to lend it into the hands of so many people incompetent to manage it' (Sykes 1994). The early 1990s recession, was a 'balance-sheet recession, which was exacerbated by the earlier ramp up in property prices and lending.

A key lesson for policymakers from the early 1990s recession was that a balance needed to be struck between a free market financial system and a well-regulated one. The experiences of the late 1980s and early 1990s were also seared in the minds of many of the managers of policy and the banking system as the Asian financial crisis and housing boom of the early 2000s presented new tests for the economy.

Reform meant that Australia has deep, liquid, and well-regulated financial markets

Interestingly, the Campbell review firmly rejected the idea that the central bank should be given independence. It argued that this would be 'inconsistent with the democratic process of government'. Central bank independence was not secured until the 1990s. The Campbell review had also recommended continuation of the monetary targeting regime. Australia's central bank persisted with this system until it became clear that the relationship between the monetary aggregates and the real economy had broken down. In the late 1980s the RBA shifted to a regime referred to as the 'the checklist' which involved setting policy based on a large list of variables. The current account played a critical role in this ill-fated approach.

After the early 1990s recession, the RBA needed a new approach to policy. Having tried virtually every other approach to setting monetary policy, the RBA began to target inflation from 1993. Although, as the central bank was, by this stage cautious about once again publicly shifting its mandate, it was not until 1996 that the inflation targeting regime was formerly acknowledged in a formal agreement between the RBA Governor and the Treasurer, which remains the system by which the RBA's mandate is operationalised. In short, the monetary policy regime and performance has improved significantly over recent decades.

The next major financial system review was the Wallis review of 1997, chaired by a Melbourne businessman, Stan Wallis. Key amongst the recommendations was the separation of prudential regulation and supervision from the RBA's role but a bolstering of its financial stability and payment systems roles. In 1998, the government established the Australian Prudential Regulation Authority.

Central bank independence and the inflation targeting regime arrived in the 1990s

The Global Financial Crisis also delivered lessons. Despite holding up comparatively well during this period, the Australian banking system showed key vulnerabilities. Local banks were highly reliant on global wholesale funding markets, many of which became illiquid. The government was forced to introduce a deposit guarantee for the local banks. Since then there has been a raft of adjustments to financial regulation and moves by the banks themselves to secure their balance sheets. Amongst these, the local deposit share of bank funding has risen from 40% to around 60% of funding, bank capital ratios have increased, and wholesale funding is now almost all at longer tenors than five years.

The most recent review of the financial system, the Murray review in 2014, chaired by prominent Australian banker David Murray, contained 44 recommendations, none of which sought to significantly alter the current institutional arrangements underpinning the financial system. The big reforms had already been done and as the Murray review reports 'the financial system has performed well since the Wallis Inquiry' in 1997.

The key finding of the review, from a macroeconomic perspective, was the acknowledgement that systems need to be bolstered to ensure that 'taxpayers are highly unlikely to lose money' in the event of a banking crisis (Murray 2014). The review has been used as a device for the prudential authority to seek to get the banks to hold more capital as the review suggested that they needed to do this to be regarded as 'unquestionably strong'.

Making the labour market flexible

Another key area of reform was in the labour market. The Australian labour market of the 1970s was highly unionised and wages were set centrally. This system proved highly inflexible to international shocks. The major labour market reforms of the 1980s involved a wages and prices 'Accord', which was an agreement between government and unions for wages restraint in exchange for social benefits. Further reform then shifted to decentralised wage determination. The later versions of the labour market Accord, in the early 1990s, became centred on enterprise bargaining agreements.

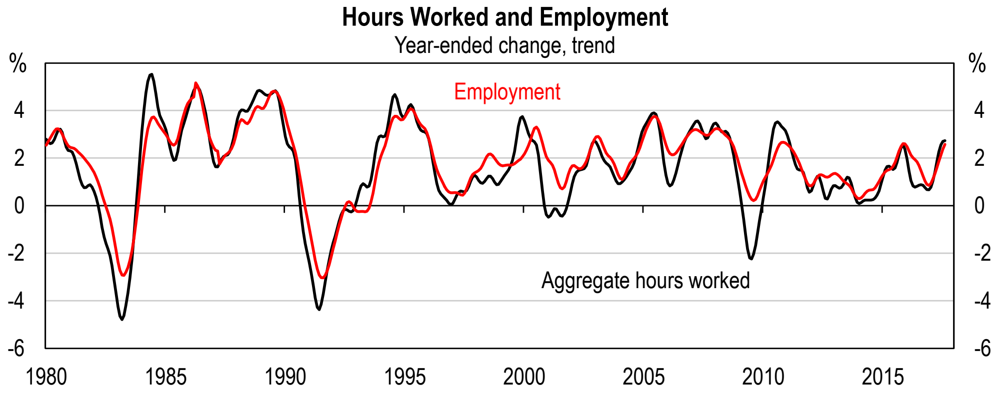
Australia's labour market has been surprisingly flexible in recent years

The labour market has proved to be surprisingly flexible in recent years, with clear evidence from the jobs numbers that flexibility has helped the economy to absorb various shocks that have come along. During the Global Financial Crisis, many firms chose to cut workers' hours rather than lay off staff. As a result, although growth in employment slowed significantly in 2009, it did not actually fall (Chart 24). Instead, hours worked fell quite sharply. This experience was unlike the 1980s and 1990s recessions, when employment fell almost as much as hours worked.

The labour market also proved to be fairly flexible during the mining investment boom. Workers were able to fly-in and fly-out (so-called FIFO workers) to meet demand at remote mining locations. Many workers travelled large distances to do this, including across the country and in some cases from New Zealand to Western Australia (over 5,500 km). Wages growth also picked up during the mining boom and slowed down subsequently, which is further evidence of labour market flexibility.

Of note, given the global discussion about whether countries should introduce a 'living wage', it is interesting that the Australian labour market has proved to be flexible despite the fact that Australia has a high minimum wage (currently AUD18.29 an hour). Changes in the minimum wage directly apply to around 20% of workers and provide a benchmark for around another 10-15% of wages, some of which are enterprise bargaining agreements.

24. Australia's labour market has proven to be surprisingly flexible



Source: ABS

Privatising to improve efficiency and reduce public debt

Deregulation and privatisation were also a key part of the Australian economic reform of the 1980s and 1990s. Key public sector entities, such as the Commonwealth Bank, the national airline, Qantas, the telecommunications network, Telstra, Sydney Airport and Medibank, amongst other state-owned assets were privatised. These industries also saw significant deregulation, with, for example, other players allowed to enter the telecommunications and air travel sectors, boosting competition in these industries.

As we pointed out above, given Australia's unique geography, there remain key questions about how competitive various industries can expect to become. For example, although many international airlines fly to Australia, it has been harder for multiple new entrants to compete in the domestic air travel market.

Privatisation has improved efficiency, but in some cases seen under-investment

Federal and state governments also privatised many of Australia's utilities and some of its transport infrastructure. There also remain outstanding questions about how successful this approach to public service provision has been, given recent challenges with energy supply and a significant lack of investment in urban transport infrastructure in recent years, which has contributed to higher housing prices in the major cities.

Although utilities and transport networks can be shown to be more efficiently run by the private sector, these industries still need to be well-regulated and there may be a need for public investment in new infrastructure, given that the market seems reluctant to invest in projects where the returns are in the medium-to-long term.

Dealing with an ageing population

Australia has also made better headway dealing with the challenge of its ageing population than many other countries, having set up a comprehensive superannuation (pension) system in the early 1990s. The Superannuation Guarantee was introduced in 1992, which required a percentage of an employee's remuneration (initially 3%, now 9.5%) to be directed into a superannuation fund by means of a compulsory employer contribution.

As a result of this system, Australia now has a superannuation system with around AUD2.3trn worth of assets (around 130% of GDP), making it the fourth largest pool of superannuation savings in the world, having recently edged ahead of Canada's pension scheme.

Australia has the fourth largest pool of pension savings in the world

As a result of Australia's superannuation scheme, and the Australian government having fully-funded its public pension liabilities through a sovereign wealth fund, called the Future Fund, Australia is better prepared than most countries from the challenge of its ageing population. This is both in terms of households' ability to fund their retirement and the government's ability to sustain its finances. A US think tank, the Centre for Strategic and International Studies, ranks Australia fourth in the world on income adequacy of pension funding and sixth on fiscal sustainability (see Jackson, R., Howe, N. and Peter, T. 2013).

In terms of its influence on the economic cycle, the pool of savings in the superannuation scheme, combined with a financial system that supports ready availability of lending, both help consumers to smooth their spending through time. The superannuation system also reduces the government's commitment to fund future pensions, which should make the task of running a balanced budget easier, albeit, as we discuss below, it still remains a key challenge.

Adept day-to-day economic management has played a key role

Just having a flexible, market-based economy is not enough to ensure economic success. Many other countries have adopted similar policy frameworks and have still had volatile economies.

Good policy management has played a role too, although this is far from a universal story. At times, poor policy decisions have been made. The flexibility of the economy appears to have, so far, meant that the economy has largely absorbed the impact of these policy errors without causing a recession.

In terms of managing the economic cycle, the key role has been played by the independent central bank with its flexible inflation targeting regime and free floating currency. As we described above, these institutional features have arrived in parallel with the current boom, so the timing alone suggests a strong link between these arrangements and the extended period of expansion.

The RBA has played an instrumental role in the longest boom

The central bank has managed to hit its target over time, an accolade that most central banks are struggling to claim in recent years. Australian inflation has averaged 2.5%, which is the centre of the RBA's 2-3% target band, over the past two decades. Both Governor Glenn Stevens and Ian Macfarlane, separately managed to average 2.5% over their individual decade-long governorships (Stevens 2016). The challenge is now set for the current Governor, Phil Lowe.

As we described in Chapter 2, above, the RBA has also been pragmatic in its approach to inflation targeting, acknowledging quite early on that just hitting an inflation target was not sufficient to maintain financial stability. Lessons were drawn from the 1990s 'balance sheet recession', when the RBA needed to deal with the early 2000s housing boom. Likewise, both of these experiences left the Reserve Bank well qualified to deal with the Global Financial Crisis.

Fiscal policy has been more mixed. We believe that key elements of the fiscal policy response to the Global Financial Crisis and the very strong fiscal position Australia had in 2008, were instrumental in avoiding a 'technical recession' during that episode.

A strong fiscal position helped Australia avoid a recession in 2008/09

The deposit guarantee introduced in September 2008, supported by Australia's net public asset position and triple-A sovereign rating, helped to support the banks and keep their doors open to borrowers. Key parts of the fiscal spending package were helpful in lifting consumer and business confidence at a time when the economy needed support. The 'helicopter drop' of AUD1,000 cheques to households just before Christmas 2008 and before Easter 2009, helped support confidence and retail spending. The rapid-fire approach of this spending was helpful. However, not all elements of the fiscal response to the Global Financial Crisis were useful.

Not all of the policy settings have been helpful

Much of what we have described above helps to explain why Australia has managed to grow for 26 years. Reforms in the 1980s and 1990s have made the economy more flexible, day-to-day policy has been quite adept at managing the cycle and Australia has benefited from some luck.

However, not all policy settings have been helpful. Progress on reform has also slowed to a standstill in recent years. Arguably, the large major economic reform was the introduction of the GST in 2000.

The lack of reform has contributed to a significant slowdown in productivity growth in recent years (Chart 25). Of course, identifying the individual drivers of the surge in productivity growth in the 1990s and early 2000s, or the subsequent slowdown, is far from a precise science.

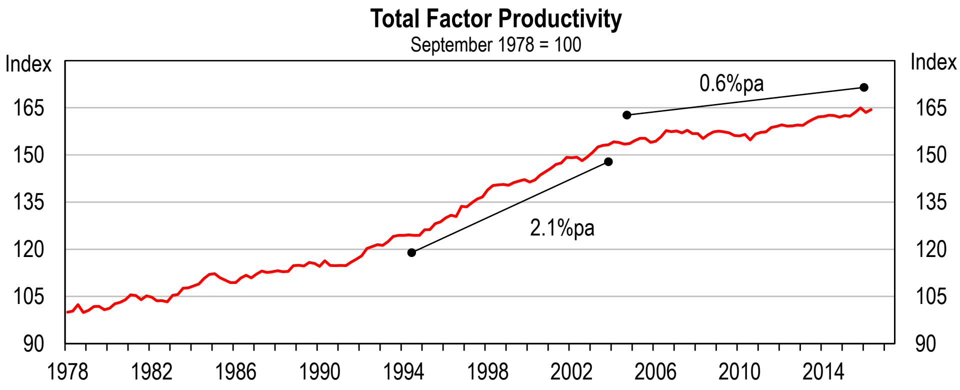
Reform has slowed to a standstill

Importantly, the slowdown in productivity growth is a global phenomenon and there is considerable debate about its cause. Some suggest that the slowdown will prove to be temporary and that technological advance in areas such as biotechnology and artificial intelligence, will see another burst of productivity growth in the coming years. For the optimistic view, suggesting productivity growth will re-accelerate, see, for example, Schwab, K. (2016) 'The Fourth Industrial Revolution' and Bynjolfsson, E. and McAfee, A. (2016) 'The second machine age'.

The more pessimistic view suggests that more of the significant productivity-enhancing developments, such as electric lighting, indoor plumbing, motor vehicles, and air travel, have already arrived and what is yet to come will have a more incremental effect on productivity growth. A more pessimistic view is outlined in Gordon, R (2016) 'The rise and fall of American growth: The US Standard of living since the civil war'.

However, most studies recognise that reform did boost productivity through the earlier period in Australia, so the absence of reform more recently has surely contributed to weaker recent productivity growth.

25. Productivity growth was rapid in the 1990s and early 2000s and has slowed since



Source: ABS, HSBC estimates

Not enough was saved from a once-in-a-century mining boom

Australian policymakers, in large part, missed a big opportunity to use the revenues from the recent mining boom to do significant reform or bolster public savings.

During the early stages of the mining boom in 2003 through 2007, the Australian government was getting persistent upside surprises to its tax revenue estimates. At the time, it was not easy to explain. The terms of trade rose and boosting incomes but it had been a long time since commodity prices had risen so much and the size and scale of the mining boom was not fully appreciated in real time.

If more had been saved from the mining boom then more reform could be afforded

It is clear in retrospect that Australia was benefitting from the upswing in a commodity prices 'super-cycle' and the biggest boost to national incomes and the tax revenues was arriving at its earliest stage. Without producing any more output and without doing any investment large commodity producers were simply benefitting from the higher prices of their products. For example, the thermal coal price had risen by from US25 a tonne in 2000 to USD72 a tonne by 2007, with the mining companies producing little more export volumes.

In the initial years of the mining boom, some headway was made, as the government paid down its public debt. More generally, as time passed and the boom became longer, fiscal policy settings deteriorated and progress on reform stalled.

Part of the challenge has been that not enough of the boost to national incomes from the mining boom was saved by the public sector. Too much of the positive effect of the mining boom on tax revenues was treated as permanent. As it turned out, much of the boost was temporary.

More public saving earlier would have helped to spread the income boost across time. One way to do this would have been to set up a sovereign wealth fund or stabilisation fund, to manage the resource wealth. Admittedly, Australia did have a sovereign wealth fund in the form of the Future Fund, but this entity had a specific mandate to fund unfunded public sector pensions, rather than to redistribute mineral wealth to future generations. As Australian journalist, Paul Cleary, wrote, Australia has perhaps had too much luck (Cleary 2011).

Australia was unable to get the political momentum needed to set up a sovereign wealth fund to save mining revenues. This is despite Australia's Treasury having advised Papua New Guinea on how to set up three sovereign wealth funds to manage its oil and gas wealth. Even East Timor set one up (as Cleary points out).

An attempt was made to put in place a mining tax but this came in 2010, which was well into the period when the mining boom was delivering a boost to national incomes. Unfortunately, without prior consultation with the mining companies or state governments the rushed attempt to introduce a mining tax failed. The mining companies lobbied hard to avoid a mining tax being legislated. The mining sector launched an aggressive media campaign to seek to gain public support to oppose a mining tax. In the end, the mining sector spent AUD22m to avoid a tax that would have potentially cost AUD40bn for the sector.

Although Australian government debt is low, it has been climbing rapidly

Too much public spending in response to the Global Financial Crisis

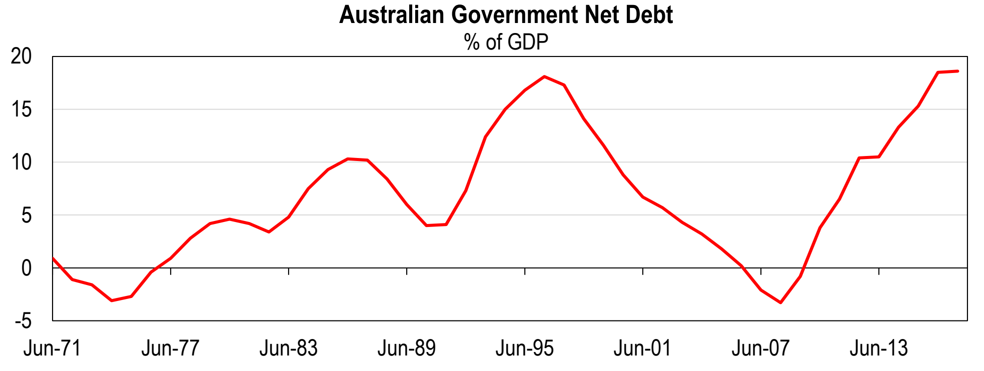
Fiscal challenges have also presented on the spending side of the ledger. Prior to the Global Financial Crisis this took the form of increased welfare payments that seem more affordable at the time due to the temporary boost in tax revenues from the early stages of the mining boom. These increased welfare benefits became somewhat embedded in the social security system leaving the government with a persistent structural challenge.

The post-Global Financial Crisis fiscal stimulus also delivered some fiscal spending that has persisted for longer than needed and contributed to the budget deficits. As well as the cheques to households, which helped to boost confidence, the government also boosted spending on a large range of longer-term spending initiatives, without rigorous cost-benefit analysis. These included Australia's largest ever infrastructure project, the National Broadband Network, which is now estimated to cost AUD49bn (NBN 2017). In addition, the government gave grants to build school halls and install insulation ('pink batts') into residential properties.

These spending initiatives were intended to provide an extended period of support for GDP growth, but proved to be unneeded and inefficient, given the economy quickly revived in 2009 as the China-stimulus led mining boom re-accelerated.

Without the tax revenue from the mining sector, with the increased spending commitments on welfare and the large and drawn out boost to fiscal spending from various post-Global Financial Crisis spending programmes, Australia has now had a decade of budget deficits. The government's bottom line has shifted from a net asset position of 4% of GDP in 2008 to a net debt position of 19% of GDP in 2017 (Chart 26).

26. Australian government debt was very low in 2008, but has been climbing since then



Source: Australian Treasury

Reform is needed to increase flexibility and boost productivity

A lack of reform is likely to be contributing to the slower productivity growth Australia has observed in recent years. Reform will also be needed if Australia is to return to persistent budget surpluses and reduce its government debt. As we noted above, the public net asset position that Australia had in 2008 was instrumental in protecting the economy and financial system from the worst effects of the Global Financial Crisis.

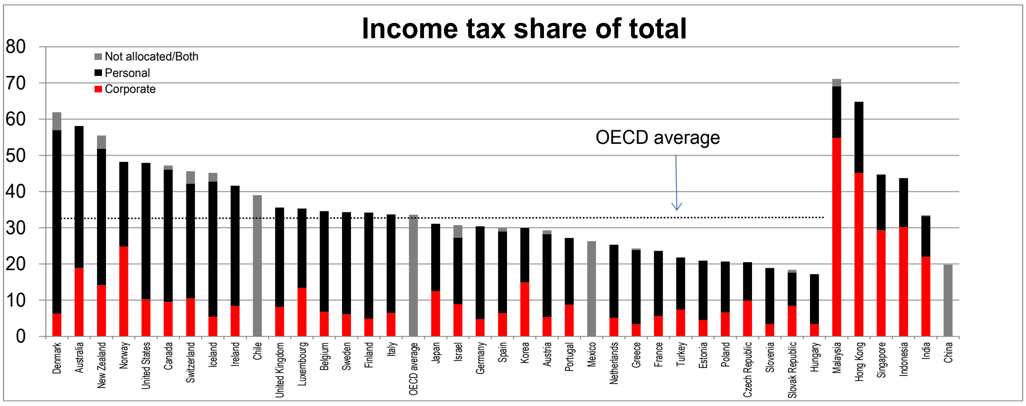
To make budget repairs, policymakers need to reform both the tax system and its spending commitments. Australia also needs reform to housing supply, energy and climate policy as well as continued focus on infrastructure investment.

Tax reform is needed to encourage labour market participation and investment

Reform of the tax system ought to be a key priority

On tax reform, the system has had little reform in recent years and is becoming increasingly inefficient. When compared with other developed economies, Australia's tax system has a high proportion of its revenue drawn from the personal income and corporate tax systems and a low proportion of its tax revenue from consumption tax, Australia's Goods and Services Tax. Across the OECD economies, Australia gets the second highest proportion of its tax revenue from the personal and corporate tax systems (Chart 27). Personal income and corporate taxes are generally quite inefficient taxes as high income taxes discourage participation in the labour market while high corporate taxes discourage business investment.

27. Australia's tax system has become increasingly reliant on inefficient taxes



Source: Australian Treasury

A key potential platform for reform was the Henry Tax Review in 2008, chaired by the then Treasury Secretary, Ken Henry. The Henry Review espoused a root and branch approach to tax reform. It made 138 recommendations. Amongst the recommendations, the Henry review suggested: concentrating revenue-raising on four efficient tax bases or personal income, business income, private consumption, and natural resources and land. However, the Henry review was not permitted to consider broadening the base or lifting the rate of GST, amongst other things, given the perceived political difficulty in considering implementing these changes. Not that it mattered, almost none of the recommendations of the Henry Review were implemented, and the few that were, such as a (modified version) of the proposed mining tax, were subsequently repealed.

Public spending reform is needed to secure the budget

Part of the government's fiscal reform agenda also needs to include reform of its spending commitments. Australia currently has a 'structural' budget deficit, meaning that its projected spending commitments over the coming years are larger than the projected funding from its tax base and other revenue sources. Without boosting the tax take, or adjusting the government's spending commitments, the budget would be expected to remain in deficit.

Reform of the public commitment to spending on health and the aged is needed

Long-term projections, published in the government's Intergenerational report, show the expected effect of the ageing population, which is set to weigh on tax revenue, but also increased costs of the age pension and public spending on health. Public health spending is particularly challenging because medical technology moves quickly and there is great uncertainty about the likely size of future public health expenditure. These are key main areas where public spending reform is needed, in our view.

A comprehensive National Commission of Audit was undertaken in 2014, chaired by Tony Shephard, an Australian businessman. This set out 86 recommendations for reform of public spending. These included: tackling the vertical fiscal imbalance that the state governments face, by allowing the states to tax incomes; establishing a new benchmark for the aged pension and tightening up eligibility criteria; reforming the health care system with co-payments and adjustments to the Pharmaceutical benefits scheme; and adjusting family tax and child care benefits.

Infrastructure and housing supply policy need work

Infrastructure investment and housing supply policy have also been challenging. A lack of investment in transport infrastructure has partly reflected the fact that this investment is done at a state level and vertical imbalance in funding versus spending commitments faced by the states (because they are reliant on Federal grants for much of their funding) as well as their particular focus on maintaining ratings. There has also been a lack of investment by the private sector in infrastructure.

Infrastructure investment and better housing supply policy should boost productivity growth

On the positive side, there has been some recent traction in state-led infrastructure investment. Sales of public assets, including parts of the electricity network, in New South Wales, combined with stamp duty revenues driven by the recent housing price boom, have enabled the government in that state to ramp up its building of transport infrastructure. Building of transport infrastructure in Victoria has also picked up recently. Other states ought to make infrastructure investment a priority, given Australia's growing population. Housing supply policy has also been a challenging area and has varied significantly across the states. Reform has been slow in New South Wales, with still long lead times between approval and construction of dwellings. Reform of housing supply policy has made better progress in Victoria, resulting in greater land release.

The slow progress on housing supply policy reform and urban infrastructure investment have been factors that have limited supply of well-located housing in the major cities and have contributed to housing prices rising. This has, in turn, been a key driver of the recent ramp up in household debt levels (discussed below).

Energy and climate should also be a high priority

Other areas of stymied reform include on climate and energy policy. The two are very much related, given that the energy industry currently produces 35% of Australia's greenhouse emissions and 87% of Australia's electricity is generated using fossil fuels (Finkel 2017).

Policy in this has been haphazard. Australian policymakers proposed an emission trading scheme in 2007, but eventually adopted a carbon tax in 2012. However, the drama did not end there. A change of government in 2014 then saw a repeal of the carbon tax that year and the introduction of direct renewables targets. State-level policy has also differed on the use of renewables for energy generation. All the while, Australia has faced increasing challenges to its energy provision, despite being a large energy exporter, as Australia's liquefied natural gas export plants have come on stream in recent years. There are also restrictions on extraction of coal seam gas in New South Wales and Victoria, which is limiting the amount of gas available for export and domestic supply, thereby lifting electricity prices.

Climate and energy policy has been haphazard in recent years

A recent review, led by the Australia's chief scientist, Alan Finkel, has included 50 recommendations to reform the country's climate and energy policies. This includes: a clean energy target; that coal power ought to be considered, but only if it is coupled with carbon capture; and that agreement between the states and Federal government needs to be reached on an orderly transition to national emissions reduction and a guarantee of supply is needed during the transition.

A key challenge for policymakers is to ensure clarity about the future direction of climate and energy policy. Reduced uncertainty in this area would allow businesses and households to make medium-term investment decisions with a clear understanding of how the system works.

Competition policy reform is important

As we pointed out above, Australia's unique geography does mean that some industries may be expected to be less competitive than in many other countries. Nonetheless, policy to improve competition, would help to support productivity growth. A review of competition policy, conducted by Ian Harper, a prominent Australian economist, in 2015, made 44 recommendations. Among other areas, these included: adopting competitive principles in public provision of 'human' services (including health); introducing cost reflective road-pricing; reform to improve the competitiveness of the shipping industry; reform of planning and zoning; reforming retail hours; reforming the pharmacy industry; and better water pricing.

Lower volatility may have driven policy complacency

Much as Donald Horne reported that policymakers had fallen into a malaise in the 1960s, the 'longest boom' may be having an impact on the impetus for reform. It may also be affecting the attitudes of the electorate, making it more difficult to do reform. In his book, Horne noted that there is a 'general Australian belief that it's the government's job to see that everyone gets a fair go'.

Today it is still the case, and perhaps even more so than in the past, that to make economic reform, political leaders need to assure the public that no one group is made worse off. That, of course, means that reform requires compensation for those that lose from the reform, and this can be expensive. Even the last big reform made in 2000, the introduction of the GST, required significant compensation of those who lost money as a result of the policy. However, as we pointed out above not enough was saved from the mining boom either directly, in the form of a sovereign wealth fund, or indirectly, in the form of investment in reform.

The longest boom may have contributed to policy complacency

The political environment has also become more divisive. As Paul Kelly clearly describes in his treatise on the 1980s reforms, these were achieved in large part because of bipartisan agreement. This reflects both developments in parliament and the lack of agreement on issues as well as evidence of a more divided electorate. There has been a trend rise in votes that have been going to the non-major parties – that is, not for the Liberal, National, or Labor Party – over a run of years. At the 2016 election a record 22.8% of the vote went to non-major parties.

Economic and political observers have recently pointed out that recent more radical political developments in the US, with the election of Donald Trump, and the UK, with the vote for Brexit, have reflected the tough times these economies have had in absorbing the impact of the Global Financial Crisis and the structural rise in inequality (Wolf 2017). For Australia it is harder to make these arguments. Australia did not have a recession during the Global Financial Crisis. Income inequality as well as consumption inequality, which is perhaps more important in explaining political disaffection, has, arguably, risen less in Australia than in many other developed economies.

The long boom may, itself, be contributing to the lack of political impetus for reform. Over half of Australia's workforce and anyone under 42 years of age, has not experienced a recession in their working lives.

The other challenge is that most of the big economic reforms have already been done. Having already floated the currency, deregulated the financial system, labour market and product markets, and privatised many key public assets. The remaining reforms are more piecemeal, which could be making it somewhat harder to get agreement for these reforms. However, as is clear from the long list of possible reforms that we have been through above, there are no lack of policy reforms that are needed.

As we have shown above, there is also no lack of recommendations from various policy working groups that have been commissioned by government over recent years. In addition, Australia has agencies charged with providing advice on how to lift productivity, The Productivity Commission, infrastructure investment, Infrastructure Australia, as well as an independent arbiter of budget policy, The Parliamentary Budget Office (akin to the Congressional Budget Office in the US).

With all this, it is concerning that reform has had so little momentum in recent years. It is also disappointing to think that Australia might need a recession, with all of its damaging effects to the economy and communities, in order to motivate reform.

Can the expansion continue?

As we showed in the first chapter, the current boom already seems somewhat improbable. The average economy in the OECD has had a recession every nine years, while Australia has completed an unprecedented 26 years of continuous growth.

On this simple arithmetic, one might think that Australia is overdue for a recession. However, the academic literature, shows that long booms are no more likely to end than short booms (Rudebusch 2016). Rudebusch shows that, based on a 'survival analysis', the historical record since World War II 'does not support the view that the probability of recession increases with the length of the recovery'. This work suggests that, on its face, there is no more reason to think that Australia's long boom will end just because it has been long (or, indeed, the longest), than if it had been of a shorter duration.

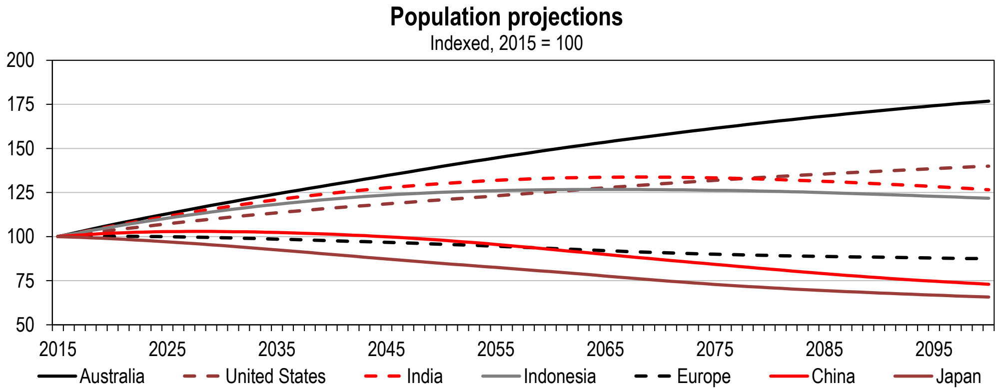
There are significant growth opportunities

There are key reasons for optimism about Australia's growth outlook. First, Australia's major trading partners are in Asia and the centre of gravity of the global economy is continuing to shift towards this region as the Asian economies continue to catch-up to Western living standards.

Second, Australia's population growth is expected to remain strong, underpinned by inward migration, with UN projections putting Australia's population growth well ahead of many comparable countries over the coming century (Chart 28).

Finally, Australia's market-based economy, managed by its independent central bank, should continue to give the economy flexibility in the face of shocks.

28. Australia's population is expected to grow much faster than elsewhere



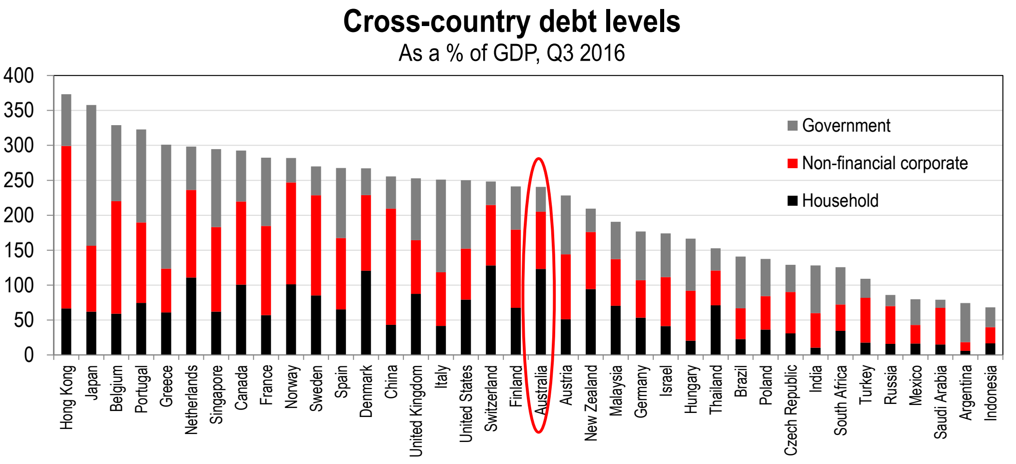
Source: UN

Weak productivity growth and high household debt present challenges

At the same time, Australia faces challenges. First, the lack of reform in recent years has contributed to weak productivity growth. This has lowered Australia's potential growth rate. In around 2005, most estimates suggested that trend growth in Australia was around 3.25-3.5%. Now, the Australian economy's potential growth rate seems more likely to be closer to 2.5-2.75%. Because the economy grows more slowly on average, it makes it more likely that the economic cycle will deliver negative GDP outcomes simply because the path for growth is already closer to zero.

Second, with less productivity growth, the central bank has been forced to push monetary policy to its limits. This has driven household debt to high levels, creating additional vulnerabilities for the economy in the face of a downturn. Amongst the developed economies, Australia has one of the highest ratios of household debt to disposable income and GDP (Chart 29).

29. Australian household debt levels are amongst the highest in the world



Source: BIS

High levels of household debt may reflect that the low volatility of the economy in recent years has encouraged households to assess economic risks differently than in the past. Importantly, it also reflects a lack of housing supply reform and investment in urban infrastructure, which has, in turn, increased housing prices and driven up household debt levels (see *Downunder Digest: Australian housing: More boom than bubble*, 6 July 2017).

It is very likely that, at some point, Australia will have a recession. What will trigger it is always hard to predict. However, a key lesson from Australia's history is that the country does not tend to have domestically generated recessions. The most likely cause of the next recession will be a negative shock from abroad. As Australia's single largest trading partner and the dominant driver of global growth, China presents Australia with both its largest opportunities to grow, but also the largest risks to its growth, if China were to have a downturn. We discussed this risk in detail in: *Australia's broadening economic links to China*, 8 November 2016.

Australia is not immune to recessions

Now is the time for fiscal reform

Importantly, without fiscal reform that drives an eventual return to sustained budget surpluses and a reduction in government debt, policymakers will have fewer options when the next negative global economic shock arrives.

Although government debt is still low by global standards – net public debt is 19% of GDP compared with an OECD average of 80% of GDP – the rising trajectory has been worrisome. The public balance sheet is in far worse shape than it was in 2008, when the Global Financial Crisis struck. Fiscal policymakers would have less ability to provide significant support for growth through public spending and Australia's triple-A sovereign rating would clearly come into question if a large fiscal stimulus was delivered that saw a rapid rise in public debt.

When the mining boom was ramping up, an option for achieving reform and a structural budget surplus was to set up a sovereign wealth fund or a stabilisation fund, funded by a new mining tax, following the lead of Norway or Chile, which is, arguably, best practice. With less mining revenue now available, that opportunity has passed.

Policymakers need a steely-eyed focus on fiscal reform

Amongst the many lessons from the experience of the longest boom, a key one is that there has been a clear economic pay-off from making a key part of the policy apparatus that is used for managing the cycle, and securing the economy, independent from the political process.

The operational independence of the RBA, within the constraints of an agreed mandate (the 2-3% inflation target), has been a key institutional framework that has helped to reduce the volatility of the economic cycle. Inflation has averaged the central bank's target rate of 2.5% over the past two decades and the financial system has remained stable. But the RBA has its limits, as both current RBA Governor, Phil Lowe, and previous Governor, Glenn Stevens, have noted repeatedly (Stevens 2016; Lowe 2017).

An independent fiscal authority, akin to the RBA, but for fiscal policy, ought to be considered

With this in mind, policymakers ought to consider ceding more authority for reform of other areas, such as transport infrastructure, energy policy, and tax reform to independent agencies. This could involve giving more independent policy authority to agencies such as the Productivity Commission or Infrastructure Australia or make pronouncements from Australia's Parliamentary Budget Office more binding.

While politically challenging, the government could consider setting up an independent fiscal authority, akin to the Reserve Bank of Australia, but aimed at managing fiscal spending, particularly on transport, energy, and social infrastructure.

The current economic environment offers an opportunity for a more concerted effort at fiscal reform. The resources sector decline is now behind us and the world is seeing the most synchronised upswing in global growth since 2010. As the global economy finally recovers from the lingering effects of the Global Financial Crisis, now is the time for local policymakers to focus on reform.

References

Blainey, G. (1967) 'The Tyranny of Distance: How distance shaped Australia's history', MacMillan Australia

Bloxham, P., Kent, C. and Robson (2010) 'Asset prices, credit growth, monetary and other policies: An Australian case study', RBA RDP 2010-06.

Bloxham, P. (2011) 'Does Australia have a resources curse? The Challenges of Managing a Mining boom', HSBC Report, August.

Bloxham, P. (2014) 'Australia's growing links to Asia: Powering growth', HSBC Report, July.

Bloxham, P. (2015) 'Australia's next growth driver: The rise of the services sector', HSBC Report, July.

Bloxham, P. and Smith, D. (2016) 'Australia's broadening economic links to China: Managing the opportunities and the risk', HSBC Report, November.

Bloxham P. and Smith, D. (2017) 'Downunder Digest: Australian Housing: More boom than bubble', HSBC Report, July.

Bynjolfsson, E. and McAfee, A. (2016) 'The second machine age: Work, Progress, and Prosperity in Time of Brilliant Technologies', MIT University press.

Cleary, P. (2011) 'Too much luck: The mining boom and Australia's future', Black Inc books

Cornish, S. (2010) 'The Evolution of Central Banking in Australia', RBA, 2010.

Economist, The (2000) 'Something Old, Something New', The Economist, 9 September, A Survey of Australia, pp 7–8. <http://www.economist.com/node/359651?story_id=E1_PVJGVT>.

Finkel, A. (2017) 'Independent Review into the Future Security of the National Electricity Market', June, Australian government.

Gordon, R (2016) 'The rise and fall of American growth: The US Standard of living since the civil war', Princeton University Press.

Greenspan (1996) 'The Challenge of Central Banking in a Democratic Society', Federal Reserve Speech to the American Enterprise Institute, 5 December.

Hartcher, P. (2013) 'The Sweet Spot: How Australia made its own luck and could now throw it all away', Black Inc

Henry, K. (2010) 'Australia's Future Tax System Review', Australian government.

Horne, D. (1964) 'the Lucky Country: Australia in the sixties', Angus and Robertson.

Kelly, P. (1992) 'The End of Certainty: The story of the 1980s', Allen & Unwin.

Lowe, P. (2017) 'The Next Chapter', Speech to the American Chamber of Commerce in Australia, 21 September.

Lucas R. (2003) 'Macroeconomic Priorities', American Economic Association Lecture.

Jackson, R., Howe, N. and Peter, T. (2013) 'The Global Aging Preparedness Index', Second edition. [https://csis-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/131010_Jackson_GlobalAgingPreparednessIndex2E_Web.pdf]

Macfarlane, I. (2000) 'Recent influences on the exchange rate', RBA speech, 9 November

Macfarlane, I. (2006) 'The search for stability', Boyer Lectures, ABC.

McLean, I. (2013) 'Why Australia Prospered', Princeton University Press.

Murray, D. (2014) 'Australian Financial System Inquiry', Australian government.

NBN (2017) 'NBN Corporate plan 2017', https://www.nbnco.com.au/content/dam/nbnco2/documents/Corporate-Plan-2018-2021.pdf

Rudebusch, G. (2016) 'Will the Economic recovery die of old age?, Federal Reserve Bank of San Francisco,

Sachs, J. and Warner, A. (2001) 'The curse of natural resources', European Economic Review, vol. 45 (4-6), pp. 827-838

Schwab, K. (2016) 'The fourth industrial revolution', World Economic Forum.

Shephard, T. (2014) 'The Report of the National Commission of Audit', Australian government.

Stevens, G. (2007) 'Asian financial crisis: A retrospective', RBA speech to Anika Foundation, 18 June.

Stevens G. (2016) 'An Accounting', RBA Speech to Anika Foundation, 10 August.

Sykes, T. (1994) 'The Bold Riders: Behind Australia's corporate collapses', Allen and Unwin.

Williamson, J. (1990) 'Latin American Adjustment': How much has happened?', Institute for International Economics.

Wolf, M. (2017) 'The Economic Origins of the populist surge', Financial Times, 28 June.

World Bank (1993) 'The East Asian Economic Miracle: economic growth and public policy', 1993/09/26

Forecasts

	2012	2013	2014	2015	2016	2017	2018f	2019f
Production, demand and employment								
GDP growth (% y-o-y)	3.6	2.1	2.8	2.4	2.5	2.5	3.2	2.8
Nominal GDP (USDbn)	1,540	1,554	1,472	1,284	1,262	1,404	1,723	1,909
GDP per capita (USD)	68,923	66,676	62,280	53,584	51,832	56,745	68,527	74,718
Private consumption (% y-o-y)	2.3	1.7	2.8	2.7	2.7	2.5	2.5	3.0
Government consumption (% y-o-y)	2.5	1.1	1.0	3.5	4.2	3.0	2.2	2.0
Investment (% y-o-y)	9.1	-1.9	-2.4	-3.7	-2.6	2.8	4.4	2.9
Stock building (% GDP)	0.3	-0.2	0.0	0.2	0.2	0.2	0.2	0.2
Business Investment (% y-o-y)	15.7	-2.0	-4.1	-8.5	-9.1	2.4	3.4	2.9
Dwelling Investment (% y-o-y)	-6.3	2.3	6.8	10.1	7.6	-0.4	2.5	-1.2
Public Investment (% y-o-y)	6.7	-6.6	-5.9	-1.2	7.7	9.0	10.4	7.9
Exports of G&S (vol growth) % y-o-y	5.7	5.9	6.9	6.0	7.3	5.1	8.5	6.6
Imports of G & S (vol growth)% y-o-y	5.5	-2.1	-1.1	2.0	0.0	7.2	7.2	6.8
Net Exports % of GDP	-4.9	-3.3	-1.8	-1.0	0.4	0.1	0.3	0.3
Net exports (contribution to GDP growth, ppt)	-0.2	1.5	1.5	0.7	1.5	-0.4	0.3	0.0
Final Domestic demand % y-o-y	4.2	0.6	1.1	1.1	1.6	2.7	2.9	2.8
Domestic Demand % y-o-y	4.1	0.2	1.3	1.3	1.7	2.7	2.9	2.8
Industrial production (% y-o-y)	2.8	1.1	4.0	1.2	1.3	0.9	4.0	4.1
Gross national saving (% of GDP)	24.6	24.4	23.9	22.1	21.9	23.5	25.5	27.0
Household saving rate (%)	8.7	9.2	8.9	7.1	6.6	4.8	4.8	4.8
Unemployment rate, avg (%)	5.2	5.7	6.1	6.1	5.7	5.6	5.2	5.1
Prices & wages								
Trimmed mean CPI, end (% y-o-y)	2.2	2.7	2.2	2.2	1.8	1.9	2.3	2.7
CPI (% y-o-y)	1.8	2.4	2.5	1.5	1.3	2.0	2.6	2.6
PPI (% y-o-y)	1.0	1.9	1.1	1.9	0.7	2.4	2.8	2.8
Core CPI (% y-o-y)	2.2	2.7	2.2	2.2	1.8	1.9	2.3	2.7
Labor Cost Index, nominal (% y-o-y)	3.6	2.8	2.6	2.2	2.0	2.0	2.3	2.8
Money, FX & interest rates								
Money Supply M1, average (% y-o-y)	-3.3	3.0	7.8	10.9	7.3	n/a	n/a	n/a
Broad money supply, average (% y-o-y)	7.3	5.8	6.7	6.6	6.1	n/a	n/a	n/a
Private credit growth-nominal (% y-o-y)	4.7	3.7	5.1	6.4	6.1	5.4	5.1	5.7
Policy rate, end-year (%)	3.00	2.50	2.50	2.00	1.50	1.50	2.00	2.50
10yr yield, end-year (%)	3.28	4.26	2.81	2.96	2.77	2.25	2.40	2.40
USD/AUD, end-year	1.05	0.93	0.87	0.71	0.76	0.80	0.90	0.90
USD/AUD, average	1.02	1.00	0.92	0.79	0.74	0.77	0.88	0.90
EUR/AUD, end-year	0.81	0.69	0.69	0.63	0.68	0.73	0.82	0.82
EUR/AUD, average	0.78	0.76	0.68	0.68	0.67	0.71	0.80	0.82
Real Trade-Weighted-Index	164.0	152.8	147.3	133.6	140.7	n/a	n/a	n/a
External sector								
Exports of G&S (USDbn)	310.1	312.1	297.3	242.0	247.7	303.8	379.6	410.1
Imports of G&S (USDbn)	331.5	319.9	304.8	269.7	256.9	284.6	352.2	381.1
Goods and Services Balance (USDbn)	-21.3	-7.8	-7.5	-27.7	-9.2	19.3	27.4	29.0
Current account balance (USDbn)	-63.5	-49.7	-42.4	-60.2	-33.2	-14.9	-6.1	-5.1
Current account balance (% GDP)	-4.1	-3.2	-2.9	-4.7	-2.6	-1.1	-0.4	-0.3
Net FDI (USDbn)	62.6	55.5	40.5	38.1	42.2	n/a	n/a	n/a
Net FDI (% GDP)	4.1	3.6	2.8	3.0	3.3	n/a	n/a	n/a
Exports (% y-o-y)	-4.1	5.6	2.9	-3.5	4.3	19.5	8.6	6.6
Imports (% y-o-y)	6.5	1.3	2.9	5.1	-3.0	7.8	7.6	6.8
International FX reserves (USDbn)	38.1	44.7	47.4	39.6	50.2	n/a	n/a	n/a
Import cover (months)	1.4	1.7	1.9	1.8	2.3	n/a	n/a	n/a
Public and external solvency indicators								
Central government balance (% GDP)	-2.9	-1.2	-3.0	-2.3	-2.4	-2.1	-1.6	-1.1
Net External debt (AUDbn)	764.3	869.7	941.0	1022.1	1023.1	n/a	n/a	n/a
Net External debt (% GDP)	50.7	55.8	58.6	62.5	60.3	n/a	n/a	n/a
Gross public domestic debt (AUDbn)	419.0	478.6	549.2	614.5	697.1	785.4	840.3	882.3
Gross public sector debt (% GDP)	27.8	30.7	34.2	37.6	41.1	42.9	42.7	41.6
Net public sector debt (% GDP)	10.4	10.5	13.3	15.3	18.5	18.6	19.5	19.8
Macro-prudential indicators								
Capital Adequacy Ratios	10.7	10.5	10.8	11.6	11.83	n/a	n/a	n/a
Non-performing loan ratio	1.2	1.0	0.7	0.5	0.50	n/a	n/a	n/a
Household debt/Income (%)	167.1	169.6	173.2	180.6	186.50	n/a	n/a	n/a
Total credit/GDP (%)	141.5	142.4	145.9	153.1	156.0	n/a	n/a	n/a
House prices growth (%y-o-y)	-0.3	6.6	9.1	9.0	5.5	9.8	5.6	3.9
Loan/deposit ratio	1.1	1.1	1.1	1.1	1.14	n/a	n/a	n/a
Stock market capitalization/GDP (%)	83.2	93.6	97.6	100.0	99.55	n/a	n/a	n/a

Source: ABS, RBA, Thomson Reuters Datastream, IMF, HSBC forecasts. Trimmed mean data represents Core CPI. 2019 FX numbers are assumptions not forecasts.

Notes

Disclosure appendix

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