

Labour Price Growth Forecasts

Prepared for the Australian
Energy Regulator

28 February 2019

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Dear Claire

Report on labour price growth forecasts

I enclose Deloitte Access Economics' report on the Wage Price Index (WPI) for Australia, New South Wales, Tasmania, the Northern Territory and the Australian Capital Territory prepared for the Australian Energy Regulator (AER).

This report has been drafted on the basis of the forecasts that underpin the December 2018 quarter *Business Outlook* and *Investment Monitor* publications that rely on the September 2018 quarter Australian Bureau of Statistics (ABS) National Accounts. However, the December 2018 quarter ABS WPI release has been included in this report.

This report follows Report 1 that was provided to the AER in July 2018 and covers the same jurisdictions.

Yours sincerely



Stephen Smith
Lead Partner
Deloitte Access Economics Pty Ltd

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Glossary

AAWI	Average Annualised Wage Increase
ACCC	Australian Competition and Consumer Commission
ABS	Australian Bureau of Statistics
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ANZSIC	Australia and New Zealand Standard Industry Classification
APRA	Australian Prudential Regulation Authority
AWE	Average Weekly Earnings
AWOTE	Average Weekly Ordinary Time Earnings
CPI	Consumer Price Index
DAE	Deloitte Access Economics
EBA	Enterprise Bargaining Agreement
FWC	Fair Work Commission
GDP	Gross Domestic Product
GJ	Gigajoules
GSP	Gross State Product
GVA	Gross Value Added
ICRC	Independent Competition and Regulatory Commission
LNG	Liquefied Natural Gas
MW	Megawatt
NEG	National Energy Guarantee
NEM	National Electricity Market
PV	Photovoltaics
RBA	Reserve Bank of Australia
WPI	Wage Price Index

Executive Summary

Australian wage growth slowly accelerating

Wage gains have recovered modestly from a low in 2016. The Wage Price Index (WPI) grew by 0.5% in the December quarter of 2018, to be 2.3% higher over the year. The recent improvement is more pronounced when bonuses and commissions are included, with total wage growth of 2.8% over the year to December 2018.

Over the year, wage gains were faster in the public sector (2.5%) compared to the private sector (2.3%). The fastest wage gains were also in industries in which the public sector plays a larger role, with year-to gains of 2.8% in health care, 2.8% in utilities, and 2.7% in arts and recreation. At the other end of the scale, wage gains were weakest in telecommunications (1.6%) and mining (1.8%). At the state level, wages grew the fastest in Victoria (2.7%), Tasmania (2.6%), and New South Wales (2.4%). Wages grew the slowest in Western Australia (1.6%) and the Australian Capital Territory (2.0%).

Wage growth has been supported by the Fair Work Commission's (FWC) 3.5% increase in award and minimum wages from 1 July 2018. Approximately one fifth of all workers' pay is set by awards, but it is estimated that a similar share of employees on federal EBAs have wage outcomes linked in some way to FWC decisions.

Fewer wage 'freezes' have also partly driven the improvement in wage growth. A number of EBAs have recently been signed that bring an end to lengthy wage freezes for workers – most notably in the retail sector. Reserve Bank of Australia (RBA) analysis indicates that faster wage gains have been supported by a larger share of jobs experiencing positive wage growth, rather than an increase in the actual size of average wage gains.

National Australia Bank's business survey reports that difficulty in finding suitable labour is a key factor currently driving wage pressures.

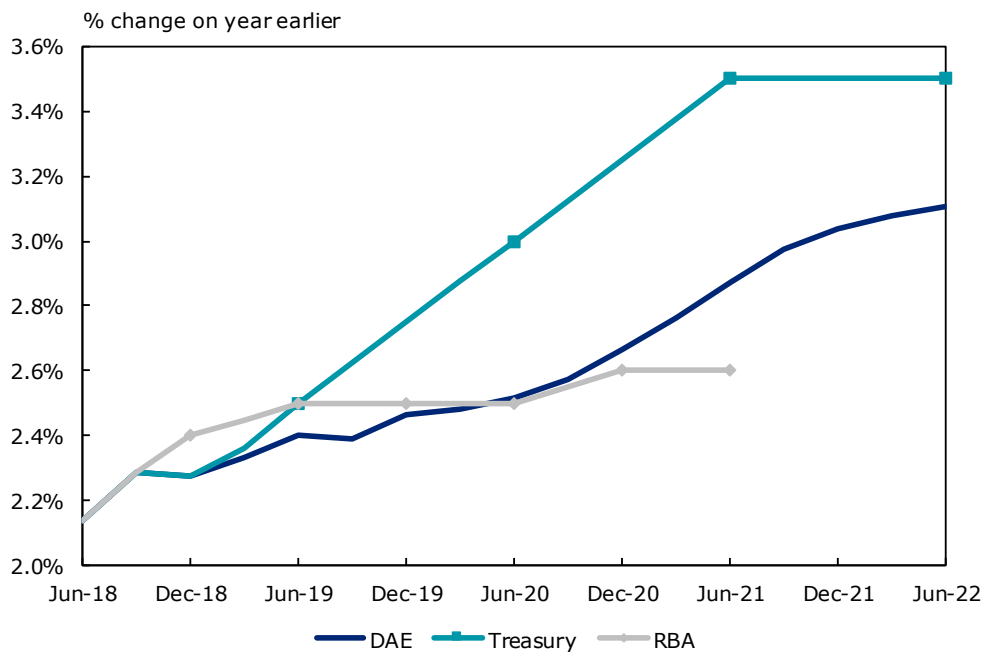
A number of factors are expected to lift wage growth over the coming years including continued gains in employment, higher inflation and a greater share of national income flowing to wages as the labour market tightens.

However, the pace of gains is likely to remain subdued. Economy-wide changes tend to occur slowly and there is often a gap between improved economic conditions flowing through to better wage gains for workers. In part, this lag reflects the fact that wages tend to move up easily, but it is much harder for them to move down. Employers require sufficient confidence about the longevity of improved operating conditions before adding to their wage bill.

Deloitte Access Economics forecasts a gradual lift in wage growth. Nominal wages are projected to lift from 2.1% growth in 2017-18 to 2.4% in 2018-19 before reaching 3.2% by 2022-23.

By way of benchmarking, our forecasts are in line with the latest released by the Reserve Bank in its February 2019 *Statement of Monetary Policy*, but continue to project a more gradual rate of pick-up in wage inflation than is envisaged in the Commonwealth Treasury forecasts encompassed in the *Mid-Year Economic and Financial Outlook* released in December 2018.

Chart 1.1 Comparison of national WPI forecasts by forecaster



Note: Markers indicate provided forecast, remaining data points have been imputed.
 Source: Commonwealth Treasury MYEFO 2018-19, Deloitte Access Economics, RBA February 2019 Statement of Monetary Policy.

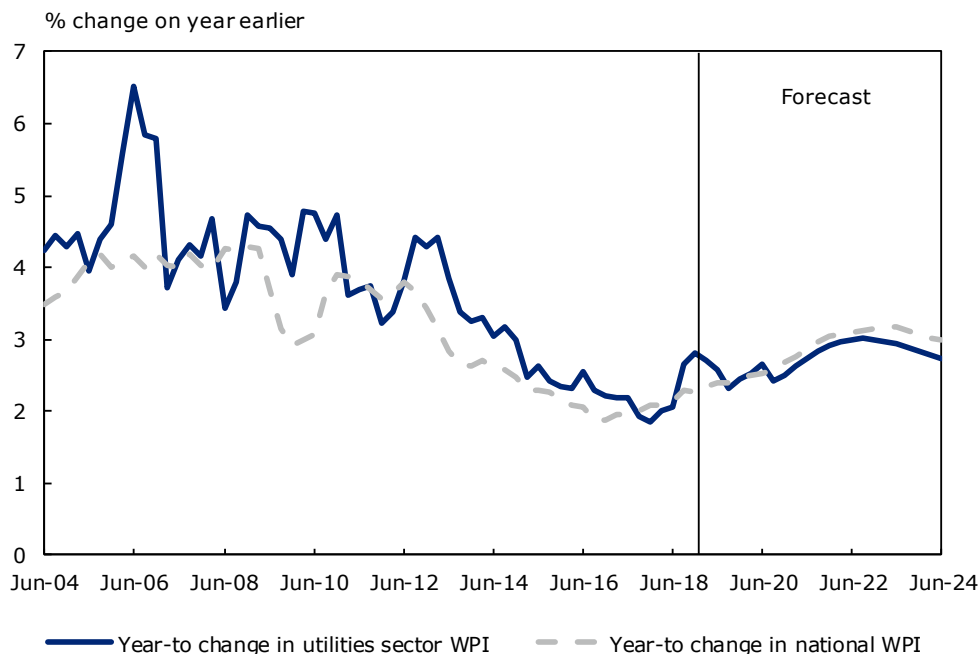
Utilities wage growth to underperform wages in the wider economy

Utilities sector wages grew by 2.8% over the year to December 2018, up from a low of 1.8% in December 2017. Wage gains have also increased across the wider economy as spare capacity in the labour market continues to tighten.

Wage gains in the utilities sector have outperformed wages in the wider Australian economy since June 2018. Private sector utilities wages grew by 2.9% over the year to December 2018, compared to a 2.6% gain in the public sector.

This acceleration does not appear to be driven by an improvement in the growth in utilities sector output, which remains below the average across all industries. Measures of labour productivity (which make workers more valuable to businesses) remain sluggish, while conditions in industries that compete with utilities for labour (such as construction, mining and manufacturing) are relatively subdued.

Chart i Utilities Wage Price Index forecasts



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.
 Source: ABS, Deloitte Access Economics.

There are a number of potential explanations for the recent lift in utilities wages:

- Although housing construction has moderated following the peak of the housing boom, record levels of infrastructure investment have supported civil construction activity. There may be a greater degree of substitutability between the skills required for civil construction and the utilities sector, compared with housing construction and the utilities sector. This would add upwards pressure to wage gains in the utilities sector.
- It is possible that wages have increased because requisite skills have lifted, but – if so – then better skilled workers have yet to boost sector output.
- Utilities WPI exhibits a greater degree of volatility than the all industry WPI. It is possible that the recent acceleration in wages gains is a temporary fluctuation.
- The ABS refreshes the representative sample of employers surveyed in the WPI series annually. This update occurs in the December quarter, and may have contributed somewhat to the acceleration in utilities wage gains.

Over the forecast period, utilities wages are expected to grow at a marginally slower rate than the all industry average. This is largely driven by the fact that utilities output is forecast to grow slower than the average across all sectors. Conditions are expected to remain weak in competitor sectors such as manufacturing and mining, while infrastructure investment activity is likely to peak in the near future. The gradual recovery in wage growth in the utilities sector is in line with the gradual recovery in Australian wages over the next few years.

The utilities WPI is forecast to gradually recover from growth of 2.1% in 2017-18, to 2.6% in 2018-19, before reaching 3.0% by 2021-22.

Utilities wage growth at the state level will largely mirror national trends

Wage growth for the utilities sector in **New South Wales** was 2.5% over the year to December 2018.

- In recent years, output from the utilities sector in New South Wales has underperformed relative to the national level contributing to declining relative wages in the sector.
- New South Wales utilities sector output is expected to accelerate back towards trend growth driving demand for jobs and increasing wages. Wages in the New South Wales utilities sector are expected to grow at a similar pace as wages across the New South Wales economy.
- Utilities wage growth in New South Wales is forecast to increase from 1.8% in 2017-18 to 2.9% in 2018-19. By 2023-24, wages in the New South Wales utilities sector are expected to grow by 2.8%.

Deloitte Access Economics estimates that **Tasmanian** utilities WPI grew by 2.4% over the year to December 2018.

- Wages in the Tasmanian utilities sector have generally grown at rates above the national average for the past several years. Broader strength in the Tasmanian economy has boosted wages across the state economy including in the utilities sector.
- Tasmanian utilities WPI is expected to grow moderately over the coming years, in-line with wage gains across the broader Tasmanian economy. Tasmania utilities wages are forecast to lift from 2.4% growth in 2017-18 to 2.8% in 2018-19 as utilities output ticks up. Forecast wage growth in the sector is 2.7% in 2023-24.

Deloitte Access Economics estimates that the **Northern Territory** utilities WPI grew by 2.0% over the year to December 2018. This is roughly equivalent to wage growth across all industries in the Northern Territory (2.2%).

- Lower economic and employment opportunities following the completion of the Ichthys LNG plant continue to play a key role in the relatively low wage growth for the Northern Territory utilities sector and the territory as a whole.
- The Territory Government has committed to increasing its share of renewable energy generation, which has led to additional investment in renewables. This may increase labour demand for suitably qualified workers and place upwards pressure on utilities wages. However, increased renewables investment may also present challenges for existing power producing assets, having potential implications for employment and wages elsewhere in the sector.
- Deloitte Access Economics expects wages in the Northern Territory's utilities sector to increase over the forecast period, reaching 2.9% growth in 2022-23 (equal to the national rate).

Deloitte Access Economics estimates that the **Australian Capital Territory's** utilities WPI grew by 2.6% over the year to December 2018. This is slightly below the Australian utilities sector wage growth (at 2.8%), but above territory-wide (2.0%) wage growth over the same period.

- Private sector wages in the territory are expected to support average wage growth in the state reaching 2.9% in 2023-24. Public sector wage growth may be limited to some extent by the Commonwealth Government policy for new Australian Public Service Enterprise Bargaining Agreements to be negotiable up to an average of 2%.
- Wage growth in the territory's utilities sector is expected to remain relatively constant over the forecast period, growing by 2.6% in 2023-24. Wages in the territory's utilities sector are projected to remain below wage gains in the wider territory economy.

Economic growth to support further wage gains

The Australian economy grew by 2.8% in the year to September 2018, above 2.5% a year earlier. This acceleration has been supported by a strong global economy, a lower Australian dollar and elevated levels of government spending. Labour market conditions remain robust, with continued growth in business profits helping to sustain employment gains. Around 300,000 jobs were created over the past year, pushing the unemployment rate down to the lowest levels seen since earlier this decade.

There are pockets of weakness that will affect economic activity in the short term. Housing construction activity is set to fall as property prices in Sydney and Melbourne continue to decline, the drought in eastern Australia will affect agricultural exports, while tighter credit conditions will continue to weigh on residential property markets, small businesses and retail spending.

This is occurring at a time when national income growth remains robust, underpinned by elevated commodity prices and higher export volumes. Adding to this, production continues to ramp-up at a number of large liquefied natural gas facilities, with Australia on track to become the world's largest producer of LNG in 2019. As a result, Australia's national income will continue to grow at a healthy rate over the near term.

To date the growth in the economy has largely flowed through to employment gains and business profits, more so than wages. There are signs that wage gains are set to improve. The RBA recently noted that an increasing number of businesses are finding it difficult to find workers with the necessary skills. This should lead to an acceleration in the pace of wage gains over time.

A number of risks to the outlook remain. The Reserve Bank is not expected to raise interest rates in 2019, but rising global interest rates are already increasing the cost of funds in Australia's banking system. Tighter credit conditions and record levels of household debt are likely to exacerbate the downswing in dwelling construction and place some pressure on the willingness of households to spend. As a result, domestic demand is expected to slow in 2019 for the first time in six years.

Overall, real GDP is forecast to slow from 2.8% growth in 2017-18 to 2.7% in 2018-19. Activity is then projected to lift amid continued strength in public investment, strong growth in exports and an improvement in private business investment.

Utilities output to remain subdued during a period of structural transformation

Utilities sector output grew by 1.1% in the year to September 2018. This continues a long-running trend that has seen the utilities sector underperform compared to the wider economy since 2008-09. A significant component of this underperformance has been due to the electricity supply sub-sector, which accounts for around three fifths of total industry output and two fifths of employment.

A number of structural factors have contributed to a decline in the amount of electricity consumed from the grid across the National Electricity Market (NEM) since 2009:

- An increasing share of households and businesses have adopted rooftop photovoltaics (PV), battery storage, and other small scale technologies to generate their own electricity.
- Elevated retail electricity prices have contributed to households and businesses actively modifying their behaviour to reduce electricity use where possible.
- Over and above that, there has been a trend towards more energy efficient appliances, machinery and buildings.

These trends are expected to persist over the coming years, outweighing the positive effect of new grid connections due to population growth. According to the Australian Energy Market Operator's (AEMO) 2018 Electricity Statement of Opportunities, consumption of NEM grid-supplied electricity is expected to remain relatively flat over the next decade.

There are also a number of changes underway in the NEM that may affect output over the coming years.

- Electricity prices are expected to fall over the next two years. This is partly due to strong growth in supply from renewable energy projects, intensified public scrutiny on retail margins, and regulatory changes.
- The settlement period in the wholesale electricity market is set to move from 30 minutes to 5 minutes from 1 July 2021. A shorter settlement period will provide a better price signal for investment in fast response technologies such as batteries, gas peaking power plants and demand management.
- Australia's electricity sector is also undergoing a rapid digitalisation. The opportunities associated with this digitalisation have been estimated at approximately \$1.3 billion per annum.

The electricity sector faces a number of risks over the medium term:

- Continued uncertainty around policy settings means greater risk for investors.
- Significant falls in the cost of household battery storage systems could prompt a larger share of households to move off the grid entirely.
- Further pressure on the manufacturing sector may see additional industrial electricity users choose to close local operations and move offshore.

Utilities sector output is expected to fall from 1.8% growth in 2017-18 to 0.7% in 2018-19, before recovering to 1.7% in 2019-20. Growth in utilities sector output is forecast to remain weaker than growth in the Australian economy as a whole over the forecast period to 2023-24.

Table i State WPI forecasts, all sectors

Yearly changes in nominal WPI

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
National	2.1	2.3	2.5	2.7	3.0	3.2	3.0
New South Wales	2.1	2.5	2.4	2.6	2.9	3.1	3.0
Tasmania	2.3	2.6	2.2	2.5	2.8	2.8	2.8
Northern Territory	1.3	2.1	2.1	2.6	3.0	3.1	2.9
Australian Capital Territory	1.9	2.2	2.7	2.9	3.1	3.1	3.0

Yearly changes in real WPI

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
National	0.1	0.5	0.3	0.4	0.6	0.8	0.9
New South Wales	0.0	0.5	0.2	0.2	0.6	0.7	0.8
Tasmania	0.2	0.3	-0.1	0.2	0.3	0.4	0.6
Northern Territory	0.3	0.3	0.1	0.3	0.5	0.7	0.8
Australian Capital Territory	-0.5	-0.1	0.5	0.6	0.6	0.7	0.8

Note: annual % change refers to the year-average change.

Source: ABS, Deloitte Access Economics.

Table ii Key variables, Australia

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Output	2.8	2.7	2.9	2.9	2.9	2.7	2.5
Consumer price index	2.0	1.9	2.2	2.4	2.4	2.4	2.2
Wage Price index	2.1	2.3	2.5	2.7	3.0	3.2	3.0
Ave. weekly earnings	2.3	2.3	2.2	2.5	2.8	2.9	2.8
Ave. weekly ordinary time earnings	2.4	2.2	3.0	3.2	3.4	3.6	3.6

Source: ABS, Deloitte Access Economics.

Table iii Economic variables, Australia

Annual % change (unless noted)	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Consumption							
Private sector	2.8	2.6	2.6	2.2	2.4	2.4	2.5
Public sector	3.7	3.5	2.8	2.5	2.6	2.4	2.5
Private sector investment							
Non-business housing	0.1	1.4	-2.9	6.0	5.1	-0.6	-4.3
Non-business real estate	0.1	-5.6	-2.0	5.3	4.1	-1.3	-4.7
Non-residential building	9.4	0.7	9.4	7.5	4.0	2.4	2.5
Engineering construction	4.5	-6.8	1.0	5.2	3.6	1.9	2.0
Machinery and equipment	6.8	3.9	5.9	8.7	6.2	4.6	4.9
IP and livestock	3.2	7.2	7.5	11.6	9.0	7.3	7.8
Public investment							
General Government	5.6	6.5	4.9	4.2	3.9	3.6	3.3
Public enterprises	-8.0	0.3	0.5	1.9	1.6	1.6	2.3
Domestic final demand	3.3	2.5	2.7	3.4	3.1	2.5	2.3
Private sector	3.4	2.1	2.6	3.6	3.2	2.5	2.2
Public sector	3.2	3.8	3.0	2.7	2.8	2.6	2.6
Gross national expenditure	3.3	2.4	2.7	3.4	3.1	2.5	2.3
International trade							
Exports	4.0	3.4	3.6	3.9	4.3	4.8	5.5
Imports	7.0	1.2	2.8	6.3	5.2	3.8	4.7
Net (% additon to growth)	-0.3	0.3	0.0	-0.5	0.0	0.2	0.2
Total output (GDP)	2.8	2.7	2.9	2.9	2.9	2.7	2.5
Non farm output	3.0	2.9	3.0	2.8	2.9	2.8	2.6
Employment	3.1	2.2	1.3	1.2	1.3	1.3	1.3
Unemployment rate (%)	5.5	5.0	4.7	4.7	4.8	4.8	4.9

Source: ABS, Deloitte Access Economics. All variables (except for population, employment and unemployment) expressed in inflation-adjusted terms.

Table iv Wages and prices, Australia

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Consumer price index (CPI)	2.0	1.9	2.2	2.4	2.4	2.4	2.2
Wage price index (WPI)							
Nominal	2.1	2.3	2.5	2.7	3.0	3.2	3.0
Real	0.1	0.5	0.3	0.4	0.6	0.8	0.9
Average weekly earnings (AWE)							
Nominal	2.3	2.3	2.2	2.5	2.8	2.9	2.8
Real	0.3	0.5	0.0	0.1	0.4	0.5	0.6
Average weekly ordinary time earnings (AWOTE)							
Nominal	2.4	2.2	3.0	3.2	3.4	3.6	3.6
Real	0.4	0.3	0.8	0.8	1.0	1.2	1.4
Unit labour costs							
Nominal	1.0	-0.1	0.7	1.0	1.7	2.1	2.3
Real	-1.0	-1.9	-1.4	-1.3	-0.7	-0.3	0.1

Source: ABS, Deloitte Access Economics.

Table v Sectoral wages, Australia

Financial year changes in nominal national industry sector WPI

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
All industries	2.1	2.3	2.5	2.7	3.0	3.2	3.0
Utilities	2.0	2.7	2.5	2.6	2.9	3.0	2.8

Financial year changes in real national industry sector Wage Prices

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
All industries	0.1	0.5	0.3	0.4	0.6	0.8	0.9
Utilities	0.0	0.8	0.3	0.2	0.5	0.6	0.6

Source: ABS, Deloitte Access Economics.

Table vi State utilities sector nominal wages

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
National	2.0	2.7	2.5	2.6	2.9	3.0	2.8
New South Wales	1.3	2.7	2.7	2.6	2.9	3.0	2.9
Tasmania*	2.4	2.6	2.5	2.5	2.8	2.7	2.7
Northern Territory*	1.7	2.2	2.3	2.3	2.7	2.8	2.7
Australian Capital Territory*	2.4	2.6	2.6	2.8	2.9	2.8	2.7

*Historical data estimated using Deloitte Access Economics' wage price model. Unavailable from the ABS.

Source: ABS, Deloitte Access Economics.

Table vii State utilities sector real wages

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
National	0.0	0.8	0.3	0.2	0.5	0.6	0.6
New South Wales	-0.7	0.7	0.6	0.2	0.6	0.7	0.7
Tasmania*	0.3	0.3	0.2	0.2	0.3	0.4	0.5
Northern Territory*	0.7	0.3	0.3	0.1	0.3	0.5	0.5
Australian Capital Territory*	0.1	0.3	0.4	0.4	0.4	0.4	0.5

*Historical data estimated using Deloitte Access Economics' wage price model. Unavailable from the ABS.

Source: ABS, Deloitte Access Economics.

1 Background

The Australian Energy Regulator (AER) commissioned Deloitte Access Economics to provide forecasts for wage price growth for the electricity, gas, water and waste services (utilities) industry to 2023-24 for the following jurisdictions:

- New South Wales
- Tasmania
- Northern Territory
- Australian Capital Territory
- Australia.

Specifically, AER has requested:

- Annual Wage Price Index (WPI) forecasts for Australia and relevant states;
- A brief analysis of the key influences on the forecast changes in the WPI, including:
 - An overview of the national and state economic outlook, including a discussion of the outlook for the utilities sector.
 - An analysis of the national and state outlook for wages for all industries and the utilities sector.
 - A discussion of the key drivers for wage growth including inflationary trends, productivity trends, Enterprise Bargaining data, and relevant cyclical factors.
- A description of the methodology and assumptions used to forecast WPI.

For the states covered in this report, the Australian Bureau of Statistics (ABS) only releases WPI estimates in the utilities sector for New South Wales. For those states where the ABS does not release WPI estimates, Deloitte Access Economics uses a range of related data to estimate the utilities sector WPI.

A detailed methodology description can be found in Report 1 provided to the AER in July 2018.

2 Australia

2.1 Economic outlook

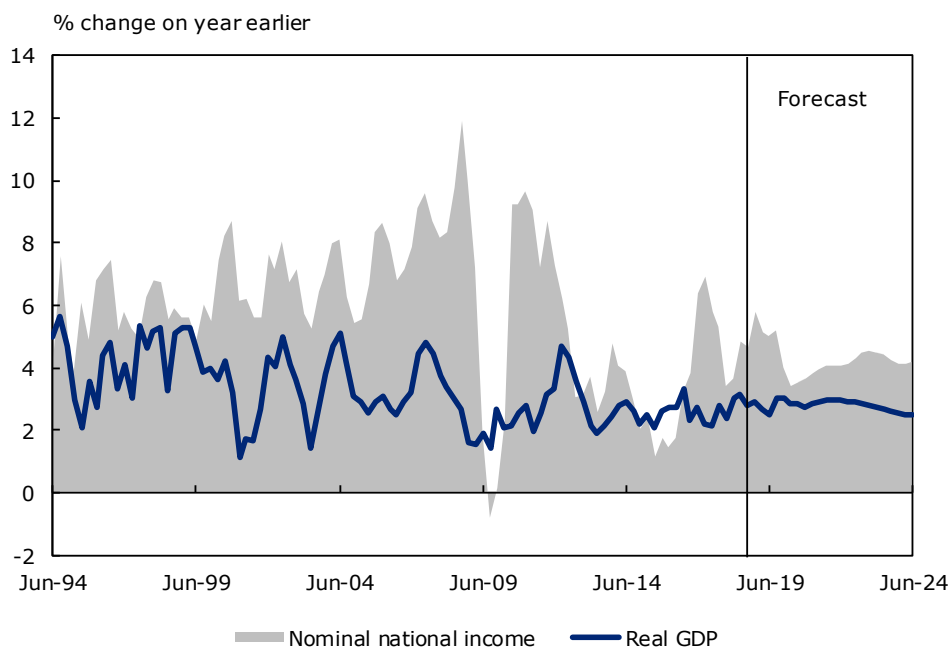
2.1.1 Overview

The Australian economy grew by 2.8% in the year to September 2018, above 2.5% a year earlier. This acceleration has been supported by a strong global economy, a lower Australian dollar and elevated levels of government spending. Labour market conditions remain robust, with continued growth in business profits helping to sustain employment gains. Around 300,000 jobs were created over the past year, pushing the unemployment rate down to the lowest levels seen since earlier this decade.

There are pockets of weakness that will affect growth in the short term (Chart 2.1). Housing construction activity is set to fall as property prices in Sydney and Melbourne continue to decline, the drought in eastern Australia will affect agricultural exports, while tighter credit conditions will continue to weigh on residential property markets, small businesses and retail spending.

This is occurring at a time when national income growth remains robust, underpinned by elevated commodity prices and higher export volumes. The Reserve Bank of Australia's (RBA) Commodity Price Index has increased by around one quarter from a low in late 2017, driven by the announcement of new stimulus measures in China and temporary supply disruptions. Production continues to ramp-up at a number of large liquefied natural gas facilities, with Australia on track to become the world's largest producer of LNG in 2019. As a result, Australia's national income will continue to grow at a healthy rate over the near term.

Chart 2.1 Australian production and national income growth



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.
Source: ABS, Deloitte Access Economics.

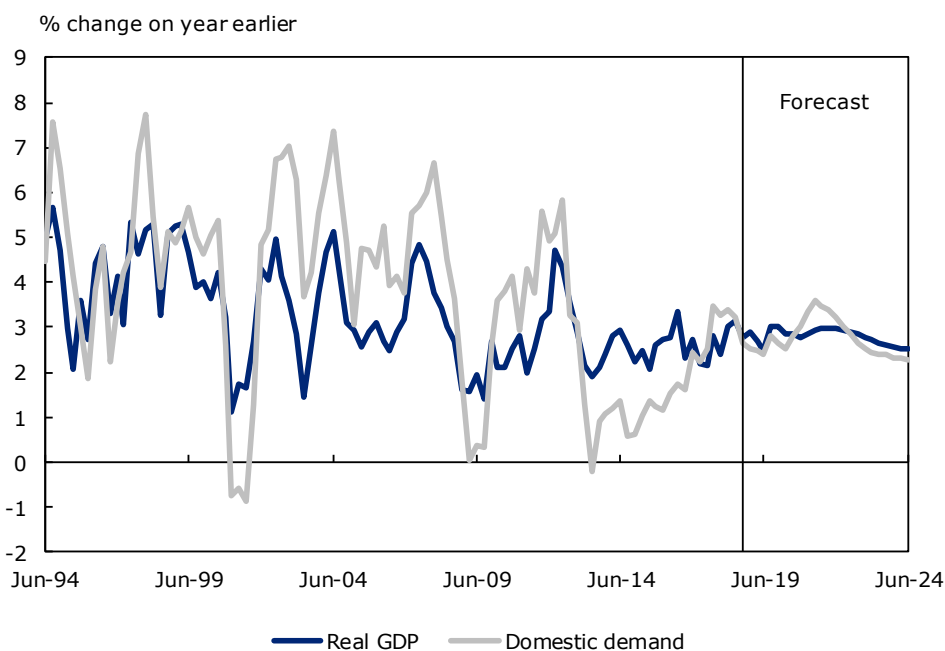
To date, the recent growth in the economy has largely flowed through to employment gains and business profits, more so than wages. Business profits before tax have doubled from a low in early 2016. Healthy profits are an important prerequisite for businesses to invest in new capacity, to employ more people and to increase wages. Employment and investment have already lifted, and there are signs that wage gains will improve. The RBA recently noted that an increasing number of businesses are finding it difficult to find workers with the necessary skills. This should lead to an acceleration in the pace of wage gains over time.

A number of risks to the outlook remain. Australia transitioned from a mining-boom to a housing-boom. The combination of record low interest rates, strong population growth, foreign investment and dwelling undersupply in some markets saw Australian house prices grow by more than 50% from early 2012 to a peak in late 2017.¹ Gains were largest in Sydney (around 80%) and Melbourne (65%), helping to support everything from retail spending to public infrastructure investment at a time when falling engineering construction investment was weighing on economic conditions in a number of states.

However, the housing boom also led to an increase in debt. Australian households now have the second highest debt to income ratios in the world, behind only the Swiss. Were interest rates to move one percentage point higher in Australia, then debt servicing costs would reduce the ability of Australian households to spend by two-thirds of a percentage point.

The Reserve Bank is not expected to raise interest rates in 2019, but rising global interest rates are already increasing the cost of funds in Australia’s banking system. Tighter credit conditions are likely to exacerbate the downswing in housing construction and place some pressure on the willingness of households to spend. As a result, domestic demand is expected to slow in 2019 for the first time in six years (see Chart 2.2).

Chart 2.2 Domestic demand and GDP



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.
Source: ABS, Deloitte Access Economics.

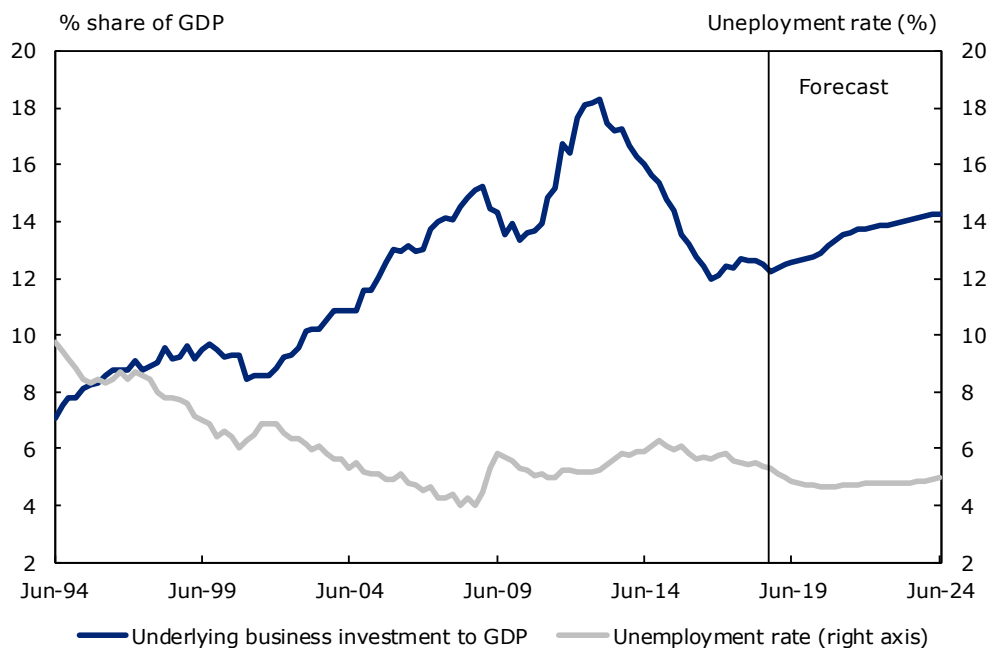
¹ Australian Bureau of Statistics, *Residential Property Price Indexes: Eight Capital Cities, Sep 2018*, cat. no. 6416.0 (11 November 2018).

The outlook for investment has improved. Ongoing growth in the Australian economy is tightening measures of capacity utilisation, business profits continue to grow at healthy rates, and borrowing costs remain low. Adding to this, record levels of government infrastructure spending are supporting activity in the private sector, while a number of miners have also approved new investment projects to replace ageing deposits.

However, the extent to which this backdrop will support a lift in investment in the short term may be limited. Leading indicators including the capex survey conducted by the ABS and the value of building approvals remain relatively subdued. It is also worth noting that new 'sustaining investment' in the mining sector is much smaller than during the mining boom. As a result, private businesses investment is forecast to remain relatively flat until around mid-2020.

Overall, real GDP is expected to slow from 2.8% growth in 2017-18 to 2.7% in 2018-19. Activity is then forecast to lift amid continued strength in public investment, strong growth in exports and an improvement in private business investment.

Chart 2.3 Business investment as a share of GDP and the unemployment rate



Source: ABS, Deloitte Access Economics.

2.1.2 Utilities sector

The 'utilities' sector is the broad term applying to the electricity, gas, water and waste services industry, which is Division D of the Australian and New Zealand Standard Industrial Classification (ANZSIC). The sector covers activity in the provision of electricity; gas through mains systems; water; drainage; and sewage services.

Utilities sector output grew by 1.1% in the year to September 2018, below 2.8% growth for the Australian economy as a whole. This continues a long-running trend that has seen the utilities sector underperform compared to the wider economy since 2008-09. A significant component of this underperformance has been due to the electricity supply sub-sector, which accounts for around three fifths of total industry output and two fifths of employment.

A number of structural factors have contributed to a decline in the amount of electricity consumed from the grid across the National Electricity Market since 2009:

- An increasing share of households and businesses have adopted rooftop photovoltaics (PV), battery storage, and other small scale technologies to generate their own electricity.
- Elevated retail electricity prices have contributed to households and businesses actively modifying their behaviour to reduce electricity use where possible.
- Over and above that, there has been a trend towards more energy efficient appliances, machinery and buildings.

These trends are expected to persist over the coming years, outweighing the positive effect of new grid connections due to population growth. According to the Australian Energy Market Operator's (AEMO) 2018 Electricity Statement of Opportunities, consumption of NEM grid-supplied electricity is expected to remain relatively flat over the next decade.

There are also a number of changes underway in the NEM that may affect output over the coming years.

Electricity markets have been a key focus of policymakers over recent years. Large increases in electricity prices are continuing to stretch household budgets, while higher input costs are threatening the viability of many Australian businesses – particularly in the manufacturing sector.

Electricity prices are expected to fall over the next two years. This is partly due to strong growth in supply from renewable energy projects. According to AEMO, more than 5,000 MW worth of wind and solar generation projects are currently listed as committed. In comparison around 2,500 MW worth of generation capacity is slated to be withdrawn or retired over the coming years. Intensified public scrutiny on retail margins and regulatory changes are also expected to place downward pressure on prices.

The settlement period in the wholesale electricity market is set to move from 30 minutes to 5 minutes from 1 July 2021. A shorter settlement period will provide a better price signal for investment in fast response technologies such as batteries, gas peaking power plants and demand management.

Australia's electricity sector is also undergoing a rapid digitalisation. The increasing adoption of smart metres, sensors, and other internet-enabled devices is expected to lead to a tenfold increase in the amount of data handled over the next five to ten years. The opportunities associated with this digitalisation have been estimated at approximately \$1.3 billion per annum. Examples include greater use of demand side management enabled by smart metres and virtual power plants that connect distributed energy resources such as batteries and rooftop PV.

The electricity sector faces a number of risks over the medium term:

- Continued uncertainty around policy settings means greater risk for investors.
- Significant falls in the cost of household battery storage systems could prompt a larger share of households to move off the grid entirely.
- Further pressure on the manufacturing sector may see additional industrial electricity users choose to close local operations and move offshore.

On the upside, there is the potential for electric cars – think Tesla – to see an acceleration in their take-up.

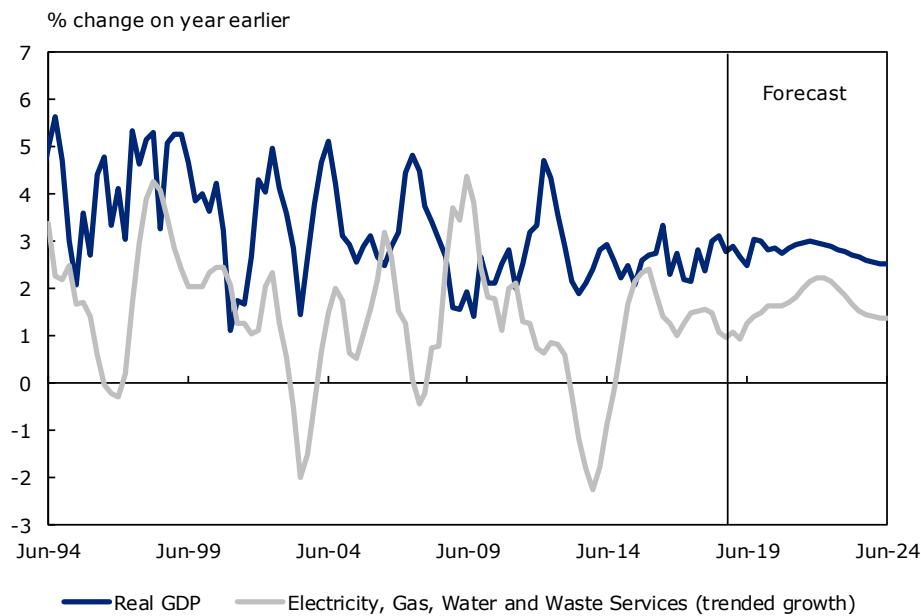
In the gas sector, consumption is forecast to decline over the next five years. Household and business consumption is set to fall amid improvements in energy efficiency and consumers continuing to switching from gas to electricity. Gas-powered generation of electricity is also expected to soften. Consumption is set to stabilise thereafter as LNG exports ramp-up to meet growing demand from Asia.

Rapid growth in LNG exports has contributed to a coupling of the Australian gas market to international markets. In response to concerns around high gas prices and potential shortfalls on Australia's east coast, the Australian Government implemented the Australian Domestic Gas Security Mechanism (AGDSM) in 2017. In the event that there is insufficient natural gas to meet the needs of Australian consumers, LNG exporters can be required to limit exports or find offsetting sources of

new gas. AMEO's 2018 Gas Statement of Opportunities projects sufficient gas supply over the short term, but notes that additional investment in resources and infrastructure will be needed over the long term.

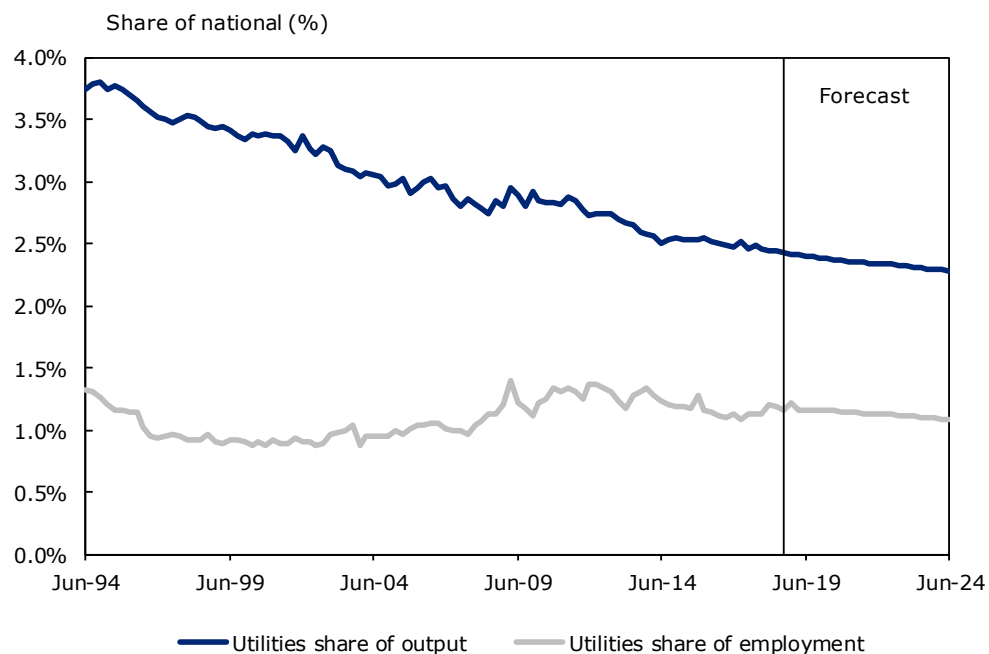
Utilities sector output is expected to fall from 1.8% growth in 2017-18 to 0.7% in 2018-19, before recovering to 1.7% in 2019-20. Growth in utilities sector output is forecast to remain weaker than growth in the Australian economy as a whole over the forecast period to 2023-24 (see Chart 2.4). As a result, the utilities sector is forecast to fall as a share of national output and employment (see Chart 2.5).

Chart 2.4 Utilities sector output and GDP



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.
Source: ABS, Deloitte Access Economics.

Chart 2.5 Utilities share of national output and employment



Source: ABS, Deloitte Access Economics.

2.2 The outlook for wages

2.2.1 All industries

Wage gains have recovered modestly from a low in 2016. The WPI grew by 0.5% in the December quarter of 2018, to be 2.3% higher over the year. The recent improvement is more pronounced when bonuses and commissions are included, with total wage growth of 2.8% over the year to December 2018.

Over the year, wage gains were faster in the public sector (2.5%) compared to the private sector (2.3%). The fastest wage gains were also in industries in which the public sector plays a larger role, with year-to gains of 2.8% in health care, 2.8% in utilities, and 2.7% in arts and recreation. At the other end of the scale, wage gains were weakest in telecommunications (1.6%) and mining (1.8%). At the state level, wages grew the fastest in Victoria (2.7%), Tasmania (2.6%), and New South Wales (2.4%). Wages grew the slowest in Western Australia (1.6%) and the Australian Capital Territory (2.0%).

Wage growth has been supported by the Fair Work Commission's (FWC) 3.5% increase in award and minimum wages from 1 July 2018. Approximately one fifth of all workers' pay is set by awards, but it is estimated that a similar share of employees on federal EBAs have wage outcomes linked in some way to FWC decisions.

Fewer wage 'freezes' have also partly driven the improvement in wage growth. A number of EBAs have recently been signed that bring an end to lengthy wage freezes for workers – most notably in the retail sector. RBA analysis indicates that faster wage gains have been supported by a larger share of jobs experiencing positive wage growth, rather than an increase in the actual size of average wage gains.

National Australia Bank's business survey reports that difficulty in finding suitable labour is a key factor currently driving wage pressures.

A number of factors are pointing to further acceleration in the pace of wage growth over the coming years:

- Continued employment gains are expected to absorb remaining spare capacity in the labour market. This tightening of labour market conditions will place downward pressure on unemployment and underemployment, leading to gradual improvements in wage growth.
- Faster growth in inflation is also set to flow through to wages. Research conducted by the RBA found that CPI was a key determinant of wage setting for around two fifths of firms. That said, the improvement is likely to be slower than previously expected, due partly to lower fuel costs. CPI is forecast to grow by 1.9% in 2018-19, lifting to 2.2% in 2019-20 before reaching around 2.4% by 2020-21.
- Growth in national income has lifted notably from a low in 2015-16. To date much of the gain has been directed toward profits, which have increased by two-thirds in the two years to September 2018. Many businesses have been recovering profits lost during the financial crisis and rewarding shareholders, but a greater share of national income is expected to flow to wages as the labour market tightens.
- In the long run, demographic factors are also expected to add to wage pressures. The increasing retirement among baby boomers is set to restrain growth in the number of potential workers. This should hand employees back some bargaining power in wage negotiations, contributing to higher wage outcomes.

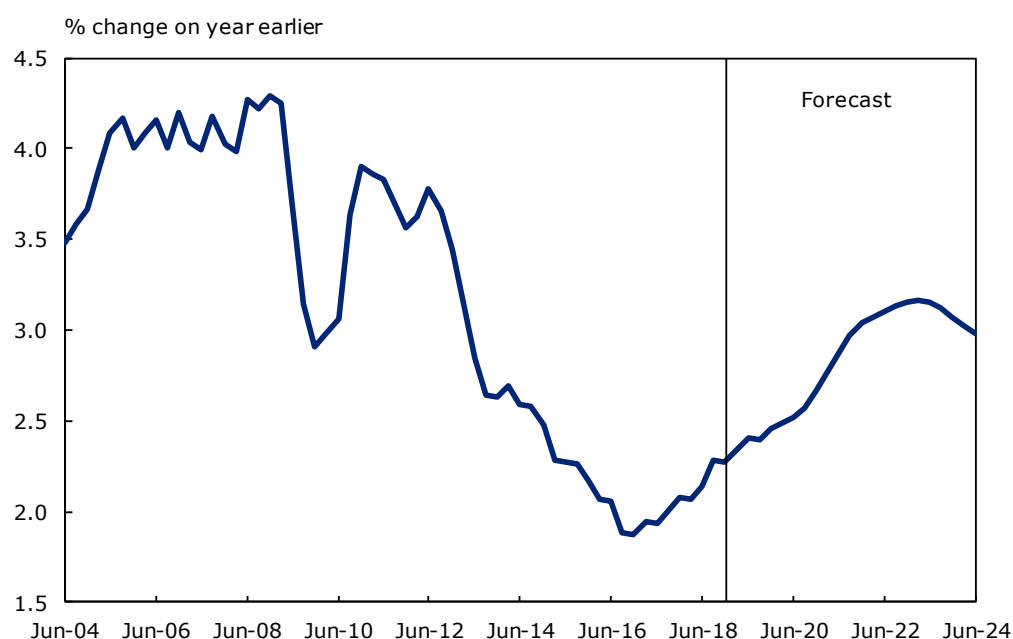
Although wage gains are forecast to improve over the coming years, the pace of gains is likely to remain relatively subdued. Economy-wide changes tend to occur slowly and there is often a gap between improved economic conditions flowing through to better wage gains for workers. In part, this lag is due to the fact that wages tend to move up easily, but it is much harder for them to move down. Employers understand this and require sufficient confidence about the longevity of improved

operating conditions before adding to their wage bill. There are additional structural and cyclical factors limiting the pace of wage gains:

- Falling property prices, record levels of mortgage debt, and tighter credit conditions mean that employees may be more interested in job security than increases in income.
- Workers are now less likely to voluntarily change jobs compared to the mid-2000s. Wage growth is typically lower for workers who do not change employer.
- The returns to technological developments, which are increasingly focussed on intangible capital goods such as software and IT, tend to be highly concentrated in a few firms across a small number of sectors. Firms that are unable to innovate and take advantage of new technologies are often opting to control costs as a way of remaining competitive. This cost-control approach is likely to sit at odds with paying employees higher wages.
- Trends such as automation of work processes, an increase in contract work, and competitive pressures from the internationalisation of services trade have all combined to restrain workers' bargaining power. It is possible that these trends are making workers feel less secure about their future employment and are less likely to push for larger pay rises.

Deloitte Access Economics forecasts a gradual lift in wage growth. Nominal wages are projected to lift from 2.1% growth in 2017-18 to 2.4% in 2018-19 before reaching 3.2% by 2022-23.

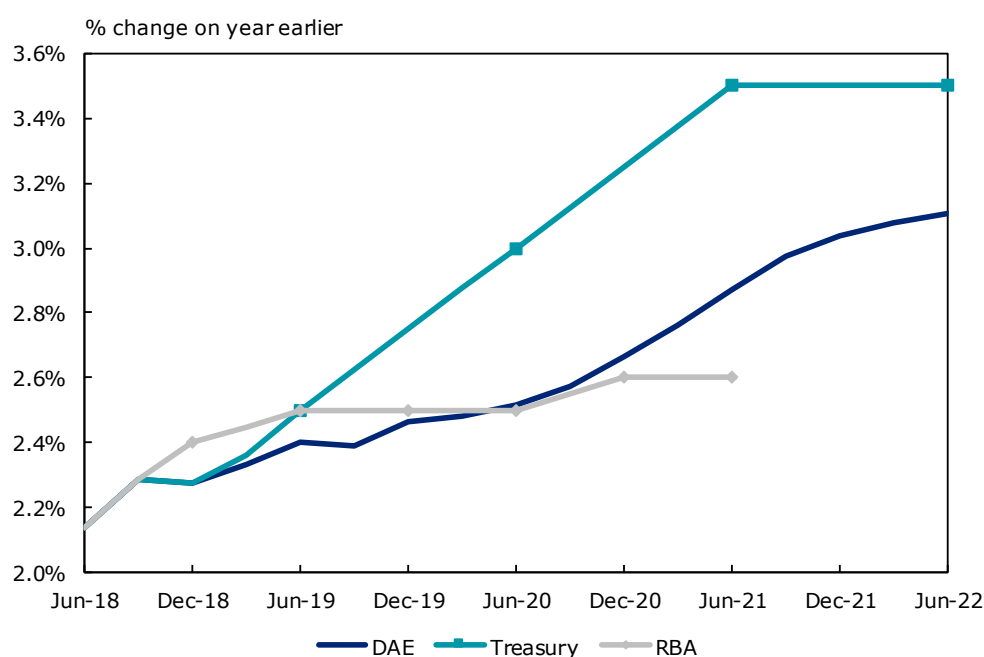
Chart 2.6 National WPI forecasts



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.
Source: ABS, Deloitte Access Economics.

By way of benchmarking, our forecasts are in line with the latest released by the Reserve Bank in its February 2019 *Statement of Monetary Policy*, but continue to project a more gradual rate of pick-up in wage inflation than is envisaged in the Commonwealth Treasury forecasts encompassed in the *Mid-Year Economic and Financial Outlook* released in December 2018.

Chart 2.7 Comparison of national WPI forecasts by forecaster



Note: Markers indicate provided forecast, remaining data points have been imputed.

Source: Commonwealth Treasury MYEFO 2018-19, Deloitte Access Economics, RBA February 2019 Statement of Monetary Policy.

Table 2.1 National wage forecasts

Financial year nominal wages forecasts

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Wage price index	2.1	2.3	2.5	2.7	3.0	3.2	3.0
Average weekly earnings	2.3	2.3	2.2	2.5	2.8	2.9	2.8
Ordinary time earnings	2.4	2.2	3.0	3.2	3.4	3.6	3.6
Unit labour costs	1.0	-0.1	0.7	1.0	1.7	2.1	2.3

Financial year real wages forecasts

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Wage price index	0.1	0.5	0.3	0.4	0.6	0.8	0.9
Average weekly earnings	0.3	0.5	0.0	0.1	0.4	0.5	0.6
Ordinary time earnings	0.4	0.3	0.8	0.8	1.0	1.2	1.4
Unit labour costs	-1.0	-1.9	-1.4	-1.3	-0.7	-0.3	0.1

Source: ABS, Deloitte Access Economics.

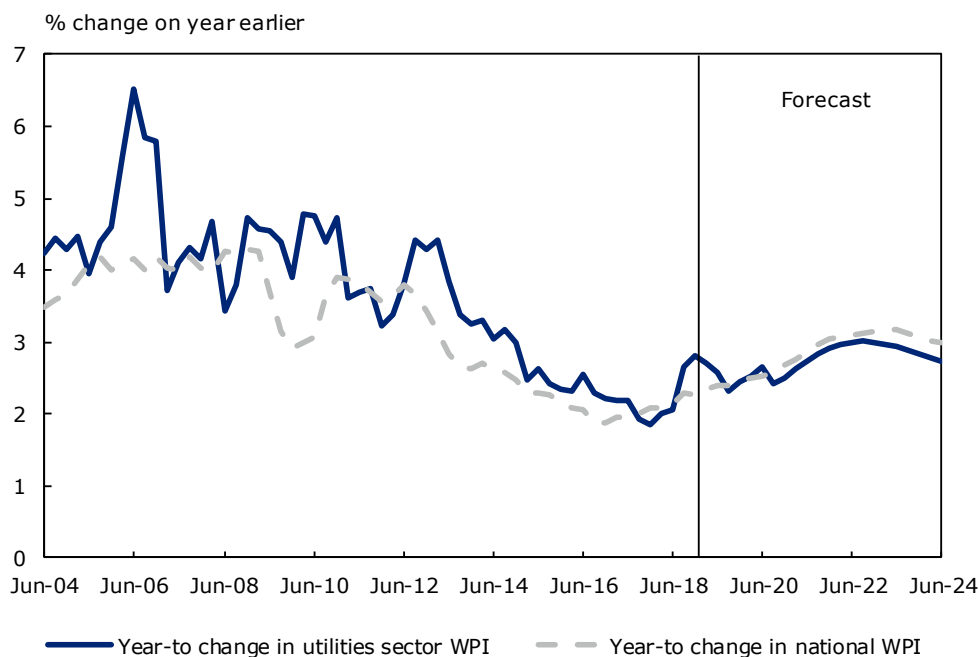
2.2.2 Utilities sector wages

Utilities sector wages grew by 2.8% over the year to December 2018, up from a low of 1.8% in December 2017. Wage gains have also increased across the wider economy as spare capacity in the labour market continues to tighten.

Wage gains in the utilities sector have outperformed wages in the wider Australian economy since June 2018. Private sector utilities wages grew by 2.9% over the year to December 2018, compared to a 2.6% gain in the public sector.

This acceleration does not appear to be driven by an improvement in the growth in utilities sector output, which remains below the average across all industries. Measures of labour productivity (which make workers more valuable to businesses) remain sluggish, while conditions in industries that compete with utilities for labour (such as construction, mining and manufacturing) are relatively subdued.

Chart 2.8 National utilities sector Wage Price Index forecasts



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.
Source: ABS, Deloitte Access Economics.

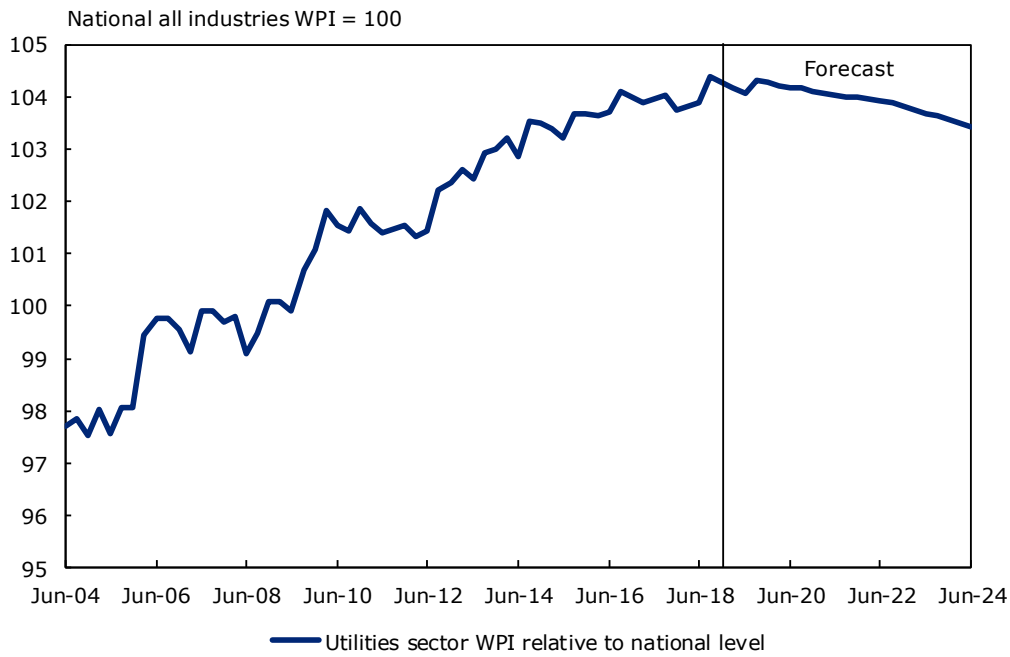
There are a number of potential explanations for the recent lift in utilities wages:

- Although the construction industry is a smaller share of the economy than it was five years ago, it has maintained a similar share of employment. Record levels of infrastructure investment have seen activity shift away from housing construction towards civil infrastructure construction. It is possible that there is a greater degree of substitutability between the skills required for civil construction and the utilities sector, compared with housing construction and the utilities sector. This would add upwards pressure to wage gains in the utilities sector.
- The outperformance of wage gains in the utilities sector relative to the wider economy may reflect factors that are difficult to observe. For example, it is possible that wages have increased because requisite skills have lifted, but – if so – then better skilled workers have yet to boost sector output.
- The utilities sector WPI exhibits a greater degree of volatility than the all industry WPI throughout history. It is possible that the recent acceleration in wages gains is a temporary fluctuation.
- The ABS refreshes the representative sample of employers surveyed in the WPI series annually. This update occurs in the December quarter, and may have contributed somewhat to the acceleration in utilities wage gains.

Over the forecast period, utilities wages are expected to grow at a marginally slower rate than the all industry average. This is largely driven by the fact that utilities output is forecast to grow slower than the average across all sectors. Conditions are expected to remain weak in competitor sectors such as manufacturing and mining, while infrastructure investment activity is likely to peak in the near future. The gradual recovery in wage growth in the utilities sector is in line with the gradual recovery in Australian wages over the next few years.

The utilities WPI is forecast to gradually recover from growth of 2.1% in 2017-18, to 2.6% in 2018-19, before reaching 3.0% by 2021-22.

Chart 2.9 Utilities Wage Price Index relative to National Wage Price Index



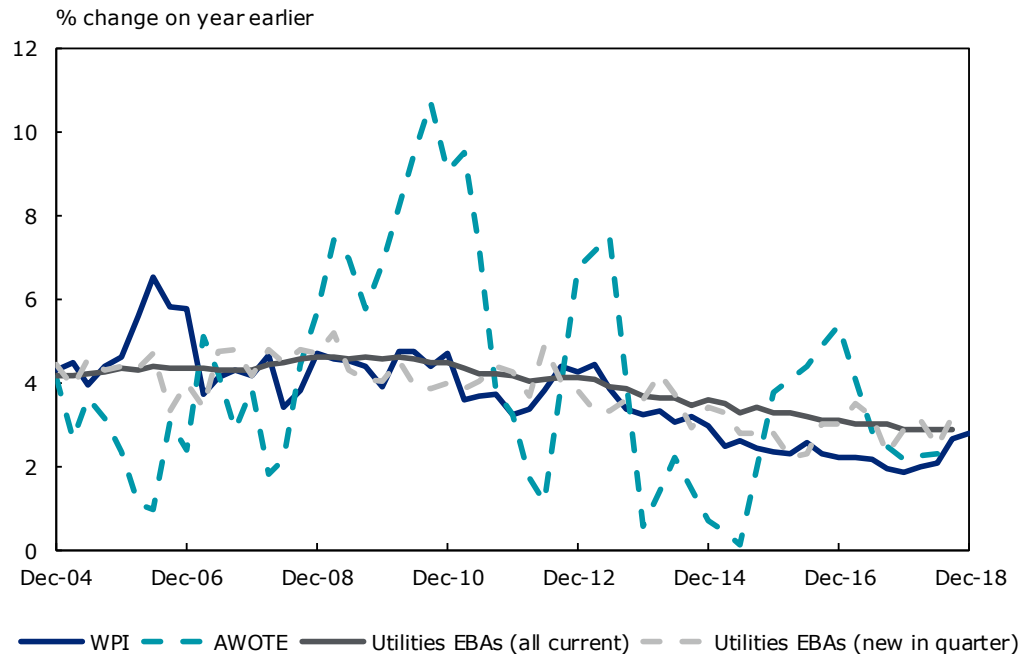
Source: ABS, Deloitte Access Economics.

2.2.2.2 Comparison with results from other wage growth measures

Chart 2.10 shows that, despite volatility in Average Weekly Ordinary Time Earnings (AWOTE – the least informative of the wage measures considered below), the downward trend in utilities WPI has been mirrored by several other wage growth measures that are produced on a regular basis.

These include Enterprise Bargaining Agreements (EBAs) sourced from the *Trends in Federal Enterprise Bargaining* publication produced by the Department of Jobs and Small Business.

Chart 2.10 Measures of utilities sector wage growth



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier
 Source: ABS, Department of Jobs and Small Business

The AWOTE series fluctuates considerably and is consequently limited in its use in forecasting wage growth. In the latest Average Weekly Earnings publication released in May 2018, the ABS indicated that the biannual survey was '*designed to provide estimates of the level of average earnings at a point in time and, while not designed for movements in earnings, the frequency of collection supports a time series of these level estimates*'. Data on the average level of earnings is useful for comparing what an individual earns relative to the average. It is therefore used in the Deloitte Access Economics wage price model as an indicator only.

The utilities EBA data provides a good partial indicator of the future trend growth in the utilities WPI measure. Deloitte Access Economics considers EBA data in forecasting WPI, but it is not the primary driver.

As at the September quarter of 2018, there were 319 EBAs active in the utilities sector, covering some 45,300 employees. Wages in 'all current EBAs' grew at 2.9% for the utilities sector in the September quarter of 2018, the fourth consecutive quarter of such gains. The average annualised wage increase (AAWI) in the utilities sector was above the 2.7% gain seen across all sectors.

Wage growth in new utilities sector EBAs was 3.2% in the year to September 2018, above the 2.5% gain in June 2018. This improvement was partly due to the signing of a large private sector EBA by Utilities Management Pty Ltd, which covered 2,200 employees at an AAWI of 4.0%.

2.2.3 Labour productivity

Labour productivity measures the number of units of output an individual employee can produce in a given time period. The more units of output each worker can produce, the fewer workers are required to create a given level of industry output.

In this report, Deloitte Access Economics provides estimates of labour productivity at the national, state and industry level. The methodology used is presented in the Appendix of Report 1.

Labour productivity in the utilities sector has largely grown at a slower rate than productivity across the wider economy over the last two decades. Research conducted by the Productivity Commission found that growth in multifactor productivity (a measure of productivity that captures the difference in the growth of outputs and inputs such as capital and labour) was strongly negative between 1997-98 and 2009-10 (falling by an average of 3.2% per annum).

Falling multifactor productivity growth was due to an increase in the ratio of peak to average electricity demand (which lowered rates of capacity utilisation), investment in capital assets (which temporarily increased inputs prior to growth in output), undergrounding electricity cabling (which raised costs and quality of service but not the volume of output) and a policy shift in favour of cleaner energy generation (which were initially higher-cost forms of generation). This weighed on labour productivity in the utilities sector from the late 1990s to the late 2000s. More recently, the impact of these factors has largely passed, leading to more settled gains in labour productivity in the utilities sector.

In 2017-18, labour productivity fell by 0.4% in the utilities sector, compared to a 0.2% fall across all industries. Utilities sector labour productivity is forecast to grow by 0.4% in 2018-19, before lifting to 1.6% growth in 2019-20. This is largely due to the fact that employment gains are set to moderate from a peak in 2017-18, adding upwards pressure to labour productivity. Utilities sector labour productivity is expected to closely track productivity in the wider economy over the medium term.

Table 2.2 Australian labour productivity forecasts

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
All industries	-0.2	0.5	1.6	1.7	1.7	1.4	1.2
Utilities	-0.4	0.4	1.6	1.7	1.7	1.4	1.3

Source: ABS, Deloitte Access Economics.

2.2.4 Summary results

Table 2.3 National sectoral wage forecasts

Financial year changes in nominal national industry sector WPI							
Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
All industries	2.1	2.3	2.5	2.7	3.0	3.2	3.0
Utilities	2.0	2.7	2.5	2.6	2.9	3.0	2.8

Financial year changes in real national industry sector Wage Prices							
Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
All industries	0.1	0.5	0.3	0.4	0.6	0.8	0.9
Utilities	0.0	0.8	0.3	0.2	0.5	0.6	0.6

Financial year changes in labour productivity forecasts							
Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
All industries	-0.2	0.5	1.6	1.7	1.7	1.4	1.2
Utilities	-0.4	0.4	1.6	1.7	1.7	1.4	1.3

Source: ABS, Deloitte Access Economics.

3 New South Wales

3.1 Economic outlook

3.1.1 Overview

The New South Wales economy has been expanding at a faster rate than the Australian economy since 2014-15. A weak Australian dollar, low interest rates, strong population growth and record levels of infrastructure investment have all contributed to this period of strength. However, some of the recent drivers of growth are losing momentum.

A key factor in the state's economic fortunes is Sydney's property market. The combination of low interest rates, higher population growth, increased foreign investment and an underlying deficiency of housing stock has contributed to strong price growth in recent years. The median house price in Sydney rose by approximately 75% in the five years to the peak in 2016-17, while unit prices rose by more than 50% over the same period.

The growth in property prices generated a number of positives for the state's economy, including increased employment in the real estate and finance sectors, higher retail spending, and increased stamp duty revenue for the State Government. However, the run-up in property prices was accompanied by an equally large increase in household debt. The accumulation of household debt and elevated investor and interest only lending prompted the Australian Prudential Regulation Authority (APRA) to impose tighter lending requirements.

Credit supply tightened further amid the stricter enforcement of lending standards in the wake of the banking Royal Commission. Foreign investment has also moderated due to capital outflow restrictions in China, tighter Australian government scrutiny of foreign buyers, and the fact that Australian banks are less willing to lend to overseas borrowers.

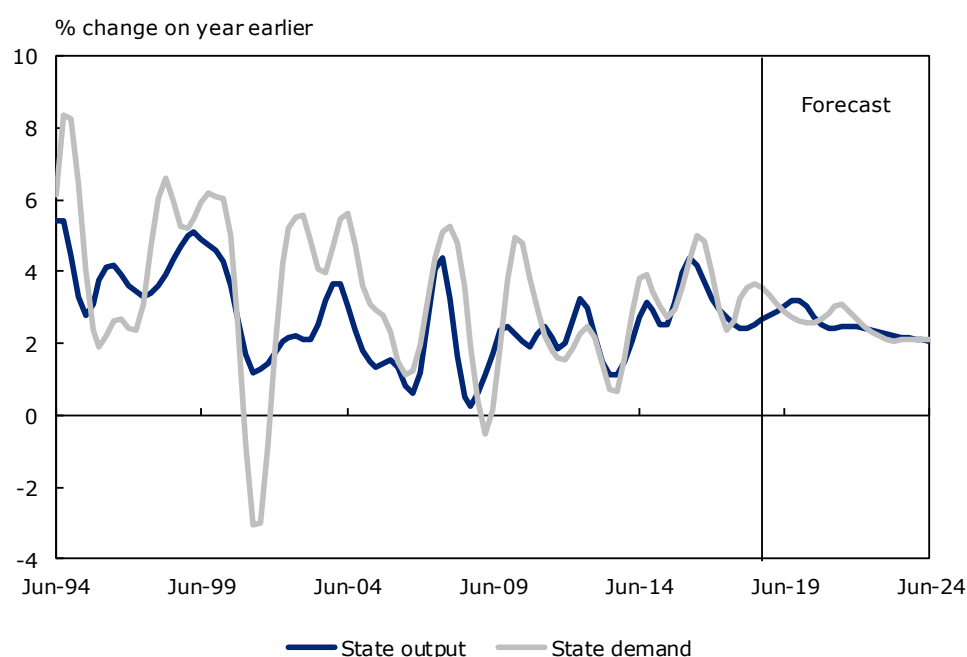
The effect of these factors has been a steady decline in prices across major markets in Australia, with prices in Sydney falling fastest. Prices are down by around 10% from their peak in mid-2017, while sales volumes have declined even further.

Housing construction is starting to fade from record highs, but at a relatively slow pace. There are still many thousands of apartments being built, and it will take some time for them to be completed. However, the current drop in building approvals is likely to accelerate as falling house prices make it less advantageous for developers to invest in building yet more apartments. Employment growth is expected to slow over the short term, led by sectors which are exposed to the downturn in the housing market such as property and financial services. Falling property prices are also likely to weigh on consumer spending growth and the State Government's stamp duty collections, thereby restraining future government investment.

Despite these headwinds, conditions in the New South Wales economy remain broadly positive. The state's unemployment rate is at a record low of 3.9%, employment growth is around double its long-term average, and the participation rate is near record highs. Adding to this the lower Australian dollar is providing a boost for the state's exporters, while business investment conditions are being supported by the large pipeline of non-residential and engineering construction projects.

The drivers of growth in the New South Wales economy are shifting. Future growth will be supported less by dwelling investment and household consumption and more by business investment and exports. Growth in the New South Wales economy is expected to lift from a low of 2.6% in 2017-18 to 2.8% in 2018-19, before accelerating to a 3.1% gain in 2019-20.

Chart 3.1 Output and demand (change on year earlier), New South Wales



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.

Source: ABS, Deloitte Access Economics.

Table 3.1 New South Wales economic forecasts

Annual % change (unless noted)	History	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Consumption							
Private sector	2.6	2.7	2.4	1.6	1.8	2.0	2.2
Public sector	2.4	4.4	2.9	2.3	2.6	2.4	2.4
Private sector investment							
Dwelling investment	1.8	1.4	-6.6	2.9	3.0	-2.0	-4.8
Non-residential building	17.7	4.1	9.2	8.0	3.5	1.8	2.3
Engineering construction	38.2	-2.0	-3.8	1.7	1.7	1.5	2.2
Machinery and equipment	-0.1	6.8	12.2	11.3	7.1	4.9	5.1
IP and livestock	7.9	9.5	10.7	13.4	9.4	7.3	7.8
Public investment							
General Government	15.8	9.9	5.2	3.5	2.4	2.6	2.7
Public enterprises	0.9	-1.9	-3.9	-0.4	0.4	0.9	1.8
Real final demand	3.3	3.2	2.7	2.9	2.6	2.1	2.1
Private sector	3.1	2.8	2.6	3.0	2.6	2.0	2.0
Public sector	4.3	4.9	2.9	2.4	2.4	2.4	2.5
Gross State output	2.6	2.8	3.1	2.4	2.5	2.2	2.1
Employment	3.2	2.8	1.0	1.0	1.1	1.2	1.2
Unemployment rate (%)	4.8	4.4	4.2	4.3	4.5	4.6	4.7

Note: All variables (except for jobs and unemployment) expressed in inflation adjusted terms.

Source: ABS, Deloitte Access Economics.

3.1.1 Utilities sector

A number of the challenges facing the national utilities sector are also present in New South Wales. The state's utilities sector is experiencing cost pressures and regulatory uncertainty amid an environment of changing energy demand preferences and supply sources.

Utilities sector output in New South Wales has been declining since 2013, though it has been relatively stable in the past two years as stronger economic growth has helped to arrest the decline. The electricity supply sub-sector has been the largest driver of this decline as households and business have sought to reduce electricity usage through new technologies such as rooftop solar and battery storage and the decline of energy intensive industries such as manufacturing.

Increasing population has somewhat offset declining per capita energy consumption which has been on a downward trend since 2004-05, from 226 gigajoules (GJ) per person to 185 GJ per person in 2016-17.² NEM electricity demand fell by less than 1% in the December quarter of 2018 from the December quarter of 2017, potentially due to cooler than average maximum temperatures.³

While coal remains the largest source of fuel for electricity generation, at around 79% in 2016-17, this has fallen from above 91% 2008-09. Correspondingly, the non-renewable share of fuels for electricity generation has increased from around 5% to over 16% over the same period. Black coal-fired generation in New South Wales in the December quarter of 2018 was 3% higher than in the September quarter despite lower electricity demand, driven by higher wholesale electricity prices and increased availability. The high usage of coal in New South Wales meant it remains the dominant price-setter, being the marginal generator over 60% of the time.

New South Wales saw the largest increase among states in rooftop PV generation in the December quarter 2018, up 32% from the previous year. One large-scale solar PV generator, White Rock Solar Farm, with capacity of 22 MW was also added to the NEM in the last quarter. Hydro generation fell from the September quarter, but remains steady over the past year.

Regulatory uncertainty has reduced investment in new fossil fuel generation assets, constraining future growth of the sector. Government policy to underwrite new low cost electricity generators could be significant in New South Wales, given the large coal share of electricity generation and coal deposits. Looking forward, expected utilities sector output growth will be modest amid growing population and increased renewable energy output.

3.2 Outlook for wages

3.2.1 All industries

The New South Wales WPI grew by 2.4% over the year to December 2018, slightly above the national figure of 2.3%. The pace of gains has lifted from the low of 2.0% in December 2017.

Chart 3.2 shows movements in New South Wales' WPI relative to the national equivalent. The decline in the state's WPI relative to the national equivalent from around 2005 largely reflects rising wages in resource rich states such as Queensland and Western Australia during the mining boom.

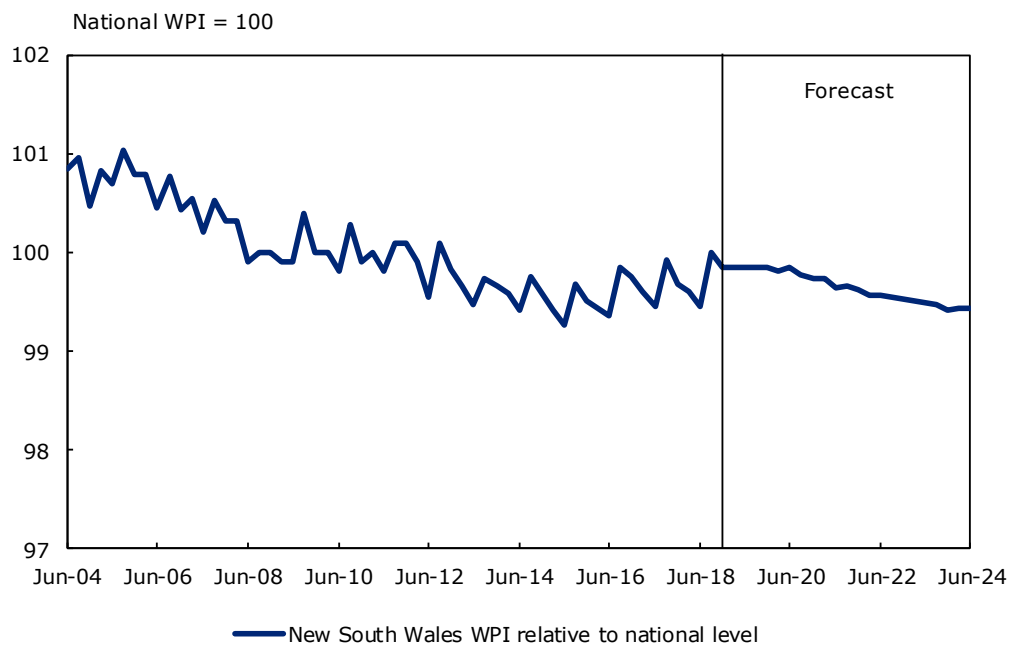
Relative wage gains in New South Wales have recovered from a trough in mid-2015. This improvement was partly due to weak wage outcomes in resource rich states as declining engineering construction activity weighed on broader economic activity and wages. Part of the relative improvement in New South Wales wage gains has also been due to broad strength in economic activity in the state. The housing boom, a robust labour market and record levels of infrastructure investment have all contributed to this period of strength. However, with Sydney property prices

² Department of Environment and Energy, *Australian Energy Update September 2018*, <<https://www.energy.gov.au/publications/australian-energy-update-2018>>.

³ Australian Energy Market Operator, *Quarterly Energy Dynamics Q4 2018* (13 February 2019) <https://www.aemo.com.au/-/media/Files/Media_Centre/2019/QED-Q4-2018.pdf>.

already falling and other drivers nearing their peaks, the state's relative WPI is set to remain slightly below the national average over the forecast period.

Chart 3.2 New South Wales WPI relative to national WPI



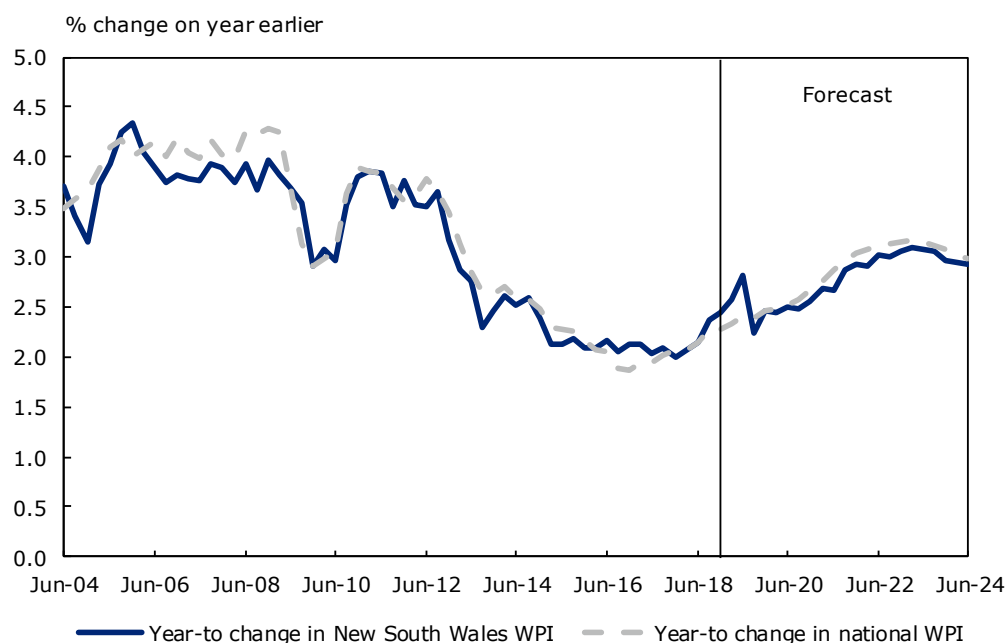
Source: ABS, Deloitte Access Economics.

Wage growth in New South Wales is forecast to return to 2.9% by 2023-24, remaining below longer-term trends in the short-term.

The recent drivers of growth, public investment and the property market appear to have peaked or are in decline. Property prices have been falling since mid-2017. This should affect the construction sector, household confidence and wages. The most recent state budget has flagged that public infrastructure investment, while remaining large by historical standards, has little room to grow.

Economy wide structural factors are playing a large role in suppressing wage growth. Increased international competition, reduced bargaining power for workers and low productivity growth are holding back wages. While unemployment is at a record low, underemployment remains significant and indicates that there is still some spare capacity in the labour market.

Chart 3.3 New South Wales general WPI growth



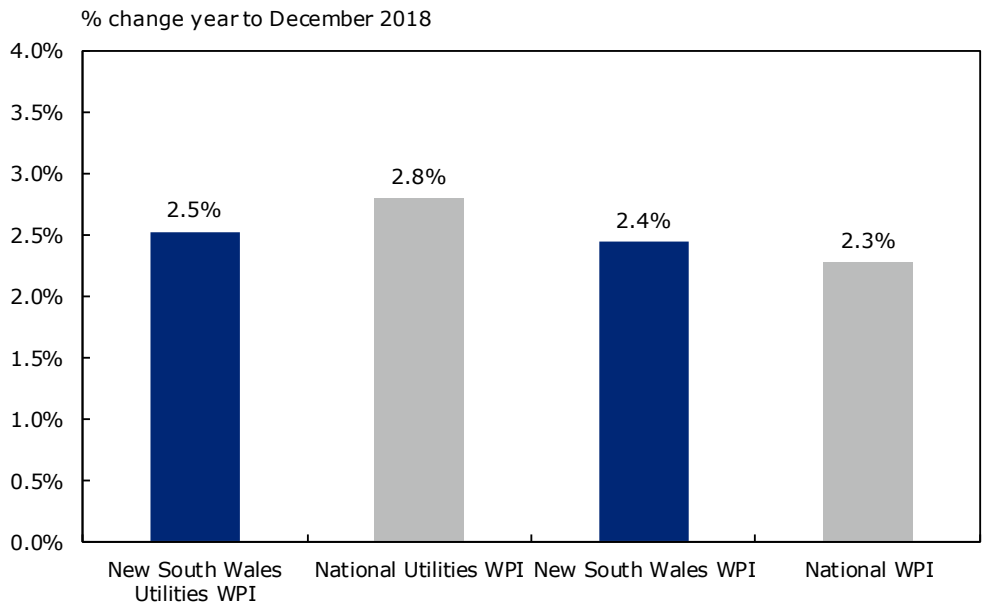
Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.
 Source: ABS, Deloitte Access Economics.

3.2.2 Utilities sector wages

As the largest state by population, New South Wales comprises a substantial share of national utilities output. Therefore, New South Wales and national utilities sector wages follow similar trends. However, at the state level there may be greater volatility in utilities output, particularly over the short term.

Wages in the New South Wales utilities sector grew by 2.5% over the year to December 2018 (see Chart 3.4). This is below the national average for the utilities sector of 2.8%, but remains above the New South Wales all industry average of 2.4%.

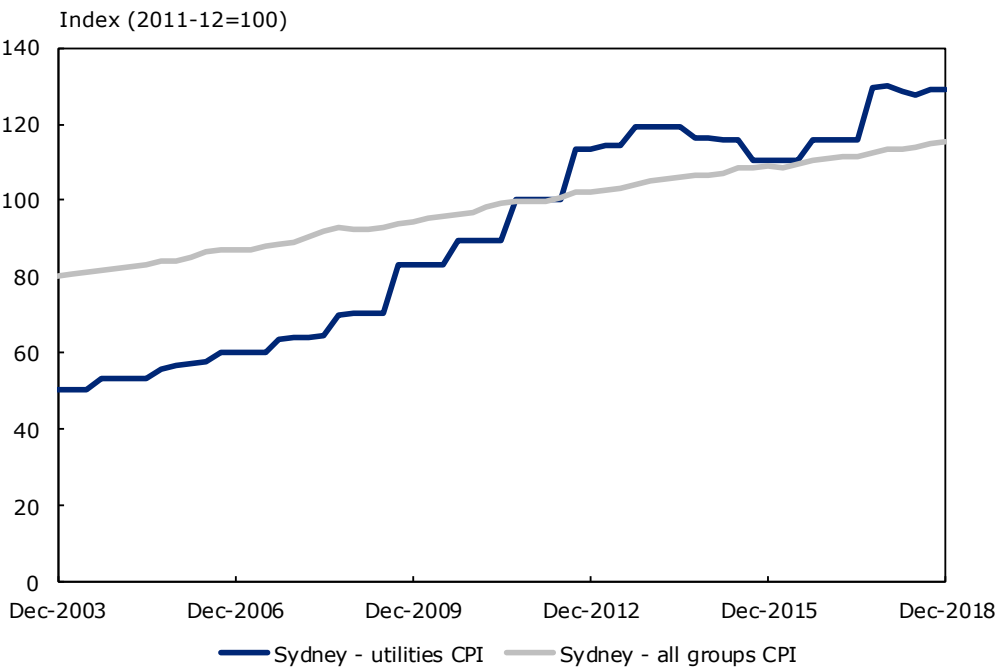
Chart 3.4 Comparative WPI annual growth rates in year to December 2018



Source: ABS, Deloitte Access Economics.

Utilities price growth has remained relatively flat over the past year (Chart 3.5). Over the year to December 2018, CPI for utilities fell by 0.7% compared to a 1.7% increase across all groups. Despite this, the utilities CPI remains above the broader CPI. The Sydney utilities CPI has grown by more than 80% over the past decade, compared to 25% growth in the broader Sydney CPI.

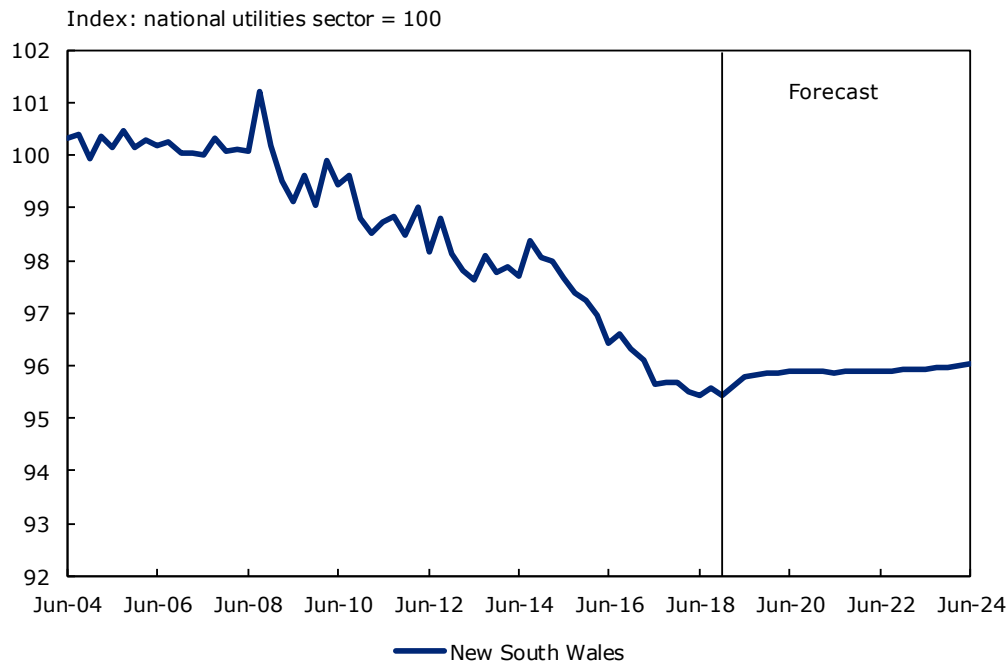
Chart 3.5 Sydney utilities prices



Source: ABS.

New South Wales utilities sector WPI relative to the national utilities sector average has been declining since 2009 (Chart 3.6). This fall coincided with a relative change in economic conditions between New South Wales and resource intensive states. More recently, output from the utilities sector in New South Wales has underperformed relative to the national level contributing to declining relative wages in the sector. This downward trend in relative wages has stabilised since 2017.

Chart 3.6 New South Wales utilities WPI relative to national utilities WPI



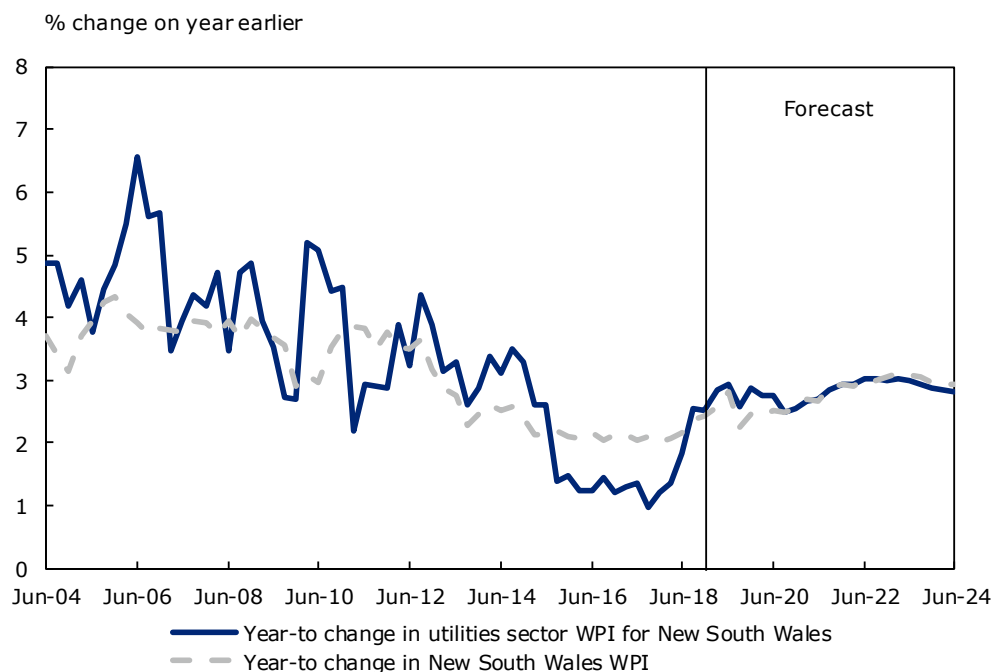
Source: ABS, Deloitte Access Economics.

Wage growth for the New South Wales utilities sector was below the gains in the wider state average from mid-2015 to mid-2018, due to the strong performance of the construction and health care sectors.

Wages in the New South Wales utilities sector are expected to maintain a similar growth rate to the state average as utilities output in the state accelerates back towards trend growth. The improvement in the pace of growth is expected to drive demand for jobs and increase wages.

New South Wales utilities wages are forecast to lift from a 1.8% gain in 2017-18, to 2.7% in 2018-19. By 2023-24, wages are forecast to grow by 2.8% in the New South Wales utilities sector.

Chart 3.7 New South Wales utilities general WPI growth



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.

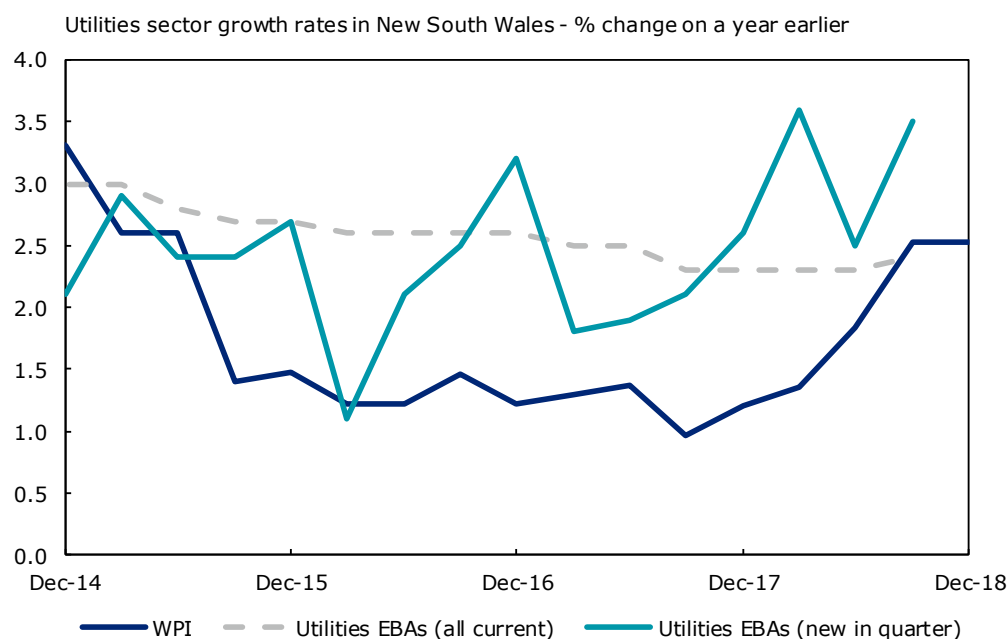
Source: ABS, Deloitte Access Economics.

3.2.2.2 Comparison with EBA outcomes

Chart 3.8 shows growth in the New South Wales utilities sector WPI alongside outcomes in state EBAs for the sector. The following can be concluded:

- The AAWI across all current utilities EBAs in New South Wales has remained fairly steady in recent periods.
- Despite significant underlying volatility, the AAWI for new utilities sector EBAs in New South Wales has seen a general upward trend since March 2016, reaching 3.5% in September 2018. This is above the longer run average of 3.1%.
- The AAWI for current utilities sector EBAs in New South Wales typically underperforms the national average. In September 2018, the state’s AAWI was 0.5 percentage points lower than the Australian average.

Chart 3.8 Comparative measures of wage growth in the New South Wales utilities sector



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.
 Source: ABS, Department of Jobs and Small Business.

3.2.3 Labour productivity

Labour productivity across all measures is expected to lift in 2018-19, following a weak outcome in 2017-18. Over recent years, the slow pace of labour productivity growth in the utilities sector has partly been due to weak growth in electricity demand. The trend of households and businesses looking to increase their energy efficiency has seen utilities output growth slow. Utilities output growth has slowed relative to gains in employment for the sector, contributing to lower measures of labour productivity.

Labour productivity for the state utilities sector should see continued growth over the forecast period. Utilities sector output is expected to see modest growth, driven by greater renewable energy output and increasing population.

Table 3.2 New South Wales and national labour productivity forecasts

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
New South Wales - All industries	-0.6	0.0	2.0	1.4	1.4	1.0	0.9
New South Wales - Utilities	-0.6	0.2	1.8	1.6	1.6	1.3	1.2
National - All industries	-0.2	0.5	1.6	1.7	1.7	1.4	1.2
National - Utilities	-0.4	0.4	1.6	1.7	1.7	1.4	1.3

Source: ABS, Deloitte Access Economics.

3.2.4 Summary results

Table 3.3 New South Wales and national wage forecasts

Financial year changes in New South Wales and national nominal Wage Price aggregates

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
New South Wales - All industries	2.1	2.5	2.4	2.6	2.9	3.1	3.0
New South Wales - Utilities	1.3	2.7	2.7	2.6	2.9	3.0	2.9
National - All industries	2.1	2.3	2.5	2.7	3.0	3.2	3.0
National - Utilities	2.0	2.7	2.5	2.6	2.9	3.0	2.8

Financial year changes in New South Wales and national real Wage Price aggregates

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
New South Wales - All industries	0.0	0.5	0.2	0.2	0.6	0.7	0.8
New South Wales - Utilities	-0.7	0.7	0.6	0.2	0.6	0.7	0.7
National - All industries	0.1	0.5	0.3	0.4	0.6	0.8	0.9
National - Utilities	0.0	0.8	0.3	0.2	0.5	0.6	0.6

Source: ABS, Deloitte Access Economics.

4 Tasmania

4.1 Economic outlook

4.1.1 Overview

Tasmanian Gross State Product (GSP) grew by 3.2% over the year to September 2018, driven by strong population growth and a low Australian dollar that boosted exports.

Continued income growth in Asia saw the value of exports to China and Hong Kong grow by 16% through 2018. This has helped some key export industries including seafood, paper and mining, while Tasmania also remains competitive in international education exports.

Business investment, particularly expenditure on equipment and machinery has seen solid growth on the back of elevated business confidence. At 5.9%, the unemployment rate is close to lows not seen since 2011, which along with a relatively resilient property market is assisting consumption spending.

International tourism has been an important factor in Tasmania's recent growth. International visitor numbers increased by 16% in 2018, above the 5% figure for Australia. Tasmania now has the second fastest growth in international visitor arrivals and tourist spending.

Population growth in Tasmania remains elevated, driven increasingly by interstate migration after seeing several years of strong net international migration. Tasmania's population grew by 1.0% in 2017-18, below the Australian average of 1.6%. However, this is a notable improvement from the flat population growth seen five years ago. Future demographic challenges could arise given that on average interstate migrants are older than international migrants.

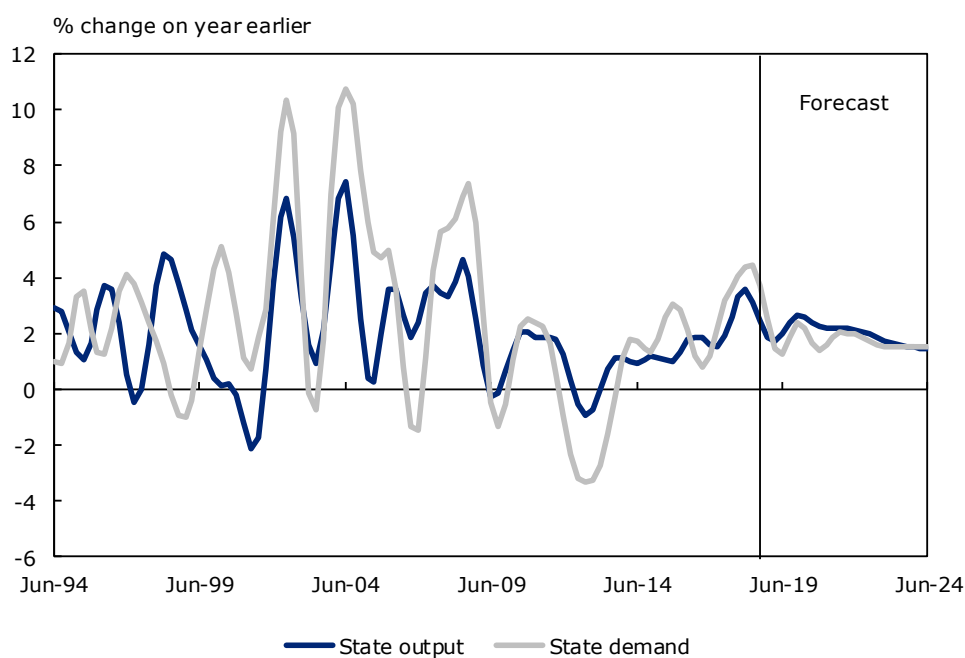
The health care and social assistance industry remains a key part of Tasmania's growth story, contributing around one-fifth to overall economic growth in the state over 2017-18. The ongoing rollout of the NDIS is a key short-term driver of that, while Tasmania's growing and ageing population will continue to support the sector over the medium term.

Tasmania recorded the highest growth in house prices in Australia in the year to December 2018. Hobart saw prices rise 8.7% while regional Tasmania saw 9.9% growth, this compares to a national fall of 4.8%.⁴ Combined with low rental vacancies this has led to higher rents and stronger building activity, with the value of dwelling approvals up by 6% in 2018.

Deloitte Access Economics is forecasts Tasmanian output growth of 1.9% in 2018-19 and 2.5% in 2019-20, which is below the forecast for the Australian economy of 2.7% and 2.9% respectively.

⁴ CoreLogic, *CoreLogic Hedonic Home Value Index, December 2018 Results* (2 January 2019) <<https://www.corelogic.com.au/sites/default/files/2019-01/CoreLogic%20Home%20Value%20Index.pdf>>.

Chart 4.1 Tasmania output and demand



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.
Source: ABS, Deloitte Access Economics.

Table 4.1 Tasmania economic forecasts

Annual % change (unless noted)	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Consumption							
Private sector	3.0	2.5	1.6	0.9	1.2	1.3	1.4
Public sector	3.0	3.5	2.3	1.8	1.8	1.7	1.5
Private sector investment							
Dwelling investment	6.8	8.1	6.2	8.6	5.2	-0.8	-3.7
Non-residential building	-2.2	-0.1	3.0	2.4	2.3	1.9	4.3
Engineering construction	21.0	3.2	3.1	-2.8	0.8	3.5	4.1
Machinery and equipment	49.4	-6.1	1.8	-2.0	3.5	3.1	3.9
IP and livestock	5.1	5.5	4.6	7.5	3.5	4.9	6.6
Public investment							
General Government	-1.9	4.6	8.6	8.6	8.1	5.3	3.6
Public enterprises	5.8	-12.3	-3.0	-1.9	-1.0	-0.6	0.4
Real final demand	4.2	2.2	2.1	1.7	1.9	1.5	1.5
Private sector	4.8	2.2	1.9	1.4	1.7	1.3	1.4
Public sector	2.6	2.3	2.6	2.4	2.5	2.1	1.7
Gross State output	3.3	1.9	2.5	2.2	2.1	1.7	1.5
Employment	3.0	0.4	0.9	0.7	0.4	0.2	0.1
Unemployment rate (%)	6.1	5.6	5.3	5.2	5.4	5.5	5.8

Note: All variables (except for jobs and unemployment) expressed in inflation adjusted terms.
Source: ABS, Deloitte Access Economics.

4.1.2 Utilities sector

Tasmanian utilities output has declined since 2011, though it has stabilised in the past couple of years as population and stronger economic activity lifted utilities sector output. Overall, state energy consumption grew by 0.9% in 2016-17. However, energy consumption per capita remained flat over the past year, but is still 9% below the peak in 2007-08.⁵

Electricity generation in Tasmania comprises hydro, wind and gas, and imported energy through the Basslink. In 2017, 87% of electricity generation was from renewable sources, with three quarters of the total provided by hydro generation.

Tasmania's Government-owned hydroelectricity monopoly, Hydro Tasmania, is the nation's largest generator of clean renewable energy. The generator currently produces more than one third of the renewable energy traded on the NEM.

The December quarter of 2018 saw a small increase in electricity demand of less than 1%. Quarterly average wholesale electricity prices were the highest on record in the December quarter in all NEM regions except for Tasmania.⁶ The amount of hydro capacity in Tasmania priced below \$100 MW/h reduced by 746 MW on average compared to the September quarter but was steady relative to December quarter of 2017.

The largest reduction in hydro generation across states was in Tasmania, where hydro generation was almost 1,097 GWh lower than in the September quarter of 2018. The reduced output coincided with below average rainfall in Tasmania and a consequent reduction in supply offered by Hydro Tasmania.

Looking at interstate transfers, the prevailing flow on Basslink remained north, with a net average of 48 MW. However, this was down notably from the September quarter amid a decline in output from Hydro Tasmania. This also resulted in reduced local price setting in Tasmania, with local units setting the price 35% of the time, down from 68% in the September quarter of 2018.

Looking ahead, utilities output is expected to grow below the rate in the overall economy as broader trends towards energy efficiency by households and business reduce demand. Population growth and the shift towards renewable energy should help lift Tasmania's utilities sector output.

4.2 Outlook for wages

4.2.1 All industries

The Tasmanian WPI grew by 2.6% over the year to December 2018, above the national average of 2.3%. Robust economic conditions have supported the state's labour market over the past year, placing some upwards pressure on wages.

Over the past few years Tasmania's WPI growth has been slightly above the national average. Stronger economic growth in Tasmania has driven down the unemployment rate and reduced capacity in the labour market leading to relatively larger wage increases in Tasmania.

Tasmania's future wage growth may be limited by the following risks to the state's outlook:

- **National wage growth remains subdued.** While both the Tasmanian and national unemployment rates have continued to decline, spare capacity remains in the labour market. Slow wage growth in other states is likely to constrain tourism and economic activity in Tasmania.
- **Weaker business confidence may translate to a deceleration in business investment.** According to the NAB Business Survey, business confidence in Tasmania has been on a

⁵ Department of Environment and Energy, *Australian Energy Update September 2018* <<https://www.energy.gov.au/publications/australian-energy-update-2018>>.

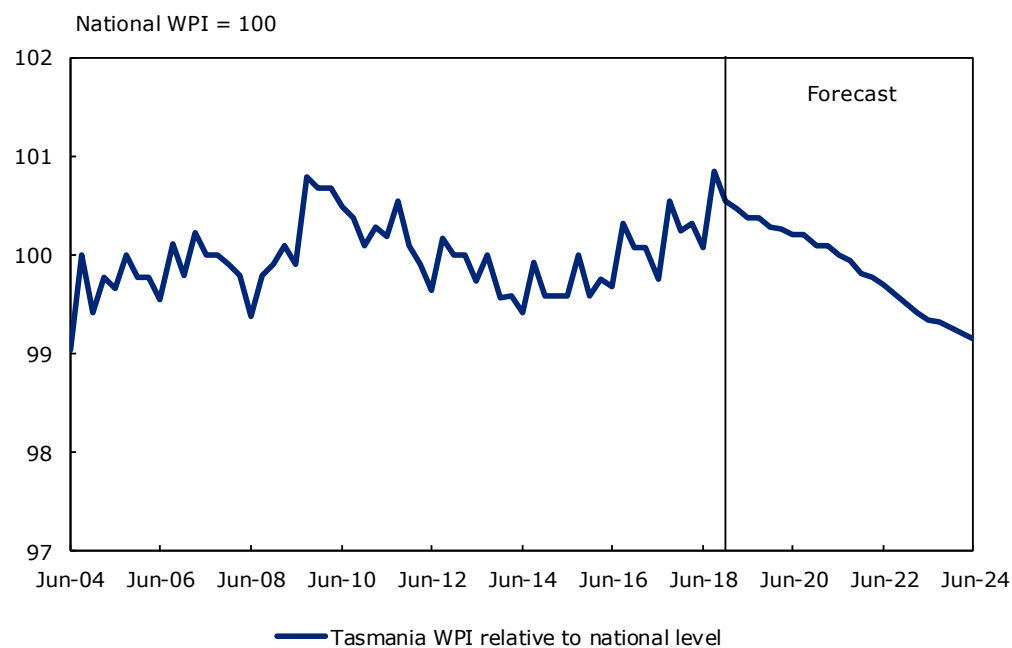
⁶ Australian Energy Market Operator, *Quarterly Energy Dynamics Q4 2018* (13 February 2019) <https://www.aemo.com.au/-/media/Files/Media_Centre/2019/QED-Q4-2018.pdf>.

downward trend since early 2018, albeit off record highs. High business confidence has sustained growth in business investment that have helped drive recent economic growth. Falling business confidence could point to slowdowns in future business investment, dragging on economic growth.

- **Tasmania’s exports may face a hit from slower global growth.** A disruption to global growth could affect two of Tasmania primary tourism markets, China and the United States. This would also affect other Asian economies, a key source of international students.

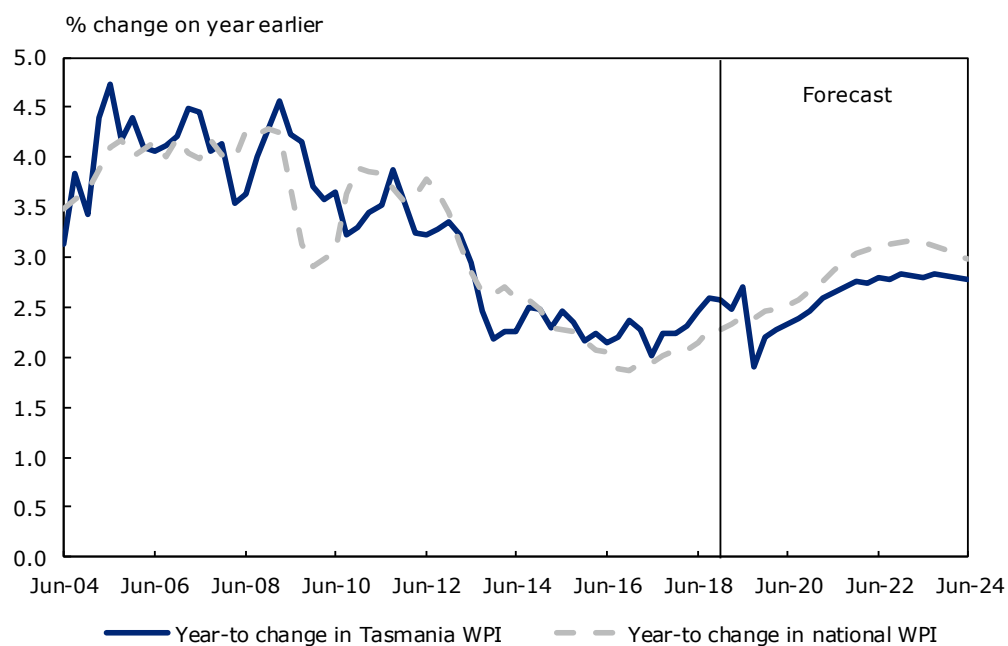
Tasmanian wages are set to underperform the national average over the coming years, amid a slowdown in Tasmania’s economic performance relative to the broader Australian economy (Chart 4.2 and Chart 4.3). Tasmanian output growth is expected to fall from 3.3% in 2017-18 to 1.9% in 2018-19 before returning to steady growth around 2% per annum. This fall in output is set to weigh on wage outcomes in the state. Tasmania’s WPI is forecast to lift from 2.5% growth in 2017-18, to 2.7% in 2018-19, before reaching 2.8% in 2023-24.

Chart 4.2 Tasmania WPI relative to national WPI



Source: ABS, Deloitte Access Economics.

Chart 4.3 Tasmania general WPI growth

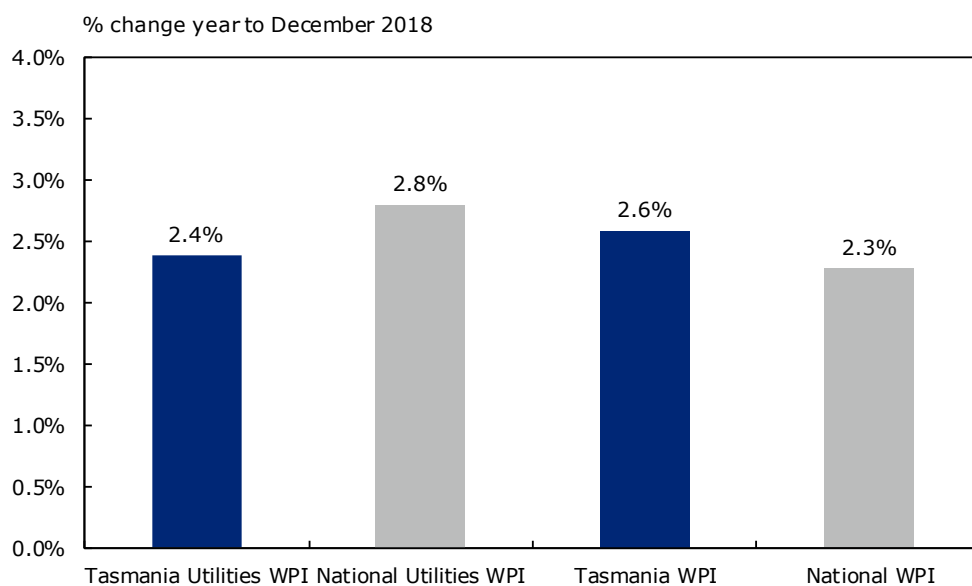


Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.
 Source: ABS, Deloitte Access Economics.

4.2.2 Utilities sector wages

In the absence of ABS data for the Tasmanian utilities sector, Deloitte Access Economics estimates that the Tasmanian utilities WPI grew by 2.4% over the year to December 2018 (see Chart 4.4). Over the past year, estimated utilities wages in Tasmania increased below wage growth in the overall Tasmanian economy and the national utilities sector.

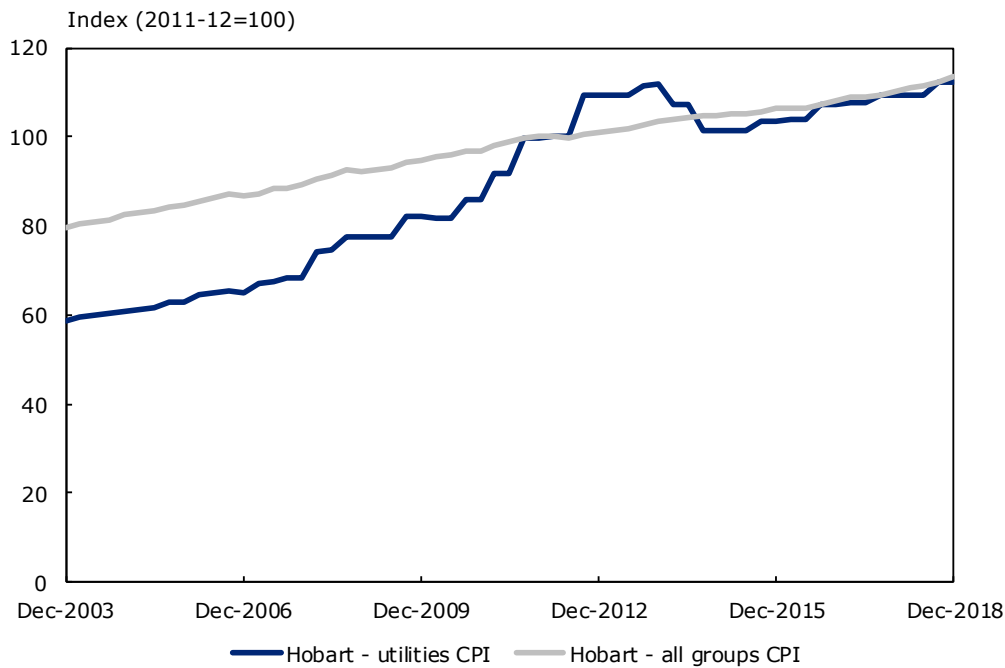
Chart 4.4 Comparative WPI annual growth rates in the year to December 2018



*Historical data estimated using Deloitte Access Economics' wage price model. Unavailable from the ABS.
 Source: ABS, Deloitte Access Economics.

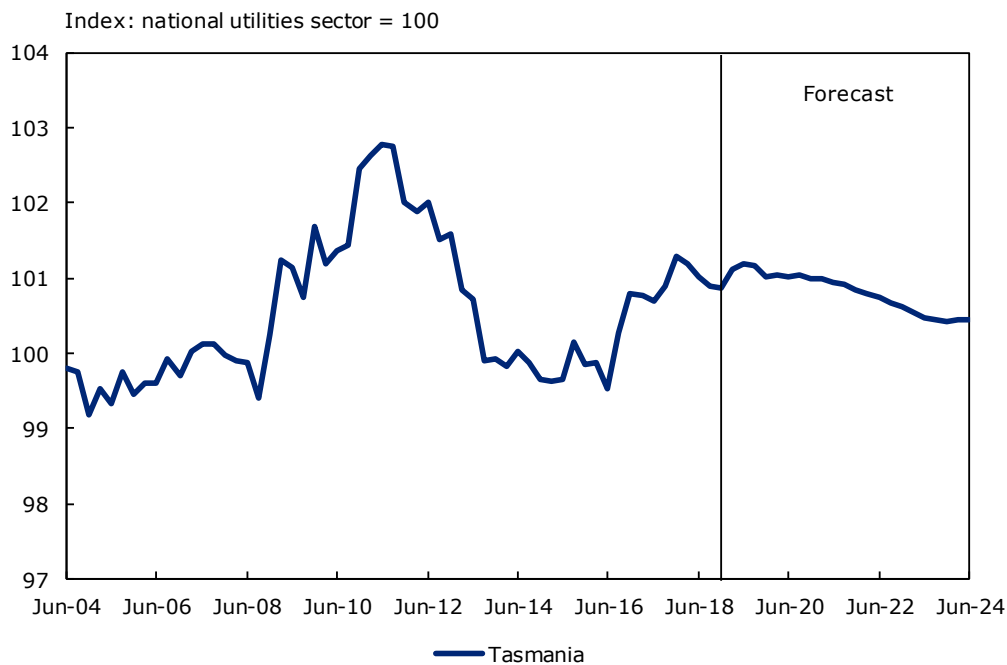
Chart 4.5 shows that utilities prices increased by 2.7% over the year to December 2018 in Hobart. This is below the 3.0% growth in total CPI inflation for Hobart over the same period.

Chart 4.5 Hobart utilities prices



Source: ABS, Deloitte Access Economics.

Chart 4.6 Relative utilities WPI forecasts for Tasmania



Source: ABS, Deloitte Access Economics.

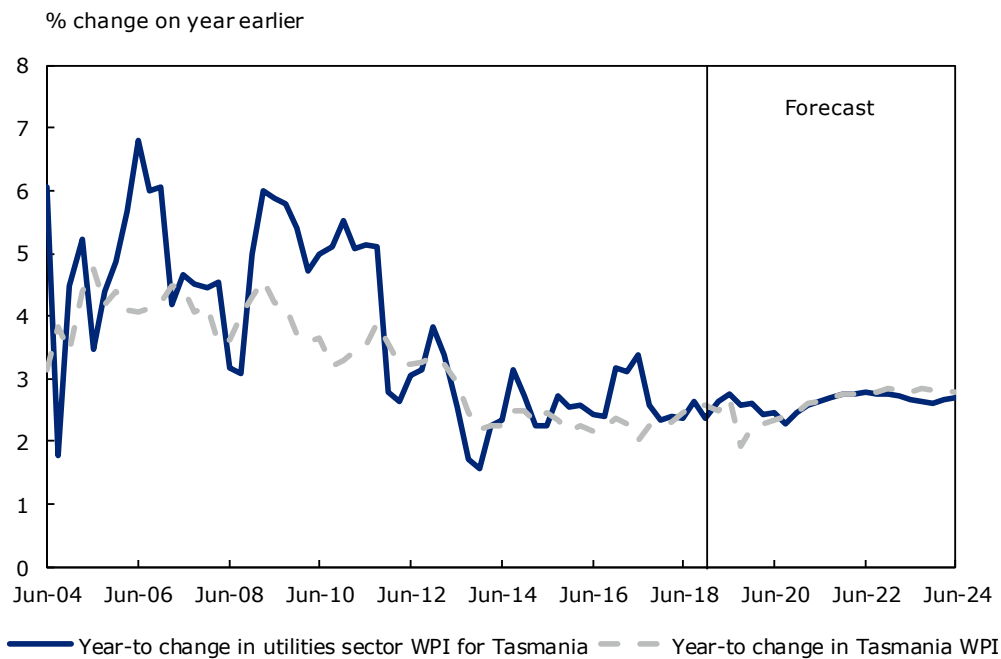
Wages in the Tasmanian utilities sector relative to the national average have improved from a low in 2016. Deloitte Access Economics forecasts Tasmanian utilities wages to decline marginally relative to the nation's level across the forecast horizon.

Given that over half of all utilities sector employees work in the electricity supply industry in Tasmania, the following factors are likely to have an impact on wages:

- Electricity demand in Tasmania has recently been steady. National prices have remained high despite the lowest fourth quarter demand since 2002. Low demand will weigh on output in the sector and therefore the amount firms are willing to pay to employees.
- The lack of coal-powered generation in Tasmania means renewables will likely to play a more significant role in electricity generation. However, given the interstate-transfers between Victoria and Tasmania, the future role of coal in the electricity generation mix in Victoria will likely affect electricity generation demand in Tasmania.

Against that backdrop, Tasmania’s utilities WPI is expected to grow at moderate rates, in line with growth in WPI in the broader Tasmanian economy.

Chart 4.7 Tasmania utilities forecast comparison



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.

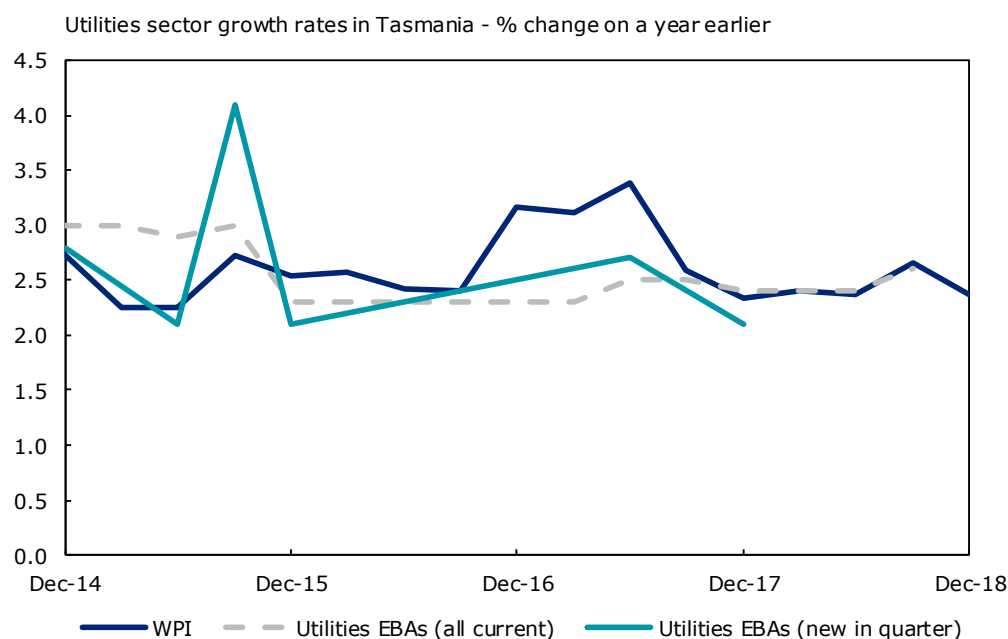
Source: ABS, Deloitte Access Economics.

4.2.2.2 Comparison with EBA outcomes

Annual wage growth in current utilities sector EBAs grew by 2.6% in the September quarter of 2018, below 2.9% for Australian utilities sector EBAs.

There have been no new EBAs struck since the December quarter of 2017, when the AAWI was 2.1%. Given that current EBAs in the September quarter of 2018 have AAWI of 2.6%, any new EBAs are likely to have higher wage gains than those from December 2017. The number of employees covered by an EBA has shrunk from 1,800 in December quarter of 2017 to 1,000 in the September quarter of 2018.

Chart 4.8 Comparative measures of wage growth in the Tasmanian utilities sector



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.

Source: ABS, Department of Jobs and Small Business.

4.2.3 Labour productivity

Utilities sector labour productivity fell in 2017-18 as output growth remained relatively weak. The estimate for labour productivity is expected to rebound in 2018-19 driven by stronger sector output. Over the forecast period, the state utilities estimate for labour productivity follows expected movements at the national level.

Table 4.2 Tasmania and national labour productivity forecasts

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Tasmania - All industries	0.3	1.5	1.6	1.5	1.7	1.5	1.4
Tasmania - Utilities	-0.5	0.4	1.6	1.7	1.7	1.4	1.3
National - All industries	-0.2	0.5	1.6	1.7	1.7	1.4	1.2
National - Utilities	-0.4	0.4	1.6	1.7	1.7	1.4	1.3

Source: ABS, Deloitte Access Economics.

4.2.4 Summary results

Table 4.3 Tasmania and national wage forecasts

Financial year changes in Tasmania and national nominal Wage Price aggregates							
Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Tasmania - All industries	2.3	2.6	2.2	2.5	2.8	2.8	2.8
Tasmania - Utilities*	2.4	2.6	2.5	2.5	2.8	2.7	2.7
National - All industries	2.1	2.3	2.5	2.7	3.0	3.2	3.0
National - Utilities	2.0	2.7	2.5	2.6	2.9	3.0	2.8

Financial year changes in Tasmania and national real Wage Price aggregates							
Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Tasmania - All industries	0.2	0.3	-0.1	0.2	0.3	0.4	0.6
Tasmania - Utilities*	0.3	0.3	0.2	0.2	0.3	0.4	0.5
National - All industries	0.1	0.5	0.3	0.4	0.6	0.8	0.9
National - Utilities	0.0	0.8	0.3	0.2	0.5	0.6	0.6

*Historical data estimated using Deloitte Access Economics' wage price model. Unavailable from the ABS.

Source: ABS, Deloitte Access Economics.

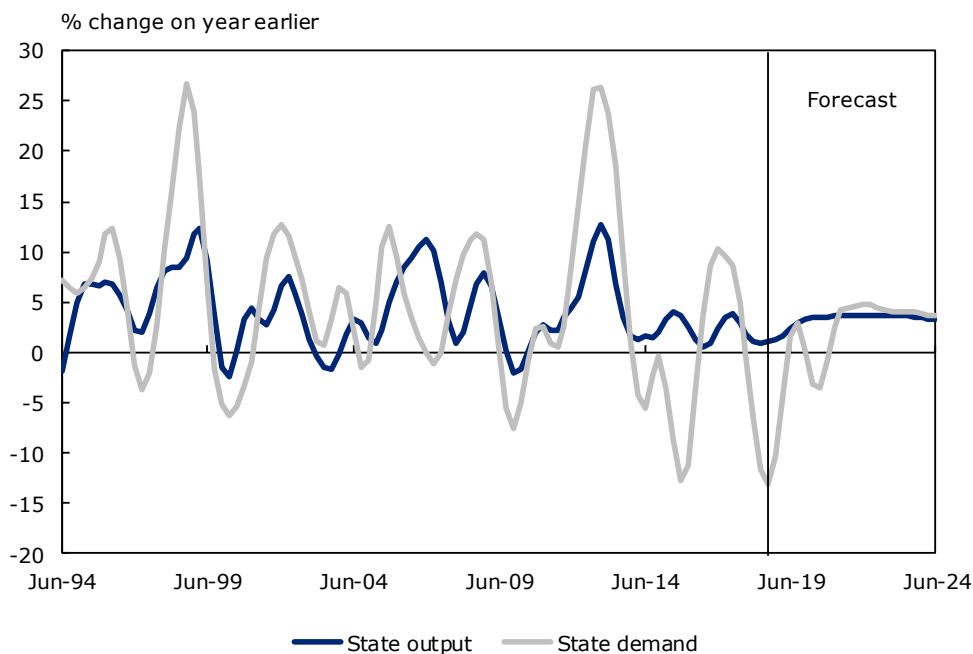
5 Northern Territory

5.1 Economic outlook

The Northern Territory economy grew by 1.2% over the year to September 2018, below 3.4% a year earlier. The completion of construction of the \$45 billion Ichthys LNG plant has resulted in a significant drop in engineering construction, with this slowdown in activity weighing on broader activity in the territory. Production at the Ichthys LNG plant will boost exports over the coming years, yet a number of indicators suggest that weak economic conditions will persist for some time:

- The operational phase of the Ichthys LNG project involves a significantly lower labour component, weighing on employment in the territory.
- Population growth has weakened, with fewer net overseas migrants and an increase in people moving interstate. This weighs on potential economic growth and property prices in the territory.
- Steady falls in employment since early 2017 have coincided with both an increasing unemployment rate and a drop in the participation rate.

Chart 5.1 Northern Territory output and demand



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.

Source: ABS, Deloitte Access Economics.

Labour market conditions are likely to be supported by the public sector, with employment growth led by the public administration, defence and health care sectors. Increasing health care employment reflects the continued rollout of the NDIS in the Northern Territory. However, employment growth will be limited by private sector investment, which plays an important role in ensuring the Northern Territory's economic output continues to grow following on from the one-off stimulus from resource exports and government spending.

Deloitte Access Economics expects economic growth in the Northern Territory to pull back in 2018-19 to 1.5%, accompanied by further falls in private sector investment persisting until 2020-21 particularly for engineering and commercial construction. Further falls in employment are expected in 2018-19 before moderating in 2019-20 and beginning to rise in 2020-21.

Table 5.1 Northern Territory output and demand forecasts

Annual % change (unless noted)	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Consumption							
Private sector	2.4	2.1	2.4	3.7	3.5	3.2	3.2
Public sector	4.6	3.6	3.4	2.7	2.6	2.4	2.4
Private sector investment							
Dwelling investment	-7.1	-5.8	-3.1	11.7	10.8	4.4	-1.1
Non-residential building	-16.8	-42.9	-25.6	-7.9	12.4	7.3	5.5
Engineering construction	-16.6	-47.5	-30.1	-4.6	14.5	8.2	6.3
Machinery and equipment	7.7	-7.1	2.2	7.4	9.8	10.9	11.5
IP and livestock	-24.9	-7.1	-10.0	9.8	14.4	25.1	18.0
Public investment							
General Government	4.5	7.9	5.2	6.7	4.3	4.4	6.4
Public enterprises	-9.3	-2.7	2.2	4.9	2.4	2.2	2.8
Real final demand	-2.7	-7.5	-1.1	2.9	4.6	4.1	3.8
Private sector	-5.8	-13.1	-3.8	2.6	5.8	5.0	4.3
Public sector	4.1	3.9	3.6	3.3	2.8	2.7	3.0
Gross State output	1.7	1.5	3.3	3.7	3.7	3.6	3.4
Employment	-1.2	-2.2	0.0	1.1	1.4	1.8	1.7
Unemployment rate (%)	4.1	4.7	4.5	4.3	4.2	4.1	4.1

Note: All variables (except for jobs and unemployment) expressed in inflation adjusted terms.

Source: ABS, Deloitte Access Economics.

5.1.2 Utilities sector

Utilities are not operated by AEMO in the Northern Territory, and are instead operated by the territory's Utilities Commission System Controller. The Commonwealth Department of the Environment and Energy publishes energy consumption data for the Northern Territory. It is less readily available as for states operated by the AEMO.

Energy consumption in the Northern Territory fell by 0.2% in 2016-17, after increasing by 0.2% in 2015-16. Decreasing energy consumption in 2016-17 occurred over a period when the Northern Territory population increased by 0.8% over the year. Falling energy consumption in the territory is consistent with the structural changes occurring across the nation related to household electricity generation technologies, the move to increased energy efficiency, and elevated retail electricity prices.

Despite the reduction in energy consumption itself, output for the electricity, gas, water and waste services industry in the Northern Territory increased by 1.2% in 2017-18. This reflects broader activity within the sector, including investment resulting from the Northern Territory Government's commitment to a target of 50% renewable energy by 2030.

The 50% target is an increase of 47 percentage points from an estimated 3% of total generation over 2017.⁷ A significant level of investment in the sector will be required over the next decade to achieve this target. The renewables developer Tetris Energy announced its \$43 million solar project comprising two 10 megawatt solar farms at Batchelor and Manton Dam in January 2019, with completion due in the second half of 2019. In conjunction with the 25 megawatt Katherine Solar

⁷ Department of Environment and Energy, *Australian Energy Update September 2018* <<https://www.energy.gov.au/publications/australian-energy-update-2018>>.

Farm, the successful completion of these projects would increase renewable energy usage to 10% by the end of 2019.

Implementation of a competitive energy and capacity market framework for renewable energy in the Northern Territory was recommended in the Roadmap to Renewables report. This would support more competitive and more affordable prices for consumers. The Northern Territory Government has since announced plans to implement the Northern Territory Electricity Market. The goal is to deliver reliable and least cost power, while increasing the territory’s renewable energy generation, through the transition to market competition in the generation and retail of energy.

There is significant spare capacity to be met over the next decade with over half of the Channel Island Power Station’s capacity due to retire in 2027. This closure would result in 190 megawatts of spare capacity. This will require significant investment in new generation in the Northern Territory.

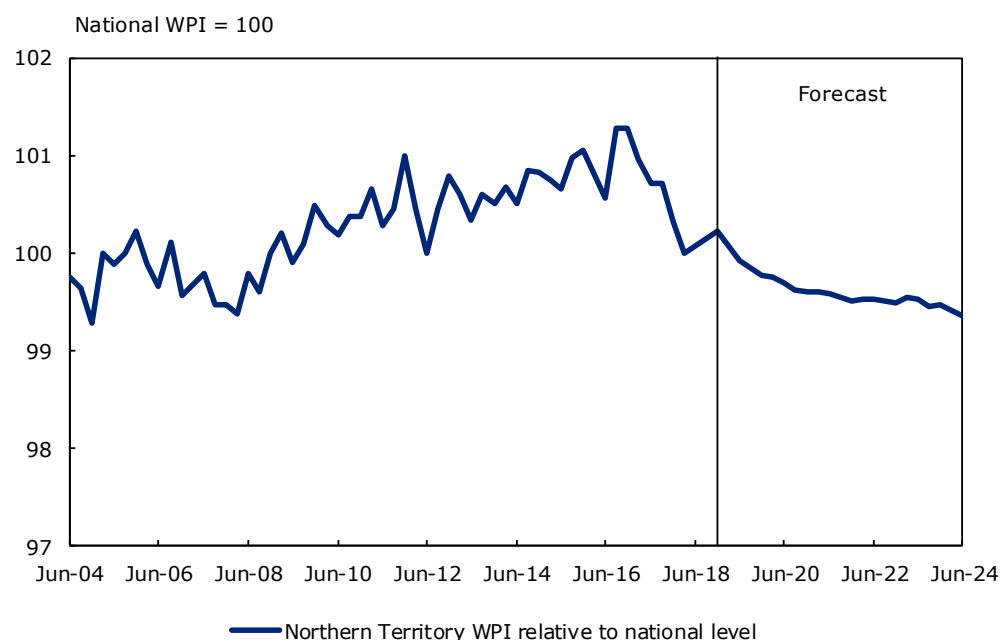
At the household level, the high proportion of renters in the territory limits incentives of dwelling owners to invest in solar panels. A key benefit to investing in household solar panels is reduced energy costs following the upfront investment. Owner-occupiers realise this benefit to a larger extent compared to landlords, who bear the upfront cost of investment while tenants access the benefits of reduced energy costs.

5.2 Outlook for wages

5.2.1 All industries

Wage growth in the Northern Territory began to fall behind national wage growth in 2017, following several years of above average growth. Past outperformance and the more recent underperformance reflects the earlier construction phase of the Ichthys LNG plant and the recent transition to production. The production phase of the plant requires significantly less employment, resulting in weaker employment opportunities in the territory.

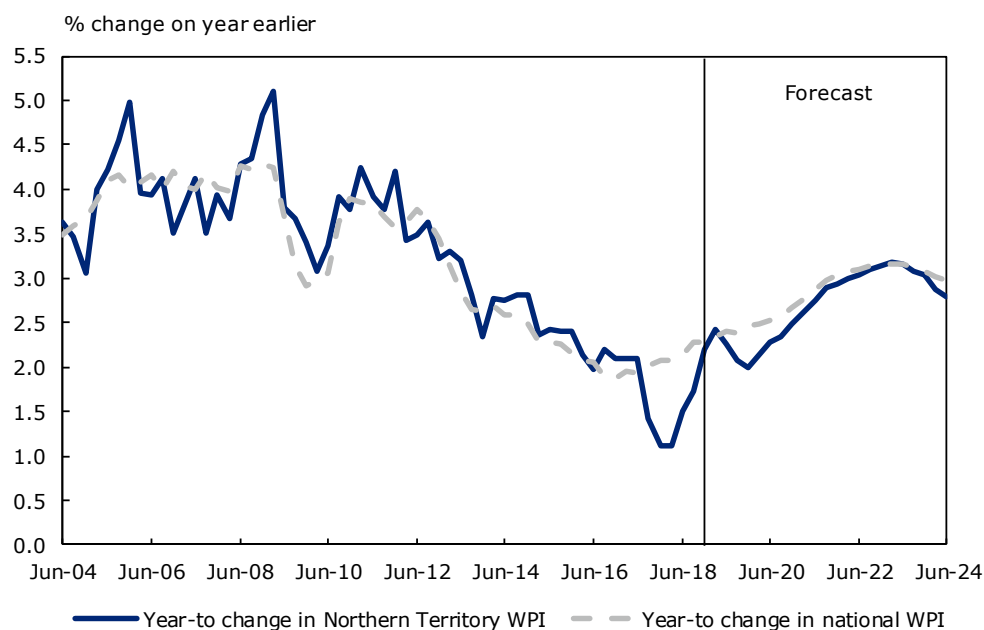
Chart 5.2 Northern Territory WPI relative to national WPI



Source: ABS, Deloitte Access Economics.

Wages in the Northern Territory grew by 2.2% over the year to December 2018, just below 2.3% growth in Australian wages over the same period. Territory wage growth is expected to accelerate as gradually improving economic conditions and investment elsewhere in the territory support a recovery in employment growth. Wages in the Northern Territory are forecast to grow by 2.8% in 2023-24, slightly outpaced by national growth of 3.0%.

Chart 5.3 Northern Territory general WPI growth

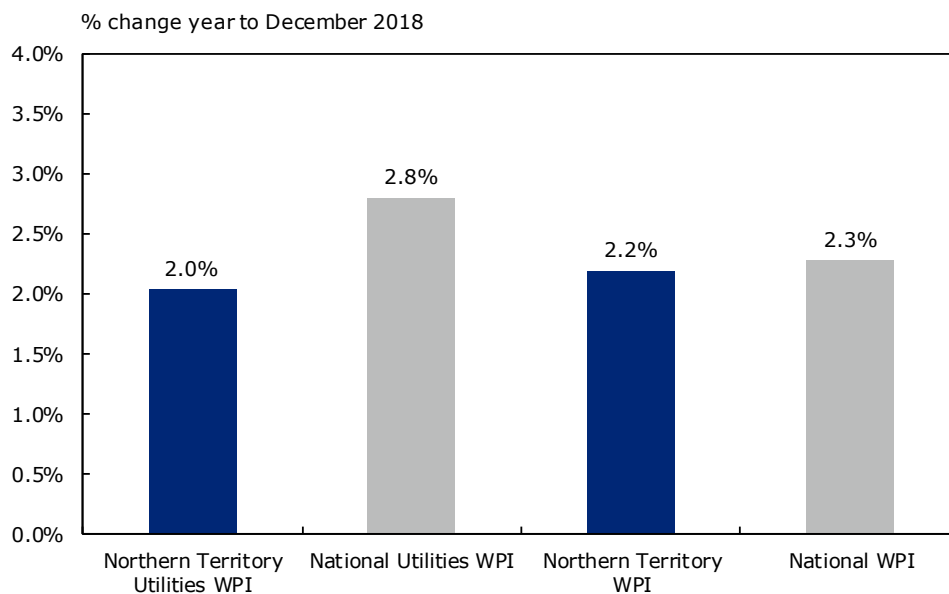


Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.
 Source: ABS, Deloitte Access Economics.

5.2.2 Utilities sector wages

In the absence of ABS data for the Northern Territory utilities sector, Deloitte Access Economics estimates that the Northern Territory utilities WPI grew by 2.0% over the year to December 2018. Territory-specific factors related to lower economic and employment opportunities following the completion of the Ichthys LNG plant continue to play a key role in the relatively low wage growth for the Northern Territory utilities sector and the territory as a whole.

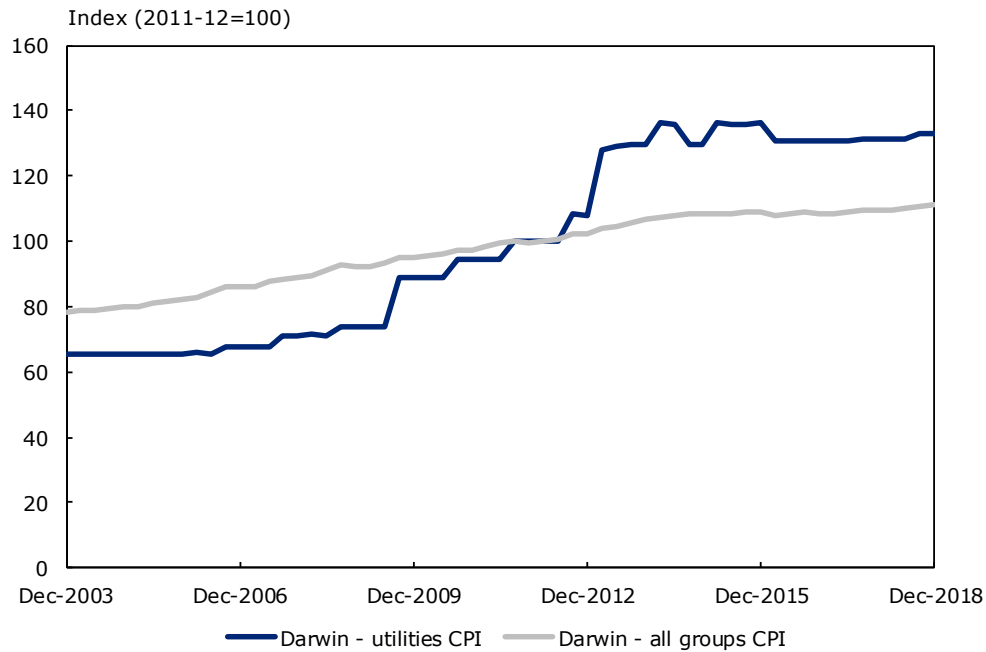
Chart 5.4 Comparative WPI annual growth rates in the year to December 2018



*Historical data estimated using Deloitte Access Economics' wage price model. Unavailable from the ABS.
 Source: ABS, Deloitte Access Economics.

Utilities prices have remained relatively stable in Darwin in recent years, following four years of continuous increases between 2009 and 2013 (as shown in Chart 5.5). Electricity prices have been a focal point of public policy in recent years as increases have put a strain on households and businesses across the nation. Utilities CPI remains above the CPI across all groups.

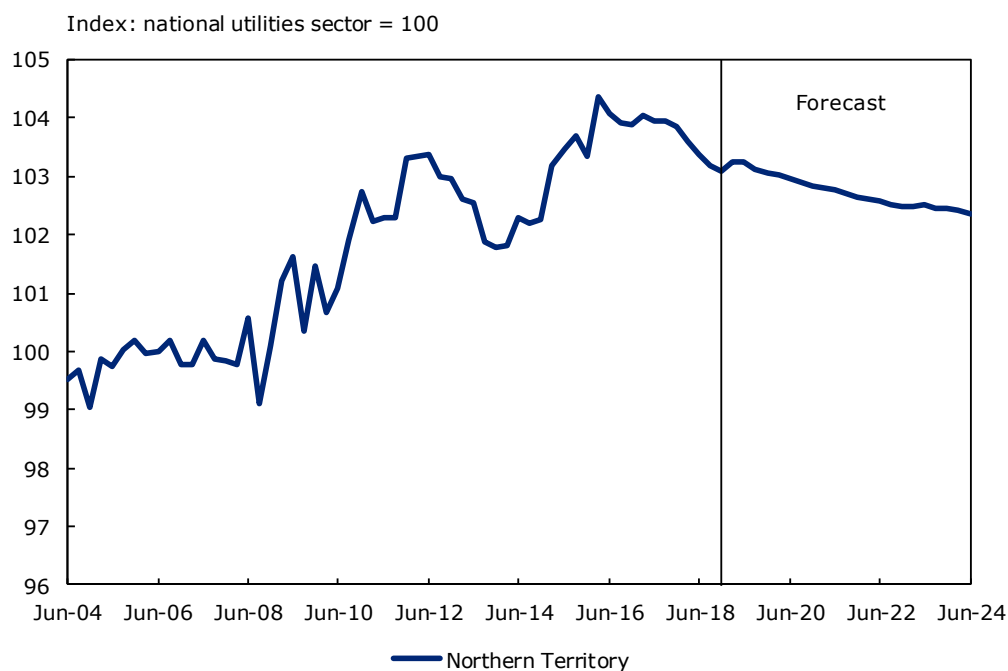
Chart 5.5 Darwin utilities prices



Source: ABS.

Utilities wage growth in the Northern Territory has been lower than the national utilities sector in recent years. The recent outperformance of national utilities wage growth relative to the Northern Territory reflects both territory-wide economic conditions of lower economic and employment opportunities following Ichthys LNG plant construction, and the territory's currently high utilities WPI relative to the national utilities sector. The second half of 2018 has seen signs of improvement, with utilities wage growth starting to recover from its earlier low.

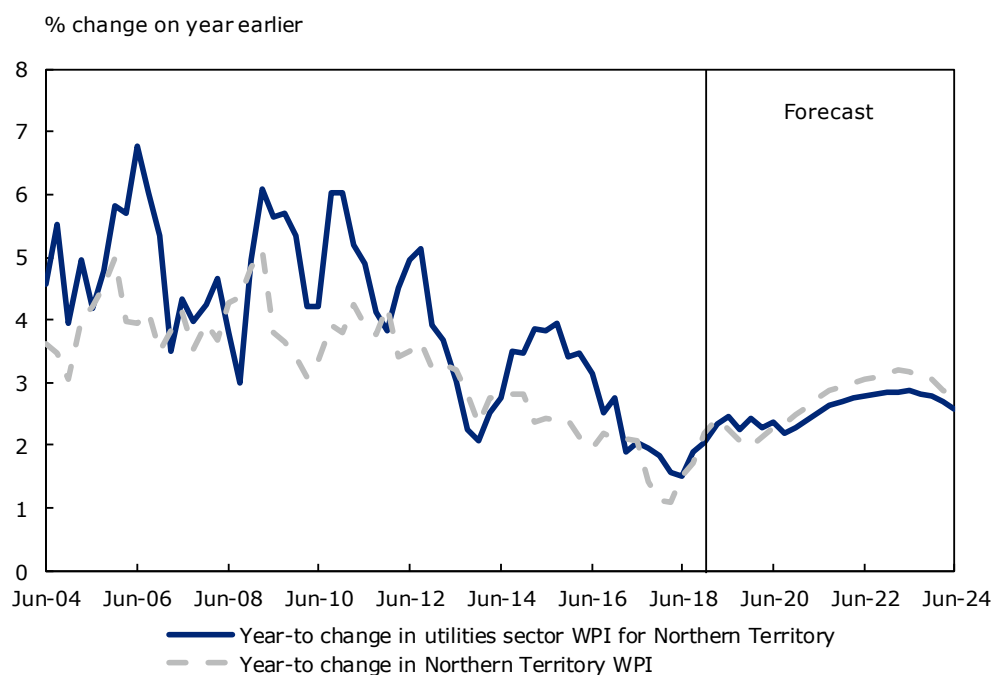
Chart 5.6 Relative utilities WPI forecast for Northern Territory



Source: ABS, Deloitte Access Economics.

Deloitte Access Economics projects utilities wage growth of 2.6% in 2023-24. The Northern Territory Government's commitment to increasing its share of renewable energy generation has already led to additional investment in the renewables sector. This may result in increased demand for construction workers, qualified technicians and other workers, boosting employment opportunities in the sector. If this occurs, this may place upwards pressure on utilities wages. However, increased investment in this sector may also present challenges for existing power producing assets, having implications for employment and wages elsewhere in the utilities sector.

Chart 5.7 Northern Territory utilities WPI forecast comparison



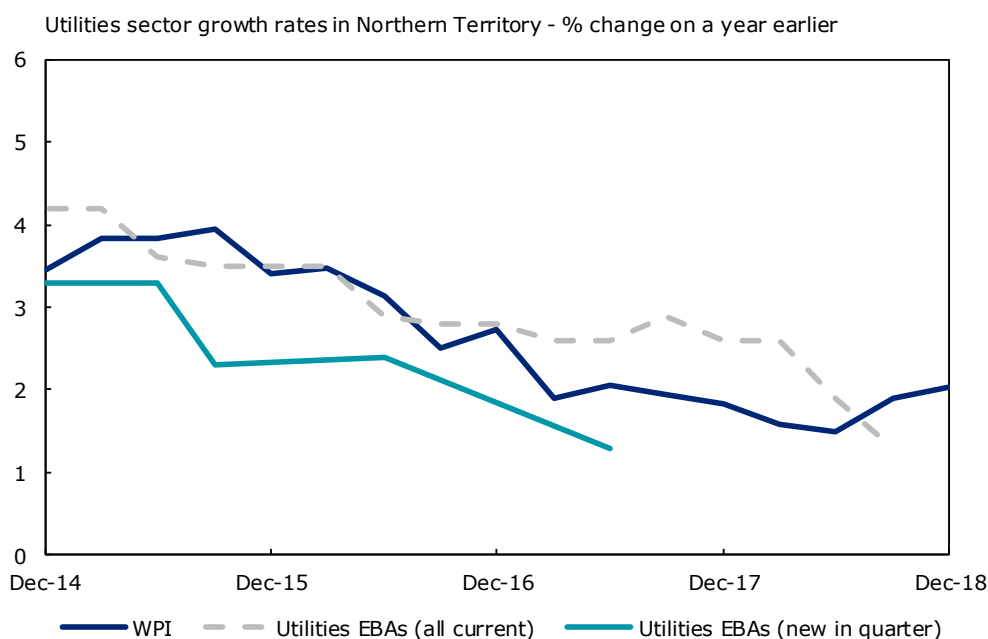
Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.
 Source: ABS, Deloitte Access Economics.

5.2.2.2 Comparison with EBA outcomes

In September 2018, there was one current EBA for the Northern Territory utilities sector with an average annual wage increase of 1.3%, average duration of three years and covering less than 100 people. Chart 5.8 shows that:

- Wage growth for existing utilities sector EBAs has declined from 1.9% in June 2018 to 1.3% over the year to September 2018.
- There have been no new utilities sector EBAs in the Northern Territory since June 2017, where the AAWI was 1.3%.

Chart 5.8 Comparative measures of wage growth in the Northern Territory utilities sector



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.

Source: ABS, Department of Jobs and Small Business.

5.2.3 Labour productivity

Labour productivity for the Northern Territory’s utilities sector declined by 0.5% in 2017-18. Looking ahead, labour productivity growth in the territory’s utilities sector is set to be supported by:

- stronger growth in utilities output compared to utilities sector employment;
- territory-wide labour productivity trends including higher growth compared to Australia (all industries); and
- utilities trends at the national level in the medium-term, with close alignment to wider economy labour productivity growth expected.

Table 5.2 Northern Territory and national labour productivity forecasts

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Northern Territory - All industries	3.0	3.8	3.3	2.5	2.2	1.9	1.7
Northern Territory - Utilities	-0.5	0.4	1.7	1.7	1.7	1.4	1.3
National - All industries	-0.2	0.5	1.6	1.7	1.7	1.4	1.2
National - Utilities	-0.4	0.4	1.6	1.7	1.7	1.4	1.3

Note: Productivity forecasts for the Australian Capital Territory and the Northern Territory in the first forecast year should be interpreted with care. This is due to two reasons (a) Data limitations exist to forecast productivity (Gross State Product (GSP) divided by employment); Northern Territory and Australian Capital Territory employment data is a **trend** series, but GSP data is **seasonally adjusted**. (b) Quarterly State Final Demand (SFD) data is used to estimate quarterly GSP, which may not fully capture the impact of interstate trade. This can lead to some volatile movements in the first forecast year for the Northern Territory and the Australian Capital Territory.

Source: ABS, Deloitte Access Economics.

5.2.4 Summary results

Table 5.3 Northern Territory and national wage forecasts

Financial year changes in Northern Territory and national nominal Wage Price aggregates							
Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Northern Territory - All industries	1.3	2.1	2.1	2.6	3.0	3.1	2.9
Northern Territory - Utilities*	1.7	2.2	2.3	2.3	2.7	2.8	2.7
National - All industries	2.1	2.3	2.5	2.7	3.0	3.2	3.0
National - Utilities	2.0	2.7	2.5	2.6	2.9	3.0	2.8

Financial year changes in Northern Territory and national real Wage Price aggregates							
Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Northern Territory - All industries	0.3	0.3	0.1	0.3	0.5	0.7	0.8
Northern Territory - Utilities*	0.7	0.3	0.3	0.1	0.3	0.5	0.5
National - All industries	0.1	0.5	0.3	0.4	0.6	0.8	0.9
National - Utilities	0.0	0.8	0.3	0.2	0.5	0.6	0.6

*Historical data estimated using Deloitte Access Economics' wage price model. Unavailable from the ABS.

Source: ABS, Deloitte Access Economics.

6 Australian Capital Territory

6.1 Economic outlook

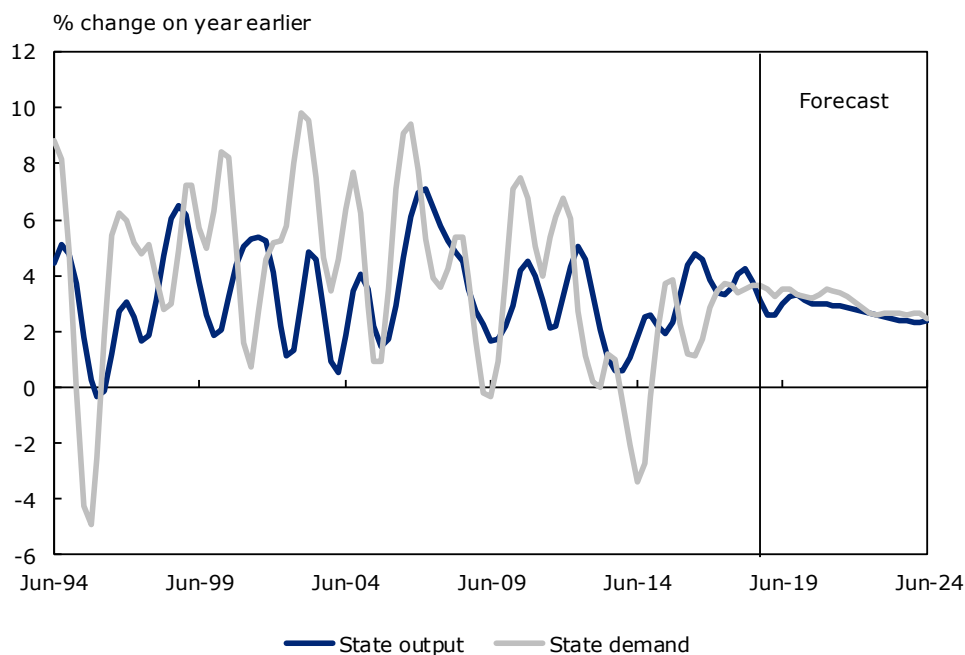
The Australian Capital Territory continues to experience strong economic and population growth. Output grew by 3.9% over the year to September 2018, supported by strong population growth, low interest rates and strength in the tourism and international education sectors. This combination of factors is supporting private consumption, exports and the territory's labour market.

The territory's population grew by 2.2% in 2017-18, second only to Victoria. International student arrivals have been a significant driver of population growth in the Australian Capital Territory. This has been aided by a falling Australian dollar, which has increased the international competitiveness of Australia's higher education sector. The Australian Capital Territory receives a proportionally large share of international students, with education now the territory's largest export industry.

Private consumption and retail turnover have increased in 2017-18 despite wage growth remaining low. The consumer sectors of the economy are also benefitting from an increase in tourist arrivals, with both international and domestic visitors increasing over the year to September 2018.

Steadily moderating output and domestic demand over the forecast period is shown in Chart 6.1.

Chart 6.1 Australian Capital Territory output and demand



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.
Source: ABS, Deloitte Access Economics.

Employment growth has been focussed in the household goods and services sectors, while the health and social assistance sector has also benefited from the continued rollout of the NDIS and the opening of the new University of Canberra hospital. This has helped push the unemployment rate down to 3.8% in December 2018 (after reaching 2.5% in November 2018).

Activity in the territory's construction sector appears to have peaked. The housing construction pipeline remains strong, however there is increasing uncertainty as to how much of that pipeline will be built. High population growth, increasing rents and falling vacancy rates suggest there is strong underlying demand for housing in the territory. However, stock on market has grown and housing price growth has moderated. Housing construction activity is expected to hold at its current high level as the existing pipeline works its way through the system.

Construction on the \$700 million first phase of the Canberra light rail is nearly complete, resulting in a fall in the value of engineering activity over 2018. While the large spike caused by projects of this nature is followed by weaker quarters in engineering construction, this sector accounts for a small portion of the territory's economy. The return to more normal levels is therefore not expected to significantly affect the wider territory economy.

Commercial construction has been strong and the pipeline of work remains elevated in the retail, education, health and accommodation sectors. In terms of project activity, construction is nearing completion on the \$160 million Australian Capital Territory Law Courts project, which is set for completion in the first half of 2019. The pipeline will be supported by the \$500 million redevelopment of the Australian War Memorial.

Overall, the outlook for the Australian Capital Territory remains positive, with growth of 2.7% expected in 2018-19. The pace of growth is then set to moderate to 2.4% by 2023-24.

Table 6.1 Australian Capital Territory output and demand forecasts

Annual % change (unless noted)	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Consumption							
Private sector	3.4	3.6	3.8	2.8	2.6	2.7	2.7
Public sector	2.4	2.7	2.6	2.9	2.3	2.2	2.7
Private sector investment							
Dwelling investment	-2.0	4.3	2.0	3.3	2.5	1.4	-3.4
Non-residential building	-1.9	1.7	-1.5	1.8	3.5	2.4	3.6
Engineering construction	-14.2	-10.9	-6.5	0.5	6.0	7.1	8.7
Machinery and equipment	21.5	3.3	7.1	16.0	10.2	7.1	7.3
IP and livestock	8.0	7.0	1.4	1.3	2.8	4.4	6.3
Public investment							
General Government	13.0	7.9	8.6	8.5	7.2	5.4	4.1
Public enterprises	26.0	4.0	-5.6	-1.8	-0.2	0.7	1.8
Real final demand	3.6	3.4	3.3	3.5	3.0	2.6	2.6
Private sector	3.3	3.4	3.3	3.3	2.9	2.6	2.3
Public sector	3.9	3.4	3.3	3.6	3.0	2.7	2.9
Gross State output	4.0	2.7	3.2	2.9	2.8	2.5	2.4
Employment	3.8	0.2	1.7	1.5	1.4	1.4	1.5
Unemployment rate (%)	3.9	3.4	3.1	3.0	3.0	3.1	3.3

Note: All variables (except for jobs and unemployment) expressed in inflation adjusted terms.

Source: ABS, Deloitte Access Economics.

6.1.2 Utilities sector

The Australian Capital Territory’s utilities sector is influenced by both independent pricing tribunals and market forces. The supply of electricity and water and waste services are determined by the Independent Competition and Regulatory Commission (ICRC) for small customers in the territory. Natural gas prices are not regulated.

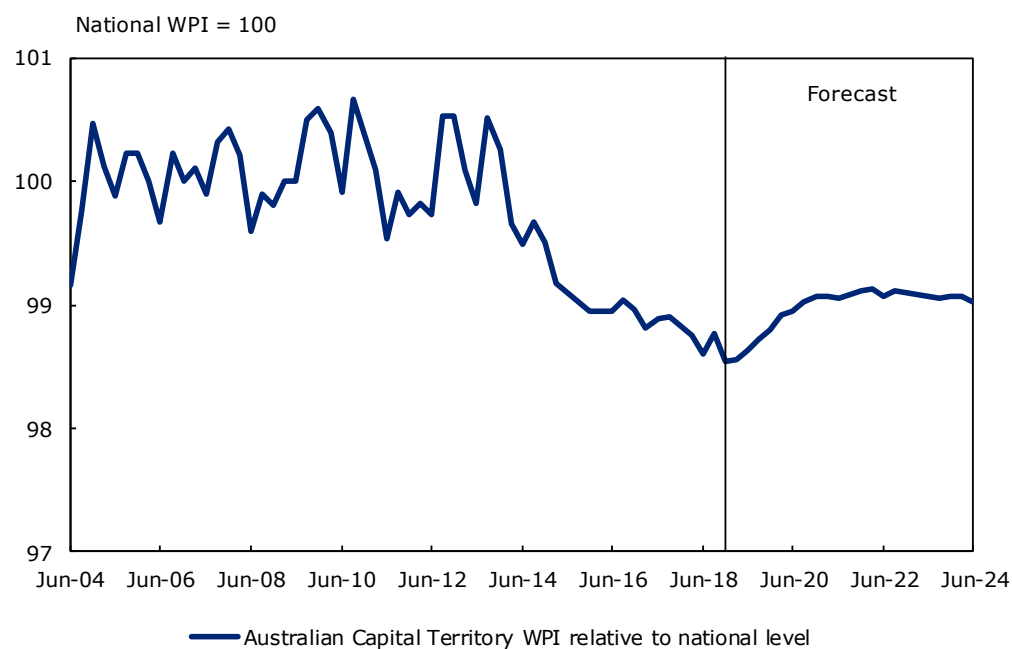
The territory’s electricity, gas, water and waste services industry grew by 3.3% in 2017-18. The Australian Capital Territory Government is targeting 100% renewable energy by 2020, supplied from either within the territory or from across the NEM. This commitment has supported investment (and output and employment) in the renewable energy sector, and is expected to continue to in the short-term. The final two investments required for the Australian Capital Territory to meet its 100% renewable energy target by 2020 have been confirmed, with the Hornsdale Wind Farm Stage 3 currently under construction and Crookwell 2 Wind Farm completed in late 2018.⁸

6.2 Outlook for wages

6.2.1 All industries

The Australian Capital Territory’s WPI has fallen relative to the national WPI since 2014. Territory wage growth was estimated at 2.0% over the year to December 2018, slightly lower than the national figure of 2.3%. Territory wage growth is expected to exceed national wage growth from mid-2019 before returning to levels in line with national wage growth from 2022. This gives rise to the increase in the Australian Capital Territory’s WPI relative to Australia’s shown in Chart 6.2 below.

Chart 6.2 Australian Capital Territory WPI relative to national WPI

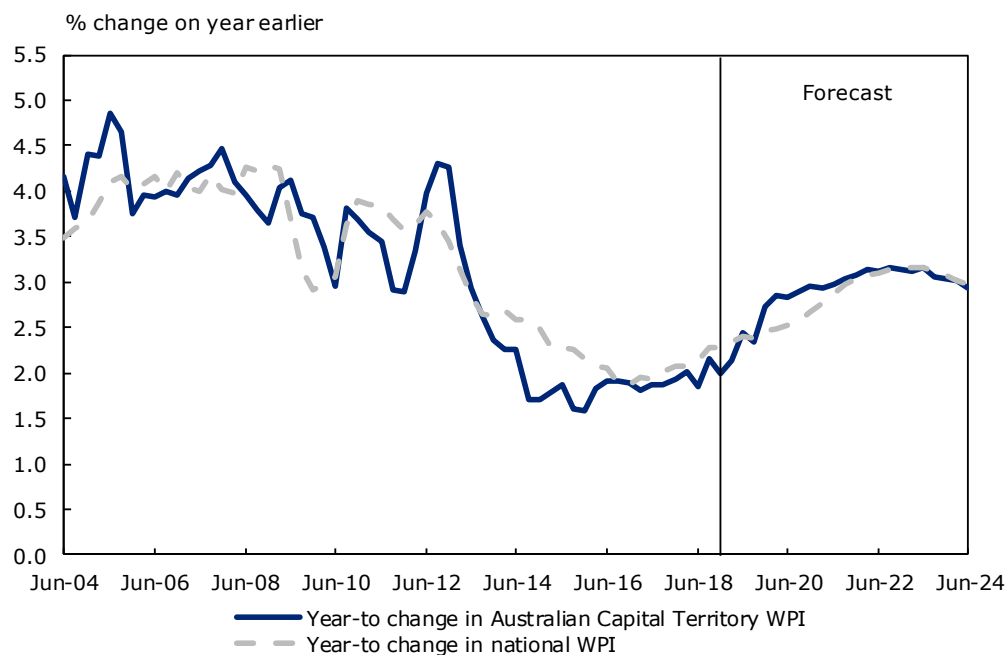


Source: ABS, Deloitte Access Economics.

⁸ ACT Government Environment, Planning and Sustainable Development Directorate, *200 MW Next Generation Renewables Auction* <https://www.environment.act.gov.au/__data/assets/pdf_file/0006/918528/200-MW-Next-generation-Renewable-Factsheet.pdf>.

Deloitte Access Economics expects recovering wage growth across the territory over the forecast period. Gains will be somewhat limited by the 2018 Commonwealth workplace bargaining policy limiting public sector wage growth in the near term. This bargaining policy indicates that all new wage increases in the Australian Public Service Enterprise Bargaining Agreements may be negotiated up to an average of 2% for the foreseeable future.⁹ This does not change or limit existing agreements, however may set a ceiling on public sector wage growth given that all new agreements are set to be affected. Average wage growth in the territory is forecast to reach 2.9% by 2023-24.

Chart 6.3 Australian Capital Territory general WPI growth



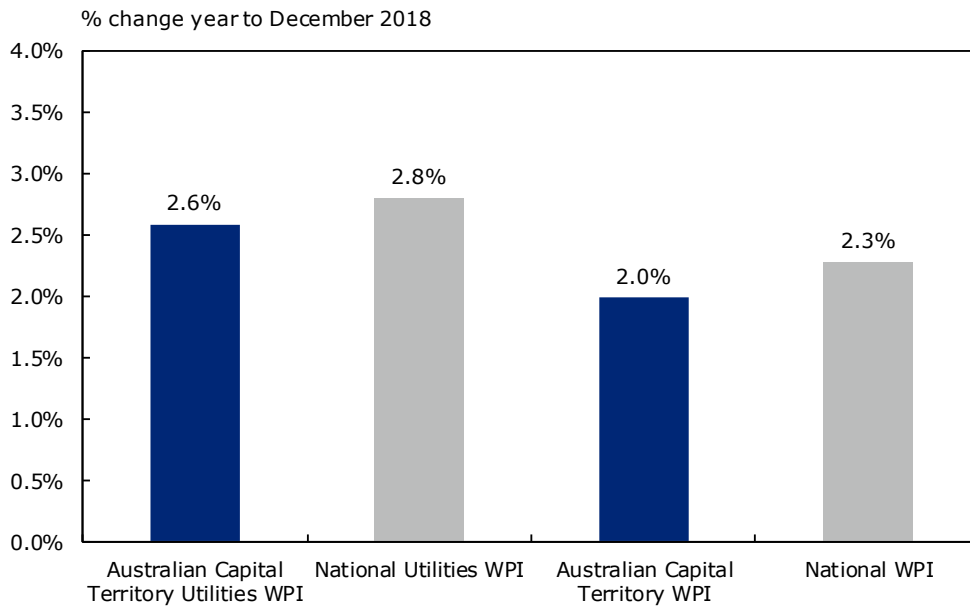
Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.
Source: ABS, Deloitte Access Economics.

6.2.2 Utilities sector wages

In the absence of ABS data for the Australian Capital Territory's utilities sector, Deloitte Access Economics estimates that the territory's utilities WPI grew by 2.6% over the year to December 2018.

⁹ Australian Public Service Commission, *Workplace Bargaining Policy 2018* <<https://www.apsc.gov.au/workplace-bargaining-policy-2018>>.

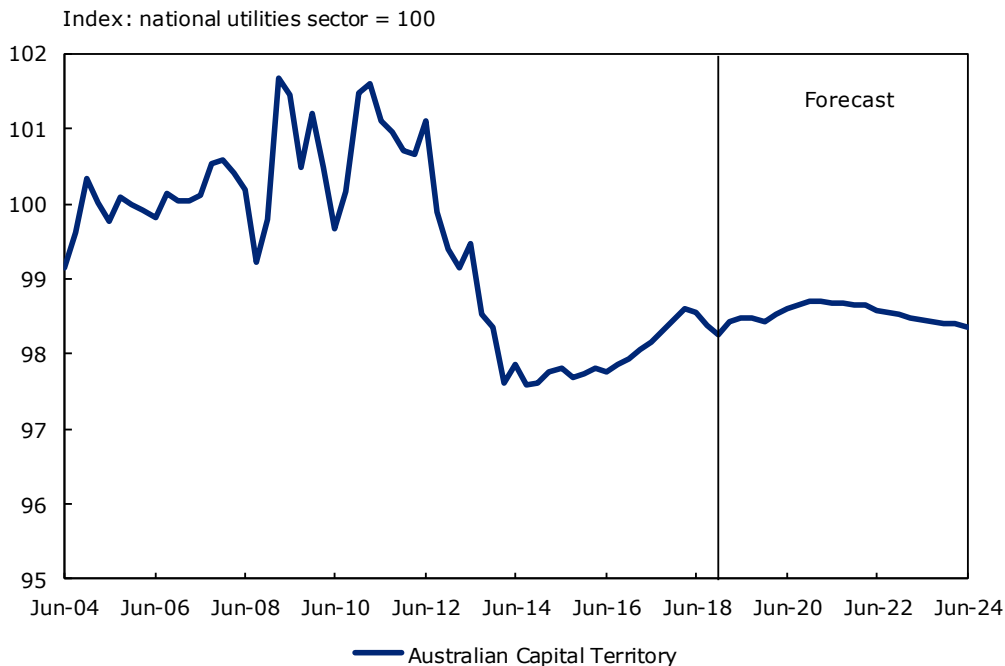
Chart 6.4 Comparative WPI annual growth rates in the year to December 2018



*Historical data estimated using Deloitte Access Economics’ wage price model. Unavailable from the ABS.
 Source: ABS, Deloitte Access Economics.

Movements in the Australian Capital Territory’s utilities WPI relative to the national utilities sector have stabilised since 2014. Deloitte Access Economics expects this to continue over the next two years as the territory transitions to renewables and there is increased demand for skilled employees. The slight increase in the short-term also reflects the increase of territory-wide WPI relative to the national.

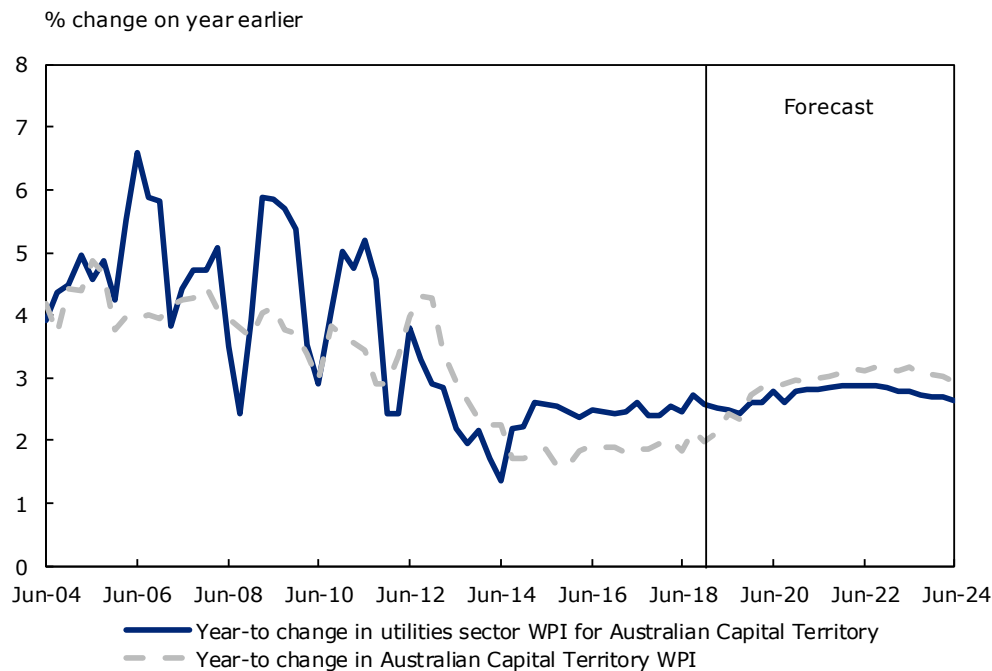
Chart 6.5 Relative utilities WPI forecast for Australian Capital Territory



Source: ABS, Deloitte Access Economics.

Deloitte Access Economics forecasts Australian Capital Territory’s utilities wage growth to remain relatively flat over the forecast period, outpaced by territory-wide wage growth from mid-2019. This is expected to occur as demand for labour in the utilities sector eases following the more significant phase of investment in new renewable energy investment (and construction of those pieces of investment). Utilities wage growth of 2.6% is forecast in 2023-24, slightly behind the 2.9% gain across all industries in the territory.

Chart 6.6 Australian Capital Territory utilities WPI forecast comparison



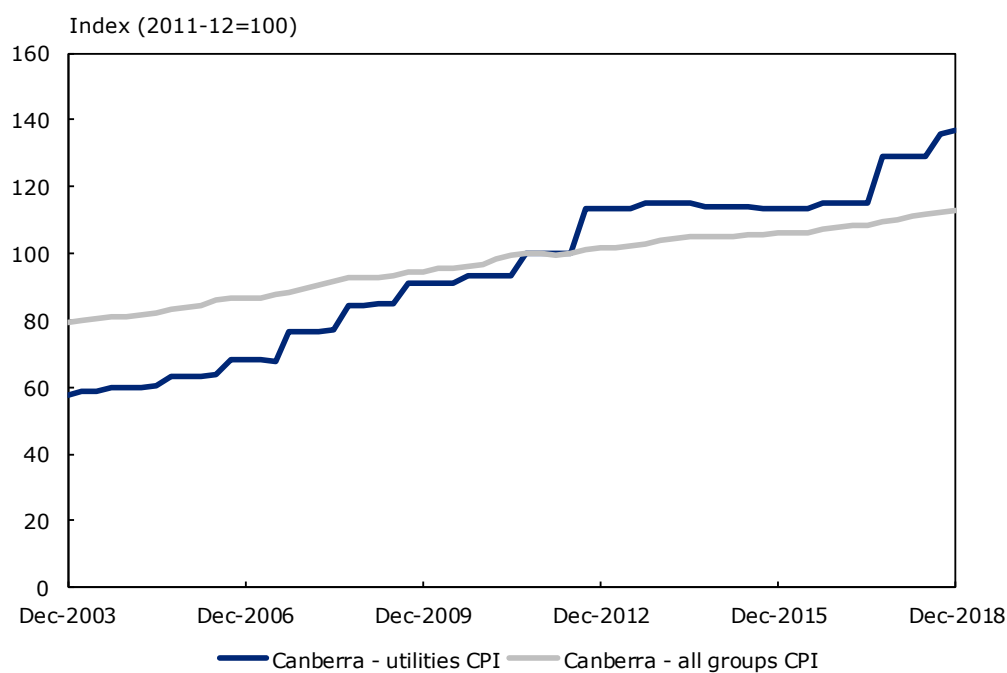
Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.
Source: ABS, Deloitte Access Economics.

After moderating for a period of time, Chart 6.7 shows that utilities prices in Canberra have recently increased, driven by rising gas, fuel and electricity prices. The Australian Energy Market Commission (AEMC) is forecasting rising electricity prices for the Australian Capital Territory over the next two years, with the average bill estimated to increase by \$87 from 2018-19 to 2020-21. This equates to an average increase of 2.5% each year following a relatively small increase of 1.4% from 2017-18. Electricity price movements are driven by wholesale, network and environmental costs:

- In 2018 wholesale costs accounted for about 48% of a typical territory electricity bill, with downward pressure on bills expected as more renewable energy supply comes online and demand remains steady.
- About 34% of the typical bill in 2018 comprised regulated network costs, which are expected to place slight upwards pressure on electricity prices in the territory due to rising transmission and distribution costs.
- Environmental costs, resulting from government policy, accounted for approximately 13% of typical prices in the Australian Capital Territory in 2018. This includes the national renewable energy target and the Australian Capital Territory Government’s feed-in-tariffs and Energy Efficiency Improvement scheme (discussed further in Report 1). Environmental costs are expected to put upwards pressure on prices over the next two years, primarily driven by the territory-specific feed-in tariffs while approaching the 100% renewables target.¹⁰

¹⁰ Australian Energy Market Commission, ‘Residential electricity price trends 2018’ (Market Review, 21 December 2018) <<https://www.aemc.gov.au/market-reviews-advice/residential-electricity-price-trends-2018>>.

Chart 6.7 Canberra utilities prices



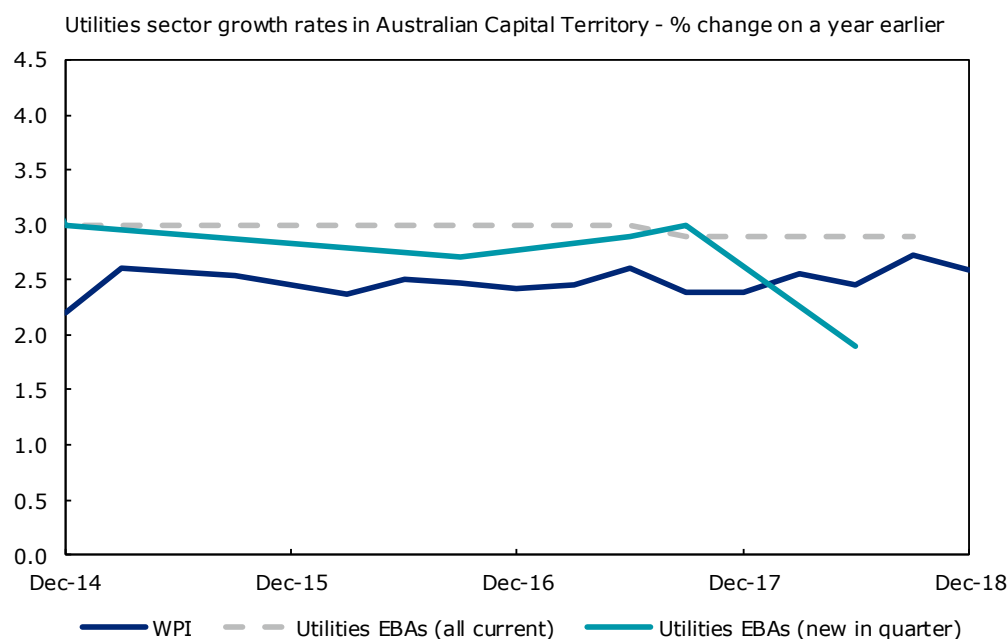
Source: ABS.

6.2.2.2 Comparison with EBA outcomes

In September 2018, the territory had five EBAs in the utilities sector with an average annual wage increase of 2.9% and covering 1,100 employees. Chart 6.8 shows that:

- Wage growth for current utilities sector EBAs has remained relatively flat over recent years with wage growth of 2.9% in September 2018.
- Wage growth in new utilities sector EBAs has fallen from a recent high of 3.0% in September 2017, declining to 1.9% in June 2018.
- Wage growth for new EBAs is below that for all existing utilities EBAs, suggesting less upwards pressure on utilities wage growth in the near term.

Chart 6.8 Comparative measures of wage growth in the Australian Capital Territory utilities sector



Note: % change on year earlier refers to output growth between a quarter and the same quarter a year earlier.

Source: ABS, Department of Jobs and Small Business.

6.2.3 Labour productivity

Labour productivity growth was relatively weak within the territory and across the nation in 2017-18. The territory's utilities sector labour productivity declined by 0.5% in 2017-18. This resulted from strong employment growth and moderate output gains in 2017-18.

Movements in labour productivity in the territory's utilities sector are expected to align with national increases over the forecast period. Deloitte Access Economics forecasts of territory sectoral labour productivity growth places significant weighting on national wide trends within the sector. As such, Deloitte Access Economics forecasts moderate growth of 0.5% in 2018-19 for the territory's utilities sector before moving to stronger growth from 2019-20.

Table 6.2 Australian Capital Territory labour productivity forecasts

Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Australian Capital Territory - All industries	0.2	2.6	1.4	1.4	1.4	1.1	0.8
Australian Capital Territory - Utilities	-0.5	0.5	1.6	1.7	1.7	1.4	1.2
National - All industries	-0.2	0.5	1.6	1.7	1.7	1.4	1.2
National - Utilities	-0.4	0.4	1.6	1.7	1.7	1.4	1.3

Note: Productivity forecasts for the Australian Capital Territory and the Northern Territory in the first forecast year should be interpreted with care. This is due to two reasons (a) Data limitations exist to forecast productivity (Gross State Product (GSP) divided by employment); Northern Territory and Australian Capital Territory employment data is a **trend** series, but GSP data is **seasonally adjusted**. (b) Quarterly State Final Demand (SFD) data is used to estimate quarterly GSP, which may not fully capture the impact of interstate trade. This can lead to some volatile movements in the first forecast year for the Northern Territory and the Australian Capital Territory.

Source: ABS, Deloitte Access Economics.

6.2.4 Summary results

Table 6.3 Australian Capital Territory wage forecasts

Financial year changes in Australian Capital Territory and national nominal Wage Price aggregates							
Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Australian Capital Territory - All industries	1.9	2.2	2.7	2.9	3.1	3.1	3.0
Australian Capital Territory - Utilities*	2.4	2.6	2.6	2.8	2.9	2.8	2.7
National - All industries	2.1	2.3	2.5	2.7	3.0	3.2	3.0
National - Utilities	2.0	2.7	2.5	2.6	2.9	3.0	2.8

Financial year changes in Australian Capital Territory and national real Wage Price aggregates							
Annual % change	History		Forecast				
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Australian Capital Territory - All industries	-0.5	-0.1	0.5	0.6	0.6	0.7	0.8
Australian Capital Territory - Utilities*	0.1	0.3	0.4	0.4	0.4	0.4	0.5
National - All industries	0.1	0.5	0.3	0.4	0.6	0.8	0.9
National - Utilities	0.0	0.8	0.3	0.2	0.5	0.6	0.6

*Historical data estimated using Deloitte Access Economics' wage price model. Unavailable from the ABS.

Source: ABS, Deloitte Access Economics.

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