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From the Chief Economist

The 1970s nostalgia movie Swinging Safari gets the hair, clothes and music right — but what about the Australian economy?

In the 70s one in four people worked in factories. Half the workforce were union members, and strikes were an everyday occurrence. Almost all men worked full-time. Most mothers were not in paid work. Young people could leave school at 15, and many did. Few went on to university. There were plenty of entry-level jobs for school leavers in banks and offices and the public service, as well as apprenticeships in publicly owned utilities.

Shops closed at noon on Saturday and re-opened on Monday. Cash was used for almost all transactions, which came in a pay envelope or by taking your deposit book to a bank.

Viewers could watch one of only four channels on television. Along with lots of whitegoods, televisions were often hired rather than purchased outright, because they were expensive. New car prices were high. Almost everyone drove a car made in Australia.

Interstate phone calls were held back to Sunday evenings to get the Telecom cheap rate. It was rare to fly interstate, with choice limited to the government backed TAA or the privately owned Ansett whose schedules largely duplicated one another.

Inflation and interest rates were high, and volatile. The decade began with full employment and ended with an unemployment rate of 6 per cent.

The past is, indeed, another country.

Daily media discussion of the Australian economy is relentlessly focused on short-term movements in exchange rates and share prices on the ASX100, and is too abstracted from people’s actual experience of economic life.

In this new series, Industry Insights — a successor to our annual Australian Industry Report — we stand back and take a considered view on how the Australian economy is changing and what impact this is having on businesses, communities and citizens. In the first issue of this series, we present three inter-related chapters under the broad theme of flexibility and growth.

The flexibility of the economy is evident in each one of the domains detailed above compared with life in the 1970s. Taking just one example, trading hours are now far more liberal for retailers and consumers, and a significant and growing proportion of retail trade is now transacted online at any time of the day and week.

The Australian economy of today is $1.7 trillion in size, compared with $0.5 trillion in the mid-1970s (after taking account of price changes). That makes it medium-sized rather than
small as is commonly thought: Australia ranks around 14th in the world on current exchange rates. On a per capita basis, cumulative growth has seen average living standards double since the mid-1970s.

The opening chapter reminds us of the series of changes made by governments in the 1980s and 1990s to open up, liberalise and modernise the Australian economy. Historians will argue for decades to come about how it was that in 2017 Australia came to hold the global record for years of avoiding recession, but the groundwork was laid in these changes.

While recession has been avoided, notably during the global financial crisis, the crisis still cast a shadow over Australia. Since 2008, there has only been one year where economic growth has been above its long-run average of 3.25 per cent. And the unwinding of the record high terms of trade, as resources supply caught up with the tremendous growth in resources demand from China, has seen incomes and wages plateau for several years.

Against this backdrop, the second chapter presents the economic year in review and finds signs emerging of a more positive growth outlook: business investment is rising and exports, profits and new jobs all increased significantly. Time will tell whether these positive developments will flow through to higher incomes and wages.

In last year’s *Australian Industry Report* we presented the first-ever estimates of economic activity in each of the regions of Australia. In the third chapter we extend this analysis over time, capturing growth in economic activity for 88 regions of Australia from the start of the century. This analysis proves the adage that averages hide much variation.

The chapter shows that there are two tales to disentangle here. The first is the scale of the resources boom: the ten fastest growing regions were all in Western Australia, Queensland and the Northern Territory, while the lowest were all in regions unaffected by the boom. The second is the pull of capital cities, especially their central business districts whose output grew well above the national average. This trend is likely to persist, as the factors that drive growth in modern economies — dense networks of skills and finance and innovation — are concentrated in cities.

Each chapter is supplemented with thoughtful contributions from guest authors. Charlie Day of Innovation and Science Australia discusses how Australia’s innovation system can meet future challenges. Andrew Charlton of AlphaBeta examines how we can best prepare workers for the jobs of the future. Danielle Wood of the Grattan Institute argues we must go with the grain of the forces shifting Australia’s economic geography towards major cities.

Compared with the 1970s, the Australian economy today is more open, more flexible and is, as a corollary, more fluid: there is less certainty that what holds today will remain the same tomorrow, hence some of the current disquiet about automation. More than ever, therefore, considered analysis of the drivers of change and the impacts it is having are required. I hope that this new series meets that need.

In coming months we will be releasing two further issues of *Industry Insights* on how globally connected the Australian economy is and on trends in productivity.

Mark Cully

Chief Economist
Department of Industry, Innovation and Science

March 2018
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Making a miracle: through crisis, reform and recovery

Stability

- **5 recessions** between 1971 and 1983
- Average rate of inflation in the 1970s was **9.8%**
- Average rate since introduction of inflation targeting is **2.5%**
- 26 years since Australia’s last recession

Trade

- Combined value of imports and exports as a share of gross domestic product
  - 15% in 1970
  - 42% in 2017
- 89% decline in effective rate of assistance provided to manufacturing sector since 1970

Labour force

- Share of labour force with post-school qualification
  - 62% in 2017
  - 41% in 1991
- 15% decline in real unit labour costs since 1986
- Proportion of labour force born overseas
  - 1 in 4 in 1991
  - 1 in 3 in 2017

Growth and decline

- The size of the Australian economy has increased by **130%** since 1991
- Manufacturing as a share of gross domestic product
  - 11% in 1991
  - 5.7% in 2017
Last year, Australia recorded its 26th year without a recession, the longest in its history and indeed, the longest of any developed nation in modern times. Since 1991, Australians have enjoyed one of the fastest income rises of any developed country and they are now amongst the richest in the world. Critical to this performance has been a series of economic reforms through the 1980s and 1990s.

This chapter describes how the highly regulated and rigid economy that emerged from the War was ill equipped to deal with the global economic turbulence of the 1970s when Australia was buffeted by severe recessions, unemployment levels not seen since the Great Depression and persistently high levels of inflation that sapped economic growth. Starting in the late 1970s, a series of major economic reforms were introduced. These reforms were not part of a grand plan per se; and Australia was not a pioneer in the reform process. But nevertheless, they laid the foundations of the modern Australian economy.

While much has been written about the productivity enhancing benefits of the reforms, the more enduring benefit of the totality of the reforms was to make the economy much more flexible and resilient (increasing its dynamic efficiency). The chapter concludes with some observations on the reforms necessary to better integrate Australia into a globalising economy.

The ‘Golden Years’?

In the decades after the Second World War, Australia was still haunted by the Great Depression, as were most countries. Macroeconomic policy was profoundly influenced by Keynesianism and focused on demand side controls with the central goal of maintaining full employment. At first, this was mainly through regulating money supply but during the 1960s, the emphasis shifted to broader demand control instruments.

Incomes were controlled through centralised wage fixing. This affected almost all the workforce and salary received was determined by the hundreds of job classifications in the award systems. Governments regulated what interest banks paid on their deposits, interest charged on their loans and provided guidance on who they should lend to. Prices on a wide range of goods and services were also centrally controlled. Much of the tradeable goods sector was regulated by boards that oversaw the ‘orderly marketing’ of everything from eggs to bulldozers. In addition, differential taxes and excises were levied on many goods. Much of the services sector, particularly professional services, was regulated by professional guilds and codes.

Schedules of what goods could be carried by which mode of transport went into minute detail in their attempt to cover every imaginable freight item. Government owned enterprises also exerted additional control over the transport sector. 1 What could be mined for export was also heavily regulated — exporting iron ore, for example, was banned until the 1960s. 2

Australia’s trade policy was particularly insular. While developed countries (led by the United States and United Kingdom) sought to unravel the pre-War barriers to world trade, Australia argued for an exemption on the grounds that it was a commodities exporter and needed to protect its infant (manufacturing) industries. 3 As other comparable countries

---

began removing their tariffs, Australia increased both tariff and non-tariff trade barriers and by 1971 they were amongst the highest in the developed world.\textsuperscript{4}

For the decades between 1951 and 1971 the centralised control of Australia’s economic system appeared to serve the nation well and the period is often regarded as the golden years.\textsuperscript{5} Unemployment averaged just 1.8 per cent. Inflation was also subdued, averaging 4.5 per cent a year over the same period, despite increasing sharply during the Korean War. Output grew strongly, increasing 4.6 per cent a year in real terms, slightly above the OECD average\textsuperscript{6} of 4.3 per cent a year.\textsuperscript{7} Economic inequality was probably the lowest Australia had ever experienced or has since.\textsuperscript{8}

The apparent strong growth in output however, largely reflected population increases associated with the major immigration programs implemented following the Second World War. If the effects of faster population growth are removed, Australia underperformed relative to other developed economies. In the 1950s, growth in real Gross Domestic Product (GDP) per capita in Australia averaged just 1.7 per cent, well below the average of 3.1 per cent a year for OECD countries. Growth in real output per capita improved in the 1960s, reaching 3.1 per cent a year but still fell short of the OECD average of 3.9 per cent a year. So while the 1950s and 1960s were indeed golden years for Australia, they were considerably less golden than those of comparable countries.

For many years, Australia’s comparatively weak economic growth was masked by strong nominal output from agricultural and mining industries which, at the time, were benefiting from terms of trade that favoured Australia’s primary commodities.

Things began to unravel quickly and irrevocably in 1971 when a period of high macroeconomic instability set in as policy makers struggled to manage a number of large external and internal shocks. The economy slid into recession on five occasions: in 1971, 1975, 1977, 1981 and most notably in 1982 which remains the most severe economic downturn in Australia since the Great Depression.\textsuperscript{9} Average economic growth deteriorated in line with higher volatility, falling to 2.5 per cent a year in the twelve years to 1983. Inflation accelerated, reaching as high as 18 per cent in the March quarter 1975, while the unemployment rate grew from 1.7 per cent in 1971 to 10 per cent in 1983. The combination of falling terms of trade, slower productivity growth and lack of flexibility in the economy ultimately led to a relative decline in living standards. In 1950, Australia ranked fifth in the world in terms of GDP per capita but by 1983 it had slipped to 15th.\textsuperscript{10}

\textsuperscript{4} Anderson, K. and Garnault, R.1987 Australian protectionism: extent, causes and effect, Sydney: Allen and Unwin


\textsuperscript{6} Founding OECD members less Iceland and Luxembourg


\textsuperscript{8} Leigh, A. 2005, Deriving long-run inequality series from tax data, The Economic Record, 81(255):58–70


The reform era

In response to the decline in economic performance, Australian governments embarked on a series of reforms that laid the foundations for a period of sustained economic growth. The reforms were wide-ranging and included changes to both macro and microeconomic policies. It should be noted that Australia was not a pioneer in the reform agenda. Other developed countries also introduced similar reforms, often many years before Australia.

One of the reasons why reform was difficult in Australia was the interlocking structure of the regulated economy where each component was dependent on another. Centralised wage fixing, for example, was reliant on both the tariff system and immigration controls which was in turn reliant on exchange rates controls which relied on foreign exchange regulation. Policy makers were rightly concerned that removal of a major piece of economic regulation too quickly would result in a rapid and uncontrolled unravelling of the other pieces.

The major areas of reform were:

- Banking
- Foreign exchange
- National Competition Policy
- Labour market
- Tariffs
- Tax.

Each of these will be discussed in turn below.

Banking reform

In the tightly regulated economy until 1971, no sector was more closely supervised than the finance sector. In 1951, banks controlled nearly 90 per cent of the assets of financial intermediaries and government largely controlled the banks. Except for two small institutions, foreign banks were either banned or had their operations severely circumscribed.11

Non-Bank Financial Institutions (NBFIs) such as Building Societies and finance companies sprang up during the 1960s as an alternative to banks while life offices and superannuation companies became more active in the lending market.

As NBFIs expanded, banks’ market share of institutional financial capital fell steadily, reaching a low of 57 per cent in 1982–8312 and consequently the government’s control of the finance sector became less effective. The government responded by starting the process of deregulating the financial sector beginning with a gradual relaxation of credit and foreign exchange controls throughout the 1970s. Further deregulation followed in 1981 with the removal of restrictions on foreign bank operations in Australia.13

In common with most countries, financial deregulation in Australia was not accompanied by increased prudential supervision. A rapid increase in credit growth from inexperienced lenders led to an asset bubble in the economy. Official interest rates were increased to 17 per cent (many businesses were paying 22 per cent) in an attempt to cool the market. This collapsed asset values and triggered the severe 1990 recession.

---

Increased prudential supervision of Australia’s financial system was introduced during the 1990s. At the core of the system are two regulators, the Australian Securities and Investments Commission (ASIC) and the Australian Prudential Regulation Authority (APRA). Broadly speaking, ASIC’s main role is in consumer protection, while APRA’s main role is prudential supervisor of Australian financial institutions. The balance between flexibility and prudential control was tested during the Global Financial Crisis. Australian banks stood almost alone amongst the world’s banks by not suffering even a single quarter of losses.

Foreign exchange and floating the dollar

The exchange rate, which had been tightly regulated since the War, was deregulated in 1983. However, this was achieved only after all other plausible options had been exhausted, including:
- Pegging the dollar to the US dollar between 1971 and 1974
- Pegging to a Trade Weighted Index (TWI) between 1974 and 1976
- The crawling peg between 1976 and 1983.  

These all proved unsuccessful. The collision between a fixed exchange rate and deregulated foreign exchange flow meant that domestic interest rates became the de facto adjustment mechanism and they swung through a wide arc. Current account crises were also a persistent feature of the Australian economic landscape. The situation came to a head in 1983. In the latter half of the year, inflows of foreign capital triggered by speculation of an appreciation of the Australian dollar caused a major current account crisis. In December, all foreign exchange transactions were suspended for three days while authorities debated the options. In the end, on the 12 December, Australia joined other developed countries and floated its currency.

The float of the dollar had two main effects. The first was a major devaluation of the dollar which fell by a third within 18 months of the float measured both against the US dollar and the TWI (Figure 1.1).

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14 Under this system, representatives from the Reserve Bank of Australia, Treasury and the Department of Prime Minister and Cabinet would meet every morning to determine the day’s exchange rate with a maximum daily movement allowance of 0.2 per cent.

15 Stevens, G. 2013, *The Australian Dollar: Thirty Years of Floating*, Reserve Bank of Australia

16 Most developed countries floated their currency in 1971 when the Bretton Woods agreement collapsed. At the time, Australian policy makers feared, probably correctly, that the highly protected banking system was in no position to cope with floating the currency.
The second effect of the float was that it left monetary policy free to pursue other macroeconomic objectives, particularly inflation. The Reserve Bank of Australia (RBA) began to take a larger role in using monetary policy to control inflation in the late 1980s and 1990s. In 1993, the RBA introduced an inflation target for consumer price inflation of between two and three per cent. In 1996, the Statement on the Conduct of Monetary Policy was released which formally established the independence of the RBA. Since the introduction of inflation targeting, volatility in interest rates, which can inhibit investment required for future growth, has declined considerably (Figure 1.2).

**Figure 1.1: Real exchange rate and terms of trade, 1972 to 2017**

![Real exchange rate and terms of trade, 1972 to 2017](image)

Notes: The ‘Real trade-weighted index’ is the average value of the Australian dollar in relation to currencies of Australia’s trading partners adjusted for relative price levels using core consumer price indices, where available, from these countries. Where core consumer price indices are not available, headline measures are used; March 1995 = 100.

Source: RBA statistics 2018, Real Exchange Measures and Terms of Trade

**Figure 1.2: Interest rate volatility, 1972 to 2017**

![Interest rate volatility, 1972 to 2017](image)

Notes: Absolute monthly change in 90-day bank bill rates, six month rolling average.

Source: Reserve Bank of Australia, 2017, Statistical Tables, Table F1.1 Interest rates and yields — Money Market
Of perhaps equal importance to the floating of the dollar, a tender system was introduced for the sale of Treasury bonds in 1982. This greatly increased the ability of the RBA to control money supply.

National Competition Policy

As the reform agenda progressed in the early 1990s, it became apparent that parts of the broader competition policy framework were inhibiting necessary adjustments in the economy. In response, Australian and state and territory governments agreed in 1993 to implement a comprehensive National Competition Policy (NCP).

Among other things, the NCP:

- Extended the anti-competitive provisions of the Trade Practices Act 1974 to unincorporated enterprises and government businesses
- Introduced governance and structural reforms to government businesses to compel them to become more commercially focused and expose them to competitive market pressures
- Created independent authorities to set, administer, or oversee prices for monopoly service providers
- Established a third-party access regime for infrastructure services with natural monopoly characteristics
- Introduced a legislative review program to assess whether regulatory restrictions on competition are in the public interest.

The program of reforms under the NCP were based on the principle that competitive markets generally serve the interests of consumers by providing strong incentives for firms to operate efficiently, innovate, and lower prices.

Estimates released by the Productivity Commission (PC) in 2005 suggested that productivity improvements and price changes linked to infrastructure reforms alone delivered a permanent 2.5 per cent increase in GDP.

A more flexible labour force

Australia had maintained a centralised wage system since 1907. By inhibiting the ability of wages to adjust in relative terms, centralised wage determination impeded the efficient allocation of labour among industries and firms facing different economic conditions and pattern bargaining drove up inflation.20 The Prices and Incomes Accords were a series of agreements between the Australian Council of Trade Unions and the Commonwealth Government between 1983 and 1991 designed to combat inflation. Under these agreements, real wages were reduced in return for an increase in the social wage (reforms in health, social welfare, superannuation, minimum wages and taxation).

Later reforms eventually led to a fully decentralised wage setting process, with the introduction of enterprise bargaining in 1993. As market based approaches became more widespread, wages growth aligned more closely with growth in changes in GDP per capita (Figure 1.3).

![Figure 1.3 Real wages and real GDP per capita, 1951 to 2016](image)

Notes: Australian wage growth ran ahead of GDP per capita growth throughout the 1950s and 1960s which was a major source of underlying inflation. The gap opened wider in the 1970s and 1980s. This further drove up domestic inflation. ‘Imported inflation’ from global trading partners increased inflation yet more. During the operation of the Prices and Incomes Accord, real wages and GDP per capita were gradually brought into alignment and alleviated inflationary pressures in the economy.

Source: Hutchinson D and Ploeckl F, 2017 MeasuringWorth, Constructing a time series of average weekly wages in Australia is difficult before the 1970s. Caveats are at, http://www.measuringworth.com/australiadata/

20 Pattern bargaining is a process where one wage settlement is used as the basis for negotiating the next one even if it is a different industry. For example, a pay rise in the metal trades industry could be used as a basis for negotiations in the transport sector.

21 Hatton, T. and Withers, G. 2014, The labour market, in Cambridge Economic History of Australia
The beginning of the end of protectionism

The microeconomic reform agenda also included significant changes to trade policy. These complemented changes to macroeconomic policies designed to open the Australian economy to international markets.

After stalling following a 25 per cent across-the-board tariff cut in 1973, efforts to reduce protectionist trade measures gathered pace in the late 1980s with the abolition of quantitative import controls and further tariff cuts. Remaining tariffs were progressively lowered over the following decade, exposing domestic firms to increasing levels of foreign competition.

By 2006, the average nominal rate of assistance provided to the manufacturing (Figure 1.4) sector had fallen below five per cent, down from 31 per cent in 1979. The effective rate of assistance provided to the agricultural sector also declined, from 28 per cent in 1971, to three per cent in 2001.

Note: Assistance data unavailable for the years 1901–1904. Manufacturing’s share of GDP data unavailable for the years 1939–1948.


Figure 1.4: Average nominal assistance to manufacturing and manufacturing’s share of GDP, 1904 to 2016

Notes: Assistance varied widely between industries. The rise in assistance in the 1970s and 1980s was directed mainly at the automotive industry and the textile, clothing and footwear industries.

Manufacturing Gross Value Added (the output of manufacturing) likewise seemed insensitive to assistance levels growing by 65 per cent between 1975 and 2009 (the GFC) before declining by around 15 per cent.
Taxation reform

There are a number of features that make the Australian tax and transfer system distinctive among developed countries.

- First, it is highly progressive when compared to most OECD countries.
- Second, transfer payments are also extremely low as a proportion of GDP\textsuperscript{24} but the transfer to the bottom 25 per cent is amongst the highest.\textsuperscript{25} This is augmented by the highest minimum wage in the developed world.\textsuperscript{26}
- Third, consumption taxes have historically been relatively low in Australia. Pre-1971, they were widely used as part of demand management and varied widely depending on the policy objective at a particular time.

In order to simplify consumption taxes and balance the taxation system, the Goods and Services Tax (GST) was introduced in 2000 at a comparatively low rate and with wide exemptions. Consequently, consumption taxes in Australia are still low by OECD standards but nevertheless the tax base was widened and its resilience improved.\textsuperscript{27}

**Improving Australia’s competitiveness**

This section will look at the overall effect of the reforms on the Australian economy from three perspectives: changes in output, productivity and flexibility.

**Increased output and economic restructuring**

The period of reform that began in the 1980s shaped a new, more productive, and more flexible economy. By increasing dynamic efficiency, the reforms allowed Australian firms and workers to realise opportunities that improved productivity and competitiveness, without generating the macroeconomic instability that had plagued the economy in the 1970s.

This is most notable when comparing Australia’s GDP growth to the OECD average (Figure 1.5). GDP growth in Australia during the 1960s was below the OECD average but as the reforms began to take effect, Australia began to grow more strongly than the OECD average.

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\textsuperscript{25} Treasury, 2010, *Australia’s Future Tax System, Chapter 9*
\textsuperscript{26} OECD Statistics, 2017, Real Minimum Wages. Australia has a long standing policy of relatively parsimonious unemployment benefits and a high minimum wage to encourage people into work. Minimum wages as a ratio to median wages have been slowly declining over a number of years.
\textsuperscript{27} OECD, 2017, Revenue Statistics:1965–2016
Increased international competition in the traded goods sector created strong pressure to reduce input costs, including labour and services provided by the non-traded utilities sector. In the past, firms had been able to pass on excessive input costs to customers because they were protected from international competition by a tariff wall. With falling levels of protection, local firms and workers were forced to improve productivity to remain competitive. Lower barriers to trade also provided access to imported goods for consumption and investment at reduced cost, allowing households and firms to benefit from the comparative advantages of Australia’s trading partners.

The structural adjustments that followed the reform agenda changed the Australian economy in a number of important ways.

- Changes facilitated by the reforms altered the structure of economic activity within Australia. At its peak in 1963, manufacturing accounted for 28 per cent of GDP. By 2017, this share had fallen to just 5.7 per cent. In contrast, the service sector’s contribution to the economy grew from 51 per cent in 1963 to around 79 per cent in 2017.

- A similar impact can be seen in the labour market. During the 1960s more than a quarter of the workforce was employed in manufacturing. By 2017, this share had declined to 7.4 per cent. Services grew from around two-thirds of the workforce in the 1960s, to nearly 80 per cent today.

- Skill levels have increased in line with technological advances. Despite the reforms to the university sector in the 1970s, only six per cent of the population had a Bachelors degree or above in 1982. By 2017, this share had increased to 31 per cent.

- Immigration and greater openness to foreign markets have also created a more diverse workforce. In 1991, around one in four workers in Australia had been born overseas; by 2017, this proportion stood closer to one in three.

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31 Australian Bureau of Statistics, 2017, Education and work, Australia, May 2017, Cat.no. 6227.0
Increased productivity

Australia’s productivity growth improved considerably in the mid-1990s. Growth rates for both labour and multifactor productivity (a measure of how efficiently labour and capital are used to produce economic output) increased to 40 year highs between 1993 and 1999.

Results from a study released by the International Monetary Fund (IMF) in 2000, suggested the combination of trade liberalisation, industrial relations reform and increased competition improved trend total factor productivity growth in Australia by as much as 0.9 percentage points. A later report released by the IMF in 2008 supported this conclusion, suggesting reforms in the product and labour markets contributed to higher levels of productivity by improving the diffusion of information and communications technologies within the economy.

In addition to placing downward pressure on prices, greater levels of competition also generated other benefits by improving the quality of goods and services, and expanding the range of products available to consumers.

Contestability in retail energy increased consumer choice and placed pressure on suppliers to innovate and introduce new services to attract and retain customers. Greater competition in the telecommunications market accelerated the introduction of new technologies and led to the availability of a much wider range of products and services. Households also benefited from the deregulation of retail trading hours, which allowed consumers greater choice in deciding when to shop.

Improved dynamic efficiency

Deregulation also improved the ability of the economy to adjust to future shocks by allowing key price mechanisms to operate more efficiently. Deregulation transferred the burdens of processing information and decision making from the government to the multitude of market participants. As a result, prices provided more timely, accurate, and transparent signals about the relative returns available to resources in the economy.

An example of the improvement in dynamic efficiency and macroeconomic stability can be seen in the adjustment to the recent mining boom. Global demand for commodities used in steel and energy production increased considerably in the mid-2000s. With the response from global supply constrained by the long lead times associated with new capacity, prices increased sharply, leading to a large rise in Australia’s terms of trade. In the period between 2003 and 2012, Australia’s terms of trade increased 82 per cent, reaching their highest level on record in September 2011.

Despite the scale of the shock, the process of structural adjustment that followed was relatively smooth: inflation largely stayed within the target range; unemployment remained relatively low; and output grew at a rate close to trend.

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32 Salgado et al. 2000, Australia: Selected Issues and Statistical Appendix, IMF Staff Country Report No. 00/24, p. 11
The smooth adjustment stands in stark contrast to previous terms of trade shocks, which often led to rapid inflation and high unemployment. In the early 1970s for example, the terms of trade increased sharply as prices for Australia’s agricultural exports spiked. In 1973, the price of wool increased 61 per cent; cereals and meat by around 40 per cent; and dried and canned fruits by 35 per cent.36

Wages growth accelerated sharply in the period that followed. Adult male earnings increased 31 per cent during 1974 alone.37 Inflation also increased rapidly, albeit at a somewhat lower rate. By 1977, the unemployment rate had risen above 5.5 per cent, and with the exception of June 1981, did not fall back below that level until October 2004.

To a large extent, the relatively smooth adjustment to the latest terms of trade shock is a direct consequence of the economic reforms introduced in the 1980s and 1990s. The floating exchange rate acted to contain inflation and facilitate the reallocation of labour and capital across industries (Figure 1.6). By allowing the dollar to appreciate in nominal terms, the floating exchange rate restrained activity and income in trade exposed industries outside the mining sector.38

**Figure 1.6: Inflation associated with two terms of trade shocks**

![Figure 1.6: Inflation associated with two terms of trade shocks](image)

**Notes:** Year-ended consumer price inflation.

**Source:** ABS cat. no. 6401.0

Reforms to the wage-setting process also facilitated the process of adjustment by restraining inflation and supporting the reallocation of labour within the economy. In the absence of centralised determination, wages were free to adjust in relative terms to reflect the different conditions facing each sector of the economy. Wages in the mining sector increased rapidly in response to the higher price for commodities. In contrast, there was little movement in wages in the non-traded sector, and a fall in trade exposed sectors outside the mining sector (see Figure 1.7).

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37 Hughes, B. 1980, *Exit Full Employment*, Angus and Robertson, p. 69
38 Reserve Bank of Australia, 2005, *Commodity Prices and the Terms of Trade*, Reserve Bank Bulletin, April Quarter, p. 4
The adjustment in relative wages and modest increase in overall wage growth also benefited from the introduction of inflation targeting, which provided a credible anchor for inflation expectations and wages growth.\textsuperscript{39}

**Prospects for the next 25 years**

The weaknesses in the current Australian economy and the areas that need reform into the future have been well canvassed by the Productivity Commission (PC) and need not be recounted here.\textsuperscript{40} What is less well covered is the necessity of reform for Australia to improve its international competitiveness. This is the subject of the closing section of this chapter.

Australia is often described as a small, trading nation. However, the nation’s economy is currently ranked 14th largest in the world, of a similar size to the much more populous countries of Spain, Russia and Mexico.\textsuperscript{41} In other words, Australia is a medium sized economy.

Australia’s international trade profile is unique amongst medium sized economies. This is partly due to geography but mainly due to policy. Decades of high exchange rates, high tariffs, high trade costs, restrictive trade practices and reluctance to participate in multi-lateral trade negotiations described above have taken their toll. As shown in Figure 1.8, Australia’s integration into the global economy has been weak. Measured by the proportion of merchandise trade of its GDP, Australia is in the bottom ten per cent of countries alongside nations with large internal economies such as the US and least developed countries such as Ethiopia.\textsuperscript{42}

\begin{itemize}
  \item[40] Productivity Commission, 2017, *Shifting the Dial: 5 year productivity review*
  \item[42] New Zealand’s economy, for example, is much more integrated into the global economy than Australia.
\end{itemize}
The second part of this report (forthcoming) will show that Australia’s integration into the global economy has also been comparatively shallow. Its participation in Global Value Chains is the lowest of any developed nation and it is progressively moving upstream in the global production process driven by its reliance of resources exports.

Four areas of reform that could help Australia is to improve its integration into the world economy are as follows:

- **Service sector regulation reform** — The PC has pointed to a number of service industry sectors that remain shielded from competitive pressures. This is partly due to a remnant of the pre-1971 economy that was not reformed and also lack of exposure to global competitors because international trade penetration into the Australian economy is relatively low. As these sectors grow in importance as a proportion of the rest of the economy and in particular for international trade (a major theme of the second part of this report), the case for reform is becoming more urgent.

- **Trade cost reduction** — Trade costs are the cost of getting goods into and out of Australia. These include border costs such as Customs and other inspections, port costs and time in bond. These remain much higher in Australia than the rest of the developed world. Indeed the World Bank *Doing Business* survey ranked Australia as 91 out of 190 countries and well below any other developed country. High trade costs inhibit trade in much the same way as tariffs do and are of particular significance for Australia. Because of its isolated geographic position, transport and trade costs make up a comparatively higher proportion of base costs.

- **Transport costs** — Australia’s settlement pattern of large cities separated by long distances and remoteness from international markets means that the efficient movement of people and goods is a critical factor for the Australian economy. Real domestic freight transport costs have not fallen for 25 years for any mode of transport, despite record amounts being spent on infrastructure as a proportion of GDP.

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44 Thirlwell, M. 2016, *Time and Cost to trade: How does Australia compare?*
45 BITRE 2017, *Freight Rates in Australia,* Information Sheet 90, Canberra: BITRE
Connectivity — In a digitally connected world, communications infrastructure is critical. While this is being addressed by the National Broadband Network (NBN), internet speeds in Australia are amongst the lowest of any developed country.\textsuperscript{46}

The Australian economy since 1991 has been described as the ‘miracle economy’. As this chapter has shown, it has been Australia’s businesses, workers and investors who have performed the ‘miracle’. It is true that the reform process was often messy and often later than it needed to have been. Nevertheless, transforming the rigid pre-1971 economy into the modern economy that has delivered so much to so many is a magnificent achievement.

Ultimately, our long run prosperity depends on our ability to innovate\textsuperscript{47} and increase productivity.\textsuperscript{48} While the areas for change may seem formidable, the lesson from this chapter is that Australia has the capacity to make far reaching reforms to its economy.

\textsuperscript{46} Akamai 2017, State of the Internet Report www.akamai.com/Connectivity
\textsuperscript{48} Productivity Commission, 2017, Shifting the Dial: 5 year productivity review, p. 3
CHAPTER 1  Making a miracle: through crisis, reform and recovery
Changing jobs: Supporting workers in dynamic labour markets

Andrew Charlton
Director, AlphaBeta

Australia has experienced an extraordinary period of economic growth, but beneath the seemingly placid surface of our economy, there is tremendous change. Career changes have become more frequent and job changes are increasingly commonplace. In the future, how we support workers through job transitions will be equally, if not more, important as preparing them for their first job.

Over the past 25 years, Australia’s labour market has been in constant flux. We have lost around 100,000 machinery operator jobs, nearly 400,000 labourers, nearly 500,000 secretaries and clerks and nearly 250,000 jobs from the technicians and trades.\(^{49}\) Offsetting these losses, there has been an explosion of more than 400,000 new jobs in community and personal services and 700,000 new jobs across the professional and business services.

At the macroeconomic level, much of this change has been positive. The economy has created new jobs that are, on average, better paid, more satisfying and safer than the jobs that were lost.\(^{50}\) But the impact on the individuals who must transition between jobs is significant.

What do we know about workforce transitions in Australia? Each year 190,000 Australians either lose their job due to being laid off, made redundant or their employer going out of business.\(^{51}\) That’s about 25 per cent more such transitions than occurred 15 years ago.

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49 AlphaBeta and FYA 2015, *The New Work Order.*
The average time these people will spend out of work during their transition is two months, and one third of them will drop out of the labour force entirely for a period (i.e. they will stop looking for work). Nearly one in five will receive some form of welfare or public assistance during their transition, 9 per cent will undertake some retraining or other education and 18 per cent will ultimately move occupations to find a new job.\(^{52}\)

In an increasingly dynamic economy, these workforce transitions are not only a common feature of careers, they are an increasingly important economic issue. Adding up the cost of lost wages, retraining, welfare and the depreciation of unused qualifications, the total cost of workforce transitions to the Australian economy is more than $6 billion each year.\(^{53}\)

But not all transitions are negative. About half of all workers actually come through transitions better off, with higher wages and reporting higher workplace satisfaction. So, if we accept that career transitions will become common, how can we help ensure they are positive for more people?

The answer starts with equipping students with skills of durable value through their careers. Our current education system is not responsive enough to the changing labour market. AlphaBeta research in partnership with the Foundation for Young Australians (FYA), shows that almost 60 per cent of Australian students are currently getting educated for jobs that will be radically affected by automation and digitisation over the next 10 to 15 years.\(^{54}\) An entire generation of young Australians is at risk of learning skills that will be of decreasing value in the future world of work.

We also need to equip workers with portable skills that they can take with them as they build careers from multiple jobs and top up through further education as they go. Changes in the labour market are increasing the premium on general rather than specific skills. By 2030 workers will spend on average 30 per cent more time per week learning on the job, spend double the time solving problems, spend 41 per cent more time on critical thinking and judgment, and 77 per cent more time using science and maths.\(^{55}\) They will also likely use verbal communication and interpersonal skills 17 per cent more often per week and develop a stronger entrepreneurial mindset. Responding to these trends, employers are increasingly looking for workers with general skills such as team work, presentation skills, problem solving and creativity.

Finally, there is also significant room to improve the matching of workers to jobs. Australia doesn’t have a good record of finding new work for people displaced from the labour market. Over the past 25 years, nearly one in ten unskilled men lost their jobs and did not return to the labour force. Today, more than one in four unskilled men don’t participate. This need not be the case. In an environment of near full employment we should be able to quickly match workers in declining industries to jobs that require similar skills and prevent people from falling out of the labour market. The availability of big-data analysis on employment opportunities should significantly help policymakers, education providers and employers to target training and re-training opportunities.\(^{56}\)

Increasingly, periods of transition are becoming a common part of career trajectories. Creating a resilient workforce that can manage — even benefit from — career transitions will be one of the most important labour market objectives over the coming decades.

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52 AlphaBeta 2017, Australian Workforce Transitions, mimeo.
53 AlphaBeta 2017, Australian Workforce Transitions, mimeo.
54 FYA 2015, The New Work Order.
56 AlphaBeta and FYA 2015, The New Work Order.
The Australian economy in 2017

Australian economy

2.0% household consumption contributed the most to economic growth

26 years of continuous growth

Industry

Services were the main driver of growth

16.3% agriculture was the fastest growing industry

Exports

Australia’s export values rebounded $373 billion

33.8% to $156 billion mining exports increased on the back of higher prices

Business conditions

$37 billion mining recorded the highest increase in operating profits

Small businesses and services recorded higher rates of business entry

Labour market

Full-time employment was strong increasing by 183,000 persons but wages growth remained low

Employment growth was the fastest in non-market services
This chapter explores economic developments and conditions in the Australian economy and industries in 2016–17. Despite a record streak, economic performance was modest in 2016–17 with growth below the long-run trend. It starts with an overview of the key drivers of economic growth.

Despite low wage growth, consumption made the strongest contribution to real Gross Domestic Product (GDP) growth. Public investment rose largely due to infrastructure spending by state governments, making its highest contribution to growth since the stimulus packages following the Global Financial Crisis (GFC). Export values of key commodities rose on the back of higher commodity prices. Conversely, business investment continued to detract from GDP growth as Mining investment fell from record highs.

This chapter also outlines developments in Australian industry which continued to shift to diverse sources of growth following the mining boom. Social services, especially health care, continued to expand in line with population ageing and changing consumer preferences. The high-skilled finance and professional services industries also made large contributions to economic growth. Mining grew strongly on the back of higher exports, despite weather-related disruptions constraining growth in export volumes. Agriculture activity recovered from modest results in the previous year with record crop production.

The chapter then examines business conditions across industry. Mining investment continued to decline from the highs during the mining investment boom. Business profits rose in the year, reaching double digits for the first time since the GFC. Mining accounted for over two-thirds of profit growth as the industry transitions from investment to production and commodity prices rose. Small businesses and Services recorded higher rates of business entries.

Next the chapter explores conditions in the labour market. Labour market conditions were mixed with a strong rise in employment, especially full-time employment, but slow wage growth. Underemployment peaked in February 2017, suggesting some spare capacity in the labour market was absorbed thereafter. Employment grew in most industries, but mainly in non-market services such as health care and education.

The chapter concludes with a summary of the economy in 2016–17 and an overview of the economic outlook for the year ahead.

**Twenty six years of economic growth**

The economy grew modestly at 2.0 per cent, marking the 26th consecutive year of economic growth.

Economic growth occurred in the context of improving global economic conditions. Global economic growth rose to 3.2 per cent in 2016 and continued to strengthen in the first half of 2017. Business investment growth has picked up, particularly in advanced economies and consumption growth has been resilient. Confidence is improving with consumer sentiment and business conditions both increasing from late 2016. Growth in global merchandise trade also improved, with a pick-up in both exports and imports.

This section examines the key contributions to Australia’s GDP growth.

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57 This chapter refers to 2016–17 financial year unless noted otherwise.
Consumption, exports and public investment drive growth

Australia’s GDP growth was driven primarily by household consumption, exports and public investment while business investment continued to detract from GDP growth (Figure 2.1).

Consumption rose despite growing challenges for households, such as low wage growth, and made the strongest contribution to real GDP growth at 1.2 percentage points. Most of the increased consumption was funded by population growth and declining household savings.

Public investment made a positive contribution to real GDP growth (0.7 percentage points) — the strongest contribution to growth since the GFC stimulus packages in 2009–10. All levels of government increased investment, but state and local government infrastructure spending accounted for the majority of the increase (Figure 2.2).

Notes: Original data, chain volume measures. Ten-year average is from 2006–07 to 2016–17. Components do not add up to total GDP growth as the figure excludes government consumption, other private investment, changes in inventories and statistical discrepancies.

Source: ABS cat. no. 5204.0, table 2

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59 Contributions to annual GDP growth by key components in this section use original data, chain volume measures. ABS cat. no. 5204.0, table 2

60 Original data, chain volume measures, current prices. ABS cat. no. 5204.0, table 1, table 2, table 7; and Department of Industry, Innovation and Science calculations.
Net exports made a small contribution to growth (0.1 percentage points), with higher exports (1.1 percentage points) offset by higher imports (–1.0 percentage points). Exports of key commodities rose on the back of higher commodity prices and, to a lesser extent, growth in export volumes.

Private investment fell due to a continuation of declining business investment, particularly in Mining, from the peak during the mining investment boom. The fall was offset by higher dwelling investment from the long-running residential construction upturn. Overall, private investment detracted from real GDP growth by 0.7 percentage points.

Developments in Australian industry

Services continued to dominate production in the economy in 2016–17. Several industries accounted for most of the growth including Health Care & Social Assistance, and Professional, Scientific & Technical Services. Mining remains the dominant export industry, with three of the top five exports. This section looks at the composition of the economy by industry in terms of output, growth and exports.

Services continue to dominate the economy

Services dominated output in the economy, largely a result of a long-running trend in consumer preferences (Table 2.1). Financial & Insurance Services was the largest industry in terms of value. Other Services — including Health Care & Social Assistance, and Professional, Scientific & Technical Services — were also in the top five largest industries.

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Notes: Figures are derived from government budgets and committed government infrastructure funding by jurisdiction at nominal prices. The data comprises historical actual figures, estimated investment levels for the current budget year and forecasts for the forward estimates.

Source: Infrastructure Partnerships Australia (2016), Government Infrastructure Funding.

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Dwelling investment refers to dwellings comprising new and used; and alterations and additions in the National Accounts.

Investment refers to gross fixed capital formation in the National Accounts.
Table 2.1: Output and employment by industry, 2016–17

<table>
<thead>
<tr>
<th>Industry</th>
<th>Output ($ billion)</th>
<th>Output growth (per cent)</th>
<th>Share of GDP (per cent)</th>
<th>Employment (million)</th>
<th>Employment growth (per cent)</th>
<th>Share of employment (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial &amp; Insurance Services</td>
<td>148.2</td>
<td>3.7</td>
<td>8.8</td>
<td>0.4</td>
<td>−0.7</td>
<td>3.5</td>
</tr>
<tr>
<td>Construction</td>
<td>124.6</td>
<td>−4.1</td>
<td>7.4</td>
<td>1.1</td>
<td>7.8</td>
<td>9.2</td>
</tr>
<tr>
<td>Health Care &amp; Social Assistance</td>
<td>119.0</td>
<td>5.3</td>
<td>7.0</td>
<td>1.6</td>
<td>7.7</td>
<td>12.9</td>
</tr>
<tr>
<td>Professional, Scientific &amp; Technical Services</td>
<td>115.2</td>
<td>6.2</td>
<td>6.8</td>
<td>1.0</td>
<td>−0.7</td>
<td>8.4</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>98.9</td>
<td>−1.8</td>
<td>5.8</td>
<td>0.9</td>
<td>−1.2</td>
<td>7.5</td>
</tr>
<tr>
<td>Mining</td>
<td>98.8</td>
<td>1.1</td>
<td>5.8</td>
<td>0.2</td>
<td>−2.4</td>
<td>1.9</td>
</tr>
<tr>
<td>Public Administration &amp; Safety</td>
<td>93.0</td>
<td>2.1</td>
<td>5.5</td>
<td>0.8</td>
<td>−3.1</td>
<td>6.6</td>
</tr>
<tr>
<td>Education &amp; Training</td>
<td>81.7</td>
<td>1.0</td>
<td>4.8</td>
<td>1.0</td>
<td>5.2</td>
<td>8.0</td>
</tr>
<tr>
<td>Transport, Postal &amp; Warehousing</td>
<td>81.5</td>
<td>1.8</td>
<td>4.8</td>
<td>0.6</td>
<td>3.6</td>
<td>5.1</td>
</tr>
<tr>
<td>Industry</td>
<td>Output ($ billion)</td>
<td>Output growth (per cent)</td>
<td>Share of GDP (per cent)</td>
<td>Employment (million)</td>
<td>Employment growth (per cent)</td>
<td>Share of employment (per cent)</td>
</tr>
<tr>
<td>--------------------------------</td>
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<td>-------------------------</td>
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<td>----------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>75.6</td>
<td>1.4</td>
<td>4.5</td>
<td>1.2</td>
<td>1.7</td>
<td>10.2</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>71.1</td>
<td>6.2</td>
<td>4.2</td>
<td>0.4</td>
<td>3.7</td>
<td>3.2</td>
</tr>
<tr>
<td>Administrative &amp; Support Services</td>
<td>53.5</td>
<td>-0.2</td>
<td>3.2</td>
<td>0.4</td>
<td>-8.8</td>
<td>3.4</td>
</tr>
<tr>
<td>Rental, Hiring &amp; Real Estate Services</td>
<td>51.7</td>
<td>2.1</td>
<td>3.1</td>
<td>0.2</td>
<td>-2.7</td>
<td>1.7</td>
</tr>
<tr>
<td>Agriculture, Forestry &amp; Fishing</td>
<td>46.9</td>
<td>16.3</td>
<td>2.8</td>
<td>0.3</td>
<td>4.6</td>
<td>2.5</td>
</tr>
<tr>
<td>Information, Media &amp; Telecommunications</td>
<td>45.2</td>
<td>2.5</td>
<td>2.7</td>
<td>0.2</td>
<td>5.9</td>
<td>1.7</td>
</tr>
<tr>
<td>Electricity, Gas, Water &amp; Waste Services</td>
<td>41.3</td>
<td>0.4</td>
<td>2.4</td>
<td>0.1</td>
<td>-3.4</td>
<td>1.1</td>
</tr>
<tr>
<td>Accommodation &amp; Food Services</td>
<td>40.8</td>
<td>1.9</td>
<td>2.4</td>
<td>0.9</td>
<td>5.5</td>
<td>7.2</td>
</tr>
<tr>
<td>Other Services</td>
<td>28.4</td>
<td>-2.6</td>
<td>1.7</td>
<td>0.5</td>
<td>3.7</td>
<td>4.0</td>
</tr>
<tr>
<td>Arts &amp; Recreation Services</td>
<td>13.9</td>
<td>0.8</td>
<td>0.8</td>
<td>0.2</td>
<td>3.6</td>
<td>1.8</td>
</tr>
<tr>
<td><strong>All industries</strong></td>
<td><strong>1,429.4</strong></td>
<td><strong>2.2</strong></td>
<td><strong>84.5</strong></td>
<td><strong>12.1</strong></td>
<td><strong>2.6</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Notes: Output calculations use original data, chain volume measures. Employment calculations use trend data and growth is through-the-year growth to August 2017.

Source: ABS cat. no. 5204.0, table 5; ABS cat. no. 6291.0.55.003, table 4
Most industries recorded growth in 2016–17 and social and business services continued
to grow as a proportion of the economy. Agriculture, Forestry & Fishing recorded the
strongest growth of any industry at 16.3 per cent, driven by record crop production.
Construction activity fell following a decline in private sector engineering construction from
the continued slowdown in Mining investment (Table 2.1).

Industries with strong links to digital technologies grew above average. For example,
Professional, Scientific & Technical Services recorded one of the strongest growth rates
of any industry. Other industries with strong digital links that grew included Financial &
Insurance Services, and Information, Media & Telecommunication Services.

Social services including Health Care & Social Assistance and Public Administration &
Safety continued to expand, in line with the ageing population and changing consumer
preferences.

Output in Services with low productivity levels fell, including Other Services and Administrative
& Support Services. Yet the link between productivity and growth was modest — Services
with higher productivity tended to grow faster, but some low-productivity Services also
recorded strong growth.

While overall Construction activity fell, building and residential construction increased.
Australia has been experiencing a long-running residential construction upturn, beginning
around mid-2012 and continuing in 2016–17 (Figure 2.3). Residential construction has
been particularly strong in New South Wales and Victoria. Construction activity in recent
years has been supported by lower interest rates combined with strong population growth
and rising house prices.

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**Figure 2.3: Residential construction work done by jurisdiction, 2006–07 to 2016–17**

![Graph showing residential construction work by jurisdiction from 2006-07 to 2016-17](image)

**Notes:** Original data, chain volume measures.

**Source:** ABS cat. no. 8755.0, table 4

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63 Social services refers to: Public Administration & Safety; Education & Training; and Health Care & Social
Assistance. Business services refers to: Financial & Insurance Services; Rental, Hiring & Real Estate
Services; Professional, Scientific & Technical Services; and Administrative & Support Services.

64 ABARES estimate. Department of Agriculture and Water Resources 2017, Agricultural Commodities,
September quarter 2017, ABARES, Canberra
Export values rebounding

Exports rebounded by 16.9 per cent in 2016–17 to $372.7 billion, following a modest fall of 1.5 per cent in 2015–16.65 Mining continued to dominate exports, with three of the top five exports, and strong growth driven by import demand from China. Agriculture, Forestry & Fishing exports rebounded following record crop production. Services exports grew quickly, with a lower dollar attracting international students and tourists (Table 2.2).

Table 2.2: Exports by industry, 2016–17

<table>
<thead>
<tr>
<th>Industry</th>
<th>Exports ($ billion)</th>
<th>Export growth (per cent)</th>
<th>Share of exports (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>156.4</td>
<td>33.8</td>
<td>42.0</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>103.6</td>
<td>3.3</td>
<td>27.8</td>
</tr>
<tr>
<td>Services</td>
<td>81.5</td>
<td>8.0</td>
<td>21.9</td>
</tr>
<tr>
<td>Agriculture, Forestry &amp; Fishing</td>
<td>20.0</td>
<td>20.5</td>
<td>5.4</td>
</tr>
<tr>
<td>Construction</td>
<td>0.4</td>
<td>142.6</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>All industries</strong></td>
<td><strong>372.7</strong></td>
<td><strong>16.9</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Notes: Data current as at 2 November 2017 and subject to future revisions due to data being lagged by eight months. All industries includes items not readily classified or confidential. Industry calculations using merchandise exports made from original data, FOB value. Industry calculations using services credits made from original data, current prices.

Source: ABS cat. no. 5368.0, table 11a, 32a and Department of Industry, Innovation and Science calculations.

Mining dominated exports in 2016–17, with the largest share of total exports and accounting for most top exports by category. The value of the top two exports — iron ore and coal — increased by more than 30 per cent.66 The rise in export values for iron ore and coal was driven by higher commodity prices due to increased demand from China. Weather-related disruptions constrained growth in the volume of iron ore and coal exports.67

Liquefied Natural Gas (LNG) has become a significant part of the Mining industry. Australia continued to increase its gas liquefaction capacity with the completion of the Gorgon project in Western Australia, and the ramping up of production at three coal seam gas projects in the eastern states. The expansion in LNG production resulted in significant annual growth in both export value and volume (Figure 2.4).

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65 Exports (values and growth) and share of exports in this section use original data unless otherwise stated. Industry calculations using merchandise exports are FOB value. Industry calculations using services credits are current prices. ABS cat. no. 5368.0, table 11a, 32a and Department of Industry, Innovation and Science calculations.

66 Coal includes both metallurgical and thermal coal. Department of Industry, Innovation and Science (2017), Resources and Energy Quarterly, September 2017

67 For further information on Australia’s resources and energy exports please refer to the Department of Industry, Innovation and Science’s Resources and Energy Quarterly.
Services exports grew strongly, with the third-largest export — International Education (education-related travel) — growing by 16.1 per cent to $28.0 billion. The number of international students reached 565,000 in July 2017, about 15 per cent more than in July 2016.\textsuperscript{68} The majority of international students were from Asia, with China being the biggest source, reflecting rapidly rising incomes in that region.

Personal Travel Services (excluding education-related travel) was the second largest Services export and fifth largest export overall. Australia welcomed 8.5 million international visitors in 2016–17 and was an attractive destination for international tourists, likely supported by the lower Australian dollar.\textsuperscript{69} Personal Travel Services increased by 4.8 per cent, to be worth $21.7 billion.

**Business conditions**

Business conditions were mixed across industries in 2016–17. Business investment continued to decline from the highs during the mining investment boom. In contrast, company profits in most industries grew, with Mining and high-productivity Services faring particularly well. Small businesses and Services generally recorded higher rates of business entry, and micro businesses had high rates of net growth (entry minus exits). This section explores business conditions across industry by business investment, profits and the entry and exit of businesses.\textsuperscript{70}

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\textsuperscript{68} Department of Education and Training 2017, *International Student Data monthly summary*, July 2017, Canberra


\textsuperscript{70} The latest available data for entry and exit of businesses in Australia is for 2015–16.
Business investment fell, but some signs of improvement

Business investment fell in 2016–17 to $112.3 billion, down 10.4 per cent over the year.\(^71\) The fall in business investment is due to a continuation of declining Mining investment from the peak during the mining investment boom, with investment in other industries failing to offset the fall (Figure 2.5). Falling Mining investment has weighed heavily on recent economic performance, detracting a total of 4.8 percentage points from GDP growth since 2013–14.\(^72\)

The completion of the three remaining LNG projects — Wheatstone, Ichthys, and Prelude — in 2018 will largely mark the end of the mining investment boom. Looking further ahead, Mining investment is expected to stabilise as firms invest to maintain existing capacity and large-scale projects drive investment from 2022.

Figure 2.5: Business investment by industry, 2006–07 to 2016–17

![Business investment by industry graph](image)

Notes: Actual expenditure, trend data, chain volume measures. Capital expenditure for Agriculture, Forestry & Fishing; Public Administration & Safety; Education & Training; Health Care & Social Assistance; and Superannuation Funds are not captured.

Source: ABS cat. no. 5625.0, table 3b

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\(^71\) Business investment refers to private capital expenditure in this discussion and uses actual expenditure, trend data, chain volume measures and year ended quarterly estimates. ABS cat. no. 5625.0, table 3b

\(^72\) Original data, chain volume measures. ABS cat. no. 5206.0, table 2
Investment in other industries has been weak in recent years. The RBA has suggested one driver of low investment growth is firms’ low expectations of future demand and a reluctance to invest until there is a sustained pick-up in aggregate demand.\textsuperscript{73} In addition, business confidence has been slow to respond to improving business conditions.

Despite a lack of pick up in investment, the outlook for business investment is generally positive for 2017–18. Business investment is being supported by low interest rates, improved economic conditions and improved global outlook. Business investment in other industries looks set to finally rise, with companies intending to increase capital expenditure in 2017–18.\textsuperscript{74}

**Profits growing strongly**

Profits rose by 18.4 per cent to $348.4 billion on the back of a large increase in Mining profits due to strong commodity prices. Prior to 2016–17, profits experienced a five-year trend of flat growth, driven by falling Mining profits (Figure 2.6).

**Figure 2.6:** Annual industry profit, 2006–07 to 2016–17

![Graph showing annual industry profit from 2006–07 to 2016–17](image)

Notes: Profit refers to total industry gross operating profit. Original data, quarterly data aggregated for financial years.

Source: ABS cat. no. 5676.0, table 15

Profitability improved in most industries, including some that have performed poorly over the past decade. Mining recorded the highest increase in operating profits in 2016–17 ($37.4 billion), following a fall of $8 billion in 2015–16. The strong increase in Mining profits accounted for over two-thirds of profit growth and was far higher than any other industry. Profits for Professional, Scientific & Technical Services returned to positive territory. Conversely, Accommodation & Food Services and Construction experienced a small fall in profit.


\textsuperscript{74} As at 7 November 2017 expected capital expenditure for Other Selected Industries (Services and Construction) for 2017–18 is 9.3 per cent higher on average than expected capital expenditure for 2016–17. Original data, current prices. ABS cat. no. 5625.0, table 12a
Small businesses most dynamic

In 2015–16, the number of business entries and exits was highest for businesses without employees (i.e. sole traders with no employees) and lowest for large businesses (200+ employees) (Table 2.3). Micro businesses (1–4 employees) were particularly successful in 2015–16, with an entry rate 5.7 per cent greater than the exit rate, the largest difference for any business size.

<table>
<thead>
<tr>
<th>Business size (employees)</th>
<th>Entries (number)</th>
<th>Exits (number)</th>
<th>Entry rate (per cent)</th>
<th>Exit rate (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-employing (0 employees)</td>
<td>212,964</td>
<td>193,402</td>
<td>16.6</td>
<td>15.1</td>
</tr>
<tr>
<td>Micro (1–4 employees)</td>
<td>87,057</td>
<td>53,667</td>
<td>14.9</td>
<td>9.2</td>
</tr>
<tr>
<td>Other small (5–19 employees)</td>
<td>9,131</td>
<td>10,923</td>
<td>4.6</td>
<td>5.5</td>
</tr>
<tr>
<td>Medium (20–199 employees)</td>
<td>1,161</td>
<td>1,980</td>
<td>2.3</td>
<td>3.9</td>
</tr>
<tr>
<td>Large (200+ employees)</td>
<td>122</td>
<td>154</td>
<td>3.3</td>
<td>4.1</td>
</tr>
<tr>
<td>Total</td>
<td>310,435</td>
<td>260,126</td>
<td>14.6</td>
<td>12.3</td>
</tr>
</tbody>
</table>

Source: ABS cat. no. 8165.0, table 13

The economy has experienced a decline in the rates of business entry and exit in recent years. Entry rates have been falling since the early 2000s and all industries have experienced the downward trend.\(^\text{75}\)

The entry rate was highest for Accommodation & Food Services, which is traditionally associated with high rates of businesses entering and exiting the market. Agriculture, Forestry & Fishing recorded the lowest entry rate. Public Administration & Safety had the highest exit rate, while Health Care & Social Assistance had the lowest exit rate, reflecting strong conditions in that industry (Figure 2.7). The net entry rate was highest for businesses in Financial & Insurance Services, while net entry rate was negative for Mining and Agriculture, Forestry & Fishing.\(^\text{76}\)


\(^{76}\) Net entry rate of businesses is the difference between the number of business entries and the number of business exits.
Figure 2.7: Growth in business entries and exits by industry, 2015–16

Source: ABS cat. no. 8165.0, table 1
Labour market recovering strongly

Employment growth was strong over the past 12 months, particularly in full-time employment, but wage growth remained low. Employment grew in most industries in the 12 months to August 2017, with expanding industries employing an additional 404,000 workers and contracting industries losing 99,000 workers. Employment growth was the fastest in non-market Services, including Health Care & Social Assistance and Education & Training.

Compared with the year before, 2016–17 was a strong year for employment growth, which was largely in full-time jobs. The participation rate — the proportion of people employed or actively looking for work in the working age population — has also risen over the same period, while wages growth was at record lows.

In the 12 months to June 2017, the number of employed people grew by 248,000 persons (2.1 per cent) (Figure 2.8). Employment was driven by strong growth in full-time employees which accounted for over 70 per cent of the increase (183,000 persons). Participation rose by 0.2 percentage points over the same period to be 65.0 per cent in June 2017.

Most of the increase in employees occurred in the first half of 2017. Between January and June 2017, the number of employed people grew by 177,000 persons. Full-time employment was again behind the rise, increasing by around 237,000 persons, while part-time employment fell (–60,000).

Figure 2.8: Annualised employment growth by type, June 2007 to June 2017

Notes: Seasonally adjusted data. Total employment growth is through-the-year growth. Full-time and part-time growth is represented as share of total employment growth.

Source: ABS cat. no. 6202.0, table 1

77 Change in the number of people from August quarter 2016 to August quarter 2017 using trend data. ABS cat. no. 6291.0.55.003, table 4
78 Through-the-year growth and change in the number of people from June 2016 to June 2017 using seasonally adjusted data. ABS cat. no. 6202.0, table 1
79 Seasonally adjusted data. ABS cat. no. 6202.0, table 1
80 Ibid.
With full-time employment growing strongly, excess labour market capacity peaked around the middle of 2016–17. The underemployment rate reached record highs in February 2017 (9.4 per cent), but fell to 9.1 per cent in August 2017.\textsuperscript{81}

Similar to other advanced countries, 2016–17 was dogged by persistently low wage growth. Nominal wages rose just 1.9 per cent and did not increase in real terms.\textsuperscript{82} With no real wage growth, per capita incomes of Australian workers are subsequently not growing and their standard of living is not improving. While the reasons behind continued low wage growth are unclear, spare capacity in the labour market is likely to be part of the reason why the stronger employment growth hasn’t yet translated into higher wages for workers.

Nearly 60 per cent of all industries employed more people. Employment growth was higher in non-market Services, including Health Care & Social Assistance and Education & Training (Figure 2.9). Construction also grew strongly on the back of robust residential construction activity.

Administrative & Support Services and Public Administration & Safety accounted for most of the reductions in employees (Table 2.1).\textsuperscript{83}

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**Figure 2.9: Employment growth by industry type, August 2016 to August 2017**

![Graph showing employment growth by industry type](image)

**Notes:** Through-the-year growth (August 2016 to August 2017) using trend data. The ABS defines non-market services as: Public Administration & Safety; Education & Training; and Health Care & Social Assistance.

**Source:** ABS cat. no. 6291.0.55.003, table 4

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\textsuperscript{81} Seasonally adjusted data. ABS. cat. no. 6202.0, table 22

\textsuperscript{82} Original data. ABS cat. no. 6345.0, table 1

\textsuperscript{83} Ibid.
Where to from here?

The Australian economy in 2016–17 continued its transition from the mining investment boom towards more-diverse sources of growth. GDP growth remained modest, driven primarily by household consumption, higher exports and a pick-up in public investment. Business investment continued to fall and detracted from GDP growth.

The labour market experienced mixed conditions, but performed well in the latter half of the year. Employment growth has picked up strongly since the beginning of 2017, mostly in full-time employment. Yet rising demand for labour has not yet materialised as any significant wage growth.

The large decline in Mining investment that has been detracting from growth in the last few years is now tapering off. Record levels of Mining investment in previous years boosted LNG production capacity, which is expected to contribute to growth in the period ahead. Business confidence is improving, and businesses have indicated they intend to increase investment in the coming year.

Mining investment is set for another year of decline in 2018 as three LNG projects collectively worth around $100 billion reach completion. This will mark the end of the investment phase of the mining boom as investment in the industry returns to more typical levels.84

Public investment made the strongest contribution to growth since the GFC stimulus packages in 2009–10. The pipeline of government infrastructure projects in 2017–18 is also expected to boost government infrastructure spending growth.

Looking forward, conditions are in place for a pick-up in economic growth in 2017–18 and for Australia to achieve 27 years of continuous economic growth. The improved picture reflects a stronger global outlook, an improving labour market, and the public infrastructure investment pipeline. Consumption growth remains a key economic risk due to high household debt and low wage growth.

To continue the long run of economic growth and maintain growing incomes, Australia needs to increase its productivity and innovation. Healthy competition boosts productivity by driving the allocation of resources to their best use and spreading innovations and better business practices. A competitive economy is supported by well-functioning regulations and government initiatives that enable markets to work, while assisting industries to transition effectively.

84 Department of Industry, Innovation and Science 2017, Resources and Energy Quarterly, December 2017
CHAPTER 2
The Australian economy in 2017
Innovating for impact

Charlie Day
Chief Executive Officer, Innovation and Science Australia

Despite a long period of sustained economic growth over the last 26 years, Australia in 2017 shares in the widespread malaise of weak productivity growth that is already slowing improvements in living standards in many developed countries. Adding to this, Australia will confront a demographic challenge over the coming decades as its ageing population moves into retirement. Leaders in government and the broader community are rightly looking to Australia's innovation system to provide a new impetus that can help meet these twin challenges.

The good news is that the tools and technologies available to innovators are more powerful every year. To take just a few examples:

- Rapid advances in artificial intelligence (AI) and machine learning are transforming everything we do, from how we diagnose life-threatening illness to the way we take our holiday photos. Over time, we expect that very few sectors of the economy will be untouched by these developments, which have significant potential to lift productivity. Major investments are being made in this technology around the world, with China and the United States (US) in particular battling to secure the leading position.

- The era of data-driven and highly personalised medicine is rapidly arriving, offering the prospect of both healthier lives for citizens and greater efficiencies for governments that are the key providers of health care. Technology is offering the capability to assemble rich sources of information about individuals, including their entire genomic sequence, and combine that with continuous monitoring through cheap and ubiquitous sensor technology. As health care is expected to occupy an increasing share of the economy in years ahead, the opportunities for innovators are considerable.

- Our energy system is undergoing a rapid and complex transformation as it seeks to deliver affordable, reliable and clean energy. Significant changes in the cost and performance characteristics of renewable power sources, such as wind and solar, combined with rapidly improving storage technologies and the disruptive business models that are challenging incumbent providers, set the scene for a significant reshaping of how and where we source our energy. To date this transformation has not played out in Australia’s
favour, despite our abundant sources of sunlight and wind energy. A key challenge for our innovators will be to drive down the cost of energy, which is a vital input to so many sectors of the economy.

Australia is fortunate that many of these tools and technologies are being advanced in our public sector research and development laboratories, which continue to be world class. Indeed, our universities have built a major export market for education largely on the back of their reputation for high quality research.

Countries around the world are recognising the potential of these technologies, and this is reflected in growing global investments in R&D that continue to outpace gross domestic product (GDP) growth. It looks like a sensible strategy: the Organisation for Economic Co-operation and Development (OECD) has highlighted that a disproportionate share of the economic dividends of innovation accrue to those who are closest to the innovation frontier.

But the history of Australia’s innovation system suggests that we haven’t always been prepared to use these tools and technologies as boldly as we will need to if we are to keep up. Reports from both Innovation & Science Australia (ISA) and the Office of the Chief Economist show that while Australian firms report high levels of innovative activity, it is primarily incremental in nature. Australian firms are generally outclassed by their international peers when it comes to new-to-market and new-to-world innovation. Furthermore, bucking the global trend for growth in business expenditure on R&D, Australian firms’ investment in R&D has been falling since the Global Financial Crisis (GFC), as the mining investment boom has faded and other sources of R&D growth have failed to step in and fill the gap. Encouraging signs of collaboration between our research base and industry are starting to grow, but it is coming from a low base and much more needs to be done. And whilst rapid growth in venture capital is helping to support the burgeoning start-up communities in clusters around the country, the all-important test of delivering cash returns to investors will only be met for certain in the years that lie ahead.

In short, then, the ingredients for a vibrant and prosperous future for Australia are within our grasp. But we must renew our commitment to innovation, and in particular to ambitious innovation, if we are to bring it to fruition. This will challenge all parts of our innovation system, and creates a number of imperatives for our policymakers:

- **Education** — equip Australians with skills relevant to 2030, and provide an education system that can routinely refresh and update those skills.
- **Industry** — reinvigorate business expenditure on R&D, and support firms that are prepared to tackle the challenge of growth opportunities in export markets.
- **Government** — innovate the procurement of goods and services and how it regulates markets, whilst transforming its own operations to make the most of digital technology.
- **R&D** — continue to build linkages with industry, both in people and technology that can underpin a long-term commitment to growing investment and ambitious innovation.

At a national level, policymakers should be prepared to take on bold large-scale projects that ISA has characterised as ‘National Missions’, projects that bring together the best that our innovation system has to offer in tackling a challenge that brings significant benefit to Australians.

ISA has laid out its vision for the future of Australia’s innovation system in its report Australia 2030. We look forward to working with all parts of the innovation community to create a future that grasps the abundant potential Australia continues to display.

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85 **Innovation and Science Australia 2016, Performance Review of the Australian Innovation, Science and Research System**

86 **Department of Industry, Innovation and Science 2017, Australian Innovation System Report**
The spatial distribution of economic growth

- 68% of growth over the past 15 years occurred in capital cities with an average growth of 3.2% per year.
- 19% in non-mining regional areas with an average growth of 2.5% per year, below the national average.
- 11% of growth was in mining regions with an average growth of 5.9% per year.

These factors are driving economic activity to cities:
- Changing demographics
- Openness to trade
- Industry structure
Over the last quarter of a century, the Australian economy has grown at about three per cent per year. The experience of Australia’s regions however, has been far from uniform. The annual growth rate of Melbourne’s central business district (CBD) was four times higher than the growth rate of Hume in regional Victoria since 2000–01. During this period, there was also a shift of economic activity to mineral-rich regions in the investment phase of the mining boom. This resulted in Mining regions growing faster than capital cities.

Using a new time series of Gross Regional Product (GRP), this chapter explores how Australia’s economy has changed spatially since 2001 (see Box 3.1). Upon establishing the spatial distribution of economic growth, the chapter will then turn to why these differences exist. Factors such as shifting demographics, openness to trade and changing industry composition can help explain why economic activity concentrates in some areas and not in others.

The chapter then moves on to discuss the implications of economic concentration in Australia’s capital cities; persistent comparative inequality in terms of GRP per capita and difficulty in predicting long-term sources of growth for regional areas. Such concentration also has implications for cities — in part, the future economic success of Australia will depend on having cities that can cope with increasing demand for their resources.

Analysis throughout this chapter focuses on sub-state regions known as Statistical Area Level 4s (SA4s). These boundaries are the largest sub-state regions in the Australian Statistical Geography Standard (ASGS), as defined by the Australian Bureau of Statistics (ABS). There are 88 SA4s in Australia, with 46 located in greater capital city areas. The remaining 42 are in regional locations. SA4s are intended to be a proxy for labour markets. But as the boundaries are also restricted by population limits, they often cut across or combine labour markets — having implications for regional economic analysis.

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87 Hume refers to the SA4 of Hume which encompasses a large area north-east of Melbourne. The Victorian City of Hume is not within the Hume SA4 boundaries.
88 The investment phase of the boom was between 2006 and 2014.
89 The term ‘Mining regions’ refers to the SA4s of Hunter Valley excluding Newcastle; Central Queensland; Mackay-Isaac-Whitsunday; WA — Outback (North); and WA — Outback (South).
Box 3.1: Notes on method used to calculate Gross Regional Product estimates

The methodology used to derive the experimental estimates of GRP is based on the work of Queensland Treasury and Trade, which produces GRP estimates for Queensland regions. Estimates of GRP are derived from the 2015–16 Gross State Product (GSP) of each State and Territory (published in the State National Accounts), and based on the income approach of measuring GSP. The income approach is the sum of incomes earned through the production of goods and services in each industry, in each State and Territory. The components of the income approach are:

- Compensation of Employees (incomes earned by employees and the self-employed)
- Gross Operating Surplus and Mixed Income (which includes business profits and imputed rental income through the ownership of dwellings)
- Taxes less subsidies.

To allocate GSP to regions, Queensland Treasury and Trade used an apportioning approach to estimate each SA4’s share of GSP. A similar approach is used to derive the estimates presented in this chapter.

Head office effects have not been fully accounted for when calculating the experimental estimates of GRP. Head office effects refer to the recording of business data (such as profit) in capital cities where head offices are located, rather than in the region where the economic activity occurred.

Head office effects are more prevalent for some industries than others (e.g. Mining). To account for head office effects, industry-regional-specific datasets were used when possible to try and apportion production back to the region where it occurred. In addition, when calculating SA4-to-state ratios from the Census, ‘place of work’ data was used to try and capture economic activity where it was occurring, rather than where the individuals earning the incomes lived.

Notes: For a detailed description of methodology please refer to Chapter 7 of the Australian Industry Report 2016. This method has been extended to previous Census years to create a time series.

Source: A detailed description of Queensland Treasury and Trade’s methodology can be found at www.qgso.qld.gov.au/products/reports/experimental-estimates-grp/
Most economic activity occurs in capital cities

Between 2000–01 and 2015–16, Australia’s distribution of economic activity was largely concentrated in and around major cities. These areas have consistently generated around two-thirds of Australia’s economic activity. Figure 3.1 shows GRP estimates across Australia for the years 2000–01, 2005–06, 2010–11 and 2015–16.

The term ‘capital cities’ refers to the Greater Capital City Statistical Areas of Greater Sydney, Greater Melbourne, Greater Brisbane, Greater Adelaide, Greater Perth, Greater Hobart, and Greater Darwin.

Notes: For all years, SA4s are split into quartiles based on their GRP estimates. The darkest shade of blue represents the fourth quartile (SA4s reporting GRP in the top 25 per cent). GRP estimates based on Queensland Treasury and Trade methodology. GRP figures are in 2015–16 prices.

Source: Department of Industry, Innovation and Science.
Between 2000–01 and 2015–16, two key changes occurred to Australia’s economic geography.

- The first was the concentration of economic activity into the CBDs of capital cities. These areas now contribute 25 per cent to national economic activity,\(^91\) despite accounting for less than 0.05 per cent of Australia’s land mass.\(^92\) Australia is one of the most urbanised countries on earth, apart from city-states like Monaco and Singapore.\(^93\) This favours Australia’s transition to a knowledge-based economy, as cities create spill overs, deeper labour markets and economies of scale.

- The second major change to Australia’s economic geography was the mining boom. Between 2000–01 and 2015–16, Australia experienced one of the biggest mining booms in its history. The Mining industry went from around five per cent of the economy to close to seven per cent in 2015–16.\(^94\) At a regional level, in 2010–11 the Mining regions of the Bowen Basin, the Pilbara, WA Goldfields and Hunter Valley accounted for around nine per cent of Australia’s economic activity, compared to almost five per cent in 2000–01. In 2015–16, these regions contributed seven per cent to the Australian economy.

Generally, the SA4s in the top quartile are located in capital cities. The exception to this is the Mining regions. Between 2005–06 and 2010–11, the WA outback — home to the Goldfields and the Pilbara — and areas of the Bowen Basin, were all in the top 25 per cent.\(^95\) The Pilbara region remains in the top 25 per cent, while other mining regions are in the top 50 per cent. Regions in the third quartile tend to be in outer capital city areas or along the eastern coast. In 2015–16, SA4s in the top 50 per cent accounted for 77 per cent of national economic activity and were home to 66 per cent of the population.

Over two-thirds of the SA4 regions in the first and second quartiles (the bottom 50 per cent) consisted of the outback areas of Queensland, SA and the NT, and regions outside the greater capital city areas of all states. Less than a third of the SA4 regions in the first and second quartiles were located in greater capital city areas. These consisted of areas such as the Logan-Beaudesert region in Queensland, Hobart and the Outer South West of Sydney. In 2015–16 these two quartiles contributed 23 per cent to Australia’s total economic activity, despite being home to 34 per cent of the population.

The distribution of economic activity within states is consistent with the national story — each state or territory is driven by its capital city. Figure 3.2 highlights how much the mining boom affected the resource-intensive states of WA and Queensland, where a large proportion of economic activity can be attributed to regional areas.

In terms of economic activity, NSW and Victoria dominate, and the same can be said for their capital cities. Sydney and Melbourne are the two largest capital cities. Combined, these two areas consistently contribute over 40 per cent to Australia’s economic activity. In part this can be attributed to their larger populations and the concentration of industries with relatively high labour productivity.\(^96\)

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\(^{91}\) From 23 per cent in 2000–01.

\(^{92}\) ABS, Regional Population Growth, Australia, 2015–16, cat. no. 3218.0.


\(^{94}\) This refers to mining gross value added as a share of GDP, ABS, Australian System of National Accounts, 2015–16, cat. no. 5204.0, Table 5. Figures based on chain volume measure.

\(^{95}\) The Bowen Basin is defined to encompass the SA4s of Central Queensland and Mackay — Isaac — Whitsunday.


An example of an industry with relatively higher labour productivity is finance and professional services.
Figure 3.2: Gross regional product (GRP) by capital city and regional area, 2015–16

Notes: GRP estimates based on Queensland Treasury and Trade methodology.
Source: Department of Industry, Innovation and Science estimates.
Capital cities growing faster than regional Australia

Between 2000–01 and 2015–16, the Australian economy grew on average 3 per cent per year. Despite this, when examining GRP growth over the past 15 years it is evident growth has not been uniform.

- More than two-thirds (70 per cent) of Australia’s growth occurred in capital cities. This equates to average growth of 3.2 per cent per year.97
- A further 11 per cent of national growth was generated in Australia’s Mining regions, equating to average growth of 5.9 per cent per year.
- The remaining 19 per cent of growth was in non-Mining regional areas, equating to average growth of 2.5 per cent per year.

SA4s growing above the national rate were mainly in the resource-intensive states of Queensland and WA. Table 3.1 lists the top 10 SA4s in terms of 15–year annual average GRP growth. The impact of the mining boom on Queensland and WA is evident — both their capital cities and regional areas experienced higher growth rates. This highlights that wealth generated by Mining is also captured in cities where the businesses that support the industry are located.98

The largest 15-year annual average growth occurred in WA — Outback (North), home of the Pilbara, which grew on average 11 per cent per year. This region now contributes around $43 billion to the economy (3 per cent of total economic activity). Higher growing SA4s that are located in capital cities also tended to have a 15-year annual average population growth rate that was higher than the national average (1.3 per cent).

The Australian Capital Territory was included in the calculation of ‘capital cities’.97

Table 3.2 lists the 10 SA4s reporting the lowest annual GRP growth. SA4s that experienced low GRP growth can be characterised by low population growth, and for some a transition away from the agricultural industry has resulted in little growth. New England and North West in regional NSW has grown an average of 1.1 per cent per year. In 2000–01 the largest employing industry in the region was Agriculture — 29 per cent of total employment. Fast forward to 2015–16 and Agriculture only accounts for 7.8 per cent of employment, and Health Care is now the largest employing industry — 13.6 per cent. Other SA4s, on the outer edges of capital cities, had similar experiences with the decline of manufacturing. Melbourne — Outer East and Adelaide South had growth rates of −1 and 0.6 per cent respectively. In both instances Manufacturing was the top employing industry, which has now been overtaken by Health Care or Construction.

While Health Care is featuring as the largest employing industry in both the top 10 and bottom 10 list of SA4s, the shift to Health Care over the past 15 years has been more pronounced in the 10 SA4s reporting the lowest annual GRP growth. Health Care accounted for 9.4 per cent of employment in the top 10 SA4s in 2000–01 and 12.1 per cent in 2015–16. In the bottom 10 SA4s, it accounted for 9.5 per cent in 2000-01 and 13 per cent in 2015–16.

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97 The Australian Capital Territory was included in the calculation of ‘capital cities’.
Table 3.1: Statistical Area Level 4s (SA4s) reporting highest annual gross regional product (GRP) growth, ranked high to low, 2000–01 to 2015–16

<table>
<thead>
<tr>
<th>Rank</th>
<th>Statistical Area Level 4 (SA4)</th>
<th>State or territory</th>
<th>Classification of SA4</th>
<th>GRP ($billions) 2015–16</th>
<th>GRP growth 15-year annual average (per cent)</th>
<th>Population ('000) 2015–16</th>
<th>Population growth 15-year annual average (per cent)</th>
<th>Largest employing industry, 2000–01 (per cent of total)</th>
<th>Largest employing industry, 2015–16 (per cent of total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>WA — Outback (North)</td>
<td>WA</td>
<td>Mining</td>
<td>43</td>
<td>11.0</td>
<td>90</td>
<td>0.8</td>
<td>Mining (14.0)</td>
<td>Mining (21.0)</td>
</tr>
<tr>
<td>2</td>
<td>Darwin</td>
<td>NT</td>
<td>Capital city</td>
<td>17</td>
<td>6.6</td>
<td>140</td>
<td>1.6</td>
<td>Public Admin and Safety (15.5)</td>
<td>Public Admin and Safety (15.4)</td>
</tr>
<tr>
<td>3</td>
<td>Perth — South East</td>
<td>WA</td>
<td>Capital city</td>
<td>36</td>
<td>6.4</td>
<td>490</td>
<td>1.9</td>
<td>Retail Trade (12.2)</td>
<td>Health Care (12.3)</td>
</tr>
<tr>
<td>4</td>
<td>Brisbane Inner City</td>
<td>QLD</td>
<td>Capital city</td>
<td>60</td>
<td>6.2</td>
<td>250</td>
<td>2.2</td>
<td>Prof, Scientific and Tech (13.3)</td>
<td>Health Care (15.9)</td>
</tr>
<tr>
<td>5</td>
<td>Perth - South West</td>
<td>WA</td>
<td>Capital city</td>
<td>26</td>
<td>6.1</td>
<td>400</td>
<td>2.1</td>
<td>Manufacturing (13.4)</td>
<td>Health Care (11.3)</td>
</tr>
<tr>
<td>Rank</td>
<td>Rank</td>
<td>Statistical Area Level 4 (SA4)</td>
<td>State or territory</td>
<td>Classification of SA4</td>
<td>GRP ($billions) 2015–16</td>
<td>GRP growth 15-year annual average (per cent)</td>
<td>Population ('000) 2015–16</td>
<td>Population growth 15-year annual average (per cent)</td>
<td>Largest employing industry, 2000–01 (per cent of total)</td>
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<td>------------------------------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>Moreton Bay — North</td>
<td>QLD</td>
<td>Capital city</td>
<td>8</td>
<td>6.0</td>
<td>240</td>
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<td>Retail Trade (10.7)</td>
</tr>
<tr>
<td>7</td>
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<td>Capital city</td>
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<td>5.9</td>
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<tr>
<td>8</td>
<td>8</td>
<td>Perth — North East</td>
<td>WA</td>
<td>Capital city</td>
<td>14</td>
<td>5.7</td>
<td>250</td>
<td>1.8</td>
<td>Retail Trade (13.4)</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>Mackay — Isaac — Whitsunday</td>
<td>QLD</td>
<td>Mining</td>
<td>18</td>
<td>5.4</td>
<td>170</td>
<td>1.5</td>
<td>Retail Trade (12.6)</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>Sunshine Coast</td>
<td>QLD</td>
<td>Regional</td>
<td>16</td>
<td>5.4</td>
<td>350</td>
<td>2.4</td>
<td>Retail Trade (13.5)</td>
</tr>
</tbody>
</table>

Notes: GRP and population figures have been rounded. GRP figures are 2015–16 prices. GRP estimates based on Queensland Treasury and Trade methodology.

Source: ABS, 2016 Census of Population and Housing (TableBuilder extract); ABS, Labour Force, Australia, Detailed, Quarterly, May 2017, cat. no. 6291.0.55.003, RQ1; Department of Industry, Innovation and Science estimates.
<table>
<thead>
<tr>
<th>Rank</th>
<th>Statistical Area Level 4 (SA4)</th>
<th>State or territory</th>
<th>Classification of SA4</th>
<th>GRP ($billions) 2015–16</th>
<th>GRP growth 15-year annual average (per cent)</th>
<th>Population ('000) 2015–16</th>
<th>Population growth 15-year annual average (per cent)</th>
<th>Largest employing industry, 2000–01 (per cent of total)</th>
<th>Largest employing industry, 2015–16 (per cent of total)</th>
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<tr>
<td>88</td>
<td>Melbourne — Outer East</td>
<td>VIC</td>
<td>Capital city</td>
<td>20</td>
<td>-1.0</td>
<td>500</td>
<td>0.4</td>
<td>Manufacturing (15.8)</td>
<td>Construction (11.5)</td>
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<tr>
<td>87</td>
<td>Sydney — North Sydney and Hornsby</td>
<td>NSW</td>
<td>Capital city</td>
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<td>410</td>
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<td>Prof, Scientific and Tech (16.0)</td>
<td>Prof, Scientific and Tech (20.2)</td>
</tr>
<tr>
<td>86</td>
<td>North West</td>
<td>VIC</td>
<td>Regional</td>
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<td>0.1</td>
<td>150</td>
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<td>Health Care (16.9)</td>
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<td>Capital city</td>
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<td>0.6</td>
<td>360</td>
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<td>Manufacturing (14.0)</td>
<td>Health Care (18.2)</td>
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<td>83</td>
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<td>0.6</td>
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<td>Prof, Scientific and Tech (17.5)</td>
</tr>
<tr>
<td>Rank</td>
<td>Statistical Area Level 4 (SA4)</td>
<td>State or territory</td>
<td>Classification of SA4</td>
<td>GRP ($billions) 2015–16</td>
<td>GRP growth 15-year annual average (per cent)</td>
<td>Population ('000) 2015–16</td>
<td>Population growth 15-year annual average (per cent)</td>
<td>Largest employing industry, 2000–01 (per cent of total)</td>
<td>Largest employing industry, 2015–16 (per cent of total)</td>
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<td>-------------------------------------------------</td>
</tr>
<tr>
<td>82</td>
<td>Melbourne — Inner South VIC</td>
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<td>Capital city</td>
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<td>0.9</td>
<td>Manufacturing (12.0)</td>
<td>Prof, Scientific and Tech (13.9)</td>
</tr>
<tr>
<td>81</td>
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<td>Regional</td>
<td>7</td>
<td>1.0</td>
<td>170</td>
<td>0.8</td>
<td>Manufacturing (12.6)</td>
<td>Health Care (14.6)</td>
</tr>
<tr>
<td>80</td>
<td>New England and North West NSW</td>
<td>Regional</td>
<td></td>
<td>10</td>
<td>1.1</td>
<td>180</td>
<td>0.1</td>
<td>Agriculture (28.6)</td>
<td>Health Care (13.7)</td>
</tr>
<tr>
<td>79</td>
<td>Sydney — Inner South West NSW</td>
<td>NSW</td>
<td>Capital city</td>
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<td>1.3</td>
<td>570</td>
<td>0.9</td>
<td>Manufacturing (15.6)</td>
<td>Retail Trade (12.1)</td>
</tr>
</tbody>
</table>

Notes: GRP and population figures have been rounded. GRP figures are 2015–16 prices. GRP estimates based on Queensland Treasury and Trade methodology.

Source: ABS, 2016 Census of Population and Housing (TableBuilder extract); ABS, Labour Force, Australia, Detailed, Quarterly, May 2017, cat. no. 6291.0.55.003, RQ1; Department of Industry, Innovation and Science estimates.
The difference between the regions becomes particularly evident when examining growth by region type. Figure 3.3 shows that over the past 15 years, Mining regions have experienced the fastest growth, an average of 5.9 per cent per year. The annual average growth of capital cities was slightly above the national rate at 3.2 per cent. While non-Mining regional areas fell below the national rate, growing 2.5 per cent per year. The significant difference between non-Mining regional areas and Mining regions is demonstrated in regional Queensland. The SA4 of Mackay-Isaac-Whitsunday, part of the Bowen Basin, grew on average three times faster than its neighbouring SA4, Queensland-Outback. For every $1 of economic activity produced in Queensland-Outback, $2 of economic activity was produced in Mackay-Isaac-Whitsunday. Growth in capital cities was driven by CBDs. Over 15 years, the economic activity of these areas nearly doubled — $236 billion in 2000–01 compared to $419 billion in 2015–16 (3.9 per cent per year), making up 29 per cent of Australia’s total economic growth. Brisbane CBD grew the fastest (6.2 per cent per year). This small area now contributes around $60 billion to the Australian economy and accounts for nearly 4 per cent of total economic activity.

Figure 3.3: GRP growth rates by region type


Source: Department of Industry, Innovation and Science estimates; ABS, Australian National Accounts: State Accounts, 2015–16, cat. no. 5220.0, Table 1.

It is important to note that GRP growth in capital cities is occurring off a higher base. Since 2000–01, in absolute terms, there has been much higher growth in GRP in capital cities compared to both Mining and non-Mining regional areas. Over this period, absolute growth in GRP amounted to more than $430 billion of additional economic activity in capital cities, compared to around $175 billion in all regional areas.
Also evident in Figure 3.3 is that the rate of growth is slowing for all regions. For each five-year period, capital cities have consistently grown faster than regional areas and the difference between the two is increasing. Overall, growth in non-Mining regional areas has remained positive over the past 15 years. In over two-thirds of these non-Mining regional areas, growth in the number of people employed in non-market industries such as Health Care, Education and Public Administration has outstripped growth in the number of people in all other industries. Since the end of the investment phase of the mining boom, growth in Mining regions has been negative. This is a result of many factors including the downturn in the commodity price cycle.

Box 3.2 will describe the relative movement between SA4s in more detail.

Box 3.2: Regional growth and GRP per capita inequality

The concentration of economic activity in capital cities has implications for individual regions and the economy as a whole. Over the 15 years, there has been persistent comparative inequality in terms of GRP per capita. This makes it difficult to predict long-term sources of growth for regional areas. In contrast, income growth has been comparable across cities and regions. But as economic activity continues to shift to capital cities, there will also be implications for cities. As rapid growth increases pressure on infrastructure, cities will need to adjust to growing demands.

The concentration of economic activity in capital cities creates comparative inequality between SA4s in terms of output per capita. In 2000–01, 40 SA4s had an estimated GRP per capita below 75 per cent of Australia’s GDP per capita ($55,810). This has remained consistent over the past 15 years. In 2015–16, 44 SA4s had an estimated GRP per capita below 75 per cent of the national average ($69,421). Table 3.3 shows this in more detail.

The information in Table 3.3 is based on each SA4’s GRP per capita as a share of national GDP per capita — relative GRP per capita. For the years 2000–01 and 2015–16, SA4s were assigned to ranges based on their relative GRP per capita — an SA4 with a relative GRP per capita of 69 per cent would be assigned to the 50–70 per cent range.

The first column gives the number of SA4s that were in each range in 2000–01. The second column lists the ranges SA4s were assigned to — in 2000–01 there were three SA4s with a relative GRP per capita of 50 per cent or less.

The top row of the table lists the relative GRP ranges for 2015–16. The main diagonal of the table shows the share of SA4s that were in the same relative GRP per capita range in 2000–01 and 2015–16.

Reading along the third row of the table, in 2000–01 37 SA4s had a relative GRP per capita between 50 and 75 per cent. In 2015–16, 76 per cent of these SA4s remained in this range, 8 per cent fell to the 50 per cent or less range, 14 per cent moved up to the 75–100 per cent range, and 3 per cent moved to between 100 and 125 per cent. SA4s that remained in the 50 and 75 per cent range included Coffs Harbour — Grafton; Ballarat; Launceston; and North East Tasmania. The large share that remained in the same range shows the persistent inequality in terms of GRP per capita.

Examining Table 3.3, it is evident that SA4s below the national average — relative GRP per capita below 100 per cent — remain below, and those above the average stay there. Typically, those regions that have gone down a range between 2000–01
and 2015–16 have been SA4s in outer capital city areas, for example Moreton Bay — South in outer Brisbane.

SA4s with a relative GRP per capita of 100 per cent or more, in either 2000–01 or 2015–16, tended to be those in the inner capital city areas or Mining regions. Mackay-Isaac-Whitsunday, an area of the Bowen Basin, transitioned from the 100 to 125 per cent range to the greater than 125 per cent range.

Table 3.3: Transition matrix of gross regional product (GRP) per capita relative to national GDP per capita, per cent, 2000–01 to 2015–16

<table>
<thead>
<tr>
<th>2015–16 relative GRP per capita</th>
<th>2000–01 relative GRP per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per cent</td>
<td>&lt;50</td>
</tr>
<tr>
<td>n</td>
<td>Per cent</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>3</td>
<td>&lt;50</td>
</tr>
<tr>
<td>37</td>
<td>50 – &lt;75</td>
</tr>
<tr>
<td>30</td>
<td>75 – &lt;100</td>
</tr>
<tr>
<td>8</td>
<td>100 – &lt;125</td>
</tr>
<tr>
<td>10</td>
<td>&gt;125</td>
</tr>
</tbody>
</table>

Notes: National figures based on chain volume measures. GRP figures based on 2015–16 prices. GRP estimates based on Queensland Treasury and Trade methodology.

Reading the table: In 2000–01 there were 30 SA4 regions where the GRP per capita as a ratio of Australia’s GDP per capita was between 75:100 and <100:100 (i.e. 75 per cent to less than 100 per cent). In 2015–16, 57 per cent of these SA4s maintained the same ratio range, 33 per cent deteriorated to a ratio range of between 50 per cent to less than 75 per cent, 7 per cent of the SA4s improved to a ratio range of between 100 per cent to less than 125 per cent, and 3 per cent of the SA4s improved to a ratio range of 125 per cent or higher.

Source: Department of Industry, Innovation and Science estimates; ABS, Australian National Accounts: State Accounts, 2015–16, cat. no. 5220.0, Table 1.
Drivers of economic activity to capital cities

The increasing concentration of Australia’s productive activity is — at least in part — the product of agglomeration economies that result from co-location. Benefits of greater concentration can take the form of deeper labour markets, increased access to specialised suppliers (inputs and services), economies of scale and knowledge spill overs.\textsuperscript{100}

The Productivity Commission conducted a study into the transition of regions post-mining boom. As part of this study, an index of relative adaptive capacity was developed. The Productivity Commission found the following factors to influence the capacity of regions to be resilient:

- Skills and education of regional workforces
- Access to infrastructure and services
- Availability of natural resources
- Availability of financial resources to businesses and individuals
- Industry diversity.\textsuperscript{101}

According to this index, most major cities have a relatively higher adaptive capacity than most remote and outer regional areas. This has implications for how regions perform and can transition following changes in Australia’s economy and industry structure. These results also have implications for the shifting of economic activity to capital cities.

The remainder of this section discusses some of the key drivers of economic concentration as identified in the literature. The GRP estimates are considered in light of each driver to better understand the trade-off and why the concentration of economic activity has benefited some SA4s more than others.

\textsuperscript{100} NSW Department of Industry — Centre for Economic Development (2016) \textit{Regional Economic Growth Enablers}, Sydney, p. 22. Offsetting these benefits are costs relating to concentration, including higher rents, greater congestion, and more pollution. The trade-off between these benefits and costs determine which areas are relatively better off and which areas grow relatively faster or slower.

Attracting talent and skills

Figure 3.4 shows total net internal migration for the working age cohort (15–64 years) over the past 10 years. From the map it is evident that the working age cohort is migrating to areas around CBDs or to major regional centres along the east coast. Economic concentration helps to deepen labour markets and provides greater education opportunities — which in turn results in greater migration to these areas.

Remote and regional areas of Australia have experienced a net loss of working age residents. This is because areas with higher concentrations of economic activity are attractive to people. In cities, job-search costs are lower, matches are better and wages typically higher as a result of the greater productivity of firms from the spillovers associated with concentration.\(^\text{102}\) Although not shown, immigrants also favour cities due to greater job opportunities and existing cultural networks.

The flows of international migrants exacerbate these trends. The population flows of large capital cities in Australia is like an hour glass. International migrants are poured in the top at a slightly faster rate than older residents leave.\(^\text{103}\) The skilled migrant stream is heavily concentrated in the CBDs of Melbourne, Sydney, Brisbane and Perth.

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Figure 3.5 shows that regions with higher working age population growth tend to have higher GRP growth, and typically the highest population growth is occurring in greater capital city areas.

Figure 3.5: 15-year annual average working age population (15–64 years) and gross regional product (GRP) growth, 2000–01 to 2015–16

![Graph showing the relationship between GRP growth and working age population growth.]

Notes: GRP estimates based on Queensland Treasury and Trade methodology. GRP figures based on 2015–16 prices, $R^2 = 0.372$.


Of course, GRP growth in some regions is not associated with higher population growth. These are primarily Mining regions. In these regions, a large value of economic activity is associated with a smaller labour force.
Trade enables growth and job creation

Trade provides new market opportunities for domestic firms, stronger productivity and innovation through competition. In understanding the dynamics and trajectory of Australian regions, it is important not to view them in isolation but to explore the role they play in the national and international trading networks.

To be a gateway to the international economy, a region needs three characteristics: a sea port; an international airport; and most importantly a CBD that hosts a critical mass of advanced producer services like finance, marketing and management consulting to facilitate and contribute to the products being traded. In Australia, there are only two cities that have such critical mass — Sydney and Melbourne. Around 90 per cent of publicly traded firms by value are located in Sydney and Melbourne, and around three quarters of international business travel passes through their airports.

Figure 3.6 shows the collective growth rates for areas with or without a sea port or an international airport. It is evident SA4s with either a sea port or international airport tend to grow faster. Trade openness encourages the concentration of economic activity because firms will choose to locate in certain regions in order to gain access to international markets and benefit from trade.

Australia’s geographic isolation and its relatively fragmented domestic markets contribute to relatively higher transport and infrastructure costs, and limit Australia’s exposure to domestic and international trade.

Figure 3.6: Australian sea ports, international airports and gross regional product (GRP) growth, 2000–01 to 2015–16

Source: Geoscience Australia; Department of Industry, Innovation and Science estimates; ABS, Australian National Accounts: State Accounts, 2015–16, cat. no. 5220.0, Table 1.

Knowledge-intensive industries

While technologies such as the National Broadband Network and video conferencing enable people to work remotely — away from cities — the more fundamental force of technological change is shifting the Australian economy into knowledge-intensive industries that thrive in the centres of large cities.

The shifting industry structure of the Australian economy is driving the concentration of economic activity to capital cities. The economy has been transitioning away from goods-producing industries to more high-value, knowledge-intensive industries.\(^{106}\)

Compared to goods-producing industries, which are reliant on immobile factors of production, such as land, knowledge-intensive industries rely on mobile factors of production like human capital. This geographic dimension of production means knowledge-intensive industries, such as finance, are less likely to locate in regional Australia because they typically benefit from knowledge spillovers, deeper labour markets and economies of scale.\(^{107}\)

Areas outside of capital cities tend to produce relatively low levels of economic activity, despite being home to a significant share of the population. The production that takes place in these areas typically involves population-serving industries.\(^{108}\) Over the past 15 years these population-serving industries — the non-market services sector — have been the main source of employment growth in non-Mining regional areas. Examples of non-market services are Health Care and Education, where the public sector plays a significant role. These industries accounted for around 53 per cent of total employment growth in non-Mining regional Australia, resulting in an additional 361,000 employed persons.

Knowledge-intensive industries — typically industries in the market services sector — are key drivers of productivity and economic growth.\(^{109}\) Figure 3.7 shows that SA4s with higher GRP growth tend to be those with greater growth in market services employment — typically in greater capital city areas.

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Figure 3.7: 15-year annual average market services employment and gross regional product (GRP) growth, per cent, 2000–01 to 2015–16

Notes: GRP estimates based on Queensland Treasury and Trade methodology. Employment figures based on 4-quarter averages. GRP figures based on 2015–16 prices. R² = 0.1329.
Regions of the future

Since 2000–01, Australia’s economic growth has largely been distributed amongst capital cities — Mining regions are the exception to this. Australia is better off as a result of this concentration. Individually, some regions are not as well off as the average and as cities continue to grow, regions are likely to fall further behind as a share of the economy (i.e. inequality between regions and cities is likely to grow).

The concentration of economic activity in cities is occurring from a natural incentive for people and firms to be close to each other — there are big benefits to agglomeration. These benefits take the form of deeper labour and consumer markets, increased access to specialised suppliers (inputs and services), economies of scale, knowledge spill-overs and lower transportation costs.

Technological change is shifting the Australian economy into knowledge-intensive industries that thrive in the centre of large cities. Knowledge-intensive industries rely on human capital as the primary factor of production. This means they are less likely to locate in regional Australia because they typically benefit more from critical mass of human capital and agglomeration. The overall shift of knowledge-intensive industries into the centre of large cities is occurring despite technology improvements that also enable people to work remotely.

Trade provides new market opportunities for domestic firms, stronger productivity and innovation through competition. Trade openness encourages economic activity to concentrate in certain regions to gain access to international markets and benefit from trade.

The concentration of economic activity in capital cities makes it difficult to predict long-term sources of growth in regional areas. However, implications of this concentration may be larger for cities themselves rather than regional areas. Rapidly growing cities put pressure on infrastructure and investment may not keep up. With the economic centre of gravity shifting to CBDs, transporting more people from outer areas to jobs in the centre of cities will be challenging. Long commute times have implications for labour force participation and health. In part, the future economic success of Australia will depend on having cities that function well and can adjust to growing demands.
Pushing water **uphill**

Danielle Wood  
*Budget Policy and Institutions Program Director, Grattan Institute*

Geography is destiny, or so we are often told. In which case, what do geographic trends in population and economic activity tell us about Australia’s future policy challenges?

Australia is highly urbanised, and becoming more so. The most densely populated parts of the country house 80 per cent of the population but occupy less than one per cent of the land mass. And population has grown faster in our cities than elsewhere over the past decade. The Pilbara mining region and the major regional centres, such as Bendigo in Victoria and Wollongong in New South Wales, have also increased their populations, but the populations of much of the rest of regional Australia are either stagnant or declining.

These regional differences in population growth reflect longer-term structural changes in the Australian economy.

As in other developed economies, an increasing proportion of the Australian workforce is employed in service industries. Over 50 years, employment in Services has risen from five in ten workers to eight in ten workers. Service jobs, particularly professional services, tend to cluster in cities and their centres. This is because there are big benefits to ‘agglomeration’, being close to lots of other service firms. These Services jobs attract people both from overseas and within Australia who are younger and more educated than the general population. So it is not surprising that cities have a higher proportion of young people, immigrants, and people with a tertiary education than regional areas.

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Figure 3.8: Population growth is highest in the capitals, some regional centres and mining regions

Population growth 2006 to 2016 (per cent)

- <0
- 0.0
- 0.6
- 1.0
- 1.3
- 1.5
- 1.9
- 2.9

In contrast, the loss of agricultural and manufacturing work is felt most keenly in regional and outer-suburban areas. Populations in these areas tend to be older and have a higher proportion of the population born in Australia.

But it’s not all bad news for the regions. Analysis of tax return data by postcode shows that while incomes are on average higher in the cities, income growth per person has been similar in the regions and the cities over the past decade. And nor is unemployment notably worse in the regions.112

Governments should not fight the ‘gravitational’ pull of the cities and major regional centres. Past attempts at intervention have been expensive and did little to increase regional growth and productivity. Governments are better off focusing on building and maintaining transport infrastructure links (but only where the benefits outweigh the costs) and improving the quality of services in regional areas.

Governments should also do more to ensure our cities remain resilient and productive.

The disconnect in Australia’s major cities between where the people are and where the jobs are is a major policy problem. Most city jobs have been added within 10 km of the central business districts (CBDs). But, other than high-rise apartments in the centre, almost all the population growth has been added 20 km or more from the city centres, with housing estates being built on what was farmland. There has been some medium-density development in middle-ring suburbs but not enough to keep up with population growth. Australia’s large cities remain particularly sparsely populated compared with cities of similar size.

Notes: The growth rate is calculated as the compound average growth rate (CAGR) in income per tax filer 2003–04 to 2014–15. A small number of outliers have been excluded from the chart to make it more readable.


114 Kelly J-F and Donegan P 2015, City limits: why Australia’s cities are broken and how we can fix them, Melbourne University Press, pp. 33.
115 Daley J, Coates B and Wiltshire T (forthcoming), Housing affordability, Grattan Institute.
The lack of new homes being built in desirable areas near high-paying jobs has contributed to strong increases in house prices in our cities. And limiting housing near high-paying productive jobs reduces economic growth.\textsuperscript{116}

Governments should reform planning and zoning regulations to increase density in the middle-ring suburbs of our cities. The focus should be medium-density development: townhouses and terrace houses, which is what people say they want.\textsuperscript{117}

Governments should also act to limit growing road congestion in our major cities. In Sydney and Melbourne, some car trips into the CBD take twice as long during the morning and afternoon peaks as in the middle of the night. And the problem is getting worse as the population grows.\textsuperscript{118} Congestion charges in the most congested areas of each city during peak periods would help improve travel times and spread traffic across the day.

Ultimately, policymakers must work with, not against, the forces shifting Australia’s economic geography. Governments can’t push economic water uphill, but they can smooth the transition by ensuring that regional areas have access to good-quality services and that our cities are flexible enough to cope with growing numbers of people and activity.

\begin{itemize}
\item Daley J, Coates B and Wiltshire T (forthcoming), *Housing affordability*, Grattan Institute.
\item Kelly J-F, Weidmann B and Walsh M 2011, *The housing we’d choose*, Grattan Institute.
\end{itemize}