Deloitte Access Economics

Forecast growth in labour costs in NEM regions of Australia

Report prepared for the AER

15 June 2015

Deloitte.

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Arek Gulbenkoglu
Director
Australian Energy Regulator
Level 37, 360 Elizabeth Street
Melbourne, Victoria 3000

15 June 2015

Dear Arek,

Report on State utilities sector WPI

Our report on the Wage Price Index (WPI) for Victoria, Queensland, South Australia, the Northern Territory and the ACT is attached.

This report has been drafted on the basis of the material and data available that fed into the March quarter 2015 issues of our *Business Outlook* and *Investment Monitor* publications.

Yours sincerely,

Chris Richardson
Director
Deloitte Access Economics Pty Ltd

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Glossary

ACCC	Australian Competition and Consumer Commission
AER	Australian Energy Regulator
DAE	Deloitte Access Economics
EBA	Enterprise Bargaining Agreement
GDP	Gross Domestic Product
GFC	Global Financial Crisis
LNG	Liquefied Natural Gas
WPI	Wage Price Index

Executive Summary

Australian economic growth remains below trend

Four key drivers of growth have been shifting:

- **Commodity prices** have fallen substantially and, despite some rebound gains in recent months, can be expected to continue to ease.
- Those lower commodity prices reinforce the ongoing fall in **engineering construction** in Australia – with commodity prices lower, so too is the incentive to build the next mine.
- Yet while these two levers (commodity prices and commodity related construction) have been worsening, two key positive have been strengthening. Most notably, businesses and families have finally twigged that Australian **interest rate**s will remain 'lower for longer'.
- In addition, **the Australian dollar** is now well off its peaks.

On balance that picture – of worsening negatives but strengthening positives – is expected to keep Australian economic growth below trend.

That's where it has been for some time. And given that it follows a decade of boom, growth that is merely below trend isn't a bad outcome. Yet the shifting balance among these four drivers of growth has different implications at the State and sectoral level, with relative strength shifting both geographically and by sector.

State strength is shifting to the south and east

The resource States are still growing faster than the rest of Australia, but in part that's merely the tail end of a huge resource construction boom which will eventually peter out. That will reveal the shift of strength that is underway from the nation's north and west towards its south and east. And in part the leaderboard will mean less than it did anyway, because although the resource States are enjoying an export surge, the latter lacks a 'feel good' factor. Exports don't generate jobs in the way the construction phase did. Domestic demand growth is a better indicator on the 'feel good' front, meaning NSW and Victoria are leading the nation:

- Victoria is lapping up low interest rates, and is as well positioned as any State to trade into the opportunities from a lower $A. Although the $A has a sting in its tail – think closures in car manufacturing – and housing is a challenge, Victoria should muddle through.
- Recent months gave Queensland's prospects a pasting: the drop in gas prices takes one option off the table for short term better news, and coal remains in pain. But the State has a good growth portfolio, with tourism, foreign education and housing moving back into gear.
- South Australia faces challenges over the loss of car making and question marks surround the future of defence manufacturing, including new submarine work. However, do not underestimate the interest and exchange rate effects now working this State's way.
- The Northern Territory is still sprinting on the back of resource construction, but needs to find a way to navigate a serious construction cliff on the horizon. Falls to oil and oil-related prices (including gas prices) mean another gas project probably won't be the answer.
- The ACT is feeling Federal cuts to the public service, with the latest Federal Budget initiating some new departmental reviews that may trigger some additional job losses.

Utilities demand has commenced a recovery

A huge hike in utilities prices in recent years has dominated the sectoral landscape, exacerbating existing negatives such as closures among some key customers in manufacturing, a switch to energy efficient appliances and buildings, environmental awareness and fear of climate change. The result was the first sustained fall in electricity demand in over a century.

Yet it is also clear that the worst has passed, and that a cyclical recovery has commenced:

- Record low interest rates have boosted **housing construction**: 2015 is expected to see a record number of new homes built. Those homes will be connected to utilities services.
- Although Australia's **population growth** is slowing from its recent highs, it remains comfortably above its longer term average.
- The lower $A and lower fuel costs are easing some **competitive pressures on Australia's trade-exposed manufacturers**.
- **Electricity prices have stabilised** amid the repeal of the carbon tax, the introduction of flexible and market pricing arrangements, falls in global energy prices, and reforms to regulatory frameworks.

Looking longer term, there are potential positives in the rise of **electric cars**, as well as the pace of innovation in oil and gas markets and in renewables.

Yet it is also true that a number of **negatives** remain for the utilities:

- **Australia's manufacturing base remains under competitive pressure**, and continued weakness in manufacturing is likely to weigh on utilities demand in coming years.
- Australia's east coast gas producers are linked to world markets, but that means **domestic gas prices will increase (though estimates of that price change have eased of late), resulting in a fall in consumption**.
- **Increased competitiveness and availability of distributed generation** such as rooftop solar systems and battery storage and solar hot water are also likely to remain a source of cuts to household electricity demand over the medium term. In particular, news that a huge factory to build batteries is being established in Nevada may be early evidence of game changing developments in the cost to families and businesses of adopting better battery capacity to allow them to better utilise solar power and other alternative energy sources.

The latter may yet raise some longer term risks around the health of electricity generation and networks. Networks have high fixed costs, and if changing technologies and distribution models were to lead, for example, to a sharp take up of solar with associated battery usage, then that could lead to a sustained fall in demand for network electricity. In turn, that would mean that the fixed costs of the network were being spread over a smaller base of customers. As yet such developments are a risk rather than a base case – they aren't reflected in these forecasts. Equally, nor are potential longer term positives such as the rise of electric cars.

However, these are mostly question marks over the longer term and, overall, the utilities sector is forecast to continue to recover from its recent dip, aided by strong rates of housing construction, a growing population, greater stability in electricity prices, and reduced risks to domestic gas pricing. **Yet although the utilities sector is recovering from its recent slump, its growth may remain slow over the outlook period.** The sector is projected to continue to shrink as a share of Australia's economy and workforce. That reflects the ongoing demand

adjustments occurring in response to the enormous lift in the price of utilities services, while the continued weakness in manufacturing will weigh on electricity demand. The level of electricity consumed from the grid peaked in 2009 and that level is unlikely to be bettered in the next decade. Indeed, by 2024 it is possible that electricity demand may be around 25% below its peak – and close to 40% below the level forecast for that time as recently as 2010.

Wage growth remains at record lows

The Wage Price Index (WPI) shows wages grew by just 0.5% in the first quarter of 2015, to be 2.3% higher over the year. That is less than the low recorded during the global financial crisis, and it is also less than the low hit when the introduction of the GST led to a hiccup in growth in 2000. Indeed, it is the lowest annual rate of wage gains since the series began in 1997.

At the State and Territory level, South Australia and Tasmania recorded the fastest rates of growth over the quarter of 0.6%. Over the past year Victoria has experienced the fastest wage growth rate at 2.6% with South Australia a close second at 2.5%. Weak wage growth numbers for Western Australia provide further evidence of how the end of the mining boom is affecting that State. Wage growth there has fallen from an average of 4.3% per year from 2004 to 2013 to be just 2.3% over the last year – second lowest only to the ACT.

The weakness in wage growth is no surprise, reflecting both structural and cyclical factors. At the structural level, wages ran ahead of productivity during the decade of the boom, and became a contributory factor in the loss of Australian business competitiveness as a result. That lack of competitiveness has been revealed as the resources boom has eased. At the cyclical level, the job market remains subdued, with weak job market conditions leading workers to accept lower wage rises in exchange for job security. With the ranks of the unemployed expected to stay elevated for the near future, wage growth may remain modest.

Wage growth in the utilities is slowing, and that slowdown may linger

Unlike wage growth in Australia more generally, wage gains in the utilities were unaffected by the global financial crisis. However, there has been a substantial slowdown since their most recent peak (at 4.4% two years ago), with wage growth over the past year – at 2.5% – the slowest ever recorded rate, and the quarterly growth of 0.5% recorded in March 2015 dropping to the national average. There are a number of underpinnings to this slowdown:

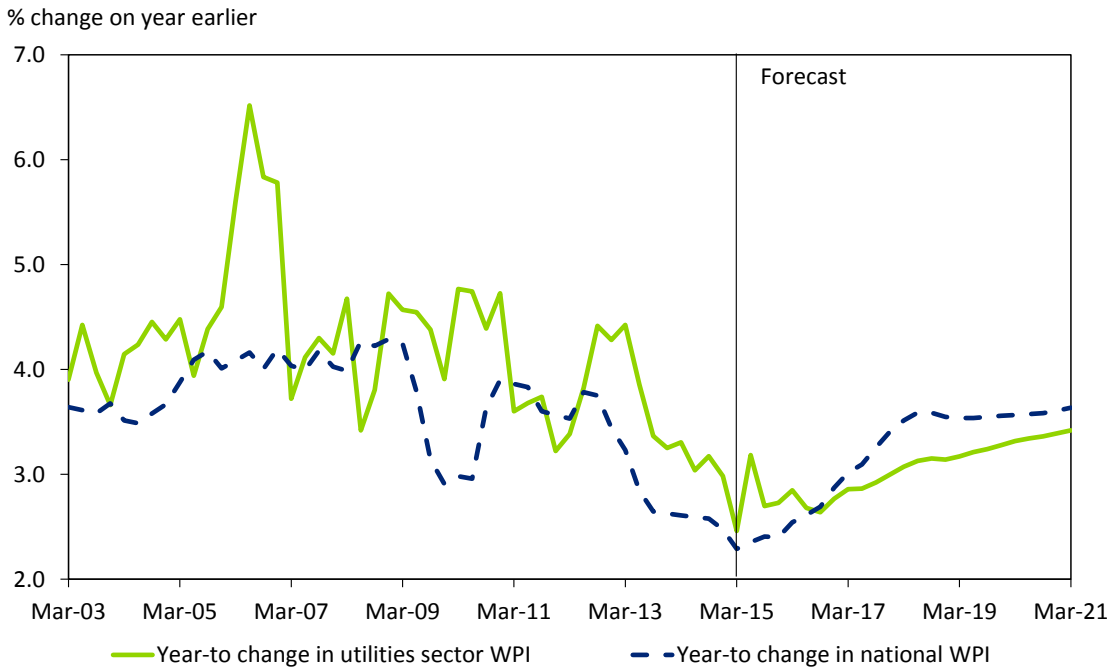
- **Weak wage growth is a lagged reaction to the shrinkage of the utilities sector**. As noted above, the sector shrank in response to a number of factors, with that shrinkage occurring most sharply through the course of 2013. And although the sector has finally returned to growth, it still lags the national growth rate by a considerable margin. Related to that, employment in the sector is now 9% below its late 2013 peak.
- **And it is in response to easing prospects and profitability in competitor sectors**. Manufacturing and mining both compete with the utilities sector for their workforce, and both are shedding workers. And so too is the engineering construction sector, although an upturn in housing construction has maintained overall employment levels in that sector
- **And it is in response to the drop in wage growth nationally**. The slowdown is not just in manufacturing, mining and engineering, with national wage growth at a record low.

None of these factors will disappear fast, with the sector still underperforming the national economy, with competitor sectors still struggling, and with the national slowdown in wage

growth set to linger into 2016. Accordingly, the outlook for utilities sector wage growth is for a moderate increase in the rate of growth following a trough in 2014-15. However, average growth over the next decade is projected to track well below historical trends, with growth not expected to exceed 3% until 2017-18 and remain well below the last decade average of 4.2%.

One reason for this is lower demand for workers in the industry. Utilities sector employees account for just over 1% of the total Australian workforce. In the decade to February 2015, utilities sector employment increased by an annual average rate of almost 4%. In contrast, in the five years to February 2015, employment in the utilities sector grew by 1.4% per year on average. In addition, the value of the total number of electricity, gas and water projects (including those under construction and under consideration) fell by 4.1% in the year-to March 2015. Accordingly, demand for utilities sector wages is predicted to continue to slide in relative terms, placing additional downward pressure on wages in the industry going forwards.

Chart i: Utilities Wage Price Index forecasts



Source: ABS, Deloitte Access Economics' labour cost model

As Chart i shows, sticky wages and forward employment contracts should keep wage growth relatively high in the short term, however utilities WPI is projected to fall below national WPI past 2015-16, with a number of factors are beginning to weigh on the utilities WPI. Notably:

- **Competition from other sectors is winding down**. During the recent resources construction boom, the utilities sector was forced to complete for workers, often causing skills shortages in sectors and across jurisdictions. More recently, falling commodity prices have eroded the mining sector's earning, and companies have pursued vigorous cost cutting strategies in response. This will contribute to lower competition for workers, stunting wage growth in the utilities sector accordingly.
- In recent years, electricity demand has declined, which has placed downward pressure on prices. Indeed, electricity consumption has fallen by an annual average of 1.7% over the past five years. **Electricity demand is expected to remain under a degree of pressure** in the short term. This will be driven by:

- **Lower industrial demand**, owing to the pending closure of car making in Victoria and SA, and the shutdown of aluminium smelters in Victoria and NSW.
- **Constrained residential demand** – as consumers become progressively more environmentally conscious, demand will be stifled by the increased use of energy efficient devices. The Australian Energy Market Operator (AEMO) continues to forecast residential consumption to fall by 0.5% per year over the short term.

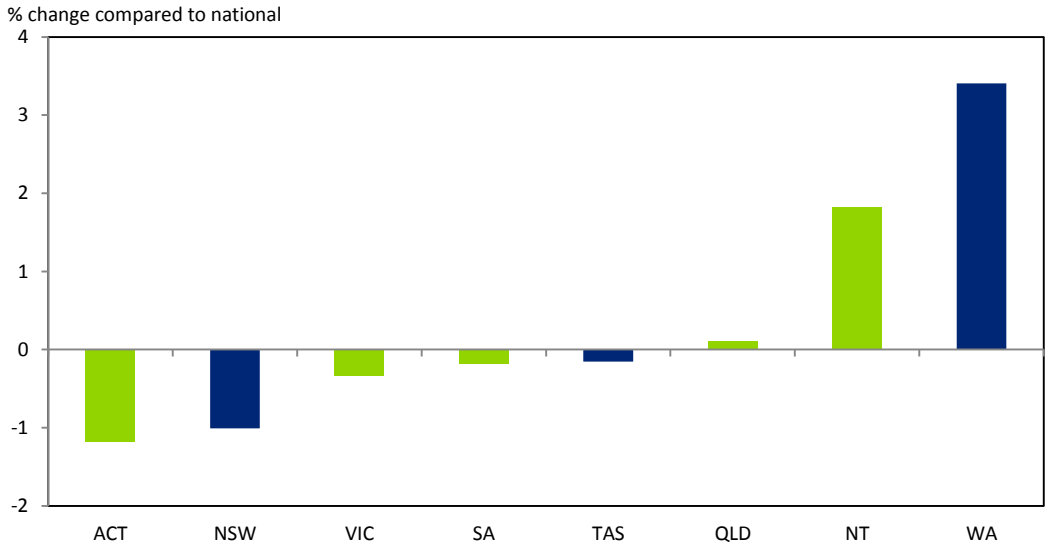
- Dampened demand is coupled with **oversupply**. There is approximately 20% excess generation capacity and, according to the AEMO, no additional power generation is likely to be required for the next decade.
- Weak demand and strong supply is an unhealthy mix for **electricity prices and revenue**, which in turn may contribute to slow wage gains in the utilities sector.

Wage gains have been weaker outside of WA and the NT

> The ABS only releases estimates of the utilities WPI for NSW (not covered in this report) and Victoria. All other State and Territory utilities WPIs in this report have been estimated by Deloitte Access Economics from other related information (including national utilities wage growth, wage gains by State and Territory, and patterns in utilities EBAs).

This report focuses on wage developments in Victoria, Queensland, South Australia, the Northern Territory and the ACT.

Chart ii: Relative shifts in State utilities WPI levels since 2008



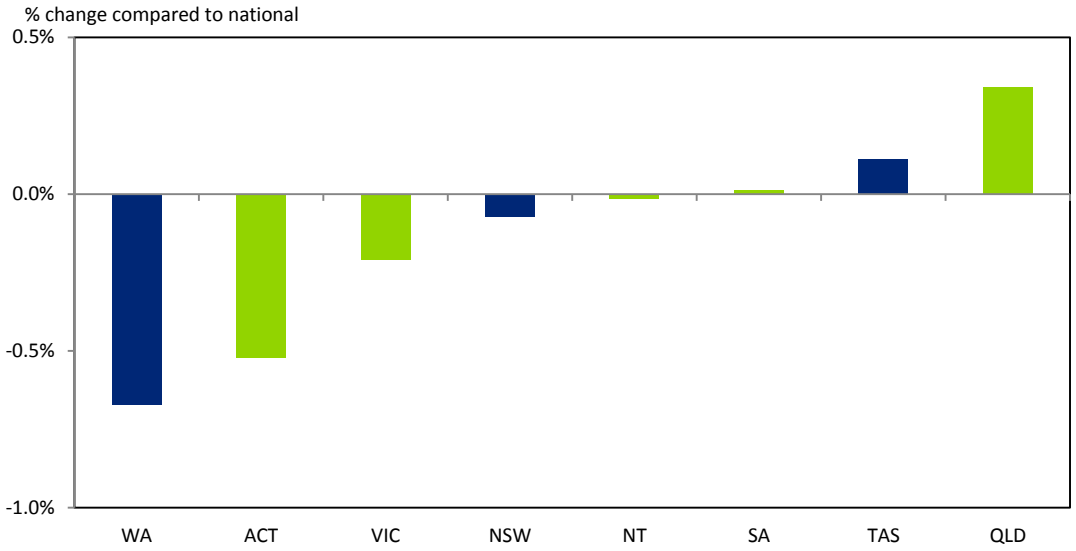
Source: ABS, Deloitte Access Economics estimates

As Chart ii makes clear, wage gains have not been evenly distributed across the country. Indeed, the rises across the period of the mining boom (effectively since 2007) have largely accrued to those States with the strongest construction and mining booms – Western Australia and the Northern Territory. Even Queensland, itself a beneficiary of the mining upswing, has lagged well behind the gains seen in those areas. The remaining jurisdictions have seen their relative wages fall – albeit modestly so – relative to utilities wages in the economy as a whole.

Forecast trends are for relatively slower utilities wage gains in WA and the ACT

The results for the forecast period are shown in Chart iii.

Chart iii: Forecast shifts in State utilities WPI levels to 2021



Source: Deloitte Access Economics' macroeconomic model

- For Queensland, relative longer term wage growth in the utilities sector is expected to pick-up as structural adjustments in the State's economy (including reduced engineering work) run their course and the general tenor of Queensland's performance picks up amid better news on housing construction and in those sectors aided by the lower $A.
- Wages in the South Australian utilities sector are likely to move broadly in line with their national counterparts. Although short term closures in manufacturing and in the utilities sector itself will see some relative ground lost through to 2018, SA utilities wages may then claw some of that back thereafter.
- For the Northern Territory, the winding down of engineering activity as the Ichthys project moves out of construction and into production may see a slower phase of wage gains in the utilities sector in that jurisdiction.
- Victorian utilities wages have outperformed since 2010 and, despite solid news for the wider Victorian economy, the forecast period may see that outperformance pegged back amid closures in the car-making sector.
- For the ACT, overall utilities wages may underperform in the near term amid public sector cutbacks, with some better outcomes likely to be seen over the medium term.
- The years ahead will see some unwinding of some of the strength in utilities wage gains in the West (which only modestly offsets the gains made since 2007).

Note that these wage forecasts do not assume any impact on wage-setting in the utilities sector related to the potential for privatisations in some elements of the industry.

Summary results

Table i: State WPI forecasts

Yearly changes in nominal Wage Price Index forecasts

Annual % change	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
National	2.6	2.4	2.5	2.9	3.4	3.6	3.6	3.6
Queensland	2.6	2.5	2.8	3.2	3.6	3.7	3.7	3.9
South Australia	3.3	2.6	2.2	2.7	3.4	3.6	3.7	3.7
Northern Territory	2.7	2.7	2.8	2.7	3.8	3.7	3.7	3.6
Australian Capital Territory	2.4	1.8	2.2	2.9	3.8	4.1	3.9	3.7
	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Victoria	2.7	2.4	2.4	3.0	3.4	3.4	3.6	3.7

Yearly changes in real Wage Price Index forecasts

Annual % change	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
National	-0.1	0.8	0.3	0.1	0.9	1.1	1.1	1.1
Queensland	-0.2	0.7	0.6	0.2	0.9	1.1	1.2	1.3
South Australia	0.7	1.1	0.3	0.0	0.9	1.2	1.2	1.2
Northern Territory	-1.0	1.3	0.9	0.1	1.3	1.2	1.2	1.1
Australian Capital Territory	0.2	0.7	0.3	0.1	1.3	1.7	1.5	1.2
	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Victoria	0.4	1.1	-0.3	0.3	0.9	1.0	1.1	1.3

Source: ABS, Deloitte Access Economics labour cost model

Table ii: Summary results – key variables

Financial year changes in key variables

Annual % change	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Output	2.5	2.4	2.7	3.1	3.0	2.7	2.8	3.0
Consumer price index	2.7	1.6	2.1	2.8	2.5	2.5	2.4	2.5
Wage Price index	2.6	2.4	2.5	2.9	3.4	3.6	3.6	3.6
Ave. weekly earnings	2.7	1.9	3.0	3.1	3.6	3.8	3.8	3.8
Ave. weekly ordinary time earnings	3.0	2.7	2.9	3.7	4.1	4.3	4.3	4.4

Source: ABS, Deloitte Access Economics macroeconomic model

Table iii: Summary results – economic variables

Financial year changes in key economic variables - annual % change (unless noted)

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Consumption								
Private sector	2.2	2.8	3.2	3.2	3.3	3.1	2.8	2.6
Public sector	2.3	2.4	2.4	2.7	2.7	2.8	2.8	2.7
Private sector investment								
Non-business housing	5.1	7.6	9.3	4.6	1.9	-0.2	3.2	5.6
Non-business real estate	14.2	-0.8	3.1	3.4	1.3	-0.8	2.3	4.6
Non-residential building	4.5	3.2	3.8	2.7	1.5	1.1	2.2	3.1
Engineering construction	-4.8	-19.3	-17.7	-5.8	-1.3	-1.6	-0.6	0.3
Machinery and equipment	-12.6	0.9	-5.7	2.6	6.0	2.2	2.9	3.9
IP and livestock	-0.4	1.9	0.6	1.6	-1.9	0.8	2.3	3.2
Public investment								
General Government	3.3	-3.0	2.0	2.9	2.2	2.5	2.6	2.6
Public enterprises	-9.2	-19.4	-10.3	13.2	5.8	0.5	1.4	2.1
Domestic final demand	1.0	0.9	1.8	2.9	2.8	2.4	2.6	2.8
Private sector	0.9	1.0	1.6	2.7	2.8	2.4	2.6	2.8
Public sector	1.6	0.2	1.6	3.3	2.8	2.6	2.7	2.7
Gross national expenditure	0.7	1.1	1.8	2.9	2.8	2.4	2.6	2.8
International trade								
Exports	5.8	5.1	2.0	6.1	6.0	5.5	4.5	4.2
Imports	-1.9	-2.3	-2.1	4.7	5.5	4.3	4.0	3.7
Net (% additon to growth)	1.0	1.7	0.7	0.3	0.3	0.4	0.2	0.3
Total output (GDP)	2.5	2.4	2.7	3.1	3.0	2.7	2.8	3.0
Non farm output	2.4	2.3	2.7	3.2	3.0	2.8	2.8	3.0
Employment	0.8	1.2	1.1	1.6	1.6	1.7	1.6	1.6
Unemployment rate (%)	5.8	6.2	6.4	6.3	6.2	6.1	6.1	6.0

Source: ABS, Deloitte Access Economics macroeconomic model

Table iv: Summary results – wages and prices

Financial year changes in national wage and prices variables

Annual % change	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Consumer price index (CPI)	2.7	1.6	2.1	2.8	2.5	2.5	2.4	2.5
Wage price index (WPI)								
Nominal	2.6	2.4	2.5	2.9	3.4	3.6	3.6	3.6
Real	-0.1	0.8	0.3	0.1	0.9	1.1	1.1	1.1
Average weekly earnings (AWE)								
Nominal	2.7	1.9	3.0	3.1	3.6	3.8	3.8	3.8
Real	0.1	0.3	0.8	0.3	1.1	1.3	1.3	1.3
Average weekly ordinary time earnings (AWOTE)								
Nominal	3.0	2.7	2.9	3.7	4.1	4.3	4.3	4.4
Real	0.3	1.1	0.7	0.8	1.6	1.8	1.8	1.8
Unit labour costs								
Nominal	0.4	0.4	1.0	1.3	2.1	2.6	2.5	2.3
Real	-2.2	-1.2	-1.1	-1.5	-0.4	0.2	0.1	-0.1

Source: ABS, Deloitte Access Economics macroeconomic model

Table v: Summary results – National sectoral wages

Financial year changes in nominal national industry sector WPI

Annual % change	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	2.6	2.4	2.5	2.9	3.4	3.6	3.6	3.6
Utilities	3.2	2.9	2.7	2.8	3.0	3.2	3.3	3.4
Construction	3.0	2.1	2.4	3.0	3.5	3.5	3.5	3.6

Source: ABS, Deloitte Access Economics labour cost model

Table vi: Summary results – State utilities sector nominal wages

Yearly changes in nominal utilities sector WPI

Annual % change	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
National	3.2	2.9	2.7	2.8	3.0	3.2	3.3	3.4	3.5
Queensland	3.2	2.5	2.6	2.9	3.0	3.2	3.4	3.6	3.7
South Australia*	3.8	2.5	1.9	2.7	3.2	3.4	3.5	3.6	3.6
Northern Territory*	3.3	3.1	2.9	2.7	3.3	3.2	3.4	3.5	3.4
Australian Capital Territory*	2.5	2.4	2.2	3.3	3.1	3.3	3.2	3.3	3.3
	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Victoria	3.6	3.3	2.5	3.0	3.2	3.3	3.4	3.6	3.5

* Historical data estimates using Deloitte Access Economics Wage Price Index forecasting model. Unavaliable for the ABS

Source: ABS, Deloitte Access Economics labour cost model

Table vii: Summary results – State utilities sector real wages

Yearly changes in real utilities sector WPI

Annual % change	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
National	0.5	1.3	0.6	-0.1	0.5	0.7	0.8	0.9	1.0
Queensland	0.4	0.7	0.4	-0.1	0.3	0.6	0.9	1.0	1.1
South Australia*	1.2	1.0	0.0	0.1	0.7	1.0	1.1	1.1	1.2
Northern Territory*	-0.4	1.7	0.9	0.0	0.8	0.7	1.0	1.0	1.0
Australian Capital Territory*	0.3	1.3	0.3	0.5	0.6	0.9	0.8	0.8	0.9
	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Victoria	1.2	2.0	-0.2	0.3	0.8	0.9	0.9	1.1	1.0

* Historical data estimates using Deloitte Access Economics Wage Price Index forecasting model. Unavaliable for the ABS

Source: ABS, Deloitte Access Economics labour cost model

Deloitte Access Economics

15 June 2015

1 Background

The Australian Energy Regulator (AER) commissioned Deloitte Access Economics to provide forecasts for labour cost growth for the electricity, gas, water and waste services (utilities) industry to 2019-20 for Victoria, Queensland, South Australia, the Northern Territory and the Australian Capital Territory, as well as for Australia as a whole.

Specifically, AER requested:

- an analysis of forecast labour costs for the utilities industry in the above mentioned States,
- a comparative analysis of forecast labour costs for the construction industry,
- an analysis of forecast general labour cost growth in each of the States, and
- a discussion of how market conditions are expected to affect the labour forecasts.

The report is organised as follows:

- **Discussion of the economic outlook**, including national and State commentary, as well as a broad look at the utilities and construction sectors.
- **Discussion of the outlook for wages**, including a brief discussion at the national and State level, followed by analysis at the industry level.
- The report then discusses **detailed forecasts at the State level of wage growth in the utilities and construction industries**.
- **The Appendices** cover regional wage and price variations, as well as an outline of the methodology used in the Deloitte Access Economics macro model and the Deloitte Access Economics wage model, a discussion of different wage measures.

2 The economic outlook

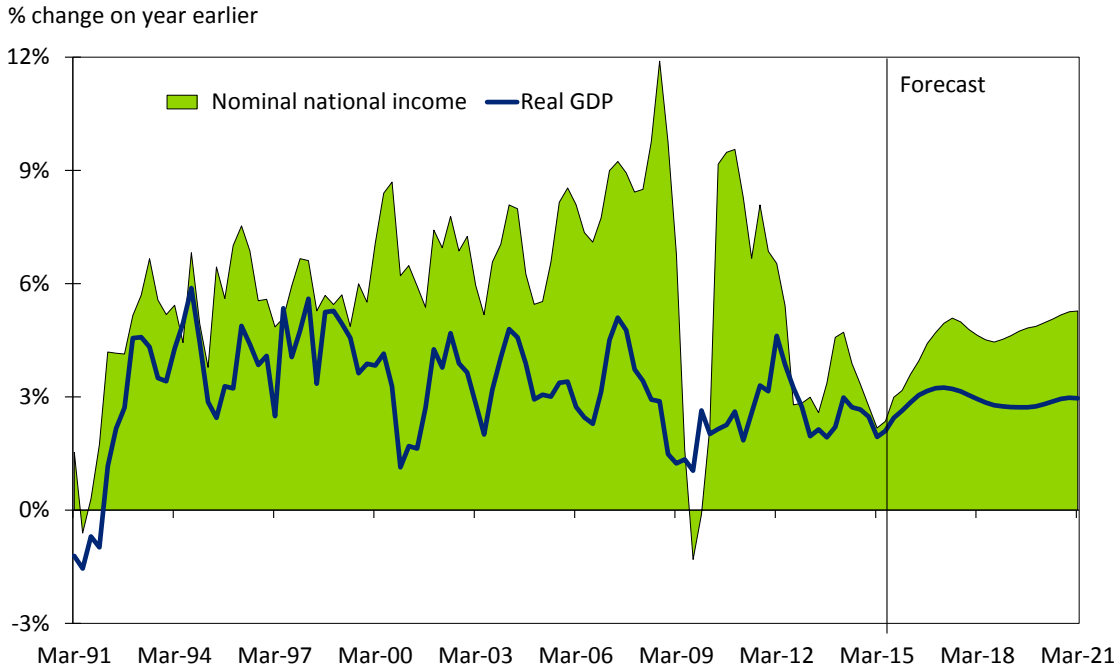
2.1 Australia

Australia can point to some genuine successes as it navigates its way through a cooling resources boom. Low interest rates have propped up retail sales growth despite weak wage and job gains. And those low interest rates are giving more momentum to housing construction than many had given credit for. In addition, a lower Australian dollar has provided a much needed shield for tourism, international education and manufacturing.

Yet these are offsets against powerful downdrafts. First, **a slowing China and falling commodity prices have sucked strength from national income growth**, which is stuttering. Australian businesses are therefore spending less on big construction projects as the mining boom fades further. And that trend is reinforced by record low wage growth. Although that's a necessary part of the repair task, **it means the largest part of national income (wages and salaries) has joined the most volatile part of national income (commodity earnings), as a problem.**

Second, those further falls in commodity prices have cemented the downswing already underway in mining-related construction. **At best Australia is only half way through a 'construction cliff'**.

Chart 2.1: Australian GDP growth



Source: ABS, Deloitte Access Economics' macroeconomic model

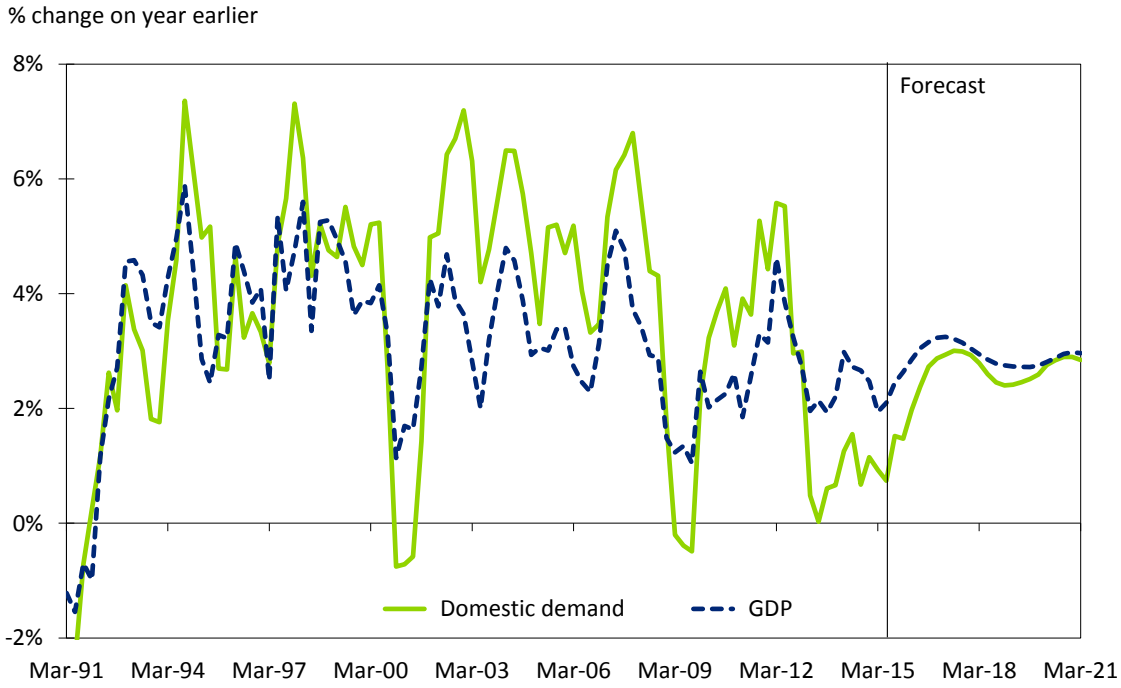
Yet despite real GDP and national income shown in Chart 2.1 both well below trend, things could have been rather worse. In fact it is worth stressing that Chart 2.1 shows some quite reasonable outcomes to date as Australia continues to transition away from the resources boom.

Given the less-than-favourable global and domestic headwinds, current production growth is reasonable and, if some key commodity prices finally steady, then the 'income recession' of recent times may be close to bottoming.

That is because as important as commodity prices and incomes are for economic growth, **the major growth drivers going forward will be interest rates and exchange rates**. Add in the benefits to families and some businesses from lower prices at the petrol pump, and Australia is navigating the tricky shoals of transition away from the construction phase of the resources boom as well as could be expected.

That backdrop leaves our forecasts where they have been for a while, with national income growth weak and overall output growth running a little below trend as mining-related construction falls away.

Chart 2.2: Domestic demand and GDP



Source: ABS, Deloitte Access Economics' macroeconomic model

Yet the confluence of a slowing China and rising global mining and energy output (and the associated squeeze on national income) seen over the past 12 months will continue to reverberate through the Australian economy for some time.

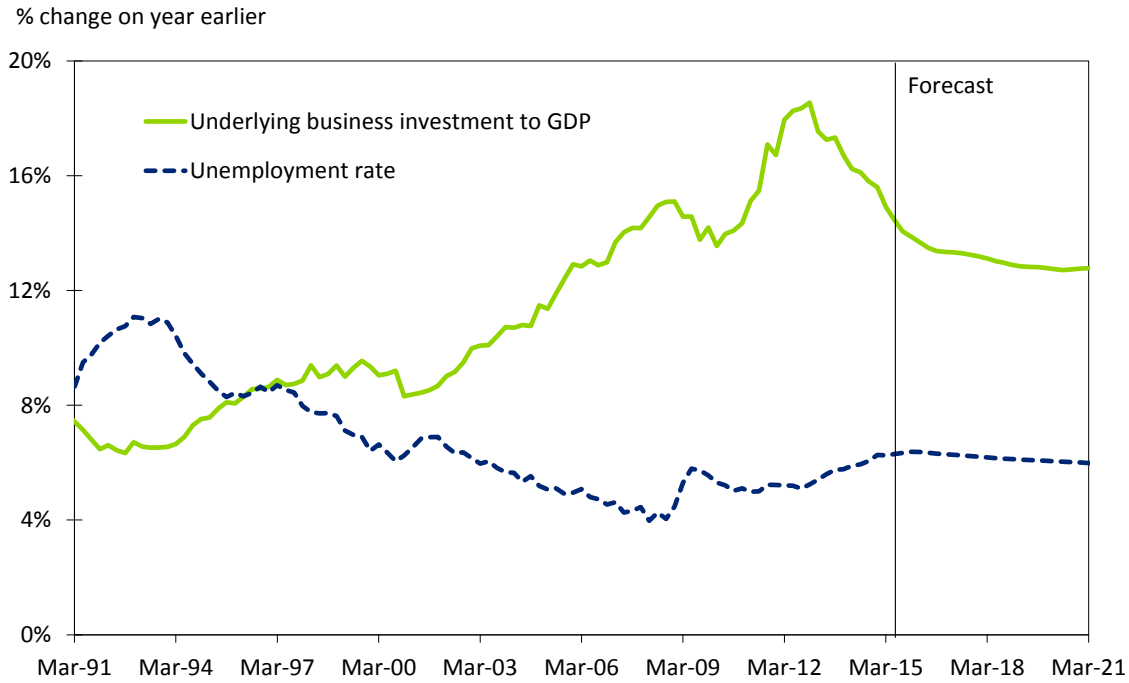
That's because lower commodity prices are merely the curtain raiser in terms of the impacts here. **The true size of the contraction will become clear when businesses decide whether or not to go ahead with the next big mining construction project in Australia.** And the ground is shifting even further there: not surprisingly, the worse commodity prices get, the less the chance the next project goes ahead.

In turn, that drives two effects – a general one seen in Chart 2.2 above, and a specific one in Chart 2.3 below. The general effect has been a switch from a phase in which growth in Australian production (GDP) was exceeded by that in Australian demand, to the current phase, in which demand is limping along at even lower rates than GDP, even though the latter is itself below trend.

As Chart 2.2 makes clear, **Deloitte Access Economics projects this to be a rather longer period of weak performance in demand growth than Australia has seen in some decades.**

The lower that commodity prices go, then the bigger will be the construction cliff in Australia. As Chart 2.3 shows, business investment peaked back in 2012, and has been in decline ever since. The main driver of the increase was engineering construction, particularly in mining-related projects. Engineering work went from 1% of the Australian economy as recently as 2003, rising to a peak over 7% in 2012. But it has since shed a quarter of its share of Australian activity, falling below 5½%.

Chart 2.3: Business investment/GDP and the unemployment rate



Source: ABS, Deloitte Access Economics' macroeconomic model

On average, over the past 30 years, engineering construction activity has accounted for around 2% of GDP. Under those circumstances, and despite the partial – and very welcome – offsets provided by the fall in the $A and by increasingly vigorous cost cutting, there's no great surprise that business investment will continue to fall as a share of the Australian economy.

2.2 Victoria

Victoria is primed to take advantage of low interest rates, and is well positioned to also take advantage of opportunities resulting from a lower currency. Although the $A has a sting in its tail – think closures in car manufacturing – and housing is a challenge, Victoria should muddle through.

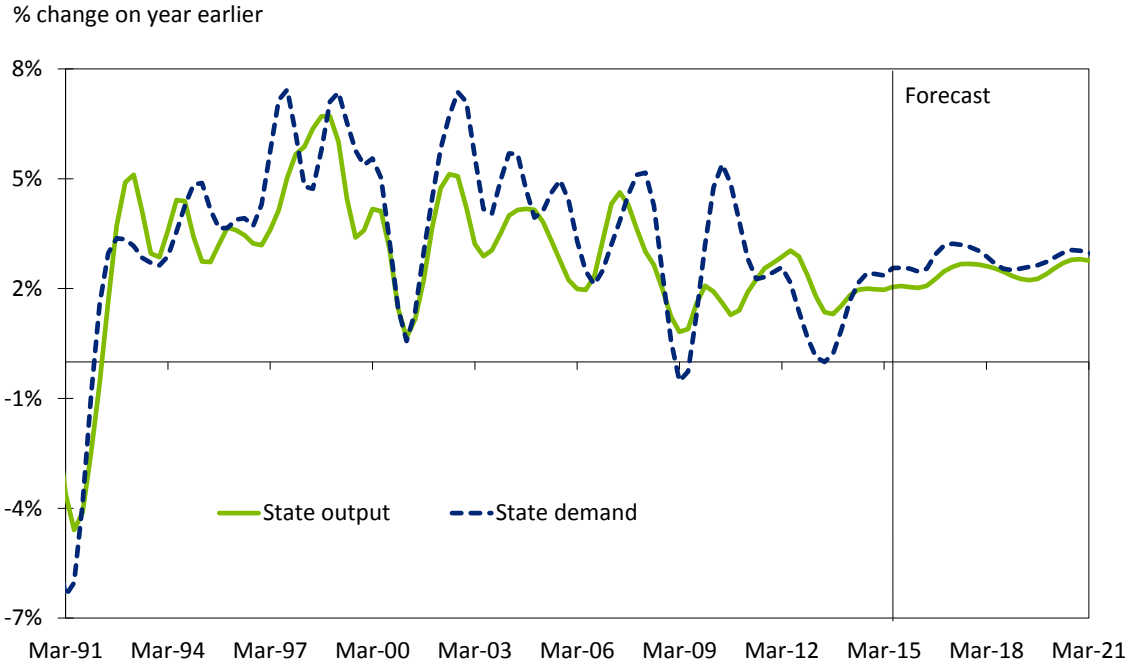
There are four big cyclical drivers for State economies:

- Commodity prices;
- Construction cycles;
- Interest rates; and
- Exchange rates.

With little in the way of resource assets, the big shifts in the external environment that are weighing on the Australian outlook – falling commodity prices and declining resource construction – are not as troubling for Victoria. Meanwhile, the shifts that have been seen in response to those falls, initially in interest rates and more recently in the exchange rate, are welcome news for the State.

Interest rates fell sharply through 2012, however markets, businesses and families are now increasingly coming to our long held view that Australia's interest rates will be 'lower for longer'. This has contributed rising business services demand, retail trade and car sales, as well as providing a floor under housing construction growth, which has been strong in Victoria for several years now.

Chart 2.4: Victoria output and demand



Source: ABS, Deloitte Access Economics' macroeconomic model

However it is the fall in exchange rates which is likely to bring the greatest benefit to Victoria – as the State tends to be more 'dollar dependent' than 'interest rate sensitive', particularly when compared to its northern neighbour, NSW. The lower dollar will come as welcome relief to the States manufacturers, farmers, tourism operators and international education providers.

Further positives for the State can be seen in population growth, which remains stronger than that seen nationally, including a rising share of interstate migration. Additionally, there are also signs that the job market in Victoria is improving as unemployment rates trend down below the national average.

However there are lingering negatives for this 'dollar dependent' State associated with the earlier period when the $A was sky high, which led to many firms (such as Victoria's car makers) cementing their exit plans. These closures are still to hit the industrial landscape. Moreover, the willingness of businesses to invest has not been strong, while a cloud hangs over the short term outlook for engineering construction given the intention not to proceed with the East-West Link project (leaving aside the question of whether the economics of the East-West Link stacked up or not).

Table 2.1 below sets out Deloitte Access Economics' current forecasts for the Victorian economy.

Table 2.1: Victoria output and demand forecasts

Annual % change (unless noted)	2014	2015	2016	2017	2018	2019	2020	2021
Consumption								
Private sector	2.4	3.5	3.4	3.3	3.2	3.1	2.7	2.6
Public sector	1.8	3.7	3.0	3.1	3.1	3.0	2.9	3.0
Private sector investment								
Dwelling investment	3.6	8.7	1.2	0.5	-1.5	-1.4	5.4	3.3
Non-residential building	8.2	-0.3	4.9	-0.7	-1.4	-0.2	2.1	3.3
Engineering construction	7.1	-8.8	3.9	-3.5	-4.4	-2.7	0.4	2.0
Machinery and equipment	-3.5	-1.8	-2.5	2.5	1.1	2.2	3.0	4.2
IP and livestock	5.7	-2.8	-3.8	-2.5	-3.4	0.0	2.0	3.5
Public investment								
General Government	0.3	-4.4	-4.4	0.3	0.9	2.1	2.4	2.5
Public enterprises	-18.5	-26.9	-3.9	8.1	0.1	0.3	1.3	2.2
Real final demand	2.1	2.6	2.5	2.6	2.3	2.4	2.9	2.8
Private sector	2.7	3.1	2.7	2.6	2.2	2.4	2.9	2.8
Public sector	0.0	0.6	1.7	2.9	2.7	2.8	2.8	2.9
Gross State output	1.9	2.1	2.2	2.6	2.5	2.3	2.7	2.8
Employment	0.8	1.8	1.2	1.4	1.6	1.8	1.8	1.8
Unemployment rate (%)	6.1	6.4	6.0	6.0	5.9	5.9	5.8	5.8

Source: ABS, Deloitte Access Economics' macroeconomic model

2.3 Queensland

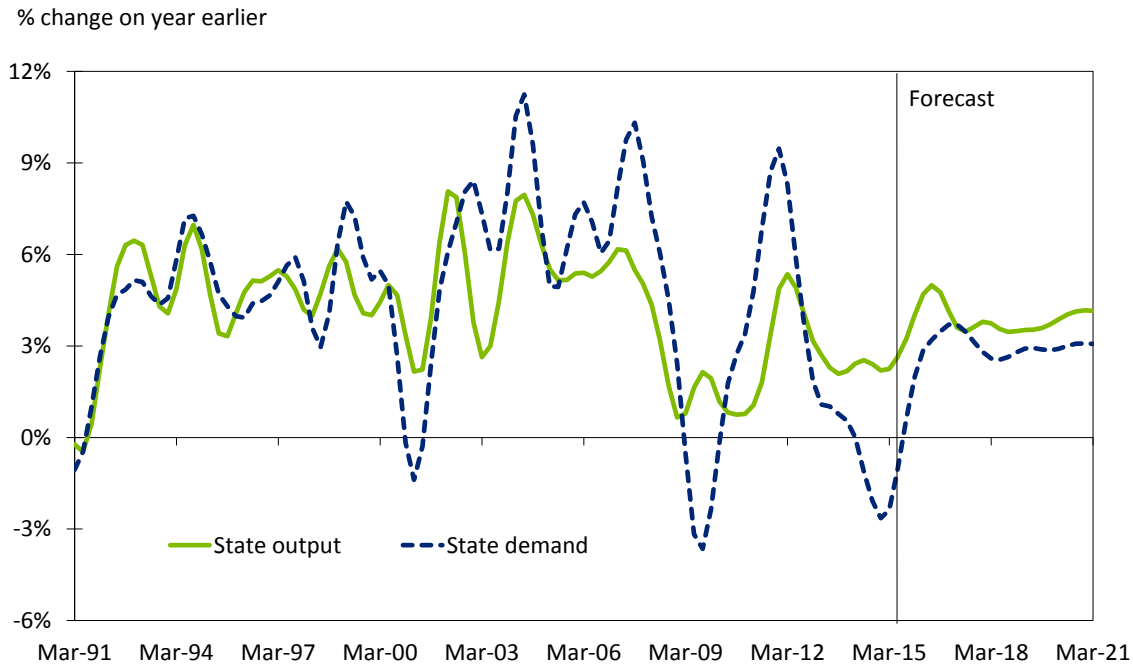
It was always clear that there would be challenges on the horizon for **Queensland's** growth once its engineering construction boom began to wind down. That was known given that the State's growth over recent years was driven to a large extent by the construction of major resource projects, with other sources of growth (such as the public sector) struggling with their own issues.

To that end, latest data suggests that Queensland is now starting to feel the hit from the fall off in engineering construction activity, and it appears to be happening stronger and faster than earlier expected.

And now falls in global oil prices (to which Australia's LNG prices are linked) have joined the earlier drops in coal prices to limit hopes of a quick turnaround in resource construction.

The toll being taken on the Queensland economy is being seen across a number of indicators. Job growth is weakening (with further job cuts in store as LNG projects still underway reach completion), while unemployment continues to remain above the national average. Consequently, population growth has fallen away to such an extent that growth is now below the national average – the first time that has occurred in over thirty years.

Chart 2.5: Queensland output and demand



Source: ABS, Deloitte Access Economics' macroeconomic model

Indeed the bad news from the construction cliff has not yet finished. Origin's $24.7 billion APLNG project, Santos' $19 billion Gladstone facility, and the $21.5 billion Queensland Curtis LNG project all either at or nearing their production phase, which leaves a rather big hole in the engineering investment agenda in Queensland over the next couple of years.

Yet there are also some **positives** worth noting for Queensland:

- as LNG projects currently under construction reach completion they will produce a huge export dividend which will add to Queensland's output growth;
- the $A's fall is also very good news for export oriented sectors including tourism, education and agribusiness;
- there will be an offset from lower imports of capital goods as LNG construction winds down; and
- after several years of being in the doldrums, housing construction is lifting strongly on the back of sustained low interest rates, although finance commitments are showing signs of levelling off.

Although these benefits have been slower to flow in Queensland than elsewhere over the past year, they should be increasingly evident, boosting recreation and retail and supporting renewed investor interest in resorts.

Table 2.2 below sets out Deloitte Access Economics' current forecasts for Queensland's economy.

Table 2.2: Queensland's output and demand forecasts

Annual % change (unless noted)	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Consumption							
Private sector	2.0	3.7	3.8	3.7	3.6	3.3	2.9
Public sector	2.2	1.9	2.6	2.7	2.8	2.8	2.8
Private sector investment							
Dwelling investment	8.2	13.4	6.8	3.0	0.8	3.9	6.1
Non-residential building	-25.1	-9.1	1.7	4.5	1.6	1.4	1.4
Engineering construction	-33.4	-18.7	-0.7	3.7	0.1	0.2	0.3
Machinery and equipment	-4.7	-6.0	6.6	11.1	6.7	1.5	3.1
IP and livestock	5.9	-8.0	-1.0	0.5	5.6	5.6	3.9
Public investment							
General Government	-6.4	7.2	7.4	3.9	3.3	3.2	3.1
Public enterprises	-21.4	1.7	19.3	8.0	1.5	2.0	2.7
Real final demand	-2.2	2.2	4.0	3.9	3.2	3.0	3.0
Private sector	-2.4	2.0	3.9	4.1	3.4	3.0	3.1
Public sector	-1.3	2.8	4.6	3.3	2.8	2.8	2.8
Gross State output	2.3	4.3	3.9	3.7	3.5	3.8	4.1
Employment	0.4	1.5	1.8	1.8	1.6	1.6	1.6
Unemployment rate (%)	6.6	6.5	6.3	6.2	6.2	6.2	6.1

Source: ABS, Deloitte Access Economics' macroeconomic model

2.4 South Australia

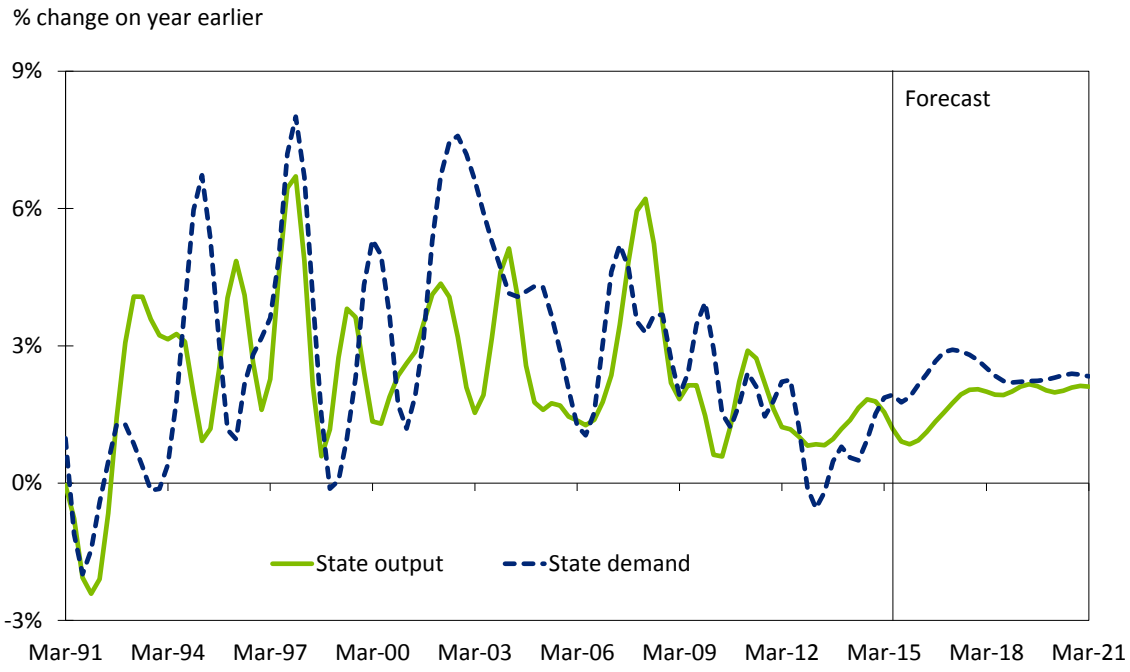
Some negatives cloud the current outlook for South Australia:

- the departure of car manufacturing (and, related to that, parts manufacturing),
- the uncertainty around what will replace the existing Defence manufacturing projects whose completion is on the horizon, and
- the likelihood that submarine work will be shifted overseas to save costs.

The timing of these events will further exacerbate the already weak population job growth being experienced in South Australia, while small business confidence and consumer spending are also nothing to write home about.

We don't want to understate the fact that these are real challenges for South Australia to work through, and they will certainly impose a serious personal cost for who are affected by these events. However the gloomy mood around South Australia's economic prospects is overdone. Although the fall in commodity prices and the downswing underway in resource construction cloud the national outlook, neither of these will take a particularly heavy toll on South Australia. In fact this State has only a relatively small base of mining activity.

Chart 2.6: South Australia output and demand



Source: ABS, Deloitte Access Economics' macroeconomic model

Rather the sharp falls seen in interest rates and more recently in the exchange rate mean that the cyclical drivers are increasingly working in South Australia's favour.

While the challenges of the moment have already softened the State's economic health, these shifts are now at least providing some life support to businesses in sectors such as farming

(and farm-related manufacturing, such as wine-making), tourism and yes even manufacturing more broadly.

In addition, there has recently been some better news in the State's retail sector, with growth picking up on the back of low interest rates. Hotel occupancies in Adelaide also grew strongly over the past year, helped along by both the lower $A as well as by new low cost carriers which have allowed for greater connectivity directly to Asian source markets.

Overall, that leaves South Australia's growth prospects below that for the nation and it is expected that South Australia's economy will continue to shrink as a share of the national economy over the next few years.

However over the longer term, prospects are brighter with South Australia well positioned to sell into Asia's maturing boom, which will include a growing demand for South Australia's agribusiness, tourism and foreign education.

Table 2.3 below sets out Deloitte Access Economics' current forecasts for the South Australian economy.

Table 2.3: South Australia's output and demand forecasts

Annual % change (unless noted)	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Consumption							
Private sector	2.5	3.3	3.4	3.1	2.9	2.4	2.1
Public sector	1.5	1.2	2.0	2.0	2.1	2.1	2.1
Private sector investment							
Dwelling investment	7.7	1.6	2.4	0.0	-1.6	2.4	5.3
Non-residential building	0.6	-3.9	-4.4	-2.8	-1.9	0.1	1.4
Engineering construction	-9.7	1.3	-2.7	-2.6	-3.0	-1.1	0.0
Machinery and equipment	7.7	-2.3	2.9	5.7	1.7	2.5	3.7
IP and livestock	-6.2	-4.7	-2.4	-5.5	-1.5	1.0	2.5
Public investment							
General Government	-14.5	8.9	6.4	3.0	2.5	2.3	2.1
Public enterprises	-19.6	-11.5	14.4	5.4	-0.2	0.3	1.0
Real final demand	1.5	2.0	2.7	2.3	2.1	2.2	2.3
Private sector	2.5	2.0	2.6	2.4	2.1	2.3	2.4
Public sector	-1.7	2.0	2.9	2.3	2.1	2.1	2.1
Gross State output	1.6	1.0	1.6	2.0	2.1	2.0	2.1
Employment	0.4	0.7	1.3	1.4	1.2	1.0	1.0
Unemployment rate (%)	6.6	6.8	6.5	6.3	6.2	6.2	6.2

Source: ABS, Deloitte Access Economics' macroeconomic model

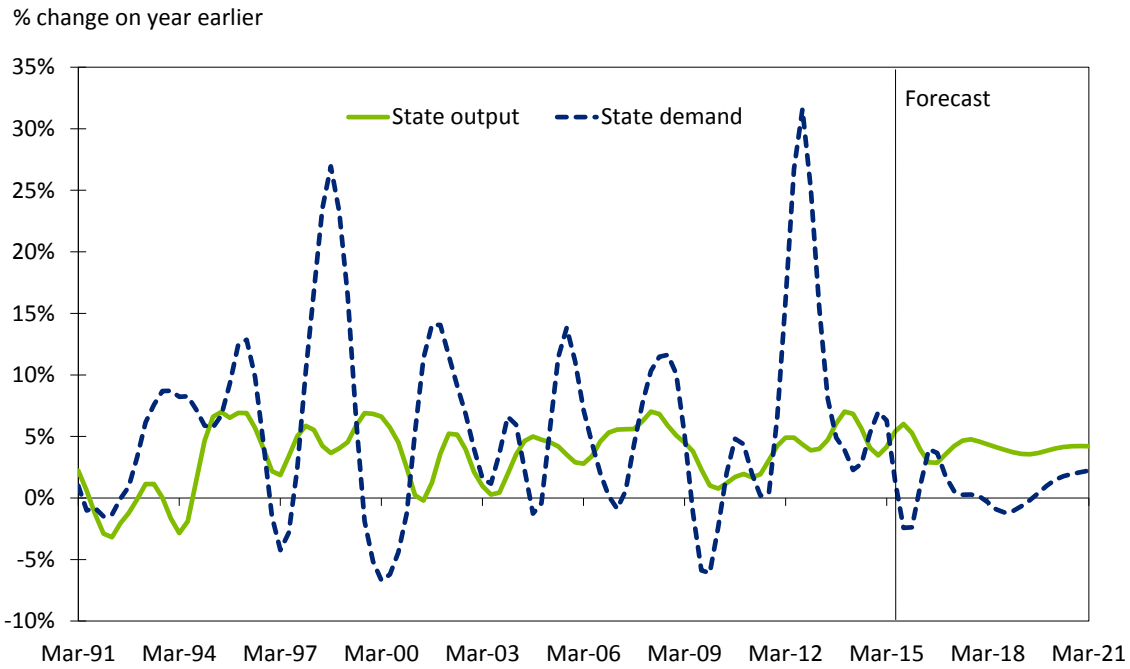
2.5 Northern Territory

The Northern Territory has a lot of eggs in the one basket. The Ichthys LNG project currently underway has a total construction spend of around $34 billion, or more than one and a half times the annual income of the entire Territory economy.

Construction on the project got under way in 2012, which in turn fuelled demand for construction workers and boosted a range of other supporting industries including retail and housing.

Yet projects have phases, and the construction phase of the Ichthys LNG project is due to end in 2016. That leaves a huge construction cliff on Territory's horizon and a tricky transition for the Territory. With much of the interest in major resource development projects centred around gas, the latest falls in global oil and oil-related prices (including in gas prices) mean that the likelihood that another large project gets the go ahead to help continue to drive growth is now much less likely.

Chart 2.7: Northern Territory output and demand



Source: ABS, Deloitte Access Economics' macroeconomic model

However, for now the Territory's economy continues to travel along quite nicely. That can be seen in Chart 2.7 above, showing the strength in overall output and demand growth. To a large extent that is being driven by increases in construction work done on the Ichthys project, whose peak contribution to growth may have already passed in 2012 and 2013 when construction on the project was initially ramping up. That said, non-residential construction work done in the Territory continued to rise strongly over the course of 2014, and it remains at a high level this year.

As is the case nationally, there are also positives for the Territory resulting from lower interest and exchange rates. The fall in the $A is good for tourism in the Territory, where latest data indicate that both domestic and international visitor arrivals are up strongly over the past year. Similarly, small businesses in the Territory are also showing a high level of confidence.

But for the outlook, much will depend on the exact timing of the remaining construction work on Ichthys. More importantly, however, the Territory will need a new growth driver for the longer term and, despite the potential around the Greater Sunrise LNG project, it isn't yet clear what that longer term growth driver will be.

So, the Territory's economy continues to sprint for now, carving out a bigger share of Australia as a result. And exports from Ichthys will keep the Territory's output growth ticking over once it reaches its production phase. But recent growth peaks won't last.

Table 2.5 below sets out Deloitte Access Economics' current forecasts for the Northern Territory economy.

Table 2.4: Northern Territory's output and demand forecasts

Annual % change (unless noted)	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Consumption							
Private sector	2.2	3.2	2.7	3.5	3.9	3.8	3.5
Public sector	2.2	2.2	3.2	3.4	3.4	3.3	3.2
Private sector investment							
Dwelling investment	-5.7	-10.9	-4.1	2.6	1.7	5.2	8.0
Non-residential building	6.4	-18.4	-41.5	-31.3	-7.0	-5.0	-3.5
Engineering construction	6.3	-18.1	-44.2	-32.0	-2.7	-5.0	-3.1
Machinery and equipment	26.1	0.3	2.8	-13.0	-13.0	-0.4	0.8
IP and livestock	-16.4	16.4	20.6	-23.3	-24.8	-6.3	-0.1
Public investment							
General Government	29.9	12.4	-4.5	3.7	3.8	1.8	2.7
Public enterprises	-16.6	-7.1	-4.0	10.1	2.7	2.9	3.1
Real final demand	4.1	-3.5	-8.5	-4.1	0.6	2.2	2.6
Private sector	3.9	-6.0	-12.7	-7.8	-0.9	1.7	2.4
Public sector	4.6	3.3	1.8	3.6	3.4	3.1	3.1
Gross State output	5.1	3.6	4.3	5.0	4.1	4.2	3.8
Employment	0.0	2.6	1.8	2.5	2.5	2.7	2.7
Unemployment rate (%)	4.2	4.8	5.1	5.0	5.0	5.0	4.9

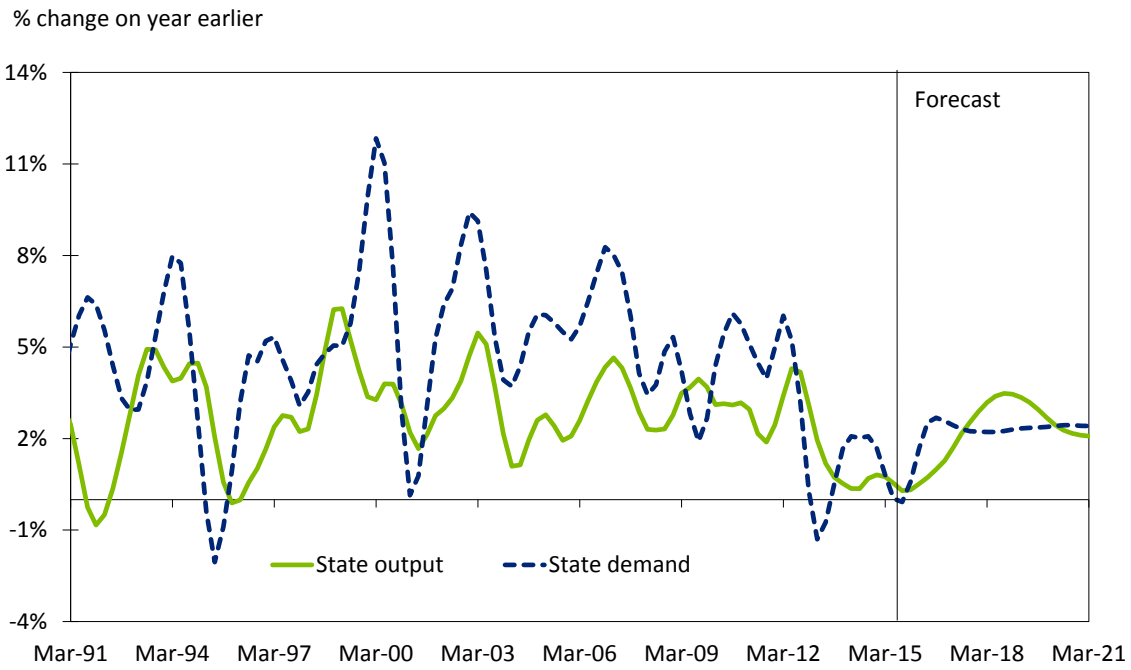
Source: ABS, Deloitte Access Economics' macroeconomic model

2.6 Australian Capital Territory

Although the ACT has no resource riches, the boom in commodity prices of the last decade helped to fill Canberra's coffers. In turn, Canberra's economy benefited greatly over much of the past decade. But with the Budget boom of the past decade now well and truly under pressure, the economy of the ACT is now facing a more challenging environment.

Cutbacks to the Federal public service totalling 16,500 jobs have been announced – the bulk under the last Government, and a top up under this one. While these cuts were initially slow to flow and earlier reductions in interest rates helped to support activity, the two-thirds mark on the job cuts has now been reached, and the toll on the ACT's economy is becoming evident in the latest statistics.

Chart 2.8: ACT output and demand



Source: ABS, Deloitte Access Economics' macroeconomic model

The level of ACT employment is falling, and that fall is picking up in speed. Public sector cutbacks resulting in falling job numbers and modest wage increases have taken their toll on the growth in wage incomes. In turn, that means that the biggest driver of consumer spending is weak, and it shouldn't be surprising that that is being felt by the ACT's retailers.

In a world where it's not clear where the Federal Budget heads (commodity prices have fallen further, while Senate intransigence has also hit Budget repair), there is a risk that additional problems may be in store for the ACT. Add in emerging weakness in housing construction activity (now below the national trend) and an ongoing slide in the rate of population growth, and it is no surprise that the outlook for the ACT is bleak over the next couple of years. That said, long term prospect are more positive and should keep up with the national average.

Table 2.5 below sets out Deloitte Access Economics' current forecasts for the ACT's economy.

Table 2.5: Australian Capital Territory's output and demand forecasts

Annual % change (unless noted)	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Consumption							
Private sector	0.0	2.1	3.4	2.8	2.7	2.3	1.9
Public sector	1.8	1.5	2.2	2.4	2.5	2.5	2.5
Private sector investment							
Dwelling investment	7.4	-0.8	-1.4	-2.3	-2.8	1.0	3.9
Non-residential building	-0.7	13.5	13.4	1.8	3.2	2.0	1.7
Engineering construction	-39.4	-40.7	4.5	-6.3	3.4	-0.4	-2.9
Machinery and equipment	-5.8	-1.7	6.0	1.4	-1.7	6.8	9.4
IP and livestock	4.7	-1.5	0.5	-0.4	-0.2	1.8	2.8
Public investment							
General Government	4.7	-8.6	-1.4	-0.2	1.5	2.2	2.4
Public enterprises	-24.7	1.7	17.8	7.6	1.1	1.6	1.9
Real final demand	1.4	1.1	2.5	2.1	2.2	2.4	2.4
Private sector	0.3	2.4	3.6	2.1	2.0	2.2	2.3
Public sector	2.0	0.4	1.9	2.1	2.4	2.5	2.5
Gross State output	0.6	0.5	1.5	3.0	3.4	2.6	2.2
Employment	-1.1	0.2	0.5	0.8	0.7	0.6	0.6
Unemployment rate (%)	4.7	4.9	5.0	5.0	5.0	5.1	5.2

Source: ABS, Deloitte Access Economics' macroeconomic model

2.7 Utilities

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, 2006).

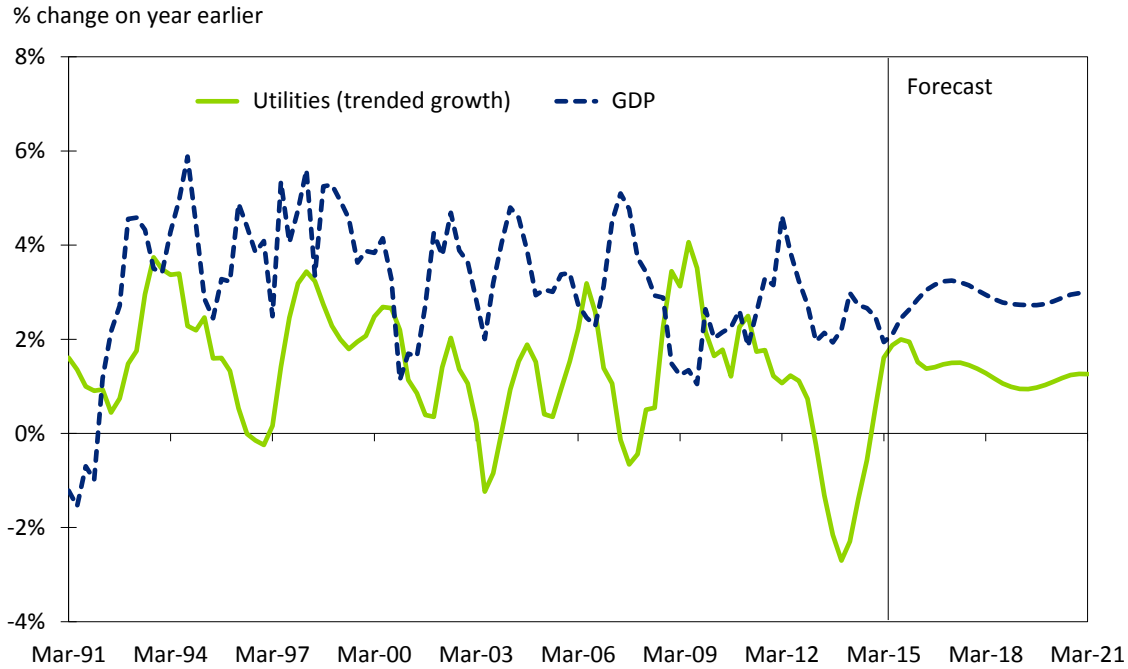
It covers production engaged in the provision of electricity; gas through mains systems; water; drainage; and sewage services. Electricity accounts for half the industry employment, while water and waste services accounts for the second greatest share and gas accounts for a minor share of the industry.

A huge hike in utilities prices in recent years has dominated the sectoral landscape, exacerbating existing negatives such as closures among some key customers in manufacturing, a switch to energy efficient appliances and buildings, environmental awareness and fear of climate change.

The result was the first sustained fall in electricity demand in over a century.

Chart 2.9 shows the extended period of contraction that the utilities sector underwent since around 2011.

Chart 2.9: Utilities output and GDP



Source: ABS, Deloitte Access Economics' macroeconomic model

Yet it is also clear that the worst has passed, and that a cyclical recovery has commenced:

- Record low interest rates have boosted **housing construction**: 2015 is expected to see a record number of new homes built. Those homes will be connected to utilities services.
- Although Australia's **population growth** is slowing from its recent highs, it remains comfortably above its longer term average.

- The lower $A and lower fuel costs are easing some **competitive pressures on Australia's trade-exposed manufacturers**.
- **Electricity prices have stabilised** amid the repeal of the carbon tax, the introduction of flexible and market pricing arrangements, falls in global energy prices, and reforms to regulatory frameworks.

Looking longer term, there are potential positives in the rise of **electric cars**, as well as the pace of innovation in oil and gas markets and in renewables.

Yet it is also true that a number of **negatives** remain for the utilities:

- **Australia's manufacturing base remains under competitive pressure**, and continued weakness in manufacturing is likely to weigh on utilities demand in coming years.
- Australia's east coast gas producers are linked to world markets, but that means **domestic gas prices will increase (though estimates of that price change have eased of late), resulting in a fall in consumption**.
- **Increased competitiveness and availability of distributed generation** such as rooftop solar systems and battery storage and solar hot water are also likely to remain a source of cuts to household electricity demand over the medium term. In particular, news that a huge factory to build batteries is being established in Nevada may be early evidence of game changing developments in the cost to families and businesses of adopting better battery capacity to allow them to better utilise solar power and other alternative energy sources.

The latter may yet raise some longer term risks around the health of electricity generation and networks. Networks have high fixed costs, and if changing technologies and distribution models were to lead, for example, to a sharp take up of solar with associated battery usage, then that could lead to a sustained fall in demand for network electricity. In turn, that would mean that the fixed costs of the network were being spread over a smaller base of customers. As yet such developments are a risk rather than a base case – they aren't reflected in these forecasts. Equally, nor are potential longer term positives such as the rise of electric cars.

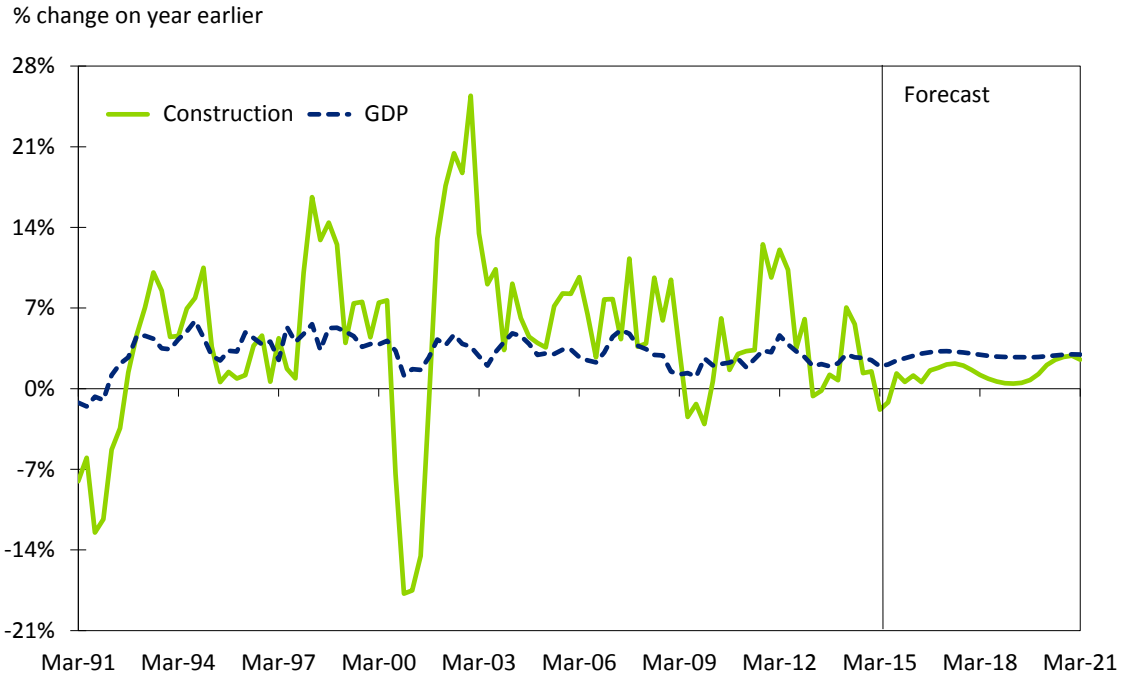
However, these are mostly question marks over the longer term and, overall, the utilities sector is forecast to continue to recover from its recent dip, aided by strong rates of housing construction, a growing population, greater stability in electricity prices, and reduced risks to domestic gas pricing.

Yet although the utilities sector is recovering from its recent slump, its growth may remain slow over the outlook period. The sector is projected to continue to shrink as a share of Australia's economy and workforce. That reflects the ongoing demand adjustments occurring in response to the enormous lift in the price of utilities services, while the continued weakness in manufacturing will weigh on electricity demand. Alcoa closed its Point Henry and Yennora operations in late 2014 adding to the oversupply on energy in the east coast market. The level of electricity consumed from the grid peaked in 2009 and that level is unlikely to be bettered in the next decade. Indeed, by 2024 it is possible that electricity demand may be around 25% below its peak – and close to 40% below the level forecast for that time as recently as 2010.

2.8 Construction

The transition from resource-related construction to other sectors is well underway, with residential construction doing its best to pick up the slack. As Chart 2.10 shows, that transition presents a rocky path back to growth, with overall construction activity expected to shrink over the short term, and to remain relatively modest over the medium term forecast.

Chart 2.10: Construction output and GDP



Source: ABS, Deloitte Access Economics' macroeconomic model

The outlook for **engineering construction** will continue to follow commodity prices as new supply and weakening global demand in resource markets hampers construction activity and challenges the returns on new projects. The last of the construction phase of the boom-time projects is drawing steadily to a close, with a host of large projects set to wind up either this year or next.

For instance, 2015 alone is expected to see the remaining two LNG projects in Gladstone wrap-up, as well as the Gorgon LNG project in WA and the Roy Hill iron ore project.

This indicates the current falls in engineering construction activity will accelerate, providing a nasty strain on the Australian economy over the next couple of years. Given the pricing backdrop, replacement mining projects simply won't be able to fill the void, although there is a significant amount of value locked up in the pipeline.

On the other hand the bad news in engineering has been somewhat mitigated by the strength in **residential construction** (with housing starts on their way to new records in calendar 2015). The Reserve Bank has cut rates aggressively to support growth in the non-mining sector. Low rates have benefited and will continue to benefit housing construction.

With yields in bond and equity markets low, property investment has taken off in key markets such as Sydney and Melbourne, leading to an increase in residential construction as developers seek to sell new stock at high prices. Residential construction has also benefited from Australia's solid population growth. The elevated nature of building approvals indicates that the residential building cycle will remain robust well into 2016.

Table 2.6: Engineering construction projects (December 2014 level and annual change)

Sector	Definite	% change on Dec 2013	In planning	% change on Dec 2013	Total $m	% change on Dec 2013
Manufacturing	2,250	32%	17,439	-2%	19,689	1%
Transport	80,156	0%	116,578	-24%	196,734	-16%
Communication	46,375	0%	300	0%	46,675	1%
Mining	235,066	3%	192,776	-6%	427,842	-1%
Power & water	12,914	-21%	21,478	22%	34,392	1%
Rural and forestry	236	0%	820	0%	1,056	51%
Total ($m)	**376,997**	**1.0%**	**349,391**	**-11.5%**	**726,388**	**-5.4%**

Source: Deloitte Access Economics' *Investment Monitor,* December 2014

Commercial construction is neither hot nor cold. Interest rate sensitive sectors such as retail are seeing some gains in building approvals, boding well for a degree of future construction. The hotel sector has also seen a notable amount of activity, and the lower $A will help this sector going forward too. Office construction has improved, but given elevated vacancy rates and weak white collar job outcomes, the outlook for this form of commercial construction is less positive.

Overall however the upturn in residential construction and modest prospects in commercial construction will not be enough to offset the rapid fall in engineering construction activity.

Table 2.7: Commercial construction (December 2014 level and annual change)

	Definite	% change on Dec 2013	In planning	% change on Dec 2013	Total $m	% change on Dec 2013
Trade	5,929	-3%	4,222	-32%	10,151	-18%
Business parks	2,749	-40%	2,380	172%	5,129	-5%
Hotels and Resorts	2,362	93%	19,439	149%	21,801	141%
Offices	4,723	33%	6,767	-2%	11,490	10%
Education	1,492	-56%	1,065	36%	2,557	-38%
Health & community services	16,123	-19%	3,190	37%	19,313	-13%
Culture, rec & other	8,686	2%	4,305	14%	12,991	6%
Business services	698	-72%	2,268	3%	2,966	-37%
Government	988	-3%	603	364%	1,591	39%
Mixed use	16,510	0%	2,444	17%	18,954	2%
Total in $m	**60,260**	**-10.2%**	**46,683**	**41.1%**	**106,943**	**6.8%**

Source: Deloitte Access Economics' Investment Monitor, March 2015

3 The outlook for wages

This chapter considers a series of related issues affecting the wage outlook, including the national wage outlook, the wage outlook for relevant States and Territories, and the wage outlook for the utilities and construction sectors.

3.1 Overview

Wage gains are at record lows, and are projected to be slow to rebound. Table 3.1 provides a summary of Deloitte Access Economics' wage forecasts.

Table 3.1: National and State WPI forecasts

Yearly changes in State nominal productivity adjusted Wage Price Index

Annual % change	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
National	1.0	1.2	0.9	1.5	2.0	2.5	2.3	2.2	2.5
Queensland	1.4	0.7	0.0	1.0	1.5	1.7	1.4	1.2	1.5
South Australia	0.6	1.5	1.5	2.1	2.6	2.6	2.5	2.5	2.6
Northern Territory	0.4	-2.9	1.7	0.5	1.1	2.0	2.0	2.4	2.4
Australian Capital Territory	1.4	0.3	1.5	1.7	1.6	1.4	1.8	2.1	2.1
	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Victoria	1.8	2.1	1.3	1.6	2.4	2.9	2.5	2.7	2.9

Yearly changes in State real productivity adjusted Wage Price Index

Annual % change	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
National	-1.7	-0.5	-1.2	-1.3	-0.5	0.1	-0.1	-0.3	0.0
Queensland	-1.3	-1.0	-2.1	-1.9	-1.1	-0.8	-1.1	-1.3	-1.0
South Australia	-1.9	0.0	-0.4	-0.5	0.2	0.2	0.1	0.0	0.3
Northern Territory	-3.2	-4.3	-0.2	-2.1	-1.3	-0.4	-0.4	-0.1	0.0
Australian Capital Territory	-0.8	-0.8	-0.3	-1.0	-0.9	-1.0	-0.6	-0.4	-0.3
	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Victoria	-0.6	0.8	-1.4	-1.0	0.0	0.5	0.0	0.2	0.3

Yearly changes in nominal utilities sector WPI

Annual % change	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
National	3.2	2.9	2.7	2.8	3.0	3.2	3.3	3.4	3.5
Queensland	3.2	2.5	2.6	2.9	3.0	3.2	3.4	3.6	3.7
South Australia*	3.8	2.5	1.9	2.7	3.2	3.4	3.5	3.6	3.6
Northern Territory*	3.3	3.1	2.9	2.7	3.3	3.2	3.4	3.5	3.4
Australian Capital Territory*	2.5	2.4	2.2	3.3	3.1	3.3	3.2	3.3	3.3
	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Victoria	3.6	3.3	2.5	3.0	3.2	3.3	3.4	3.6	3.5

* Historical data estimates using Deloitte Access Economics Wage Price Index forecasting model. Unavaliable for the ABS

Yearly changes in real utilities sector WPI

Annual % change	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
National	0.5	1.3	0.6	-0.1	0.5	0.7	0.8	0.9	1.0
Queensland	0.4	0.7	0.4	-0.1	0.3	0.6	0.9	1.0	1.1
South Australia*	1.2	1.0	0.0	0.1	0.7	1.0	1.1	1.1	1.2
Northern Territory*	-0.4	1.7	0.9	0.0	0.8	0.7	1.0	1.0	1.0
Australian Capital Territory*	0.3	1.3	0.3	0.5	0.6	0.9	0.8	0.8	0.9
	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Victoria	1.2	2.0	-0.2	0.3	0.8	0.9	0.9	1.1	1.0

* Historical data estimates using Deloitte Access Economics Wage Price Index forecasting model. Unavaliable for the ABS

Source: ABS, Deloitte Access Economics' macroeconomic model

3.2 Australia

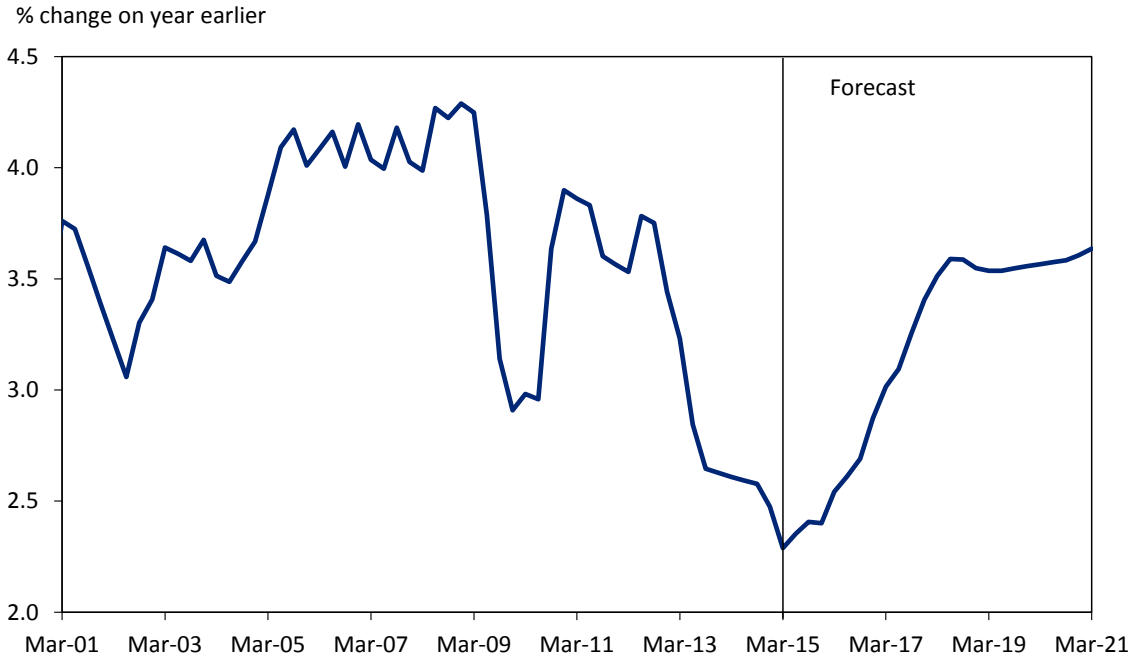
National wage growth is hitting records in the wrong direction. There are three main reasons. *First*, businesses are trying to keep wages on a short leash. Wages grew faster than productivity in the resources boom, and the subsequent slowing in that boom has left many businesses uncompetitive. Those corporates are therefore cutting back costs as fast as they can, with that tight cost control being a big driver of the wage weakness of the moment.

Second, workers are worried about their jobs. A long period of underachievement on growth has seen measures of underemployment lift during the GFC and move further upwards in recent years. So with many people wanting more work than they have, and much of the workforce mulling its job security, workers are settling for longer wage growth than previously.

Third, and finally, inflation and inflation expectations are themselves low.

The upshot is not merely that wage growth is at record lows of 2.3% over the past year, but also that it is weaker than the usual relationship to unemployment would otherwise suggest. And the drop off in wage gains in the last few years may have been sharpest among those who did best in the boom years – mining and Western Australia – but it has been consistent across both regions and sectors.

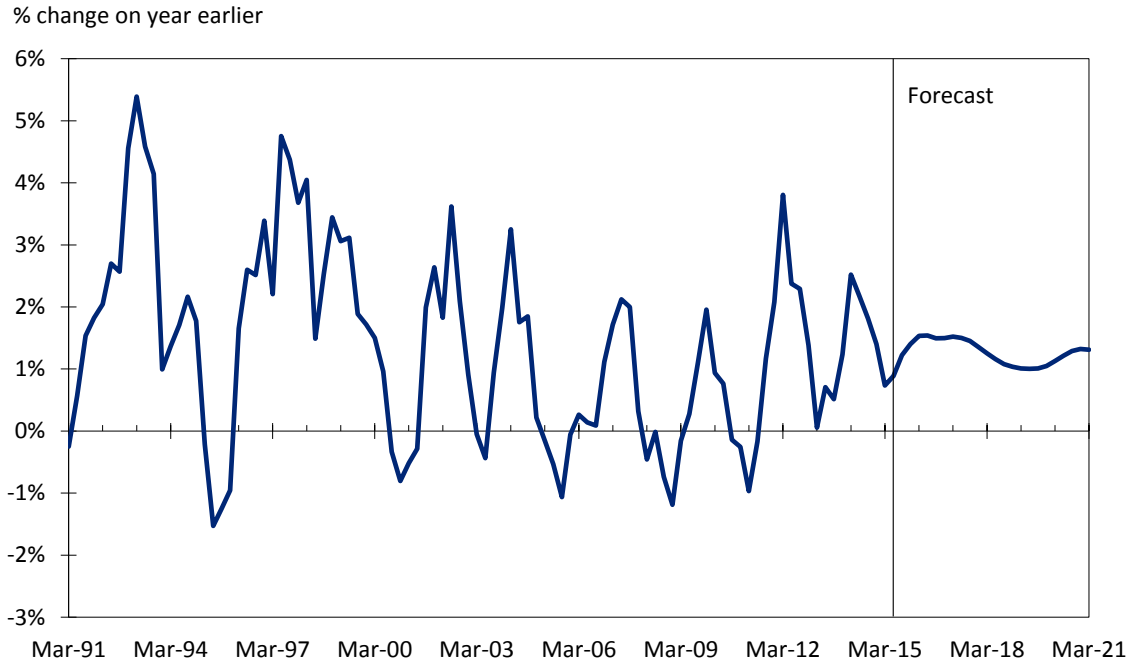
Chart 3.1: Overall Wage Price Index forecasts



Source: ABS, Deloitte Access Economics' macroeconomic model

We don't see that slowdown in labour costs as permanent. But we do see it as lasting long enough to remove pressure from the largest single driver of consumer prices – the cost of workers.

Chart 3.2: Productivity growth



Source: ABS, Deloitte Access Economics' macroeconomic model

Table 3.2: National wage forecasts

Financial year nominal wages forecasts

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Wage price index	2.4	2.5	2.9	3.4	3.6	3.6	3.6
Average weekly earnings	1.9	3.0	3.1	3.6	3.8	3.8	3.8
Ordinary time earnings	2.7	2.9	3.7	4.1	4.3	4.3	4.4
Unit labour costs	0.4	1.0	1.3	2.1	2.6	2.5	2.3

Financial year real wages forecasts

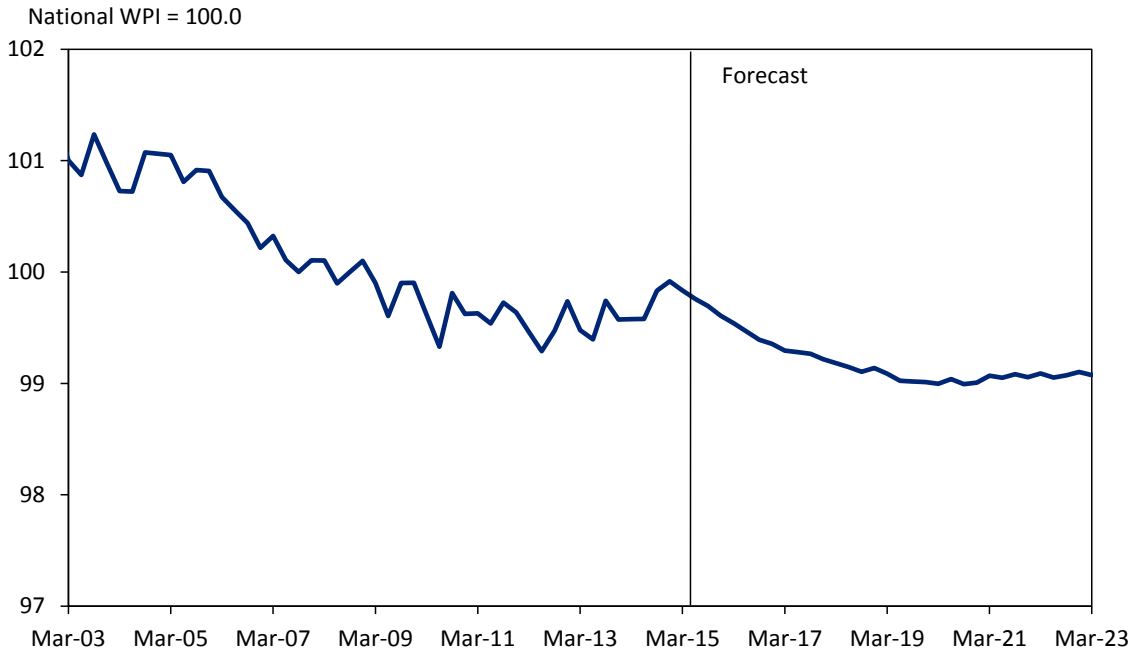
Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Wage price index	0.8	0.3	0.1	0.9	1.1	1.1	1.1
Average weekly earnings	0.3	0.8	0.3	1.1	1.3	1.3	1.3
Ordinary time earnings	1.1	0.7	0.8	1.6	1.8	1.8	1.8
Unit labour costs	-1.2	-1.1	-1.5	-0.4	0.2	0.1	-0.1

Source: ABS, Deloitte Access Economics' Labour Cost model

3.3 Victoria

Victorian wages edged down relative to their national equivalent through to 2010 (see Chart 3.3), though recent years saw a return to relative stability. That relative decline was more a story of the success of the resources States than it is one around developments in Victoria.

Chart 3.3: Victorian WPI relative to national WPI



Source: ABS, Deloitte Access Economics' macroeconomic model

However, the $A had a bigger impact on jobs in Victoria than almost anywhere else in Australia (South Australia excluded). That has been a source of bad news in the past, but more recently the currency fundamentals are beginning to turn in Victoria's favour. While interest rates have been low for some time, the $A's fall was relatively recent (having mostly occurred since mid-2014).

However, with more action having occurred on interest rates than on exchange rates, the likes of NSW have done better on the growth front than Victoria over the past year or so.

Looking ahead, two factors will keep wage growth at moderate rates in Victoria:

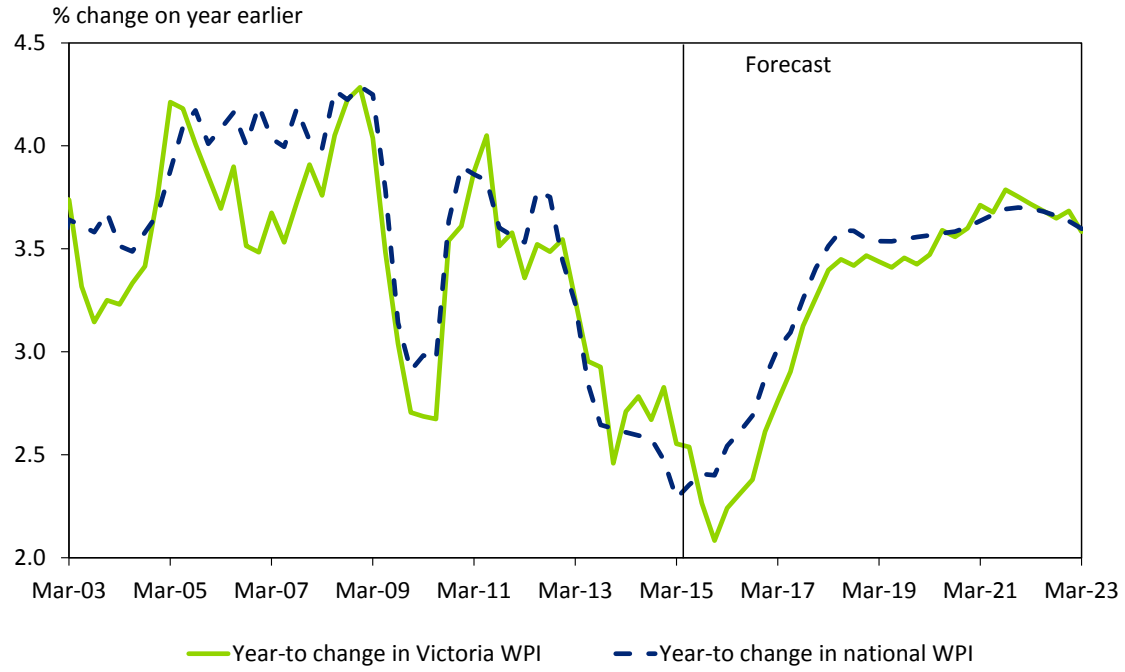
- First, growth is still modest, and many businesses continue to lack competitiveness. That will keep the pressure on employers to limit wage gains.
- Second, while the $A is now less dangerous to the State labour market, it is still in contractionary territory. Pressure on the currency front may ease further over time, but for now the 'lower' $A has simply moved from being a negative for jobs and wages in this State to being more neutral.

That said, there are two potential bright spots on the horizon:

- First, when the $A does finally fall to a more equitable position, Victoria is poised to take advantage. Asia's emerging middle class will provide an ongoing and growing market for the State's export manufacturers, although investment will need to pick up.
- Second, Victoria recently took the podium position from Queensland in terms of interstate migration, and Melbourne's more moderate housing market is a comparative advantage for the State when compared to the likes of Sydney.

These factors will not be enough to lift wage growth on their own, with Victorian wage growth not expected to match the national average until around 2019. That said, relative prospects are improving.

Chart 3.4: Victoria general labour cost growth



Source: ABS, Deloitte Access Economics' macroeconomic model

3.4 Queensland

The headwinds hitting Queensland's economy are gathering momentum. There was always going to be challenges for Queensland once the massive pipeline of engineering construction began to wind down. But the pace of the wind down has taken many by surprise.

The collapse in the gas price takes another string out of the State's bow, while the continued pressure on coal putting a cap on returns on surging export volumes. But the State still has an excellent growth portfolio, with tourism, foreign education and housing moving back into gear.

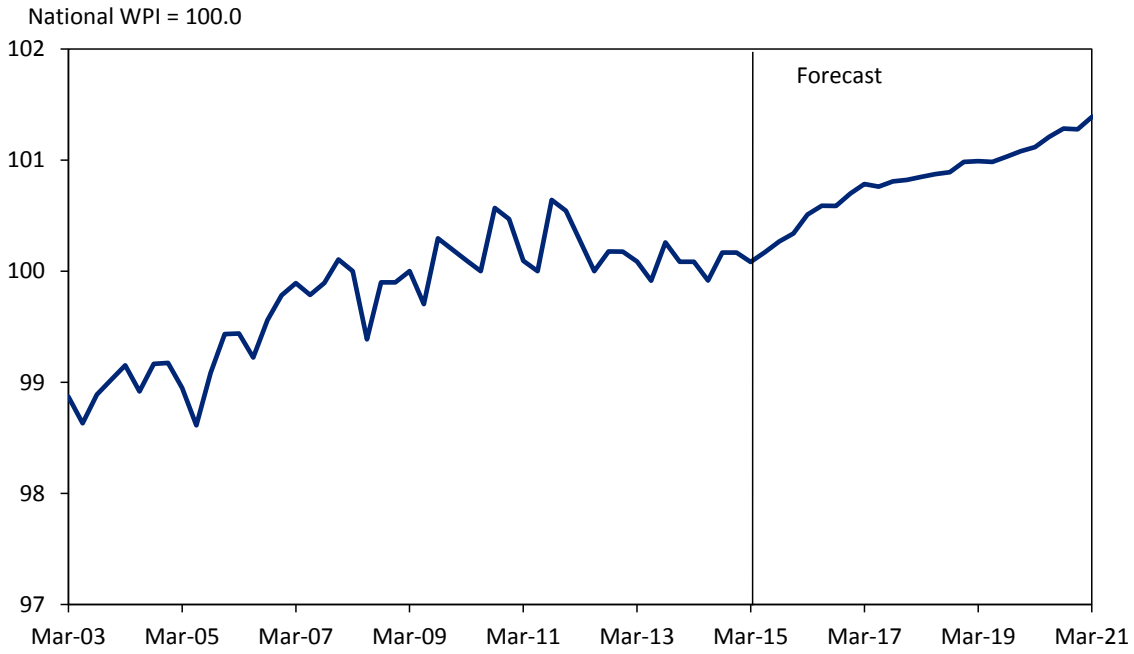
On the other hand, however, these industries won't provide the same support to wage growth that came from high commodity prices and the construction investment phase that followed.

Wage growth for miners at 2.4% is now only marginally above the national average of 2.3% and the commissioning of a number of major gas projects over the next year will place further

downward pressure on construction sector wages in Queensland as more and more projects finish their construction and move into production.

That said, wage growth is soft in all States and sectors, and as Chart 3.5 shows, Queensland overall is slated to perform better than most on the wages front over the next few years.

Chart 3.5: Queensland WPI relative to national WPI



Source: ABS, Deloitte Access Economics' macroeconomic model

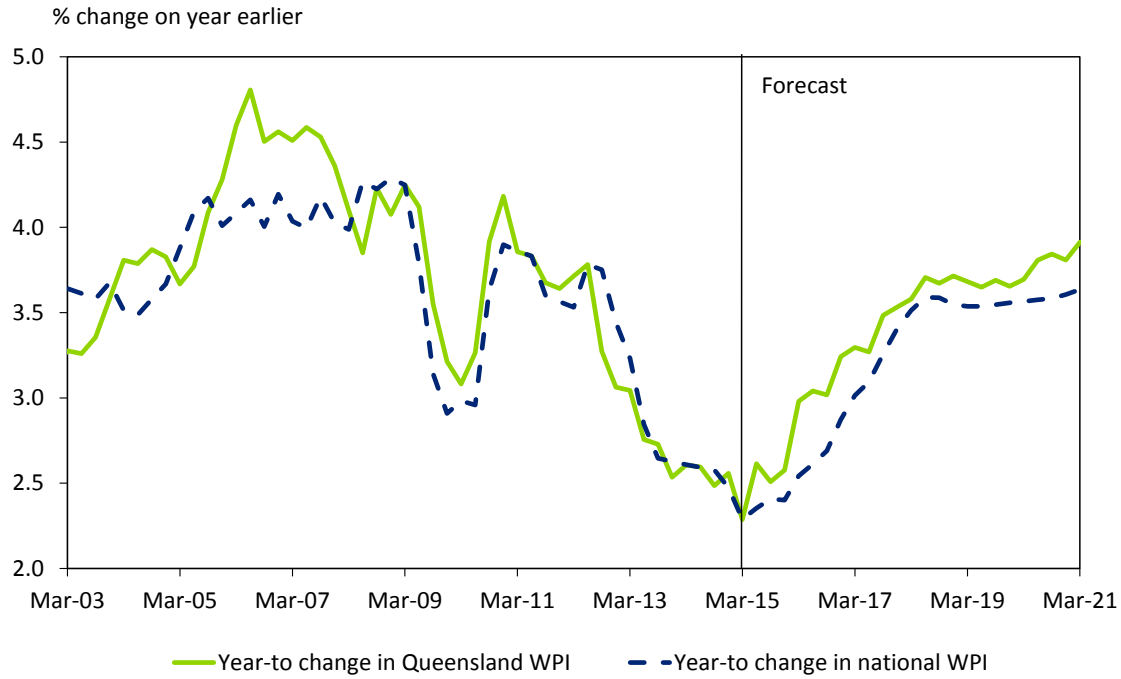
The single greatest driver of wage growth in Queensland over the past decade – the resources investment boom – is wrapping up fast. And while the subsequent export phase will support economic growth in the State over the long term, this phase won't be as job friendly. That means less of a 'feel good' factor, and less money in Queenslanders' pockets going forward.

Meanwhile, job growth has been weakening (with further job cuts in store as a number of LNG projects still underway reach completion), and unemployment continues to remain above the national average. That combination, coupled with population growth that recently slipped below the national average, is a potion that will likely keep wage growth in the State relatively moderate over the short term.

However, the State's major LNG projects will still support jobs until at least the end of the calendar year. Housing construction is also beginning to boost activity on the back of low interest rates, after an extended period in the wilderness, and the fall in the $A will likely boost activity in export orientated sectors like tourism, agribusiness and international education.

Accordingly, Chart 3.6 shows wage growth in Queensland marginally outperforming the national average. In fact, and in relative terms, Queensland is forecast to be the best performing State on the wage front over the forecast period.

Chart 3.6: Queensland's general labour cost growth



Source: ABS, Deloitte Access Economics' macroeconomic model

3.5 South Australia

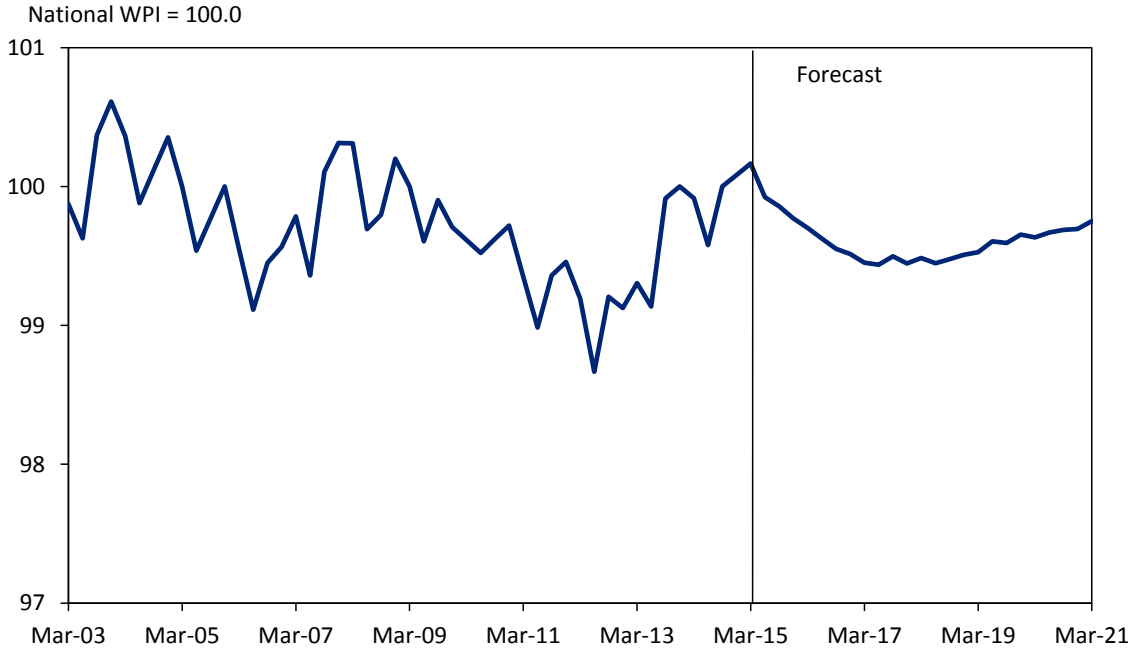
South Australia's economic performance continues to fall short of Australia's as a whole. There has been no job growth over the past year and unemployment in SA is the highest in the nation. In turn, that is restraining the potential for growth in consumer spending, with retail and car sales not showing much of a rise over the past year. Population growth is another source of weakness, remaining well below national rates. The resultant modest mood is being reflected in below average levels of business confidence.

This is bad news for job creation and retention, with job vacancies continuing to slide. Existing Defence manufacturing projects are running dry, and, coupled with the increasing likelihood that a bigger share of submarine work will end up getting done overseas, job prospects for South Australian workers are looking modest.

As such, wage gains – which have recently bettered the Australian average as the 'resource States' feel the impact of slowdown – may gradually fall back relative to the national trend in the foreseeable future, especially compared to the past few years (see Chart 3.7).

This trend is expected to improve by 2018 (beyond the timeframe when car- and Defence-related cutbacks may be most evident), when South Australia's wage growth is predicted to slightly outperform the national average.

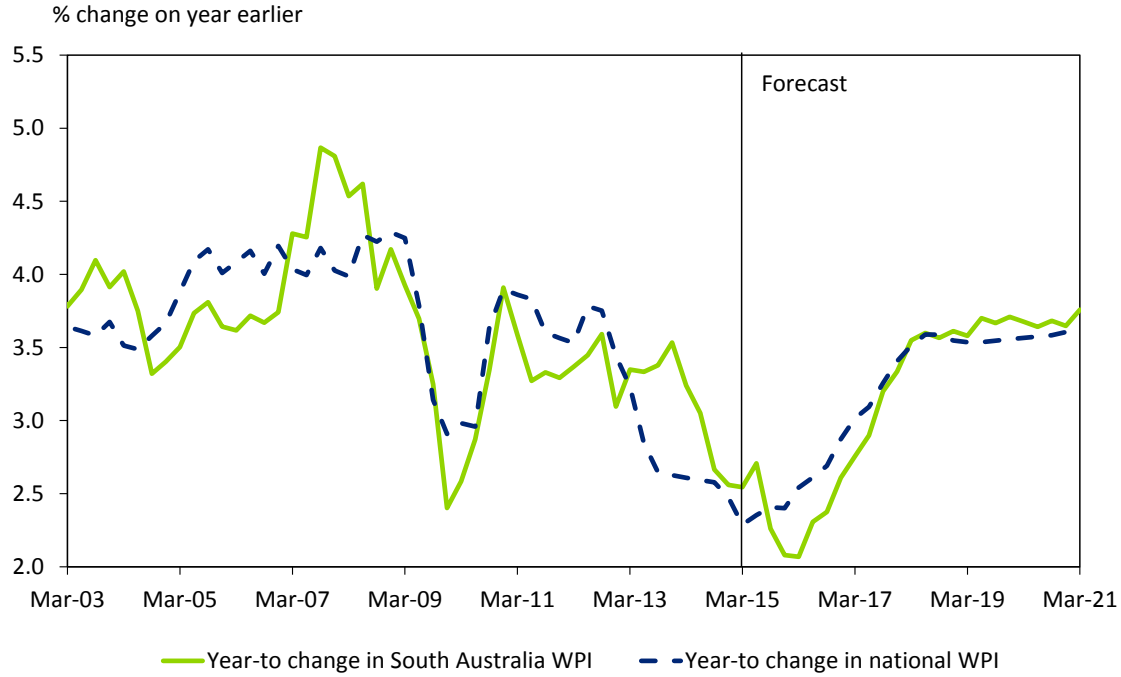
Chart 3.7: South Australia's WPI relative to national WPI



Source: ABS, Deloitte Access Economics' macroeconomic model

That is, and despite some known negatives on the horizon, the economic fundamentals should continue to move in the State's favour – in particular, downward pressure on the Australian dollar and record low interest rates will be powerful forces contributing to a rise in the State's overall outlook going forwards

Chart 3.8: South Australia's general labour cost growth



Source: ABS, Deloitte Access Economics' macroeconomic model

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The weaker Australian currency will support South Australia's trade-exposed sectors, including tourism, international education, manufacturing and the premium food and beverage sector. These goods and services will be in increasing demand as China's boom matures, and as emerging south-east Asian countries start to see rising urbanisation and higher incomes. Cheaper credit, too, will provide welcome relief for SA.

Overall, South Australian wage growth faces its fair share of challenges in the next few years compared to other States. However, SA is relatively well positioned to serve Asia's maturing boom over the medium term, and the State should see a rise in its relative wages accordingly.

3.6 Northern Territory

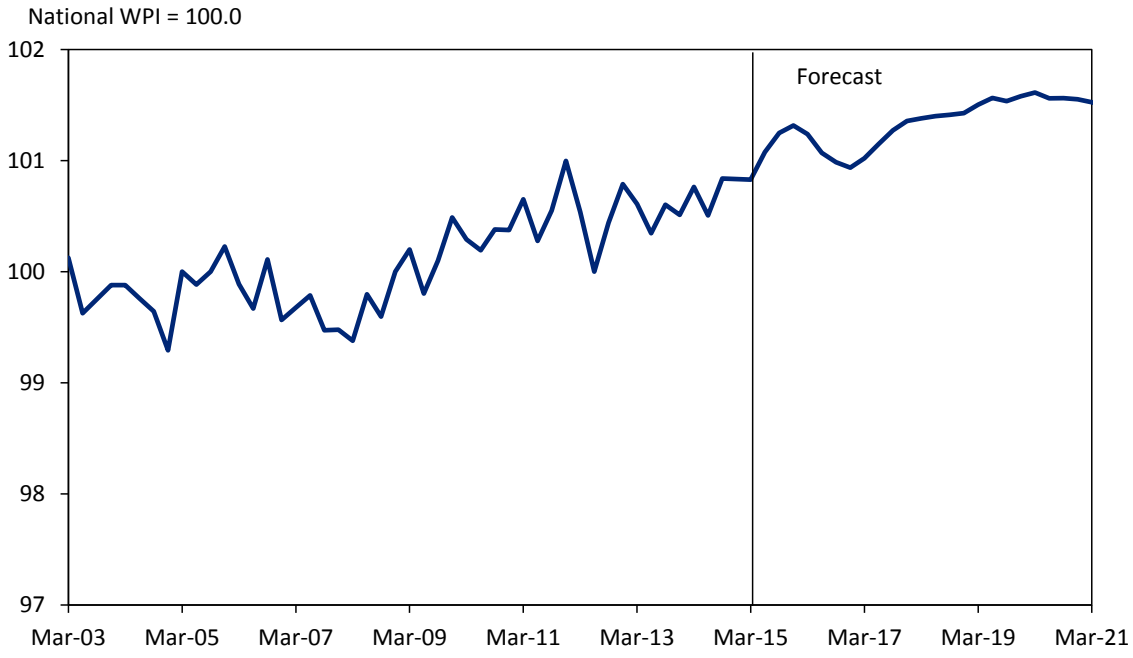
The sheer size of the $34 billion Ichthys LNG project in the Northern Territory means that nowhere else in Australia are the economic fortunes of a region so closely tied to a single sector (or in this case a single project).

The total construction spend on the project is over one and a half times the size of the entire Territory economy's income in a single year.

Construction got underway in 2012, which in turn fuelled demand for construction workers and provided a boost to wages as sectors competed for workers. Since then nominal wages have increased by an average rate of 2.8% per year, marginally above the national average.

Yet investment projects have phases, and the construction phase of the Ichthys project is set to wrap up in 2016 (although delays in construction of major components of the floating platform being built at Korean shipyards may extend the schedule somewhat).

Chart 3.9: Northern Territory WPI relative to national WPI



Source: ABS, Deloitte Access Economics' macroeconomic model

That means a large construction cliff is approaching for the Territory.

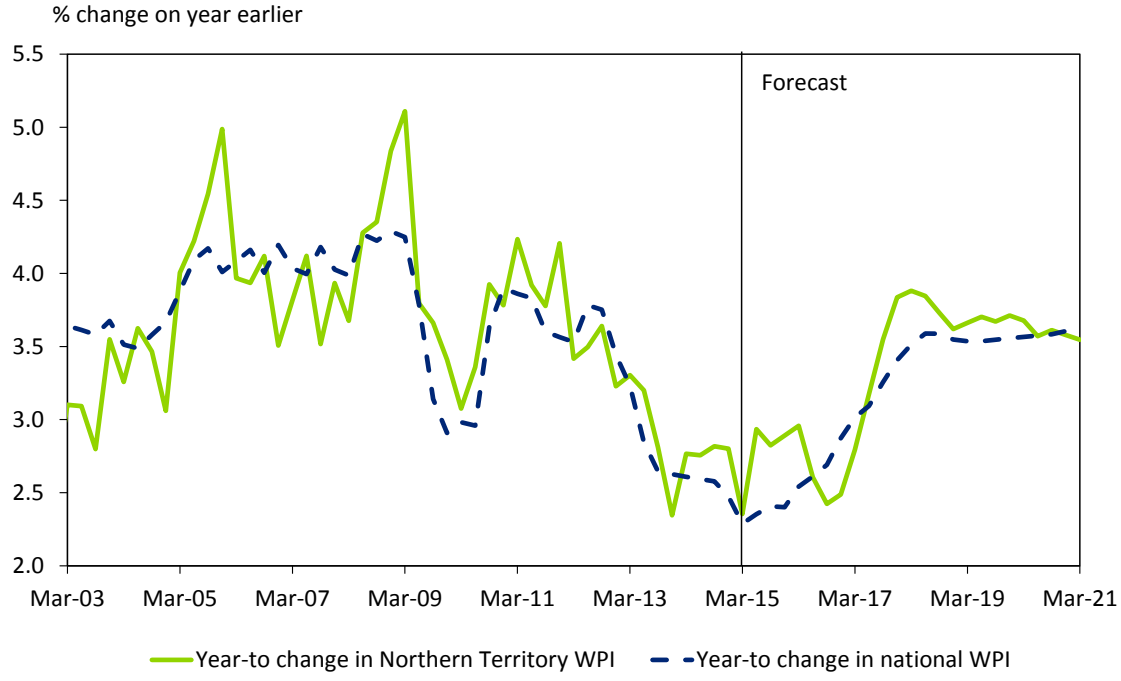
As Chart 3.10 shows, Ichthys and related strength in the NT economy may still support wage growth above the national average for at least the next couple of years, with a relative decline once that project is completed.

Other sectors, however, are also contributing to wage growth. Non-residential construction work showed strong growth over 2014 and remains at high levels so far this year. Residential construction is also performing better on the back of low interest rates, and a lower $A is encouraging a greater number of domestic and international tourists to the Territory.

For now the Territory's unemployment rate remains well below the national average. But with working age population grow projected to exceed growth in employment over the next couple of year, the unemployment rate may edge up to 5% by 2020 (compared to an Australian average of 6%).

That combination of positives and negatives should keep wages in line with broader Australian trends for the foreseeable future, with wages in the Territory broadly following the path for wage growth nationally to 2020.

Chart 3.10: Northern Territory's general labour cost growth



Source: ABS, Deloitte Access Economics' macroeconomic model

3.7 Australian Capital Territory

Lower population growth, coupled with lower employment gains, are expected to induce downward pressure on the ACT's wage growth in the short term.

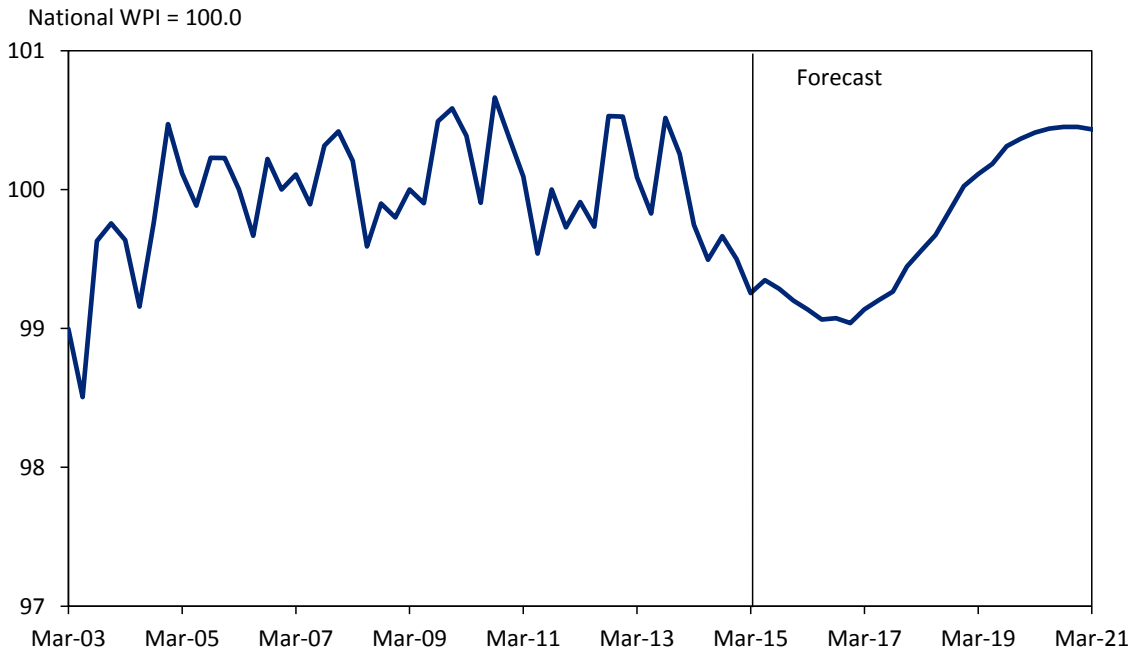
Job losses in the Australian Capital Territory now amount to 1.5% over the past year, meaning overall job numbers haven't shown any net growth since early 2012. That said, some

perspective is necessary – although the unemployment rate also rose in the past year, the rise in unemployment has not been substantial, and it remains a notch below the national unemployment rate.

In part, higher unemployment reflects a downward trend in labour force participation, as discouraged workers give up looking for jobs, but it also reflects a slowing rate of population growth. Population growth began easing in late 2012, and it has continued to drop in the latest data. Although overall population growth remains positive, net interstate migration statistics are now showing a net outflow of people from the ACT as people move to other jurisdictions in Australia in search of better job opportunities.

As such, ACT wages are predicted to continue to fall relative to the national level over the short term, as can be seen in Chart 3.11.

Chart 3.11: ACT WPI relative to national WPI



Source: ABS, Deloitte Access Economics' macroeconomic model

After adjusting for inflation, there has been no growth in overall consumer spending in the past year. The weakness in retail adds to the weakness in housing construction (after an earlier period of strong building) to leave overall business activity subdued. Additionally, after outperforming the rest of Australia in the years through to 2012, housing construction in the ACT has recently been more modest than seen nationally.

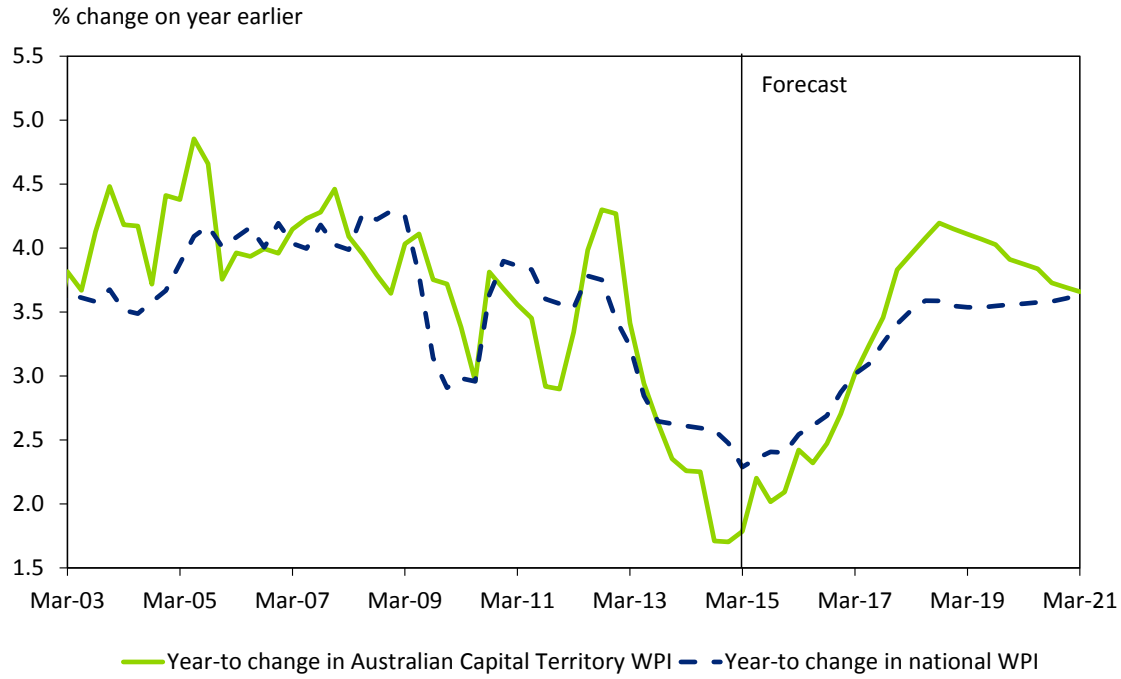
Building approvals remain well down on their 2013 peak, while rental vacancy rates have continued to trend steadily upwards in recent months to their highest level in around a decade. Office vacancy rates, too, are on the rise, while small business confidence is weak. This is not a good combination for job creation or wage growth.

Continued Federal cost cutting will lead to public service job losses in Canberra in the coming years, although questions surrounding the extent of further cutbacks remain. Cuts are a necessary part of a return to sustainable finances, though cutbacks to public sector jobs are

adding to the ACT economy challenges accruing from a slowdown in housing construction and from sluggish retail spending.

As Chart 3.12 shows, slowing relative rates of housing construction have coupled with Federal Budget impacts, has put downward pressure on labour cost growth in the ACT. However, the longer term outlook for wage growth in the ACT is much more optimistic. Housing construction is expected to pick up once more (in part in response to the need to re-build 1,000 homes affected by asbestos), which will increase the demand for labour and drive up wages. By mid-2017, growth in ACT wages is forecast to outpace national wage growth for several years, before growing broadly in line with the national average thereafter.

Chart 3.12: ACT general labour cost growth



Source: ABS, Deloitte Access Economics' macroeconomic model

3.8 Utilities

Unlike wage growth in Australia more generally, wage gains in the utilities were unaffected by the global financial crisis. However, there has been a substantial slowdown since their most recent peak (at 4.4% two years ago), with wage growth over the past year – at 2.5% – the slowest ever recorded rate, and the quarterly growth of 0.5% recorded in March 2015 dropping to the national average.

There are a number of underpinnings to the slowdown in wage growth in the utilities sector over the past two years:

- **Weak wage growth is a lagged reaction to the shrinkage of the utilities sector**. As noted above, the sector shrank in response to a number of factors, with that shrinkage occurring most sharply through the course of 2013. And although the sector has finally returned to growth, it still lags the national growth rate by a considerable margin. Related to that, employment in the sector is now 9% below its late 2013 peak.

- **And it is in response to easing prospects and profitability in competitor sectors**. Manufacturing and mining both compete with the utilities sector for their workforce, and both are shedding workers. And so too is the engineering construction sector, although an upturn in housing construction has maintained overall employment levels in that sector
- **And it is in response to the drop in wage growth at the national level**. The slowdown is not confined to conditions in manufacturing, mining and engineering construction, with national wage growth having dropped to a record low.

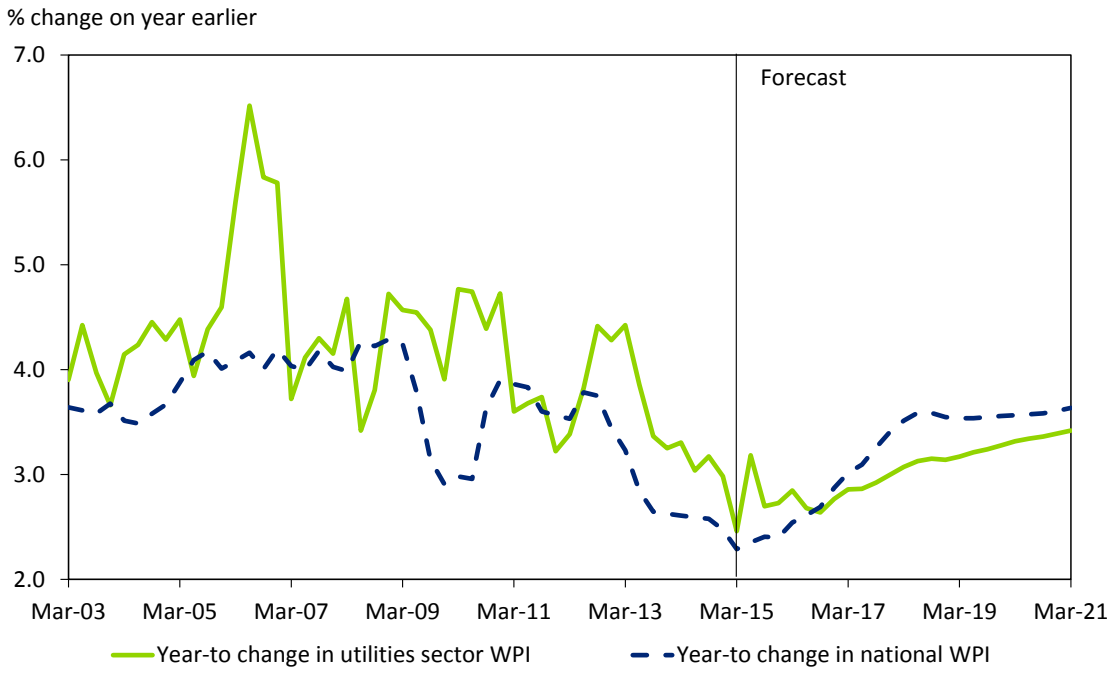
None of these factors will disappear fast, with the sector still underperforming the national economy, with competitor sectors still struggling, and with the national slowdown in wage growth set to linger into 2016.

Accordingly, wage growth in the utilities sector will also remain under pressure.

Specifically, the outlook for utilities sector wage growth is for a moderate increase in the rate of growth following a trough in 2014-15. However, average growth over the next decade is projected to track well below historical trends, with growth not expected to exceed 3% until 2017-18 and remain well below the last decade average of 4.2%.

One reason for this is lower demand for workers in the industry. Utilities sector employees account for just over 1% of the total Australian workforce. In the decade to February 2015, utilities sector employment increased by an annual average rate of almost 4%. In contrast, in the five years to February 2015, employment in the utilities sector grew by 1.4% per year on average. In addition, the value of the total number of electricity, gas and water projects (including those under construction and under consideration) fell by 4.1% in the year-to March 2015. Accordingly, demand for utilities sector wages is predicted to continue to slide in relative terms, placing additional downward pressure on wages in the industry going forwards.

Chart 3.13: Utilities Wage Price Index forecasts



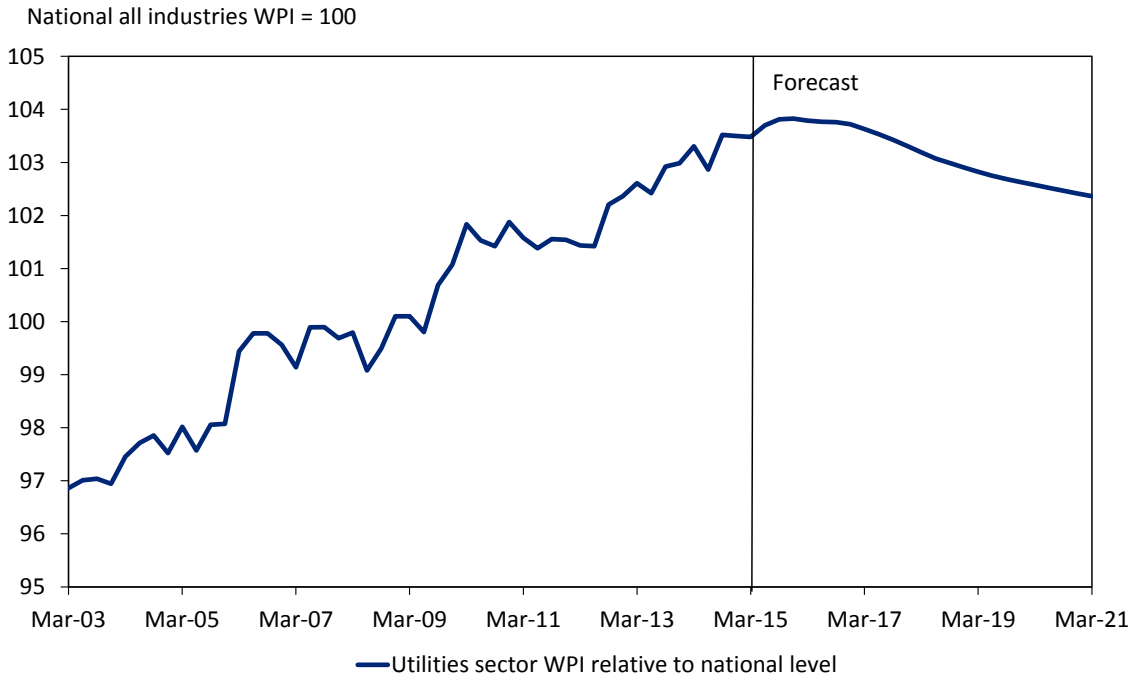
Source: ABS, Deloitte Access Economics' labour cost model

As Chart 3.13 shows, sticky wages and forward employment contracts should keep wage growth relatively high in the short term, however utilities WPI is projected to fall below national WPI past 2015-16.

The gap between national WPI and utilities WPI has been closing, and recent data suggests utilities WPI is beginning to respond to broader weakness in the sector and in the Australian economy.

Chart 3.14 illustrates the relative strength of utilities wages, comparing the utilities WPI to the overall WPI.[1] Over the decade to 2014, the utilities WPI grew by 9 percentage points faster than overall wages, with a consistent level of relative increase over much of that period.

Chart 3.14: The utilities WPI relative to the national WPI



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

However, a number of factors are beginning to weigh on the utilities WPI. Notably:

- **Competition from other sectors is winding down**. During the recent resources construction boom, the utilities sector was forced to complete for labour, often causing skills shortages in sectors and across jurisdictions. More recently, falling commodity prices have eroded the mining sector's earning, and companies have pursued vigorous cost cutting strategies in response. This will contribute to lower competition for workers, stunting wage growth in the utilities sector accordingly.
- In recent years, electricity demand has declined considerably, which has placed downward pressure on prices. Indeed, electricity consumption has fallen by an annual average of 1.7% over the past five years. **Electricity demand is expected to remain under a degree of pressure** in the short term. This will be driven by:

[1] Note this is a comparison of two indexes both set to equal 100 in 2008-09 – it does not mean wage levels are much the same in the utilities as the national average.

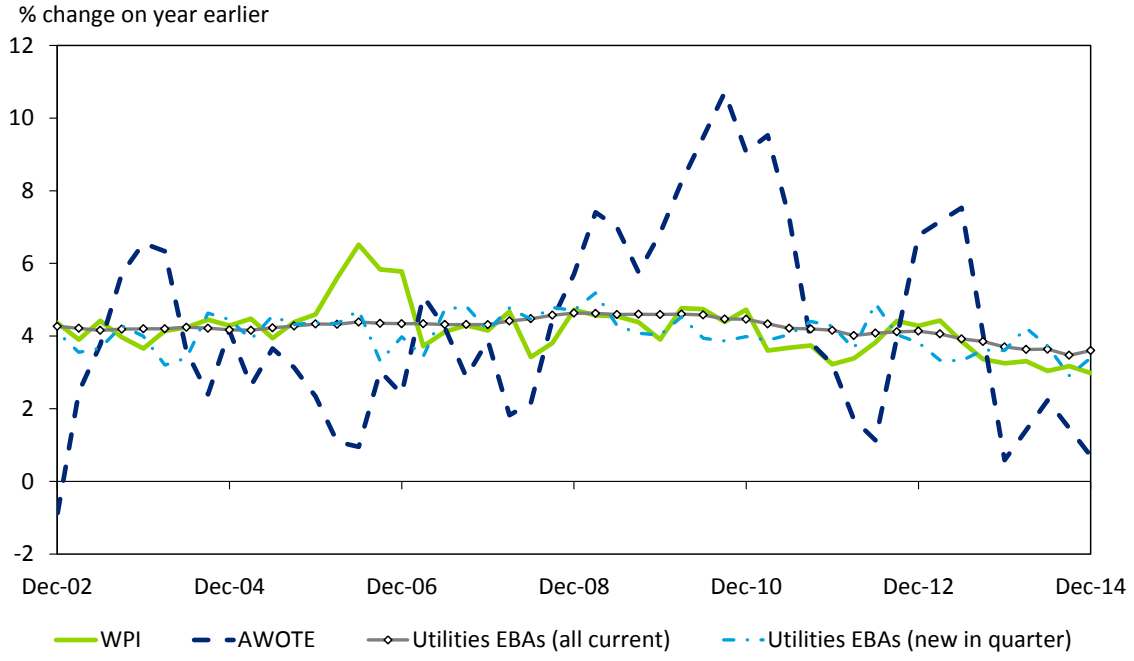
- **Lower industrial demand**, owing to the pending closure of the automobile industries in Victoria and South Australia, and the shutdown of aluminium smelters in Victoria and NSW.
- **Constrained residential demand** – as consumers become progressively more environmentally conscious, demand will be stifled by the increased use of energy efficient devices. The Australian Energy Market Operator (AEMO) continues to forecast residential consumption to fall by 0.5% per year over the short term.

- Dampened demand is coupled with **oversupply**. There is approximately 20% excess generation capacity and, according to the AEMO, no additional power generation is likely to be required for the next decade.
- Weak demand and strong supply is an unhealthy mix for **electricity prices and revenue**, which in turn may contribute to slow wage gains in the utilities sector.

3.8.1 Comparison with results from enterprise bargaining agreements

It is not just the WPI that points to lower utilities wage growth. As can be seen in Chart 3.15, the downward trend in utilities WPI is mirrored by several other wage growth measures that are produced on a regular basis. These include AWOTE and Enterprise Bargaining Agreements (which are sourced from the *Trends in Federal Enterprise Bargaining* publication produced by the Department of Employment).

Chart 3.15: Measures of utilities sector wage growth



Source: ABS, Department of Education, Employment and Workplace Relations

The AWOTE series fluctuates considerably and is consequently limited in its use in forecasting wage growth. In the Average Weekly Earnings publication released in November 2014, the ABS indicated that the biannual survey was '*designed to produce estimates of the level of average gross weekly earnings associated with employee jobs in Australia, at a point in time. While AWE is not designed for movement in earnings, the frequency of collection supports a*

time series of these level estimates'. It is therefore used 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[2].

In the December quarter of 2014, wages in all current EBAs grew at 3.6% for the utilities sector, up slightly from 3.5% in the previous quarter. As mentioned, however, new EBAs provide a more accurate indicator of future wage trends. Wage growth in new utilities sector EBAs was 3.4% in the final quarter of 2014, down from 4.2% in the first quarter of the year, and lower than the average growth in the past three years (3.8%). This trend is consistent with falling wage growth nationally.

Looking forward, growth in utilities sector wages are expected to remain tepid, albeit outperforming national wage growth until mid-2016. Thereafter, utilities sector wages are predicted to ease, and lag behind national WPI over the medium term.

3.8.2 Forecasting wages – the role of EBAs

Although EBAs feed into Deloitte Access Economics' short term forecasts for wage gains, there are important reasons why EBA data is not the sole driver of utilities wage movements going forward:

- **Coverage issues** – EBA data covers only those employees who are covered under an agreement. While the percentage of those covered by EBAs will vary from State to State, the EBA database indicates that 45,000 utilities employees were covered by an EBA in December 2014. The labour force data indicates that there are approximately 140,000 employed in the utilities industry nationwide, indicating that around one third of workers in the utilities sector are employed under EBAs.
- The 'all current' EBA series depicts wage growth under all EBAs current during the quarter – this series broadly follows the WPI series. The 'new in quarter' EBA series shows annual wage growth under any agreements commencing in the quarter. Thus, this series is a fairly good predictor of future trends in the 'all current' EBA series, although, depending on the number of new EBA's struck in the quarter, the number of employees covered by new agreements can be quite small. Recent EBAs lodged with the Department of Employment indicate that wage growth is trending back down towards WPI growth.
- **Circularity issues** – There is a risk that relying too heavily on EBA data to forecast wage growth could result in a level of "circularity". Wage costs of business whose employees are covered by the enterprise bargaining system will rise at a similar rate to EBAs, particularly those that have been negotiated more recently (as a result, in the short term our expected rate of overall EBA growth will move towards the rates seen in more recent agreements). However, newer EBAs themselves will be affected by economic developments over the forecast period, as well as trends in competitor industries and demand for utilities services.

[2] Deloitte Access Economics' forecasts are developed using a more formal modelling approach rather than a more 'institution-based' approach which is based on increases in minimum wages and collective agreements. As such, while EBA data is taken into account, it is not the primary driver of our model.

- **Forward looking inputs** – More broadly, Deloitte Access Economics' forecasts – of the Australian and global economies, of the utilities sector, and of factors affecting wage trends – are important inputs to our forecasts of wage growth in the utilities sector. To rely too much on EBAs would be to miss the benefits of those forward looking inputs.

Some related issues are covered in Appendix D.

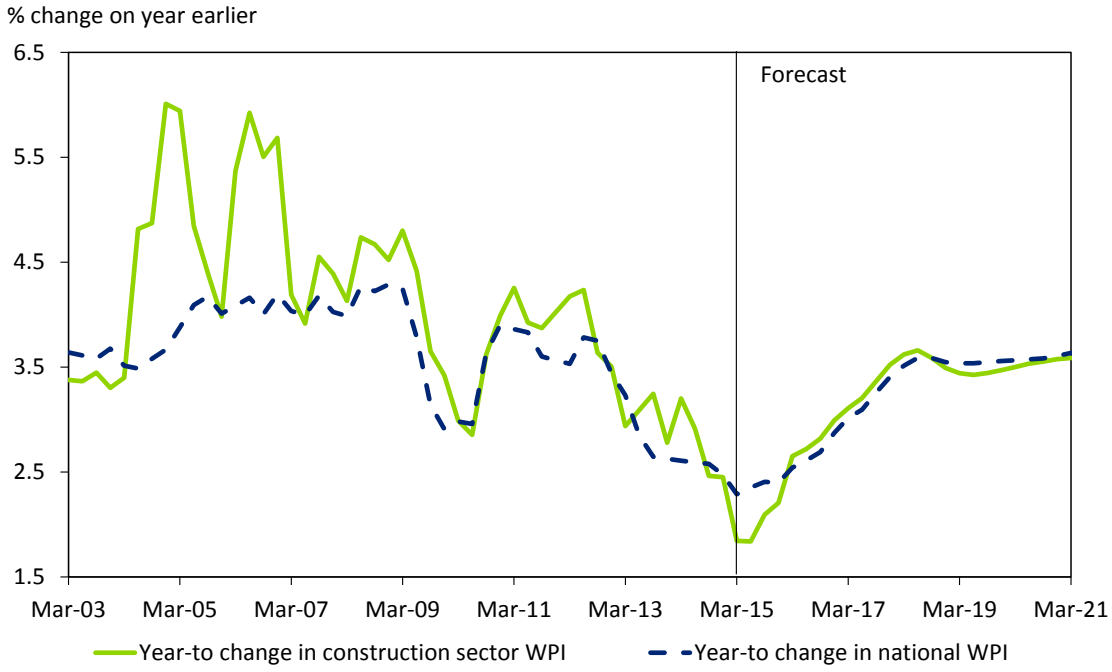
3.9 Construction

Construction sector employees account for just over 9% of the total Australian workforce, having risen by 7.3% in the past five years. Over the past decade, the construction sector saw strong employment growth, and it is now the nation's third largest employing industry. In the ten years to February 2015, construction sector employment grew by an average rate of 2.4% per year, significantly higher than the growth rate across all industries (1.8% per year).

Against such a strong demand backdrop, it is no surprise that the construction sector WPI grew at a faster rate than the national WPI:

- Upward pressure on wages was driven by a surge in demand for construction workers.
- In addition, the construction sector competes with the mining sector for workers, and, as the resources boom pushed up wages in the mining sector, the construction sector followed suit to remain an attractive employer.
- Furthermore, a rising population supported growth in housing and commercial construction.
- Increased public and private sector infrastructure investment also spurred higher demand for construction workers.

Chart 3.16: Construction WPI growth forecast



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics labour cost model

More recently, general labour cost growth has flagged. Construction wages are no exception, and have been hit hard relative to national WPI growth – as Chart 3.16 above shows, construction WPI growth is expected to dip well below the national average during the next year, before reverting to follow the movement of the WPI for all sectors nationally over the long run, at around 3.5% growth.

The construction sector is comprised of engineering construction, residential building and non-residential building, and each component is driven by a varied set of economic conditions. Engineering construction activity, for example, has recently been determined chiefly by the resources boom, while building activity is linked to movements in interest rates. A series of interest rate cuts by the Reserve Bank of Australia (RBA) recently have led to higher house prices, and an associated increase in building approvals and dwelling commencements.

In the first three months of 2015, total construction work declined by 2.4%. This was driven by the continued cooling of the resources boom, and offset slightly by more favourable conditions for building activity. The value of engineering work done fell by 7.3% in the first quarter of 2015. In contrast, the value of residential building work rose by 4.8% and the value of work done on non-residential building increased by 1.4%.

Looking forward, the impact on construction jobs prompted by the fading resources boom and lower investment in resource-related projects is likely to continue to induce downward pressure on wages in the sector over the short term. This is expected to improve over the medium term as the construction cycle picks up once more. Furthermore, progress in wage growth in the construction sectors will be supported by the recent strength in dwelling approvals, which have risen by 16.3% in the past year. This will boost demand for construction workers going forwards, and wages should improve as a result.

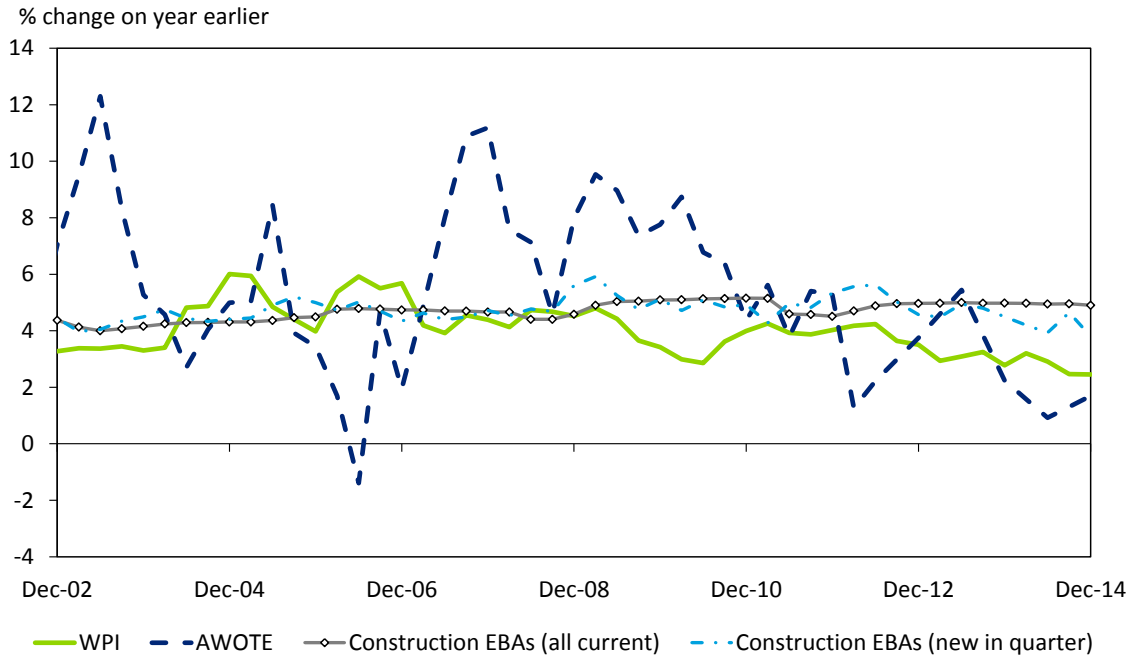
3.9.2 Comparison with EBA results

The recent downward trajectory of growth in construction sector WPI has been mirrored in other measures of wage growth. As seen in Chart 3.17, construction sector wages have declined significantly using a measure of average weekly earnings (AWOTE), which is far more volatile than WPI. Current EBA agreements continue to yield higher wage outcomes in the construction sector than indicated by either the WPI or AWOTE measure.

In the December quarter of 2014, wages in all current EBAs grew at 4.9% for the construction sector, down slightly from 5% in the September quarter, but still greater than growth seen in the utilities sector (3.6%). New EBAs, however, serve as a better indicator of future wage trends. Wage outcomes for new construction sector EBAs have fallen over the past few years, from 5.3% in December 2011, to 4.6% 12 months later, to 3.8% in the December quarter of 2014. This trend is consistent with national results and the utilities sector.

The gap between the WPI and EBA measures has widened considerably in the past three years (Chart 3.17), in part reflecting the strength of construction sector unions. As such, WPI may have a closer resemblance to the trends in the construction industry, and in particular the recent weakness of the construction sector.

Chart 3.17: Measures of construction sector wage growth



Source: ABS, Department of Education, Employment and Workplace Relations

3.10 Summary results

The forecasts for national and sectoral wage growth are shown in Table 3.3. Forecast components include real and nominal WPI, and real and nominal productivity adjusted WPI.

Table 3.3: National sectoral wage forecasts

Financial year changes in nominal national industry sector WPI

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	2.4	2.5	2.9	3.4	3.6	3.6	3.6
Utilities	2.9	2.7	2.8	3.0	3.2	3.3	3.4
Construction	2.1	2.4	3.0	3.5	3.5	3.5	3.6

Financial year changes in real national industry sector Wage Prices

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	0.8	0.3	0.1	0.9	1.1	1.1	1.1
Utilities	1.3	0.6	-0.1	0.5	0.7	0.8	0.9
Construction	0.5	0.3	0.2	1.0	1.0	1.0	1.1

Financial year changes in nominal productivity adjusted Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	1.2	0.9	1.5	2.0	2.5	2.3	2.2
Utilities	1.5	1.3	1.5	1.7	2.1	2.1	2.1
Construction	1.5	1.0	1.8	2.3	2.5	2.4	2.3

Financial year changes in real productivity adjusted Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	-0.5	-1.2	-1.3	-0.5	0.1	-0.1	-0.3
Utilities	-0.1	-0.8	-1.3	-0.8	-0.3	-0.3	-0.4
Construction	-0.2	-1.2	-1.0	-0.2	0.1	0.0	-0.2

Source: ABS, Deloitte Access Economics Macroeconomic model, Deloitte Access Economics Labour Cost model

4 Victorian wage growth forecasts

This chapter sets out the projections for labour costs in the utilities and construction sectors in Victoria, and provide an analysis of wage movements compared to national trends.

Note that WPI data for the utilities sector is only available for some jurisdictions (though it is available for Victoria). Deloitte Access Economics uses estimates where it is not available from the ABS. Details are given in Appendix A.

Key factors to consider for the Victorian economic outlook include:

- **Victoria is more dollar dependent than its northern neighbours**. The $A has only recently come off its peaks when comparted to interest rates, which suggests there are still positives to felt from the fall in the $A.
- Engineering construction activity is in decline across Australia. But **the pipeline of major transport infrastructure projects in Victoria should keep investment at high levels**.
- Deloitte Access Economics' *Investment Monitor* data shows the value of engineering work in the pipeline in Victoria is three times larger than the value of work currently underway.

The big cyclical drivers have moved in favour of Victoria's economy of late. On the one hand, the big shifts in the external environment that are weighing on the Australian outlook (and those for the resources States) – falling commodity prices and falling resources construction – are not as troubling for Victoria.

On the other hand, the shifts in interest rates and in the exchange rate in response to those falls are welcome news for the State's large export manufacturing and residential construction sectors.

4.1 State trends

Victorian utilities wages have outperformed since 2010 and, despite solid news for the wider Victorian economy, the forecast period may see that outperformance pegged back amid closures in the car-making sector.

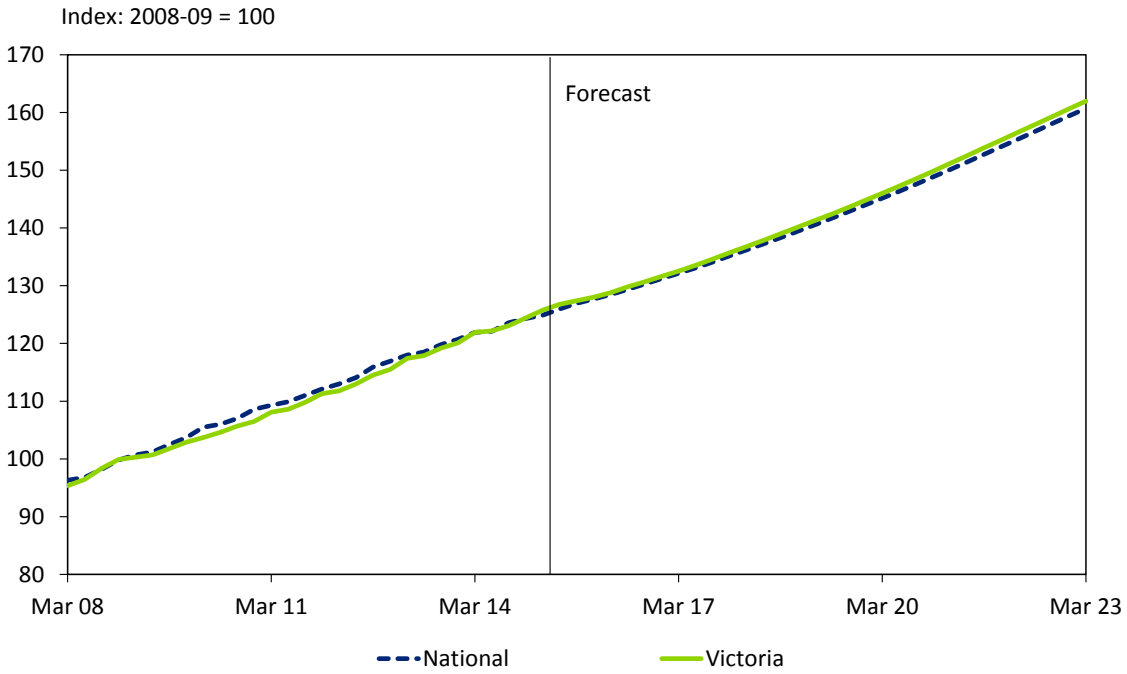
Over the year, utilities sector WPI in Victoria grew by 3.2%. That is well above national growth in utilities wages of 2.5%. However, as Chart 4.1 below shows, underlying trends in utilities wages at the national level tend to dominate the movements by State, with wage movements relatively consistent over the long run. That is unsurprising given that wages in the sector are regulated at the national level for most States. However, significant variance can be observed in smaller jurisdictions over short periods of time.

Short term deviations by State occur when driven by a combination of:

- **General trends in State wage growth** – States with slower growth in output generally experience slower WPI growth.
- **One-off factors that affect a particular industry** – such as movements in a specific award level or a single EBA, or a sharp swing in demand or supply for workers in that sector and in that State.

Over the long term however, workers are mobile and will move to areas where wages are higher. That limits the degree in which wages can deviate across different jurisdictions across Australia. Short term deviations are also generally driven by demand shocks like major project activity in the resources sector. These shocks are never permanent, and when construction activity winds down so does the excess demand for labour that drives up wages.

Chart 4.1: Utilities sector WPI forecasts – national and Victoria

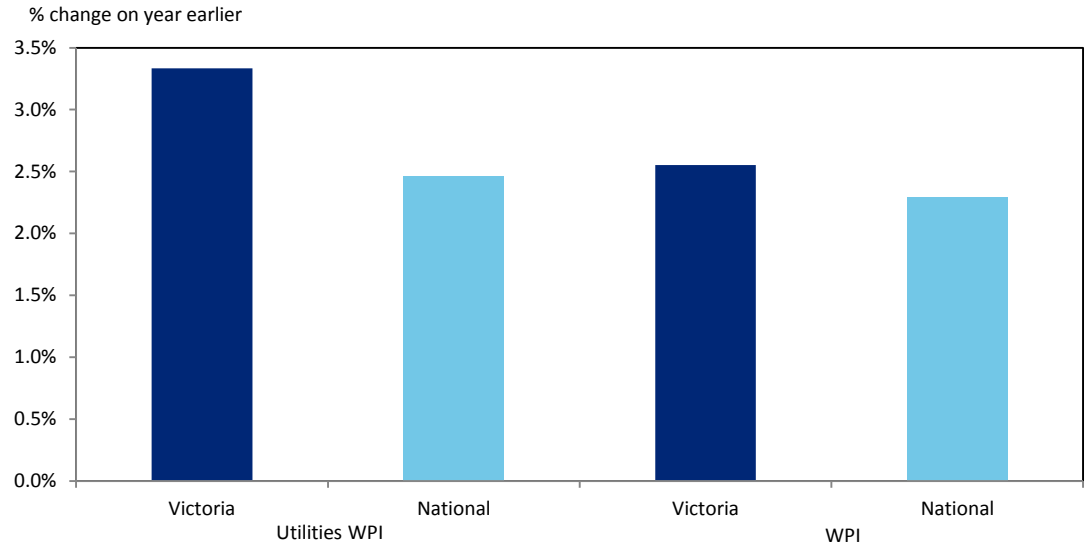


Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

4.2 The utilities sector

Chart 4.2 shows recent wage growth in Victoria outpaced wage growth nationally in the utilities sector and overall. Over the year to March 2015 ABS data shows national wage growth was 2.3%, while in Victoria wage growth topped 2.6%. Meanwhile in the utilities, wage growth was 3.3% in Victoria versus 2.5% overall.

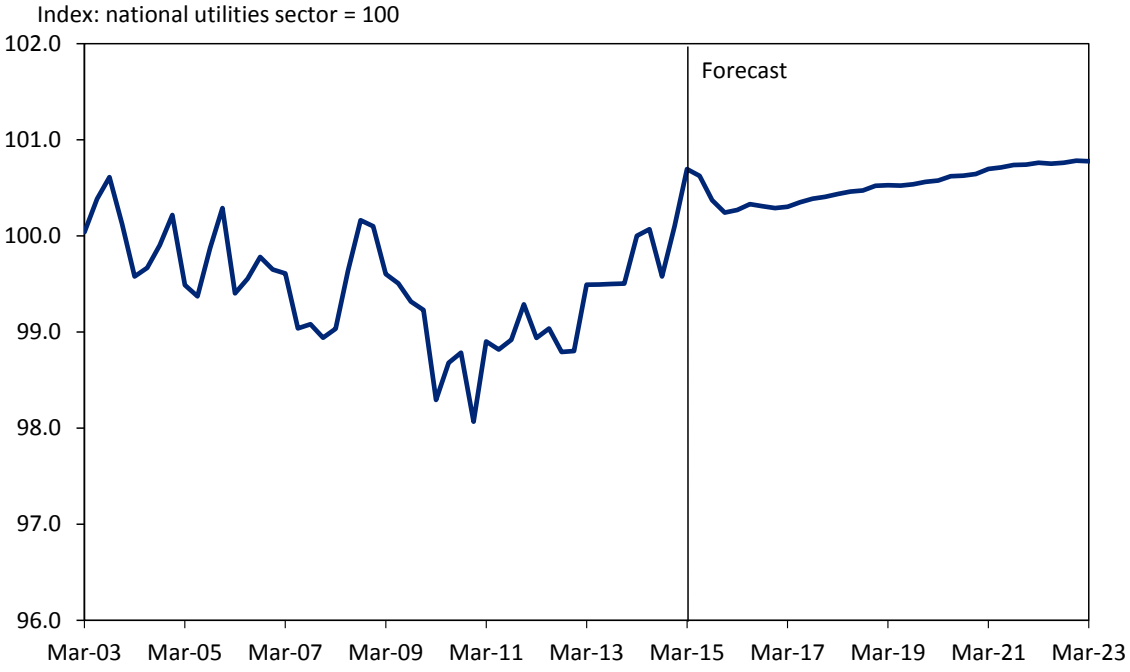
Chart 4.2: Comparative WPI growth rates in the 12 months to March 2015



Source: ABS, catalogue number 6345.0, special request and Deloitte Access Economics Wage Model

As Chart 4.3 shows, Victorian utilities WPI growth lagged its national equivalent for much of the past decade. The last few years have therefore been a period of catch-up for Victorian utilities WPI.

Chart 4.3: Relative utilities WPI forecast for Victoria



Source: ABS, Deloitte Access Economics' labour cost model

Looking ahead, Deloitte Access Economics projects Victorian utilities WPI growth will moderate towards the national level, with wage gains marginally above the national average for utilities workers over the forecast period.

The forecast profile in Chart 4.3 shows the Victorian utilities WPI maintaining its relative difference to the national utilities sector WPI level due to:

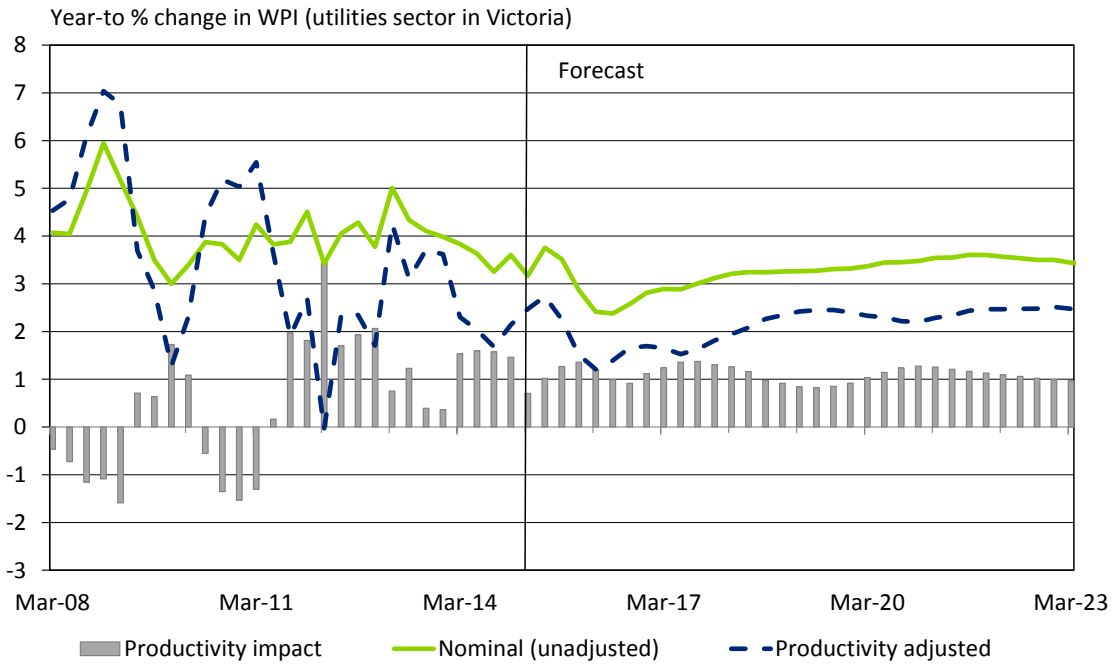
- An **improvement in the relative economic outlook for Victoria** due to low interest rates and a lower $A.
- The **winding down of the recent resource construction boom** has relieved wage pressures in the resource States (improving Victoria's relative position).

However, it is expected that wage growth in the Victorian utilities sector will moderate over the short run, in line with broader national income trends, as low overall economic growth and relatively high unemployment cap future wage growth.

Chart 4.4 shows Victorian nominal utilities sector WPI is expected to ease over the short term, before returning to a long run growth rate of between 3% and 4%.

As always, it should also be noted that volatility in the State indices implies that actual movements in State-by-industry WPI in the future are likely to be far less smooth than shown in the charts here. Movements in recorded data may therefore move against what might be expected from the underlying economic drivers.

Chart 4.4: Victoria utilities WPI forecasts



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

That means that forecasting growth rates based on a point-to-point comparison of results can be volatile. **For that reason Deloitte Access Economics recommends that it is better to concentrate on the longer run underlying trends indicated in Chart 4.4.**

In the short term, weak prospects for output will continue to place downward pressure on employment and hamper wage growth. But the relative weakness in other jurisdictions will ensure that Victoria will at least perform well in relative terms.

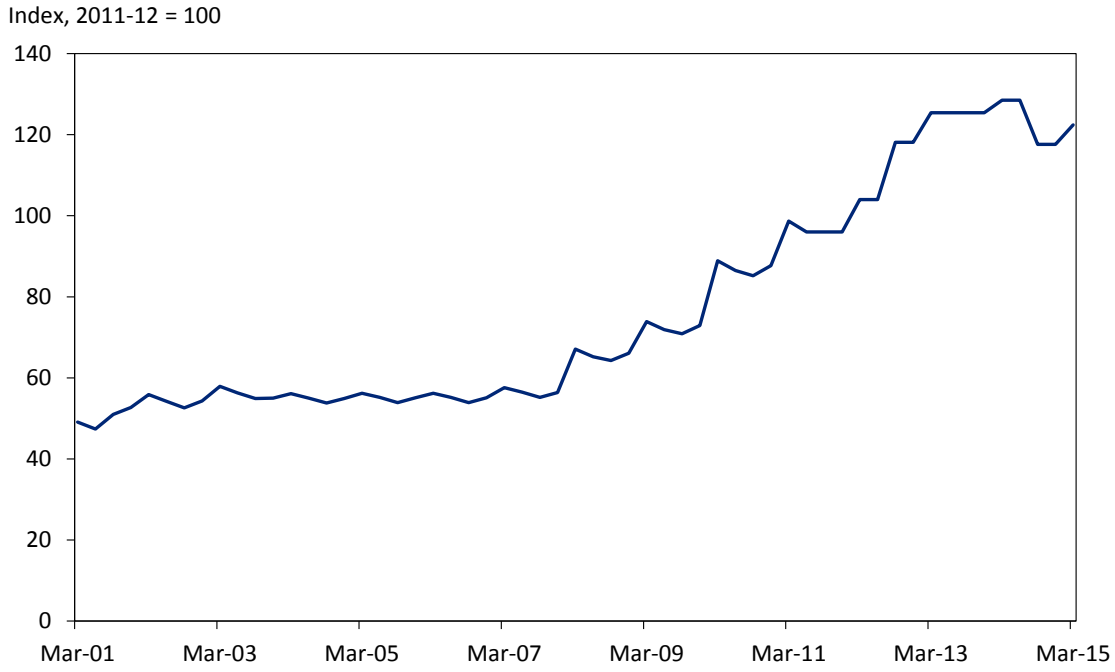
As Chart 4.5 shows, electricity prices in Victoria have outpaced that for overall price growth for some time. Higher prices have eaten into demand, particularly in the State's manufacturing sector, which in turn has added to competitive pressure due to a higher $A.

But energy policy reforms resulting in rule changes to tariff price determinations, the way reliability standards are set and the removal of the carbon tax have all placed downward pressure on electricity prices.

In the long term these reforms may also mitigate the need for infrastructure expansion and employment flowing from that expansion. In turn, that may be expected to keep wage growth in the utilities sector on a shorter leash than would otherwise be the case.

However, in the near term factors such as targets for reliability for supply may remain an issue despite the new efforts for more consultative reliability standard setting.

Chart 4.5: Melbourne electricity prices

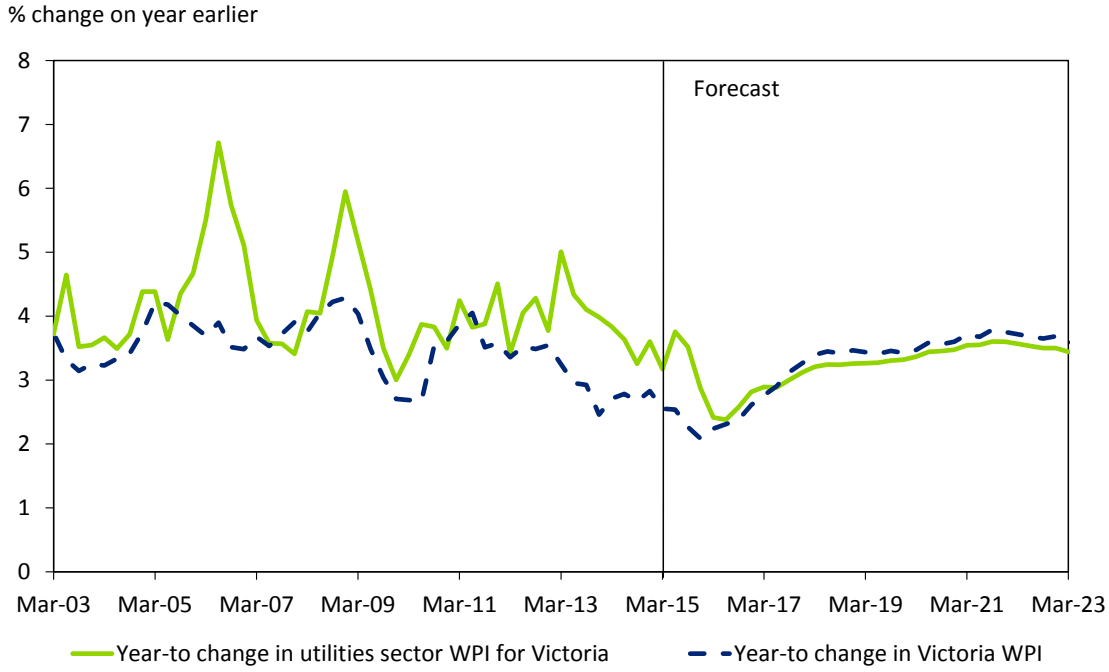


Source: ABS, 6401.0 Consumer Price Index, Australia

It should be noted that the AER's price determination following this report may also significantly affect future retail prices. The latest report on retail pricing by the Australian Energy Market Commission found that network cost still account for over half of the representative consumer's electricity bill. The AER's tariff determinations play a significant part in determining final costs that are passed through to consumers, and how consumers react to those costs.

Chart 4.6 shows that growth in Victoria's utilities sector WPI currently remains around one percentage point higher than the WPI growth for all sectors in the State. The forecasts show a rapid return towards broader State WPI growth by 2016, followed by a period of modest relative underperformance leading up to 2020.

Chart 4.6: Victoria utilities forecast comparison

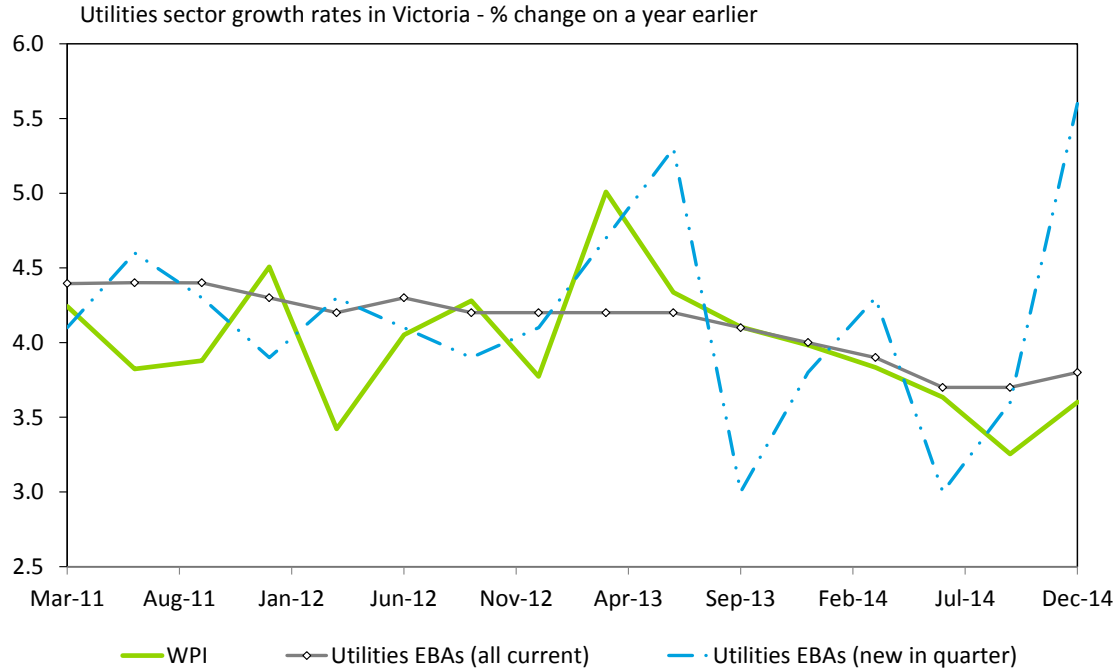


Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

4.2.2 Comparison with EBA outcomes

The following section compares growth in Victoria's utilities sector WPI against outcomes in State Enterprise Bargaining Agreements. Chart 4.7 shows all current Victoria utilities EBA wage growth eased over the last couple of years, before ticking up towards the end of 2014.

Chart 4.7: Comparative measures of wage growth in Victoria utilities



Source: ABS, Department of Employment

This uptick is in part due to the 13 new agreements in the utilities EBA database in December 2014, which indicated an average annual increase of 5.6%. However these agreements apply to just 700 workers, representing a relatively small fraction of the utilities workers on EBA's in the State (of 8,600 people).

Rather than the start of a new upward trend in wages outcomes for the sector in Victoria, Deloitte Access Economics sees this as more likely a lagged impact of wage bargaining over the first half of 2014.

4.3 The construction sector

With activity in **resource-related construction** sectors in the resource States winding down, Victoria is well position to take back some lost ground in the construction sector.

The value of total **residential construction** work in Victoria grew by 9.6% over the year to December 2014. On the other hand, the total value of residential building approvals increased by 19.5% over the year to April 2015, on the back of low interest rates and very positive house price growth in Melbourne.

The State's **engineering construction** sector is moving into a period of strength with several large public infrastructure projects in the pipeline slated to underpin activity over the medium term. The latter list includes:

- $11 billion Melbourne Metro rail project;
- $6 billion North East Link road project;
- $5.5 billion Western Distributor road project, and;
- $1.3 billion CityLink upgrade road project.

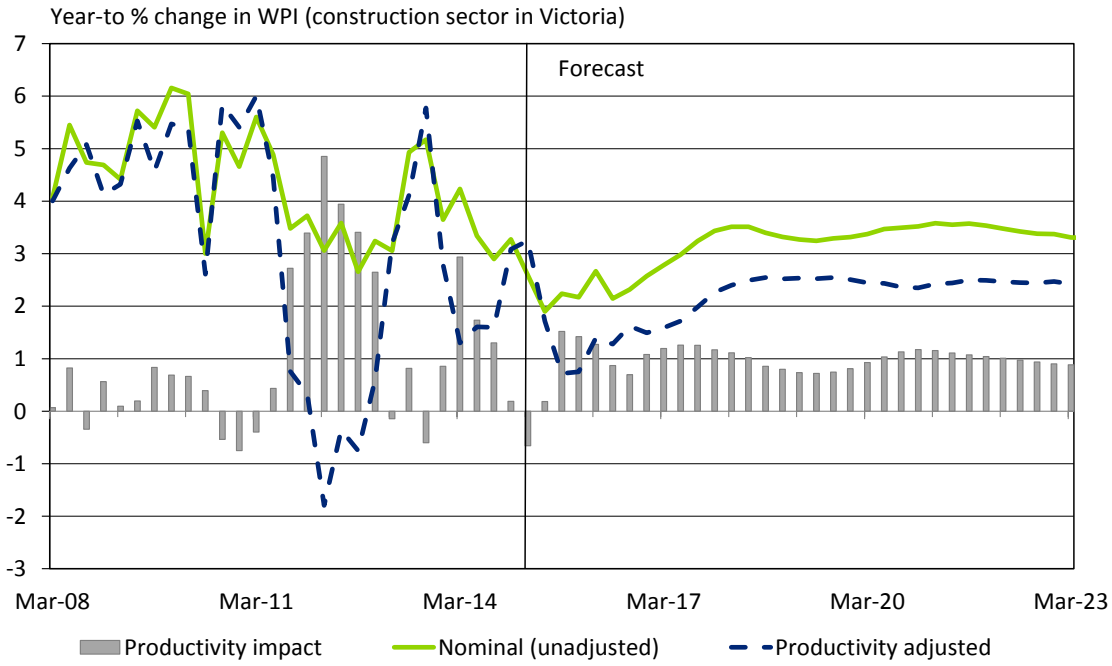
Meanwhile, a number of major projects are also underway including:

- $4.1 billion Regional Rail Link;
- $1.6 billion Port of Melbourne redevelopment, and;
- $662 million Western Highway Duplication (between Ballarat and Stawell).

As activity in the State's construction sector rises relative to that in other States, competition for workers in the utilities sector will also rise and may put a modest degree of upward pressure on wages in the sector.

Wage growth in the construction sector in Victoria is not immune to national trends, however, with overall WPI easing despite some better news of late for residential building approvals and a marked improvement in residential construction work underway.

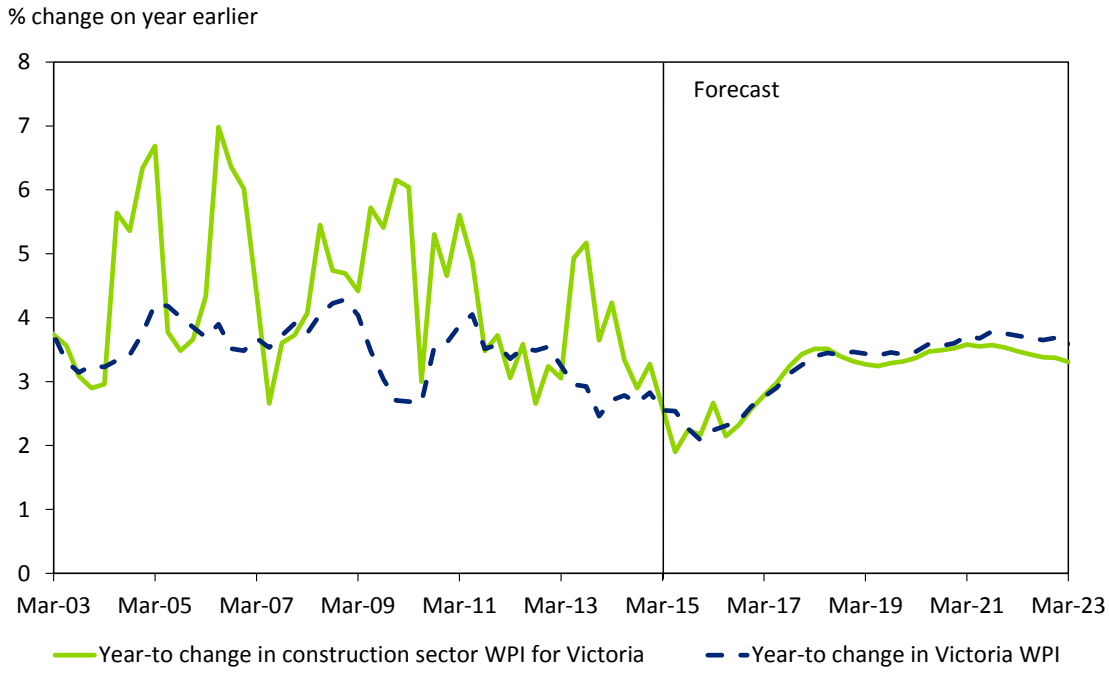
Chart 4.8: Victoria construction WPI forecasts



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

As Chart 4.8 shows, nominal Victorian construction WPI growth is expected to increase after a period of consolidation that began in 2013. Over the short term WPI growth is expected to track at a below average rate of between 2% and 3%, before then rising to between 3% and 4% as higher relative levels of engineering construction activity support wage growth over the medium term.

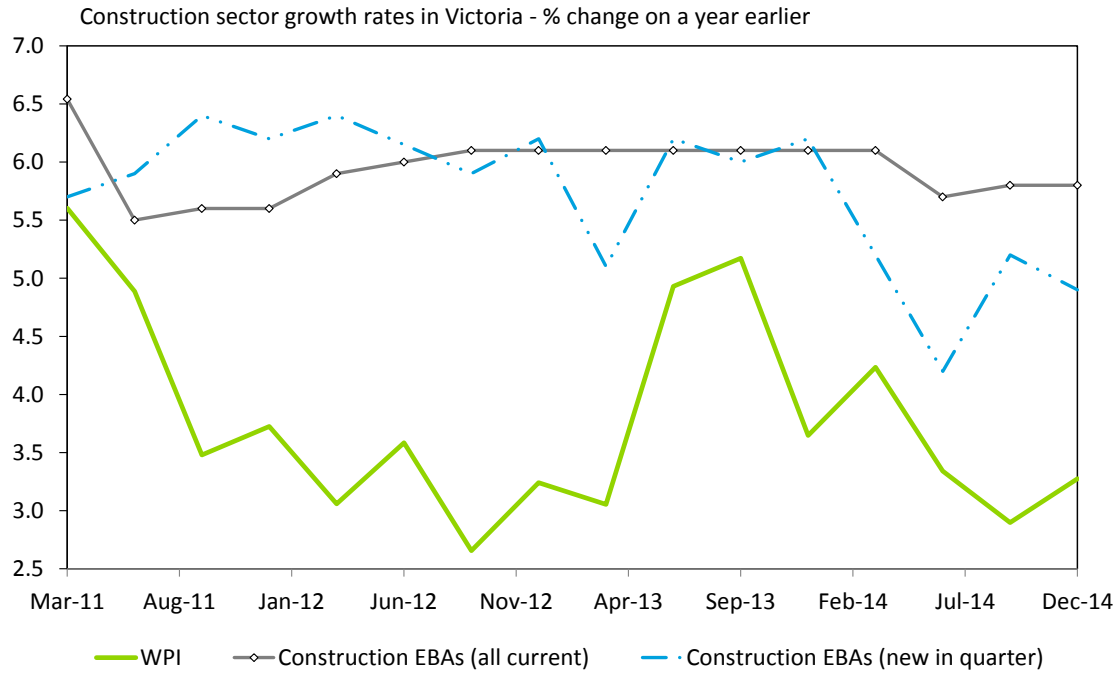
Chart 4.9: Victoria construction WPI forecast comparison



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

As Chart 4.10 shows, growth in wages under new EBAs in Victoria slowed over 2014, but remains well above broad State WPI. However, wage growth under new quarter EBAs have underperformed existing EBAs for some time, indicating that construction EBAs may edge down further in the future.

Chart 4.10: Comparative measures of wage growth in Victoria construction



Source: ABS, Department of Employment

Note that construction sector EBAs tend to be focused on a relatively small number of large projects, many of which are the subject of considerable industrial bargaining tension. This can lead to large fluctuations from quarter to quarter and it is beneficial to consider each measure in the context of the broader sectoral trends.

4.4 Summary results

Forecasts for sectoral wage growth in Victoria are shown in Table 4.1 below. The forecasts include real and nominal WPI, and real and nominal productivity adjusted WPI.

As requested, the data below – unlike for the other jurisdictions we examine in this report – has been presented in calendar year format.

Table 4.1: Victoria wage forecasts

Calendar year changes in Victoria nominal Wage Price aggregates

Annual % change	2014	2015	2016	2017	2018	2019	2020	2021
All industries	2.7	2.4	2.4	3.0	3.4	3.4	3.6	3.7
Utilities	3.6	3.3	2.5	3.0	3.2	3.3	3.4	3.6
Construction	3.4	2.2	2.4	3.1	3.4	3.3	3.5	3.6

Calendar year changes in Victoria real Wage Price aggregates

Annual % change	2014	2015	2016	2017	2018	2019	2020	2021
All industries	0.4	1.1	-0.3	0.3	0.9	1.0	1.1	1.3
Utilities	1.2	2.0	-0.2	0.3	0.8	0.9	0.9	1.1
Construction	1.0	0.9	-0.3	0.4	1.0	0.8	1.0	1.1

Calendar year changes in Victoria nominal productivity adjusted Wage Price aggregates

Annual % change	2014	2015	2016	2017	2018	2019	2020	2021
All industries	1.8	2.1	1.3	1.6	2.4	2.9	2.5	2.7
Utilities	2.0	2.2	1.5	1.7	2.2	2.4	2.3	2.4
Construction	1.9	1.6	1.4	1.9	2.5	2.5	2.4	2.5

Calendar year changes in Victoria real productivity adjusted Wage Price aggregates

Annual % change	2014	2015	2016	2017	2018	2019	2020	2021
All industries	-0.6	0.8	-1.4	-1.0	0.0	0.5	0.0	0.2
Utilities	-0.3	1.0	-1.2	-1.0	-0.3	0.0	-0.2	-0.1
Construction	-0.5	0.3	-1.2	-0.8	0.0	0.1	-0.1	0.0

Source: ABS, Deloitte Access Economics' labour cost model

5 Queensland wage growth forecasts

This chapter sets out the projections for labour costs in the utilities sector in Queensland, and provides additional State level projections for the construction industry in Queensland.

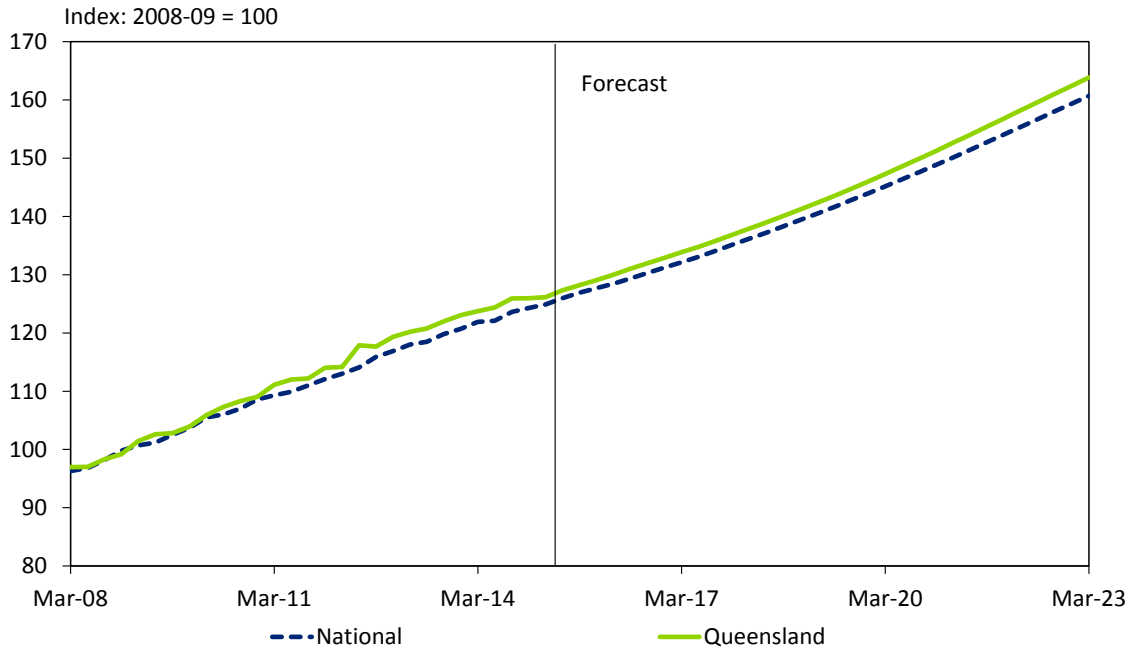
Queensland's economy hit a number of setbacks in recent months, including falls in energy prices diminishing the outlook for the gas sector and the continuation of drought conditions. Job growth has been sluggish reflecting the downturn underway in resource construction with further slowing expected as projects still under construction reach completion. Slower jobs growth will place downward pressure on wage growth in Queensland in the near term.

5.1 State trends

The utilities sector in Queensland will be influenced by national trends over the medium term and is expected to see growth returning to above the national average, driven by:

- **relative strength in housing construction**, as well as
- **relative strength in exports** (including tourism and, beyond the drought of the moment, farming) as a lower $A offsets a reduction in resources sector investment in the State.

Chart 5.1: Utilities sector WPI forecasts – national, Queensland



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

Chart 5.1 shows that the WPI of Queensland is forecast to remain in line with the national level over the outlook to 2023. This is due to:

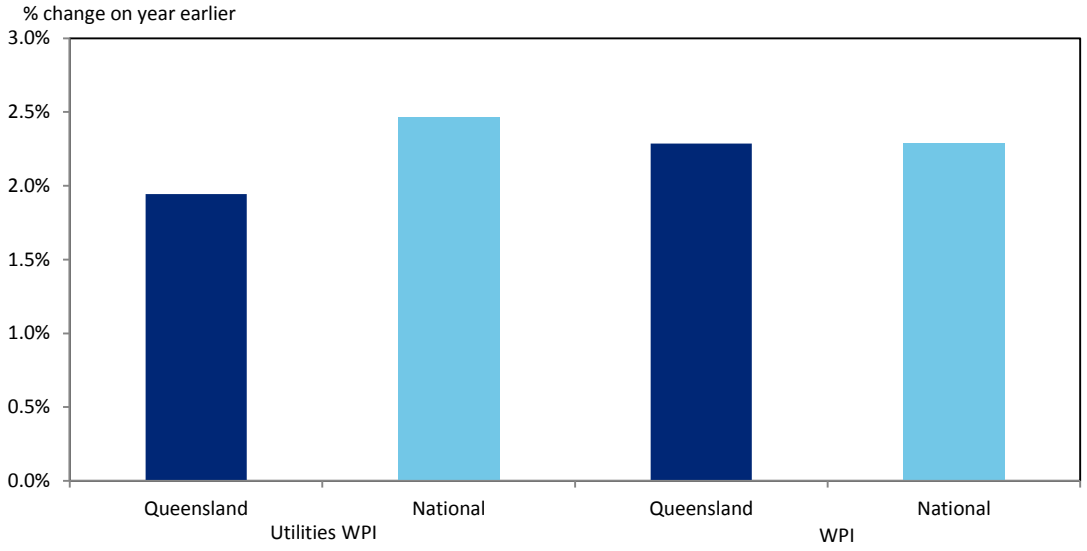
- Continued strength in the State's economy, although growth is slowing as the State transitions away from resource investment led growth.
- In addition, rising housing construction and the inception of substantial LNG exports due to come online in the near term will contribute to continued growth in WPI in the State.
- On the other hand Queensland will see a sharp decline in resources sector investment and employment flowing on from that.

On balance the broad trends in WPI gains in Queensland are projected to remain in line with the matching national movements.

5.2 The utilities sector

Wage growth in utilities in Queensland has fallen to below the national average as the resources sector sees a decline in investment and business confidence, placing downward pressure on wage gains across the State. Chart 5.2 shows that that utilities wage growth underperformed against the State and remained below the national growth rate. In the year to March 2015, utilities wage growth has been estimated by Deloitte Access Economics to be 1.9% in Queensland (compared to 2.5% nationally).

Chart 5.2: Comparative WPI growth rates in the 12 months to March 2015



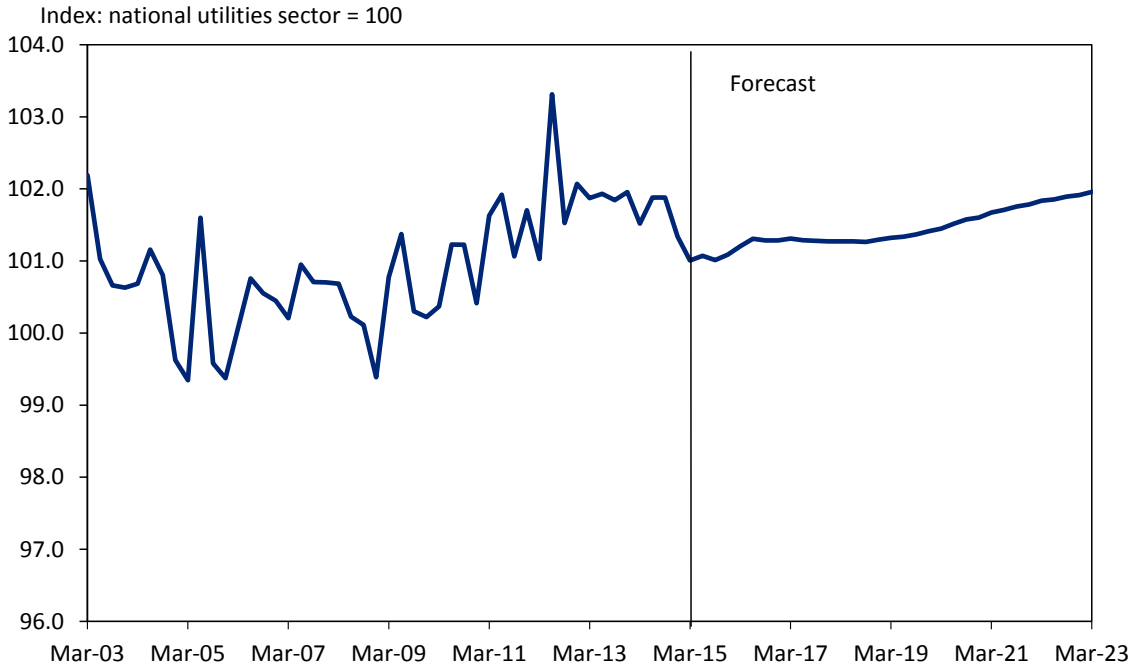
Source: ABS, catalogue number 6345.0, special request and Deloitte Access Economics Wage Model

The slowdown in relative utilities sector wage growth in Queensland reflected what we estimate to be a relatively weak outcome for Queensland's utilities sector wage growth in the latest figures. Queensland's electricity supply chain has been under pressure:

- Retailers are looking at ways to better integrate new technology into their offerings and deal with declining electricity use.
- Network businesses are also responding to changes to the national regulatory framework to make investments in infrastructure more efficient.
- These drivers will have a cooling effect on the demand for employment in the utilities sector and wage growth.

We forecast that, in the near term, utilities wages in Queensland relative to national utilities wages will remain around current levels. Chart 5.3 shows that in the medium term wages will again rise modestly in Queensland relative to the national level as population and employment growth in the State rise to outperform their matching national counterparts once again.

Chart 5.3: Relative utilities WPI forecast for Queensland



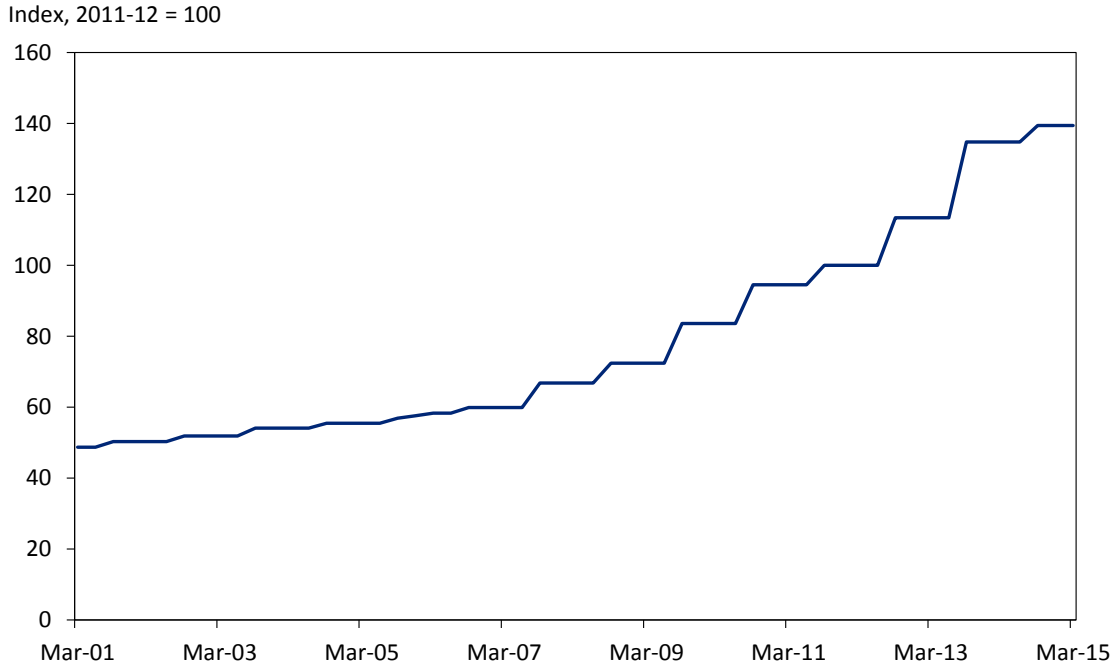
Source: ABS, Deloitte Access Economics' labour cost model

Chart 5.4 indicates that since 2007, Brisbane electricity prices have seen strong increases. Some factors that contributed to these increases have recently been eliminated as a generator of upward pressures on prices (such as carbon pricing) and may fade over time. However, other factors (such as targets for reliability of supply and the Queensland Solar Bonus Scheme) may continue to place pressure on electricity prices. Overall, the price pressures on electricity consumption are likely to remain, although they should be less significant.

Volatility in the State indices implies that actual movements in State-by-industry WPI in the future are likely to be far less smooth than shown in the charts here. Forecasting growth rates based on a point-to-point comparison of results can amplify that volatility. **For that reason Deloitte Access Economics recommends that it is better to concentrate on the longer running underlying trends indicated in Chart 5.5**.

The forecasts suggest that the moderation in the growth in wages for utilities workers in Queensland (relative to the national average) that has become apparent in the past two years is set to continue over the course of 2015. As competition for workers from the mining and construction sector fall away, pressures on utilities wages are easing. As construction work on the State's large projects such as the Curtis Island LNG facilities and related infrastructure reach completion, the reduction in the pipeline of new resources projects will limit competition for workers and wage pressures.

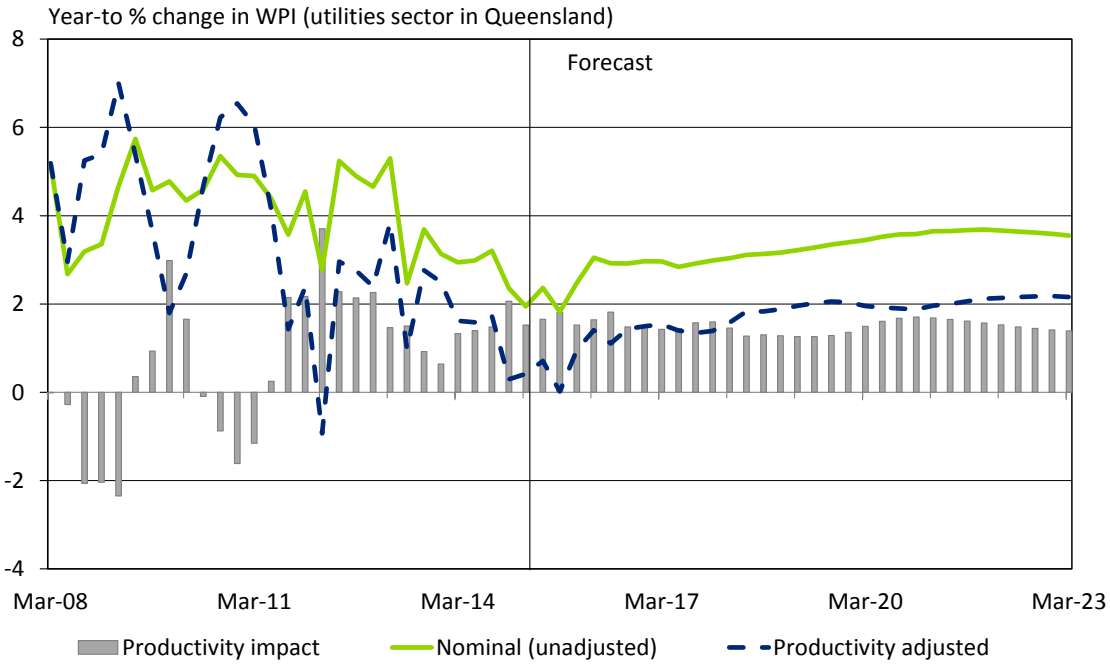
Chart 5.4: Brisbane electricity prices



Source: ABS, 6401.0 Consumer Price Index, Australia

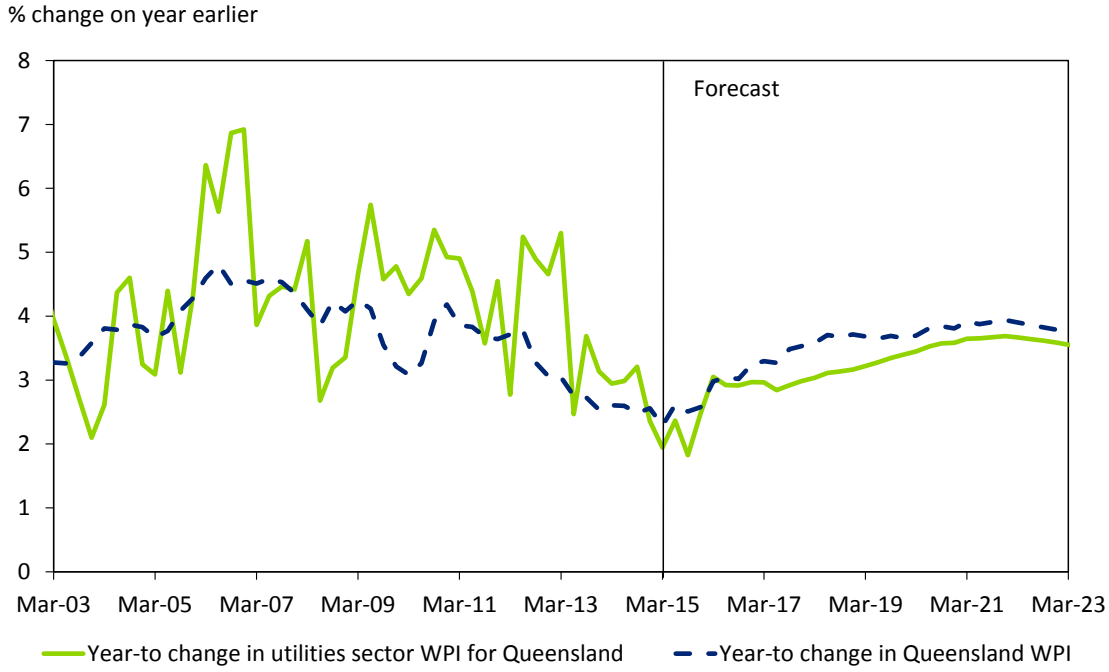
Chart 5.5 shows that Queensland's utilities sector wage growth is expected to ease further in the near term before returning to moderate growth in the long term. However, the economic backdrop is different: utilities sector wage growth in Queensland is expected to remain broadly lower than it was during the period of the mining construction boom of recent years.

Chart 5.5: Queensland's utilities WPI forecasts



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

Chart 5.6: Queensland utilities forecast comparison



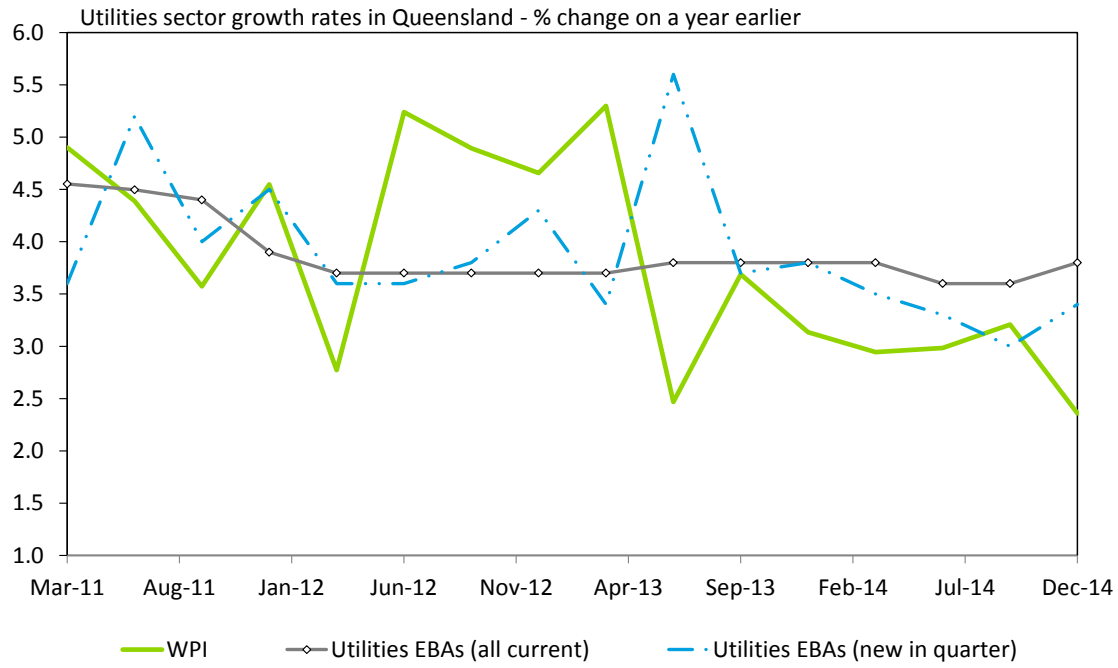
Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

Chart 5.6 shows that over the outlook, Queensland's utilities sector wage growth is expected to be slightly weaker than State wage growth. Although Queensland utilities sector wage growth is forecast to outpace national utilities sector wage growth, the sector is forecast to grow at a marginally slower pace that State wages in the long run. This is expected to occur as the competition for workers from the resources and construction sector eases.

5.2.2 Comparison with EBA outcomes

Chart 5.7 compares the growth in Queensland's utilities sector WPI with partial results from Enterprise Bargaining Agreements (EBAs). The latest data suggest that the moderation in wage growth continues in early 2015. In the year to March 2015 current and new utilities EBAs grew at 3.8% and 3.4% respectively from the previous year. This trend is consistent with the recent moderation seen in WPI growth for the Queensland utilities sector.

Chart 5.7: Comparative measures of wage growth in Queensland utilities



Source: ABS, Department of Employment

5.3 The construction sector

Recent months weighed on Queensland's prospects. The fall in gas prices takes one option off the table for short term better news, and coal prices continue to be problematic. However, the State still has an excellent growth portfolio, with tourism, foreign education and (particularly importantly for the construction sector) housing activity moving back into gear.

The pipeline of new projects in **engineering construction** in Queensland is shrinking. One of the three mammoth gas projects in Queensland has now moved into the production phase, with the other two expected to follow later this year. Recent price falls in LNG prices linked to oil may have hit these projects' financial positions, given that their investment decisions were forged amid significantly higher LNG prices.

Projects in Australia (and overseas) coming online will tend to exacerbate any glut in the LNG / hydrocarbon market. Players in the space will be hoping that LNG demand is bolstered by China's environmental push, as it is a cleaner energy source than coal. Currently, the state of the sector means any further investments are likely to be few and far between.

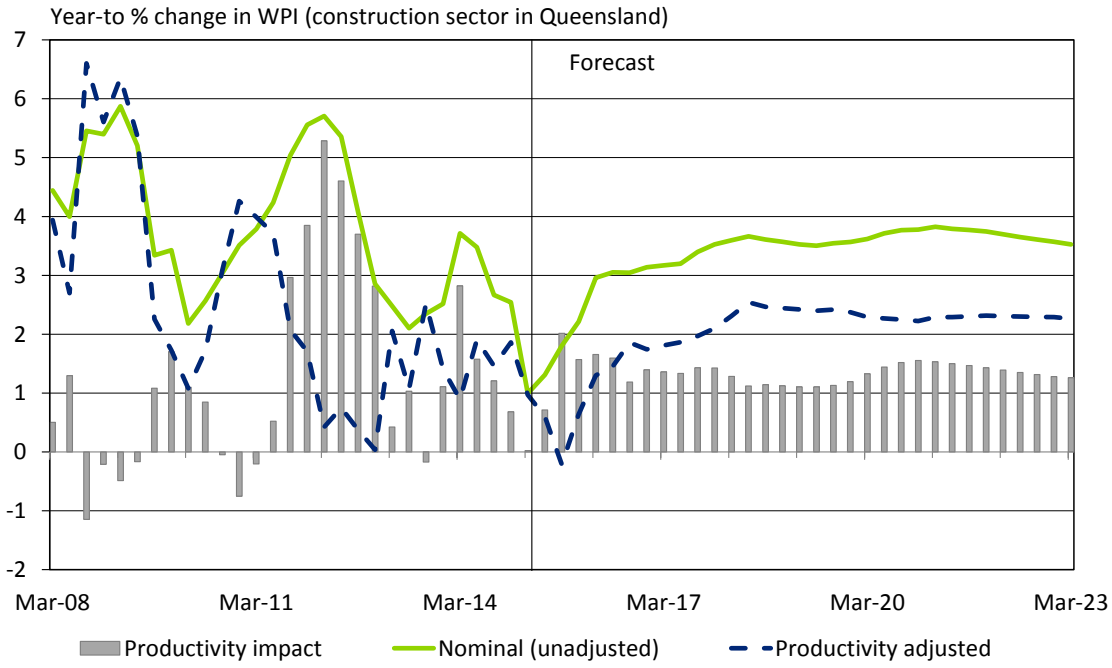
Somewhat offsetting the outlook for Queensland's resource-related construction activity is the **housing sector**. Housing construction is rising strongly on the back of low interest rates, and a strong lift in approvals suggests that there's more to come. Housing prices have also lifted, although less so than in Sydney and Melbourne.

Yet there are some less positive indicators to consider here too. Finance commitments are showing signs of levelling off in the State, while vacancy rates have edged higher. Population growth has also come off the boil, which dampens Queensland's housing construction outlook in the short term.

Even so, however, the outlook for housing construction is anticipated to somewhat offset the reduction in engineering construction from a decline in resources projects.

Chart 5.8 shows that after the near term period of adjustment, wage growth in the Queensland construction sector is forecast to recover as the investment cycle recovers. In the year to March 2023, nominal wages are forecast to grow at 3.5% and productivity adjusted wages are forecast to grow at 2.3% over the same period.

Chart 5.8: Queensland's construction WPI forecasts



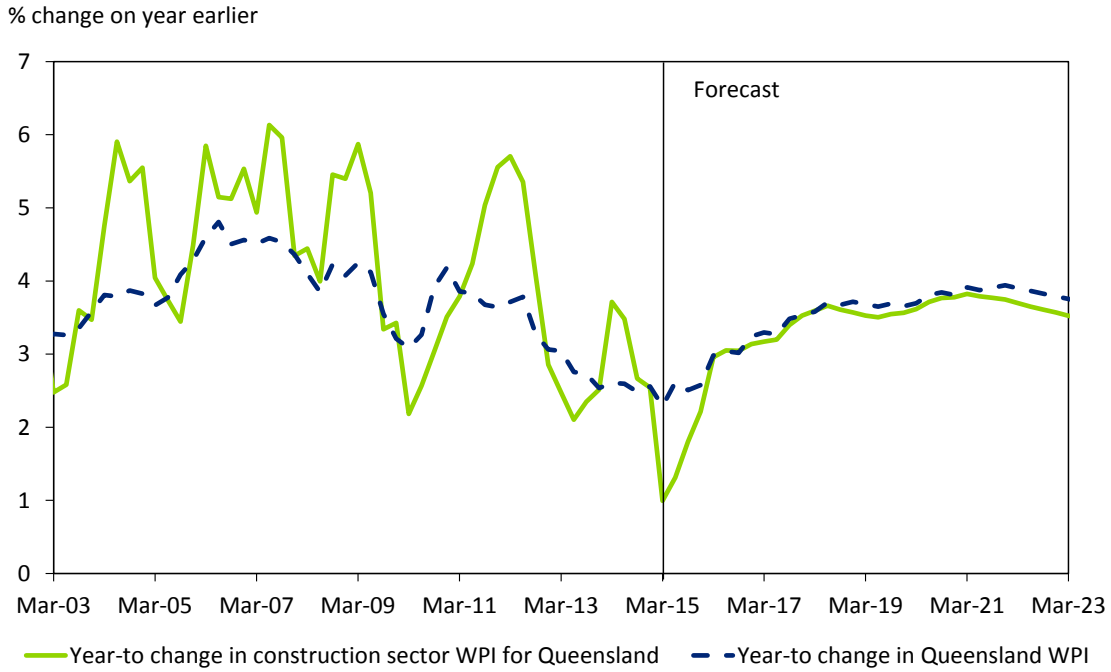
Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

Lower expectations for construction sector wage growth in the post-boom period match lower expectations for overall wage growth in the State, with construction sector wages lagging behind overall wage growth.

The demand for construction workers is likely to ease in Queensland, meaning the outlook for wages is for modest growth. Chart 5.9 shows that the State construction sector is in a period of moderation as the resources boom unwinds and average State wage growth remains above construction wage growth. In the medium term, construction wages are forecast to recover with improving housing construction activity and business investment.

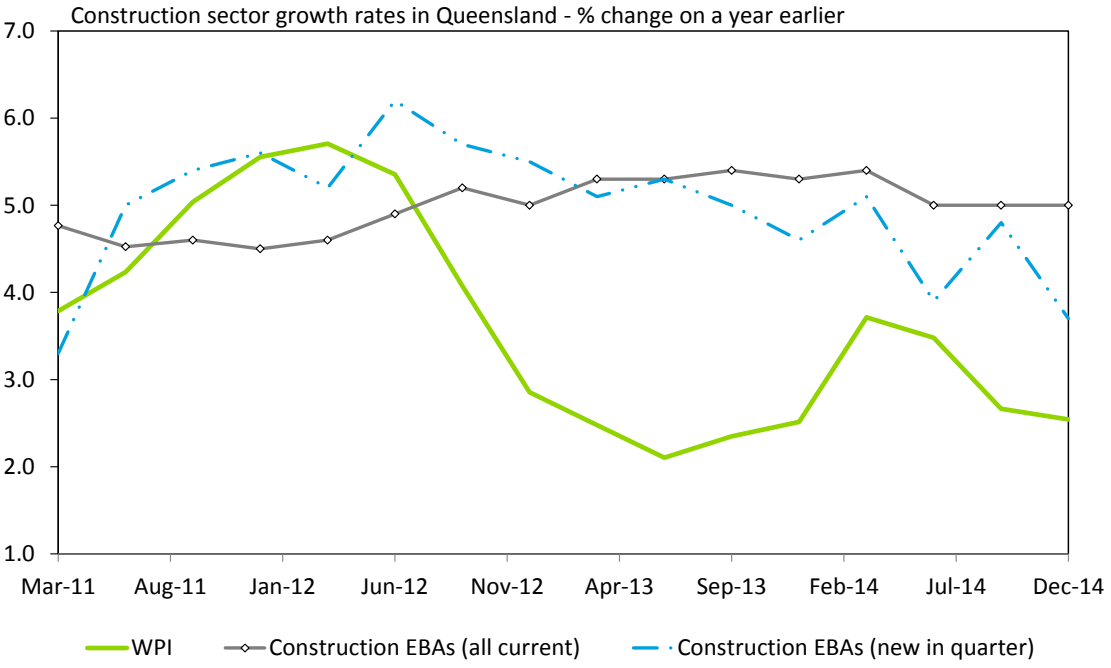
Chart 5.10 compares the growth in Queensland's construction sector WPI with partial results from Enterprise Bargaining Agreements. The chart shows that new and existing construction EBAs are moderating in growth. In the year to December 2014 existing EBA wages grew at a relatively optimistic 5%. New EBAs reflected the downturn in construction work related to the resources sector, with wage growth falling back to (a still robust) 3.7% in the year to December 2014.

Chart 5.9: Comparative measures of wage growth in Queensland construction



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

Chart 5.10: Comparative measures of wage growth in Queensland construction



Source: ABS, Department of Employment

5.4 Summary results

Forecasts for sectoral wage growth in Queensland are shown in Table 5.1. Forecasts include real and nominal WPI, and real and nominal productivity adjusted WPI.

Table 5.1: Queensland wage forecasts

Financial year changes in Queensland nominal Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	2.5	2.8	3.2	3.6	3.7	3.7	3.9
Utilities	2.5	2.6	2.9	3.0	3.2	3.4	3.6
Construction	1.9	2.5	3.1	3.5	3.6	3.6	3.8

Financial year changes in Queensland real Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	0.7	0.6	0.2	0.9	1.1	1.2	1.3
Utilities	0.7	0.4	-0.1	0.3	0.6	0.9	1.0
Construction	0.1	0.4	0.1	0.9	1.0	1.1	1.2

Financial year changes in Queensland nominal productivity adjusted Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	0.7	0.0	1.0	1.5	1.7	1.4	1.2
Utilities	0.8	0.9	1.5	1.5	1.9	2.0	1.9
Construction	1.2	0.8	1.8	2.2	2.4	2.3	2.3

Financial year changes in Queensland real productivity adjusted Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	-1.0	-2.1	-1.9	-1.1	-0.8	-1.1	-1.3
Utilities	-1.0	-1.2	-1.5	-1.1	-0.6	-0.5	-0.6
Construction	-0.6	-1.3	-1.1	-0.4	-0.1	-0.2	-0.3

Source: ABS, Deloitte Access Economics' labour cost model

6 South Australian wage growth forecasts

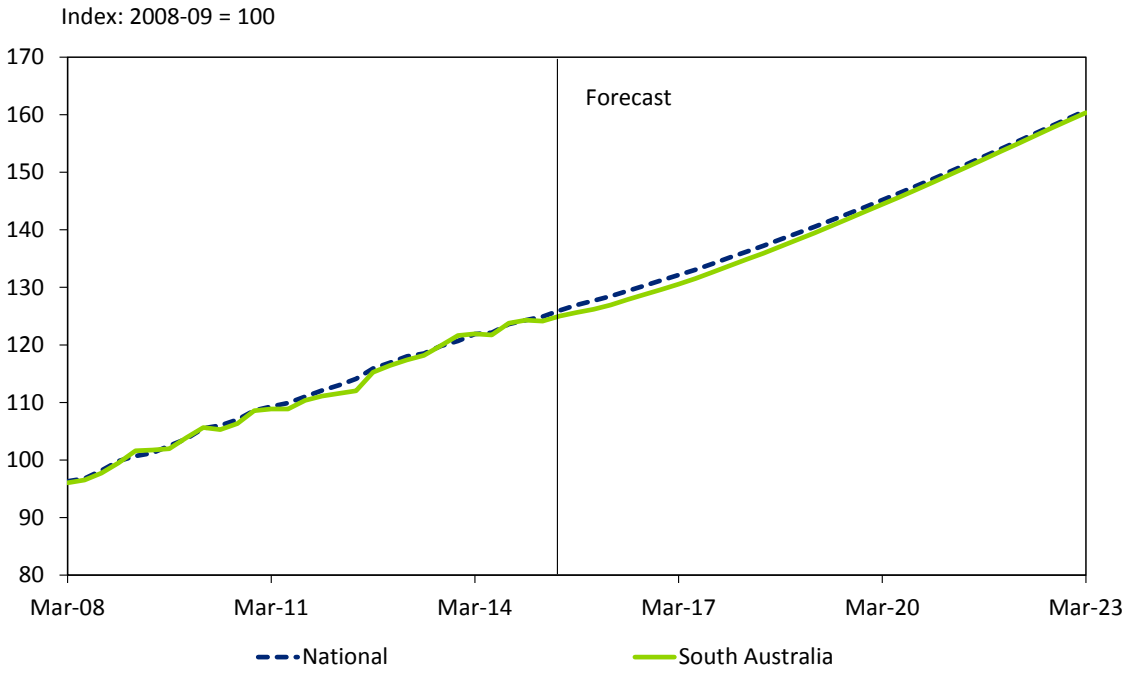
This chapter sets out the projections for labour costs in the utilities and construction sectors in South Australia. See Appendix A for further technical notes.

6.1 State trends

The national trends which tend to dominate movements in wages by State are no exception in South Australia, as Chart 6.1 shows. While South Australia has seen wages in the utilities sector rise and fall relative to their national counterparts over recent years, the broad trends remain very similar to those of other States.

Wage increases are expected to remain close to those seen at the national level.

Chart 6.1: Utilities sector WPI forecasts – national, South Australia



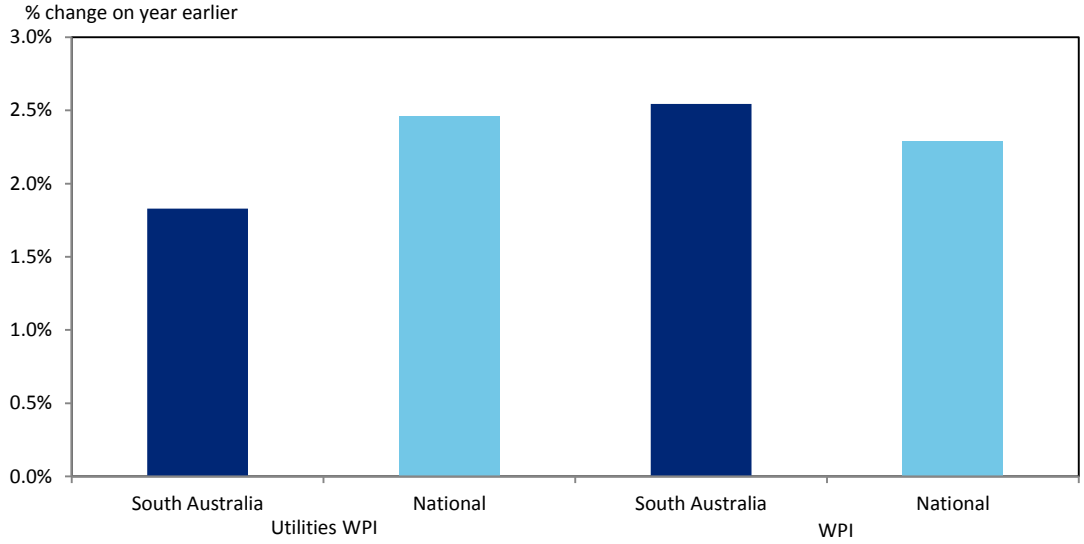
Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

6.2 The utilities sector

As Chart 6.2 illustrates, overall wage gains in South Australia have been slightly stronger than those of the nation as a whole over the past year. Growth in the South Australian WPI at around 0.2 percentage points above the national figure over the past year suggests broad wage trends that are largely in keeping with those in other States.

Yet the same can no longer be said of the utilities sector, where South Australia's estimated 1.8% growth figure means the State is now running below national wage trends.

Chart 6.2: Comparative WPI growth rates in 12 months to March 2015



Source: ABS, catalogue number 6345.0, special request and Deloitte Access Economics Wage Model

Indeed, the latest figures estimated by Deloitte Access Economics show a notable easing in utilities sector wage growth for South Australia, after relatively strong increases over the two years to early 2014.

That relative slowdown looks to have some way further to go given the strong increases seen over recent years. The relative slowdown in utilities sector wage growth also reflects the weakness expected in both the State's economy and in broader wage growth across all industries over the next few years.

An announcement by Alinta Energy that it will be closing its Northern and Playford B power stations as well as its Leigh Creek coal mine by March 2018 is further evidence of the current pressures on the State's utilities sector. In making the announcement, Alinta stated that the operations had become 'uneconomic' due to a decline in energy demand in South Australia, reflecting a fall in the number of industrial customers and more efficient households.[3]

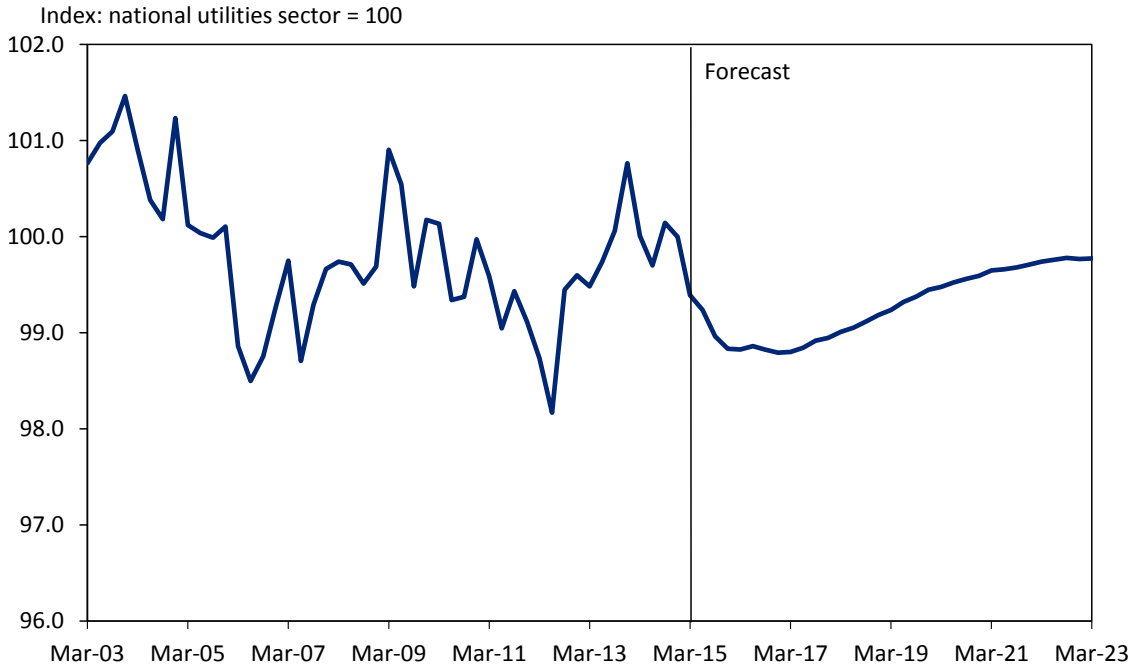
Accordingly, Deloitte Access Economics sees relative utilities wages in South Australia continuing to fall back and remaining subdued for some time, as seen in Chart 6.3. This trend is expected to improve from 2018 onwards, when:

- The impact of the abovementioned closures has already been felt, and
- South Australia's utilities sector wage growth is predicted to slightly outperform the national average.

That timing is also consistent with an expected improvement in broader wage growth trends in South Australia.

[3] http://www.abc.net.au/news/2015-06-11/power-stations-port-augusta-alinta-energy/6537814

Chart 6.3: Relative utilities WPI forecast for South Australia



Source: ABS, Deloitte Access Economics' labour cost model

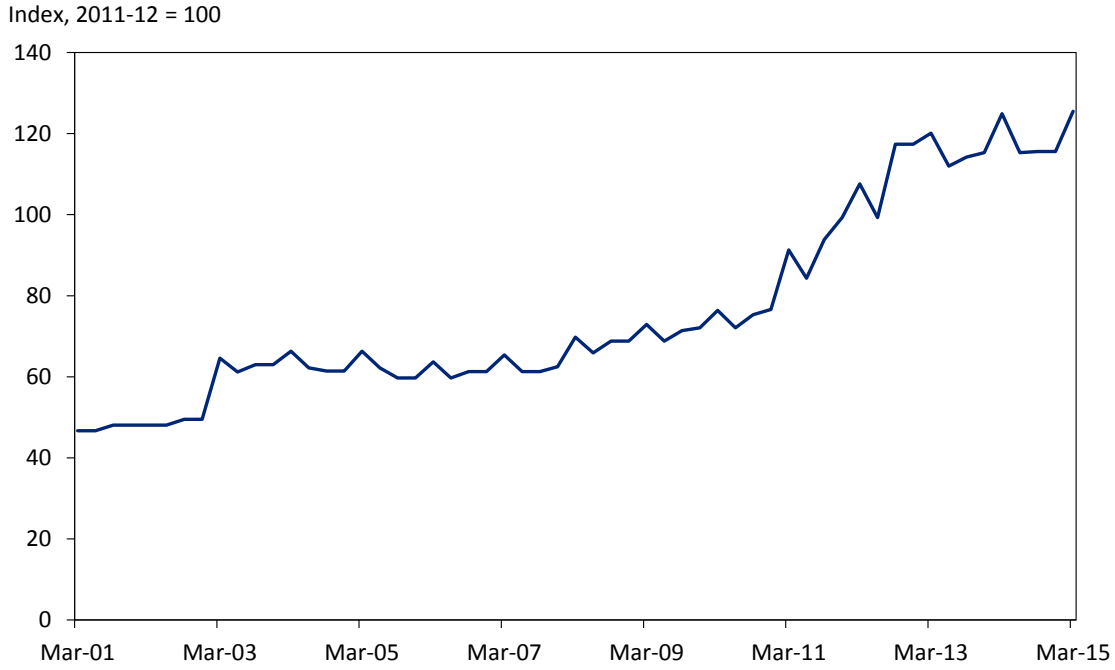
As always, it should also be noted that volatility in the State indices implies that actual movements in State-by-industry WPI in the future are likely to be far less smooth than shown in the charts here. That is particularly true in the case of South Australia, which is not only a smaller State, but one for which much of the relevant data must be estimated, rather than measured directly.

Forecasting growth rates based on a point-to-point comparison of results can amplify that volatility. **For that reason Deloitte Access Economics recommends that it is better to concentrate on the longer running underlying trends indicated in Chart 6.5.**

Those results suggest a period of relatively soft growth in wages for utilities workers in South Australia, with much of that weakness estimated to have emerged over the course of 2015. That weakness comes amid an easing of competition for workers emerging from both the construction and mining sectors, which will help to reduce wage pressures in the utilities.

It is also a reflection of relatively weak business investment in the State. Although business investment in South Australia recently hit a record high, that is off a rather low base. With businesses reluctant to expand their capacity, that suggests less demand for the electricity and gas needed to power growth in South Australia's industrial heartland. Indeed, Alinta Energy's announcement that it will close two power stations in the State was partly driven by weakness in demand from industrial customers.

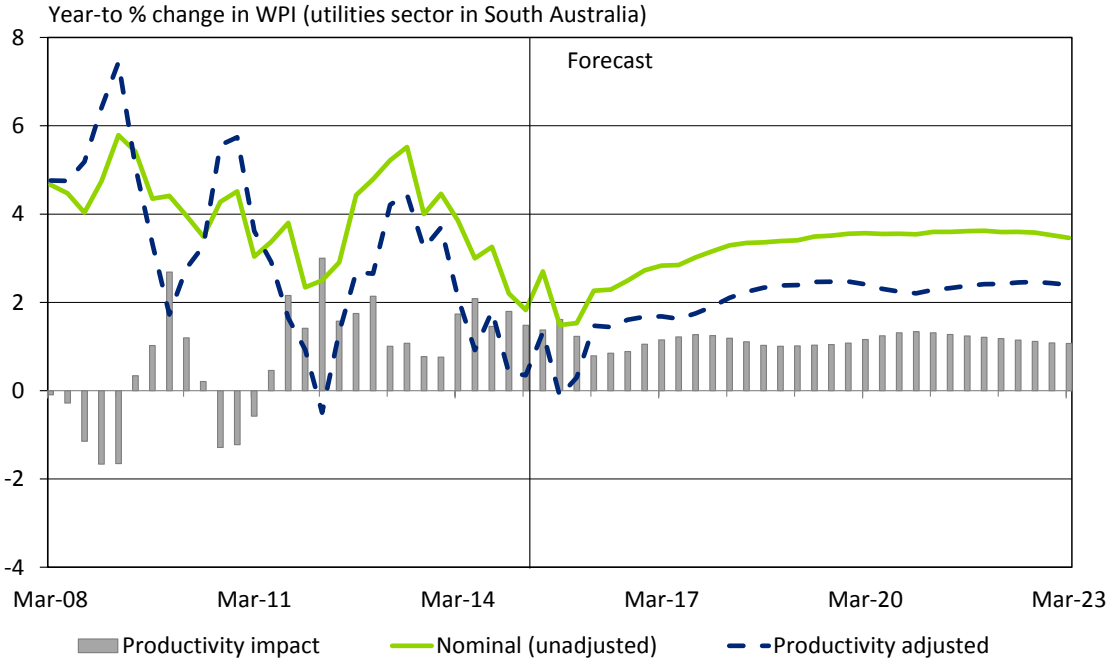
Chart 6.4: Adelaide electricity prices



Source: ABS, 6401.0 Consumer Price Index, Australia

Chart 6.5 shows that the forecast easing in the near term represents a continuation of the easing trend that has already been seen in the latest data.

Chart 6.5: South Australia's utilities WPI forecasts

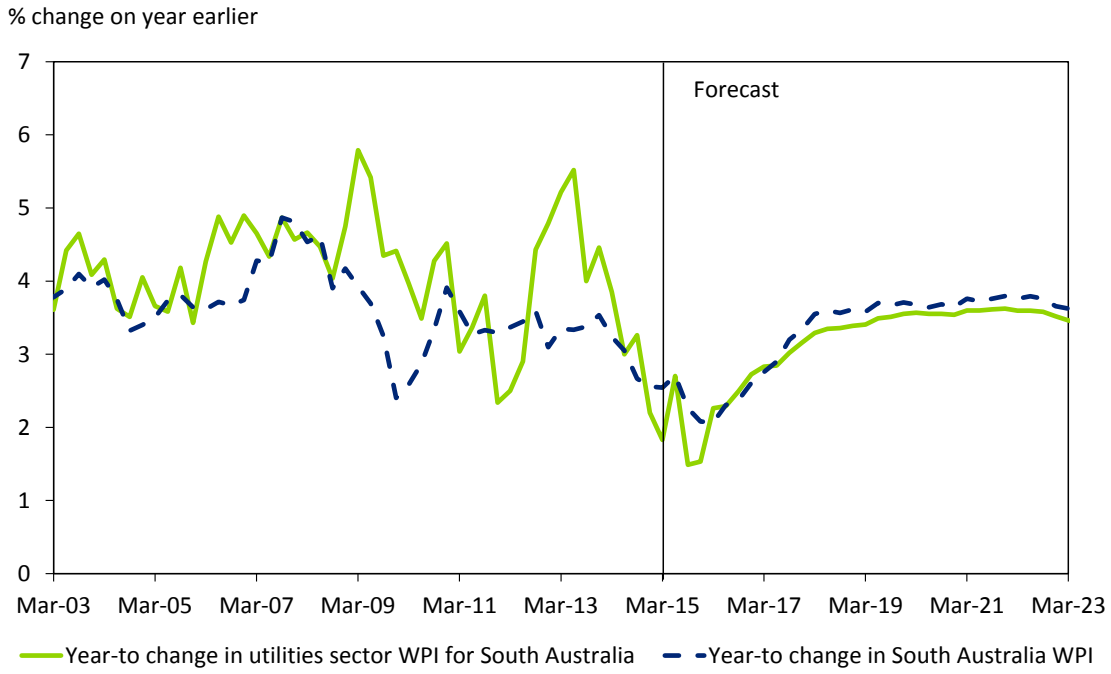


Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

Utilities sector wages are predicted to slightly underperform matching wage gains for the South Australian economy as a whole in the near term as well as later in the forecast period, following their relative over performance over recent years.

The underperformance later in the forecast period is consistent with a relative underperformance of national utilities wages over that period.

Chart 6.6: South Australia utilities forecast comparison



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

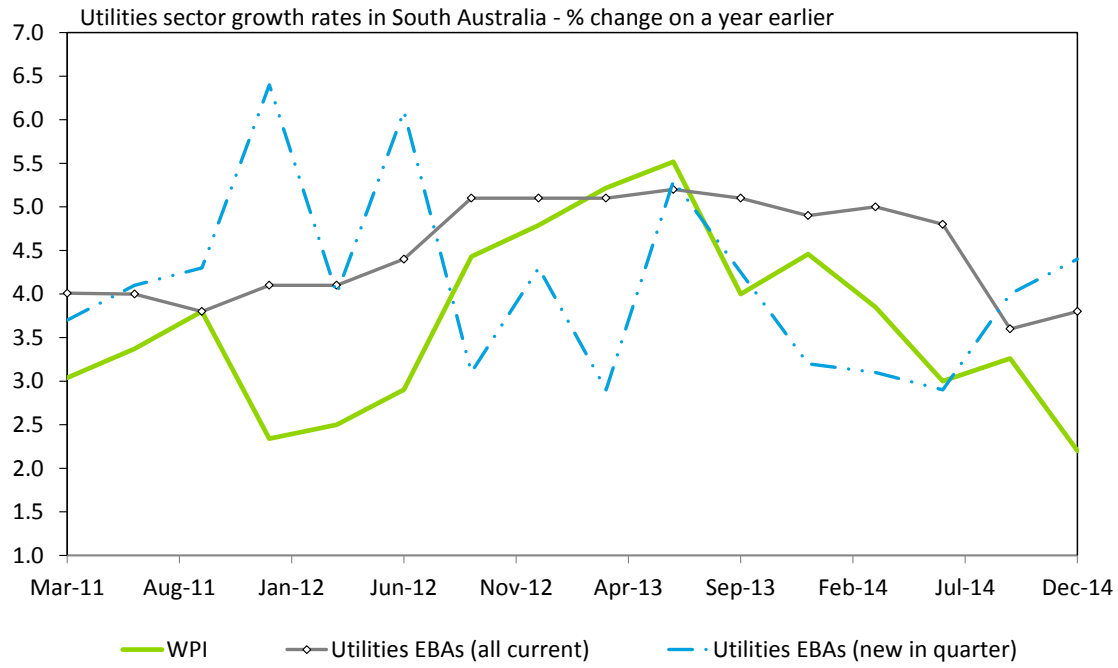
6.2.2 Comparison with EBA outcomes

Chart 6.7 compares the growth in the WPI for South Australia's utilities sector with partial results from South Australia's Enterprise Bargaining Agreements maintained by the Department of Employment.

Wage growth in new EBAs is continuing to show an uptick in wage rises in recent quarters, following a prolonged period of easing growth since mid-2013.

That appears to have helped steady the growth across all in-force agreements in the latest data, which has also picked up very slightly following a notable reduction in the previous quarter. That said, overall wage growth across all in-force agreements remains lower than has been seen for a number of years.

Chart 6.7: Comparative measures of wage growth in South Australia utilities



Source: ABS, Department of Employment

6.3 The construction sector

South Australia' construction sector has been struggling to keep pace with its national counterpart for some time now, with that gap evident both in activity and in wage growth over time.

In contrast to the very strong conditions being seen in a number of other jurisdictions, the outlook for **housing construction** in South Australia is relatively moderate despite low interest rate cuts. A weak rate of population growth in the State is an additional important factor weighing on the outlook for housing construction.

Indeed, after an earlier burst of speed, the forward indicators of housing construction in South Australia are looking more pedestrian. Housing finance has levelled off and has been close to flat over the past year, while housing prices in Adelaide have risen only modestly. Residential building approvals have been trending downwards for the past twelve months, suggesting a softening near term outlook for housing construction after an earlier period of strength.

Non-residential construction is also facing a relatively poor outlook over coming years. In part that reflects an economy in which businesses aren't looking too keen to invest in new capacity.

South Australia's **engineering construction** sector is facing a familiar foe: a pipeline filled with promise, but an apparent inability to convert that pipeline into meaningful projects. Currently, the list of 'possible' projects recorded in Deloitte Access Economics' *Investment Monitor* database is worth billions; and there are billions more still sitting in projects under consideration. The latter group includes a $3.2 billion open cut coal mine, and the highly anticipated Central Eyre Iron Project worth $4.5 billion.

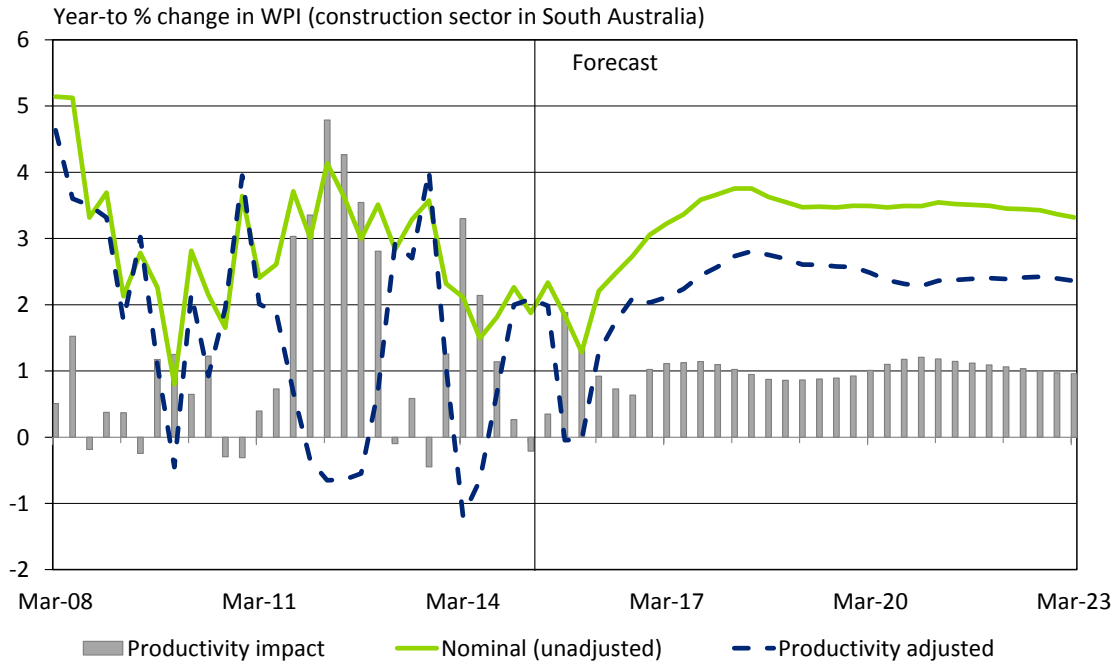
Prices remain a significant challenge but the Central Eyre project may yet avoid the scrap heap upon which so many of its regional contemporaries lie, as it offers a higher quality product that is (in theory) less vulnerable to price fluctuations.

To put the potential of the latter project into perspective, if successful it could be worth more to South Australia than its beer, wine and wheat industries combined.

As far as existing projects go, these continue to be led by the $514 million Port Pirie project, which recently added the installation of an $86 million air separation unit to the project schedule, and the $408 million Southern Expressway development, that is due to be open to road users later in the year. The $439 million Snowtown wind farm was also completed in recent months.

The overall outlook for South Australia's construction sector is therefore relatively weak in the near term, meaning the outlook for wage growth in the sector is also relatively modest.

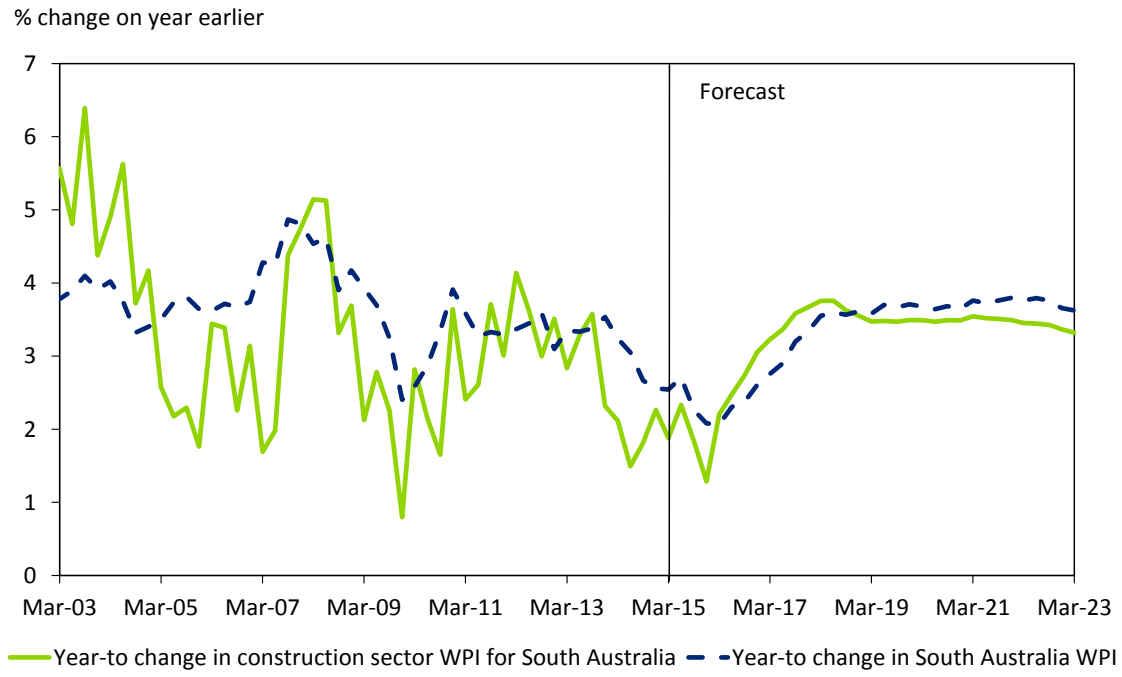
Chart 6.8: South Australia's construction WPI forecasts



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

Despite the easing in construction sector wage growth that is expected in the near term, the weakness in utilities sector wage growth is expected to contribute to growth in construction sector wages over the next three years. Construction wage growth is expected to return to more average growth rates of around 3% over the next three years.

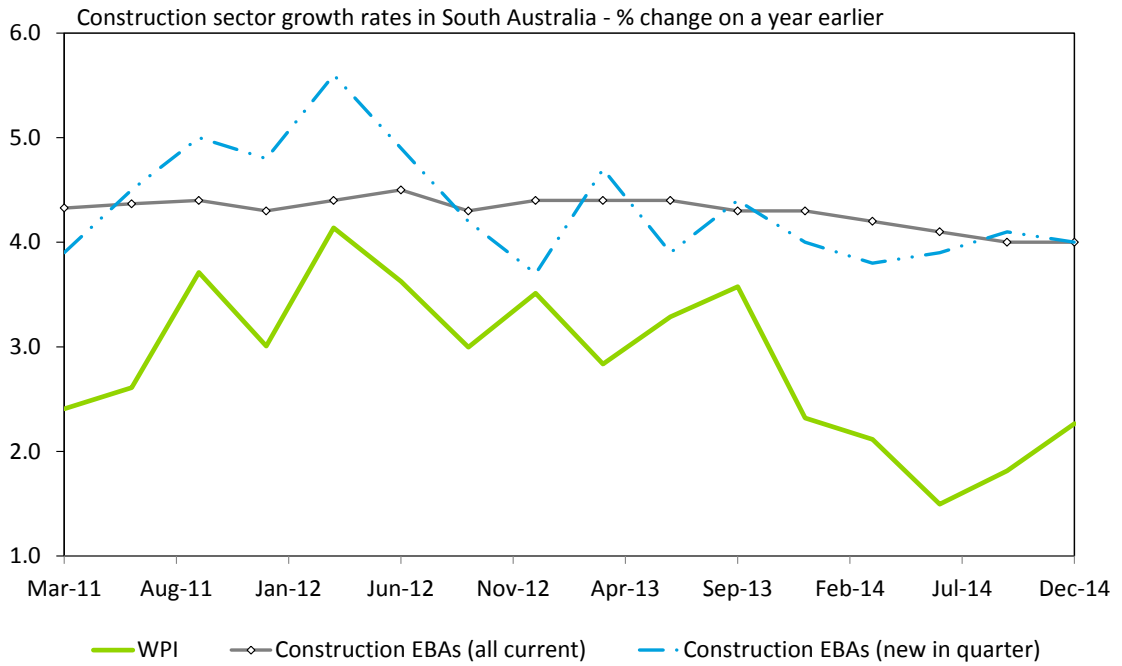
Chart 6.9: South Australia construction forecast comparison



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

Wage growth under EBAs in South Australia's construction sector have generally tracked well above broader industry wage trends. There has not been much evidence of further easing in wage growth under EBAs in recent quarters, but wage growth in new agreements is down notably from the higher rates recorded in early 2012. Wage growth under all agreements has also eased slightly over the same period but remains higher than indicated by the WPI.

Chart 6.10: Comparative measures of wage growth in South Australia construction



Source: ABS, Department of Employment

While different degrees of bargaining power among employees will doubtless have played a factor in that gap, it may also suggest that there remains at least some pressure on broader construction wage growth to pick up.

While Deloitte Access Economics expects weakness in the near term for construction wages, we do expect some bounce back in construction sector wage growth after the end of 2015.

6.4 Summary results

Forecasts for sectoral wage growth in South Australia are shown in Table 6.1. Forecasts include real and nominal WPI, and real and nominal productivity adjusted WPI.

Table 6.1: South Australia's wage forecasts

Financial year changes in South Australia nominal Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	2.6	2.2	2.7	3.4	3.6	3.7	3.7
Utilities	2.5	1.9	2.7	3.2	3.4	3.5	3.6
Construction	2.1	2.0	3.1	3.7	3.5	3.5	3.5

Financial year changes in South Australia real Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	1.1	0.3	0.0	0.9	1.2	1.2	1.2
Utilities	1.0	0.0	0.1	0.7	1.0	1.1	1.1
Construction	0.6	0.1	0.4	1.2	1.1	1.1	1.0

Financial year changes in South Australia nominal productivity adjusted Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	1.5	1.5	2.1	2.6	2.6	2.5	2.5
Utilities	1.0	0.8	1.6	2.0	2.4	2.4	2.3
Construction	1.7	0.7	2.1	2.6	2.7	2.5	2.3

Financial year changes in South Australia real productivity adjusted Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	0.0	-0.4	-0.5	0.2	0.2	0.1	0.0
Utilities	-0.5	-1.1	-1.0	-0.4	0.0	0.0	-0.2
Construction	0.2	-1.1	-0.5	0.2	0.3	0.1	-0.1

Source: ABS, Deloitte Access Economics' labour cost model

7 Northern Territory wage growth forecasts

This chapter sets out the projections for labour costs in the utilities sector in the Northern Territory, and provides additional Territory level projections for the construction industry in the Northern Territory. See Appendix A for further technical notes.

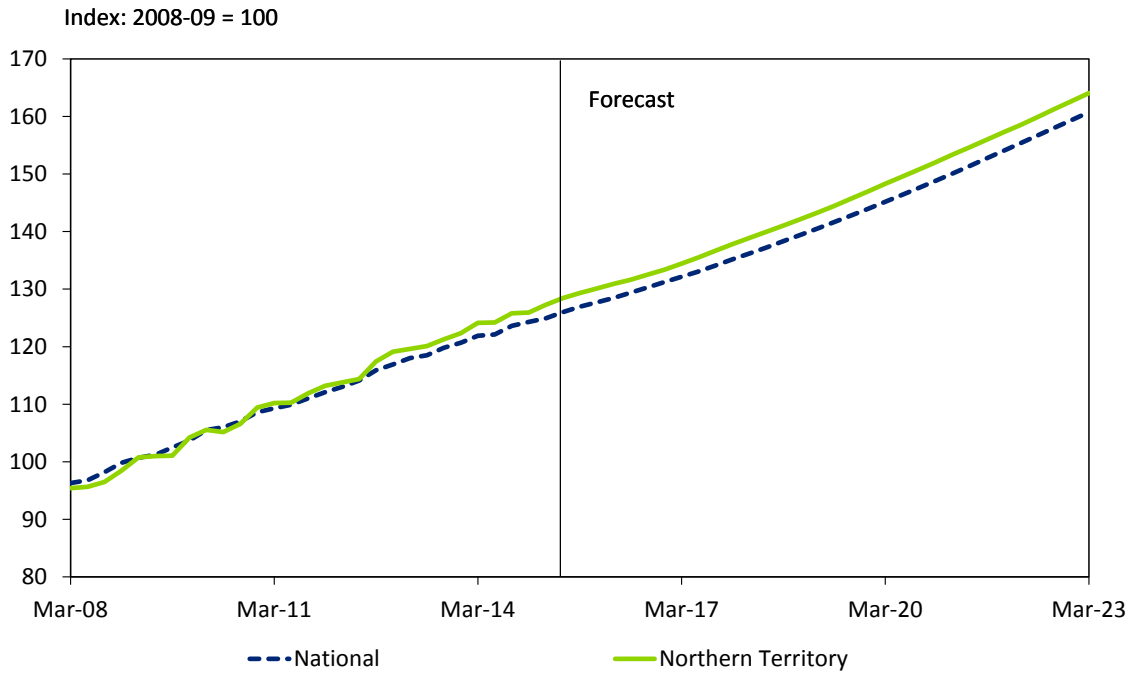
7.1 Territory trends

The Northern Territory economy has benefited of late from large investments in the resource sector. In particular, the Ichthys LNG project which got under way in 2012 and has a total spend of around $34 billion (or around one and a half times the Territory's annual output), has contributed to economic output growth in the Territory.

As a result the growth in the latter has been consistently stronger than for the rest of Australia. These projects have fuelled demand for labour in the construction sector and other related sectors, including retail trade and housing. This has placed pressure on other sectors of the economy, raising labour costs.

As Chart 7.1 below shows, wages in the utilities sector have been growing faster than the national average since late 2010, with a more considerable gap opening up in 2012 as the Ichthys LNG project drew in more workers.

Chart 7.1: Utilities sector WPI forecasts – national and Northern Territory



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

The Territory is forecast to experience stronger than average economic growth over the medium term. This will work to keep the labour market tighter, placing more pressure on wage growth, which as Chart 7.1 above shows, sees the gap between Territory and National utility sector wages continue to grow.

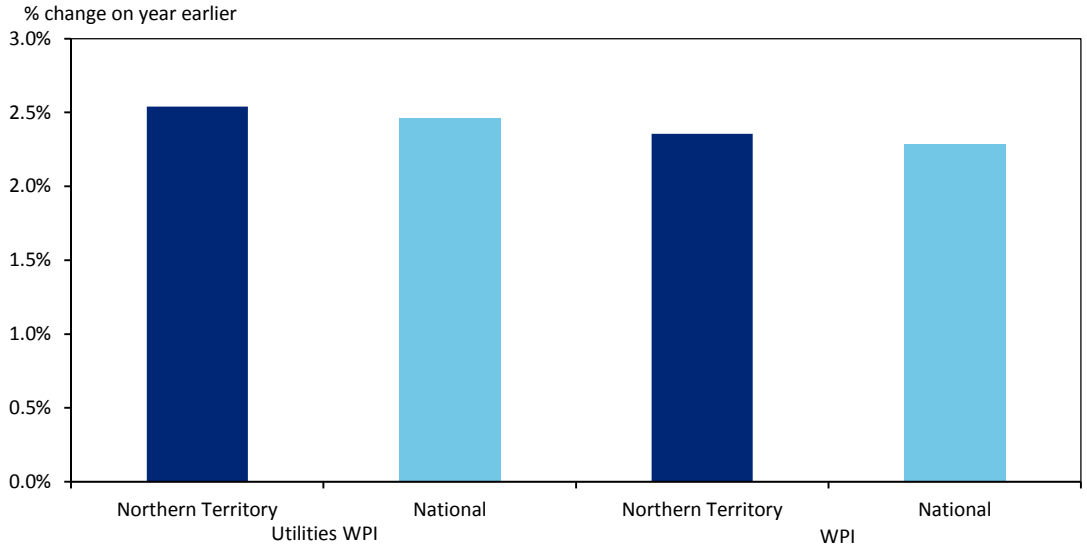
7.2 The utilities sector

Chart 7.2 below compares wage growth in the Northern Territory utilities sector (as estimated by Deloitte Access Economics) against wage growth across the Northern Territory economy, the Australian utilities sector, and the broader Australian economy.

Wage growth in the Territory's utilities sector is estimated at 2.5% over the 12 months to March 2015. This was the same as average wage growth across the Australian utilities sector over the same period, but slightly more than wage growth across in the Territory (2.4%) and Australian (2.3%) economies over that same period.

The small wage growth differential between the Northern Territory and Australia is likely to compress further over time as the resource construction boom which has been placing a premium on labour in the Territory phases out.

Chart 7.2: Comparative WPI growth rates in 12 months to March 2015



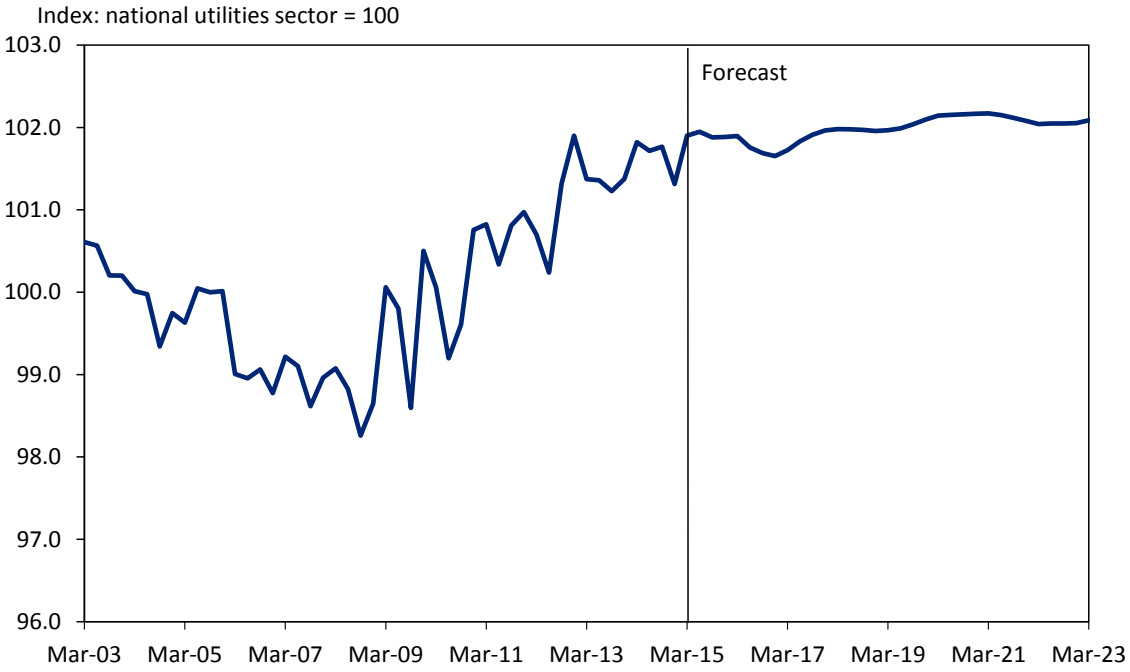
Source: ABS, catalogue number 6345.0, special request and Deloitte Access Economics Wage Model

Wages in the Northern Territory utilities sector have increased over the last five years relative to the national utilities sector (Chart 7.3). Those relative gains are forecast to level out over the medium term. That return to wage growth in line with national trends in the utilities sector is due to the relative outperformance of the Northern Territory economy subsiding as resource investment reduces.

As always, it should also be noted that volatility in the State indices implies that actual movements in State-by-industry WPI in the future are likely to be far less smooth than shown in the charts here. That is particularly true in the case of the Northern Territory, which is not

only a much smaller jurisdiction, but one for which much of the relevant data must be estimated, rather than measured directly.

Chart 7.3: Relative utilities WPI forecast for Northern Territory



Source: ABS, Deloitte Access Economics' labour cost model

Forecasting growth rates based on a point-to-point comparison of results can amplify that volatility. **Deloitte Access Economics recommends that it is better to concentrate on the long run underlying trends indicated in Chart 7.5.**

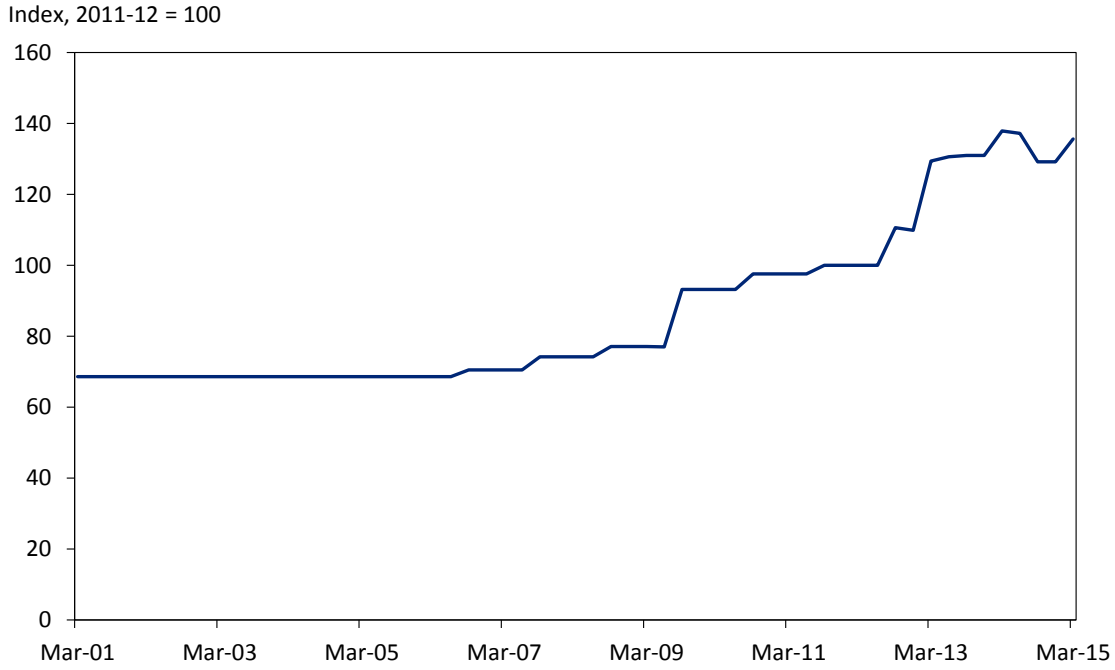
Output in the Northern Territory's utilities sector has been steadily declining as a share of the national total for the last two decades. This relative decline is due to faster rates of growth in other parts of Australia compared to the Northern Territory.

Employment growth in the utilities sector is forecast to pick up from mid-2015 along with continued growth in the utilities sector. This should see wage growth pick up in the short term from its current low levels, but will fall away as investment in other sectors of the economy reduces which increases the supply of available labour

As Chart 7.4 below shows, Darwin has experienced considerable rises in electricity prices since 2009. The removal of the carbon tax coincided with a small fall in prices in 2014, but much of this reduction was soon reversed.

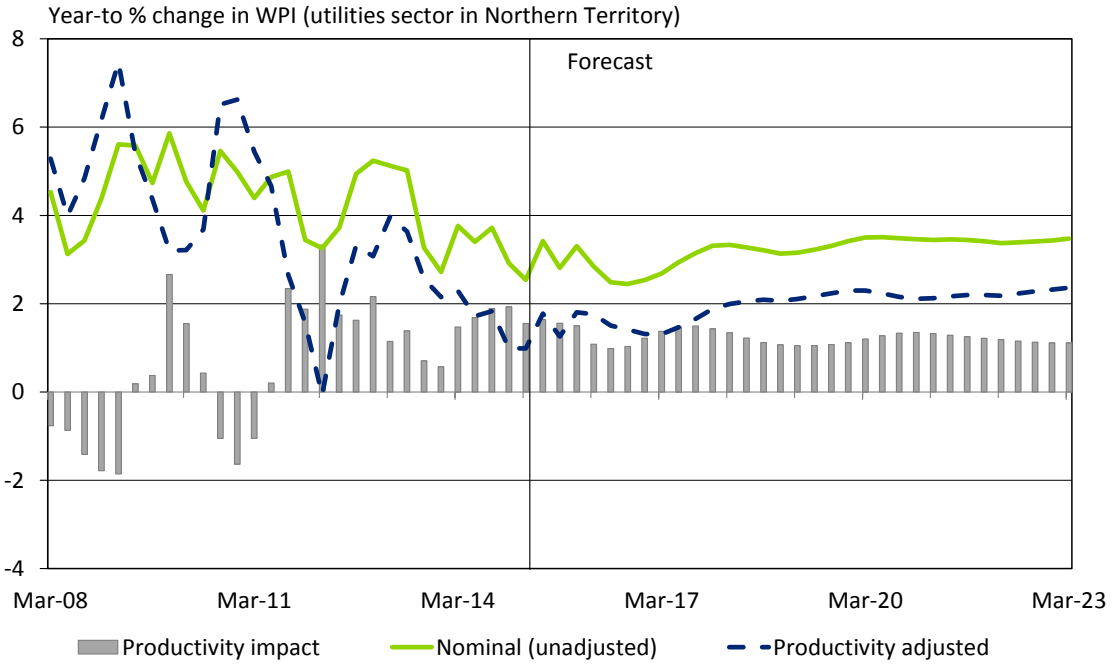
Looking ahead, Deloitte Access Economics expects moderate price growth to return. Increased costs associated with the regulated networks will contribute to price rises. These include increased expenditure on asset condition monitoring and preventative maintenance.

Chart 7.4: Darwin electricity prices



Source: ABS, 6401.0 *Consumer Price Index*, Australia.

Chart 7.5: Northern Territory utilities WPI forecasts



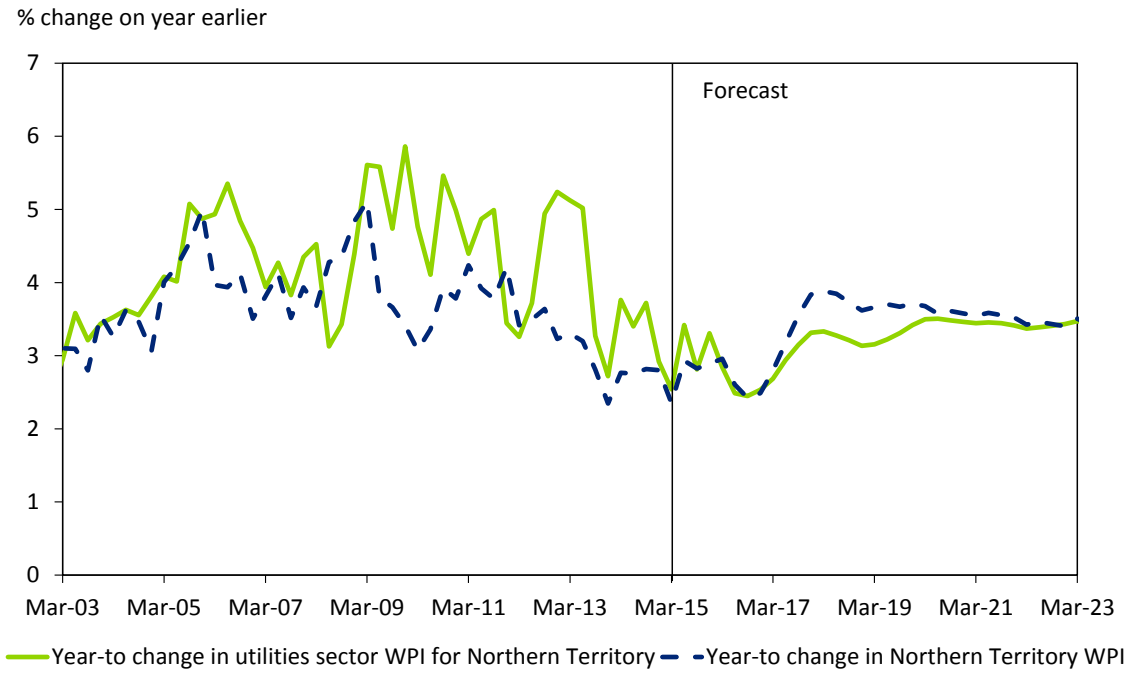
Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

Chart 7.5 above shows that nominal wage growth in the Northern Territory utilities sector is estimated to have moderated recently in line with weaker wage growth across the broader economy. Recently large increases in resource investment have been seen in the Northern Territory – with most of this investment being tied up in the Ichthys LNG project. As that project comes to an end and with limited other investment likely due to lower global

commodity prices, there will be a reduction in the demand for labour. This will act to keep downwards pressure on wage growth across the Territory.

The positive long term outlook for the Northern Territory utilities sector should see increased demand for labour in the sector – leading to an increase in wage growth over the long term. However, as Chart 7.6 below shows, wage growth in the utilities sector is likely to run at a lower rate than for the Northern Territory economy as a whole. Utilities sector WPI growth is forecast to reach a low of 2.4% per annum in mid-2016, before rising to around 3.5% growth from 2020 to the end of the forecast period.

Chart 7.6: Northern Territory utilities forecast comparison



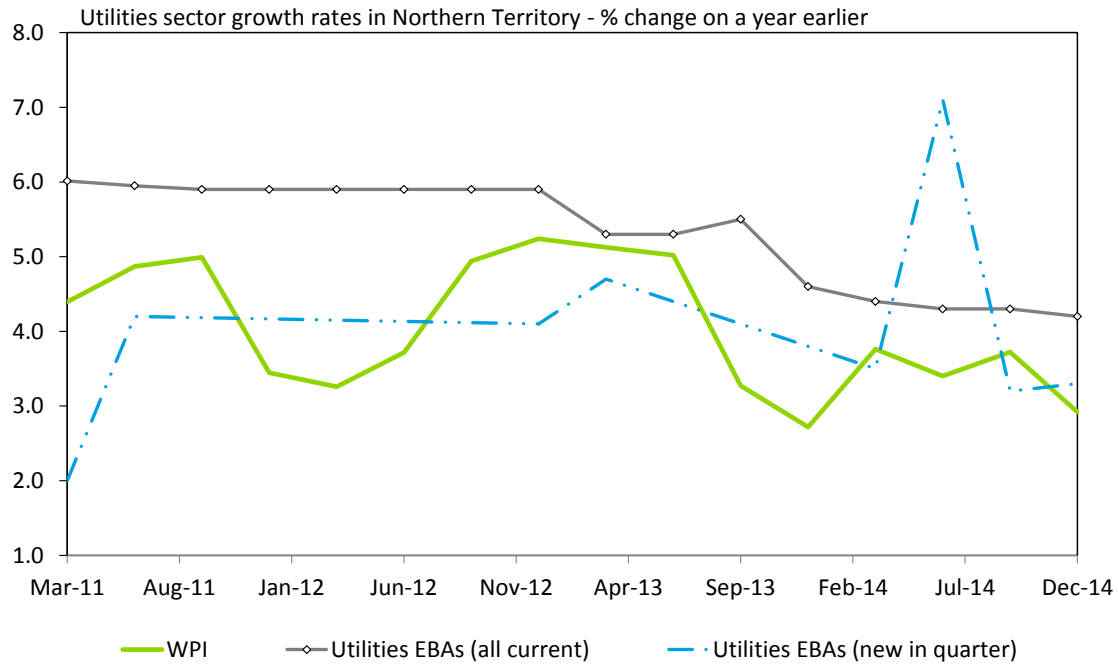
Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

7.2.2 Comparison with EBA outcomes

Chart 7.7 compares the growth in the Northern Territory's utilities sector WPI with partial results from Enterprise Bargaining Agreements. Except for a large spike in mid-2014, new EBA wage growth outcomes in the utilities sector have been steadily falling since early 2013. This has seen the overall level of wage growth in the utilities sector EBA's fall from 6.0% at the beginning of 2011 to be around 4.5% in December 2014.

Both the utilities sector and overall EBA wage growth have been trending down recently, however wage growth in the EBAs for the utilities sector still remain slightly above the wage growth in the broader Territory economy.

Chart 7.7: Comparative measures of wage growth in Northern Territory utilities



Source: ABS, Department of Employment

7.3 The construction sector

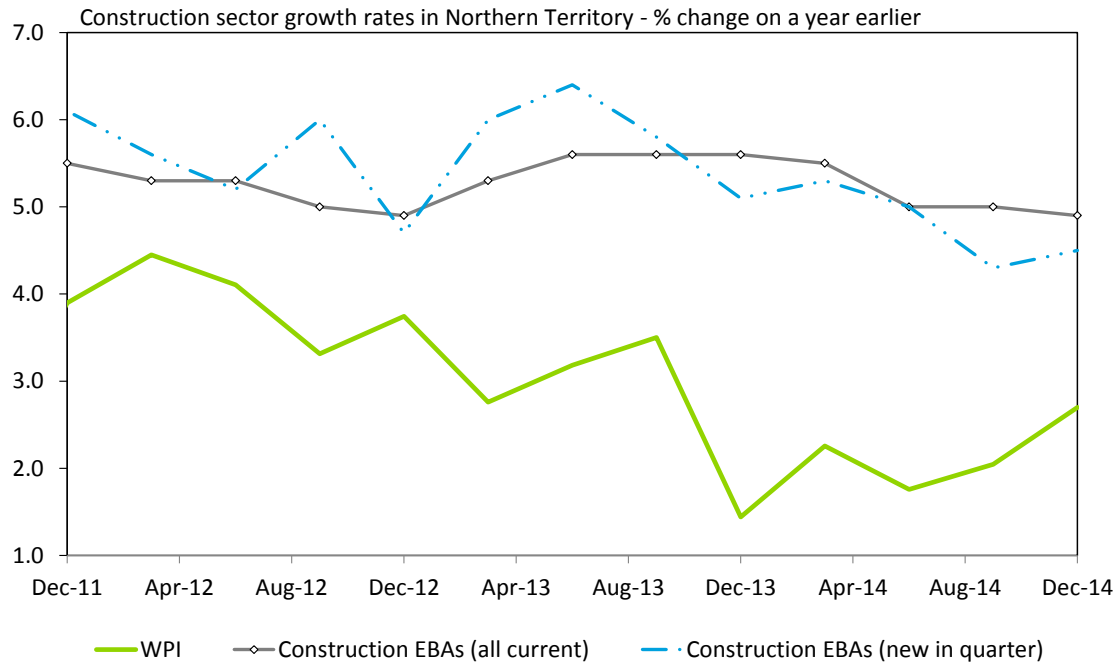
The mining boom of the last decade has directly benefited the Northern Territory construction sector. Population and economic growth have consistently outpaced that in the rest of the Australia, increasing the demand for construction services across residential, commercial and engineering construction. While some of this increased construction is set to finish as the investment phase of the resource boom comes to an end, solid population growth should see growth in **residential building construction** remain robust over the near term.

Due to the strong presence of the resource sector, **engineering construction** accounts for a larger share of the Northern Territory's economic activity than it does for other jurisdictions. However, with most of the investment due to a single project and low oil and gas prices reducing the prospect of future investment, the outlook for engineering construction in the Territory is looking weak. While there are some projects waiting in the wings, including the $13 billion Greater Sunrise LNG project and the smaller $1.3 billion Crux LNG and $2.1 billion Tassie Shoal LNG projects, they are not of a large enough scale to completely replace the activity generated by the Ichthys LNG project when it ends.

The outlook for **commercial construction** also looks in trouble after recent solid performance. The current $1 billion worth of projects now underway are rapidly approaching their completion date, and there is no new work of note to maintain the current rate of investment.

Wage growth under new and current construction sector EBAs has been consistently higher than the growth in the Wage Price Index for the construction sector as a whole (Chart 7.8). This reflects the strength of the union movement in the Northern Territory construction sector. Wage growth from new EBAs, a barometer for future wage growth, has come down since mid-2013 to be around 4.5% at the end of 2014.

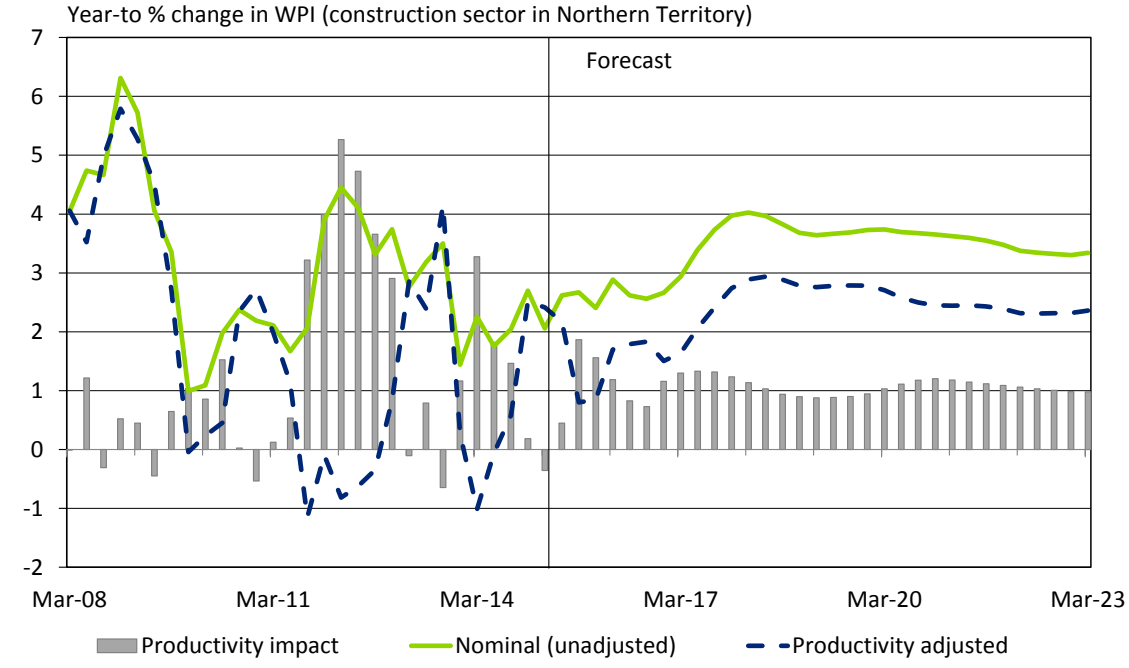
Chart 7.8: Comparative measures of wage growth in Northern Territory construction



Source: ABS, Department of Employment

The forecasts for construction sector wages show nominal wage growth stabilising over the near term due to reduced activity in the construction sector, then increasing over the medium term as activity picks up again. The pickup in wage growth largely reflects strong underlying demand for labour in the sector over the medium term, with only modest productivity improvements expected.

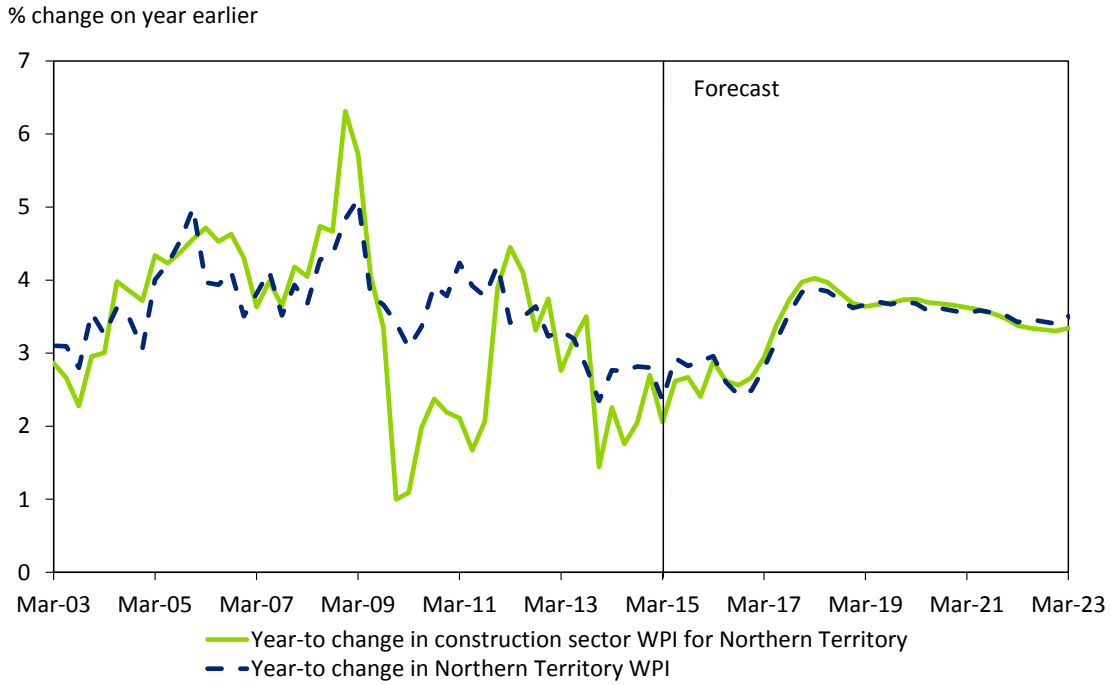
Chart 7.9: Northern Territory construction WPI forecasts



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

As Chart 7.10 shows, the resulting forecasts for construction wages in the Northern Territory see wage growth slowly increasing over the medium term, returning back to the level of wage growth projected to be evident in the overall Territory economy.

Chart 7.10: Northern Territory construction forecast comparison



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

Looking further forward, Tasmania's construction sector is expected to see wage growth returning close to its longer term average by mid-2020.

To the degree that skills are transferrable from the construction sector to the utilities, that picture of moderate wage pressure gradually fading over the next few years will take some pressure off wage developments in the Northern Territory's utilities sector.

7.4 Summary results

Forecasts for sectoral wage growth in the Northern Territory are shown in Table 7.1. Forecasts include real and nominal WPI, and real and nominal productivity adjusted WPI.

Table 7.1: Northern Territory wage forecasts

Financial year changes in Northern Territory nominal Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	2.7	2.8	2.7	3.8	3.7	3.7	3.6
Utilities	3.1	2.9	2.7	3.3	3.2	3.4	3.5
Construction	2.4	2.6	2.9	3.9	3.7	3.7	3.6

Financial year changes in Northern Territory real Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	1.3	0.9	0.1	1.3	1.2	1.2	1.1
Utilities	1.7	0.9	0.0	0.8	0.7	1.0	1.0
Construction	0.9	0.7	0.2	1.5	1.2	1.3	1.1

Financial year changes in Northern Territory nominal productivity adjusted Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	-2.9	1.7	0.5	1.1	2.0	2.0	2.4
Utilities	1.4	1.6	1.4	1.9	2.1	2.3	2.1
Construction	1.9	1.3	1.8	2.7	2.8	2.7	2.5

Financial year changes in Northern Territory real productivity adjusted Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	-4.3	-0.2	-2.1	-1.3	-0.4	-0.4	-0.1
Utilities	0.0	-0.3	-1.2	-0.5	-0.3	-0.1	-0.3
Construction	0.5	-0.6	-0.9	0.3	0.4	0.3	0.0

Source: ABS, Deloitte Access Economics' labour cost model

8 Australian Capital Territory wage growth forecasts

This chapter sets out the projections for labour costs in the utilities sector in the Australian Capital Territory (ACT), and provides additional State level projections for the construction industry in the ACT. See Appendix A for further technical notes.

8.1 Territory trends

Due to its government and public service employment base, the ACT economy often moves against national economic cycles. Unlike other services-based economies on the east coast, the ACT enjoyed many of the benefits of the mining and resources boom, with limited exposure to the downsides. The strong budgetary position created during this period saw an increasing propensity for the Commonwealth Government to spend, and with it, an expansion in the Federal public sector.

Yet the cycle has moved on, and the present day budget situation is a stark contrast, with the focus has firmly moved to austerity measures and public sector downsizing.

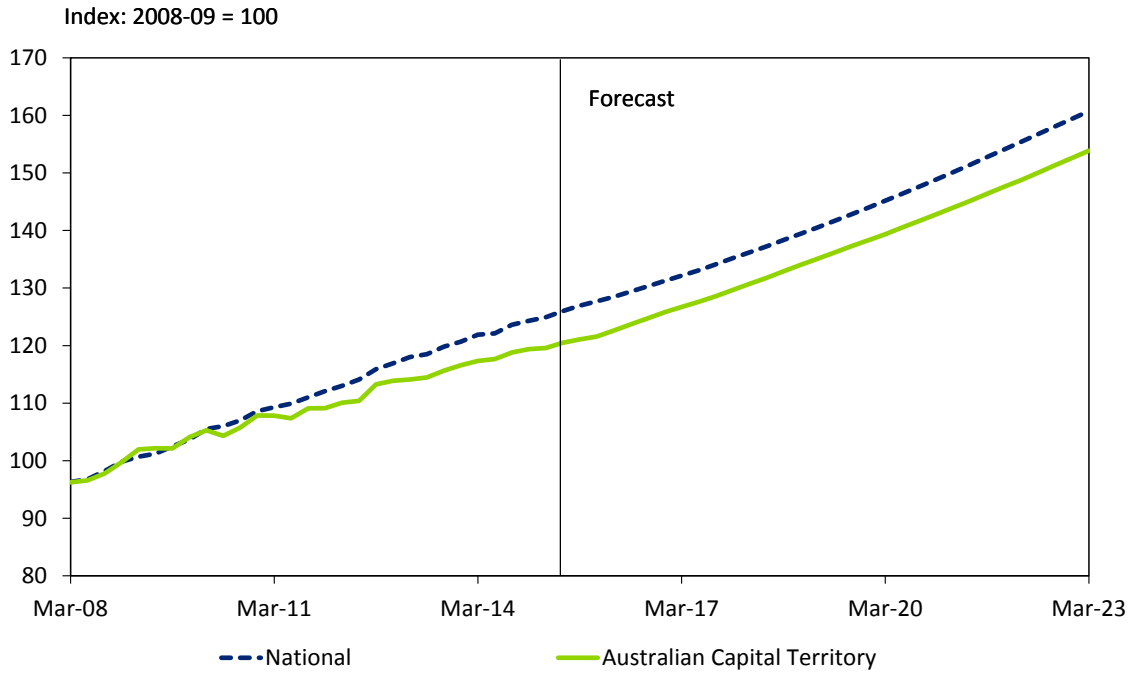
Figures from the ABS show that the 7,200 Federal job losses combined with the 300 Territory Government job losses in 2014 resulted in the steepest employment downturn in the ACT since 1996, though job levels have stabilised through 2015 to date. The current employment level is the same as that three years ago.

Unemployment in the ACT currently sits at 4.3%, modestly above the sub-4% historical rates. There has also seen a **slowdown in population growth** since 2012, particularly among the young professional segment, with less people moving to the ACT and more residents moving to other regions in search of work opportunities.

While the outlook for wage growth in the **utilities sector** is subdued, these wages may be likely to outpace growth in ACT economy-wide wages. The latter are anchored down by population, public sector employment and housing construction constraints. Similar to most other jurisdictions, the ACT's relative utilities WPI measure is forecast to gradually increase over the next decade — albeit underperforming against national growth rates.

As Chart 8.1 shows, the gap between national wages in the utilities sector and the ACT experienced in recent years is projected to persist into the long term. Going forward, the difference between ACT and national utilities WPI growth is driven by the relative weakness in the Territory's economic outlook.

Chart 8.1: Utilities sector WPI forecasts – national and ACT



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

While national wages in the sector are regulated, significant variance can be observed in smaller jurisdictions such as the ACT over short periods of time. Short term deviations at a State and Territory level can occur when driven by a combination of:

- **General trends in State wage growth.** Slower growing jurisdictions are likely to see slower WPI growth; and
- **One-off factors that affect a particular industry** – such as movements in a specific award level or a single EBA, or a sharp swing in demand or supply for workers in that sector and in that State.

As has been emphasised in the preceding sections of the report, there are limits to how far wage rates can diverge when moving from the short term to the longer term. Large and lingering relative swings between State and Territory wages tend to be inhibited by competition between jurisdictions and industries and by the ability of workers to act and take-up better paying jobs elsewhere.

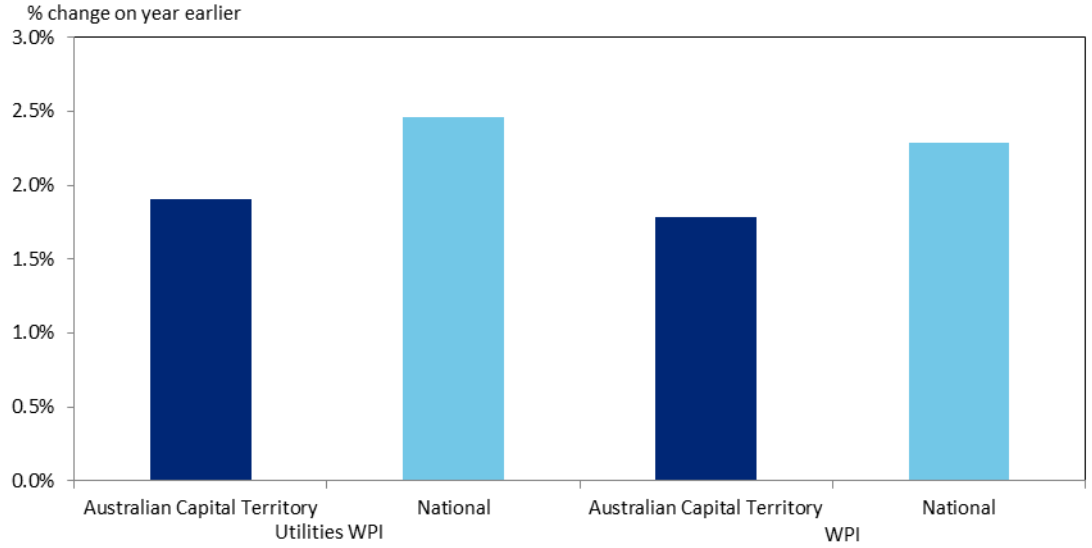
8.2 The utilities sector

As Chart 8.2 illustrates, wage gains in the ACT have lagged behind national wage gains recently, largely due to a correction from previous periods where wage growth in the public sector were not matched by productivity improvements.

The ACT's WPI growth over the past year was 1.8%, whereas the national WPI grew at 2.3% in the same period. This underperformance extended to the ACT utilities sector WPI, which – on Deloitte Access Economics estimates – diverged from national trends. The most recent estimate indicates that ACT's utilities WPI grew at 1.9% in the 12 months to March 2015,

below national utilities WPI growth of 2.5%. This differential in performance may reflect the Territory's modest economic and job performance of recent years.

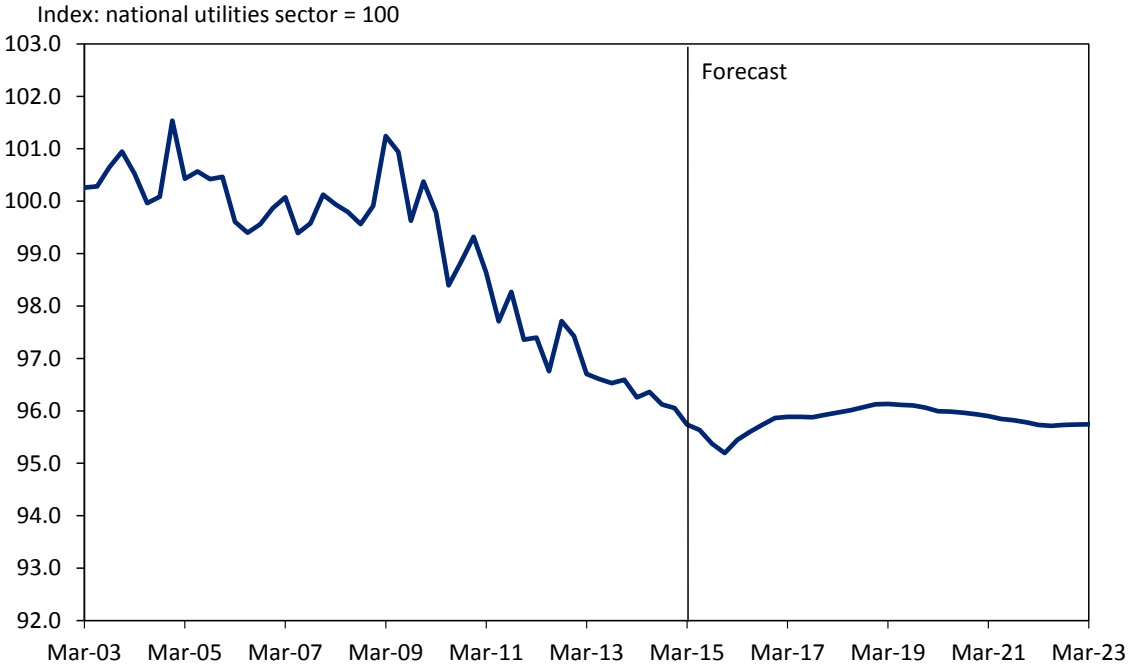
Chart 8.2: Comparative WPI growth rates in 12 months to March 2015



Source: ABS, catalogue number 6345.0, special request and Deloitte Access Economics Wage Model

As Chart 8.3 shows, the ACT is estimated to have seen wages in the utilities drop sharply relative to other States during the GFC. The utilities WPI in the ACT is estimated to have progressively declined against other jurisdictions between 2012 and 2015.

Chart 8.3: Relative utilities WPI forecast for ACT



Source: ABS, Deloitte Access Economics' labour cost model

The short term outlook for the ACT continues that trend of recent years. As the impacts of the public sector cutbacks continue to play out, the relative utilities WPI for the ACT is projected to dip further relative to national utilities wages in 2016.

The medium to longer term is, however, forecast to see a modest improvement, with housing construction, government and commercial activity picking up once more.

Despite these more favourable fundamentals, wage growth in the ACT utilities sector is likely to stabilise at a lower rate than the national average.

The volatility in State and Territory indices implies that actual movements in State-by-industry WPI in the future are likely to be far less smooth than shown in the charts presented in this report. That is particularly true in the case of the ACT, which is not only a smaller jurisdiction, but one for which much of the relevant data must be estimated, rather than measured directly.

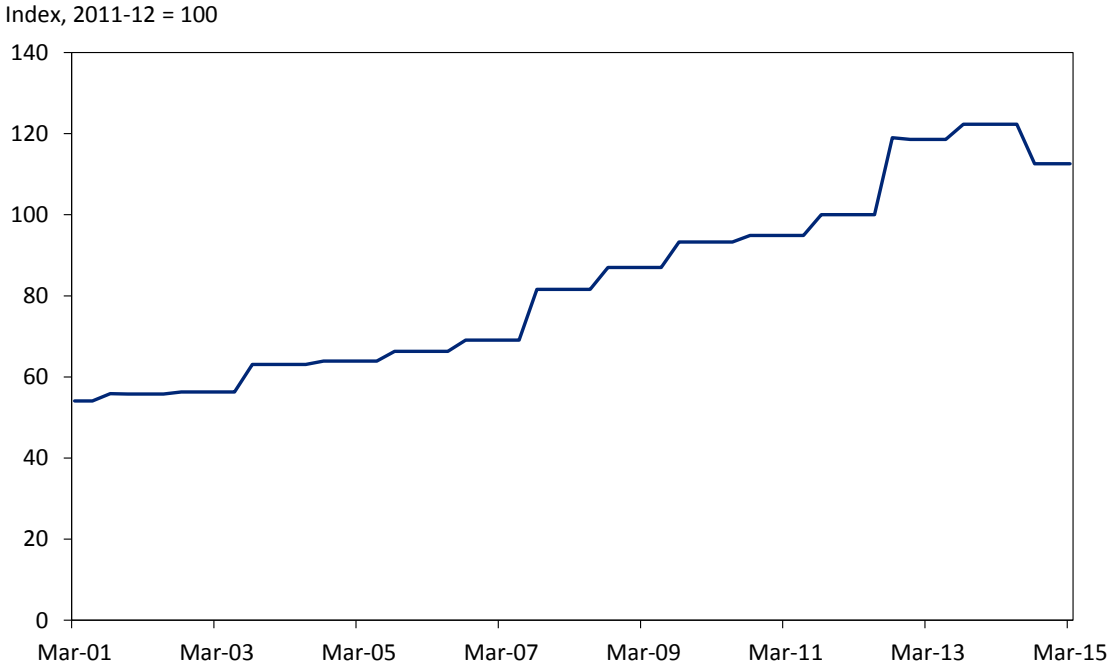
Forecasting growth rates based on a point-to-point comparison of results can amplify that volatility. **Deloitte Access Economics recommends that it is better to concentrate on the long run, underlying trends indicated in Chart 8.5.**

Output in the ACT's utilities sector has been steadily increasing as a share of its national counterpart for much of the past two decades, from 0.6% in 1993 to 0.9% in 2013. This has occurred in a period when the ACT's population rose at above national rates, triggering land releases and a sustained demand for new houses which require water and power fittings. From the record share of output in 2013, the ACT sector's share of national utilities output has declined in recent years, to 0.7% in 2015.

This is a trend that is expected to continue into the longer term. On the supply front, the already small pipeline of energy projects for the ACT has been delayed. For instance, plans by Elementus Energy to build a 26,000-panel solar farm that could power more than 1,400 homes in Uriarra has been abandoned and moved to Williamsdale (to the south of the Territory).

Coupled with the modest electricity demand outlook, output growth in the ACT utilities sector is likely to be constrained, with slow jobs growth also placing downward pressure on wages.

Chart 8.4: Canberra electricity prices



Source: ABS, 6401.0 *Consumer Price Index*, Australia.

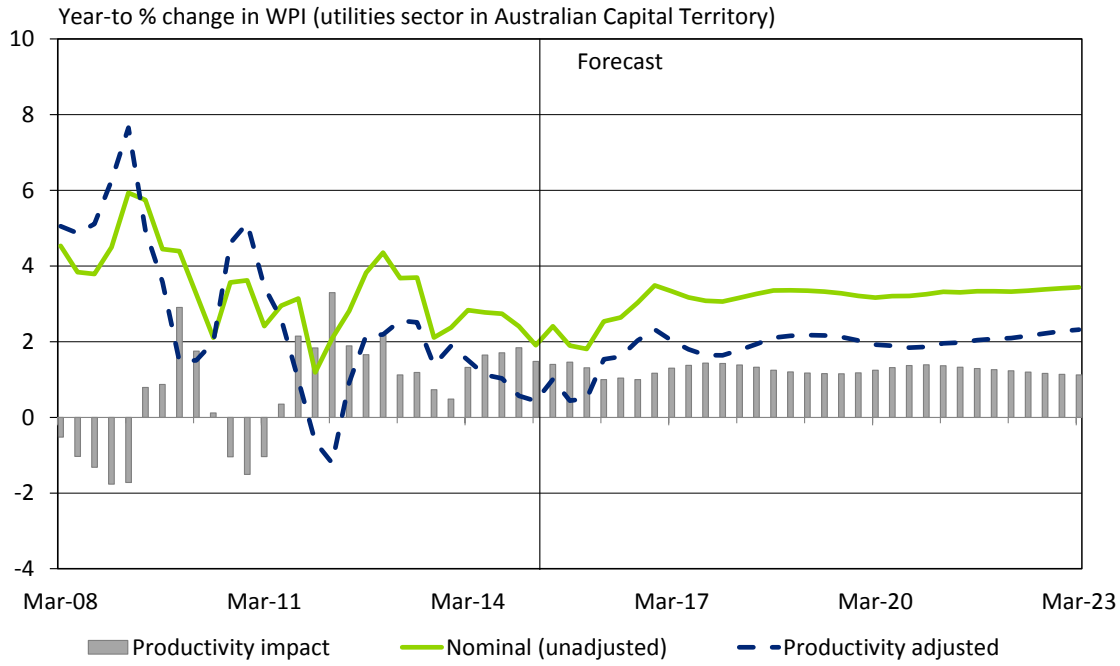
As Chart 8.4 above shows, like the other NEM regions, Canberra has experienced high price rises over the last decade and consumers have responded by curtailing their energy consumption. As expected, the removal of the carbon tax has seen a reduction in electricity prices; however, this was a one off event.

Chart 8.5 illustrates that the ACT's utilities WPI growth has fallen considerably since the highs estimated in 2008 and is forecast to moderate at just above current rates of around 3% going forward. Despite the need to replace 1,000 homes affected by asbestos, lower levels of residential construction in particular are projected to depress employment and wages in the utilities sector.

As the commodities and investment boom subsides, the long term outlook is for less demand for utilities and less competition for utilities workers – both leading to the conclusion that wage pressures emerging in the utilities sector will balance just above the prevailing levels.

Chart 8.6 shows that, after an initial dip in utilities WPI to 2.2% in mid-2016, wage growth in the sector starts to rebound in line with economy-wide wage rates. The ACT's utilities WPI is projected to outpace the ACT's overall WPI in the near term as Federal Government cutbacks and a meek housing market impact general wage trends. By the end of the forecasting period, sector and economy-wide WPI are expected to converge at the 3.5% mark.

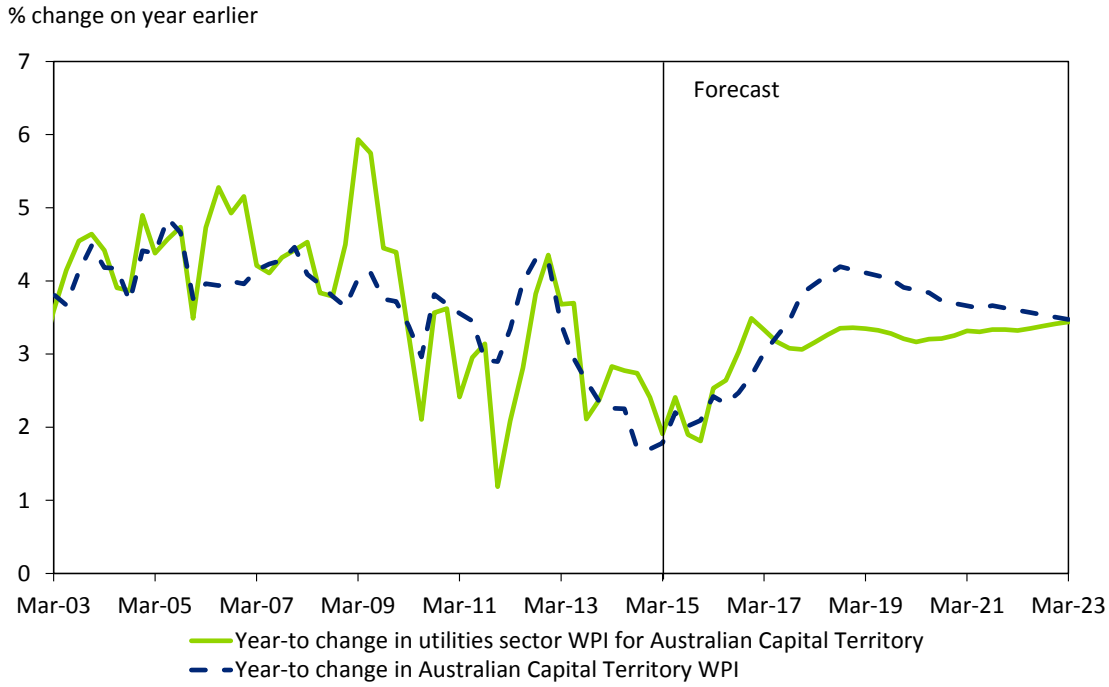
Chart 8.5: ACT utilities WPI forecasts



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

As indicated previously, that will coincide with a period where the recent strong outperformers (mainly Queensland and Western Australia) are also projected to fall back towards the national average in terms of wage growth in general and utilities wages.

Chart 8.6: ACT utilities WPI forecast comparison



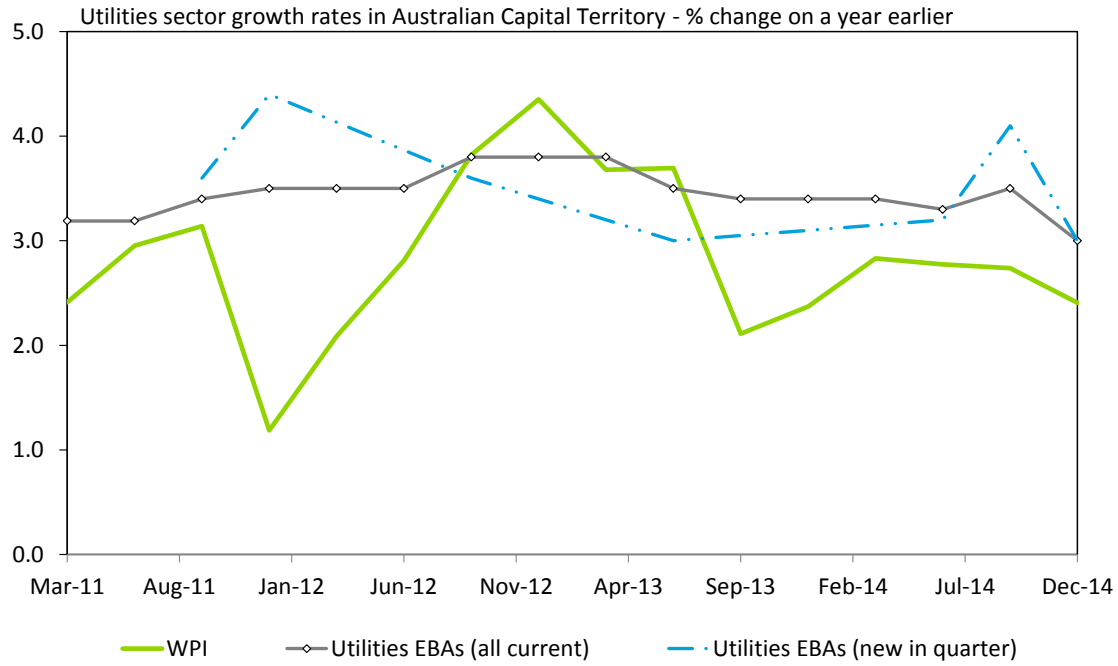
Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

8.2.2 Comparison with EBA outcomes

Chart 8.7 compares the estimated growth in the ACT's utilities sector WPI with partial results from Enterprise Bargaining Agreements. The latest data shows a continued decline in the rate of wage rises included in new EBAs in the ACT. All current utilities sector EBAs grew at 3% in late 2014 and new EBAs also recorded this rate, reflective of the recent weakness in the ACT economy as well as lower demand for utilities.

The economy-wide WPI for the ACT has trended down below the growth pattern of both utilities EBA measures. That said, as a smaller jurisdiction with an even smaller relative sector share, the ACT data for the most recent quarter covered a small number of workers. There is also a lag impact of wage bargaining in the utilities sector.

Chart 8.7: Comparative measures of wage growth in ACT utilities



Source: ABS, Department of Employment

8.3 The construction sector

After a decade of strong growth, the ACT's population growth began easing in late 2012, and it has continued to drop in the latest release of data from the ABS. Although overall population growth remains positive, there is now a net migration outflow of people moving away from the ACT in search of better job opportunities. These trends have heavily influenced outcomes for **residential housing**, with the ACT market outperforming the Australia-wide industry average until 2013.

Today, building approvals remain well down on their 2013 peak, while vacancy rates have trended upwards in recent months to their highest levels in around a decade. Specifically, residential building commencements are down 9.4% in the year to December 2014 and the number of building approvals down 37%, driven mainly by a reduction in new units, flats, apartments and townhouses.

The news is slightly better for new housing finance commitments and property prices, with both showing a recent lift – against national trends. Moreover, the Territory Government's plan to spend $160 million replacing around 350 public housing units in Red Hill ($56 million), Allawah Court in the city ($45 million), and the Karuah Dickson garden flats ($18 million) and Owen flats ($13 million) on Northbourne Avenue. However, and despite the added impact of rebuilding homes affected by asbestos, this will not be enough to keep housing construction at the elevated levels seen in recent years. Aided by the end of the Federal Government recruitment freeze, the housing construction sector is projected to hold steady at the current lower levels over the forecast horizon.

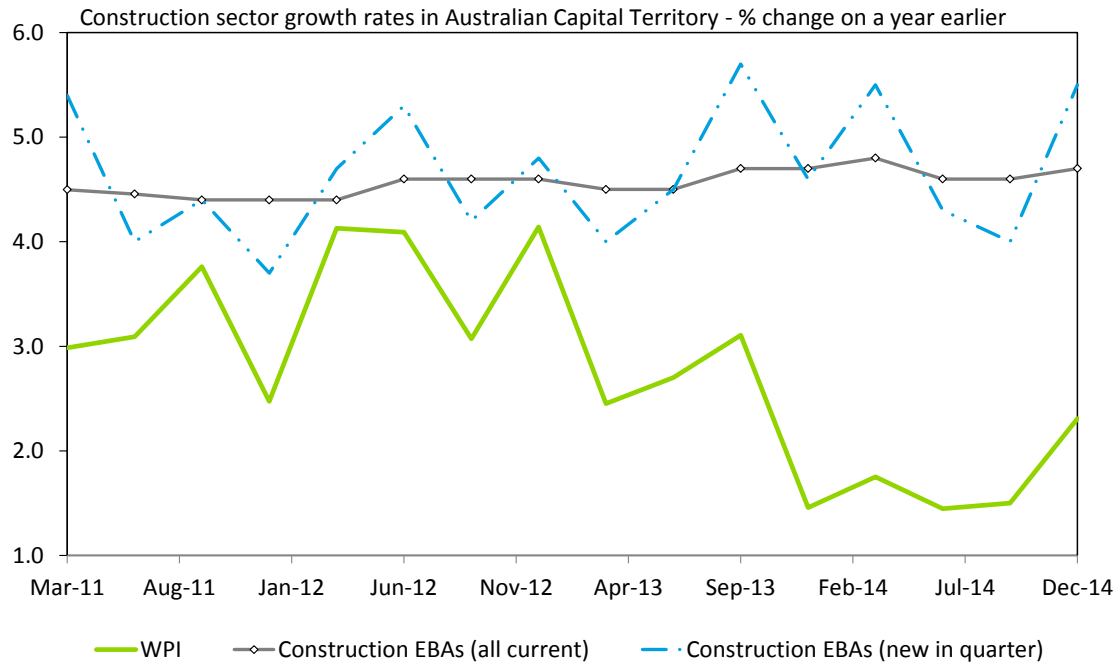
While **engineering construction** has historically taken a smaller share of activity in ACT than it does in other jurisdictions, the value of work done is up 3% over the year to March 2015. The light rail project may boost engineering construction works over the next few years.

On the other hand, **commercial construction** has been next to stagnant in recent months. Construction on a major refurbishment of the Australian Defence Force Academy and the $100 million office redevelopment on the corner of Canberra Avenue and National Circuit are nearing completion. Over the remaining months of this year, the region's first IKEA store and a $600 million business and research precinct at the Australian National University is expected to raise activity. Elsewhere, a number of smaller health and education projects, along with a proposed rejuvenation of Aquis' Casino Canberra and City South precinct are likely to see stronger commercial construction activity in the ACT over the short to medium term to 2020.

Wage growth for all current construction EBAs has remained at around the 4.5% mark observed for the past three years (see Chart 8.8). Wage growth for new EBAs, which are a barometer for future wage growth, was on the way up for the ACT after a sharp decline through most of 2014. This is likely to be on the back of the uptick across the engineering construction and commercial construction subsectors in particular.

The gap in the growth between the current construction sector WPI compared to new construction EBAs is reflective of the lagged bargaining that occurs under EBAs and strength of unions in the ACT construction sector. In comparison, the industry-wide WPI for the ACT economy was 2.4% in December 2014, recovering marginally in the second half of last year.

Chart 8.8: Comparative measures of wage growth in ACT construction

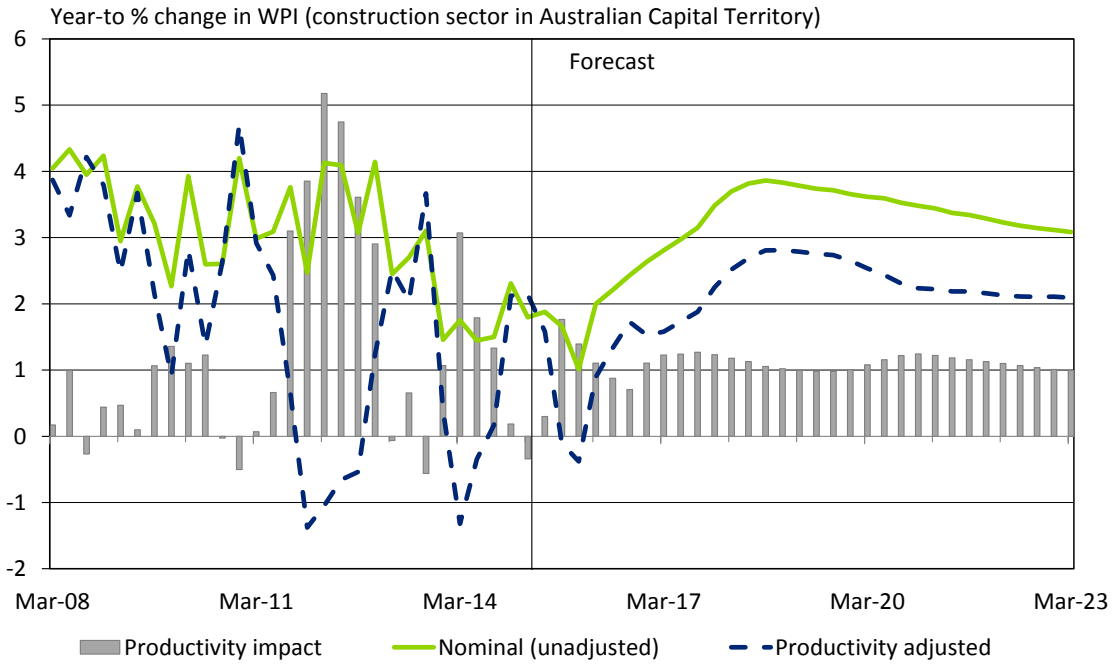


Source: ABS, Department of Employment

Turning to the forecasts, Chart 8.9 highlights that lingering weakness in construction sector wage growth, mostly stemming from the residential segment, is expected to fade. The forecast growth in wages comes from higher levels of productivity rather than strong underlying wage pressures in the sector due to expanding output. From late 2016 over the medium term, the investment and construction cycle is then projected to improve, lifting construction productivity growth to around 2.2% and wage growth to 3.4% annually by mid-2020.

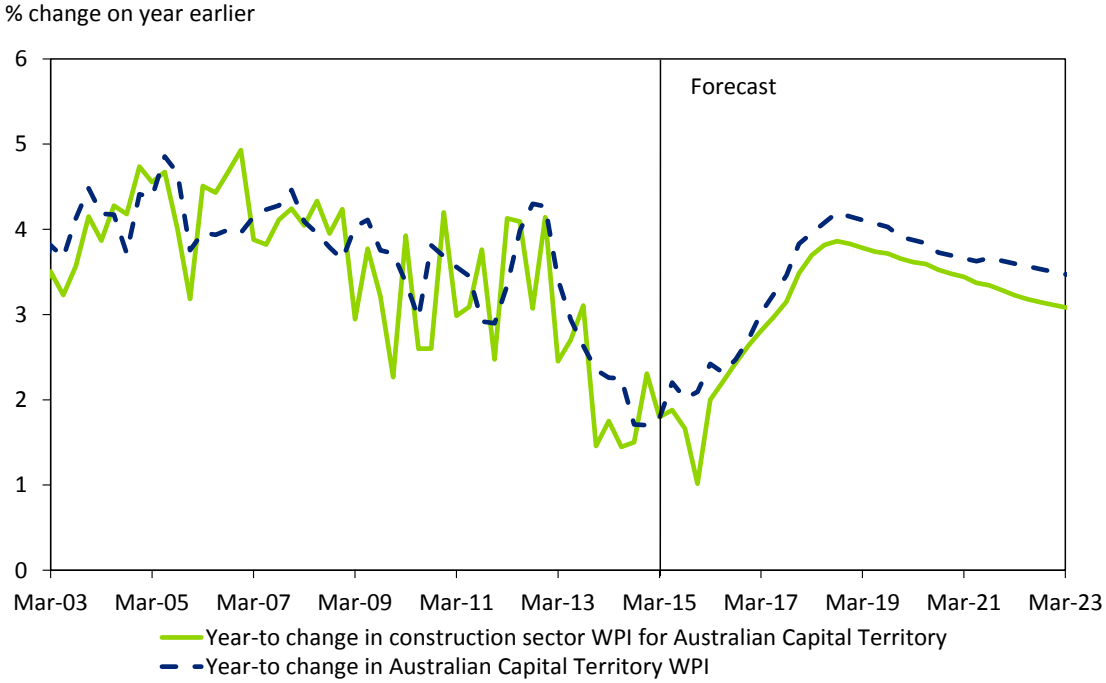
Chart 8.10 compares economy-wide wage growth for the ACT to the construction sector. Wage growth for the construction sector is projected to outperform wage growth across the rest of the economy, with construction wages increasing at a relatively higher rate from mid-2017 onwards in particular. As suggested previously, on the construction front, the drivers of demand and supply look positive in the medium term, while wages in the public sector are likely to be modest, adjusting for the rapid rises in wages that were not met by productivity gains in the past decade. Overall, the projected path for wage growth in ACT WPI and construction WPI are broadly similar.

Chart 8.9: ACT construction WPI forecasts



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

Chart 8.10: ACT construction WPI forecast comparison



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics' labour cost model

To the degree that skills are transferrable from the construction sector to the utilities, that picture of modest wage increases in the ACT construction sector over the longer term could limit the related pressure on wages in the ACT's utilities sector. Due to the relatively small pool of non-professional workers in the ACT labour force, the likelihood of wage and labour supply interactions between these two sectors are greater than in other sectors.

8.4 Summary results

Forecasts for sectoral wage growth in ACT are shown in Table 7.1. Forecasts include real and nominal WPI, and real and nominal productivity adjusted WPI.

Table 8.1: ACT wage forecasts

Financial year changes in Australian Capital Territory nominal Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	1.8	2.2	2.9	3.8	4.1	3.9	3.7
Utilities	2.4	2.2	3.3	3.1	3.3	3.2	3.3
Construction	1.9	1.7	2.7	3.5	3.8	3.6	3.5

Financial year changes in Australian Capital Territory real Wage Price aggregates

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	0.7	0.3	0.1	1.3	1.7	1.5	1.2
Utilities	1.3	0.3	0.5	0.6	0.9	0.8	0.8
Construction	0.8	-0.2	0.0	1.0	1.3	1.2	1.0

Financial year changes in Australian Capital Territory nominal productivity adjusted Wage Price aggr

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	0.3	1.5	1.7	1.6	1.4	1.8	2.1
Utilities	0.8	1.0	2.0	1.8	2.2	2.0	1.9
Construction	1.5	0.4	1.6	2.3	2.8	2.6	2.2

Financial year changes in Australian Capital Territory real productivity adjusted Wage Price aggregat

Annual % change	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
All industries	-0.8	-0.3	-1.0	-0.9	-1.0	-0.6	-0.4
Utilities	-0.3	-0.8	-0.7	-0.7	-0.3	-0.4	-0.5
Construction	0.4	-1.4	-1.1	-0.2	0.3	0.2	-0.2

Source: ABS, Deloitte Access Economics' labour cost model

References

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Warren, M. 2014, 'Changing climate on climate change', paper presented at the 2014 *Economic and Social Outlook Conference*, 3-4 July 2014, https://melbourneinstitute.com/Outlook_2014/updates.html.

Appendix A: Technical notes on WPI data and forecasts

The historical WPI data is not necessarily released for each sector by State. This is due to small sample sizes, and reasons of confidentiality. In some cases, where a specific WPI series is not available, a comparative series for average weekly ordinary time earnings (AWOTE) can be obtained.

Table A.1 shows which data is available in time series for the WPI and (for those where WPI is not available) AWOTE. These are data series provided on the new ANZSIC06 basis. In the case of WPI data this has been provided across the period from September quarter 2008 to March quarter 2015.

Where AWOTE data is shown as being available, only estimates from May 2009 to November 2011[4] have been calculated by the ABS. Beyond this point data is imputed.

Table A.1: Data availability by sector

State	Utilities	Construction
New South Wales	WPI	WPI
Victoria	WPI	WPI
Queensland	AWOTE	WPI
South Australia	AWOTE	AWOTE
Western Australia	AWOTE	WPI
Tasmania	Imputed only	AWOTE
Northern Territory	Imputed only	AWOTE
Australian Capital Territory	Imputed only	AWOTE

Source: ABS

Where utilities sector WPI is not published, Deloitte Access Economics imputes the value, based on a combination of:

- WPI for utilities as a whole, and the relevant States, as well as relative movements in those industries with the States that do have an official estimated WPI.[5]
- When and where previously published, AWOTE for the sector in question. Note that all sectoral by State AWOTE estimates were discontinued at the end of 2011.
- Data on enterprise bargaining agreements.

The same method is used to estimate an imputed value for the construction and administration sectors.

[4] AWE/AWOTE measures are defined for the mid-month of quarter, so the initial AWE/AWOTE data here is from the May 2009 publication. The LPI data is referred to by the entire quarter.

[5] ACT sectoral WPI indices are currently published only for the public administration sector.

Note this means **there is no longer any officially released time series estimate for utilities wages outside of New South Wales and Victoria** (in terms of WPI measures). **Therefore extreme care needs to be taken in analysing these series over time.** The modelling here implicitly assumes that overall Tasmanian and ACT WPI wage growth, overall utilities sector wage movements, data for enterprise bargaining agreements, as well as the data published for other States, can be used to create a reasonable estimate of the specific WPI series in history. However, there is no guarantee that the data used matches what the ABS data would show were it to be released.[6]

As the table shows, the ABS produces all the required WPI data for NSW, but not the other States discussed in this report. AWOTE data for the missing construction sectors was available until the end of 2011, but has now been discontinued. In addition, the overall AWOTE data itself is not consistent with the WPI data for Australia, so rather than using the raw data, to obtain a State by industry WPI we have used the deviations in the AWOTE growth from State AWOTE averages and applied a consistent ratio to the known State WPIs.

In other words, if the Tasmanian construction sector AWOTE measure rose faster than the overall State AWOTE measure, then we allow the Tasmanian construction sector WPI measure to rise faster than Tasmania's overall WPI. Because the AWOTE data was far more volatile than WPI in later years, we limit the deviations that this might imply.[7]

In addition to the AWOTE methodology (and in the most recent quarters, in place of it) we have used trends from EBAs to drive deviations in WPI growth rates. In all cases where WPI data is not published, the estimated results are normalised to ensure that the totals for the States are consistent with the levels of the industry components.

[6] The ABS does estimate these values, but does not release them externally due to the small number of businesses that are included in the sample, and the possibility that individual results could be estimated from the data if it were to be released.

[7] We do that by comparing the variations in published AWOTE and WPI measures within each State and adjust the unknown deviations accordingly.

Appendix B: Some rules of thumb for wage forecasting

Inflation has three main drivers:

- wage gains (or, to be more exact, wages relative to productivity),
- import prices, and
- the degree of pressure on prices coming from the spare capacity (or the lack of it) in the economy.

The Reserve Bank tries to keep consumer price inflation (CPI) to an average of 2 to 3% a year across the business cycle. That is an average both across time and across categories. For example, retail prices for imports have grown relatively slowly across the past decade, while prices for services have tended to grow faster.

Aiming for average CPI of 2 to 3% also requires aiming for average inflation in labour costs of the same.

- That is exactly what does occur – growth in nominal unit labour costs is close to growth in the CPI over time.
- Many people in the corporate world find that strange at first blush. After all, they see their own wages and those of people around them growing at faster rates.
- However, there are two other steps to take account of in translating wage growth into labour cost growth.
    - **First**, the workforce sees entries and retirements each year, with those retiring on higher earnings than the juniors who are entering. To look at the wage growth of individuals as a proxy for wage growth more widely is to forget that the group of individuals gains a year in experience and seniority every year whereas, due to retirements, the workforce as a whole sees rather less of an increase in experience and seniority every year.
    - **Second**, whether considering a specific group of individuals or the workforce as a whole, you have to remember that we get better at working over time – for example, thanks to working with better equipment. This growth in labour productivity saves money. For example, the work that last year took an hour may this year take 58 or 59 minutes. In turn, that productivity growth reduces the impact of rising wages on labour costs.

The above therefore helps to identify some rules of thumb:

- Across a long enough period, growth in prices will tend to average somewhere in the Reserve Bank's target range of 2 to 3% a year – perhaps 2.5%.
- The same is true for labour costs for a unit of output (nominal unit labour costs) – also averaging somewhere close to 2.5%.
- However, wages for the 'average' worker will tend to grow faster – the sum of both prices and productivity. As the latter has averaged around 1.5% over the past three decades,

that might suggest that wages for the 'average' worker will grow by perhaps 4.0% in a typical year.

- There will be a divergence between wage growth on the one hand and price and productivity growth on the other over the course of a business cycle. When demand is strong relative to the available supply of workers, wage growth will exceed this rule of thumb measure – and vice versa.
- Moreover, wages for the typical 'specific' worker will tend to grow faster still, as their seniority and experience increases each year. It is harder to identify a general rule of thumb here, as the reward for seniority and experience varies notably across sectors and occupations, as well as across the business cycle. That said, wages for the typical 'specific' worker will tend to grow by perhaps 5.0% in a typical year.

Appendix C: Macroeconomic and wage forecasting methodology

Introduction

The model used by Deloitte Access Economics to forecast the WPI by State and by industry has been created as a subsidiary component of our Deloitte Access Economics Macro (AEM) model. Key aggregates, including overall wage and productivity movements, and projections for output and employment by State and for Australia are used to drive WPI measures at more detailed levels.

The following are **excerpts** from the full model documentation that cover the creation of the key driver of the detailed wage model. Full documentation for this component of the model has been provided separately to the AER.

Macroeconomic forecasting

AEM is a macroeconometric model of the Australian economy. It is made up of numerous accounting identities and behavioural equations which describe the aggregate actions of households, businesses, government and foreigners. The formulation of these behavioural equations is based on mainstream theory. The resultant model is best described as a small open economy model in which all foreign (world) prices and interest rates are taken as given (that is, they are exogenous to the model).

The structure of AEM has evolved over time in response to various forecasting and policy simulation challenges. Significant changes to current and future Australian population characteristics have led to a number of changes in the structure of the AEM over the previous version (version 5).

In brief, the model now has a better spelled out supply side, with an endogenous role for capital deepening and an exogenous role for total factor productivity growth, which along with a more detailed treatment of population dynamics acts as a long term anchor for output.

As the then Treasury Secretary Ken Henry noted in 2007, Australia cannot:

> *"… generate higher national income without first expanding the nation's supply capacity: one of the 3Ps — population, participation or productivity. Now you might be thinking that that's all pretty obvious. It is, after all, a tautology. But one of my messages to you today is that if you understand what I have just been talking about, then you are a member of a rather small minority group."*

The redesigned model adds to the sectoral structure of the previous version, which included a business sector, a housing services sector and government sector, by netting out farm output from the business sector. Given the variable nature of farm output, this change allows us to account for volatile changes that could not be captured when farm output was combined with non-farm output.

In the new model, business sector factors of production (capital and labour) produce non-farm business sector output, which is non-farm GDP less the service flow from housing and the value of government services. The level of business sector output is the sum of potential output and the output gap.

Potential business sector output is the level of output that would exist if there were no temporary or cyclical influences. In constructing potential business sector output, considerable attention is paid to the population characteristics which influence labour force participation, the growth rate of residual total factor productivity and the expected rate of capital deepening. The output gap is the gap between actual and potential business sector output. Negative output gaps imply the economy is operating below its potential, while positive gaps imply the economy is operating above its potential.

Fluctuations in the output gap are driven by a number of cyclical factors, including fluctuations in interest rates, foreign GDP and the terms of trade.

Imports are effectively intermediate goods in the latest version of the AEM model. They are combined with domestically produced traded goods to produce gross national expenditure on traded goods. Higher domestic demand raises the demand for imports. In contrast to the previous version of the model, the level of exports is determined by foreign demand conditions rather than domestic supply conditions. Just as stronger domestic demand raises the demand for imports, stronger foreign demand raises the demand for exports.

The demand for capital and labour in the new model has been reworked so that the short and long run paths of capital and labour are consistent with the forecast potential output path.

One of the new features of the model is the introduction of an equation forecasting the price of business sector investment. This change was necessary because the previous model assumption that the pricing of consumption and investment goods are similar no longer fits with the data. This change should yield more accurate forecasts of investment and the returns to investment.

Changes to the household sector in the model were minor. The most significant change involved the introduction of equations for the price of consumption and housing investment.

With the exception of some minor changes caused by the introduction of distinct prices for consumption and investment, the balance of the model remains unchanged.

Finally, model parameters are estimated using quarterly data extending from September 1974 to the most recent quarter for which data are available. Quarterly data are used as annual data is too aggregated to allow analysis of turning points and interest rate movements. Monthly data is not feasible because most key ABS collections are produced on a quarterly basis – notably the national accounts, the balance of payments, CPI and international investment data. Another advantage of quarterly data over annual data is that both calendar and financial year totals can be calculated.

Domestic production

Domestic production is divided into farm and non-farm. Non-farm production is further divided into household, general government and business sector production.

The current version of the model nets out **farm sector** production from total production. Given the variable nature of farm output, this change allows us to account for volatile changes in farm output that could not be captured when farm output was combined with non-farm output. Farm output is an exogenous input to the model.

In keeping with the previous version of the model the **household sector** produces housing rental services. This is the household sector's only output. The service flow is modelled as a fixed proportion of the housing capital stock.

Public sector production is limited to general government output, which comprises general government services (equal to the wage cost of the general government employees) and general government gross operating surplus (equal to the depreciation of general government capital).

All other non-farm production takes place in the **business sector**, which incorporates private and public enterprises. Business sector output is produced using capital and labour via a standard constant returns production technology. Business sector production is also influenced by the level of total factor productivity.

To capture the impact of cyclical fluctuations on the economy business sector output is divided into potential output and an output gap. **Potential business sector output** is the level of output that would exist if there were no temporary or cyclical influences. In constructing potential business sector output, considerable attention is paid to population characteristics which influence labour force participation, the growth rate of residual total factor productivity and the expected rate of capital deepening.

The **business sector output gap** is the gap between actual and potential business sector output. Negative output gaps imply the economy is operating below its potential, while positive gaps imply the economy is operating above its potential. Fluctuations in the output gap are driven by a number of cyclical factors including fluctuations in interest rates, foreign GDP and the terms of trade. Output gaps play an important role in determining the level of price and wage inflation.

AEM forecasts all components of aggregate demand. To ensure consistency between aggregate expenditure and aggregate output, the model uses adjustment factors which trim individual expenditure components so that aggregate expenditure equals aggregate output.

Labour market

The size of the **labour force** is forecast using exogenous assumptions about age specific **population growth** and **labour force participation**.

There are two measures of employment in the model. There is the potential employment that underlies the estimate of potential output and actual employment. The output gap to a large extent reflects the gap between the actual and potential employment.

Potential employment is the actual labour force less the level of unemployed workers implied by the natural rate of unemployment, where the natural rate of unemployment is the level of unemployment that would exist in the absence of cyclical fluctuations.

Actual employment is the actual labour force less the level of unemployed workers implied by the actual rate of unemployment.

There are three types of workers in the economy, civilian non-government (business sector workers), civilian general government and defence employees. Demand for business sector workers is endogenous, while the demand for the other two types is exogenous.

Business sector employment is driven by a standard labour demand function that relies on labour productivity, real wages and business sector output growth. Since labour force participation is tied down by exogenous assumptions, the actual unemployment rate for the economy is the residual after subtracting employment (for all three types of workers) from the labour force.

Other measures of employment, such as **wage and salary earners** are assumed to grow at the same rate as total employment.

Prices and wages

In addition to national account price deflators, the model also includes the underlying and headline measures of the **consumer price index (CPI)**, and prices for **new cars, house building materials, material used in manufacturing, and preliminary stage domestic and imported commodities**.

The model also includes a number of measures of wages. The central measure is **average quarterly earnings** estimated from the national accounts. Other measures include **average weekly ordinary time earnings, average weekly earnings** and the **labour price index**.

Price and wage inflation in AEM are governed by the behavioural equations of the:

- business sector output gap;
- real exchange rate;
- import prices (including oil prices);
- monetary policy reaction function;
- average quarterly wages; and
- underlying consumer price index.

The way these equations interact is best observed through some examples.

A positive shift in domestic demand that raises the gap between actual and potential output (a positive output gap) will have a direct impact on price inflation by raising the underlying CPI. Wages respond with a lag to changes in underlying CPI inflation, with the long run real wage tied to CPI inflation and labour productivity growth.

A positive output gap also has a direct and indirect effect on real interest rates via the monetary policy reaction function, with the typical reaction to a widening output gap and higher price inflation being higher nominal interest rates. Higher interest rates dampen

domestic demand which narrows the output gap and relieves upward pressure on price and wage inflation. Over time this mechanism forces the output gap back to zero, interest rates to a neutral position and inflation to return to the RBA target level.

A change in real wages that exceeded the change in labour productivity raises price inflation in the short run. Since wages increase by more than labour productivity this raises nominal unit labour costs, which in turn raises underlying CPI inflation. Wages in turn respond to changes in underlying CPI inflation. Over time wage inflation will equal price inflation (plus changes in productivity growth). In the long run, price inflation is governed by the same mechanism at work in the output gap example above, which forces the CPI inflation rate to return to the RBA target level.

While the real exchange rate and import prices do not have an import role in the output gap and real wage scenarios, they are key players in the next foreign price shock example. Holding other things constant, higher world prices raise domestic import prices. Higher import prices have a direct impact on price inflation by raising the underlying CPI. Higher price inflation causes nominal interest rates to rise via the monetary policy reaction function. Higher domestic interest rates and incomplete pass-through of world price changes to domestic prices causes the differential between domestic and world real interest rates to rise.

Ordinarily this would imply an appreciation of the real exchange rate but in the Australian case this is more than offset by a deterioration of the terms of trade due to higher import prices which causes a depreciation of the real exchange rate. Combined with incomplete price pass-through the nominal exchange rate appreciates in the short run, which partly offsets the rise in domestic import prices due to rising world price. Over time there is full pass-through of world prices to domestic prices, which eliminates the gap between domestic and foreign real interest rates and returns the terms of trade to its pre-price shock level. Just as in the domestic inflation example, wages respond with a lag to changes in underlying CPI inflation, with the long run real wage tied to CPI inflation and labour productivity growth.

Wage forecasting

The wage forecasting methodology adopted in this report involves estimation of the deviations between industry – and State-specific wage measures and the broadest measures of wages in the Australian economy. In other words, the AEM model has provided an overall picture for how the WPI will move, and the remainder of the modelling determines which industry, State and industries within States will see their WPI measures grow faster or slower than this value.

Industry and State Labour Price Indices

Modelling of specific labour price indices (WPIs) begins with the movements in the total Australian WPI – taken from the Deloitte Access Economics Macroeconomic model. This measure serves as an anchor to overall wage rates in every part of the economy, in part because it provides a measure of the wage rises that other employees are receiving, making it a common starting point for negotiations.

From this initial index, the model adds in deviations from the average. Three key factors will drive these wage differentials:

- **Business cycle factors**. Deviations in industry (or State) performance from the national average. Faster growing industries and States will tend to see faster growth in wages and

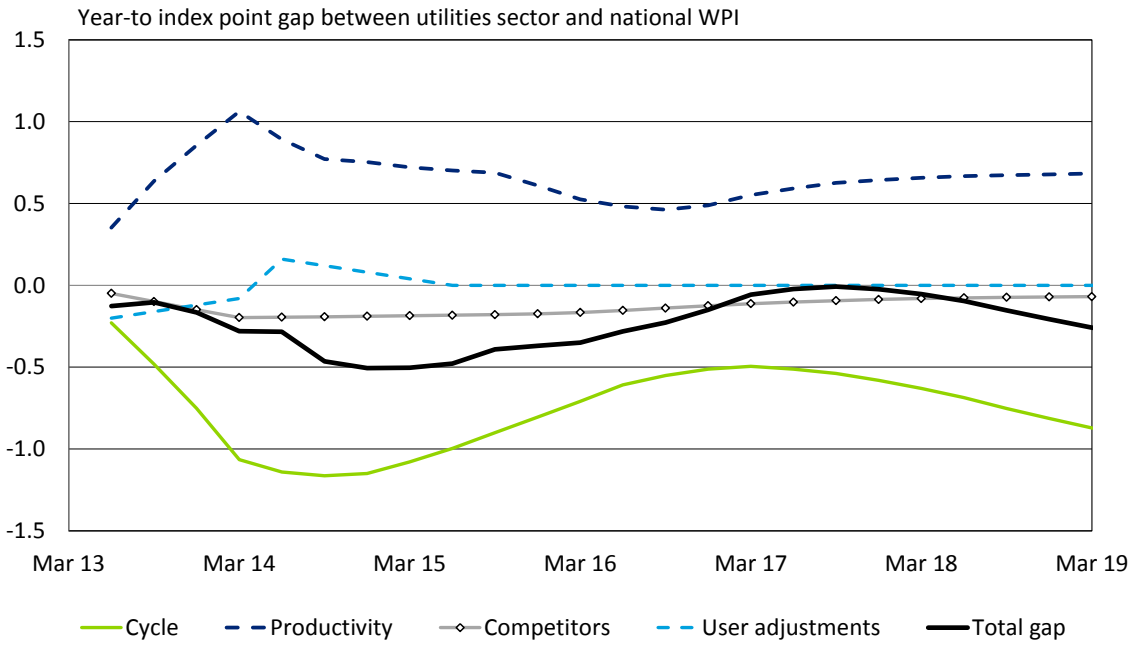
vice versa. In this model, the key factor is how fast the industry (or State) is growing relative both to the national average, as well as to historical averages. So, while manufacturing growth in the future may be below the national average, if the gap is relatively less that has been seen in recent years, this is view as an out-performance by the sector and would see some upward pressure on wages. In this model the methodology is forward-looking, with forecast growth across the next six months (as well as the past twelve) used to determine the current performance of an industry.

- **Productivity factors**. The model assumes that industries with faster growth in productivity will see faster growth in wages – workers across an industry being rewarded for increasing the average amount of output per employee faster than the national average. As these factors take some time to become evident (and due to the inherent volatility in productivity measures at the State and industry level) an average productivity trend across the past two years is used.
- **Competition (relative wage) factors**. Depending on the nature of the industry, workers will have skills that are relatively more or less transferable to other sectors where wages may be rising faster than in their own. Indeed, many workers will be performing effectively the same task (or same occupation – effectively their job description) across different industries (as their industry classification is determined by what their employer produces, rather than what they do). This will tend to limit the ability of wage rates to diverge. As wage rates in (say) mining rise higher, companies in (say) the construction sector will be forced to pay higher wages to keep their staff. Similar factor operate across States – although they are likely to be less significant (and react only to relatively larger discrepancies in wages). The modelling here will see wages in competitor industries tend to move more closely together – with industries that are benefiting from the two previous factors tending to be drawn back towards the average, and wages in otherwise slow growing industries boosted.

In addition to these three 'mechanical' factors, there is often the need to use judgement to determine movements in wages – particularly when other data is volatile (which employment data currently is) and when factors not relevant to wage determination are having effects on broader output and employment measures.

It is important to remember that the WPI for an industry is a composite measure and can, in certain situations, behave in the perverse manner. When there is a significant change in the occupational structure of an industry, movements in the WPI may not be reflective of movements in the wages of individual employees. In an extreme case, it would be possible for (say) all the workers in an industry to take a pay cut but the overall WPI measure in the industry to rise if all the low-paid workers left the industry all together – shifting the average wage towards the higher level.

Chart C.1: Sample composition chart of sectoral wage drivers (national level)



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics labour cost model

The user-defined adjustments that are required have been explicitly shown in the charts that decompose the movements in industry WPI. The chart above (analysing the national construction sector) compares movements to the national WPI – above the line means growth in the index of more than would be expected if it rose in line with the national WPI and below the line implies growth in the index less than that implied by the national WPI.

In the case of the utilities sector chart above, this indicates the following:

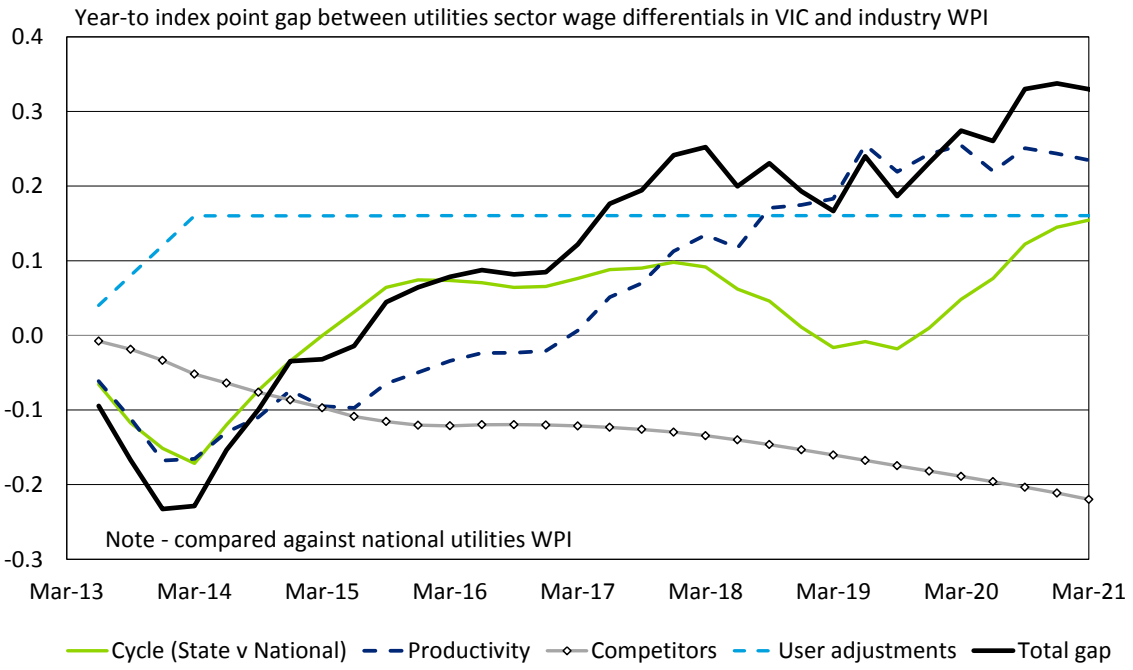
- The recent strength in the construction sector will keep upward pressure on the wages in the sector (represented here by the **Cycle** line). By the end of 2012 growth rates will begin to move in line with the overall economy and the cyclical pressure will diminish (and reverse further out); but
- The higher rate of productivity growth in the utilities sector will put upward pressure on the WPI for construction across the forecast period (the **Productivity** line). This effect will largely dissipate further out; but
- The relatively strong growth in construction sector wages implied by these first two trends (and the recent strength in the WPI) means the sector will face minor downward wage pressure from other sectors. Weakness in the manufacturing sector in particular will limit the impact from competitor industry wages (the **Competitors** line). In the longer term the otherwise stronger wage growth in the sector will not see a need for wages to rise to maintain pace with growth in competitor sectors (mining, construction and manufacturing) to prevent workers being tempted to move.

The final result of all of these effects is construction sector WPI growth well ahead of the national average early on, but lagging in later years.

In the case of State-level indices, our point of departure is the national industry WPI. So the chart below implies that the State's construction sector WPI will:

- Grow relative fast as the State's growth will be well ahead of national averages through the forecast period;
- See a strong offset due to relatively weaker productivity growth, particularly in the latest years; and
- Will initially be boosted as the State's WPI is currently low by historical standards, but will be constrained in the longer run as the WPI soon grows ahead of the national rate.

Chart C.2: Sample composition chart of sectoral wage drivers (State level)



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics labour cost model

Labour prices versus labour costs

The methodology above estimates movements in labour prices – the cost of employing the average employee, whether broadly in the Australian economy, or in a specific industry in a specific State.

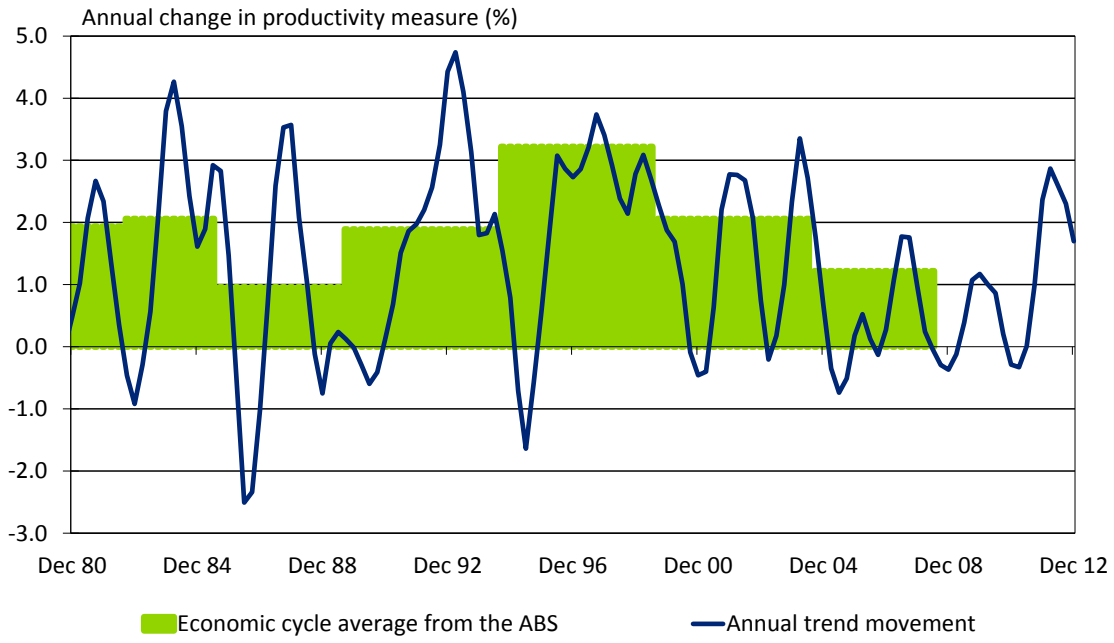
However, labour costs will rise at a different rate due to the effects of labour productivity growth. Effectively, labour productivity measure the number of units of output an individual employee can produce in a given time period. The more units of output each worker can produce, the fewer workers are required to create a given level of industry output. If productivity is rising, the total cost of labour (the price of each employee multiplied by the number of employees) will rise less rapidly than the individual employee's price.

The measure adopted for increases in labour costs is the growth in productivity-adjusted labour prices. Because so many factors can influence productivity (for example, during times of rapid expansion in employment, productivity may fall as new workers are often less productive that those who have been working in an industry for longer, but productivity may

also rise as 'economies of scale' become available, and workers who may has been underemployed in their workplace increase their effective level of output) it is often best measured over an entire economic cycle. The chart below shows annual growth in a simple productivity measure against the ABS' cyclical average measure (the last published cycle ends in 2007-08, so the last few years have no official cyclical productivity growth measure).

For the last two economic cycles (1998-99 to 2003-04 and 2003-04 to 2007-08) the ABS has produced a labour productivity measure adjusted for the quality of hours worked. This measure is closer to the basic measure (output per employee) over the cycle than the simpler output per hour worked measure over this period.

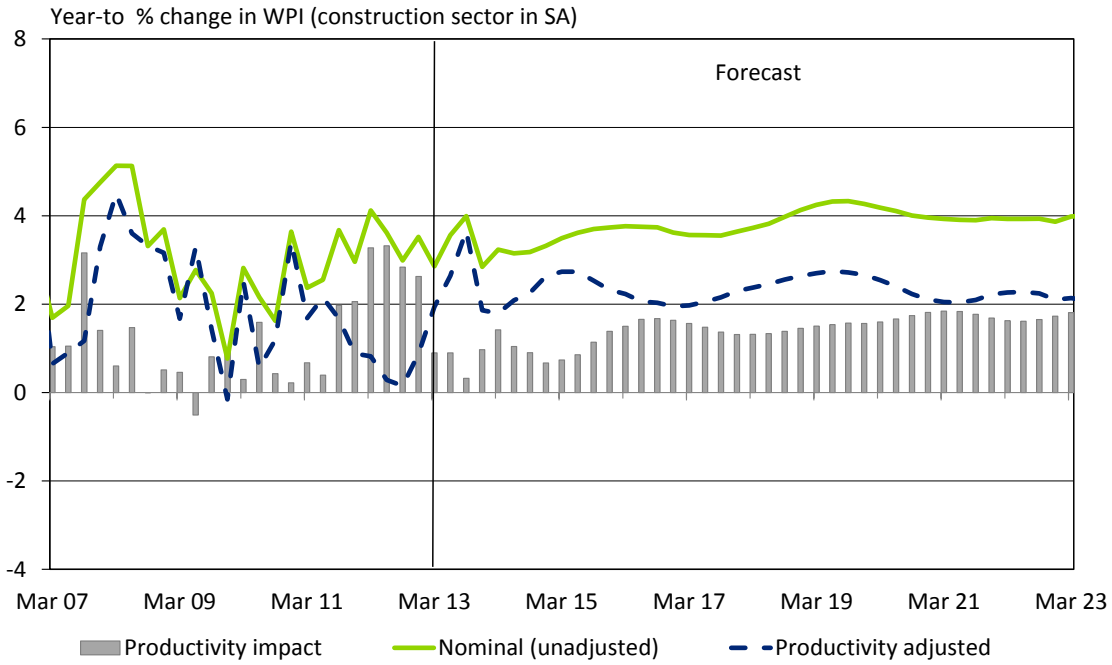
Chart C.3: Growth in productivity – annual methodology vs economic cycle methodology



Source: ABS

However, in the methodology used here the volatility in the underlying productivity data is minimised by creating a composite productivity measure based on national, industry and State-specific productivity movements – where the relative impact of movements in the smaller and more volatile States and industries is lessened.

Chart C.4: Sample measure of forecast productivity effects



Source: ABS, Deloitte Access Economics estimates, Deloitte Access Economics labour cost model

In the example above, the cyclical impact of productivity becomes clearer. Across the latter part of the forecast (from 2012 to 2018), the nominal (or unadjusted) WPI rises by 4.0% per year, while the rate of increase adjusted for productivity improvements is just 2.0% per year – the gap implying productivity improvements of 2.0% per year.

Appendix D: Different measures of wage growth

The Australian Bureau of Statistics published an article in the October 2005 issue of Australian Labour Market Statistics (catalogue 6105.0) which discussed the comparative features and relative merits of the measures they produce.[8] The following reproduces part of that article, and then adds some observations.

Introduction

Statistics on employee remuneration are in demand from a wide range of users, including economic analysts, social researchers, policy makers, and employer and employee associations. The ABS publishes a number of measures relating to the remuneration of employees, to meet the different needs of users. These measures include average weekly earnings, changes in the price of labour, and compensation of employees.

The variety of measures available can sometimes lead to misunderstanding and misapplication. The choice of measure will depend on what type of analysis is being undertaken. This section explores the differences between the various measures of employee remuneration.

Measures of employee remuneration

Three distinct measures of employee remuneration are discussed below: earnings; changes in the price of labour; and compensation of employees.

Earnings

Estimates of the level of earnings are produced from a number of surveys: the Survey of Average Weekly Earnings (AWE); the Survey of Employee Earnings and Hours (EEH); and the Survey of Employee Earnings, Benefits and Trade Union Membership (EEBTUM).

The AWE survey is one of the major sources of data on earnings, and is designed to provide a quarterly measure of the level of earnings. Three earnings series are produced from AWE:

- average weekly ordinary time earnings for full-time adults;
- average weekly total earnings for full-time adults; and
- average weekly total earnings for all employees.

While the AWE survey provides a frequent time series, data are only available for full-time adult employees and all employees, and can only be cross-classified by a small number of variables, such as sex, state, sector, and industry. The EEH and EEBTUM surveys provide additional detail, although on a less frequent basis. The EEH survey is run every two years and

[8] See http://www.abs.gov.au/AUSSTATS/abs@.nsf/90a12181d877a6a6ca2568b5007b861c/9b6a7239b96304ddca2570930000e4bf!OpenDocument

provides a large number of variables important in the analysis of weekly earnings, including: managerial/non-managerial status; state; sector; level of government; industry; occupation; employer size; sex; full-time/part-time status; adult/junior status; and type of employee (e.g. permanent/fixed-term contract or casual). The EEH survey therefore supplements AWE survey data by providing detailed information on the composition and distribution of employee earnings and hours.

The annual EEBTUM survey is a household survey, in contrast to the AWE and EEH surveys which are business surveys. The EEBTUM survey, which is conducted as a supplement to the monthly Labour Force Survey, collects weekly earnings data cross-classified by a range of socio-demographic information, including: sex; age; marital status; relationship in household; geographic region; school attendance; birthplace and year of arrival in Australia. The EEBTUM survey also collects details about the type of employment, including: occupation; industry; hours worked; full-time or part-time status; sector; size of workplace and leave entitlements.

While the EEH and EEBTUM surveys are run less frequently than the AWE survey, they are a valuable source of information as they enable detailed analysis of earnings levels.

Changes in the price of labour

Information on changes in the price of labour is available from the quarterly Labour Price Index (LPI). The LPI is compiled from information collected from businesses on changes in wage and non-wage costs. Information collected on wages is used to produce a Wage Price Index (WPI).

The WPI was first compiled for the September quarter 1997 and is the main ABS measure of wage growth. The WPI measures quarterly changes over time in the cost to an employer of employing labour, and is unaffected by changes in the quality or quantity of work performed.

The ABS publishes four wage price indexes each quarter. The headline WPI series is the index of total hourly rates of pay excluding bonuses. This series excludes bonus payments (which generally relate to the individual performance of the employee or to the organisation's performance), and so represents a pure price measure for combined ordinary time and overtime hourly rates of pay.

Compensation of employees

Compensation of employees (CoE) is a quarterly measure of the total remuneration paid to employees in return for work done and is published as part of the national accounts. Compensation of employees is a broader measure than earnings as it includes irregular payments (e.g. annual bonuses) and social contributions paid by the employer (e.g. severance, termination and redundancy payments; employer superannuation contributions; and workers compensation premiums). These payments are excluded from measures of earnings, which have a narrower focus.

A quarterly measure of the average CoE per employee, known as Average Earnings National Accounts (AENA), is produced by dividing the total compensation of employees for the quarter by the total number of employees. The total number of employees is estimated using Labour Force Survey data, calculated as an average of the three months in each quarter. Some adjustments are made to this estimate of employment. Two measures of AENA are produced: average non-farm compensation per employee; and average compensation per employee.

The average non-farm compensation per employee estimate is the key series, as it is a more stable estimate. This is because employee earnings in the agricultural sector can fluctuate due to seasonal effects.

Wage Price Index

The Wage Price Index (WPI) was first compiled for the September quarter 1997 and is the main ABS measure of changes in wages. The WPI measures quarterly changes over time in the cost to an employer of employing labour, and is unaffected by changes in the quality or quantity of work performed. The WPI does not include the superannuation guarantee levee.

In the WPI, index numbers are compiled using information collected from a representative sample of employee jobs within a sample of employing organisations. Price-determining characteristics of the jobs are fixed to ensure that changes in these characteristics do not contribute toward index movements. The following are examples of changes in price-determining characteristics which are not reflected in index movements:

- changes in the nature of work performed (e.g. different tasks or responsibilities)
- changes in the quantity of work performed (e.g. the number of hours worked)
- changes in the characteristics of the job occupant (e.g. age, apprenticeship year, successful completion of training or a qualification, grade or level, experience, length of service, etc.)
- changes in the location where the work is performed.

Changes in the price of wages and salaries resulting from changes in the composition of the labour market are also excluded from index movements. To achieve this, a longitudinal survey methodology is used to measure a similar sample of jobs over time.

Summary of the surveys and their key series

Table D.1 (found at the end of this chapter) provides a comparison of each of the surveys discussed. It outlines the key series produced, what each survey is designed to measure, the frequency and type of data source, the benefits and limitations of each survey, and the related publication.

Drawbacks to using the WPI measure

While Deloitte Access Economics would view the WPI as the best measure for use in the context of this report, 'best measure' is not the same as 'perfect measure', and there are also drawbacks to using the WPI:

- First, the WPI is published by State and by sector separately, but not by State and by sector. That is, the WPI for NSW is published, and the mining sector WPI is also published, however the NSW mining sector WPI is not. The latter data is only available by special request and, in the case of small sample sizes, the ABS does not release their estimates. In contrast, more series at the 'by State and by sector' are available for AWOTE from the ABS 6302.0 release. However, it is possible to 'back out' reasonable estimates of WPI at the 'by State and by sector' level. Appendix B discusses how Deloitte Access Economics does that. The resultant series are rather less volatile than the matching ABS AWOTE series. (Note that, not surprisingly, the ABS is reducing over time the range of sectoral level AWE data

which it is willing to release. This phase will eliminate one of the remaining arguments in favour of using AWOTE or AWE over the WPI measures.)

- Second, it is sometimes relevant that the composition of the workforce is changing. That is particularly true in analysing the implications of wage developments for the Australian economy as a whole. For example, promotions are easier to get during a sustained expansion, reflecting the strength of cyclical demand rather than pure productivity. Other things equal, that adds to total incomes in the economy, but doesn't show up in the WPI (which does not 'recognise' that people at a certain seniority today are, on average, different to those who were at that level some years past).

EBAs and contract rates

Deloitte Access Economics' forecasts are developed using a more formal modelling approach rather than a more 'institution-based' approach.

The latter focuses on:

- increases in the **Federal Minimum Wage / Fair Pay Commission decisions**,
- increases in **collective agreements** under enterprise bargaining,
- increases in **individual agreements**.

That said, close attention to such institutional factors can assist in short term forecasting (as opposed to longer term forecasts), given that most such decisions have lingering effects on wage outcomes.

Accordingly, Deloitte Access Economics notes developments in the Department of Employment's Trends in Federal Enterprise Bargaining reports[9], and takes account of these in its short term forecasting if they appear likely to have a material impact.

Further issues

The ABS has reviewed its production of AWE and AWOTE measures at the industry by State level (e.g. the AWOTE for the utilities sector in Victoria). This information will now no longer be produced.

A key reason was the high standard errors for these series. In the case of the AWE/AWOTE publication, sample selection is stratified across States and across industries, but not both. That means that as the businesses in the sample change from quarter to quarter (and about 8% of the 5,000 do each time) there is no guarantee that the State by industry samples can be readily compared. This led to questionable comparability of detailed AWE/AWOTE results from quarter to quarter as the changes may be driven by changes in the sample, rather than changes in wages.

The WPI, by contrast, suffers as little as possible from this problem because its sample follows specific "jobs" over an extended period (at least five years). This limits the rotation problems that the AWE/AWOTE series suffered from.

[9] See employment.gov.au/trends-federal-enterprise-bargaining

Table D.1: National wage surveys

	AWE Survey	EEH Survey	EEBTUM Survey	LPI	CoE
Key series produced	Average weekly total earnings (AWTE) for full-time adult employees and all employees. Average weekly ordinary time earnings (AWOTE) for full-time adult employees	Average weekly earnings for all employees. Average weekly earnings for full-time adult non-managerial employees	Median and mean weekly earnings of full-time, part-time and all employees	Labour Price Indexes. Wage Price Index (WPI) of total hourly rates of pay excluding bonuses.	Non-farm Average Earnings National Accounts (AENA)
Designed to measure	Level estimates of weekly earnings and the distribution of earnings	Level estimates of weekly and hourly earnings and the distribution of earnings	Level estimates of earnings and the distribution of earnings	Changes in the price of labour	Level estimates of average compensation of employees
Frequency and basis of survey	Quarterly survey of businesses	Biennial survey of businesses	Annual survey of households	Quarterly survey of businesses	Quarterly national accounts series based on quarterly survey of businesses
Benefits of the methodology	Quarterly time series (original, seasonally adjusted and trend estimates available)	Provides detailed job information allowing analysis by industry, occupation, hourly rates etc. Source of distributional data (e.g. quartiles)	Provides detailed demographic and job information. Source of distributional data (e.g. medians)	Provides estimates of wage and non-wage inflation	Broad measure of remuneration
Limitations of the methodology	Few cross-classificatory items	Survey run infrequently (two-yearly)	Only provides average weekly total earnings (no series on ordinary time earnings). Includes payments not related to the period of work performed (e.g. backpay and pay in advance)	No level estimates or in-depth cross-classificatory items	Few cross-classificatory items
Publication description and ABS catalogue number	Average Weekly Earnings, Australia (cat. no. 6302.0)	Employee Earnings and Hours, Australia (cat. no. 6306.0)	Employee Earnings, Benefits and Trade Union Membership, Australia (cat. no. 6310.0)	Labour Price Index, Australia (cat. no. 6345.0)	Australian National Accounts: National Income, Expenditure and Product (cat. no. 5206.0)

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