

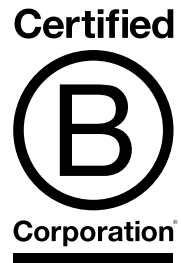
# ECONOMIC PERFORMANCE OF AUSTRALIA'S CITIES AND REGIONS

2017-2018  
DEC 2018



Independent  
insight.





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## About this publication

For the past decade, SGS Economics and Planning (SGS) has published *Economic Performance of Australia's Cities and Regions* to fill a void in economic policy research.

The publication reveals the economic growth in Australia's major cities and regions and exposes their planning, infrastructure and economic development challenges. For the first time, the publication includes small area gross domestic product estimates and an interactive map and dashboard.

The publication draws on research by SGS and data from the annual Australian Bureau of Statistics (ABS) Australian National Accounts: State Accounts (Cat. No. 5220.0).

Section one of this publication compares the economic outcomes for each region, section two provides an overview of the economic performance of each region and section three describes the methodology.

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## About SGS

SGS Economics and Planning (SGS) is an independent consulting business with a social purpose. Our cohesive team of economists, planners, mathematicians, researchers and spatial analysts explore and create solutions to social, economic and environmental issues that impact communities across Australia and overseas.

We are driven by a collective desire to shape a more equitable, prosperous and sustainable world. We work first and foremost for the public interest and aspire to provide Australia's best independent policy advice. A certified B Corp, we are part of a global movement of leaders using business as a force for good.

With evidence and insight, we help our clients make informed decisions and shape sustainable places, communities and economies. We work with all tiers of government, universities, peak bodies, not-for-profit organisations, the development industry and other private businesses across more than twelve sectors including housing, transport, education, environment and health. Our diverse services intersect across the public policy decision-making process: research and analysis, planning and strategy, policy and governance, appraisal and evaluation and data and spatial analytics.

# 01

## Overview

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Our research reveals that while Melbourne and Sydney continue to drive the national economy many regional areas have seen a return to economic growth.

”

# Overview

*Economic Performance of Australia's Cities and Regions* provides improved insights into the relative economic performance of Australia's major capital cities and key regions. It highlights the productivity challenges facing these cities and regions.

During the early 1980s, the economic structure of Australia was reasonably homogeneous. Manufacturing was the primary income generator across most parts of the country. Select regional areas specialised in industries such as agriculture, mining and manufacturing while knowledge-intensive services were the central core of Australian cities. At this time, statistics at a national level would have shown an adequate representation of the economic conditions across the whole of Australia.

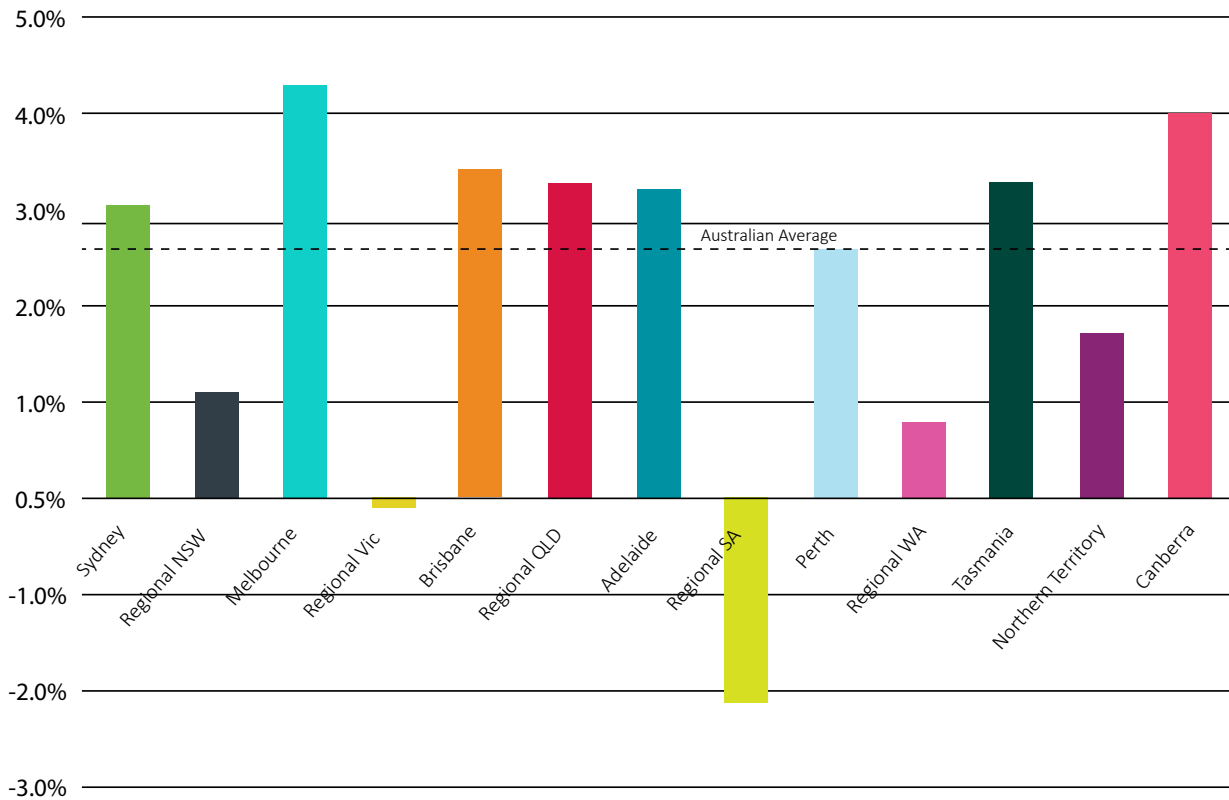
However, the economic evolution of the past 30 years paints a far more complex picture.

The rise of knowledge-intensive services, differentials in government policy and investment, the resources boom, the declining competitiveness of manufacturing and other notable changes have created a patchwork economy.

## 1.1 GDP GROWTH RATES

**Figure 1** shows a wide range of growth rates across the country during 2017-18. The regions with the most growth were Melbourne (4.3 per cent), Canberra (4.0 per cent), Brisbane (3.4 per cent), Regional Queensland (3.3 per cent) and Tasmania (3.3 per cent). Regional South Australia (-2.1 per cent) experienced a technical recession during 2017-18 on the back of a fall in extraordinarily high agricultural production in 2016-17. Regional Victoria (-0.1 per cent) also saw a fall in agricultural production. Regional Western Australia (0.8 per cent) and Regional New South Wales (1.1 per cent) were the slowest growing regions.

FIGURE 1: GDP GROWTH RATES - VOLUME MEASURE



Source: Australian National Accounts: State Accounts, Cat. No. 5220.0 and SGS Economics and Planning

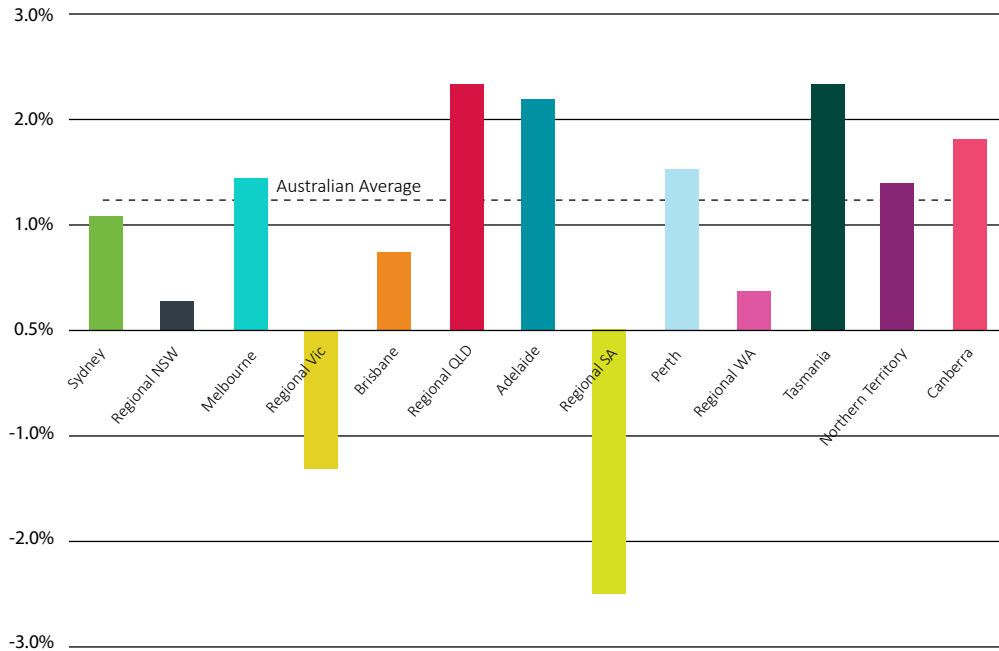
**Figure 2** shows GDP growth in per capita terms. The regions with the most substantial growth were Regional Queensland, Tasmania (both 2.3 per cent), Adelaide (2.2 per cent) and Canberra (1.8 per cent). Regional South Australia (-2.5 per cent) and Regional Victoria (-1.3 per cent) experienced the declines in per capita GDP growth.

**Figure 3** presents the level of GDP per capita. Regional Western Australia had by far the highest GDP per capita (\$269,900) which is driven by iron ore and other mineral production.

Regarding the major capital cities, Sydney's GDP per capita of \$84,700 was the highest, followed by Perth (\$72,800), Melbourne (\$70,500), Brisbane (\$68,800) and Adelaide (\$61,200). Tasmania (\$57,700), Regional New South Wales (\$54,500), Regional Victoria (\$48,800) had the lowest GDP per capita.

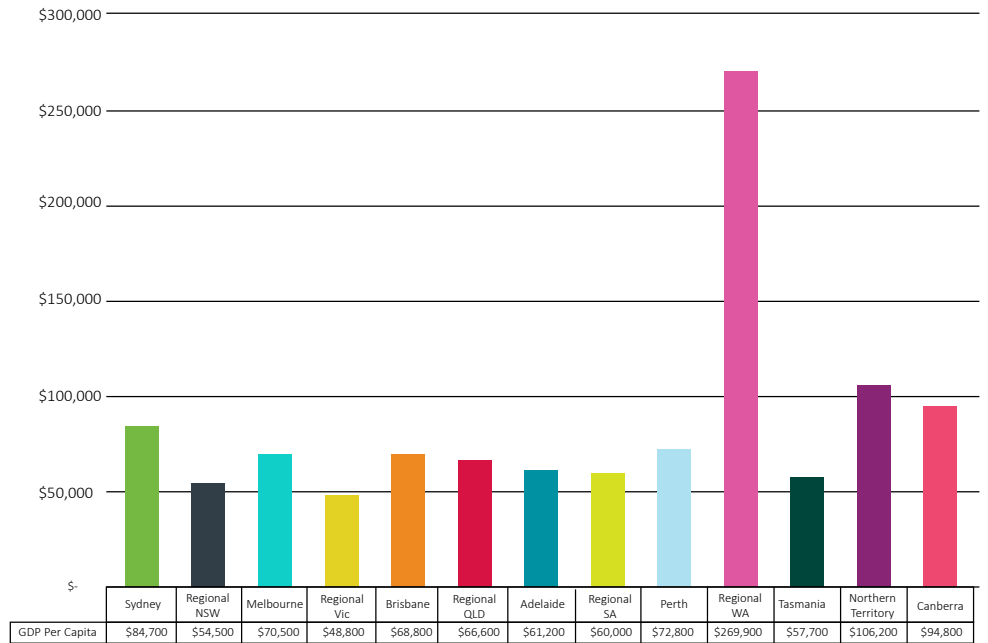


FIGURE 2: 2017-18 GDP PER CAPITA GROWTH RATES – VOLUME MEASURE



Source: Australian National Accounts: State Accounts, Cat. No. 5220.0 and SGS Economics and Planning

FIGURE 3: 2017-18 GDP PER CAPITA – VOLUME MEASURE



Source: Australian National Accounts: State Accounts, Cat. No. 5220.0 and SGS Economics and Planning





**Table 1** presents the value of GDP, annual growth rate, the average annual growth rate for the last decade and the share of national GDP for each region.

**TABLE 1: GROSS DOMESTIC PRODUCT - VOLUME MEASURE 2017-18**

REGION	GDP MILLION	2017-18 GROWTH	AVERAGE ANNUAL GROWTH 07-08 TO 17-18	SHARE OF GDP
Sydney	\$443,090	3.1%	2.7%	24.4%
Regional NSW	\$150,185	1.1%	1.7%	8.3%
Melbourne	\$351,016	4.3%	3.0%	19.3%
Regional Victoria	\$72,945	-0.1%	0.8%	4.0%
Brisbane	\$170,505	3.4%	2.3%	9.4%
Regional QLD	\$168,999	3.3%	2.2%	9.3%
Adelaide	\$82,531	3.2%	1.7%	4.5%
Regional SA	\$23,473	-2.1%	0.7%	1.3%
Perth	\$150,287	2.7%	3.3%	8.3%
Regional WA	\$105,596	0.8%	4.5%	5.8%
Tasmania	\$30,266	3.3%	1.4%	1.7%
Northern Territory	\$26,200	1.7%	3.4%	1.4%
Canberra	\$39,442	4.0%	3.0%	2.2%
<b>Australia</b>	<b>\$1,814,535</b>	<b>2.8%</b>	<b>2.5%</b>	<b>100%</b>



## 1.2 CONTRIBUTION TO GROWTH

**Table 2** presents each region's contribution to GDP growth for the 1990s, 2000s, 2010s, the most recent financial year and the whole period (1989-90 to 2017-18). This demonstrates the importance of Australia's two largest cities, Sydney and Melbourne, to the national economy, and the variable contributions of the resource-reliant economies of Regional Western Australia and Queensland.

Sydney has traditionally been a significant driver of Australia's economy, accounting for 29.8 per cent of Australia's economic growth in the 1990s. This title was ceded to Melbourne in the 2000s (19.1 per cent), with Sydney accounting for 17.1 per cent of national growth in the 2000s.

The Harbour City's economy has returned to its preeminent position in the last seven years, accounting for 25.9 per cent of growth since 2009-10, and 25.1 per cent in the most recent year.

Meanwhile, Melbourne has demonstrated increasing importance to Australia's economy, successfully transforming from the "rust belt" economy of the late 80s to the diversified economy of today. This is illustrated through Melbourne's increasing contribution to national growth, from 15.0 per cent in the 1990s and 19.1 per cent in the 2000s, to 22.2 per cent over since 2009-10. In 2017-18, Melbourne accounted for 27.7 per cent of national growth, the most significant contributor.

Table 2 also illustrates the impact of the resources boom on Australia's economy. Perth's economy accounted for 6.0 per cent of growth in the 1990s, increasing to 11.5 per cent in the 2000s and 9.6 per cent in the 2010s. Regional Western Australia showed a similar trend, from 4.2 per cent in the 1990s to 7.4 per cent in the 2000s, and 8.8 per cent in the 2010s.

There has been a transition in Regional Western Australia from a construction boom to a production boom, with new mine development curtailed by falls in commodity prices.

Table 2 presents Statistical Area 3 (SA3 ) level with very large economies and their contribution to GDP growth. These selected SA3 represented 36 per cent of national GDP growth in 2017-18. These areas cover the inner suburbs of the major cities, major suburban employment clusters and mining areas.

TABLE 2: CONTRIBUTION TO GDP GROWTH – VOLUME MEASURE

REGION	1990S	2000S	2010S	MOST RECENT YEAR	1989-90 2017-18
Sydney	29.8%	17.1%	25.9%	25.1%	22.8%
Regional NSW	11.1%	5.5%	6.0%	4.4%	6.6%
Melbourne	15.0%	19.1%	22.2%	27.7%	19.5%
Regional Vic	7.9%	2.5%	2.0%	1.1%	3.0%
Brisbane	10.5%	12.9%	8.4%	10.7%	10.6%
Regional QLD	8.5%	12.6%	9.1%	11.4%	10.9%
Adelaide	5.1%	4.2%	2.6%	4.7%	3.7%
Regional SA	1.0%	1.6%	0.3%	-0.6%	0.9%
Perth	6.0%	11.5%	9.6%	7.9%	9.7%
Regional WA	4.2%	7.4%	8.8%	1.8%	7.4%
Tasmania	0.1%	1.6%	0.9%	1.9%	1.2%
Northern Territory	-0.5%	1.6%	1.9%	0.9%	1.6%
Canberra	1.2%	2.4%	2.5%	3.0%	2.2%
<b>Australia</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: Australian National Accounts: State Accounts, Cat. No. 5220.0 and SGS Economics and Planning

Melbourne City was the most significant contributor to national GDP growth with 8.6 per cent, followed by Sydney Inner City with 7.7 per cent.

Yarra and Port Phillip SA3s, which adjoin Melbourne City contributed a further 2.7 per cent to GDP growth.

Adjoining SA3s of Dandenong and Monash in Melbourne's south east added a combined 2.6 per cent to GDP growth.

While North Sydney – Mosman and Ryde - Hunters Hill, which forms the northern section of Sydney's Global Economic Corridor, contributed a further 2.5 per cent to GDP growth.

The two Pilbara SAs in Western Australia's north combined to contributed a 2.2 per cent to GDP. While the Goldfields, which covers a large part of Regional Western Australia and includes Kalgoorlie, contributed 0.6. The mining region of the Bowen Basin – North contributed 0.9 per cent to GDP growth in 2017-18.



TABLE 3: SA3 CONTRIBUTION TO 2017-18 GDP GROWTH - VOLUME MEASURE

STATE	LOCATION	GDP MILLION	CONTRIBUTION TO GDP GROWTH	ANNUAL GROWTH	5 YEARLY GROWTH
NSW	Sydney Inner City	\$135,803	7.7%	2.9%	3.7%
VIC	Melbourne City	\$103,146	8.6%	4.3%	3.9%
QLD	Brisbane Inner	\$43,028	3.3%	3.9%	2.7%
WA	Perth City	\$43,570	2.8%	3.3%	-0.2%
WA	West Pilbara	\$26,848	1.2%	2.4%	2.5%
WA	East Pilbara	\$23,241	1.0%	2.3%	6.9%
SA	Adelaide City	\$20,746	1.0%	2.6%	2.2%
NSW	North Sydney- Mosman	\$20,283	1.2%	3.1%	4.6%
NSW	Ryde- Hunters Hill	\$18,480	1.3%	3.6%	5.0%
VIC	Port Phillip	\$18,052	1.5%	4.2%	3.3%
NSW	Parramatta	\$17,028	0.9%	2.8%	1.6%
VIC	Monash	\$16,939	1.4%	4.3%	3.4%
VIC	Dandenong	\$15,990	1.2%	3.7%	2.8%
WA	Goldfields	\$15,169	0.6%	2.0%	6.3%
VIC	Yarra	\$14,355	1.2%	4.2%	3.3%
QLD	Bowen Basin- North	\$13,799	0.9%	3.2%	7.3%

### 1.3 INTEREST RATE COMPARISON

While overall Australia's cities have displayed a level of strength and resilience reflecting the competitive advantages built up over the last three decades, each city faces challenges to ensure the ongoing prosperity of their residents through long-term growth. Some of these challenges are common to all cities (e.g. providing efficient infrastructure, attracting skilled workers, developing industry and ensuring liveability), however, others are unique to certain cities due to city-specific industry structures and other geographic factors.

At a city level, there are limited policy levers available to manage the individual economies of Australia's cities in the short-term. At the national level, interest rates are used as a tool to help manage short-term economic movements. As the economy grows at a faster rate, interest rates are increased to ensure that the rate of growth does not become unmanageable. Conversely, a slowing economy would see interest rates cut to stimulate growth.

However, as shown in **Table 4**, the rates of growth across the country vary greatly so setting a single interest rate for all regions is challenging. To highlight the economic divergence between regions, Table 4 presents a hypothetical situation where each region has its own central bank setting local interest rates. The weighted sum of all the rates is equal to the current Reserve Bank of Australia (RBA) target cash rate of 1.5 per cent.

In this hypothetical situation, during 2017-18 eight regions would have seen an increase in their interest rates, two would have remained unchanged and three regions would have cut interest rates. The Reserve Bank of Sydney would have decreased interest rates from 3.50 per cent to 2.75 per cent in response to slowing economic growth. Regional South Australia and the Northern Territory would have also seen reductions in their interest rates.

TABLE 4: HYPOTHETICAL REGIONAL INTEREST RATES

REGION	INTEREST RATE 2014-15	INTEREST RATE 2015-16	INTEREST RATE 2016-17	INTEREST RATE 2017-18
Sydney	3.50%	3.75%	3.50%	2.75%
Regional NSW	1.25%	0.25%	0.50%	0.50%
Melbourne	2.00%	2.25%	2.25%	2.50%
Regional Vic	1.00%	0.25%	0.50%	0.50%
Brisbane	1.00%	0.25%	0.25%	0.50%
Regional QLD	1.00%	0.25%	0.25%	0.50%
Adelaide	1.00%	0.25%	0.25%	0.50%
Regional SA	1.00%	0.50%	1.00%	0.50%
Perth	1.25%	0.50%	0.25%	0.50%
Regional WA	2.75%	0.50%	0.25%	0.50%
Tasmania	1.00%	0.25%	0.25%	1.00%
Northern Territory	5.00%	3.50%	3.25%	2.00%
Australian Capital Territory	1.75%	1.50%	2.00%	2.50%
<b>Australia</b>	<b>2.00%</b>	<b>1.50%</b>	<b>1.50%</b>	<b>1.50%</b>

Source: SGS Economics and Planning and Reserve Bank of Australia

# 02

## Economic Performance

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The patchwork economy of strong inner cities in Melbourne and Sydney and weak regional areas looks to be over with growth rates across the country starting to converge.

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# SYDNEY

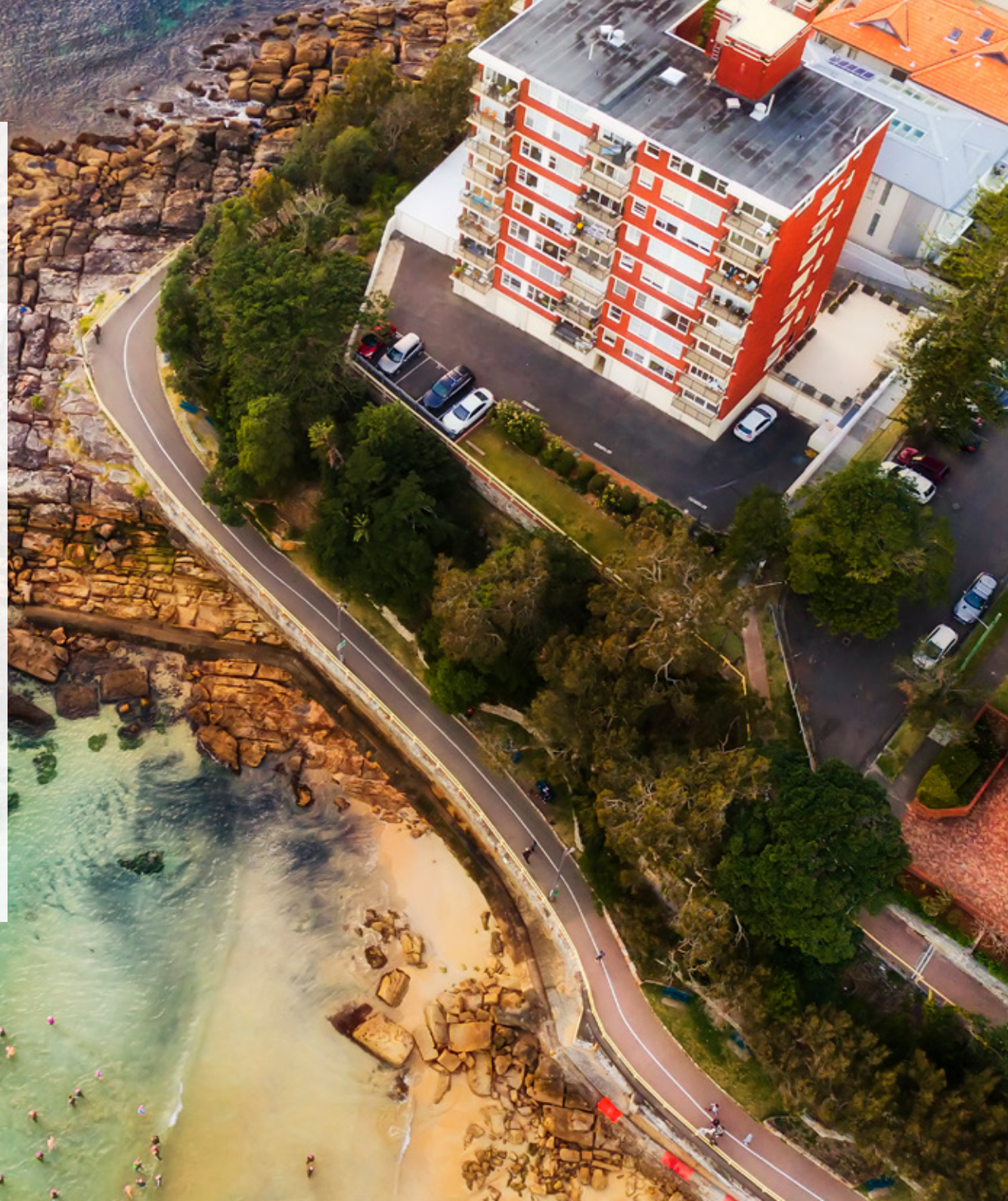
Sydney is usually the most important city in Australia for economic growth. However, the decade from 2000-10 could be described as Sydney's lost decade.

Many factors contributed to this period of relative sluggish economic growth - such as the ineffective application of urban policy, including:

- Poor housing policies which generated congestion and impacted affordability
- Lack of investment in transport capacity
- Limited opportunities for businesses to locate in strategic locations at affordable rents.

While these challenges still exist, there have been improvements in housing supply in Sydney over the past few years, with more supply in the pipeline. There have also been new commercial redevelopments in the central business district including Barangaroo and the revitalisation of established precincts such as Martin Place and Circular Quay, and increased investment in Parramatta central business district.

Public transport projects including the Sydney Metro City & Southwest, Sydney Metro West, Western Sydney Airport rail projects across the city will also provide additional transport capacity in the medium to long term.





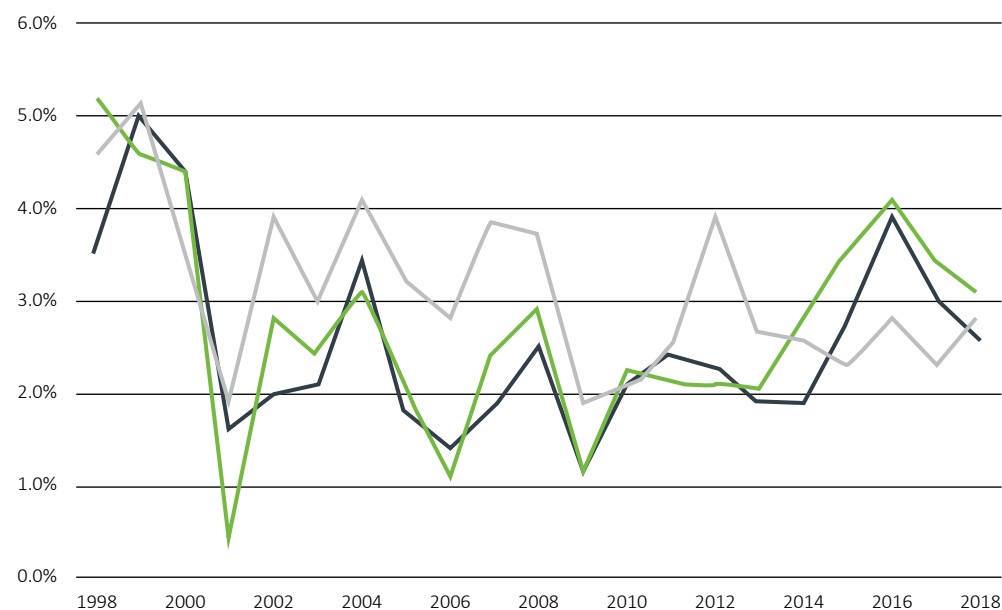
## ECONOMIC PERFORMANCE - SYDNEY

**Figure 4** presents the Volume measure (i.e. excluding inflation) of GDP growth for Sydney, compared to New South Wales and Australia. Sydney represents around 75 per cent of the New South Wales economy, and as a result, the Sydney and New South Wales growth rates track very closely together. Leading into 1999-00 Sydney had a higher rate of growth than the rest of Australia. Between 2000-01 and 2012-13, Sydney's growth underperformed relative to the rest of Australia, with the 2008-09 Global Financial Crisis impacting Sydney particularly hard. In the past four years, Sydney's economy significantly outperforms the rest of the country.

Sydney's GDP growth slowed in 2017-18 to 3.1 per cent, following three years of very high growth. Growth over the past few years has been linked to mainly cyclical factors. Sydney's role as a major financial hub has provided access to global capital flows, which over the past few years have been flooded with liquidity. The strong growth in Sydney's Financial and Insurance Services sector (the city's largest industry) and low interest rates have helped support growth across several other industries.

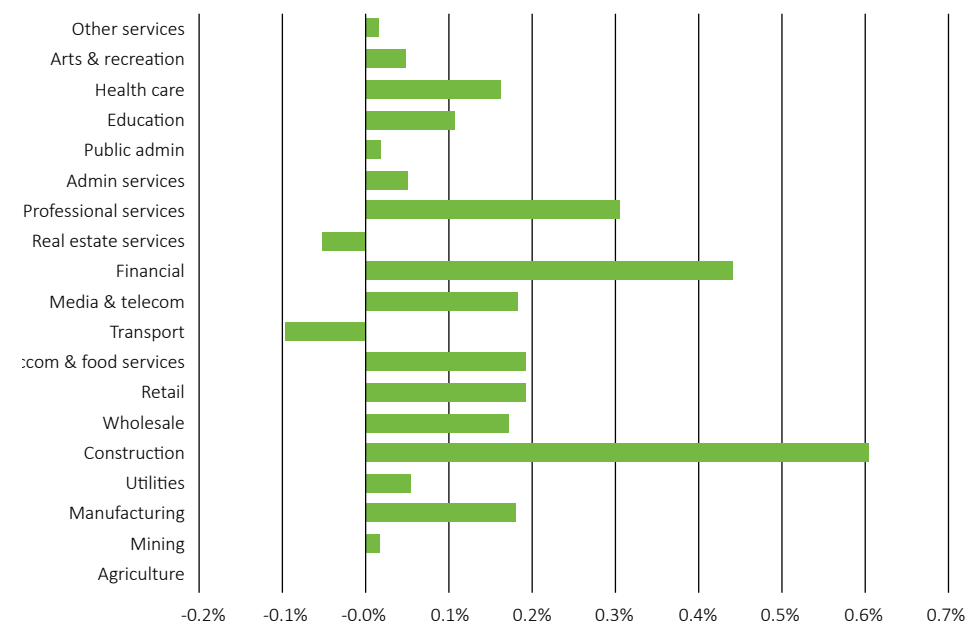
**Figure 5** presents the industry contribution to Sydney GDP growth for 2017-18. Construction (0.6 percentage points), Financial & Insurance Services (0.4 percentage points) and Professional Services (0.3 percentage points) were the most significant contributors to growth. Six industries contributed between 0.1 and 0.2 percentage points. Two industries, Transport and Real Estate services, subtracted from economic growth.

FIGURE 4: SYDNEY GDP GROWTH - VOLUME MEASURE



Source: Australian National Accounts: State Accounts, Cat. No. 5220.0 and SGS Economics & Planning.

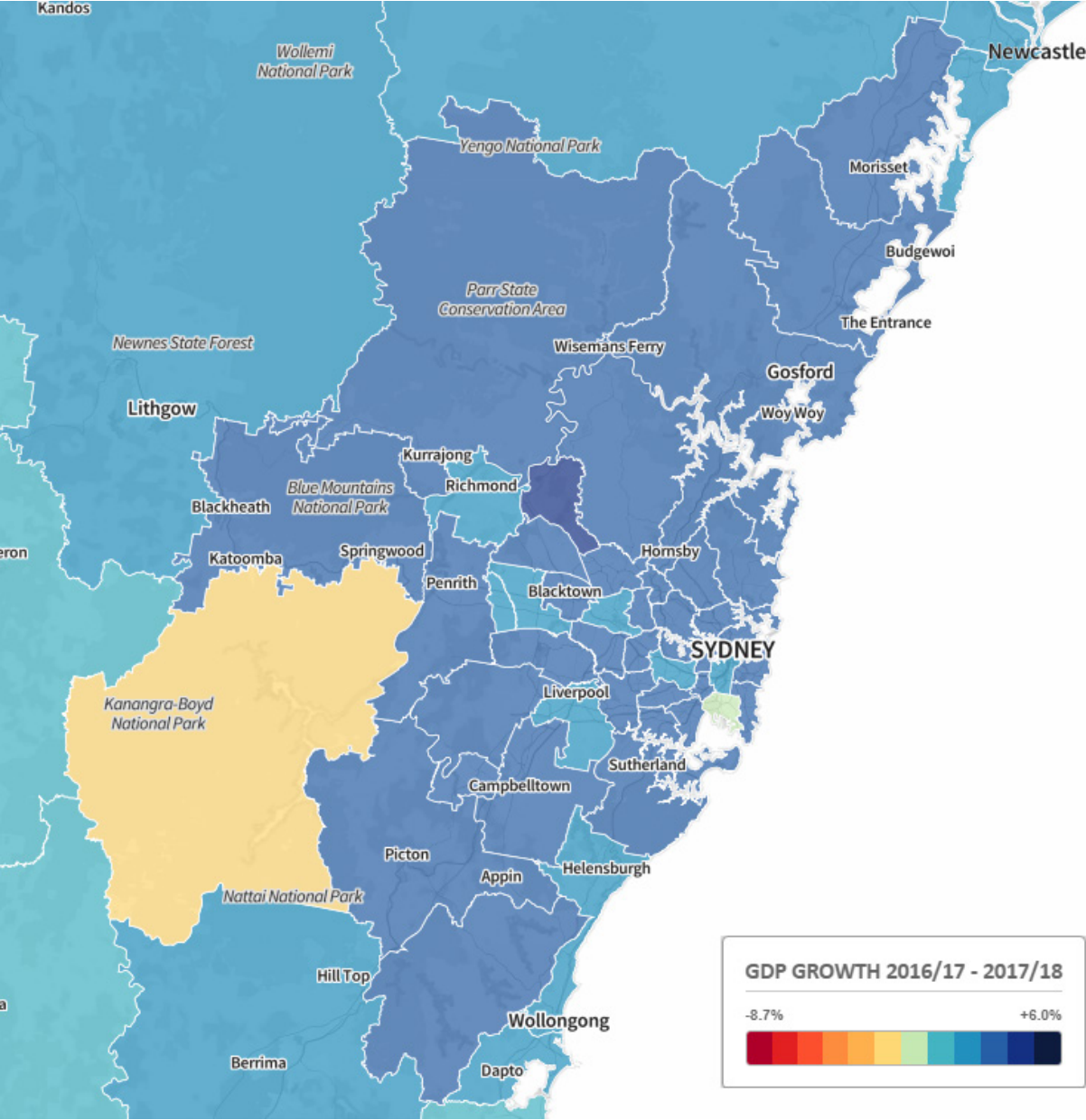
FIGURE 5: CONTRIBUTION TO SYDNEY GDP GROWTH 2017-18



Source: SGS Economics and Planning.



FIGURE 6: SYDNEY SA3 GDP GROWTH - VOLUME MEASURE



Source: SGS Economics and Planning

Figure 6 presents the GDP growth rates at the SA3 level. Most SA3s in Sydney had growth rates of between 3.0 and 3.5 per cent. This relatively even growth pattern is different to recent years when the eastern half of Sydney was growing much faster than the west.

Greenfield growth areas such as Camden and Baulkham Hills (both 3.7 per cent) had slightly higher growth rates, driven by high population growth.

Sydney Inner City (the largest SA3 in Sydney) had a growth of 2.9 per cent, well below the 3.7 per cent average growth rate over the past five years. This was driven by slower growth in Financial and Professional Services sectors.

In terms of contribution to growth, the three largest SA3 were Sydney Inner City (29.3 per cent), Ryde – Hunters Hill (4.9 per cent) and North Sydney Mosman (4.7 per cent).

A range of factors drive economic growth, including population growth. To eliminate the impact of population growth, **Figure 7** presents growth in Sydney’s GDP per capita, again compared to New South Wales and Australia. The overall pattern is similar to that of the GDP growth rate.

Sydney’s GDP per capita of \$84,700 is \$11,400 higher than the national average. Sydney’s GDP per capita is \$30,200 higher than Regional NSW, the highest on record.



FIGURE 7: SYDNEY GDP PER CAPITA GROWTH - VOLUME MEASURE



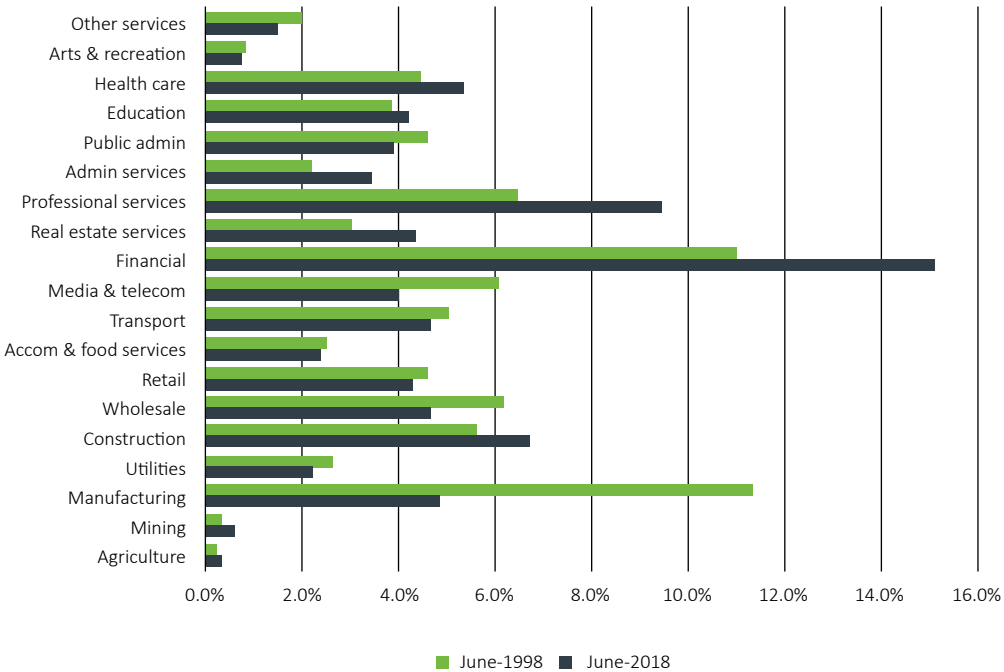
Source: SGS Economics and Planning

**Figure 8** shows the Professional Services and Financial & Insurance Services industries represent 25.6 per cent of the economy of Sydney. This is up from 17.5 per cent in 1996-97. The Financial & Insurance Services share of Sydney's economy was 15.1 per cent in 2017-18. This is by far the largest industry in Sydney. Other significant changes to the industry structure of Sydney over the same period include the decline in Manufacturing from 11.5 per cent to 4.9 per cent.

Sydney is most labour productive (gross value added per hour worked) city of the major Australian capital cities. **Figure 9** shows that Sydney's labour productivity grew faster (0.3 per cent) than the national average (0.2 per cent) and is now at a record high of \$95.2 per hour worked. This reflects two related factors. The first is the relative concentration of high labour productivity industries (mostly Financial & Insurance Services and Professional Services) located in Sydney. The second reflects the advantages, in terms of economies of scale and scope, which are offered to firms due to the size of the Sydney economy.

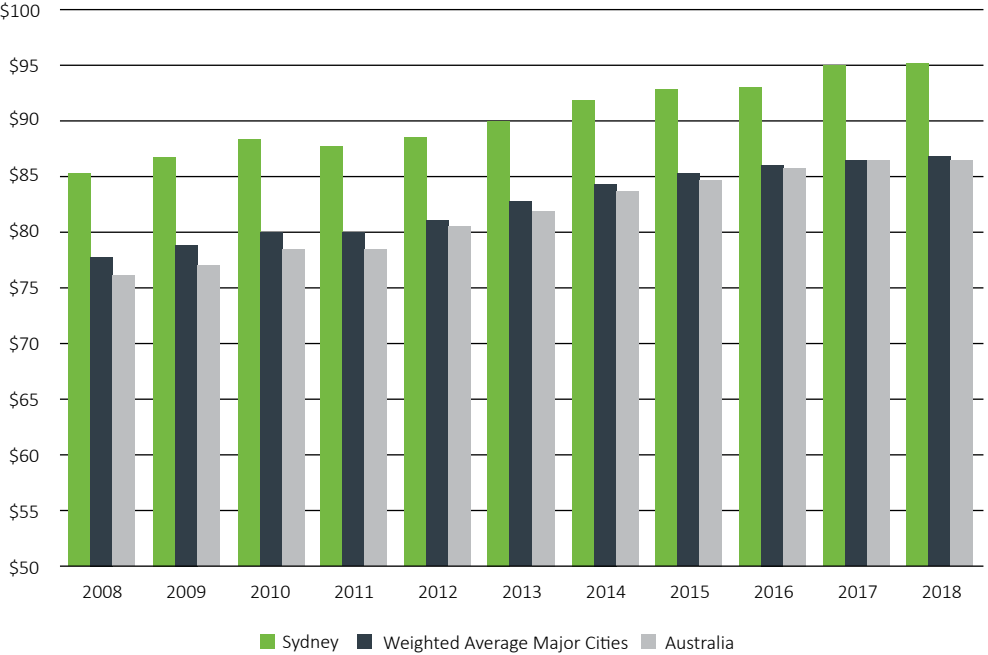


FIGURE 8: SYDNEY INDUSTRY STRUCTURE



Source: SGS Economics and Planning

FIGURE 9: LABOUR PRODUCTIVITY, SYDNEY



Source: SGS Economics and Planning



# MELBOURNE

Over the past 25 years, Melbourne has successfully transitioned from an economy heavily reliant on a declining Manufacturing sector to a diversified economy with significant growth in Professional and Financial & Insurance Services.

Much of the growth has resulted from investments made over the past two decades, including developing Southbank and Docklands central business district with “brownfields” to accommodate significant levels of new employment. Road projects, such as the Western Ring Road, CityLink and EastLink, have also helped improve connectivity across the city.

These factors have produced agglomeration economies which enable high-productivity firms to flourish. However, this employment growth has absorbed the public transport capacity to the Melbourne central business district. Without additional transport investment, Melbourne risks facing lower levels of economic growth.

Aside from the Regional Rail Link, Melbourne has had limited significant transport improvement in recent years. The proposed Melbourne Metro Rail Project will change this. However, the tentative completion date of 2024 means the benefits are still some way off.

More immediately, the Victorian Government’s program to remove 50 level crossings from the Metropolitan train network over the next seven years will bring incremental benefits in increased rail and road network capacity. The West Gate Tunnel is expected to open in 2022 and will improve connectivity for western Melbourne.





## ECONOMIC PERFORMANCE - MELBOURNE

**Figure 10** compares GDP growth for Melbourne with Victoria and Australia. Melbourne experienced a larger boom in 1999 and a larger bust in 2001 than the rest of Australia. This period was influenced by the introduction of the new taxation system which caused changes in consumption patterns to avoid the Good & Services Tax. There was also a global recession in 2001. Melbourne's growth between 2001-02 to 2004-05 was noticeably higher than Australia. This was driven by robust growth in Financial & Insurance Services in Melbourne.

In 2017-18, Melbourne GDP growth was 4.3 per cent. Melbourne has outperformed the Australian economy over the past five years, with average annual growth of 3.8 per cent. The slowing of growth in 2016-17 was driven by a sharp decline in Manufacturing related to the closure of the car manufacturing industry.

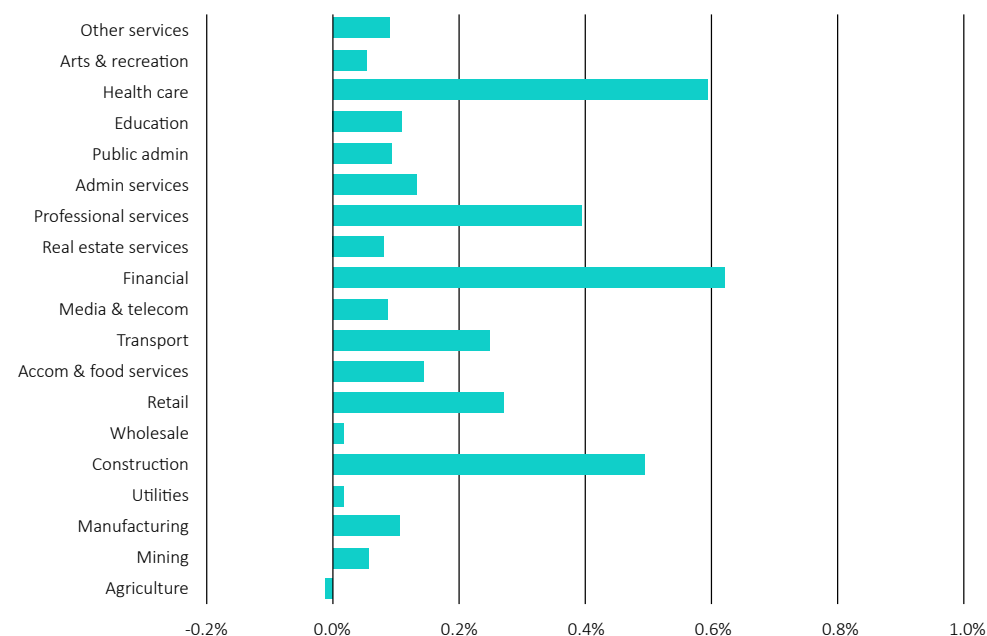
**Figure 11** presents per capita GDP growth for Melbourne, Victoria and Australia. After a period of GDP per capita contracting, the past five years have seen increasing growth in GDP per capita.

FIGURE 10: MELBOURNE GDP GROWTH - VOLUME MEASURE



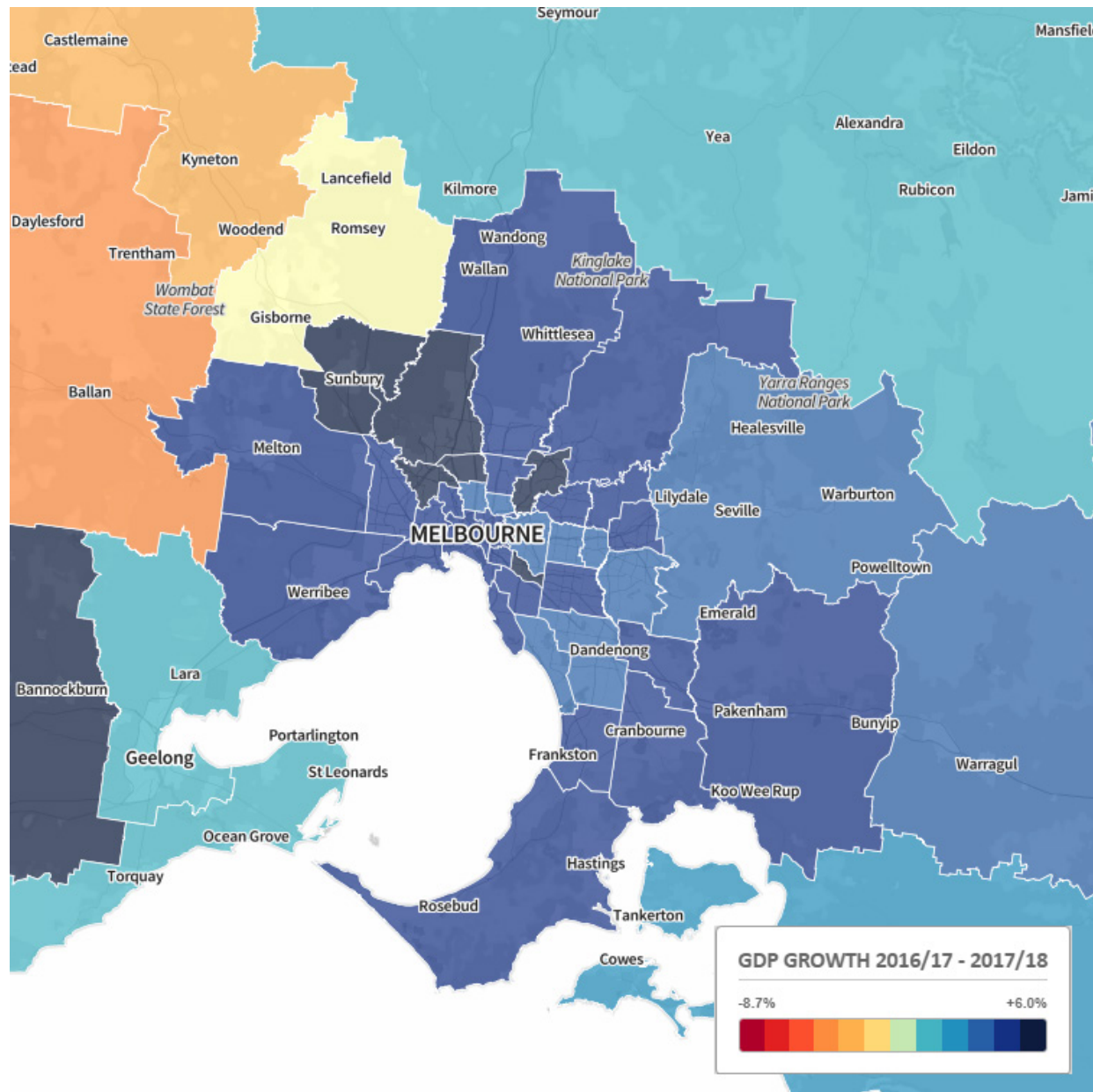
Source: Australian National Accounts: State Accounts, Cat. No. 5220.0 and SGS Economics and Planning

FIGURE 11: CONTRIBUTION TO MELBOURNE GDP GROWTH, 2017-18



Source: SGS Economics and Planning

FIGURE 12: MELBOURNE SA3 GDP GROWTH- VOLUME MEASURE



**Figure 12** presents the GDP growth rates at the Statistical Area 3 (SA3) level. Most Melbourne SA3s had growth rates of between 4.0 and 5 per cent.

Tullamarine – Broadmeadows (which includes both Melbourne Airport and the Craigieburn growth corridor) had growth of 5.0 per cent. Many adjoining SA3 along the Metropolitan Ring Road (Keilor (5.5 per cent), Moreland North (5.2 per cent), Brimbank 4.5 per cent)) also saw strong growth.

Melbourne City (the largest SA3 in Melbourne) had a growth of 4.3 per cent which was above the 3.9 per cent average growth rate over the past 5 years. Other inner city SA3, such as Port Phillip, Yarra (both 4.2 per cent), and Stonnington West (4.3 per cent) all had GDP growth in 2017-18 which was higher than the average growth over the past five years.

Regarding contribution to growth, the three largest SA3 were Melbourne City (29.3 per cent), Port Phillip (5.1 per cent) and Monash (4.8 per cent).

Source: SGS Economics and Planning



**Figure 14** shows Professional Services and Financial & Insurance Services represented 21.7 per cent of the economy of Melbourne. This is up from 15.4 per cent in 1997-98. Over the same period, the share of Manufacturing fell from 15.3 per cent to 6.4 per cent (the lowest level on record).

**Figure 15** reveals Melbourne's productivity is below the weighted average for the major capital cities and Australia due to a higher concentration of jobs in lower productivity industries. Melbourne's labour productivity increased by 1.8 per cent during 2017-18 to reach \$83.0.

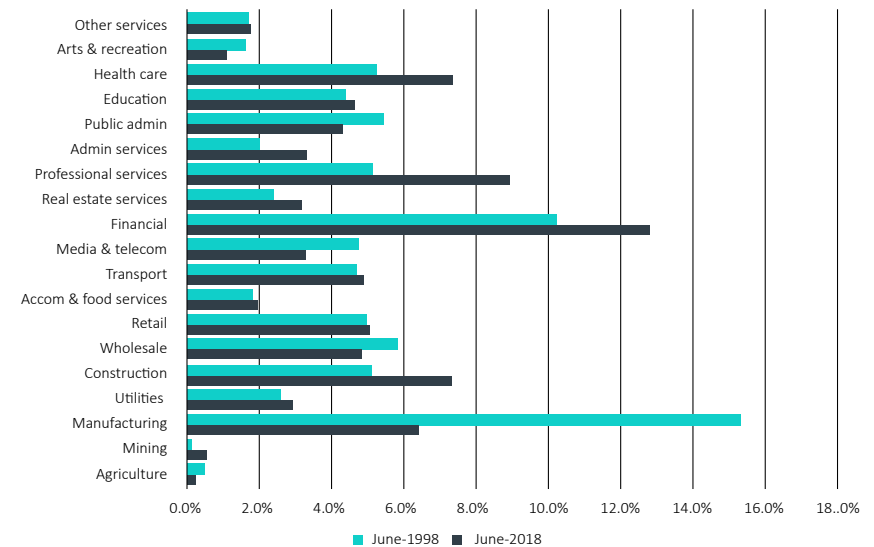


**FIGURE 13: MELBOURNE GDP PER CAPITA GROWTH - VOLUME MEASURE**



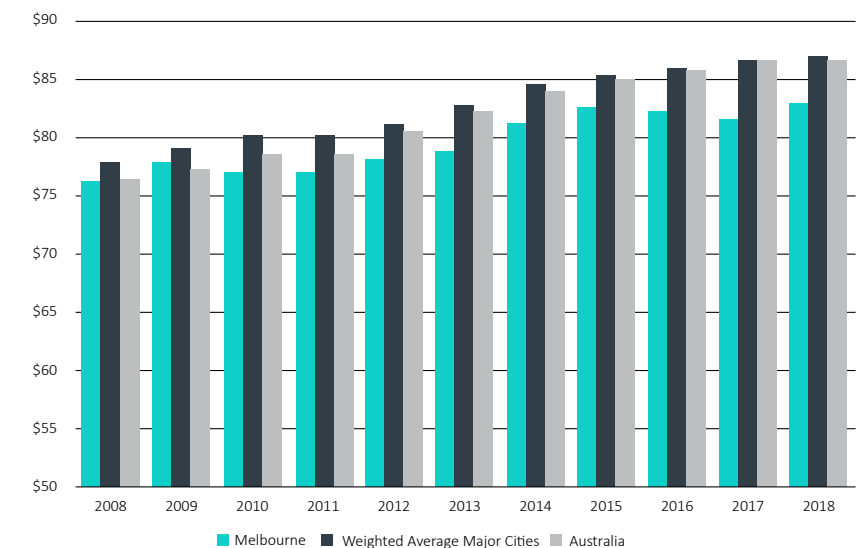
Source: Australian National Accounts: State Accounts, Cat. No. 5220.0 and SGS Economics & Planning

**FIGURE 14: MELBOURNE INDUSTRY STRUCTURE**



Source: SGS Economics and Planning

**FIGURE 15: LABOUR PRODUCTIVITY, MELBOURNE**



Source: SGS Economics and Planning

# BRISBANE

For an extended period, economic growth in Brisbane has been fuelled by population migration, with people from the southern states drawn to employment opportunities, cheaper housing and an attractive lifestyle.

The challenge for Brisbane is to establish a competitive advantage, in addition to population growth, to ensure the city's continued development. Unlike Sydney and Melbourne, Brisbane does not have a deep pool of export-oriented Financial & Insurance Services and Professional Services firms. Therefore, a more diversified industrial makeup will be needed to overcome the cyclical downturn in Mining.

In 2017-18, the Brisbane economy accounted for around half of the Queensland economy. This is the smallest share of all the major capital cities and is the result of a more dispersed population and significant mineral production in Regional Queensland.





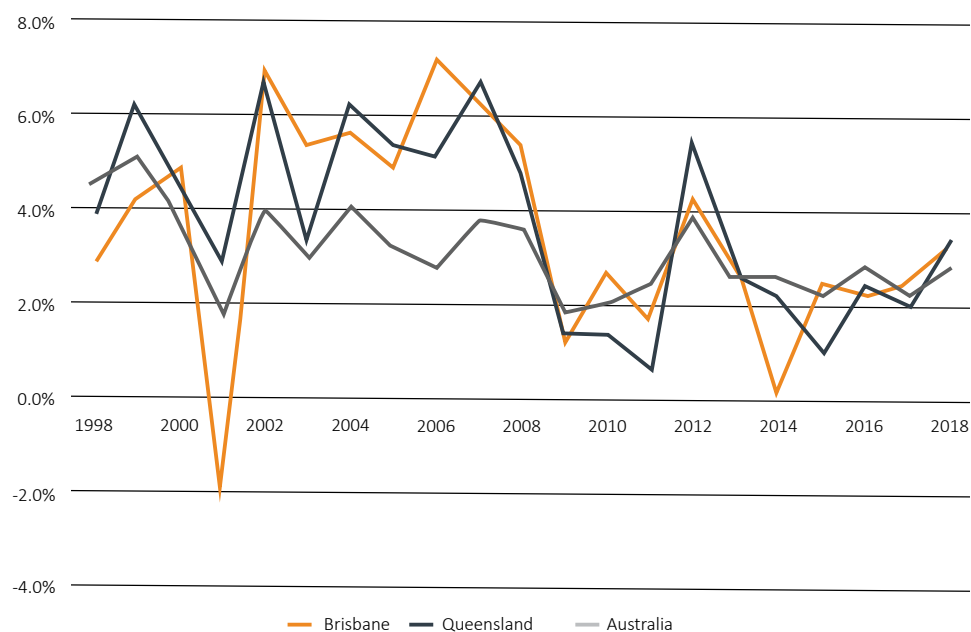
## ECONOMIC PERFORMANCE - BRISBANE

**Figure 16** shows Brisbane's GDP growth was higher than the national average during the early-to-mid 1990s, however, it also experienced a more pronounced contraction around the time of the introduction of the GST. During the 2000s, Brisbane's exposure to the minerals boom ensured growth higher than the Australian average. Brisbane's GDP growth has also displayed significant volatility, with drops in growth experienced in 2008-09 (during the Global Financial Crisis), and in 2010-11 (as a result of the major floods in Queensland).

Since 2014-15, GDP growth in Brisbane has been steadily trending upwards. In 2017-18 GDP growth was 3.4, per cent the highest since 2011-12.

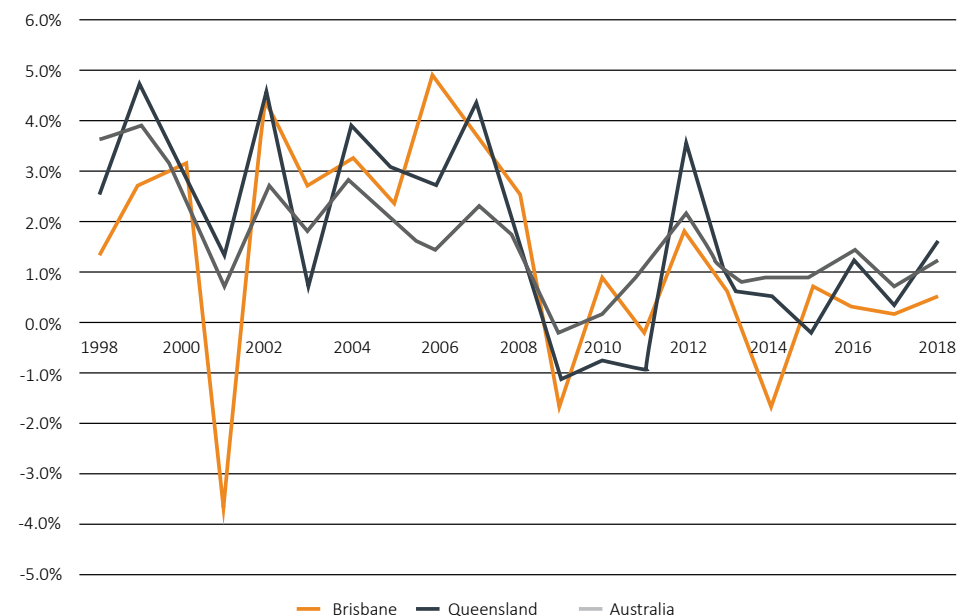
**Figure 17** shows that growth in GDP per capita for Brisbane exhibited a very similar trend to growth in GDP. 2017-18 saw Brisbane's GDP per capita grow by 0.7 per cent.

**FIGURE 16: BRISBANE GDP GROWTH - VOLUME MEASURE**



Source: Australian National Accounts: State Accounts, Cat. No. 5220.0 and SGS Economics & Planning

**FIGURE 17: BRISBANE GDP PER CAPITA GROWTH - VOLUME MEASURE**



Source: Australian National Accounts: State Accounts, Cat. No. 5220.0 and SGS Economics & Planning

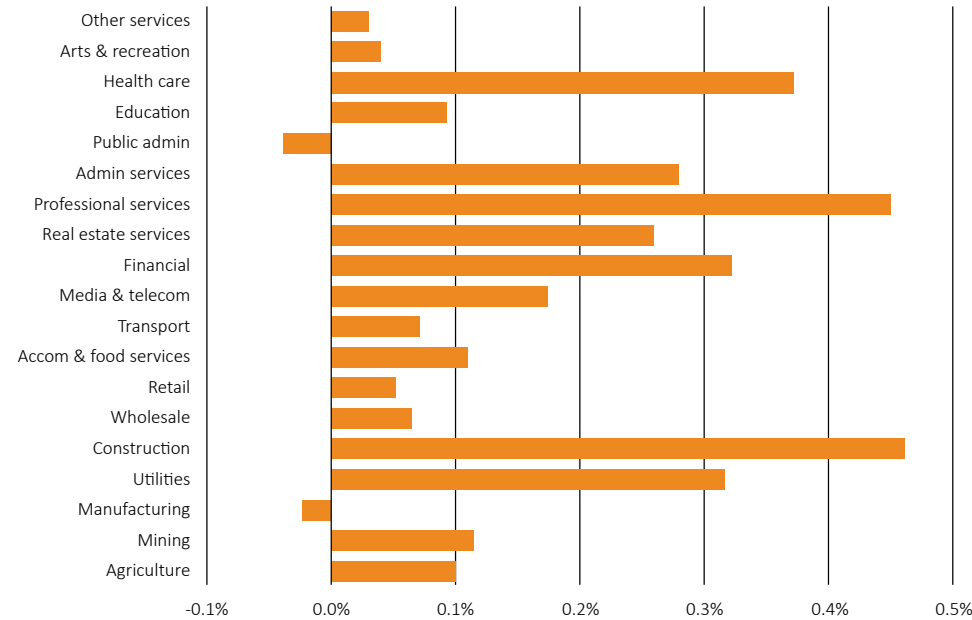


**Figure 18** reveals the most significant contributors to Brisbane's growth in 2017-18 was Construction (0.5 percentage points), Professional Services (0.4 percentage points) and Health Care (0.6 percentage points). Public Administration and Manufacturing both detracted from growth.

**Figure 19** shows that in 2017-18, Financial & Insurance Services (9.2 per cent) was the largest industry in Brisbane, followed by Professional Services (8.5 per cent) and Health Care (7.9 per cent).

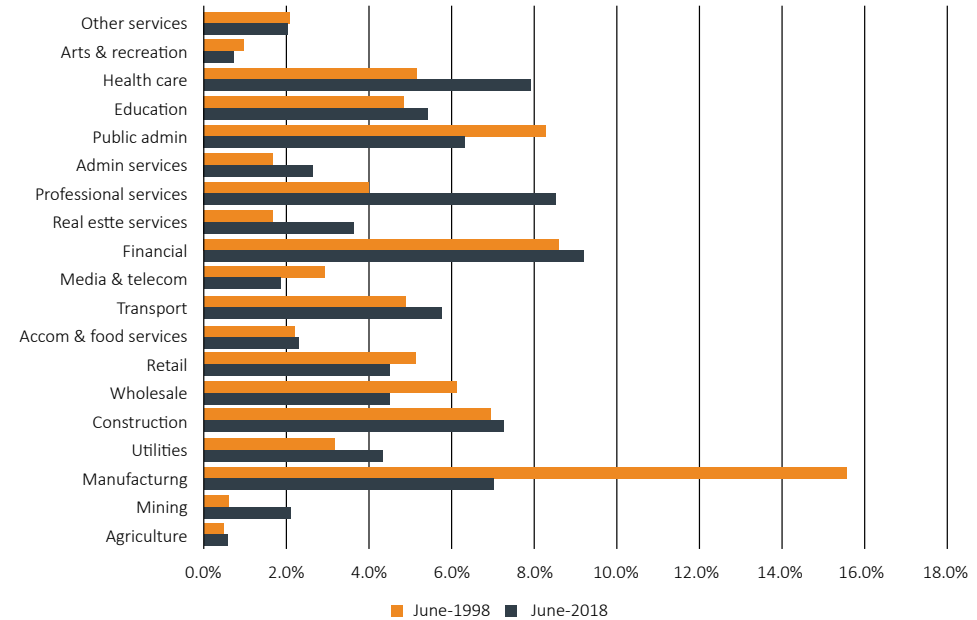


FIGURE 18: CONTRIBUTION TO BRISBANE GDP GROWTH, 2017-18



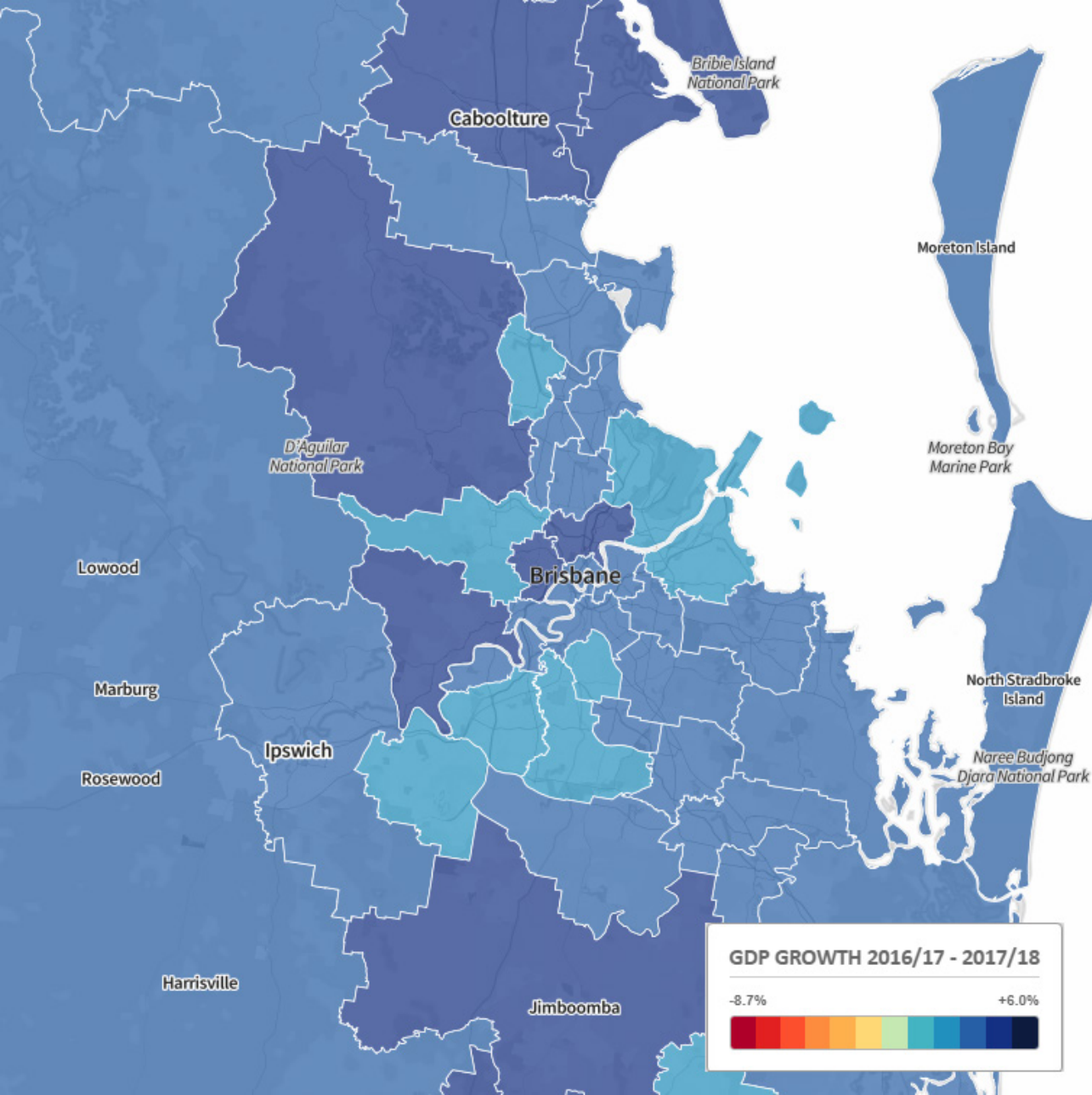
Source: SGS Economics and Planning

FIGURE 19: BRISBANE INDUSTRY STRUCTURE



Source: SGS Economics and Planning

FIGURE 20: BRISBANE SA3 GDP GROWTH - VOLUME MEASURE



**Figure 20** presents the GDP growth rates at the Statistical Area 3 (SA3) level. Brisbane Inner (the largest SA3 in Brisbane) and surrounding SAs3s Brisbane Inner – East, Brisbane Inner – North and Brisbane Inner – West, had a growth of at least one percentage point higher than growth rate over the past five years.

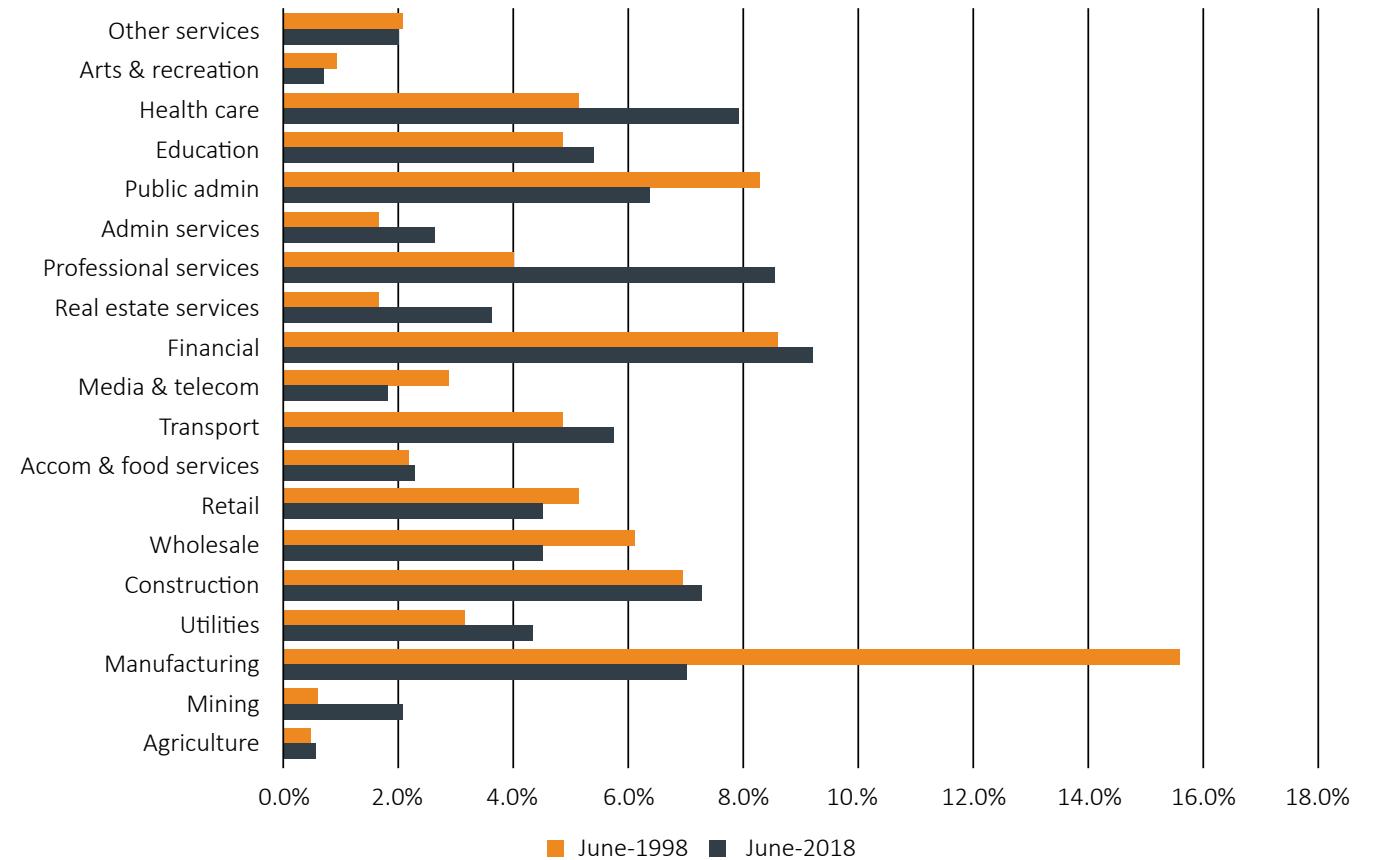
In terms of contribution to growth, the three largest SA3 were Brisbane Inner (28.4 per cent), Brisbane Inner – North (8.0 per cent) and Nundah, a large SA including Brisbane Airport, (4.8 per cent).

Source: SGS Economics and Planning



**Figure 21** illustrates that labour productivity in Brisbane is lower than Australia and the weighted average of the major capital cities.

**FIGURE 21: LABOUR PRODUCTIVITY, BRISBANE**



Source: SGS Economics and Planning



# ADELAIDE

Adelaide has been a perennial underperformer economically over the past few decades, as the city struggles to overcome the ongoing decline of the Manufacturing sector.

The South Australian capital faces many structural challenges which do not have a clear solution. Aside from the decline of Manufacturing, it has a population which is ageing more rapidly than other cities, and a shallow pool of export-oriented knowledge-intensive industries which will constrain growth over the coming years.

The weakness in the economy will continue to exacerbate the long-term trend of migration of skilled labour (particularly those in younger age groups) to elsewhere in Australia.



## ECONOMIC PERFORMANCE - ADELAIDE

Between 2006-07 and 2015-16 Adelaide experienced GDP growth well below the national average (**Figure 22**). Over this period, the city has struggled to overcome the ongoing decline of the manufacturing sector, a population which is ageing more rapidly than other cities, and a shallow pool of export-oriented knowledge-intensive industries. Adelaide represents 77.0 percent of South Australia's GDP, as hence the city's GDP and South Australian GDP growth track very closely together.

The last two years have seen Adelaide outperform the national growth. In 2017-18, the GDP of Adelaide grew by 3.2 per cent. In per capita terms, Adelaide's GDP growth is closer to the national average, and still shows the same volatility (**Figure 23**). This can be explained by the fact that Adelaide has relatively low population growth compared to the rest of the country.

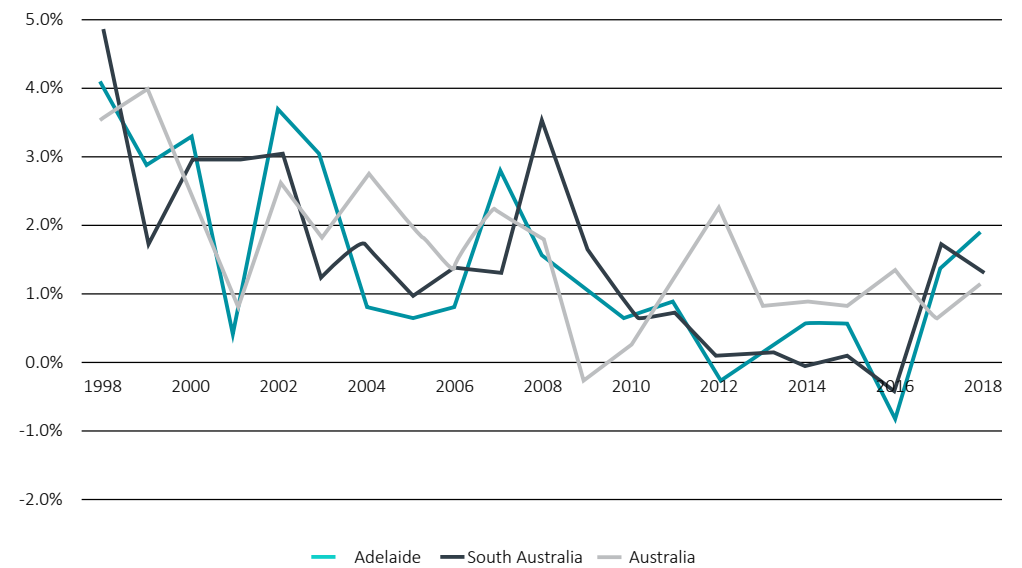
FIGURE 22: ADELAIDE GDP GROWTH - VOLUME MEASURE



Source: Australian National Accounts: State Accounts, Cat. No. 5220.0 and SGS Economics and Planning



FIGURE 23: ADELAIDE GDP PER CAPITA GROWTH - VOLUME MEASURE



Source: Australian National Accounts: State Accounts, Cat. No. 5220.0 and SGS Economics and Planning



**Figure 24** shows Health Care (0.8 percentage), Construction (0.5 percentage), Professional Services (0.4 percentage) made the most significant contribution to growth in 2017-18. Public Administration subtracted 0.2 percentage from GDP growth.

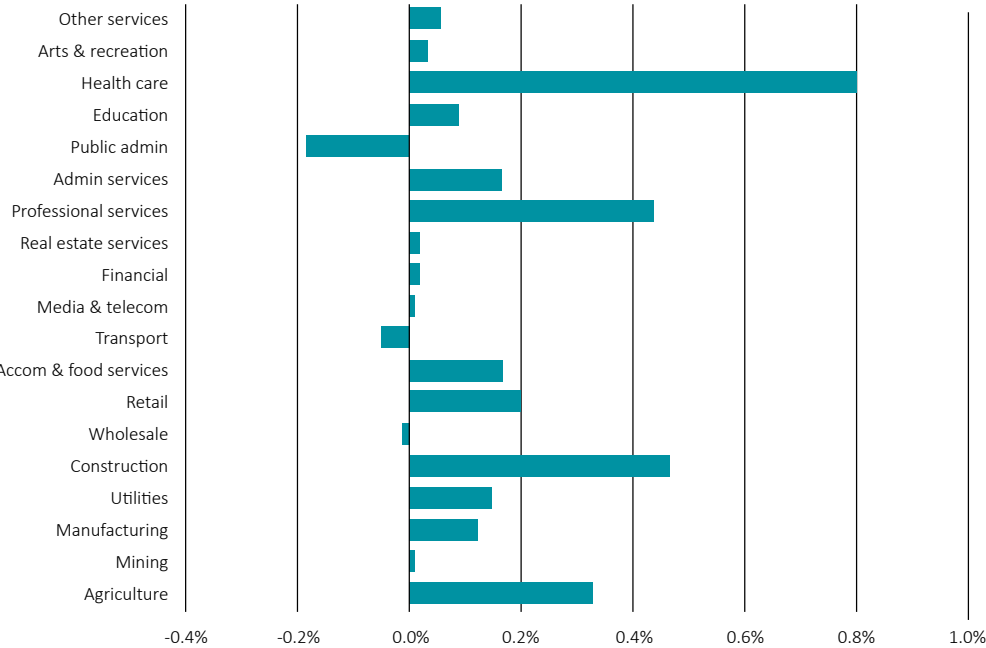
**Figure 25** shows Health Care is now the largest industry in Adelaide, accounting for 10.5 per cent of the city's GDP in 2017-18. Due to Adelaide's ageing population, this sector has become increasingly important in recent years.

Financial & Insurance Services was the second largest (9.3 per cent). Manufacturing has significantly decreased its share of Adelaide's GDP over the past two decades, from 17.5 per cent to 5.9 per cent of GDP.



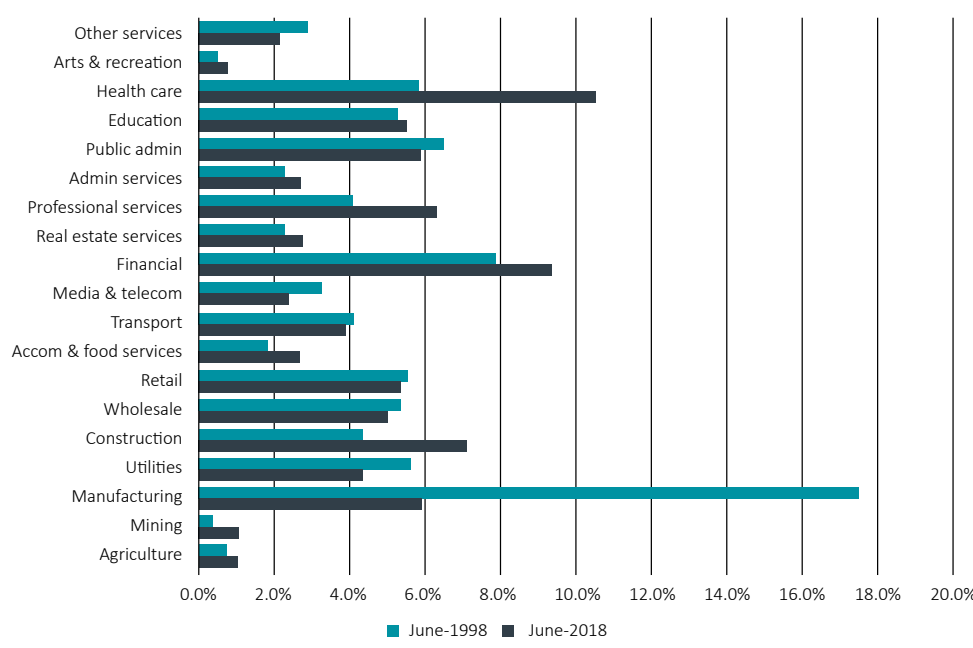
Adelaide

FIGURE 24: CONTRIBUTION TO ADELAIDE GDP GROWTH, 2017-18



Source: SGS Economics and Planning

FIGURE 25: ADELAIDE INDUSTRY STRUCTURE

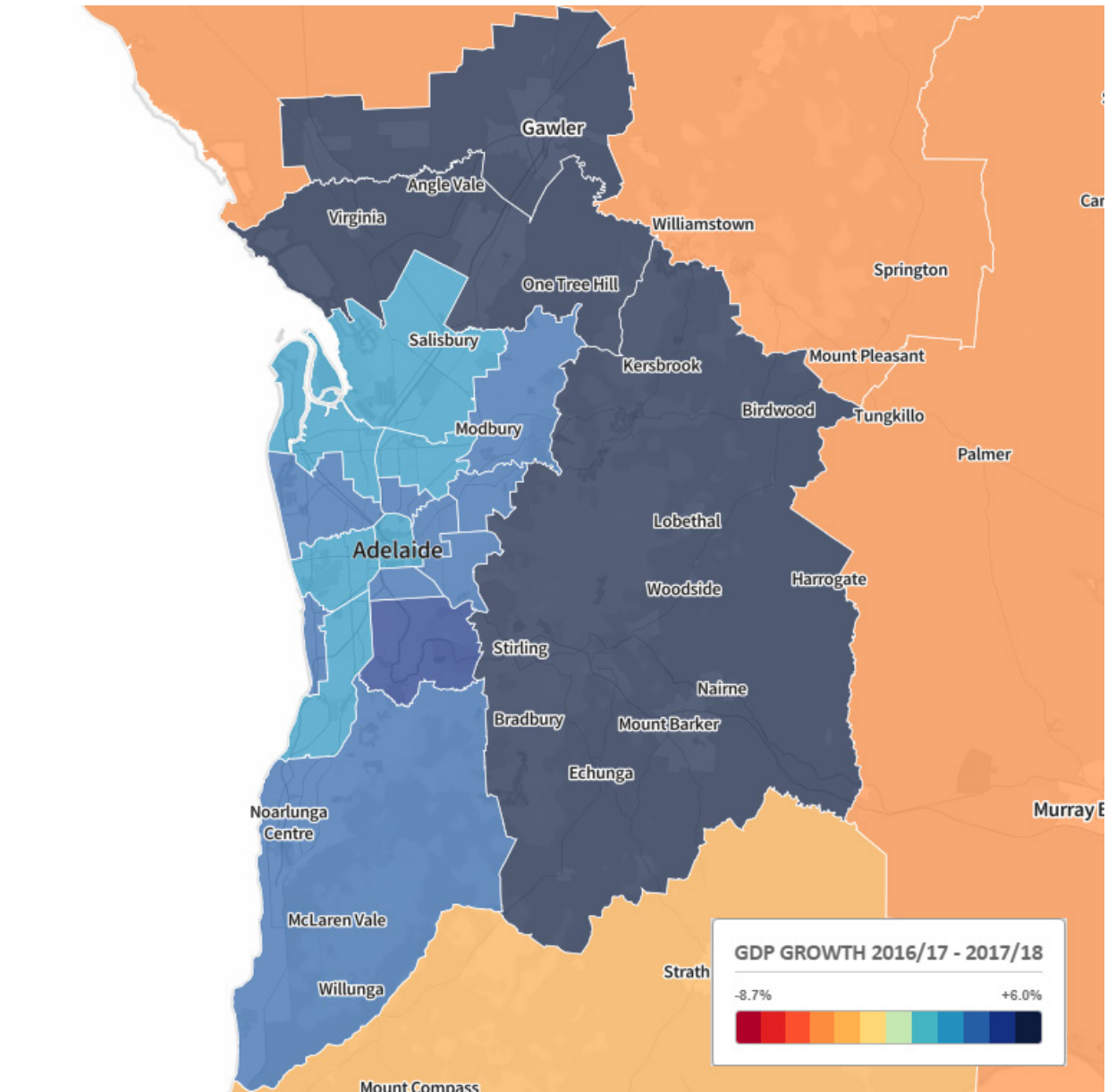


Source: SGS Economics and Planning

The GDP growth rates at the Statistical Area 3 (SA3) level are shown in **Figure 26**. All Adelaide SA3 had higher growth in 2017-18 than the 5-yearly average. The northern greenfield growth areas of Gawler – Two Wells (5.7 per cent) and Playford (5.6 per cent) had robust growth rates. As did the Adelaide Hills SA3 (5.5 per cent growth).

In terms of contribution to growth, the three largest SA3 were Adelaide City (20.1 per cent), West Torrens (7.3 per cent) and Onkaparinga (6.8 per cent).

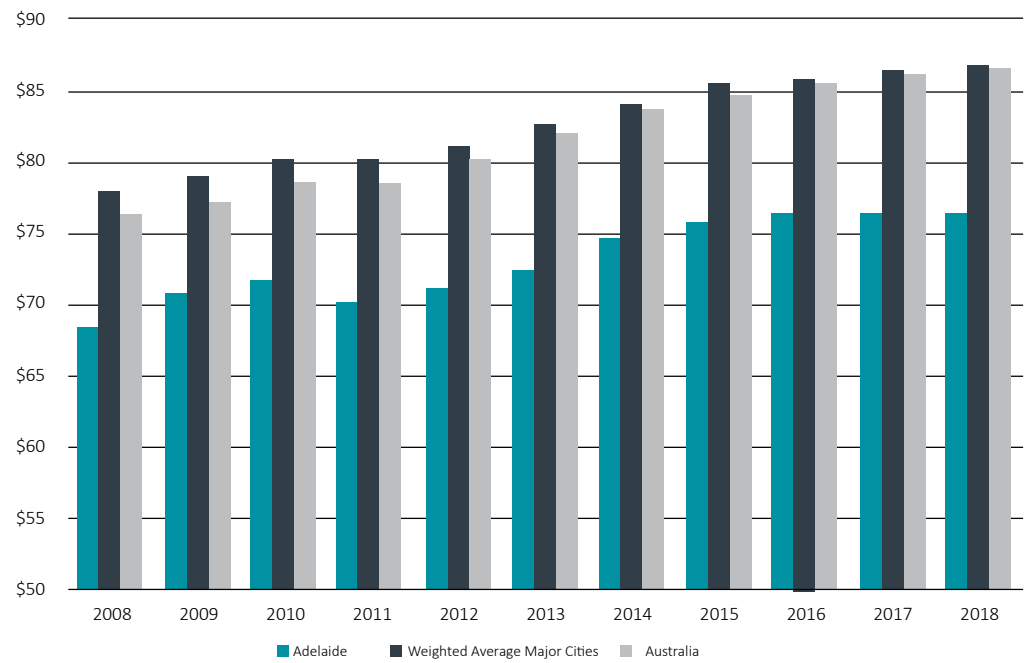
FIGURE 26: ADELAIDE SA3 GDP GROWTH - VOLUME MEASURE



Source: SGS Economics and Planning

Labour productivity in Adelaide is the lowest of the major capital cities, which is heavily influenced by the composition of major industries the economy (Figure 27). Adelaide has a lower percentage of higher productivity industries than other major capital cities.

FIGURE 27: LABOUR PRODUCTIVITY, ADELAIDE



Source: SGS Economics and Planning





# PERTH

The effect of mining on Perth's economy has been profound with growth in the city's GDP significantly outperforming the national average from 2000-01 to 2013-14.

The effect of the end of the mining boom on Perth's economy has been equally profound. The ongoing challenge for Perth going forward will be to find alternate sources of economic growth now that the mining boom that has driven the city's economy for the past decade, is over. The economic slowdown is compounded by the flight of skilled labour, as many workers formerly employed in mining-related jobs migrate to the eastern seaboard in search of employment.

Perth was in a recession during 2016-17 with a decline of 3.0 per cent in GDP. This is a significantly larger than the 1.7 per cent decline that Perth experienced during the last national recession in 1990-91. The 2017-18 results followed two years of the lowest growth rates since the 1990-91 recession.





## ECONOMIC PERFORMANCE - PERTH

**Figure 28** shows the effect of mining on Perth's economy has been profound with growth in the city's GDP significantly outperforming the national average from 2000-01 to 2013-14. Perth was in a recession during 2016-17 with a decline of 3.0 per cent in GDP. This is a significantly larger than the 1.7 per cent decline that Perth experienced during the last national recession in 1990-91. The 2017-18 results followed two years of the lowest growth rates since the 1990-91 recession.

In 2017-18 Perth's GDP grew by 2.7 per cent, the highest growth since 2012-13.

**Figure 29** shows Health Care (0.8 percentage points), Financial Services (0.4 percentage points), Construction, Manufacturing and Mining (all 0.3 percentage points) made the most significant contribution to GDP growth. Agriculture, Wholesale, Transport and Real Estate all detracted from Perth's GDP growth.

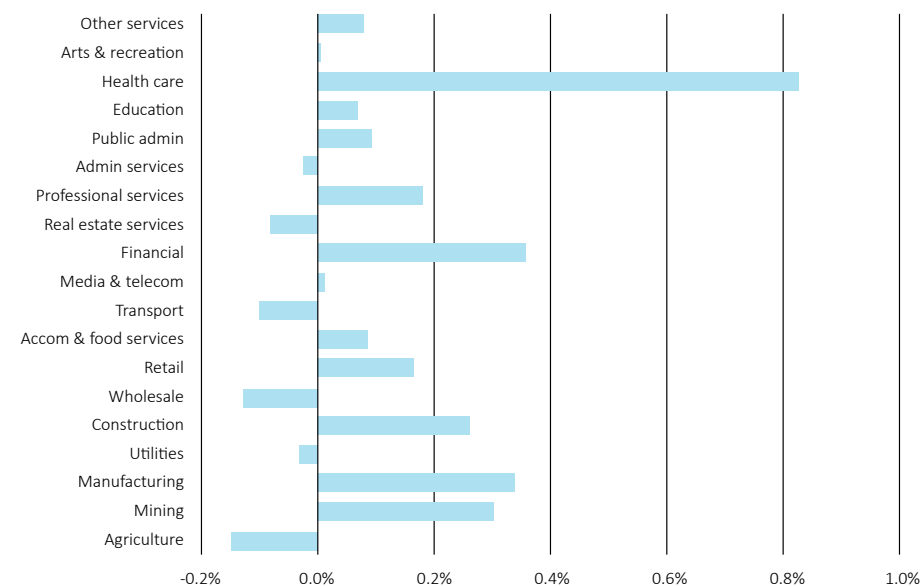


FIGURE 28: PERTH GDP GROWTH – VOLUME MEASURE



Source: Australian National Accounts: State Accounts, Cat. No. 5220.0 and SGS Economics and Planning

FIGURE 29: CONTRIBUTION TO PERTH GDP GROWTH, 2017-18

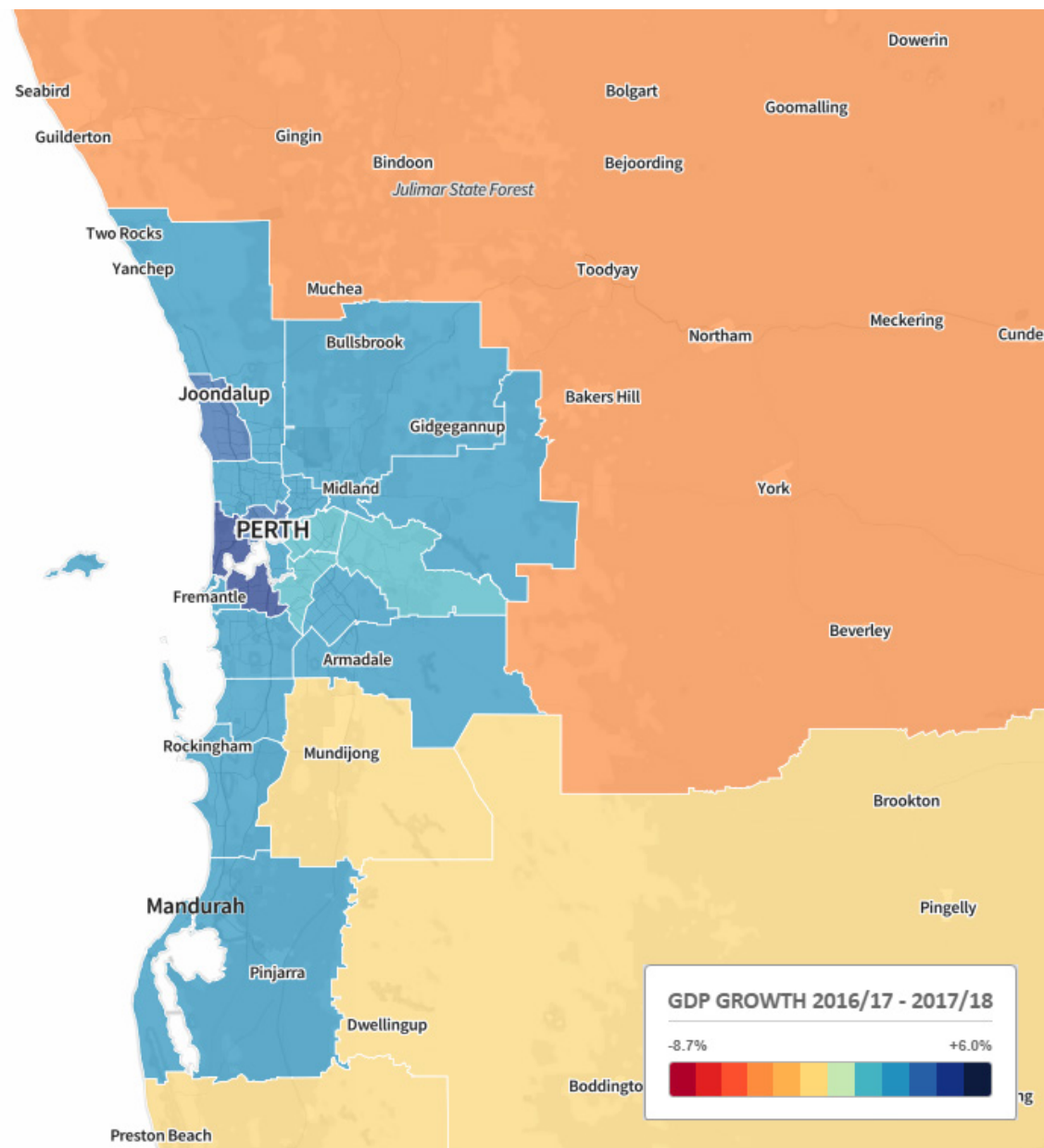


Source: SGS Economics and Planning

The GDP growth rates at the Statistical Area 3 (SA3) level are shown in Figure 30.

In 2017-18, Cottesloe – Claremont and Melville (both 4.1 per cent), Joondalup (3.4 per cent) and Perth City (3.3 per cent) were the fastest-growing SA3 in Perth. Most other SA3 had a growth rate of between 2.0 and 3.0 per cent. In terms of contribution to growth, the three largest SA3 were Perth City (34.1 per cent), Stirling (7.5 per cent) and Cottesloe – Claremont (6.1 per cent).

FIGURE 30: PERTH SA3 GDP GROWTH - VOLUME MEASURE



Source: SGS Economics and Planning

In 2016-17, Perth experienced the largest decline in GDP per capita on record (-4.0 per cent). In 2017-18, GDP per capita growth rebounded with 1.5 per cent growth.

**Figure 32** presents the industry share of the Perth economy in 1996-97 and 2017-18. Over this period, Manufacturing’s share of GDP halved, while Professional Services and Health Care grew significantly.

In 2017-18, Construction was the largest industry (10.6 per cent). Professional Services (8.7 per cent) and Financial Services (7.2 per cent) were also large industries in Perth.

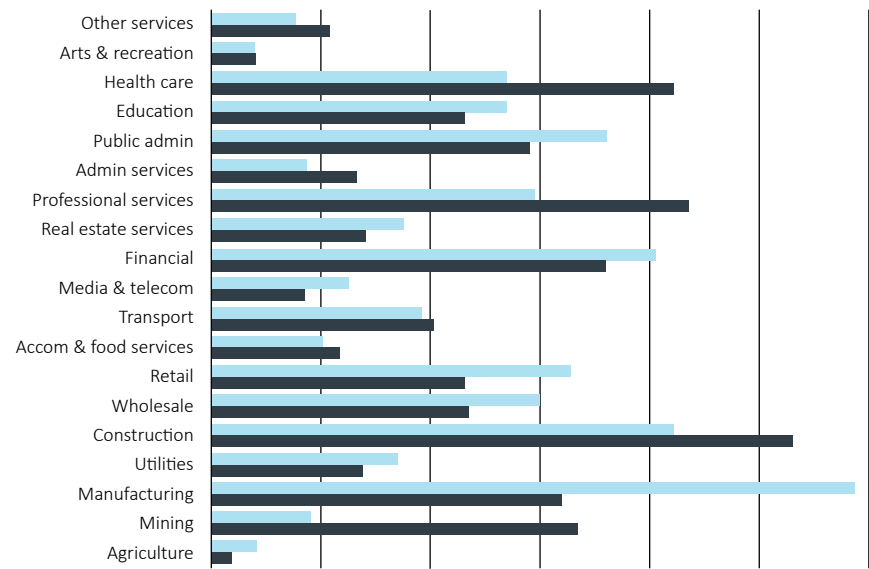
**Figure 33** presents estimated labour productivity for Perth. In 2006-07 the city was below the weighted average of the major capital cities; however, the onset of the mining boom brought Perth in line with the weighted average for the major capital cities. This was due to growth in a range of high labour productivity industries in Perth.

FIGURE 31: PERTH GDP PER CAPITAL GROWTH - VOLUME MEASURE



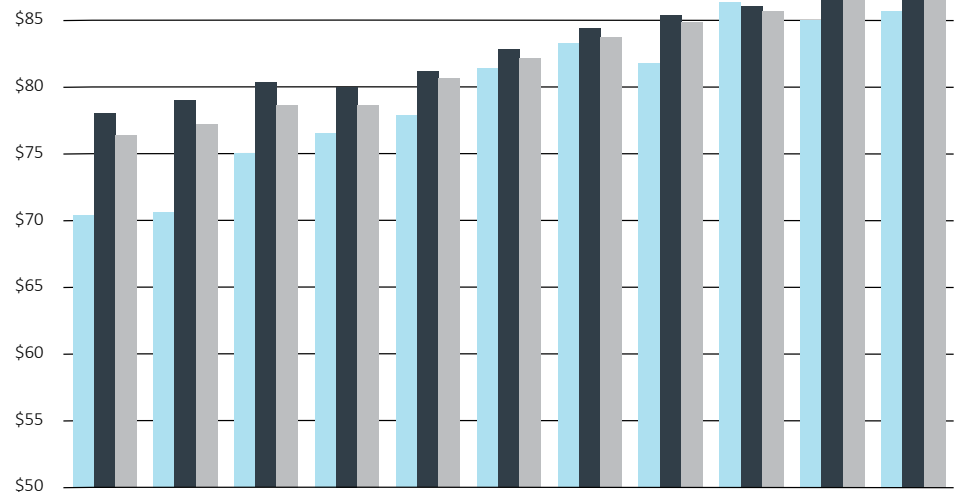
Source: Australian National Accounts: State Accounts, Cat. No. 5220.0 and SGS Economics and Planning

FIGURE 32: PERTH INDUSTRY STRUCTURE



Source: SGS Economics and Planning

FIGURE 33: LABOUR PRODUCTIVITY, PERTH



Source: SGS Economics and Planning



# CANBERRA

Canberra's GDP growth tends to track the national average less than other capital cities. This is due to its small size and its largest industry, Public Administration, is less dependent on overall economic conditions.

Cuts to the public service saw Canberra's GDP growth fall to just 0.9 per cent in 2013-14, the lowest growth since 1996, which was the last time there were major cuts to the public service.

However, over the past three years, economic activity has surged. In 2017-18 Canberra's GDP growth was 4.0 per cent.





## ECONOMIC PERFORMANCE - CANBERRA

**Figure 34** shows Canberra's GDP growth over the last 20 years. Cuts to the public service saw Canberra's GDP growth fall to just 0.9 per cent in 2013-14, the lowest growth since 1996 which was the last time there were major cuts to the public service.

**Figure 35** shows the highest contributions were Professional services and Health Care, both (0.9 percentage points). Administrative services, Construction and Media and Telcom also made a large positive contribution to GDP growth. In 2017-18, Public Administration, Canberra's largest industry, did not contribute to growth.

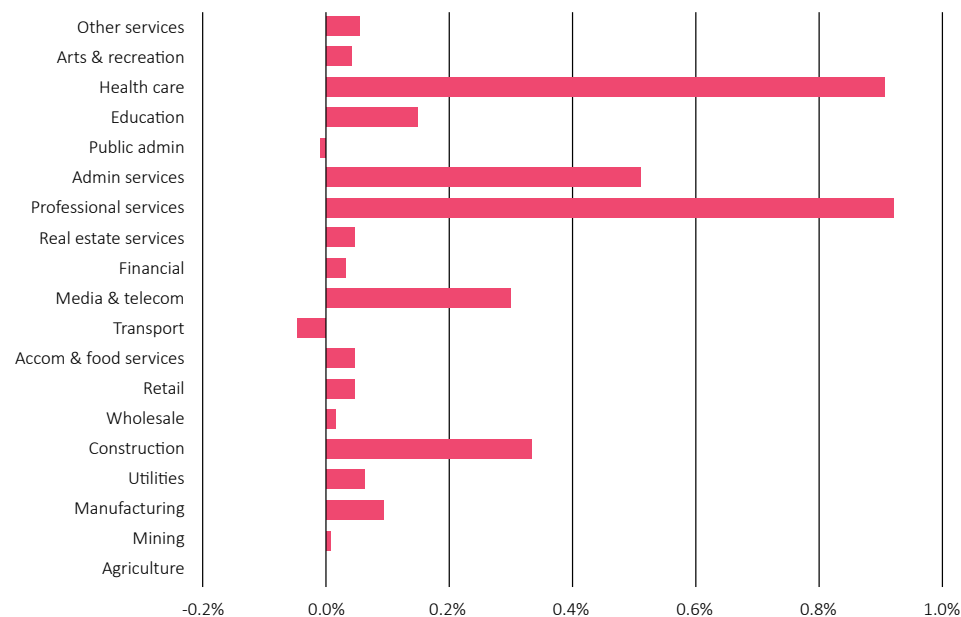


**FIGURE 34: CANBERRA GDP GROWTH – VOLUME MEASURE**



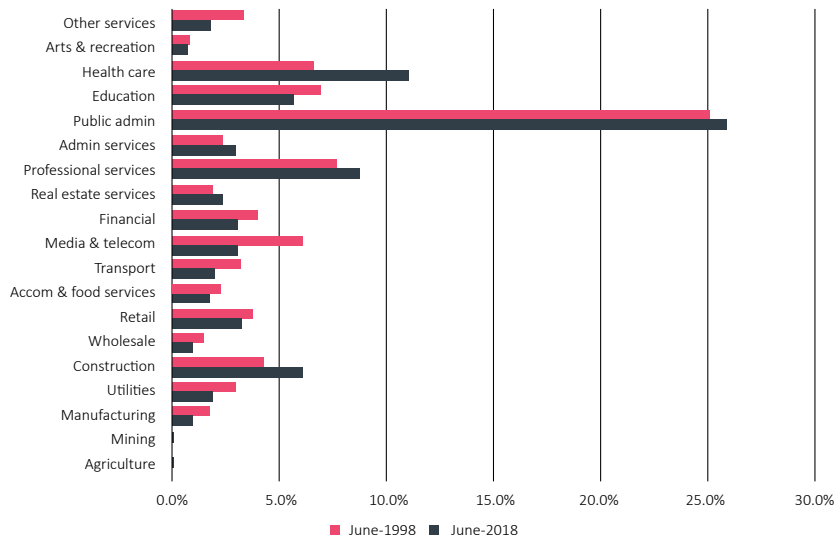
Source: Australian National Accounts: State Accounts, Cat. No. 5220.0

**FIGURE 35: CONTRIBUTION TO CANBERRA GDP GROWTH, 2017-18**



Source: Australian National Accounts: State Accounts, Cat. No. 5220.0

FIGURE 36: CANBERRA INDUSTRY STRUCTURE



Source: Australian National Accounts: State Accounts, Cat. No. 5220.0

**Figure 36** presents the industry share of Canberra's economy. The most substantial difference over the past twenty years is the increased importance of Professional Services, which grew from 7.7 per cent in 1996-97 to 8.7 per cent in 2017-18 and Health Care which rose from 6.6 per cent to 11.0 per cent.

**Figure 37** presents the GDP per capita growth rate for Canberra. Canberra's population has continued to grow despite the cuts (albeit more slowly than the Australian average), resulting in negative GDP per capita growth in 2013-14. Again, the GDP per capita growth rate recovered, growing by 1.8 per cent.

FIGURE 37: CANBERRA GDP PER CAPITA GROWTH – VOLUME MEASURE



Source: Australian National Accounts: State Accounts, Cat. No. 5220.0





# TASMANIA

For most of the last 20 years, Tasmania's economy has grown more slowly than the national average (see Figure 40). Between 2009-10 and 2016-17 Tasmania's GDP growth was well below the national average. However, in 2017-18, GDP growth was 3.3 per cent. This is the highest growth since 2007-08.

There was a broad base growth profile across a range of industries. In 2017-18, Health Care (0.7 percentage points), Manufacturing (0.4 percentage points), Mining, Construction and Professional Services (all 0.3 percentage points) were the most significant contributors to Tasmania's GDP growth.





## ECONOMIC PERFORMANCE - TASMANIA

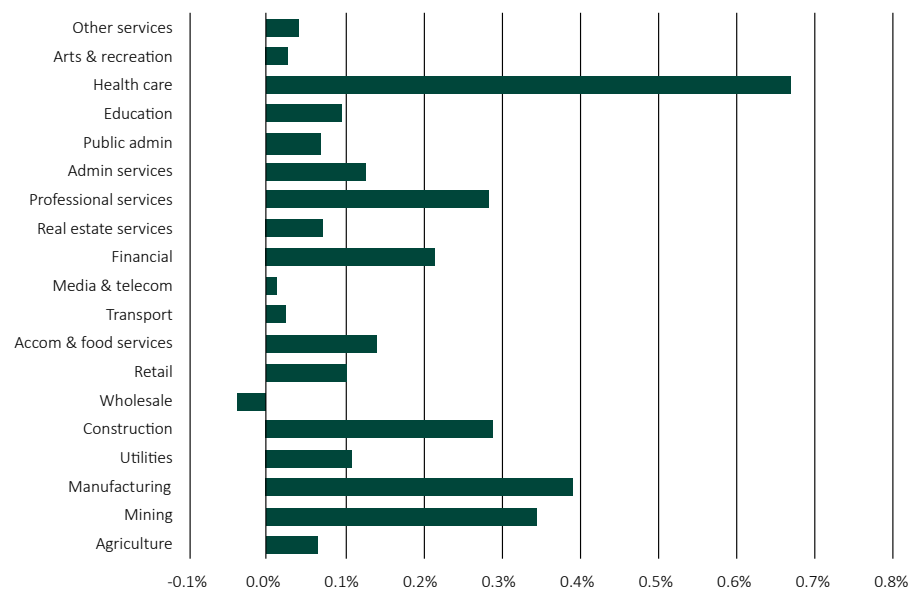
For most of the last 20 years, Tasmania's economy has grown more slowly than the national average (see Figure 40 on following pages).

Between 2009-10 and 2016-17 Tasmania's GDP growth was well below the national average. However, in 2017-18, GDP growth was 3.3 per cent. This is the highest growth since 2007-08. There was a broad base growth profile across a range of industries.

In 2017-18, Health Care (0.7 percentage points), Manufacturing (0.4 percentage points), Mining, Construction and Professional Services (all 0.3 percentage points) were the most significant contributors to Tasmania's GDP growth.

The breakdown of each industry's contribution to Tasmanian economic growth is shown in **Figure 38**.

FIGURE 38: CONTRIBUTION TO TASMANIAN GDP GROWTH, 2017-18



Source: Australian National Accounts: State Accounts, Cat. No. 5220.0

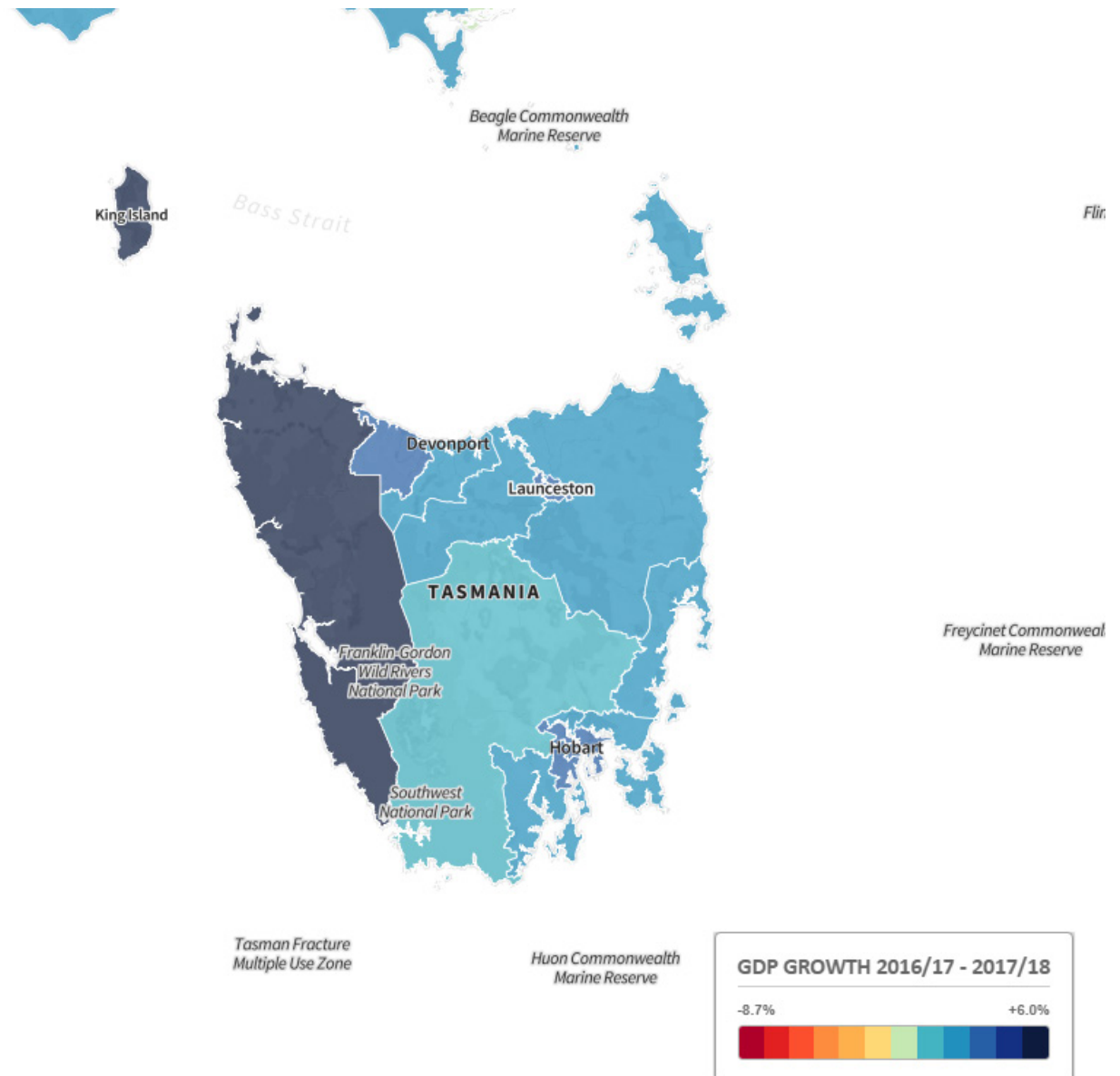


**Figure 39** presents the Tasmanian GDP growth rates at the Statistical Area 3 (SA3) level.

In 2017-18, the Hobart SA3 all grew between 3.1 and 3.3 per cent, with Launceston growing at 3.2 per cent. The growth in the past recent year in all of these locations is significantly higher than the five year average growth rate.

Regarding contribution to growth, the three largest SA3 were Hobart Inner (26.1 per cent), Launceston (17.1 per cent) and Hobart – North West (9.4 per cent).

FIGURE 39: TASMANIA SA3 GDP GROWTH - VOLUME MEASURE



Source: SGS Economics and Planning

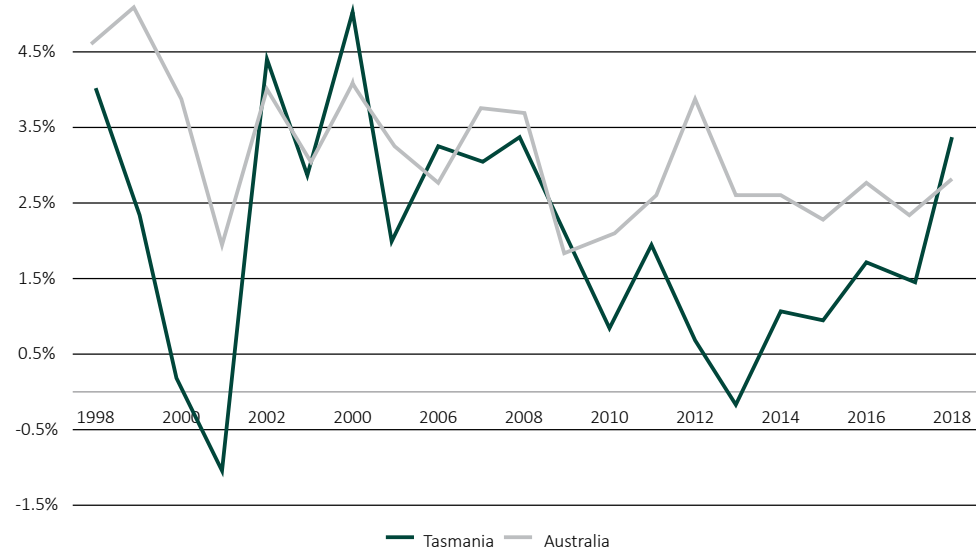
Part of the reason why Tasmania shows lower GDP growth than Australia is its relatively small population growth.

Per capita growth rates in Tasmania, shown in **Figure 41**, show less of a gap with Australia compared to overall GDP figures, with growth rates tending to move in line with Australia’s growth.

In 2017-18, the GDP per capita growth in Tasmania was 2.3 per cent compared to the Australian growth rate of 1.2 per cent.

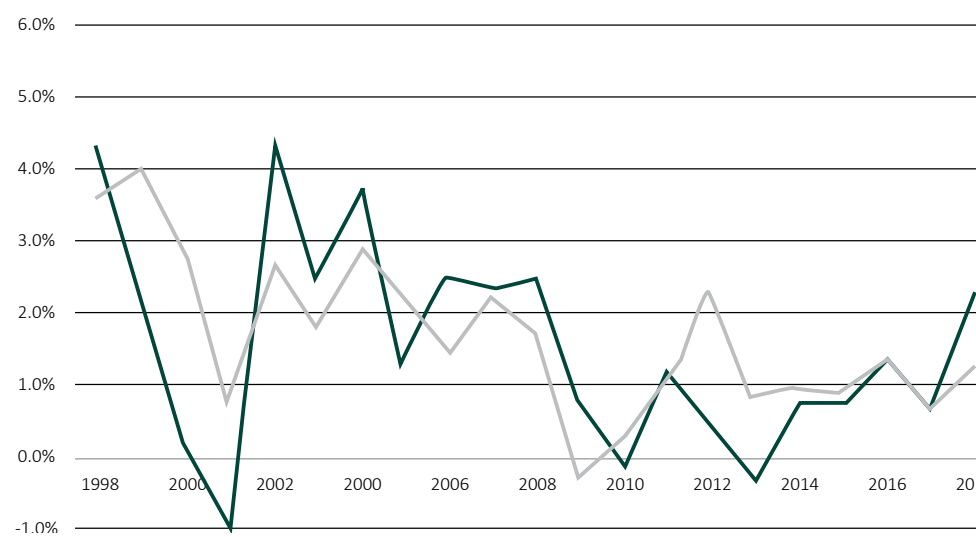


FIGURE 40: TASMANIA GDP GROWTH – VOLUME MEASURE



Source: Australian National Accounts: State Accounts, Cat. No. 5220.0

FIGURE 41: TASMANIA GDP PER CAPITA GROWTH – VOLUME MEASURE



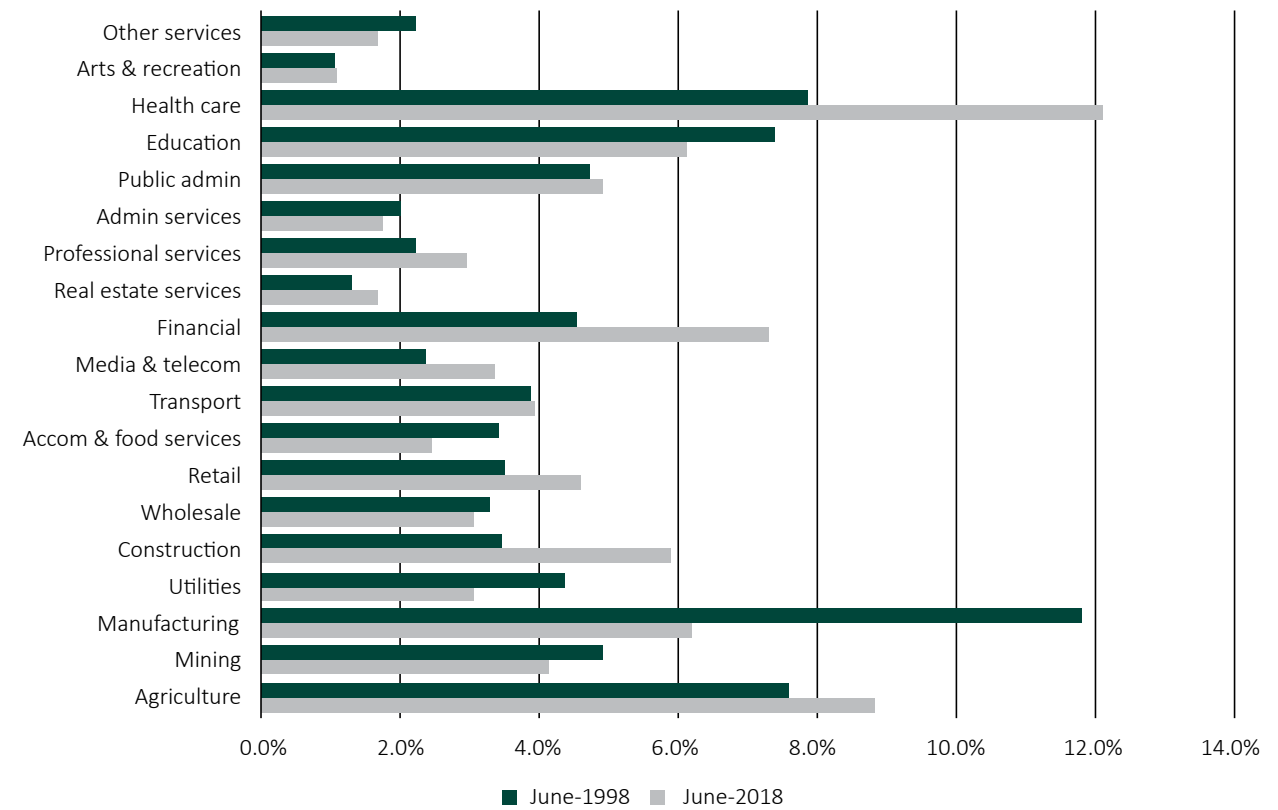
Source: Australian National Accounts: State Accounts, Cat. No. 5220.0 and SGS Economics and Planning





As with all the other States, the decline in the share of Manufacturing in Tasmania is significant, falling from 11.9 per cent of GDP in 1996-97 to 6.2 per cent in 2017-18. Health Care grew from 7.9 per cent of GDP in 1995-96 to 12.1 per cent in 2017-18. Several other industries have shown modest growth in their share of the economy.

FIGURE 42: TASMANIAN INDUSTRY STRUCTURE



Source: Australian National Accounts: State Accounts, Cat. No. 5220.0

# REGIONAL ANALYSIS

While this publication focuses on major capital cities, there were also significant economic changes in Regional Australia. This section provides a snapshot of some of these changes.



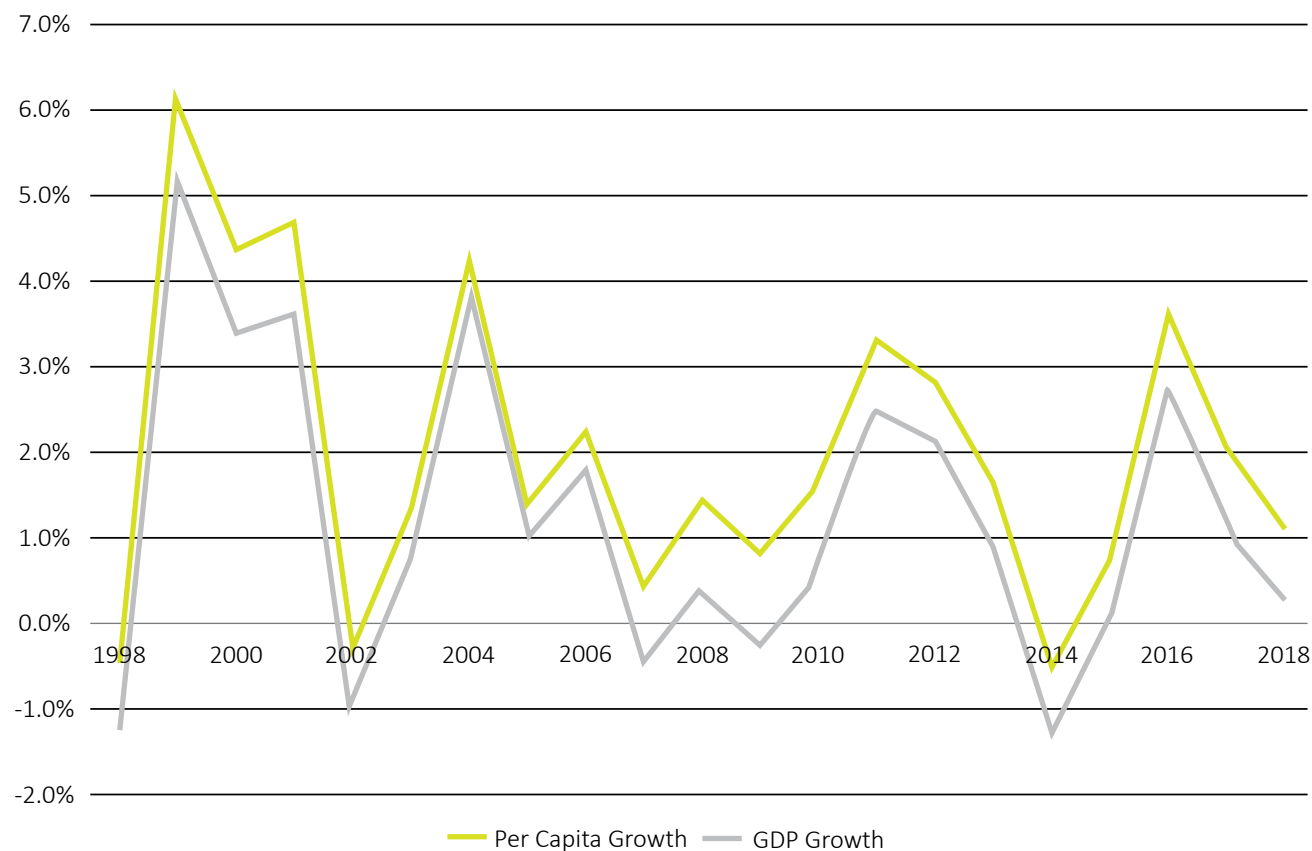


## ECONOMIC PERFORMANCE - REGIONAL ANALYSIS

As shown in **Figure 43**, the economy of Regional New South Wales contracted in 2013-14 (-0.5 percent) and experienced very weak growth in 2014-15 (0.7 percent). A key factor in the economic decline has been a fall in Manufacturing. In 2017-18, GDP growth in Regional New South Wales was 1.1 per cent.



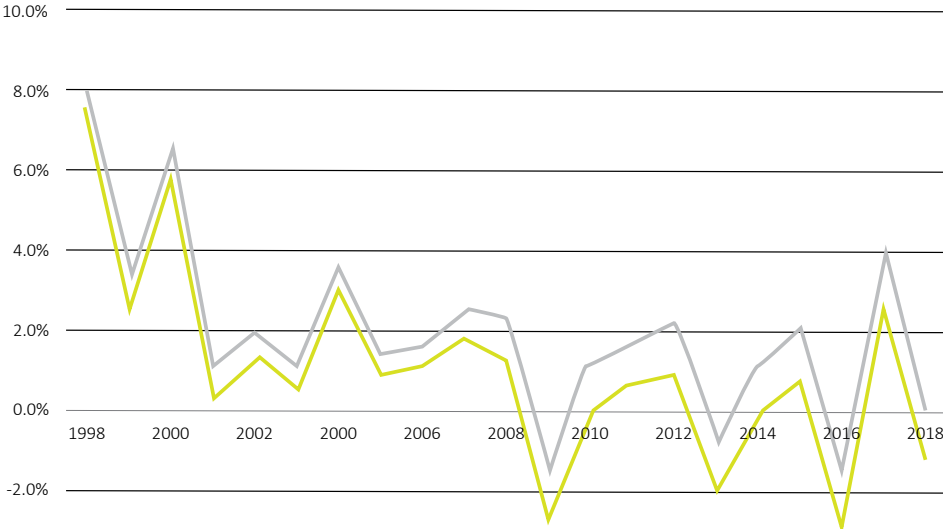
**FIGURE 43: REGIONAL NSW GDP AND GDP PER CAPITA GROWTH**



Source: SGS Economics and Planning

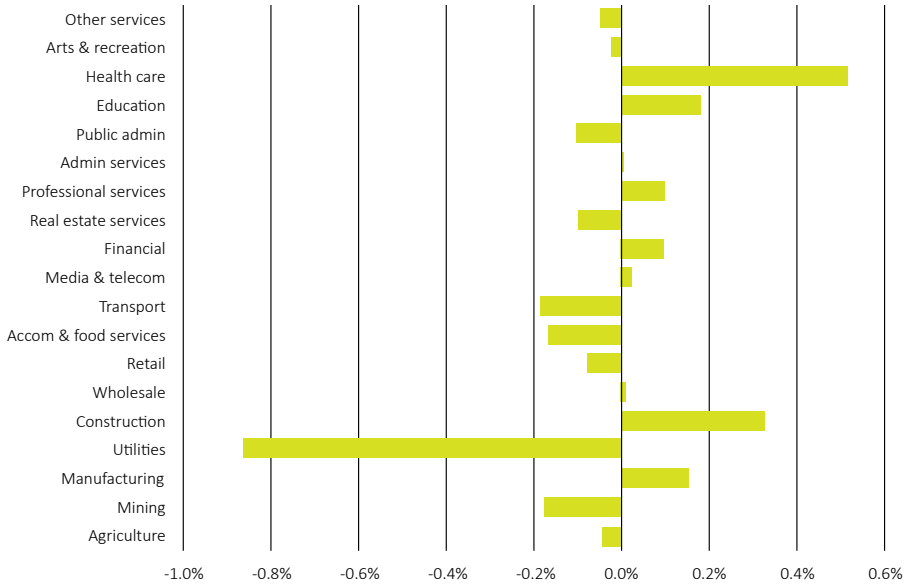


**FIGURE 44: REGIONAL VICTORIA GDP AND GDP PER CAPITA GROWTH**



Source: SGS Economics and Planning

**FIGURE 45: CONTRIBUTION TO REGIONAL VICTORIA GDP GROWTH, 2017-18**



Source: SGS Economics and Planning

**Figure 44** shows there has been a decline in Regional Victoria's GDP in four of the past ten years, and a decline in GDP per capita in five of the past ten years.

The most recent year saw a small decline in Regional Victoria GDP of 0.1 per cent. As with many recent years, this decline was driven by the closure of a major industrial plant. The impact of Hazelwood Power Station closing contributed to a 0.9 percentage point subtraction from GDP growth in Regional Victoria. Excluding this one off, GDP growth would have been 0.8 per cent.

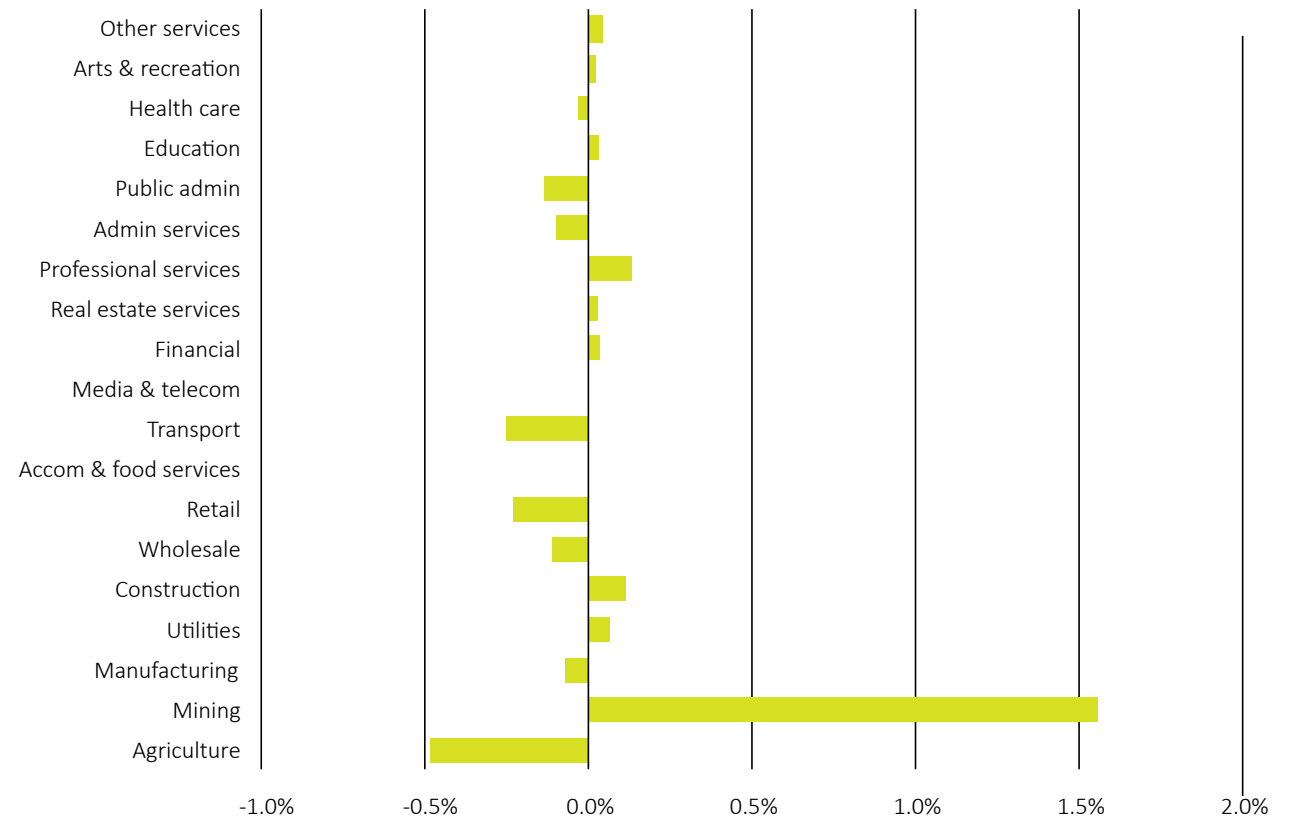




Following the end of the mining construction boom, Regional Western Australia's GDP grew by 0.8 per cent. As shown in Figure 46, Mining (1.6 percentage points) was the primary driver of growth, most other industries subtracted from economic growth.

Figure 47 shows that GVA of the Construction industry in Regional Western Australia is back at levels not seen since before the start of the mining boom in 2003-04. Figure 47 also provides a sense of the scale of the mining construction boom in Regional Western Australia.

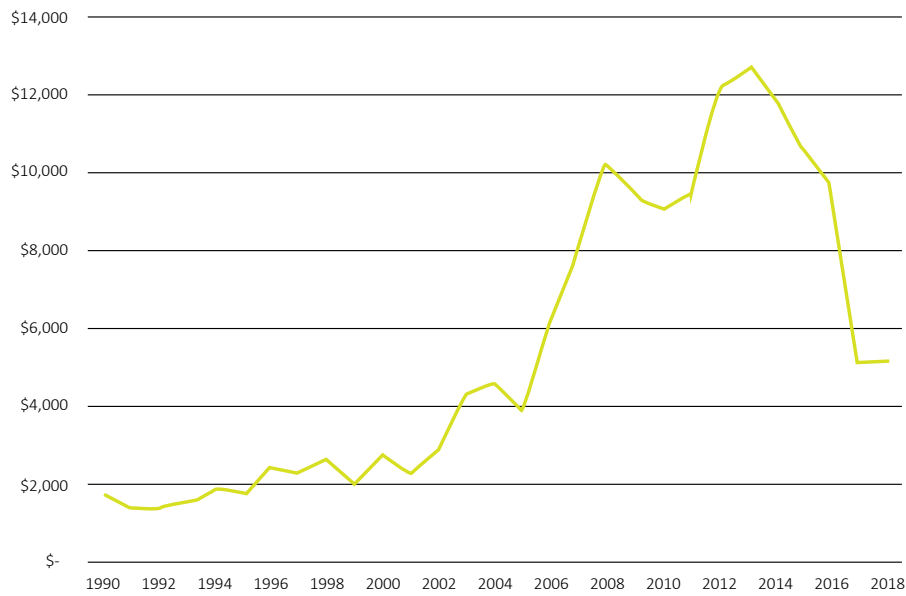
**FIGURE 46: CONTRIBUTION TO REGIONAL WA GDP GROWTH, 2017-18**



Source: SGS Economics and Planning

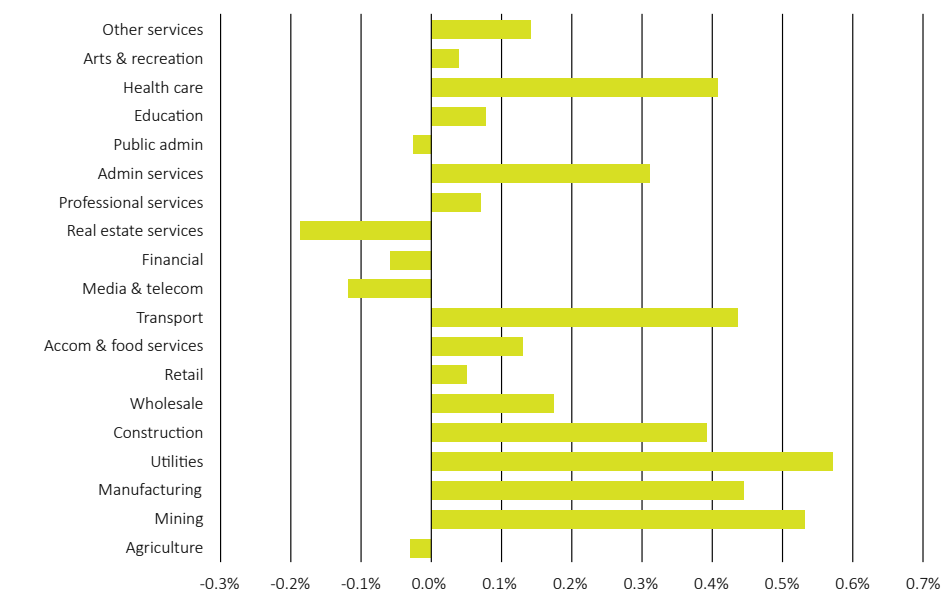
Regional Queensland saw GDP growth of 3.3 per cent in 2017-18. This was the highest growth since 2013-14. As shown in Figure 48, a wide range of industries contributed to this growth. It would appear that the impact of the mining bust on Regional Queensland has ended.

FIGURE 47: REGIONAL WA CONSTRUCTION GVA VOLUME MEASURE (\$ MILLIONS)



Source: SGS Economics and Planning

FIGURE 48: CONTRIBUTION TO REGIONAL QLD GDP GROWTH, 2017-18



Source: SGS Economics and Planning





Presented in **Table 5** is the GDP growth rates for a selection of regional cities across Australia. The cities in Regional Queensland and Tasmania experienced growth rates during 2017-18 significantly higher than the average of the past five years. The cities in Regional New South Wales and Victoria experienced growth broadly in line with the past five years. One exception is Newcastle, which has benefit from improvements in global coal prices. The other is Bendigo which was impacted by a drop in Agricultural production within the SA3, following very high growth in Agricultural production in 2016-17.



**TABLE 5: REGIONAL CITY GDP & GROWTH RATES – VOLUME MEASURE**

STATE	LOCATION	GDP 2017-18	ANNUAL GROWTH	5 YEARLY GROWTH
QLD	Gold Coast	\$35,380	3.2%	1.7%
	Sunshine Coast	\$18,606	3.3%	2.0%
	Cairns	\$14,190	4.0%	2.1%
	Townsville	\$11,758	4.1%	0.8%
	Toowoomba	\$9,498	3.7%	2.7%
	Mackay	\$7,949	4.2%	2.4%
	Rockhampton	\$6,782	5.4%	2.1%
	Gladstone	\$5,625	5.8%	1.6%
TAS	Hobart	\$14,437	3.2%	2.1%
	Launceston	\$5,141	3.2%	2.4%
VIC	Geelong	\$11,237	1.1%	1.1%
	Ballarat	\$5,548	0.9%	1.0%
	Bendigo	\$4,938	0.2%	1.0%
NSW	Newcastle	\$15,042	2.7%	1.8%
	Wollongong	\$7,196	2.2%	2.4%
	Wagga Wagga	\$5,741	0.4%	0.7%
	Orange	\$4,168	1.9%	1.6%

Source: SGS Economics and Planning

# 03

## Methodology

“

The SGS method focuses on the Production measure of GDP. This is the most robust approach for producing smaller area estimates of GDP.

”

There are three approaches to measuring Gross Domestic Product:

- The Production Approach: the sum of the Gross value added for each of the industries and taxes, less subsidies on products;
- The Expenditure Approach: measures the final expenditure on goods and services; and
- The Income Approach: sum of income generated by all factors of production.

At the Australian level, the Production, Expenditure and Income approaches are averaged by the ABS to produce and estimate of GDP. However, at the State level, a lack of data on trade between the states results in the Expenditure and Income approaches being combined and averaged with the Production approach. The hybrid Expenditure and Income estimates of Gross State Product (GSP) have been published since the 1990s. The Production approach has only been estimated and published as part of the Australian National Accounts: State Accounts (Cat. No. 5220.0) since 2007.

In developing GDP estimates for each major capital city (as defined by the capital city statistical divisions), the Production approach is used. This is used firstly because of the lack of data on interstate trade, and secondly because the data available to calculate the Production approach is more robust (and hence requires fewer assumptions to be made) than that available for the Expenditure or Income approaches. For each industry, wherever possible, the same data sources that have been used to produce industry Gross value added at the state level are used to produce industry Gross value added at the city level. Some of these data sources include:

- Agricultural Commodities: Small Area Data, Australia (Cat. No. 7125.0);
- Manufacturing Industry, Australia (Cat. No. 8221.0);
- Regional Population Growth, Australia (Cat. No. 3218.0);
- Household Expenditure Survey, Australia (Cat. No. 6530.0);
- Education and Training Experience (Cat. No. 6278.0); and

- Labour Force, Australia, Detailed, Quarterly (Cat. No. 6291.0.55.003).

Through the use of the implicit price deflation technique, the Chain Volume Measures of the industry Gross value added are converted into current prices. This method overcomes the non-additivity issue with the Chain volume measure and allows the aggregation of industry estimates of GVA to overall GDP. In order to maintain consistency with the wider National Accounts, the Production Approach estimate of city GDP is benchmarked to the state GDP.

For deriving labour productivity, the estimates of hours worked are taken from Information Paper: Implementing New Estimates of Hours Worked into the Australian National Accounts, 2006 (Cat. No. 5204.0.55.003) which provides the total hours worked within the economy for 2004-05. The index of total hours worked from the Australian System of National Accounts, 2017-18 (Cat. No. 5204.0) has been used to advance the 2004-05 estimate for the years between 2005-06 and the most recent year. This Australian total hours worked figure has then been allocated for each industry in each capital city based on its share of total hours worked from the Labour Force, Australia, Detailed, Quarterly (Cat. No. 6291.0.55.003).

### 3.1 INDUSTRY METHODS

The Gross value added for each industry for Australia is derived in the annual supply and use tables using the double deflation technique. That is, subtracting estimates of intermediate input from estimates of output.

Where possible the same data has been used in estimating State level industry Gross value added. The details of this estimation method are outlined in "Information paper: Gross State Product using the Production approach GSP(P)". In estimating the Capital City level industry Gross value added, where possible, the same data sources have been used. The

following section provides a summary of the data sources used to estimate Gross value added for each industry. A quality assessment is also provided.

#### Agriculture, forestry and fishing

##### METHOD

Australian National Accounts: State Account (cat. no. 5220.0) provides a measure of Gross value added for the Agriculture, forestry & fishing industry in State. Data from the Agricultural Commodities: Small Area Data, Australia, 2006-07 (cat. no. 7225.0) provides information on the gross value of agricultural production within Capital City and Balance of the State.

The share of the gross value of agricultural production within Capital City is used to allocate the State Gross value added figure to Capital City for 2006-07. The Capital City share is altered in every other year using the hours worked from the Labour Force, Australia, Detailed, Quarterly (cat. no. 6291.0.55.003).

##### QUALITY

The most reliable estimate would be for 2006-07, with the estimates based on the labour force survey being a slightly lower quality. The 2006-07 share based on the Agricultural Commodities: Small Area Data, Australia publication is 8.5 per cent and the Labour Force, Australia, Detailed, Quarterly estimate is 8.3 per cent. This indicates that the labour force survey is a good proxy of economic activity in the Agriculture, forestry & fishing industry.

This method would be unlikely to capture head office operations of Agriculture, forestry & fishing firms located in Capital Cities. This would have a very small downward bias on the estimates. Due to the relatively small size of the industry in the Capital City (0.2 per cent in 2006-07), it would have little impact on the quality of Capital City's GDP.



## Mining

### METHOD

The Gross value added per hour worked (labour productivity) for the Professional, scientific & technical services industry is multiplied by the total hours worked in the Mining industry in the Capital City. This is done as much of the Mining activity in the Capital City is often related to head office operations. The Professional, scientific & technical services Gross value added per hour worked is thought to reflect the type of activities carried out by head office operations.

### QUALITY

Due to the conceptual issues with measuring mining production associated with city based workers and lack of data the Mining estimates of Gross value added are considered to be of a very low quality. The method would not account for direct mining operations (quarries, sands etc) which take place in the Capital City. This could have a very small downward bias on the estimates. Due to the relatively small size of the industry in Capital Cities (between 0.1 per cent and 0.4 per cent) it would have little impact on the quality of the Capital City's gross domestic product.

## Manufacturing

### METHOD

Data from the Manufacturing Industry, State and Australian Capital Territory (cat. no. 8221.1.55.001) publication provides information on the sales income share between Capital City and the Balance of State for 2001-02. Manufacturing Industry, Australia, 2006-07 (cat. no. 8221.0) provides the sales income split for 2006-07.

The share of the income within Capital City and the Balance of State is used to allocate the State Gross value added figure to Capital City for 2001-02 and 2006-07. The Capital City share is altered in every other year using the movements

in hours worked from the Labour Force, Australia, Detailed, Quarterly (cat. no. 6291.0.55.003) publication.

### QUALITY

The most reliable estimate would be for 2001-02 and 2006-07 with the estimates based on the labour force survey of a slightly lower quality. The 2001-02 income share for the Capital City is 69.8 per cent and the labour force hours worked is 72.8 per cent. The 2006-07 income share for the Capital City is 68.6 per cent and the labour force hours worked is 70.3 per cent. This indicates that the labour force survey is a reasonably good proxy of economic activity in the Manufacturing industry. The availability of detailed Manufacturing industry statistics data for 2001-02 and 2006-07 makes the estimates of Capital City's industry Gross value added of a good quality.

## Electricity, gas, water and waste services

### METHOD

National Gross value added for the two digit industry subdivisions from Australian System of National Accounts (cat. no. 5204.0) and the Census two digit industry subdivision place of work data is used to estimate an average Gross value added per worker. The Census place of work data for Capital City and the Balance of State is then applied to these averages. The share of the total estimated gross value added is applied to the Australian National Accounts: State Account (cat. no. 5220.0) Gross value added for the Electricity, gas, water & waste services for State. This produces an estimate for 2005-06 for Capital City and Balance of State Gross value added for this industry. Population growth is then used to create a time series for industry Gross value added.

### QUALITY

The quality for the Electricity, gas, water & waste services industry estimates would have to be seen as low. The lack of data is the key issue. The conceptual issue of splitting Gross value added between generators / water treatment plants and distribution networks is also challenging. The industry is estimated to represent around 2.0 per cent of a city's gross domestic product.

## Education and training

### METHOD

The Australian Bureau of Statistics publication, Australian National Accounts: National Income, Expenditure and Product (cat. no. 5206.0) provides a measure of Gross value added for the Education industry in Australia. Government Finance Statistics, Education, Australia (cat. no. 5518.0.55.001) is used to split the national estimates of Education Gross value added into School & Post School Education.

Australian National Accounts: State Account (cat. no. 5220.0) provides a measure of Gross value added for the Education industry in each State. The Survey of Education and Training (cat. no. 6278.0) provides data on people with education qualifications, and estimates of school aged population taken from Population by Age and Sex, Regions of Australia (cat. no. 3235.0) are used to allocate the State estimate of education by level to the capital city.

### QUALITY

Given the detailed level of data being used and the fairly straightforward nature of the delivery of education and training services (in a spatial sense) lead to the quality of this industry estimated being classed as good.

## Ownership of dwellings

### METHOD

Average rents in Capital City and Balance of the State are derived from the Housing Occupancy and Costs, Australia, 2005-06 (cat. no. 4130.0) publication and combined with population data to estimate the share of Ownership of dwellings for the two areas. This is then applied to the Ownership of dwellings Gross value added from the Australian National Accounts: State Account (cat. no. 5220.0).

### QUALITY

The quality of the available data and the clear conceptual boundaries lead to the quality of this industry estimate being classed as good.

## All other industries

### METHOD

In the absence of any data which would allow the share between the Capital City and Balance of the State to be estimated, the hours worked from the Labour Force, Australia, Detailed, Quarterly (cat. no. 6291.0.55.003) is used. The industries which this method is applied to are:

- Construction
- Wholesale trade
- Retail trade
- Accommodation & food services
- Arts & recreation services
- Other services

For some industries one adjustment is made to the hours worked share. The hours worked are weighted by an average wage rate for Capital City and Balance of the State from the Census. This accounts for different economic structures within each industry in the Capital City and Balance of the State. For example, in Financial & insurance services the

type of activities (from basic banking operations up to hedge funds) is much wider than in Balance of the State (where basic banking operations are the most common activities).

The industries which this method is applied to are:

- Information media & telecommunications
- Financial & insurance services
- Rental, hiring & real estate services
- Professional, scientific & technical services
- Public administration and safety
- Health care and social assistance

### QUALITY

The quality of the various industry estimates would vary and should be treated with some caution but in aggregate the method should provide a good estimate of a Capital City's gross domestic product.

## Taxes less subsidies on products

### METHOD

Australian National Accounts: State Account (cat. no. 5220.0) provides a measure of Taxes less subsidies on products for the Agriculture, forestry & fishing industry in each State. The Capital City share of Agriculture, forestry & fishing industry Gross value added is used to split the value of Taxes less subsidies on products this industry. The residual of the State Taxes less subsidies on products is then split using the total industry value added (excluding Ownership of dwellings) for Capital City and the Balance of the State.

### QUALITY

This method should produce reasonable estimates of the split between Capital City and Balance of the State for Taxes less subsidies on products.

Aggregation of industry estimates to Gross Domestic Product Via the use of the implicit price deflation technique, the chain volume measures of industry Gross value added are converted into current prices. This method overcomes the non-additivity issue with the Chain volume measure and allows the aggregation of industry estimates of Gross value added to overall gross domestic product. In order to maintain consistency with the wider National Accounts, the Production approach estimate of Capital City gross domestic product is benchmarked to Gross State Product. An industry weighted GDP implicit price deflator is created to for the Capital City and Balance of the State.

## 3.2 AREAS FOR FURTHER REFINEMENT AND RESEARCH

Methodological areas which are the subject of ongoing research and development include:

- Development of a Supply Use Table to improve editing of the city GDP estimates;
- Development of a Purchasing Power Parity (PPP) measure to allow better comparisons between the relative size of each major capital city;
- Development of multifactor productivity estimates for each state and city; and
- Incorporation of additional industry specific data sources as they become available.



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