AusNet Transmission Group Pty Ltd

Transmission Revenue Review 2017-2022

Revised Revenue Proposal

Appendix 4A: CIE Labour forecasts

Submitted: 21 September 2016

mission zero

FINAL REPORT

Labour price forecasts

Prepared for
AusNet Services

09 September 2016

THE CENTRE FOR INTERNATIONAL ECONOMICS
www.TheCIE.com.au

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Summary

AusNet Services has engaged The Centre for International Economics (The CIE) to update forecasts of wages growth, in real and nominal terms, for Australia and Victoria, across *all-industries* (combined) and for the electricity, gas, water and waste industry (hereafter '*utilities'*) and the *construction* industry. AusNet Services requires these forecasts for its submission to the Australian Energy Regulator for its 2017 Transmission Revenue Reset.

Measure of wages used, methodology and assumptions

As required by AusNet Services, wages are measured with the Wages Price Index (WPI).

To forecast growth in the WPI in the relevant industries in Victoria and in Australia, we develop forecast assumptions for key variables, incorporate these assumptions into The CIE-Regions model and then use the model to develop wage forecasts. Table 1 sets out the key forecast assumptions made for this project.

1   Forecast assumptions (growth, per cent)

	Australia				Victoria		
	Population	Real GDP	CPI inflation	Exchange rate	Population	Real GSP	CPI inflation
2015-16	1.75	2.89	1.38	0.73	1.79	3.0	1.60
2016-17	1.73	2.75	1.70	0.76	1.77	3.0	1.80
2017-18	1.70	3.00	2.00	0.77	1.73	2.8	2.00
2018-19	1.66	2.95	2.25	0.77	1.69	2.8	2.25
2019-20	1.63	2.85	2.50	0.77	1.66	2.8	2.50
2020-21	1.59	2.80	2.50	0.77	1.62	2.8	2.50
2021-22	1.57	2.80	2.50	0.77	1.59	2.8	2.50

Source: ABS; IMF; Vic Treasury; The CIE-Regions model

Growth in headline, all-industries WPI for Australia

GDP grew by 2.9 per cent in 2015-16, broadly consistent with its underlying or 'trend' rate. Within this result, household consumption, dwelling investment and net exports made solid contributions to growth, and business investment (especially mining related investment) was weak. There was an increase in labour supply, and employment grew by a solid 2.2 per cent. Despite this growth in labour supply, labour demand was strong

enough in the growing sectors of the economy for the *all-industries* WPI to grow in real terms 0.73 per cent.

For this project, the CIE has adopted forecasts for Australian GDP published by the IMF. As shown in Table 1 (above), these forecasts see growth in GDP hovering around its current rate. This implies that demand for labour will remain about as strong as it is currently.

From its solid result in 2015-16, labour supply is expected to weaken in the forecast period, returning to our estimate of its trend rate (population growth plus an upwards adjustment that captures increased labour supply from older workers and women).

As strength in labour demand remains around its current rate and labour supply is expected to weaken, real growth in the *all-industries* WPI is forecast to increase slightly (from 0.73 per cent in 2015-16, to 0.91 per cent in 2012-22, see Chart 2). This forecast for real growth in the WPI implies growth remains consistent with previous outcomes for the series. Reflecting history, growth in the Victorian *all-industries* WPI is broadly consistent with the national figure.

2   Real growth in the WPI for all-industries (per cent)
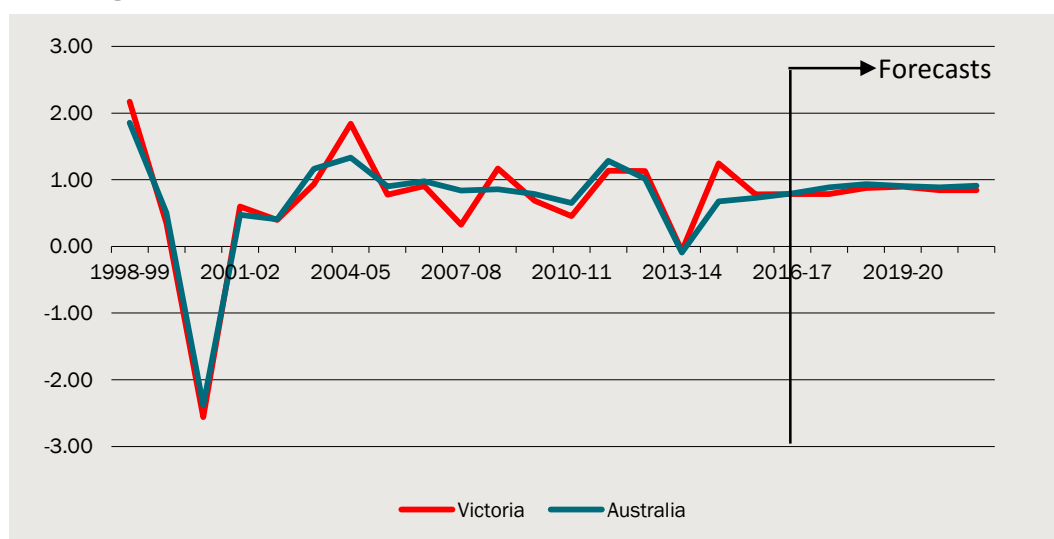
Note: The data are in financial years to June. The ABS published history of the data finishes at 2015-16; forecasts are from 2016-17 onwards.

Data source: ABS; The CIE-Regions model

Detailed wages forecast

Consistent with history, real growth in wages in the *utilities* and *construction* industries is forecast to be above the national average (see Chart 3).

3   Real growth in the WPI, for Australia and by industry (per cent)

Note: The data are in financial years to June. The ABS published history of the data finishes at 2015-16; forecasts are from 2016-17 onwards.

Data source: ABS; The CIE-Regions model

Our forecasts for growth in the WPI in different industries are developed using the CIE-Regions model. The model uses two factors to forecast wages growth across industries.

- In each industry, it determines underlying wages growth. This underlying growth reflects the structure of the economy, including economic fundamentals and long-run trends. Industries that have strong fundamentals exhibit stronger wages growth.

- It also considers whether wages growth deviates from underlying growth due to short-term factors.

In the *utilities* industry, long-run history implies that underlying growth in wages is stronger than the national average (see Chart 3). Recent outcomes have been consistent with this. Wages growth consistent with its underlying trend (i.e. growth that is stronger than the national average) is expected to continue, with any short-run factors offsetting each other.

In the *construction* industry, long-run history also implies that underlying growth in wages is stronger than the national average. Recently however, wages growth has deviated from this trend and has been weaker than the national average. This reflects weak demand for construction from the mining sector, where investment has fallen (as demand for raw materials in Asia weakens). Our forecasts for growth in the capital stock, which incorporate forecasts for investment in Australia published by the IMF, imply solid *construction* growth in the forecast period. The impact of further weakness in mining construction is forecast to be offset by strength in dwelling investment and construction for non-mining export industries. Solid growth in the *construction* sector implies real wages growth returns to its trend. In the short run (in 2016-17 and 2017-18), forecast wages growth is stronger than its underlying rate. This is required to return it to its trend position, given recent relative weakness. In medium and long run, forecast wages growth is consistent with its underlying rate, which is still somewhat stronger than the *all-industries* WPI.

Growth in wages in financial years to March

AusNet Services have requested forecasts for wages growth over financial years to the March quarter. These are shown in Table 4 and Table 5. Nominal growth in the WPI series is simply real growth plus projected CPI inflation.

4   Real growth in the WPI by industry (March financial years, per cent)

	Australia			Victoria		
	All-industries	Utilities	Construction	All-industries	Utilities	Construction
2014-15	0.39	0.81	0.32	0.77	1.62	1.14
2015-16	0.66	0.91	0.17	0.97	1.75	1.37
2016-17	0.78	1.09	1.28	0.78	1.22	1.44
2017-18	0.86	1.15	1.63	0.79	1.05	1.58
2018-19	0.92	1.14	1.53	0.85	1.07	1.50
2019-20	0.91	1.08	1.38	0.89	1.06	1.38
2020-21	0.89	1.03	1.27	0.86	1.00	1.27
2021-22	0.90	1.03	1.24	0.84	0.97	1.22

Note: 2014-15 is the year to the March quarter of 2015
Source: The CIE-Regions model

5   Nominal growth in the WPI, by industry (March financial years, per cent)

	Australia			Victoria		
	All-industries	Utilities	Construction	All-industries	Utilities	Construction
2014-15	2.47	2.89	2.41	2.69	3.54	3.06
2015-16	2.16	2.41	1.67	2.50	3.28	2.90
2016-17	2.40	2.71	2.90	2.53	2.97	3.19
2017-18	2.79	3.07	3.55	2.74	3.00	3.53
2018-19	3.11	3.33	3.72	3.04	3.26	3.69
2019-20	3.35	3.51	3.81	3.33	3.49	3.82
2020-21	3.39	3.53	3.77	3.36	3.50	3.77
2021-22	3.40	3.53	3.74	3.34	3.47	3.72

Note: 2014-15 is the year to the March quarter of 2015
Source: The CIE-Regions model

Comparison of forecasts

In its draft decision for AusNet Services, the AER notes 'we consider the average of the utilities WPI growth forecasts from DAE [Deloitte Access Economics] and CIE represents a realistic expectation of the cost inputs required to achieve the OPEX

objectives'.[1] Therefore, it is important to compare the forecasts between the CIE and DAE.

Table 6 shows DAE expects weaker real growth in the *utilities* WPI than the CIE (especially in the short term). This is because DAE expect relatively weak growth in activity (and thus in labour demand) in *utilities,* which comes from weaker growth in the economy (in general), and relatively weak growth in the *utilities* industry (in particular). Weaker growth in industries that compete for similar labour to *utilities* is also noted.[2] However, since DAE's forecasts were published (February 2016), GDP figures have come out suggesting growth in the *utilities* sector has improved. *Utilities* GVA grew by 2.4 per cent in the 2015-16, up from growth of 1.4 per cent in 2014-15 and a contraction of 2.4 per cent in 2013-14.[3]

Recent real growth in *utilities* wages is consistent with the long-run trend in the industry. The CIE's forecast implies this will continue.

6 Forecast real growth in the WPI for utilities (per cent)

	CIE	DAE
	Aug 16	Feb-16
2014-15	1.1	1.1
2015-16	1.0	0.8
2016-17	1.1	-0.3
2017-18	1.2	0.1
2018-19	1.1	0.5
2019-20	1.1	0.9
2020-21	1.0	0.9
2021-22	1.0	

Note: Data are financial years to June

Source: CIE-Regions model; Deloitte Access Economics 2016, *Forecast growth in labour costs in NEM regions of Australia – Report prepared for the AER;*

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1   AER 2016, *Draft Decision AusNet Services Transmission Determination 2017-18 to 2021-22 Attachment 7, Operating Expenditure,* July 2016, pg 7-53

2   DAE 2016, *Forecast growth in labour costs in NEM regions of Australia,* February 2016, *pg 39*

3   ABS 2016, *Australian National Accounts March 2016,* Cat. 5206.0, http://www.abs.gov.au/ausstats/abs@.nsf/mf/5206.0 (accessed August 2016)

1   Introduction

AusNet Services has engaged The Centre for International Economics (The CIE) to update forecasts of wages growth, in real and nominal terms, for Australia and Victoria, across *all-industries* (combined) and for the electricity, gas, water and waste industry (hereafter '*utilities'*) and the *construction* industry. AusNet Services requires these forecasts for its submission to the Australian Energy Regulator for its 2017 Transmission Revenue Reset.

The forecast period is 2016-17 to 2021-22, for financial years to the March quarter.

This report is organised as follows.

- Chapter 2 sets out background information.
- Chapter 3 describes the methodology the CIE has used to forecast wages growth.
- Chapter 4 describes the macroeconomic forecasts that are driving expected wages growth.
- Chapter 5 sets out expected wage growth.
- Chapter 6 highlights how our forecasts have changed.
- Chapter 7 compares the CIE's forecasts with the forecasts of other economists.
- Chapter 8 converts the forecasts to March financial years calendar years.

2   Background information

Economic drivers of wage growth

The economic drivers of wage growth can be understood by considering a market for labour, comprising the demand for labour (employers, the users of labour) and the supply of labour (workers), as follows.

- Demand for labour is determined by the amount of additional production generated by additional labour (the marginal product). This in turn reflects factors such as the level of Australian output (including exports), skill levels, capital-labour ratios and productivity. An increase in the demand for labour tends to increase wages growth.

- The supply of labour is determined by individual decisions balancing income and leisure and by demographics. An increase in the supply of labour tends to decrease wages growth.

The CIE has ensured its forecasts for wages growth reflects both labour demand and supply by developing our forecasts with our own Computable General Equilibrium (CGE) model, the CIE-Regions model. The CIE-Regions model provides a comprehensive, economy-wide analytical approach which takes into consideration the linkages and interactions between industries, regions, commodity and services markets as well as factor markets.

Measure of wages used in this study

As noted in Chapter 1, the distributors require forecast growth for economy-wide (*all-industry)* wages, wages in the *utilities* industry and wages in the *construction* industry, in Australia and Victoria. Further, the distributors require growth to be measured with changes compatible to the Wage Price Index (WPI, published by the ABS).

Labour cost indices produced by the ABS generally attempt to measure one of two things:

- changes in the amount of income or earnings which can be influenced by wage rates and the number of hours worked, or

- changes in wage rates.

The Wage Price Index (WPI) attempts to measure the latter and is discussed in detail below. This discussion is taken from the Concepts, Sources and Methods document for the WPI, published by the ABS.[4] 2012.

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[4]   ABS 2012, *Wages Price Index: Concepts sources and Methods,* Cat. 6351.0.55.001

Sampling method for the WPI

The ABS adopts a two-stage sampling methodology to generate a sample of employee jobs for the WPI. The first stage selects a sample of businesses. Businesses selected in the first stage are asked to select a sample of jobs from their payrolls using instructions provided by the ABS. In the case of a job becoming obsolete or possibly outsourced, a new job is selected. This sampling methodology implies that shifts in the underlying workforce composition can potentially impact movements in the WPI at the margin.

Development of WPI

WPI data is collected by the ABS through quarterly questionnaires, which include questions related to details of overtime provisions, any bonuses, commissions or incentive payments paid during the reference quarter, and any additional information about jobs that have unusual pay or working arrangements.

This information enables the ABS to understand the drivers of wage growth and adjust for:

- changes in the quality and quantity of work performed;
- bonuses;
- salary sacrificing; and
- workplace arrangements that trade-off between employee benefits and salary.

As a result, these factors are likely to have a negligible impact on WPI growth across the industries of focus.

Measures of the WPI

It is understood that overtime is paid in the *utilities* sector. As a result, the most appropriate WPI data is ***Total Hourly Rates of Pay Excluding Bonuses***. Detailed WPI data for industries at the state level were obtained from the ABS by special request over the period September 2008 to June 2016.

The industries of interest

The *utilities* and *construction* industries are described here. These descriptions are taken from the Australia and New Zealand Standard Industrial Classification System 2006 (ANZIC 2006).

The *utilities* industry includes business units mainly engaged in the provision of electricity, gas through mains systems, water, drainage and sewerage services. The sub-industries of the *utilities* industry are:

- Electricity supply;
- Gas supply;
- Water supply, sewerage and drainage services; and
- Waste collection, treatment and disposal services.

The *construction* industry includes business units mainly engaged in the construction of buildings and other structures, additions, alterations, reconstruction, installation, maintenance and repairs of buildings and other structures. The sub-industries of the *construction* industry are:

- Building construction;
- Heavy and civil engineering construction; and
- Construction services.

In ANZSIC 2006, the ABS notes that business units that use similar production functions (the transformation of intermediate inputs, through the application of capital and labour, to produce output) are grouped together in the same industry (ABS 2006).

3   *Forecast methodology*

The CIE has followed three broad steps to complete this project.

1. Develop forecast assumptions

The first step in forecasting wages growth is developing forecast assumptions for GDP/GSP, inflation, the exchange rate and exports. Chapter 4 explains the CIE's forecast assumptions and how they were determined.

2. Use forecast assumptions and the CIE-Regions model to project wages growth

The second step is taking these forecast assumptions and incorporating them into the CIE-Regions model, a general equilibrium model of the Australian economy, which projects wages growth by state and by industry.

The CIE-Regions model

The CIE-Regions model is a general equilibrium model of the Australian economy. It was developed by the CIE based on the publicly available MMRF-NRA model used by the Productivity Commission.[5] The CIE has updated the MMRF-NRA model and introduced a more detailed treatment of state/territory government fiscal revenues and expenditures. A 53-sector version of the CIE-Regions model was used for this analysis because it separately identifies the sectors of interest (see Table 3.1). Some of the key features of CIE-Regions are that it:

- provides a detailed account of industry activity, investment, imports, exports, changes in prices, employment, household spending and savings and many other factors;
- identifies 53 industries and commodities;
- accounts for Australia's six states and two territories as distinct regions including specific details about the budgetary revenues and expenditures of each of the state and territory governments and the Australian Government (the government finances in CIE-Regions align as closely as practicable to the ABS government finance data);
- provides a detailed account of labour demand and supply in each industry in each state/territory, based on economic theory and empirical data;

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5 Productivity Commission 2006, *Potential Benefits of the National Reform Agenda*, Report to the Council of Australian Governments.

- specifically accounts for major taxes including land taxes, payroll taxes, stamp duties and others at the state level, as well as income taxes, tariffs, excise, the GST and other taxes at the federal level;
- traces out the impact of transfers between governments;
- accounts for differing economic fundamentals in the states (for instance, the mining boom in WA and Queensland);
- can produce results on employment and value added at a regional level; and
- can be run in a static or dynamic mode. The dynamic version allows the analysis to trace impacts over time as the economy adjusts, which is particularly useful over the short to medium term.

3.1   Sectors identified in the CIE-Regions model

	Sector			Sector
1	Sheep Cattle		28	Residential Building
2	Grains		29	Other Construction
3	Other Animal		30	Construction Services
4	Other Ag		31	Trade
5	Forestry		32	Accommodation Hotels Cafes
6	Fishing		33	Road Freight Transport
7	Coal		34	Road Passenger Transport
8	Oil		35	Rail Freight Transport
9	Gas		36	Rail Passenger Transport
10	Metal Ores		37	Transport Services
11	Other Mining		38	Water Transport
12	Meat Products		39	Air Freight Transport
13	Other Food Manufacturing		40	Air Passenger Transport
14	Textile Clothing Footwear		41	Communications
15	Wood Products		42	Financial Services
16	Paper Products		43	Dwelling
17	Print Publishing		44	Business Services
18	Refinery		45	Professional Technical Services
19	Chemicals		46	Public Services
20	Non-Metal Construction materials		47	Education
21	Basic Metals		48	Hospital Medical Services
22	Metal Products		49	Other Health Services
23	Transport Equipment		50	Community Care Services
24	Photographic and Scientific Equipment		51	Cultural Services
25	Electronic Equipment		52	Recreational Services
26	Other Manufacturing		53	Other Services
27	Utilities			

Note: The relevant industries are highlighted in Teal: the utilities industry and the components of the construction industry

Source: CIE-Regions model

Key drivers of wages in the CIE-Regions model

To illustrate how the CIE-Regions model works, we have performed a number of scenarios to work out how economic growth, export prices, labour supply and the capital stock impact wages growth in the model. Each of these economic variables was shocked

with a 1 per cent change. From the results, we have calculated the elasticity between the variables and growth in real wages (see Chart 3.2).

Economic growth has the highest positive impact on wage growth. A one per cent increase in GDP leads to a 0.61 per cent increase in the real wage rate. An increase in economic growth drives an increase in labour demand, which boosts wages growth.

A 1 per cent increase in the capital stock leads to about a 0.5 per cent increase in the wage rate. The higher capital stock increases the capital-labour ratio and increases the marginal productivity of labour, resulting in a higher real wage.

Higher export demand has a positive, but insignificant, impact on wage growth. A one per cent increase in export demand leads to a 0.03 per cent increase in the real wage rate.

By contrast, labour supply has a significant, negative impact on wage growth. A one per cent increase in labour supply would lead to a 2.27 per cent fall in the real wage rate.

3.2   Elasticity between real growth in the all-industry WPI and growth in economic drivers
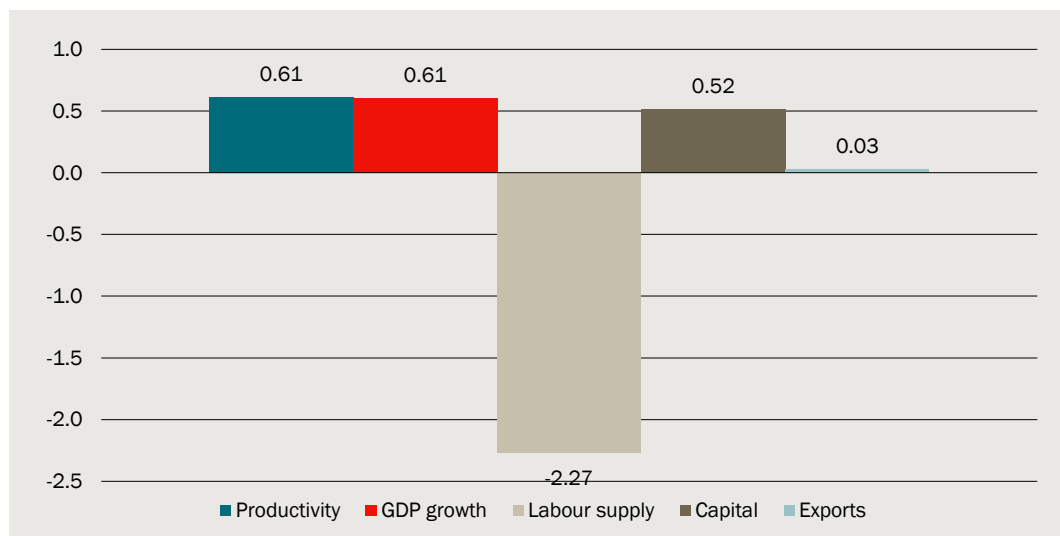
Note: These elasticities are between the growth in *all-industries* WPI and national, Australia level economic variables. These elasticities would differ slightly in individual industries and states.

Data source: CIE-Regions model

3. Review and compare forecasts

Our macroeconomic assumptions and wages forecasts are compared to the forecasts of other economists. This is discussed in Chapter 7. This is an important cross-checking exercise.

4   The assumptions that drive our forecasts

This chapter documents the forecast assumptions the CIE has adopted to forecast growth in wages and explains how we have developed them.

- Assumptions for GDP/GSP growth, export growth and the exchange rate drive demand for labour;
- Assumptions for population and other assumptions determine the supply of labour; and
- Assumptions for inflation determine the difference between real wages growth and nominal wages growth.

GDP growth

Australian GDP grew by 2.9 per cent in 2015-16, broadly consistent with its underlying or 'trend' rate. This result reflects two diverging trends, which (recently) have offset each other.

- Investment in the mining sector has been falling from a high peak (as demand growth for raw materials in emerging Asia has slowed).
- Growth in other sectors of the economy has picked up, especially household consumption (reflecting improved labour market outcomes and lower interest rates, spurred on by looser monetary policy), housing investment (due to lower interest rates) and exports (which reflects new mines and gas facilities coming online and the lower exchange rate helping non-mining trade exposed industries, including tourism and education).

The RBA, for example, has noted a 'rebalancing' of growth away from mining and towards these other sectors.[6] This trend is captured in Chart 4.1, which shows the 'contribution' of different sectors of the economy to growth.

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6   RBA 2016, *Statement of Monetary Policy August 2016*, pg 2

4.1   Contribution to GDP growth from key components (ppt)
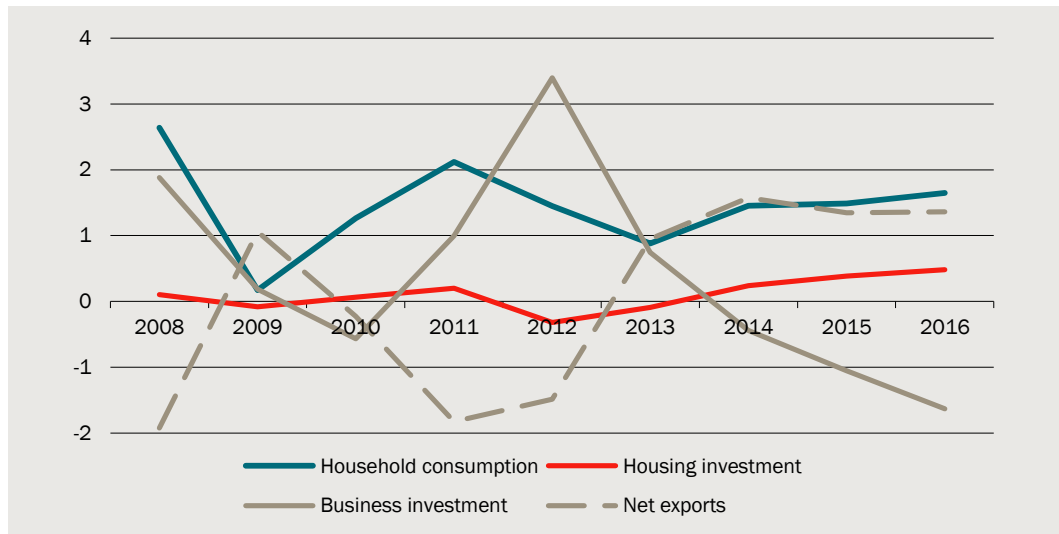
Data source: The CIE

The outlook for GDP

Where possible, the most efficient and robust forecast methodology is to adopt the forecasts of an independent, respected forecaster, whose views on the economy are reasonable. The CIE has adopted the forecasts for Australian GDP growth published by the International Monetary Fund (IMF) in their recent April World Economic Outlook (WEO) out to 2020-21, and assumed growth remains constant in 2021-22. These forecasts are shown in Table 4.3 and in Chart 4.2.

The IMF sees little change in growth. This is consistent with underlying trends in the economy. In the first years of the forecast, 'rebalancing' is occurring in the economy. As strength outside mining offsets weakness in mining, growth hovers around its long-term or trend rate, which the IMF has estimated to be around 3 per cent. The factors supporting the parts of the economy that are growing (lower interest rates and exchange rate) remain in place. Over the longer term, growth is consistent with its trend rate, which (overall) implies growth changes little over whole forecast period. This forecast is reasonable (and is discussed further below).

4.2   Real growth in Australian GDP and Victorian GSP (per cent)
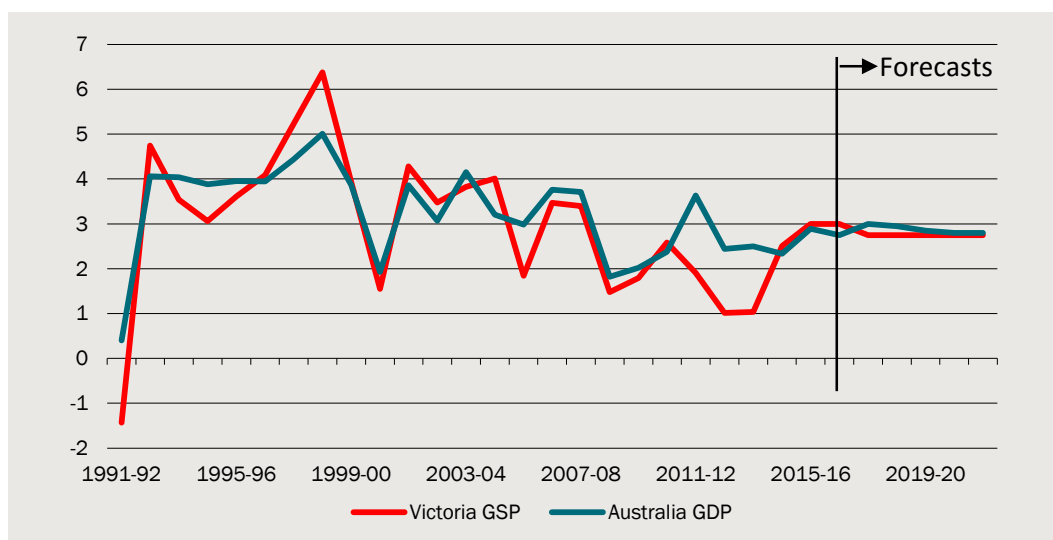
Source: ABS (Cat. 5206); IMF WEO (April 2016); The CIE

4.3   Real growth in Australian GDP (per cent)

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Australian GDP	2.34	2.89	2.75	3.00	2.95	2.85	2.80	2.80

Note: The IMF publishes their forecasts in calendar years (2015, 2016, etc.). We have estimated financial year forecasts using averages. For example, forecast growth in 2015-16 is the average of forecast growth in 2015 and 2016. With this method, the IMF forecasts extend to 2020-21. To extend the forecasts to the required timeframe (2021-22), we simply held growth constant in the final year.
Source: ABS (Cat. 5206); IMF WEO (April 2016); the CIE

The IMF's view of trend growth is broadly reasonable

The IMF has a trend or underlying rate of growth of around 3 per cent. This is reasonable for the following reasons.

- With slower economic growth and slower demand for raw materials in Asia, the prices of Australia's mining exports have fallen since mid-2011. With this, the boom in mining investment that has substantially driven economic conditions in Australia in recent years is unwinding. Therefore, our starting point for 'trend' growth in the years ahead is average growth in the pre-mining boom era: 3.2 per cent (average growth between the financial years of 1990 and 2003).

- Economists accept that economic growth during the period 1990-2003 was supported by productivity improvements that arose from the economic reforms of the 1980s and 1990s. For example, in a 2010 speech, The Deputy Governor of the Reserve Bank of Australia (RBA), Ric Battellino noted that the reforms including the floating of the Australian dollar, a wide range of reforms to competition and industry policy, labour market reforms and various reforms to the financial system, 'contributed to a substantial pick-up in productivity growth in the 1990s' (Battellino, 2010).

- Similar economic reforms have not been made in recent years. Therefore, to determine trend economic growth in the years ahead, we make a downwards

adjustment. This adjustment is partially offset by a small upwards adjustment, made to account for the effect of strong expected growth in mining exports. Mining exports are expected to grow strongly as the recent investment boom in mining and LNG has created new production capacity (which is targeted at exports).

- Overall, a trend rate of growth of around 3 per cent is reasonable.

GSP growth in Victoria

In the years 2011-12 to 2013-14, growth in Victoria was significantly weaker than the national average. This is because non-mining trade exposed industries (especially manufacturing and education) are relatively important to the Victorian economy, and growth in these was relatively weak for some or all of this period.

Recently, the Australian dollar has depreciated (it averaged around 83 US cents in 2014-15 and has been between 70 and 80 US cents since). With this, activity growth in the trade exposed industries in Victoria has improved (especially manufacturing), and growth in Victorian GSP has picked back up to be closer to the national average (see Chart 4.2).

The CIE has taken forecasts for Victorian GSP from the state Treasury out to 2019-20, and assumed growth remains constant thereafter. These forecasts are shown in Table 4.4. Broadly, these forecasts imply growth in Victoria remains around the national average.

4.4   Real growth in Victorian GSP (per cent)

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Victoria GSP	2.51	3.00	3.00	2.75	2.75	2.75	2.75	2.75

Source: ABS; Victorian Treasury; The CIE

Export growth

As explained, changes in export demand have a small impact on wages growth. Forecasts for export demand are taken from the Department of Industry and Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES).

Labour supply

In recent decades, workforce participation amongst women and older workers (who are staying in work longer) has increased. Partially, this reflects a 'cohort effect' – current generations of women and older workers are more prepared to participate in the labour force than previous generations. Reflecting these trends, Chart 4.5 shows employment growth has been quicker than population growth, on average, by around 0.4 – 0.6 percentage points over the last 3 decades (the exact figure depends on which base year is used). Between 2009 and 2013, the gap was narrower than this long run average, with

employment growth weakening and population growth strengthening. Since 2013, employment growth has increased relative to population growth.

4.5   Annual growth in population and employment (per cent)
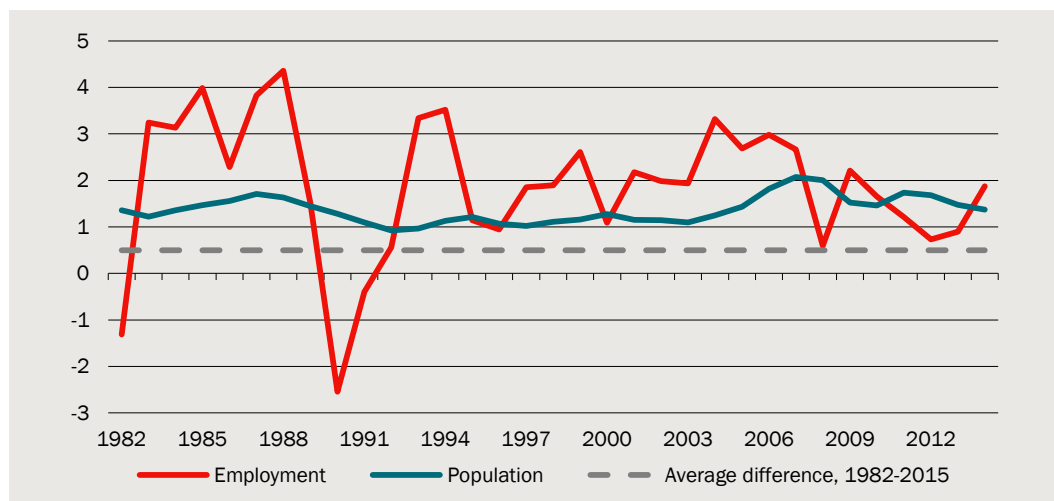
Data source: ABS Cat. 6202.0 and Cat. 3101.0; The CIE

For the purposes of forecasting over a 5 year horizon, as is the case in this project, it is reasonable to assume these trends (especially these 'cohort' trends) will continue to some extent. Therefore, we forecast labour supply by making an upwards adjustment to population growth.

Table 4.6 shows population growth, the adjustment the CIE has made to derive labour supply growth and labour supply growth (which we incorporate into the CIE-Regions model). From the solid result 2015-16, we expect growth in labour supply to unwind somewhat. In the medium to long term we expect the gap between population growth and labour supply growth to increase slightly, given the long term (historical) gap of 0.5 percentage points.

4.6   Growth in Australian population and labour supply (per cent)

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Population growth	1.75	1.73	1.70	1.66	1.63	1.59	1.57
Adjustment	0.47	0.36	0.26	0.25	0.28	0.31	0.35
Underlying growth in labour supply	2.22	2.09	1.95	1.91	1.91	1.91	1.92

Source: ABS Cat. 3222.0 (series B population projections are taken – these are the central population forecasts of the ABS); The CIE

Capital stock

The CIE's forecast for growth in the capital stock reflects forecasts for investment in Australia derived from IMF forecasts,[7] and an adjustment for deprecation (7 per cent of the existing capital stock per year).

4.7   Forecast growth in the capital stock (per cent)

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
August 2016		1.42	1.50	1.57	1.73	1.85	1.94	1.94

Source: The CIE; International Monetary Fund 2016, *World Economic Outlook April 2016;*

Inflation

Inflation determines the difference between growth in nominal wages and real wages.

In 1993 Australia adopted 'inflation targeting', where the goal of the RBA became to use monetary policy to achieve inflation of 2-3 per cent, on average, over the business cycle. Chart 4.8 shows that since the early 2000s, Australian inflation has tracked closely with the RBA's target band. Therefore, our default position is inflation of 2.5 per cent in each of the forecast years.

Chart 4.3 (above) shows that (until recently) Australia had a few years of weak GDP growth, reflecting weak demand in the economy. This has caused inflation to weaken over the past two years (Chart 4.8). We expect inflation to gradually increase, and eventually reach a point consistent with the midpoint of the RBA's target band. Victorian inflation broadly follows Australian inflation, consistent with history.

4.8   Annual CPI inflation (per cent)

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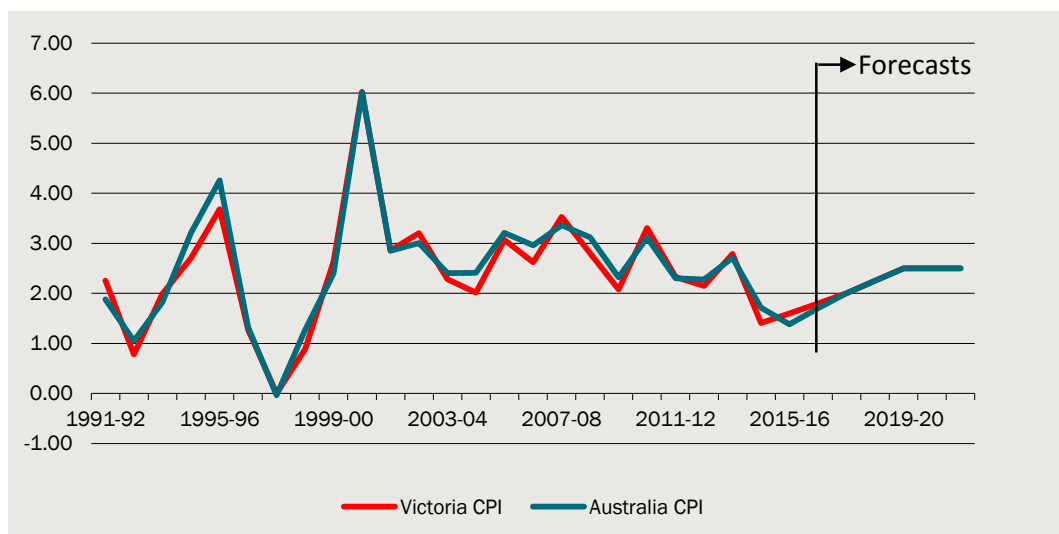
7   The IMF publish forecasts for GDP and investment as a share of GDP, from which we derive a forecast for investment.

Data source: ABS; The CIE

5 Forecast for wages

The CIE has projected growth in the relevant industries using the forecast assumptions described in Chapter 4 and the CIE-Regions model. In the forecast period, there are small fluctuations in growth rates between years. These are normal and are driven by changes in the underlying economic assumptions.

Real wages growth

In 2015-16, growth in the real *all-industries* WPI was around average: 0.73 per cent. This was due to stronger labour demand from growing sectors of the economy (especially consumption and housing) more than offsetting stronger growth in labour supply (employment grew by 2.2 per cent in the year).

As noted, the IMF expects GDP growth to hover around its current level. This implies labour demand will remain about as strong as it has been recently.

As noted, we expect labour supply to weaken from its recent strength.

The combination of these two factors sees real growth in the *all-industries* WPI increase slightly over the forecast period. Forecast growth is consistent with previous growth in the series. As activity growth and labour demand in Victoria is consistent with growth in Australia, real *all-industries* WPI growth in Victoria is consistent with the national average. These forecasts are shown in Chart 5.1.

5.1 Real growth in the WPI for all-industries (per cent)

Note: The data are in financial years to June. The ABS published history of the data finishes at 2015-16; forecasts are from 2016-17 onwards.

Outlook by industry

Consistent with history, real growth in wages in the *utilities* and *construction* industries is forecast to be above the national average (see Chart 3).

5.2   Real growth in the WPI, for Australia and by industry (per cent)

Note: The data are in financial years to June. The ABS published history of the data finishes at 2015-16; forecasts are from 2016-17 onwards.
Data source: ABS; The CIE-Regions model

Our forecasts for growth in the WPI in different industries are developed using the CIE-Regions model. The model uses two factors to forecast wages growth across industries.

- In each industry, it determines underlying wages growth. This underlying growth reflects the structure of the economy, including economic fundamentals and long-run trends. Industries that have strong fundamentals exhibit stronger wages growth.

- It also considers whether wages growth deviates from underlying growth due to short-term factors.

In the *utilities* industry, long-run history implies that underlying growth in wages is stronger than the national average (see Chart 3). Recent outcomes have been consistent with this. Wages growth consistent with its underlying trend (i.e. growth that is stronger than the national average) is expected to continue, with any short-run factors offsetting each other.

In the *construction* industry, long-run history also implies that underlying growth in wages is stronger than the national average. Recently however, wages growth has deviated from this trend and has been weaker than the national average. This reflects weak demand for construction from the mining sector, where investment has fallen (as demand for raw materials in Asia weakens). Our forecasts for growth in the capital stock, which incorporate forecasts for investment in Australia published by the IMF, imply solid *construction* growth in the forecast period. The impact of further weakness in mining construction is forecast to be offset by strength in dwelling investment and construction

for non-mining export industries. Solid growth in the *construction* sector implies real wages growth returns to its trend. In the short run (in 2016-17 and 2017-18), forecast wages growth is stronger than its underlying rate. This is required to return it to its trend position, given recent relative weakness. In medium and long run, forecast wages growth is consistent with its underlying rate, which is still somewhat stronger than the *all-industries* WPI.

Wages growth by industry is shown in Table 5.3.

5.3   Real growth in the WPI by industry (June financial years, per cent)

	Australia			Victoria		
	All-industries	Utilities	Construction	All-industries	Utilities	Construction
2014-15	0.68	1.07	0.40	1.25	2.08	1.60
2015-16	0.73	1.01	0.22	0.78	1.65	0.87
2016-17	0.80	1.11	1.63	0.78	1.07	1.63
2017-18	0.89	1.16	1.63	0.79	1.05	1.57
2018-19	0.94	1.13	1.50	0.88	1.08	1.47
2019-20	0.91	1.06	1.33	0.90	1.05	1.35
2020-21	0.89	1.02	1.25	0.84	0.98	1.24
2021-22	0.91	1.03	1.24	0.84	0.97	1.21

Note: 2014-15 is the year to the June quarter of 2015
Source: The CIE-Regions model

Nominal wages growth

Nominal wages growth in Australia and Victoria is real wages growth plus forecast CPI inflation growth in Australia and Victoria (respectively). The forecast for CPI inflation was outlined in Chapter 4. Chart 5.3 shows that forecast nominal wages growth is consistent with the history of the series.

5.4   Nominal growth in all-industries WPI (per cent)
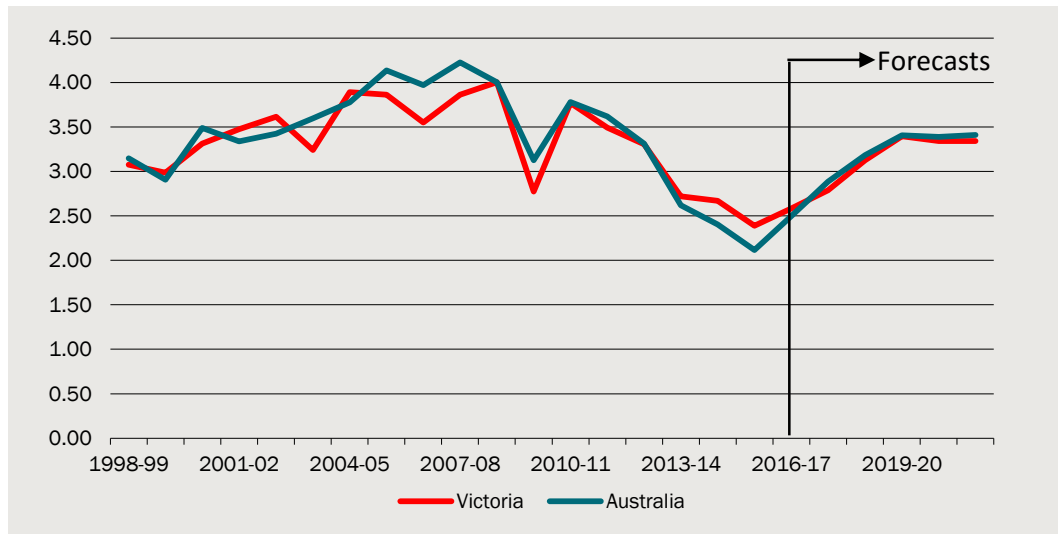
Data source: The CIE-Regions model

Detailed nominal wages growth is shown in Table 5.5.

5.5   Nominal growth in the WPI, by industry (June financial years, per cent)

	Australia			Victoria		
	All-industries	Utilities	Construction	All-industries	Utilities	Construction
2014-15	2.39	2.79	2.12	2.65	3.49	3.00
2015-16	2.11	2.39	1.60	2.38	3.25	2.47
2016-17	2.50	2.81	3.33	2.58	2.87	3.43
2017-18	2.89	3.16	3.63	2.79	3.05	3.57
2018-19	3.19	3.38	3.75	3.13	3.33	3.72
2019-20	3.41	3.56	3.83	3.40	3.55	3.85
2020-21	3.39	3.52	3.75	3.34	3.48	3.74
2021-22	3.41	3.53	3.74	3.34	3.47	3.71

Note: 2014-15 is the year to the June quarter of 2015
Source: The CIE-Regions model

6   *How our forecasts have changed*

GDP growth

As noted, we take forecasts for GDP growth from the IMF. The IMF forecast is similar to last time, though slightly weaker in the near term.

6.1   Forecast for GDP growth in Australia (per cent)

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
November 2015 (IMF October 2015)	2.42	2.61	2.96	3.01	2.96	2.89	2.89	2.89
August 2016 (IMF April 2016)	2.34	2.89	2.75	3.00	2.95	2.85	2.80	2.80

Note: The IMF publishes their forecasts in calendar years (2015, 2016, etc.). We have estimated financial year forecasts using averages. For example, forecast growth in 2015-16 is the average of forecast growth in 2015 and 2016. With this method, in the IMF April 2016 WEO, (our forecasts for August 2016), the forecasts extend to 2020-21. To extend the forecasts out to 2021-22, we simply held growth constant in the final year. Similar adjustments were made for the November 2015 forecasts.

Source: The CIE; International Monetary Fund 2016, *World Economic Outlook April 2016;* International Monetary Fund 2015, *World Economic Outlook October 2015.*

GSP growth

Manufacturing and international education are more important to Victoria than they are to other states (see Tables 6.2 and 6.3).

6.2   Employment in manufacturing (2015-16), per cent of total employment

	Employment in manufacturing (2015-16), per cent of total employment
Victoria	8.9%
Other states	6.9%
Australia (total)	7.4%

Source: ABS

6.3   International students in Australia in 2014 (by state where they study)

	Share	Level
NSW	0.27	93,737
Victoria	0.35	122,370
QLD	0.15	52,194
WA	0.11	37,029
SA	0.06	22,097
Tas	0.01	4,779
NT	0.01	1,804
ACT	0.03	10,223
Multistate Unis	0.01	3,210

Source: Department of Education

Expected growth in these two industries has improved, with the lower Australian dollar, as they both rely on demand from foreigners for their output and compete with foreign suppliers. Consistent with this, Victorian Treasury has upgraded their forecast for Victoria in the near term (see Table 6.4).

6.4   Forecast GSP growth in Victoria (by publication date of forecast, per cent)

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
May 2015	2.25	2.50	2.75	2.75	2.75	2.75
May 2016	2.50	3.00	3.00	2.75	2.75	2.75

Note: to extend the forecasts out to 2021-22, we have held growth constant in the final years of the forecast.
Source: Victorian Treasury

Labour supply

As noted, labour supply and employment were strong in 2015-16. We project labour supply to unwind from this strength. With this, the outlook for labour supply is slightly stronger than it was last time.

6.5   Forecasts for growth in Labour supply (per cent)

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
November 2015	1.96	1.96	1.95	1.93	1.91	1.91	
August 2016	2.22	2.09	1.95	1.91	1.91	1.91	1.92

Source: The CIE

Growth in the capital stock

The CIE has also taken this opportunity to update its forecasts for growth in the capital stock. Previously, we used our own forecast. We have changed this to the forecast for investment implied by IMF forecasts,[8] less adjustment for deprecation (which we assume to be 7 per cent of the existing capital stock each year). This change has resulted in a downgrade to the outlook for growth in the capital stock. This downgrade has reduced our forecasts for real growth in the *all-industries* WPI (as worker productivity is lower).

6.6   Forecast growth in the capital stock (per cent)

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
November 2015	2.05	2.05	2.05	2.05	2.05	2.05	2.05	
August 2016		1.42	1.50	1.57	1.73	1.85	1.94	1.94

Source: The CIE; International Monetary Fund 2016, *World Economic Outlook April 2016;*

Wages

Our forecast for growth in *all-industries* WPI for Australia is slightly weaker in the short-term, compared to last time. This is due to the slightly stronger outlook for labour supply and slightly weaker outlook for growth in the capital stock. In 2015-16, recorded growth in the *all-industries* WPI was stronger than growth forecast last time.

6.7   Forecast growth in all-industries WPI for Australia (per cent)

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
November 2015	0.43	0.87	0.85	0.96	0.89	0.87	
August 2016	0.73	0.80	0.89	0.94	0.91	0.89	0.91

Source: The CIE-Regions model

In Victoria, the *all-industries* WPI is similar to last time (in the short-term, the GSP outlook for Victoria has been upgraded, and this offsets the effect of stronger labour supply in the short-term).

6.8   Forecast growth in all-industries WPI for Victoria (per cent)

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
November 2015	0.32	0.77	0.90	0.97	0.89	0.88	
August 2016	0.78	0.78	0.79	0.88	0.90	0.84	0.84

Source: The CIE-Regions model

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[8]   The IMF publish forecasts for GDP and investment as a share of GDP, from which we derive a forecast for investment.

Forecast real growth in wages in the *utilities* and *construction* industry is stronger than last time (see Tables 6.9 and 6.10). This reflects changes in the pattern of wages growth across industries, caused by our change to forecast growth in the capital stock.

As noted in Table 6.6 (above), we have incorporated the latest projections from the IMF for investment in Australia, and this has resulted in us downgrading our projection for growth in the capital stock. Overall, this downgrade to growth in the capital stock results in a downgrade to wages growth (this is picked up by the *all-industries* WPI). However, with less capital available (implied by the downgrade to growth in the capital stock), industries which are capital-intensive in their production (including *utilities* and *construction*) are forced to increase their employment of workers. This, overall, causes wages growth in these industries to be stronger. (*All-industries* wages growth falls as this is more than offset by weaker wages growth in other industries).

In both industries, recorded real growth in WPI wages was stronger in 2015-16 than what was forecast growth last time.

6.9   Forecast growth in the utilities WPI for Victoria (per cent)

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
November 2015	0.60	0.88	1.04	1.07	0.98	0.97	
August 2016	1.65	1.07	1.05	1.08	1.05	0.98	0.97

Source: The CIE-Regions model

6.10   Forecast growth in the construction WPI for Victoria (per cent)

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
November 2015	0.57	1.06	1.30	1.24	1.13	1.13	
August 2016	0.87	1.63	1.57	1.47	1.35	1.24	1.21

Source: The CIE-Regions model

7 Comparison and review of forecasts

As a way of examining the reliability of projections, we compare and discuss our forecasts with those of other economists.

Forecasts for Australia

GDP growth

Economic activity – measured with GDP – is the key driver of labour demand. Therefore, expected GDP growth is the key driver of expected growth in real wages.

As noted, the CIE has adopted the IMF's forecast for GDP growth. Table 7.1 shows competing forecasts for Australian GDP growth.

- In 2016-17, CIE/IMF and the RBA are broadly consistent; Treasury is slightly weaker. Over the medium term, these forecasters are consistent with one another.
- DAE is persistently weaker than the other forecasters (except for 2017-18 and 2020-21).

7.1   Forecasts for real growth in Australian GDP (per cent)

	CIE/IMF	RBA	Aus Treasury	DAE
	April 16	Aug 16	May-16	Feb 16
2014-15	2.3		2.2	2.2
2015-16	2.9	3.0	2.5	2.2
2016-17	2.8	2.5-3.5	2.5	2.1
2017-18	3.0	2.5-3.5	3.0	3.0
2018-19	3.0		3.0	2.7
2019-20	2.9		3.0	2.7
2020-21	2.8			3.0
2021-22	2.8			

Note: The IMF produces forecasts in calendar years. We take an average across two calendar years (e.g. 2015 and 2016) to get growth in financial years (e.g. 2015-16)

Source: CIE-Regions model; Commonwealth of Australia 2016, The Treasury, *2016-17 Budget, Budget Paper No. 1 - Budget Strategy and Outlook;* Deloitte Access Economics 2016, *Forecast growth in labour costs in NEM regions of Australia – Report prepared for the AER;* International Monetary Fund 2016, *World Economic Outlook April 2016*; Reserve Bank of Australia 2016, *Statement of Monetary Policy August 2016.*

Employment

An increase in labour supply reduces growth in wages. In a general equilibrium model like the CIE-Regions model, forecast for employment matches forecast for labour supply. Our forecast for labour supply is explained in Chapter 4. The CIE has stronger forecasts for employment than other forecasters do.

7.2   Forecasts for employment growth in Australia (per cent)

	CIE	Aus Treasury	DAE
	Aug 16	May-16	Feb 16
2014-15	--	1.6	1.3
2015-16	2.22	2	2.1
2016-17	2.09	1.75	1
2017-18	1.95	1.75	1.3
2018-19	1.91	1.25	1.5
2019-20	1.91	1.5	1.4
2020-21	1.91		1.4
2021-22	1.92		

Source: CIE-Regions model; Commonwealth of Australia 2016, The Treasury, *2016-17 Budget, Budget Paper No. 1 - Budget Strategy and Outlook;* Deloitte Access Economics 2016, *Forecast growth in labour costs in NEM regions of Australia – Report prepared for the AER.*

Real wages

Table 7.3 shows forecasts for real growth in the Australia *all-industries* WPI. In 2016-17, Australian Treasury sits between CIE (with stronger forecasts) and DAE (with weaker forecasts). From 2018-19 onwards, CIE and Treasury are broadly consistent, and DAE is stronger.

7.3   Forecast real growth in all-industries WPI (per cent)

	CIE	Aus Treasury	DAE
	Aug 16	May-16	Feb 16
2014-15	0.7	0.8	0.7
2015-16	0.7	1.0	0.7
2016-17	0.8	0.5	-0.2
2017-18	0.9	0.5	0.6
2018-19	0.9	0.75	1.2
2019-20	0.9	1.0	1.3
2020-21	0.9		1.3
2021-22	0.9		

Source: CIE-Regions model; Commonwealth of Australia 2016, The Treasury, *2016-17 Budget, Budget Paper No. 1 - Budget Strategy and Outlook;* Deloitte Access Economics 2016, *Forecast growth in labour costs in NEM regions of Australia – Report prepared for the AER.*

Real wages by industry

In its draft decision for AusNet Services, the AER notes 'we consider the average of the utilities WPI growth forecasts from DAE [Deloitte Access Economics] and CIE represents a realistic expectation of the cost inputs required to achieve the OPEX objectives'.[9] Therefore, it is important to compare the forecasts between the CIE and DAE.

Table 7.4 shows DAE expects weaker real growth in the *utilities* WPI than the CIE (especially in the short term). This is because DAE expect relatively weak growth in activity (and thus in labour demand) in *utilities,* which comes from weaker growth in the economy (in general), and relatively weak growth in the *utilities* industry (in particular). Weaker growth in industries that compete for similar labour to *utilities* is also noted.[10] However, since DAE's forecasts were published (February 2016), GDP figures have come out suggesting growth in the *utilities* sector has improved. *Utilities* GVA grew by 2.4 per cent in the 2015-16, up from growth of 1.4 per cent in 2014-15 and a contraction of 2.4 per cent in 2013-14.[11]

Recent real growth in *utilities* wages is consistent with the long-run trend in the industry. The CIE's forecast implies this will continue.

7.4   Forecast real growth in the WPI for utilities (per cent)

	CIE	DAE
	Aug 16	Feb-16
2014-15	1.1	1.1
2015-16	1.0	0.8
2016-17	1.1	-0.3
2017-18	1.2	0.1
2018-19	1.1	0.5
2019-20	1.1	0.9
2020-21	1.0	0.9
2021-22	1.0	

Note: Data are financial years to June

Source: CIE-Regions model; Deloitte Access Economics 2016, *Forecast growth in labour costs in NEM regions of Australia – Report prepared for the AER;*

Table 7.5 shows competing forecasts for real wages growth in the *construction* industry. The CIE expects stronger growth in the short-term than DAE, while forecast growth is similar in the medium to longer term.

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9   AER 2016, *Draft Decision AusNet Services Transmission Determination 2017-18 to 2021-22 Attachment 7, Operating Expenditure,* July 2016, pg 7-53

10   DAE 2016, *Forecast growth in labour costs in NEM regions of Australia,* February 2016, *pg 39*

11   ABS 2016, *Australian National Accounts March 2016,* Cat. 5206.0, http://www.abs.gov.au/ausstats/abs@.nsf/mf/5206.0 (accessed August 2016)

DAE expect relatively weak growth in construction due to their expectation that the industry's output will grow slowly relative to total output (they note 'despite the short-term boost in residential construction, this is not expected to outweigh the fall in engineering and commercial construction projects').[12] However, since DAE's forecasts were published (February 2016), GDP figures have come out suggesting activity in the *construction* sector has improved. *Construction* GVA grew by 2.6 per cent in 2015-16, up from 1.2 per cent in 2014-15.

7.5   Forecasts for real growth in WPI for construction (per cent)

	CIE	DAE
	Aug 16	Feb-16
2014-15	0.4	0.5
2015-16	0.2	0.3
2016-17	1.6	-0.5
2017-18	1.6	0.5
2018-19	1.5	1.1
2019-20	1.3	1.4
2020-21	1.2	1.4
2021-22	1.2	

Source: CIE-Regions model; Deloitte Access Economics 2016, *Forecast growth in labour costs in NEM regions of Australia – Report prepared for the AER;*

Inflation

Inflation (growth in the CPI) is the difference between real wages growth and nominal wages growth. Consistent with the CIE's approach, most forecasters expect inflation to be around the mid-point of the RBA's range (2-3 per cent). DAE see inflation returning to 2-3 per cent more quickly than other forecasters.

7.6   Forecasts for Australia CPI inflation (per cent)

	CIE	Aus Treasury	DAE
	Aug 16	May-16	Feb 16
2014-15	1.40	1.5	1.7
2015-16	1.60	1.25	1.6
2016-17	1.80	2.0	2.4
2017-18	2.00	2.25	2.5
2018-19	2.25	2.5	2.4
2019-20	2.50	2.5	2.3
2020-21	2.50		2.5
2021-22	2.50		

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12 DAE 2016, *Forecast growth in labour costs in NEM regions of Australia,* February 2016*, pg 42*

Nominal wages

The forecasts for nominal wages reflect forecasts for real wages and inflation. In 2017-18 and 2018-19, the CIE and Treasury are weaker than DAE.

7.7   Forecasts for nominal growth in all-industries WPI (per cent)

	CIE	Aus Treasury (implied)	DAE
	Aug 16	May-16	Feb 16
2014-15	2.39	2.30	2.4
2015-16	2.11	2.25	2.3
2016-17	2.50	2.50	2.1
2017-18	2.89	2.75	3.1
2018-19	3.19	3.25	3.6
2019-20	3.41	3.50	3.7
2020-21	3.39		3.8
2021-22	3.41		

Victoria

DAE do not specify their forecasts for GSP growth in Victoria.

Table 7.8 shows competing forecasts for real growth in the *all-industries* WPI for Victoria. DAE forecast weaker growth in 2016-17 and 2017-18.

Since DAE have published its forecast, Victorian Treasury has released their forecasts for the May 2016 budget, where they upgraded their outlook for GSP growth. The CIE incorporate this forecast, and have more solid growth in the short-term.

7.8   Real growth in all-industries WPI, Victoria (per cent)

	CIE	DAE
	Aug-16	Feb-16
2014-15	1.2	-
2015-16	0.8	0.65
2016-17	0.8	0
2017-18	0.8	0.35
2018-19	0.9	1
2019-20	0.9	1.25
2020-21	0.8	1.25

	CIE	DAE
	Aug-16	Feb-16
2021-22	0.8	

Note: DAE provide forecasts for Victoria in calendar years. We have converted these forecasts to financial years by averaging across year. For example, growth in 2015-16 is the average of growth in 2015 and 2016.

Source: The CIE-Regions model

8   March financial year forecasts

The following tables outline forecasts for the relevant series, calculated for the financial years finishing in the March quarter of each year (as required by AusNet Services).

8.1   Real growth in the WPI by industry (March financial years, per cent)

	Australia			Victoria		
	All-industries	Utilities	Construction	All-industries	Utilities	Construction
2014-15	0.39	0.81	0.32	0.77	1.62	1.14
2015-16	0.66	0.91	0.17	0.97	1.75	1.37
2016-17	0.78	1.09	1.28	0.78	1.22	1.44
2017-18	0.86	1.15	1.63	0.79	1.05	1.58
2018-19	0.92	1.14	1.53	0.85	1.07	1.50
2019-20	0.91	1.08	1.38	0.89	1.06	1.38
2020-21	0.89	1.03	1.27	0.86	1.00	1.27
2021-22	0.90	1.03	1.24	0.84	0.97	1.22

Note: 2014-15 is the year to the March quarter of 2015
Source: The CIE-Regions model

8.2   Nominal growth in the WPI, by industry (March financial years, per cent)

	Australia			Victoria		
	All-industries	Utilities	Construction	All-industries	Utilities	Construction
2014-15	2.47	2.89	2.41	2.69	3.54	3.06
2015-16	2.16	2.41	1.67	2.50	3.28	2.90
2016-17	2.40	2.71	2.90	2.53	2.97	3.19
2017-18	2.79	3.07	3.55	2.74	3.00	3.53
2018-19	3.11	3.33	3.72	3.04	3.26	3.69
2019-20	3.35	3.51	3.81	3.33	3.49	3.82
2020-21	3.39	3.53	3.77	3.36	3.50	3.77
2021-22	3.40	3.53	3.74	3.34	3.47	3.72

Note: 2014-15 is the year to the March quarter of 2015
Source: The CIE-Regions model

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