Deloitte Access Economics

Forecast growth in labour costs in Victoria

Report prepared for the AER

4 February 2013

Deloitte.

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Kevin Cheung
Australian Energy Regulator

4 February 2013

Dear Kevin,

Report on Victorian utilities sector WPI

Our final report on the Wage Price Index (WPI) for the Victorian utilities sector is attached.

Yours sincerely,

Chris Richardson
Director
Deloitte Access Economics Pty Ltd

Contents

Charts

Tables

Executive Summary

Key conclusions

Australia's economy has been driven in recent times by an ongoing 'resources boom' which has driven up demand for workers in sectors such as mining and construction. As these sectors compete with the utilities sector for some types of skilled labour, that has resulted in relative wage gains in the utilities sector in Australia, including in Victoria.

But **the nature of Australia's resources boom is changing**, with implications for the degree of competitive pressure on wages in the utilities.

There are three ways in which Australia has benefited from growth in emerging economies and an associated resources boom:

- First, c**ommodity prices and the $A leapt**, as demand for the commodities which feed into industrialisation and urbanisation in China and elsewhere rose faster than their supply, sending prices for Australian mineral exports leaping, and dragging the $A (a 'commodity currency') up in their wake. Higher national incomes boosted profits and underwrote consumer spending and business investment. That environment drove down unemployment, despite a sharp rise in labour force participation, and it also boosted wage growth. However, although commodity prices remain well above their 2003 levels, and although iron ore prices recovered sharply in recent months, the consensus among commodity forecasters is that the latter are unlikely to retest their 2011 highs any time soon.
- Second, the high commodity prices encouraged **a boom in mining-related engineering construction**. Moreover, despite high profile cancellations and deferrals of projects in the second half of 2012, there is still a stunning pipeline of work yet to be done. That pipeline of work is shifting away from iron ore and coal towards gas, but it remains huge. It generated a lift in construction employment to a peak of one in every eleven workers in Australia in 2011. That boosted the demand for workers with some of the same skills as those of the utilities sector workforce, thereby again underwriting a lift in relative wages in this sector. However, the peak in mining-related construction is not far off. In that sense, the second channel through which mining has delivered a boom to Australia's economic landscape – via its impact on construction – will peak and pass at some time in the relatively near future.
- Third, the construction phase still underway will increasingly lead to **higher volumes of mining exports**. That's no surprise. The long term outcome of the rise of emerging economies and their thirst for industrial commodities was always going to be a boom in Australian minerals and energy production. We've been investing a fortune to achieve exactly that. And there will be a rich vein of reward reaped in mining output and related export growth in the years to come, as we feed the global appetite for the likes of gas, coal and iron ore, as well as a host of other mineral and energy commodities. The Government's official commodity forecaster, the Bureau of Resources and Energy Economics (BREE), suggests the next five years will see Australia's LNG production more than double in volume, backed up by a roughly 50% increase in each of iron ore, thermal coal and coking coal.

As the mining boom matures, that shifting pattern of economic impacts is already becoming apparent. **The best of the commodity price boom has passed, the peak of the resource construction boom is in sight, and the leap in mining exports is still in its infancy.** In that sense, the resources boom is in transition – meaning that so too is Australia's outlook.

However, while the resources boom brought a range of benefits, it also brought costs. Not only did higher commodity prices boost the $A, their impact on national income also led to Australian interest rates being higher than those in other advanced nations. That relative strength in interest and exchange rates hurt sectors such as manufacturing, tourism and international education – with that list covering some traditional strengths of the Victorian economy. As workers in manufacturing also compete for some of the jobs in the utilities sector, that provided something of an offset to the upward wage pressures noted above.

National wage growth

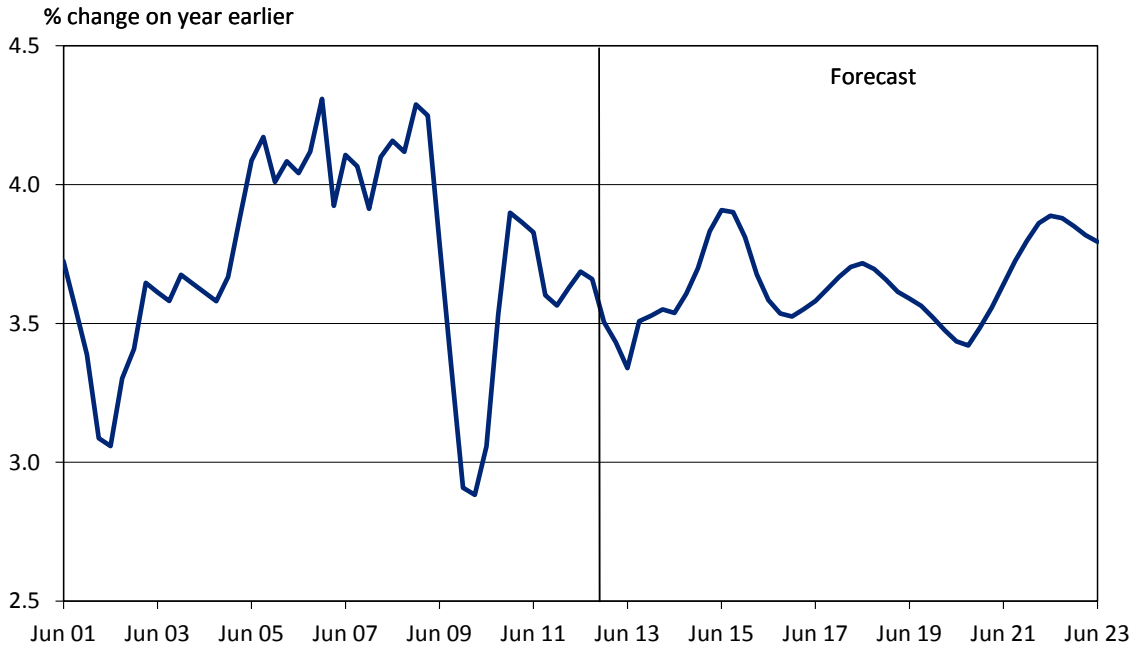
National wage growth has been slowing, and looks set to continue to pull back through the first half of 2013.

The run up to the Global Financial Crisis (GFC) saw several years in which wage growth was between 4 and 4½%. However, the GFC saw wage growth rapidly drop below 3%, before a subsequent recovery and then a renewed easing to 3.7% in the year to the September quarter 2012.

That basic pattern across time – strong, weak, recovering, easing – characterises a number of economic indicators, and wages are no exception. Wage growth is projected to trough at 3.3% in the year to the June quarter 2013, before a modest recovery thereafter.

The recent fall in wage growth has two related drivers: weakness in the economy, and weakness in inflation. The weak economy has shown up in below trend job growth, with miners now more cautious on costs, joining a public sector repairing State and Federal Budgets, and many others in the private sector who are also keeping wage growth in their sectors low – especially those businesses exposed to the relative strength in Australia's exchange and interest rates.

Chart i: Overall Wage Price Index forecasts



Source: ABS, Deloitte Access Economics' macroeconomic model

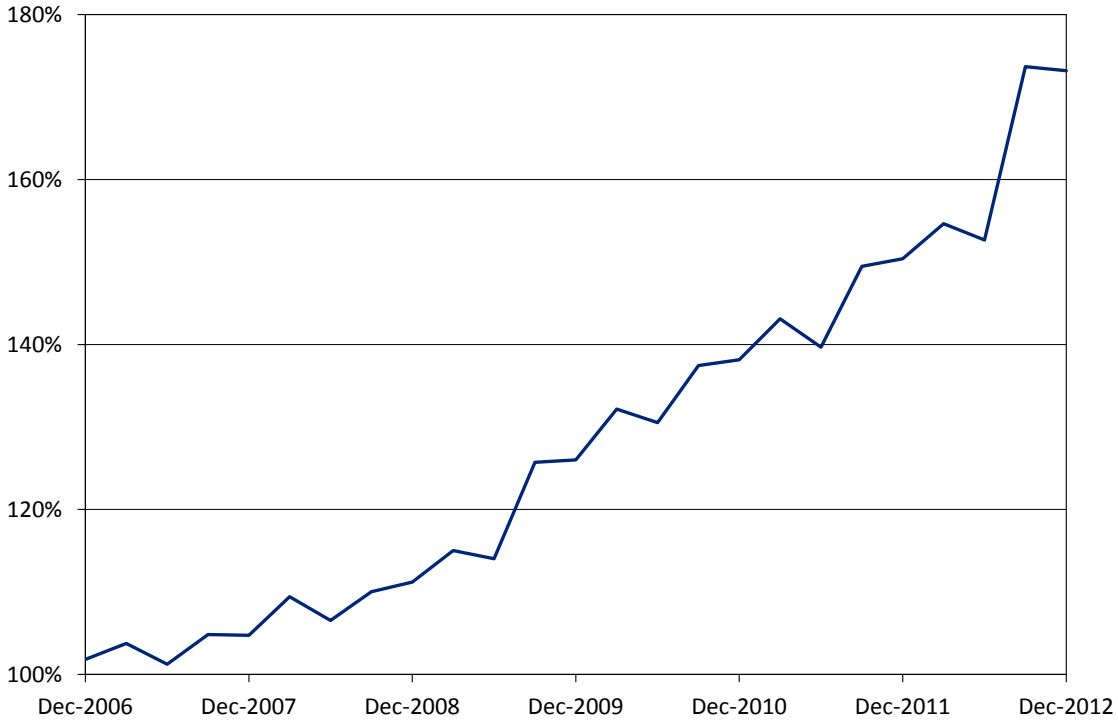
Conditions in the Australian utilities sector

As is true of many industries, the utilities are under pressure. Most notably, electricity output has fallen to where it was just ahead of the GFC, and the short term outlook is modest.

Using trend data, the electricity sector is amid its longest and sharpest contraction in output since records began on a consistent basis in the mid-1970s. Partly in response to rapid retail price increases, electricity output levels have been falling since late 2010 – and are currently 3% below their peak – whereas the other components of the utilities sector have seen output increase over this period.

Much of the bad news is related to the fact that electricity prices have soared. Indeed, as the chart below shows, in the past six years electricity prices have risen 74% more than consumer prices more generally.

Chart ii: Electricity prices versus the CPI as a whole



Source: Australian Bureau of Statistics

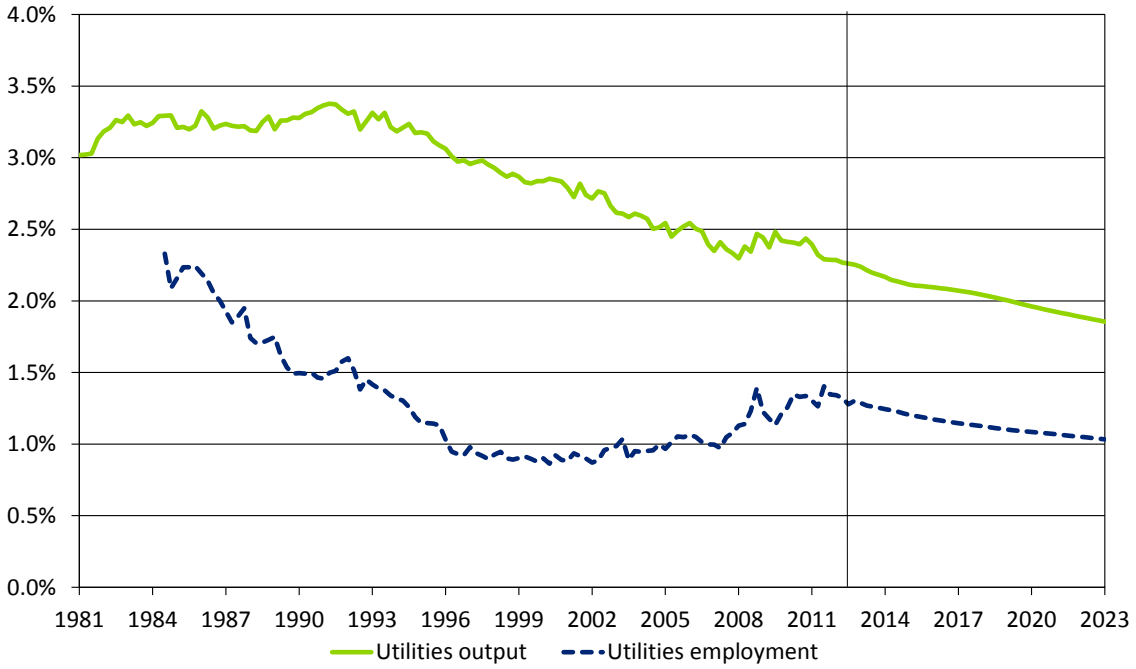
The carbon tax is partly to blame, but the other problem is a system which delivers little likelihood of blackouts. As Australia doesn't charge customers peak prices at times of peak demand (on sweltering summer afternoons), that has led to some gold plating of basic infrastructure – at a flow on cost to retail pricing.

The other big issue here is linked to Mandatory Renewable Energy Targets (MRET). Because Australia has a carbon price, it would make rather more sense to let the latter do the heavy lifting, but for the moment policy is forcing this sector to change its production profile as a result of mandates rather than markets. Even so, it looks as if gas-fired electricity will be on the rise, simply thanks to Australia's abundant gas potential.

There are other challenges for the utilities to handle too, including reduced production and a less certain future among metal refineries and smelters, which eats into electricity-intensive demand in Australia.

On the other hand, improving population growth and a projected lift in new housing starts should increase basic connections of power and water to those new homes. On balance, however, with weakness in the wider economy and with electricity demand still responding to recent relatively rapid price increases, this sector is expected to grow more slowly than the Australian economy and its workforce as a whole.

Chart iii: The utilities sector as a share of Australia



Source: ABS, Deloitte Access Economics' macroeconomic model

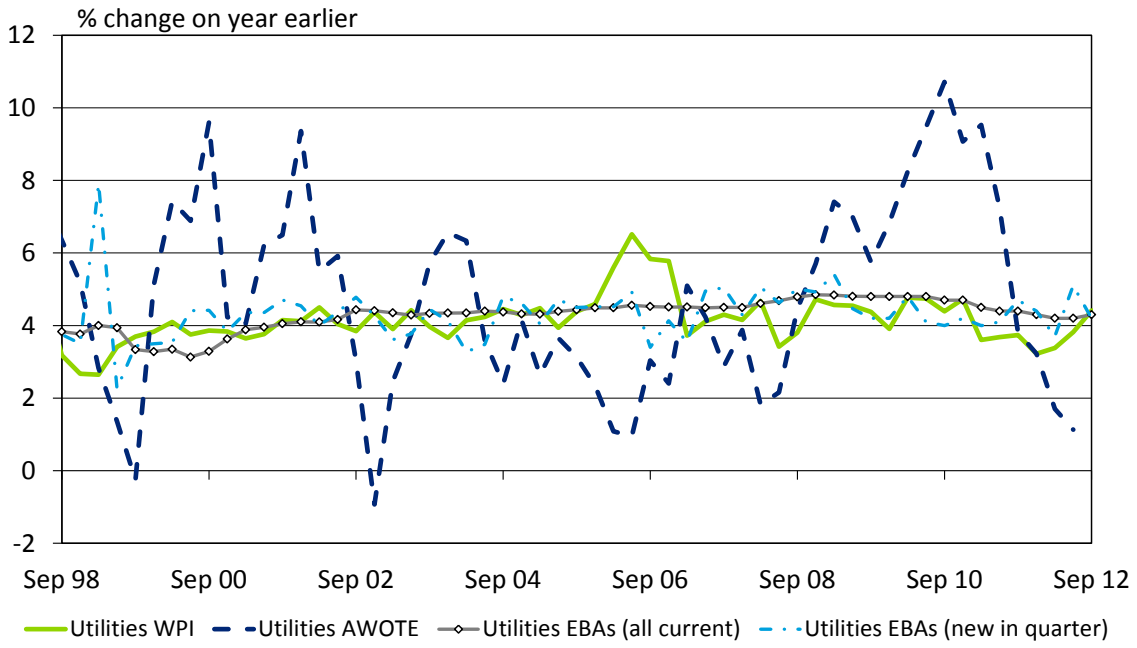
Wage growth in the Australian utilities sector

Yet despite softer conditions for the utilities, wage growth in the sector has held up. Wages in the utilities sector WPI grew by 4.4% in the year to September 2012, comfortably ahead of the national average growth rate of 3.7%.

But with the peak of the mining construction and investment boom fast approaching, there are question marks on the sustainability of demand for labour in these sectors, which will soon be fading as a driver of wage competition in the utilities. As we have often noted, skill shortages are temporary, and the shortages that have driven strong growth in the utilities sector in recent years appear to be nearing a turning point.

That said, mining construction activity remains at a very high level, and wage growth determined in new EBAs for the utilities sector remains robust. That suggests a degree of relative strength in wage growth in the utilities will remain until about mid-2013, before declining below the national average from about 2014.

Chart iv: Measures of utilities sector wage growth

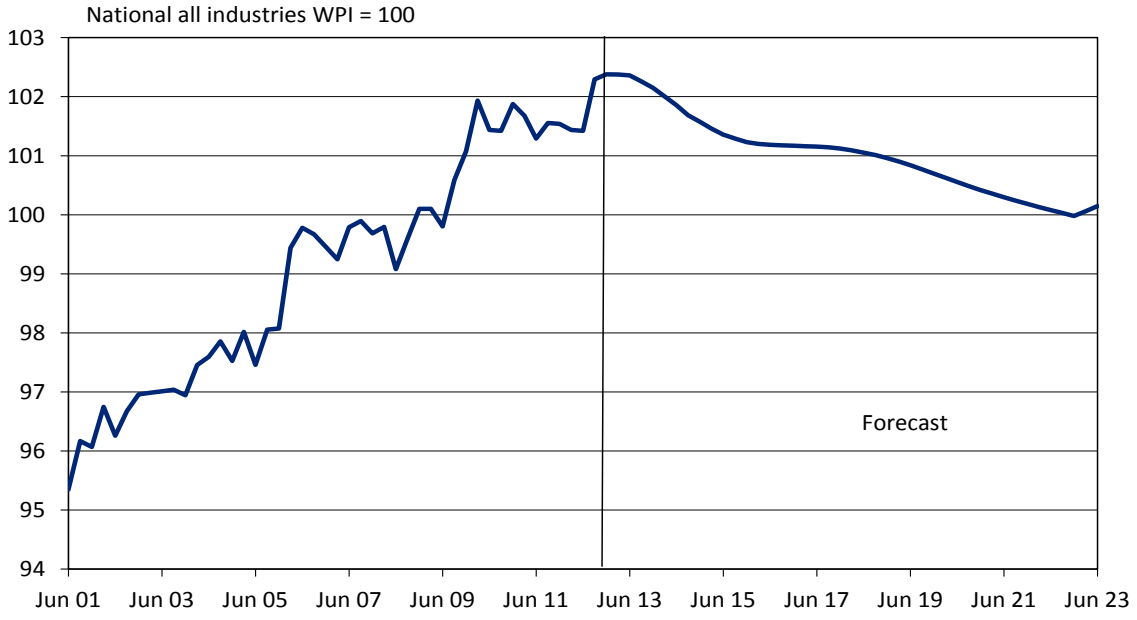


Source: ABS, Department of Education, Employment and Workplace Relations

Strong growth over recent quarters has seen wages in the utilities once again rising faster than the national average.

While a softening in demand in competing sectors is expected to see relative wage gains unwound in coming years, it is notable that much of the recent relative strength in wages will persist through to early 2014 – with the latter timing closely matching our expectation for the peak in mining investment.

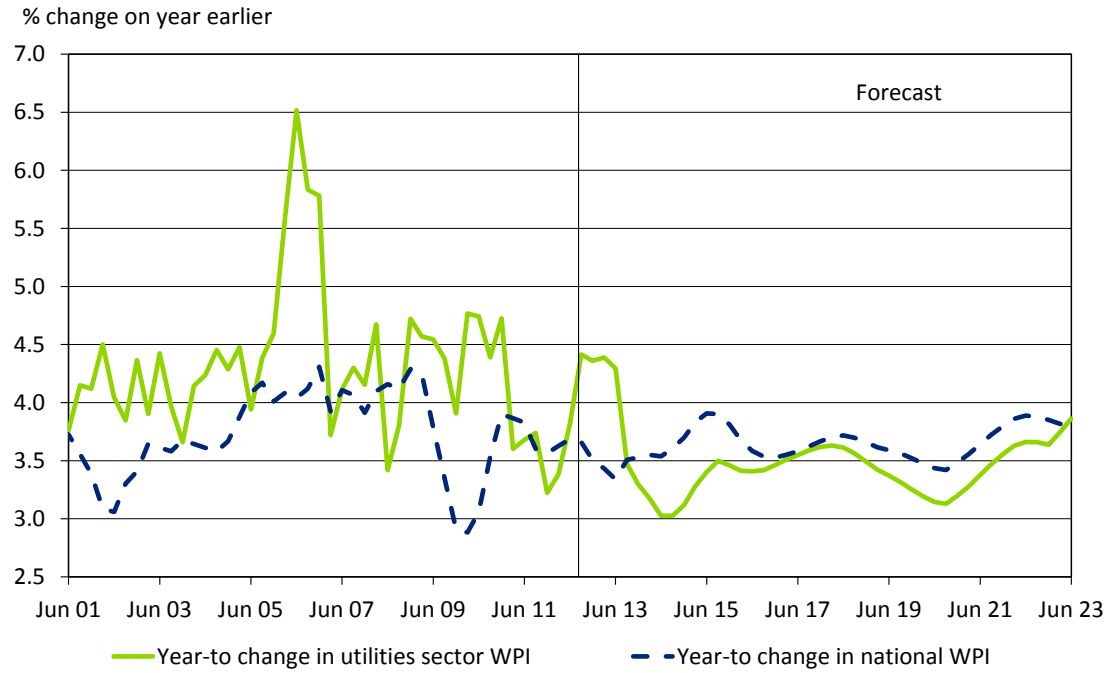
Chart v: The utilities WPI relative to the national WPI



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

Looking ahead, utilities wage growth is projected to remain above average wage gains through much of 2013, before lagging broader national wage growth over the medium term (see Chart vi).

Chart vi: Utilities Wage Price Index forecasts



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

As Chart v shows, Deloitte Access Economics projects a peak in relative utilities wages. This easing partly reflects some unwinding of previous gains, as well as weakness in utilities sector output.

Moreover, with the outlook for some competitor sectors for workers in the utilities either still very weak (as is true of manufacturing) or at risk of easing beyond a peak in resource-related construction in late 2013 (as is true of construction itself), some of the factors that drove a relative increase in utilities sector wages over the past decade are likely to weaken or partly unwind over the next decade.

Outlook for Victoria

Victoria's economic growth remains modest, with the strength of the $A affecting its manufacturers in particular, while its demand growth is easing. A slowdown in housing construction has seeped into retail sales, leaving the unemployment rate exceeding the national average for a year and a half. Finally, although State Government cutbacks were needed to help set fiscal finances in better order, they've also affected growth.

The coming peak in resource-related investment spending is less of an issue for Victoria – it has fewer resources, so its engineering construction pipeline is less at risk from a resource-related slowdown. Yet while NSW is better seen as an 'interest rate dependent' State, Victoria is more accurately characterised as a 'dollar dependent' State. Hence, the Reserve Bank's interest rates cuts are better news for New South Wales than they are for Victoria, with this State's

outlook more reliant on the rather more open question of what may happen to the $A. On balance, we see Victoria losing some of its share of Australia's economy in the next few years.

General labour cost growth in Victoria

Following a brief flurry at the start of 2011-12, Victorian wage growth has fallen behind its national counterpart in recent quarters, as a combination of the public sector wage restraint and a cooling in the construction sector helped to bring wage gains below the 3.5% per year level through much of 2012.

Unlike the resource rich States of Western Australia and Queensland, the State has seen little benefit from the current mining boom. That has been a key negative for Victoria amid the higher interest and exchange rates flowing from the mining boom.

However, as the mining boom itself changes gears, that lack of exposure to the boom means Victoria has less to fear from a shrinking pipeline of mining related construction and investment.

Not only are these trends likely to result in greater headwinds for wages in Queensland and Western Australia than in Victoria, recent developments suggest that those headwinds will arrive sooner, and prove more challenging than had been predicted through much of 2012.

Table i: State WPI forecasts

Calendar year changes in nominal Wage Price Index forecasts

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
National	3.7	3.6	3.5	3.6	3.9	3.6	3.6	3.7	3.6
Victoria	3.8	3.3	3.3	3.3	3.7	3.5	3.6	3.6	3.5

Calendar year changes in real State Wage Price Index forecasts

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
National	0.3	1.8	0.4	0.9	1.2	0.9	0.8	1.2	1.2
Victoria	0.3	1.6	0.3	0.7	1.2	0.9	0.9	1.2	1.2

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

That implies a degree of relative strength in wages for Victoria, both as current economic positives affecting this nation and its labour markets fade, and as pressure from interest and exchange rates on manufacturers in the State ease.

Looking ahead, we see a modest relative recovery for wage growth in the State, though that will owe more to a slowdown in the resource States than to more rapid gains in Victoria.

Wages in the Victorian utilities sector

Utilities wages in Victoria have seen a period of solid growth, and have kept pace with a recent upswing in the national utilities sector. That broader lift in utilities wages is expected to continue in the short term, helping to push wage gains in the State near or above the 4% level over the remainder of 2012-13.

Once the current upswing ends, Victoria's utilities sector employment is expected to face a more modest outlook. This reflects the significant challenges for the utilities arising from:

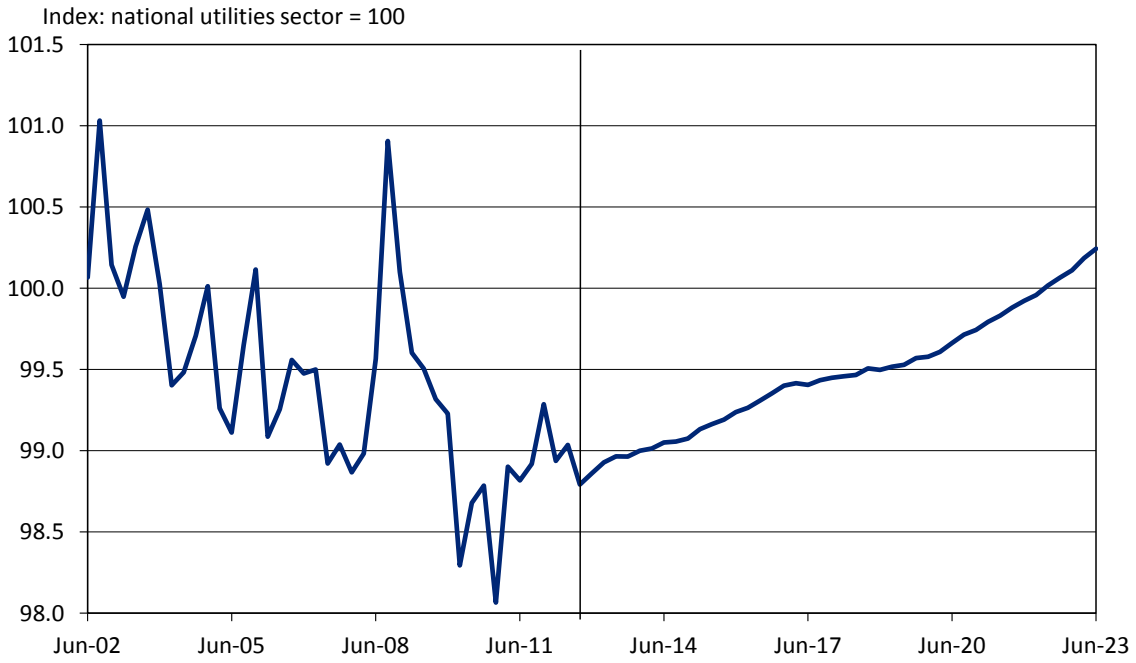
- the 'two speed troubles' gripping the State's manufacturing sector;
- the impact of past price increases for the sector's output, especially electricity;
- the slowdown in housing construction (and hence the pace at which utilities will be connected to new homes); as well as
- the impacts of the carbon price.

While the Federal Government's decision to abandon its plans to close a number of the State's coal-fired electricity generators means the latter are now likely to have a more gradual effect on the State's electricity generation sector than was in prospect, it will remain a challenge for a State whose energy supply is more emissions intensive than other jurisdictions.

Wage growth will also likely be constrained by further decreases in competition for labour from other key industrial sectors in the State – particularly manufacturing and construction. That trend will be more evident in Victoria than in Australia in general, particularly with the State's manufacturers exposed to a $A that will remain uncomfortably high for some time.

Even so, Victoria's utilities WPI is expected to make minor gains relative to its national counterpart, as seen in Chart vii below.

Chart vii: Victoria utilities sector WPI relative to national utilities WPI



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

In this chart the national utilities index at any point in time is set to a value of 100 and the index for Victoria is expressed relative to that value.

In brief, the period from the late 1990s to around 2005 saw considerable strength in wage gains in the utilities in New South Wales. In more recent times the flow-on effects from the Queensland and Western Australia mining sectors have been an important driver of WPI growth. Utilities wages in those strong mining States has been growing rapidly.

Victoria's relative utilities WPI measure is expected to rise slightly over the longer term, with that rise driven as much by relative weakness in the resource States as by strength in Victoria.

The expectation that relative WPI increases seen in Western Australia and Queensland will ebb slightly over time means that States such as Victoria will see relatively faster growth in utilities WPI than the average (even as Victoria's utilities sector WPI grows less rapidly than its overall WPI measure).

Summary results

The summary tables of results follow.

Table ii: Summary results – key variables

Calendar year changes in key variables

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
Output	2.4	3.6	2.5	2.8	3.0	3.2	3.5	3.1	3.1
Consumer price index	3.4	1.8	3.1	2.7	2.7	2.7	2.7	2.5	2.3
Wage Price Index	3.7	3.6	3.5	3.6	3.9	3.6	3.6	3.7	3.6
Average weekly earnings	4.1	5.0	4.0	3.6	3.9	3.6	3.6	3.7	3.6

Source: ABS, Deloitte Access Economics macroeconomic model

Table iii: Summary results – economic variables

Calendar year changes in key Economic variables

Annual % change (unless noted)	2011	2012	2013	2014	2015	2016	2017	2018	2019
Consumption									
Private sector	3.3	3.5	2.2	2.3	2.6	2.8	3.0	3.2	3.3
Public sector	2.5	3.3	-1.4	2.6	3.7	2.6	1.8	1.4	1.4
Private sector investment									
Non-business housing	0.7	-5.4	5.5	8.5	7.9	9.2	9.0	-2.7	-0.6
Non-business real estate	-7.6	-0.2	5.2	7.9	6.9	8.3	8.2	-2.5	-0.7
Non-residential building	3.1	14.0	4.8	0.4	-1.1	2.3	4.2	1.8	1.5
Engineering construction	39.9	38.6	3.3	0.9	-4.2	-1.9	0.0	-2.2	-2.5
Machinery and equipment	14.1	4.9	15.2	5.6	3.9	1.6	1.5	1.1	0.6
IP and livestock	5.2	3.6	1.1	8.0	-2.9	2.2	1.3	0.1	-0.2
Public investment									
General Government	-7.2	-7.0	-7.2	1.2	0.9	1.9	2.0	2.0	2.0
Public enterprises	-16.0	12.4	14.6	6.0	-1.0	0.1	0.8	-0.5	-0.8
Domestic final demand	4.2	4.7	2.5	3.0	2.4	2.7	2.8	1.8	2.0
Private sector	5.6	5.5	3.6	3.1	2.3	2.8	3.2	1.9	2.2
Public sector	-0.3	2.1	-1.3	2.6	3.0	2.3	1.7	1.4	1.3
Gross national expenditure	4.6	4.6	2.2	2.9	2.4	2.7	2.9	1.8	2.0
International trade									
Exports	-0.8	5.5	7.6	5.2	3.2	5.2	8.1	8.3	7.5
Imports	10.6	7.0	8.6	5.7	0.7	3.1	6.0	3.1	3.4
Net (% additon to growth)	-1.8	-0.3	-0.4	0.2	0.7	0.2	0.8	1.2	0.8
Total output (GDP)	2.4	3.6	2.5	2.8	3.0	3.2	3.5	3.1	3.1
Non farm output	2.2	3.7	2.5	2.9	3.1	3.3	3.5	3.2	3.1
Employment	1.8	1.0	1.2	1.4	1.4	1.5	1.8	1.7	1.4
Unemployment rate (%)	5.1	5.2	5.6	5.7	5.5	5.4	5.3	5.2	5.3

Source: ABS, Deloitte Access Economics macroeconomic model

Table iv: Summary results – wages and prices

Calendar year changes in national wage and prices variables

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
Consumer price index (CPI)	3.4	1.8	3.1	2.7	2.7	2.7	2.7	2.5	2.3
Wage Price Index (WPI)									
Nominal	3.7	3.6	3.5	3.6	3.9	3.6	3.6	3.7	3.6
Real	0.3	1.8	0.4	0.9	1.2	0.9	0.8	1.2	1.2
Average weekly earnings (AWE)									
Nominal	4.1	5.0	4.0	3.6	3.9	3.6	3.6	3.7	3.6
Real	0.7	3.1	0.9	0.9	1.2	0.9	0.8	1.2	1.2
Average weekly ordinary time earnings (AWOTE)									
Nominal	4.4	4.2	4.1	4.2	4.4	4.1	4.1	4.2	4.2
Real	1.0	2.3	1.0	1.5	1.7	1.4	1.3	1.7	1.8
Unit labour costs									
Nominal	3.8	1.4	1.8	2.4	2.6	2.4	2.4	2.8	2.3
Real	0.4	-0.4	-1.2	-0.3	-0.1	-0.3	-0.3	0.3	0.0

Source: ABS, Deloitte Access Economics macroeconomic model

Table v: Summary results – National sectoral wages

Calendar year changes in nominal national industry sector WPI

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
All industries	3.7	3.6	3.5	3.6	3.9	3.6	3.6	3.7	3.6
Utilities	3.6	4.0	3.9	3.1	3.4	3.4	3.6	3.6	3.3
Construction	4.0	3.9	3.3	3.4	3.5	3.0	3.2	3.7	3.8
Administration services	3.3	3.6	3.5	3.6	3.4	3.4	3.6	3.6	3.5

Source: ABS, Deloitte Access Economics labour cost model

Table vi: Summary results – State utilities sector

Calendar year changes in nominal utilities sector WPI

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
National	3.6	4.0	3.9	3.1	3.4	3.4	3.6	3.6	3.3
Victoria	4.1	3.9	3.9	3.2	3.5	3.6	3.7	3.6	3.4

Source: ABS, Deloitte Access Economics labour cost model

Deloitte Access Economics

4 February 2013

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 2017-18 for Victoria, as well as for Australia as a whole. This is the second and final report.

Specifically, AER requested:

- an analysis of forecast labour costs for the utilities industry in Victoria;
- a comparative analysis of forecast labour costs for the utilities industry with other industries that compete for utilities workers (mining, construction and administration services);
- an analysis of forecast general labour cost growth in Victoria; and
- a discussion of how market conditions are expected to affect the labour forecasts.

Deloitte Access Economics' report:

- **Discusses the economic outlook**, starting with Australia as a whole (see Chapter 2), then looking at Victoria (see Chapter 3), and then at the utilities sector (see Chapter 4), as well as the outlook for sectors which compete with the utilities sector for workers (notably, mining, construction and administrative services – see Chapter 5).
- **Discusses the outlook for wages**, starting with Australia as a whole (see Chapter 6, which also discusses the related outlook for prices), followed by **overall rates of WPI growth at the State level** (see Chapter 7), and then an examination of wage growth in Australia's utilities sector (see Chapter 8), as well as wage growth in key sectors which compete with the utilities sector for workers (construction and administrative services – see Chapter 9).
- The report then discusses **detailed forecasts at the State level of wage growth in the utilities and competitor industries** (see Chapter 10).
- **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, and a discussion of different wage measures.

2 The Australian economic outlook

2.1 The global backdrop

The world economy is an important backdrop to Australia's prospects.

The current global economic environment presents some significant challenges for the Australian economy, but in assessing that backdrop, we must be careful not to overlook the longer term perspective. Australia will indeed benefit from the rise of emerging Asia for years to come as these developing economies undergo their own industrial revolution, and the largest migration of people in human history is urbanising the populations of China and India at record rates. That will bring with it benefits to Australia that extend far further than simply boosting export volumes for our basic commodities.

Yet for now, the global environment remains at risk given the continuing sovereign debt problems in Europe and uncertainty from China. However, these risks now look less dangerous and for the first time in a while the news on global growth is getting better rather than worse. Moreover, improving conditions in the United States housing market may be the good news needed to ward off the economic concerns caused by wrangling in Washington over the so called 'fiscal cliff'. How these issues play out in the coming year will do a lot to determine the path of Australia's economic prosperity in the short term.

In brief, fears from Europe have subsided as the European Federal Bank continues to do *'whatever it takes'* to keep the ship afloat. The outlook from China has improved, with the most recent trade figures showing strong growth in export and import volumes, and with a new government that has so far signalled a willingness to support steel-intensive, investment driven growth. US growth, assuming that sensible fiscal outcomes prevail, has the potential to surprise in 2013. All that adds up to an outlook that is better than it has been for a while, but remains far from a perfect set of circumstances.

The World Bank (WB) released its most recent issue of its Global Economic Prospects (GEP) report on 15 January 2013.[1] In doing so, the WB noted that *"Four years after the onset of the global financial crisis, the world economy remains fragile and growth in high-income countries is weak"*. Overall, the WB's forecast for global growth in 2013 was marked down to 2.3% from previous expectation of 3.0% in June 2012, citing potential downside risks from the Eurozone, US debt issues, declining Chinese investment and possible disruptions to oil supplies as reasons for the revision.

The latter is, of course, a global view. The WB further noted its view that *"Developing-country GDP is estimated to have grown 5.1% in 2012, and is projected to expand by 5.5% in 2013, strengthening to 5.7% and 5.8% in 2014 and 2015, respectively".* So while global growth remains anaemic overall, a number of our key trading partners are projected to do relatively better than average.

Deloitte Access Economics' view on several key nations follows.

[1] See http://www.imf.org/external/pubs/ft/survey/so/2012/RES100812A.htm

Improving conditions in the **United States** housing market, the addition of cheap energy, thanks to new gas supplies, and the willingness of the Fed to keep the printing presses rolling (and Congress staying out of the way) could be enough for the US to start to deliver some much needed momentum to the global economy. On the other hand, consumer spending still has a way to recover, as does unemployment, while State Government spending cuts have taken a lot away from demand. Significant fiscal challenges will need to be addressed over the coming months as the next fiscal watershed moment approaches as the US again approaches its debt ceiling. As a result economic growth in the US over 2013 may be limited. Indeed, the IMF in its latest quarterly update to the semi-annual World Economic Outlook, downgraded the forecast for U.S. growth for 2013 down by a tenth, to 2.0%, with the pace *"rising above trend in the second half of the year,"* while raising the estimate for 2014 to 3.0%.

Japan's industrial base produces less than it did a decade ago – and it exports less too. Recent growth has relied on a boost from reconstruction work after the devastating earthquakes and tsunamis of early 2011, but the latter have already peaked, along with temporary support from tax incentives. And sales to China have been affected by the slowdown in emerging economies evident through 2012 all across the globe. Moreover, the population is shrinking in size and ageing fast, government debt is a larger multiple of national income than in Greece and despite a new government, of which Japan has had many of late, much needed reforms to taxes and spending remain unaddressed. At the same time, private sector debt to GDP remains high, and the stockmarket is worth just a fraction of its value a quarter of a century ago. In the short term, much will depend on movements in the Yen, which had been trading uncomfortably high prior to the latest round of money printing by the Bank of Japan as a result of monetary easing in the US and Europe. All that adds up to a rather depressing story for growth over the short term in the world's third largest economy (and our second largest trading partner).

Europe's problems are many – its banks are badly undercapitalised, making it hard for them to finance new growth. Indeed, investors are currently valuing Australia's financial sector more highly than all of Europe's banking sector added together. And political divisions between member countries threaten the entire recovery process. Moreover, Europe's economies all operate at very different levels of competitiveness, with Greece, Spain, Portugal and Italy having long since priced themselves out of world markets. These competiveness problems are the most damaging of all, as well as the hardest to solve, and with austerity measures on top, unemployment within the Eurozone is at record rates. Recession in Europe's periphery is creeping towards its core and countries on Europe's southern fringe will see their economies remain on the back foot for some years until wage costs are restrained (relative to those in Germany and France) rather more than they've already been. So the underlying story remains better than it was, with the risk of a complete melt down in Europe now less likely, but with the caveat that the toxic mix of politicians and markets could trip up debt talks in the Eurozone.

China's economy staggered in the middle of 2012, and it took a while for things to stabilise once more. But they did stabilise, and now the recovery is strengthening. The government has pumped up infrastructure spending and eased the constraints on lending. That new spending is now starting to show up, with more to come, and it can be expected to buoy the construction market more generally over the coming year. Credit growth has also started to pick up again, although that counts as a negative as well as a positive – it helps growth in the short term, but this is an economy which has relied too much on credit growth in recent years. The upshot is that indicators of manufacturing are already looking healthier, and the same is true of electricity output, where the data is now pointing to a revival. Importantly for

Australia, inventories of unsold inputs at steel mills have also dropped back to more sustainable levels, allowing something of a bounce back in commodity prices. And equally as important, China's new government has so far signalled a willingness to support steel-intensive, investment driven growth. However, the new leadership will, during its tenure, have to oversee a swing away from infrastructure and investment and towards consumer spending. Chances are that will see growth averaging less than it has in the past decade and that, with too many apartments having already been built, there will be limited upside for Australia from this swing in growth patterns. Overall, the outlook for China's economic growth in 2013 now looks increasingly solid, but we would maintain a more cautious outlook thereafter.

2012 was a difficult year for the major emerging economies of the world. **India, Brazil** and **Turkey** all slowed, meaning that the outperformance of emerging economies over the past decade suffered some damaging headwinds. Indeed, India's growth is too low, but its inflation and its budget deficit are too high: a tricky combination, as it means that neither the Reserve Bank of India nor the government have both the ammunition and the inclination to prop up the outlook.

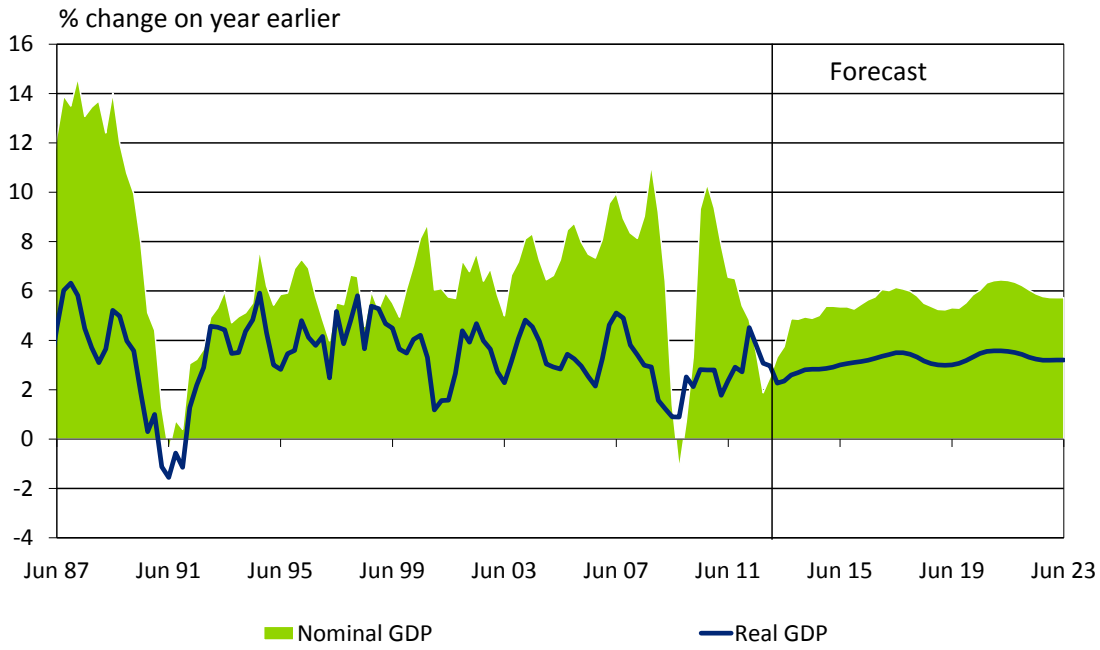
2012 also saw some heavier headwinds being faced by **Asia's Tigers (Korea, Taiwan, Hong Kong, Singapore, Thailand, Malaysia, Indonesia** and **the Philippines**, all now seeing more modest growth prospects.

2.2 Implications for Australia

The mega-mining construction projects which accounted for much of Australian production growth in recent years are hurtling towards a peak. We time the latter as coming in late 2013 – though the Reserve Bank sees it coming even earlier. That means Australia's main growth driver will no longer play that role beyond 2013. (Resource related construction will remain huge relative to times past, but will be falling from its 2013 peak.) That leaves the rest of the economy to fill a potential growth pothole. But Federal and State Government cuts have deepened that pothole. And although interest rate cuts will help retail and housing activity more than is yet realised, that won't be enough. Australia also needs the $A to start to slide from recent highs to take pressure off the likes of manufacturing, tourism and international education. Yet so far that's not happening, with a sharp divide between commodity prices (which have fallen) and the $A (which hasn't). These forecasts project growth will continue to labour in the short term amid damage from the $A. At least global risks now look less dangerous, with China rebounding, US growth having the potential to surprise, and Europe's central bank doing the best that it can.

You can measure growth by looking at how much more we are producing, or by looking at how much more we are earning. Both measures are in Chart 2.1, and they tell very different stories.

Chart 2.1: Growth in Australia's real GDP and in nominal national income



Source: ABS, Deloitte Access Economics macroeconomic model

On the one hand production growth remains solid, though it has been losing momentum for the past year. The slowdown is in government spending (as both the Feds and the States battle budgets), as well as increased caution on the part of consumers who spent their carbon compensation earlier in 2012, but have been more careful with their cash since then. Even worse, some recent production simply helped fill shop shelves with unsold goods, with production growth running a little ahead of sales in the closing months of 2012.

These negatives come atop what were already difficult trading conditions for those sectors on the wrong side of Australia's two speed economy. As we've often noted, the rise of China has helped send the $A into the stratosphere. And, by pumping more income into Australia than is true for other rich nations, our interest rates remain relatively higher than the rates seen among our peers. Hence the strength of exchange and interest rates was already hurting growth, but now governments are doing the same, while our consumers are being conservative once more.

Moreover, all those negatives are being felt even before the peak in the resource construction boom. When the latter does occur, it will mean that the strengths of Australia's two speed economy will have run out of steam. No wonder then that corporate Australia, the Reserve Bank and the Federal Government are all looking for new growth drivers. The bad news is the latter may be harder to conjure up than usual. Although interest rate cuts will help the pace of housing construction and retail sales – both have been in the doldrums, but both are projected to do better – they may not fill the hole left by the peak in the resource construction boom and the continuing headwinds created by tightening State and Federal Budgets.

That's because the biggest single negative for growth is the Australian dollar. Ordinarily, the big falls in commodity prices and in interest rates in recent months would have driven a downturn in the $A. That hasn't been true of late, however, because Australia's economy and currency remain a safe haven in a world still awash in risks, and because money is still flooding into this nation to finance the mega mining projects that are still underway. And with a $A

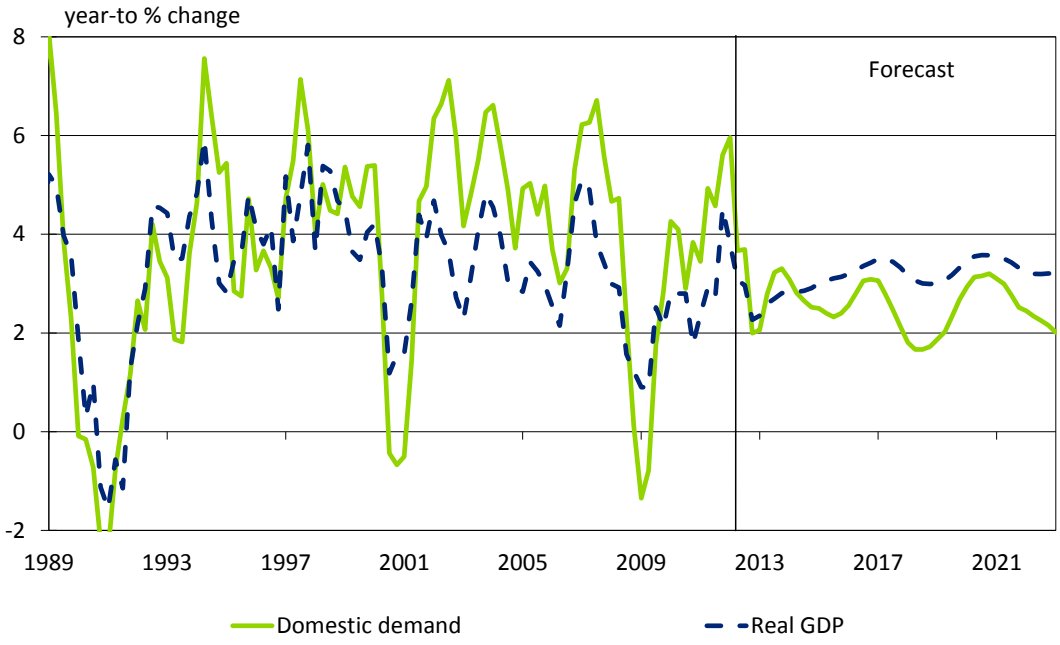
that remains persistently high, then production growth – seen in Chart 2.1 above – may struggle to fill the pothole as mining related construction peaks and then falls away.

But the latter is a potential problem for down the track. The other series shown in Chart 2.1– the growth in Australia's national income – is already facing difficulty. That is because 2012's slowdown in emerging economy growth sapped the strength from industrial commodity prices, thereby dropping national income growth to just 2.7% over the past year. (The fall in nominal GDP growth to 1.9% in the past year is even more dramatic, with the current growth rate less than a third of what it has averaged in both the last decade and the last two decades.)

Production growth is the usual yardstick of health in an economy. For example, the Budget papers promised the Federal Government would build growing surpluses while growth is at or close to trend, and the Government has interpreted the word "growth" in its own fiscal rules to mean real GDP growth. Yet that's not how most businesses and families feel the economy. What we feel is better captured in national income growth – in effect the increase in revenue of Australia Pty Ltd. The latter is the lowest it has been since the global financial crisis, which helps to explain why so many are still feeling and seeing an economy in standstill.

As Chart 2.2 below shows, demand growth in Australia remains healthy, with imports still strong, partly aided in that strength by the high $A. But it's not imports and the $A which have been the main driver of domestic demand strength in recent times. That's been the mega mining projects in gas, iron ore and coal which have dotted the Australian landscape.

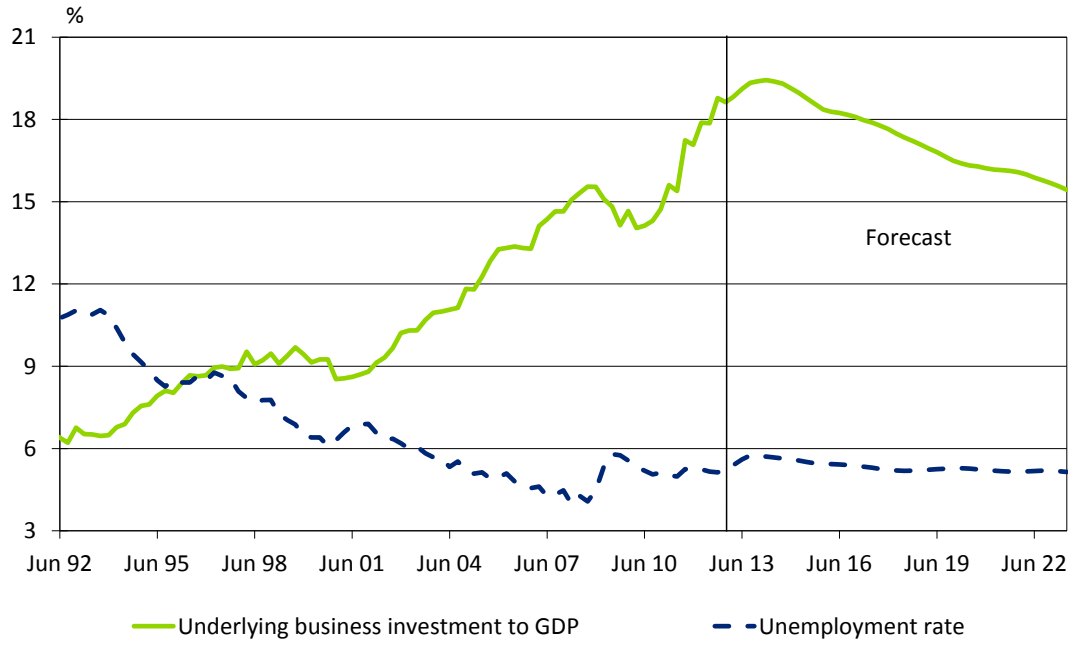
Chart 2.2: Domestic demand and supply (GDP)



Source: ABS, Deloitte Access Economics macroeconomic model

However, as Chart 2.3 shows, the peak in the investment spend will be arriving sooner and at a lower level than earlier expected - we continue to see the peak as arriving in late 2013.

Chart 2.3: Business investment and the unemployment rate



Source: ABS, Deloitte Access Economics macroeconomic model

That timing provides some handy breathing space for Australia's economy and its outlook. In response, the Reserve Bank is trying to gear up the interest rate sensitive sectors of the economy, including retail spending and housing construction, to take the growth baton. The bigger question mark is whether the dollar dependent sectors – including the likes of manufacturing, tourism and international education – will also hear some good news any time soon. It is our hope – and given our forecasts, also our expectation – that the $A will fall providing impetus to the Australian industrial landscape before the resource construction boom peaks.

If that's so, then the baton change across the sectoral drivers may not be smooth, but it's unlikely to cause too much harm across the economy as a whole. That very view underpins these forecasts.

Then again, the latter forecast covered the outlook for production growth – gains in real GDP. But national income growth is at least as important. In a typical year Australian national income grows by around $80 billion dollars – a little over 6%. However, the slowdown in emerging economies and the continuing weakness in advanced economies have hit commodity prices and hence national income growth, with the latter slipping to $56 billion through calendar 2012.

The good news is that we project better times ahead, with national income growth lifting to some $64 billion through the course of 2013, and then a further $74 billion through 2014. That's still below the trend of the past decade, but it's rather better than Australia had to deal with through 2012.

2.3 Is the mining boom over?

In previous analysis for the AER we have stressed that the mining boom can be measured in three ways**; via commodity prices, via the strength of resource-related construction, or via**

resource-related export volumes. Further, we have noted that it is unlikely that the world will ever see anything like the **industrial commodity prices** seen in 2011 ever again – or at least not for a very long time. But the question is not whether the boom in commodity prices has peaked – that happened a while ago now – but when will we likely see the peak in resource related construction?

The mega-resources investment projects which accounted for much of Australian economic growth in recent years are hurtling towards such a peak, likely in late 2013. That means Australia's main growth driver will no longer play that role beyond 2013. (Resources related construction will remain huge relative to times past, but smaller than its 2013 peak).

A key question for the Australian economy over the next few years will be what sort of business investment profile we see after resources investment peaks – one of gradual decline with resources investment remaining at historically high levels, or a much sharper drop-off?

2013 brings with it the due date of final investment decisions for a number of large resources projects. The top ten projects on this list could potentially provide another $126 billion boost to Australia's investment agenda. What happens to these projects will go a long way to answering the above question.

Whatever happens, it will be followed by an increase in export volumes. These gains will partly offset the slowdown as construction related investment eases. But it won't completely fill that pothole – it takes a lot more people to build a mine than to run one. More importantly, while construction is set to peak in late 2013, export volumes are not projected to make significant gains until 2015, which means Australia may still face a tricky change in growth gears in a couple of years. Besides, as we have noted before, the coming gains in export volumes will offset investment (that is, construction) losses, but not prices, as the lift in mining output (in Australia and in other countries) pushes down commodity prices.

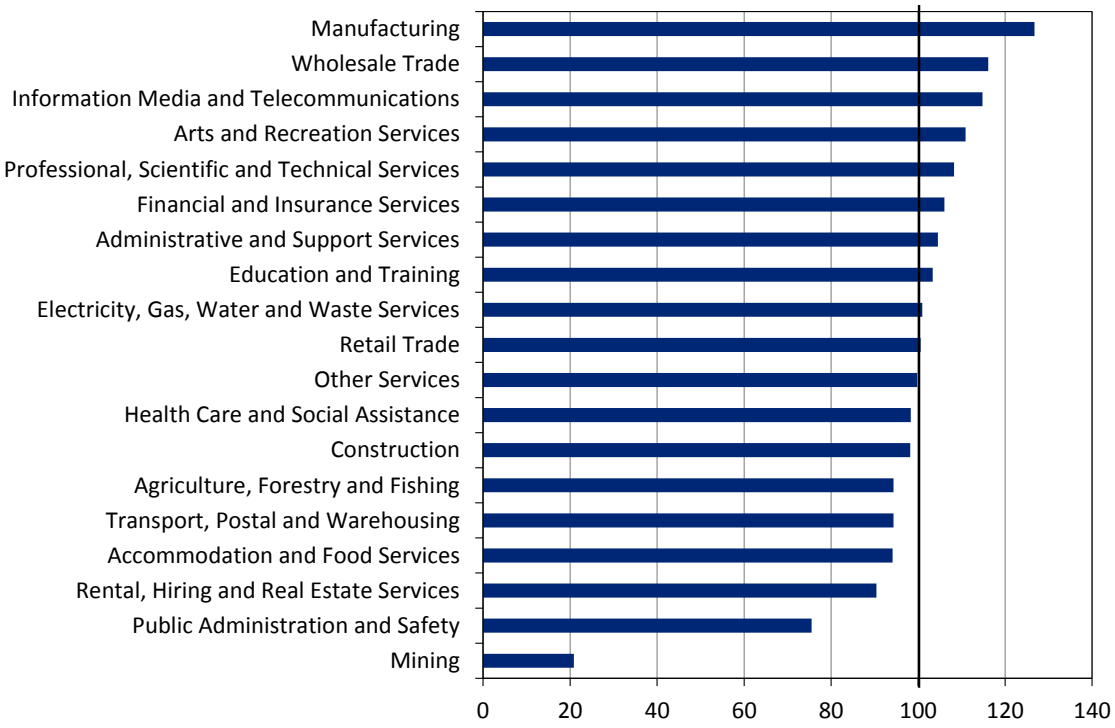
To summarise, the best part of the mining boom – the rise in commodity prices – has already passed its peak, and the key driver of Australian growth at the moment – resource-related construction – is likely to peak late in 2013 or early in 2014. That doesn't mean the boom is 'over', but it does mean the boom is already less of a positive, and that it has embarked on a trajectory that will see those gains further eroded in the next few years. Australia will still be much better off than those rich nations without a big mining sector, but the story is changing.

3 Victorian economic outlook

3.1 The structure of Victoria's economy

Chart 3.1 ranks the relative intensity of employment in Victorian industries against that seen nationally.[2] If an industry ranks above the 100% line, it accounts for a relatively higher share of the State employment base compared to nationally.

Chart 3.1: Ratio of Victorian employment shares to national industry shares – 2011-12



Source: ABS, Deloitte Access Economics

Sectors which stand out for their relatively strong representation in Victoria include:

- **Manufacturing**, which while taking a battering in recent years still accounts for a relatively larger share in Victoria than in other States. Automotive manufacturing has had a particularly bad run – shedding around 40% of jobs since 2005. However, a more favourable outlook for the $A in the coming year should provide some welcome relief for Victoria's larger than average manufacturing sector.
- **Wholesale trade**, partly a result of the manufacturing sector's good performance and partly due to some good years for the State's agricultural production. A high $A has also been good news for imports via the Port of Melbourne – hence driving up wholesale trade in recent years.

[2] These figures, like the WPI, exclude agriculture from the measure of employment

- **Information services**, with the State accounting for a high share of telecommunications sector workers thanks in part to the location of Telstra's headquarters and a strong service sector in Melbourne.
- **Arts and recreation services**, helped by Melbourne's monopoly on just about every major sporting event to come to Australia – and fanatical support for AFL also helps. Melbourne is also home to Australia's largest Casino - Crown Casino.

It is worth noting that while Victoria has a similar share of financial services employment to that of the nation as a whole, Melbourne has made considerable gains in market share, at Sydney's expense, and is largely a result of Melbourne doing a relatively better job at building new office space – and hence keeping rents relatively lower.

Sectors which stand out for their relative lack of representation in Victorian employment include:

- The **mining** sector. Victoria has relatively few mining projects compared to the States to the north and west; and
- **Public administration**, primarily due to the concentration of this sector in Canberra, and recent budget cuts by the State government will ensure that employment in the sector will remain below average over the short term.

Victoria's industrial structure is important in determining the effect of Australia's current economic pressures – those of relatively high interest rates and a high $A - on the State's outlook. It suggests that Victoria's economy has been relatively more exposed to the 'two speed economy' pressures of recent years than has been true of the Australian economy as a whole.

The strength in the $A and in interest rates (or, more correctly, interest rates here versus those in other developed nations) **have been a greater negative for Victoria than for Australia as a whole**. **But expectation for a fall in the value of the $A should equally be better news for Victoria than for Australia as a whole.**

But for now, the continuing strength of the $A (even though industrial commodity prices and interest rates have fallen) places the State's manufacturing, tourism and international education sectors under pressure.

Victoria has an unfair share of industries adversely affected by a strong $A (manufacturing, agriculture, higher education) and by relative strength in interest rates (housing construction and the retail sector).

3.2 The State's economic outlook

Across the last decade – one dominated by good growth news out of the resource States – Victoria's achievements were considerable. The State achieved excellent population growth, and broadly managed to maintain its share of Australia's economy and population at a time when you'd expect this State to lose share to the good news in Australia's west and north.

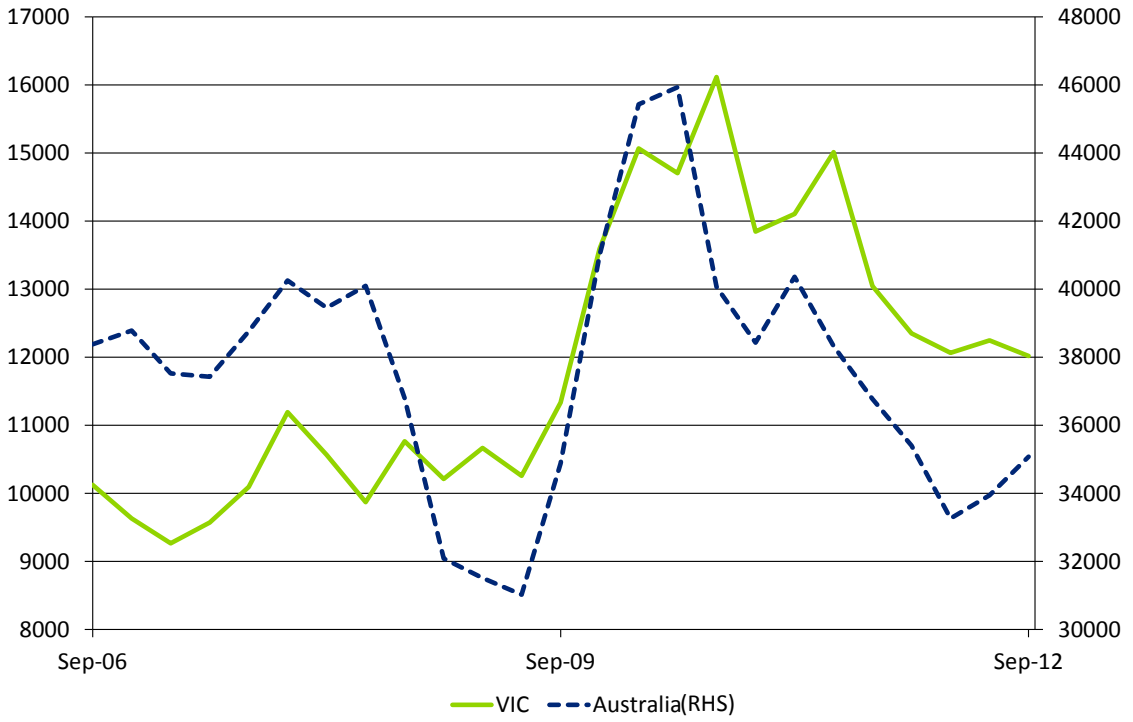
There were a number of reasons why Victoria's economy outperformed, including a better performance on infrastructure and residential land release (the latter might have been poor, but it was still better than that seen elsewhere), and Victoria managed to sell a lot to the

resource States. Even more importantly, Victoria over-achieved partly because NSW under-achieved over the past decade, as Victoria's relatively more affordable office space, industrial land and housing allowed it to steal a march on its traditional foe to the north.

However, the good news has been petering out. In part that is because the relentless rise of the $A has generated bad news for this State's strong manufacturing sector, while the $A added to what was already bad news for the State's largest export earner – international education. The latter has also been battling continued fallout from changes to visa arrangements, as well as the well-publicised question marks over the treatment of Indian students.

Similarly, the success of housing construction in the State has mostly drawn to a close. There were a number of years in which housing starts in Victoria easily surpassed those in NSW and Queensland, and there've even been times in which Victoria's housing activity matched that of the rest of the east coast added together. But as Chart 3.2 shows, that strength has now passed. Although Victoria's housing construction hasn't fallen into a hole – low interest rates should stop that happening – it is no longer the growth driver that it once was.

Chart 3.2: Quarterly dwelling commencements



Source: ABS

That is partly a result of the State's past successes – as Victoria hasn't got anything like the pent-up demand evident in some other key States. That leaves the overall housing construction outlook in this State projected to be solid enough, just somewhat less impressive than it is for other parts of the country.

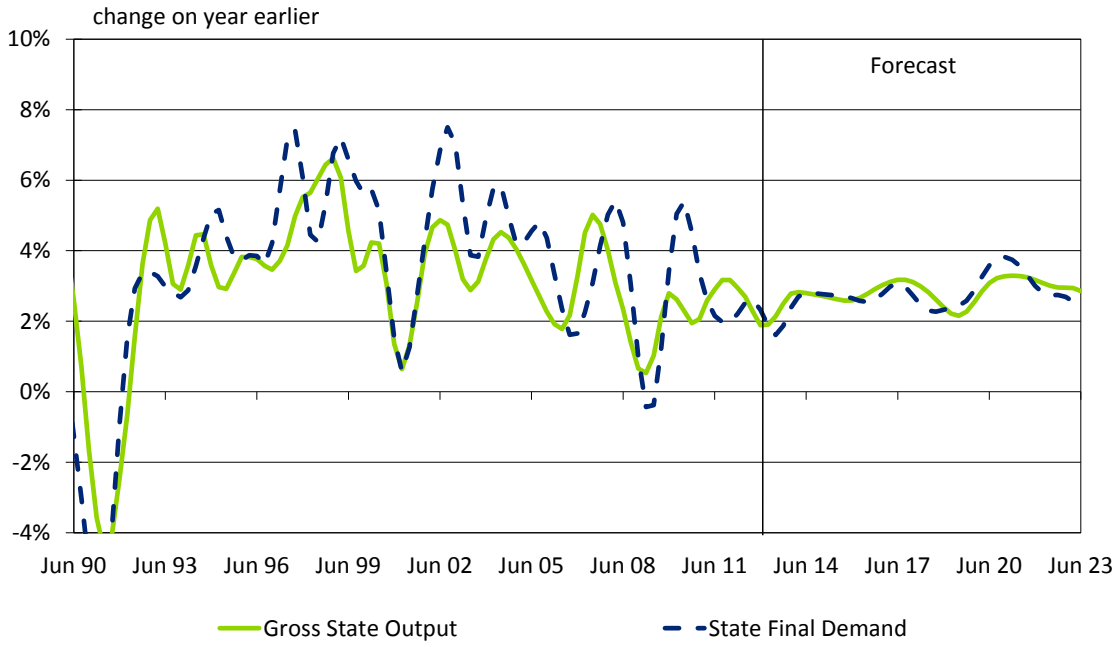
Moreover, the bad news has seeped into retail sales, while a poor performance on the job front has seen the State's unemployment rate exceed the national average for a year and a half. Finally, although State Government cutbacks were needed to help set fiscal finances in better order, they've also sucked some growth out of the State.

In short, Victoria is suffering from a range of negatives. But chief among them is the strength of the $A. And that poses a problem. On the one hand, the coming peak in resource-related investment spending is less of an issue for Victoria than most other States – it doesn't have the resources, so its engineering construction pipeline is less at risk from a resource-related slowdown. However, whereas NSW is better characterised as a State that's dependent on interest rates, Victoria is more accurately characterised as a State that's dollar dependent. Hence, the Reserve Bank's interest rates cuts are better news for New South Wales than they are for Victoria, with this State's outlook more reliant on the rather more open question of what may happen to the $A.

Accordingly Deloitte Access Economics forecasts an outlook for 2013 and 2014 with few major problems for Victoria, but with its economic outlook more reliant on the $A than anything else. Yet it will still be true that lower interest rates are good news for housing construction in Victoria – the latter would have had a bigger and harder fall absent the Reserve Bank's cuts to rates. And although the State's retail spending growth has been close to stagnant, it too can expect to benefit from lower interest rates.

In addition, Victoria's population growth remains essentially line ball with that seen nationally and – all things considered – that's a pretty good outcome.

Chart 3.3: Victorian State output and demand (change on year earlier)

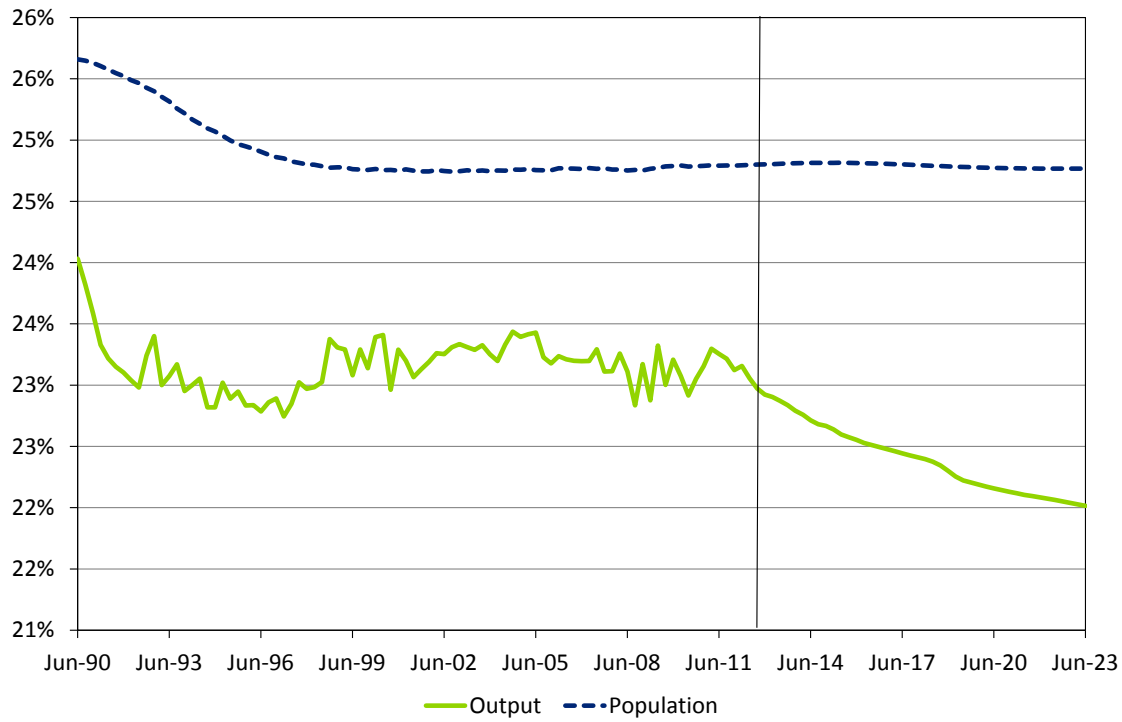


Source: ABS, Deloitte Access Economics macroeconomic model

However, with the $A still high, the short term outlook for growth seen in Chart 3.3 is relatively modest. In addition, Chart 3.4 indicates that we see Victoria losing some of its share of Australia's economy in the next few years.

In effect, this State's ability to outperform other States over the past decade may have mostly run its course. Although the good news in the sunbelt States of Western Australia and Queensland is already itself moderating, the excellent relative performance of this State's economy may have done its dash for the moment.

Chart 3.4: Victoria as a share of national totals



Source: ABS, Deloitte Access Economics macroeconomic model

Table 3.1 below sets out Deloitte Access Economics' current forecasts for Victoria's economy.

Table 3.1: Victorian demand and output forecasts

Calendar year changes in Victoria key economic variables

Annual % change (unless noted)	2011	2012	2013	2014	2015	2016	2017	2018	2019
Consumption									
Private sector	2.7	2.1	1.4	2.8	2.3	2.5	2.9	1.9	2.2
Public sector	2.1	1.8	-0.6	3.1	4.2	2.9	2.0	1.6	1.5
Private sector investment									
Dwelling investment	7.2	-3.5	-2.1	2.8	3.4	6.1	6.8	-4.3	-1.7
Non-residential building	-6.8	20.5	8.2	0.4	-3.5	-0.1	3.8	0.2	-0.2
Engineering construction	-1.1	7.0	19.4	9.6	-3.0	-2.3	3.1	-1.4	-2.1
Machinery and equipment	8.7	2.5	8.1	8.1	4.2	1.0	0.6	0.1	1.3
IP and livestock	3.8	3.1	-5.8	2.5	-10.1	-1.3	5.0	4.2	0.7
Public investment									
General Government	0.3	-21.4	-8.7	2.5	1.3	1.9	1.9	1.9	1.8
Public enterprises	-8.9	1.7	-0.4	3.2	-1.3	-0.2	0.4	-0.6	-0.8
Real final demand	2.7	2.1	1.4	2.8	2.3	2.5	2.9	1.9	2.2
Private sector	4.4	2.9	1.1	2.6	2.0	2.6	3.2	2.1	2.5
Public sector	-2.7	-0.7	2.4	3.4	3.3	2.4	1.8	1.3	1.3
Gross State output	2.4	2.7	2.2	2.3	2.7	3.0	3.3	2.9	2.5
Employment	2.1	0.5	0.9	1.0	1.0	1.4	1.7	1.6	1.2
Unemployment rate (%)	5.2	5.5	5.9	5.9	5.7	5.6	5.5	5.4	5.4

4 The utilities sector outlook

The utilities sector (technically the electricity, gas, water and waste services industry, which is division D of the Australian and New Zealand Standard Industrial Classification, 2006) covers economic units engaged in the provision of:

- electricity;
- gas through mains systems;
- water;
- drainage; and
- sewage services.

The Australian Energy Regulator (AER) is principally concerned with the regulation of the electricity and gas markets.

4.1 The policy backdrop for the utilities sector

Regulation of the electricity market has been a topic of considerable policy interest in recent months. While the much anticipated introduction of the carbon price resulted in a 5 – 13% increase in retail prices nationally (AER 2012), policy attention at the Federal level has since shifted to examining the role played by capital investment in distribution networks in raising electricity prices.

4.1.1 Network investment

Policy concerns around the level of investment in 'poles and wires' infrastructure has been motivated by the fact that network charges collectively account for around 45% of retail electricity costs and have been a major driver of price increases in recent years in a number of states (AER 2012). In particular, concerns have been raised about the high reliability standards imposed by State governments which have led to high levels of investment in distribution networks and rising retail prices.

Similar considerations apply to the gas market, with the cost of supplying and maintaining gas pipelines accounting for approximately two-thirds of retail prices (AER 2012).

The introduction of smart meters in conjunction with the introduction of peak pricing is seen as one potential way of reducing investment in 'poles and wires' infrastructure by encouraging consumers to manage their level of electricity demand during the day. However, the roll out of smart meters in the Victorian context has been controversial, largely due to the costs associated with the smart meter roll out.

4.1.2 The carbon price and Renewable Energy Target

While the debate has shifted away from the carbon price in recent months, it continues to have important policy implications for the sector. Electricity generation accounts for

approximately 35% of Australia's carbon emissions (Garnaut 2011) meaning the sector is a key target of the carbon price arrangements.

At present the carbon price (introduced in July 2012) is set at a fixed price of $23 per tonne, but will be replaced by an emissions trading scheme in July 2015. Under the emissions trading scheme the price of carbon in Australia will be linked to the price of EU carbon allowances.

Over time, the carbon price and emissions trading scheme will gradually shift the sources of power used by electricity generators from brown coal to less emission intensive sources. Brown coal-fired generators have a carbon footprint that is approximately 1.5 times that of black coal-fired power stations and more than twice that of gas fired stations.

This has had a noticeable impact on new investment in generators. Currently, 41% of new generators being developed will use wind power, 37% will be gas fired and 17% will use black coal (BREE 2012). No generators which use brown coal are currently under construction.

The policy framework for electricity is also influenced significantly by the Renewable Energy Target (RET). The RET requires electricity retailers to source a certain proportion of their power from renewable sources, with 20% of Australia's energy required to come from renewable sources by 2020. The scheme currently extends out to 2030.

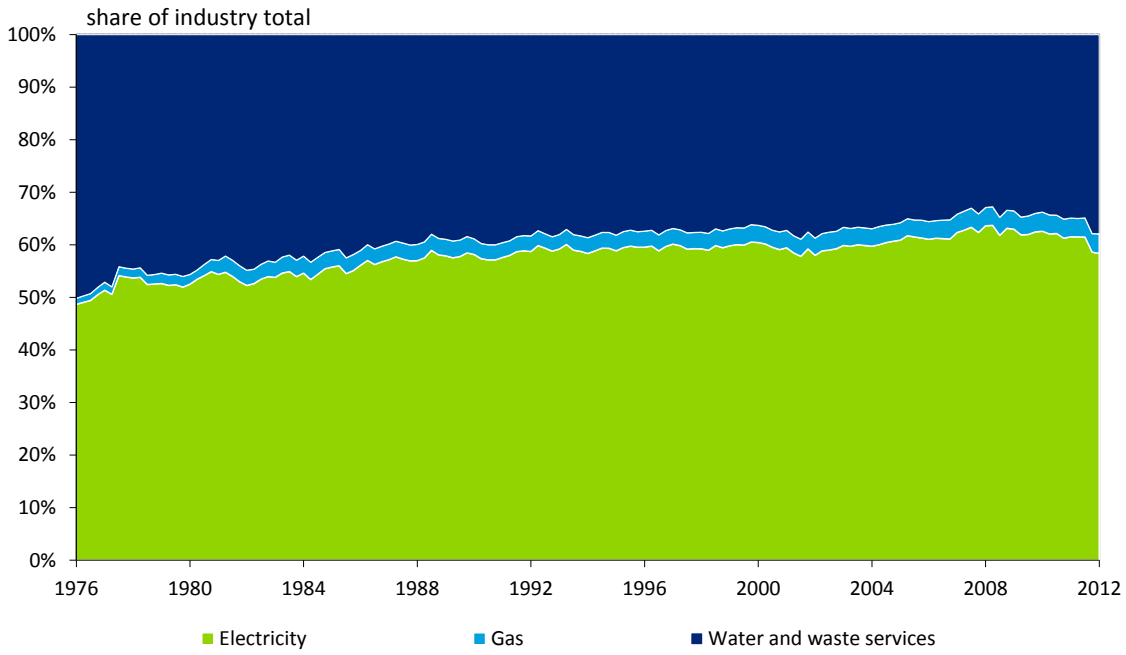
While the carbon price is a more economically efficient way of reducing greenhouse gas emissions and significant concerns continue to be raised about the cost of RET, the Climate Change Authority has recently recommended that the RET be continued at current levels given the risk to investor confidence associated with any changes to current targets (Climate Change Authority 2012).

The costs of the RET, mandatory solar feed in tariffs and energy efficiency schemes are responsible for around 5% of total retail electricity costs (AER 2012), although responsibility for solar feed in tariffs and energy efficiency schemes rests with State governments.

4.2 The outlook for the utilities sector

As Chart 4.1 below shows, gas accounts for a small share of the utilities sector, while electricity has accounted for a rising share of the sector over time. However, since the GFC, this trend has levelled off, and the share of the utilities sector accounted for by electricity has been falling in recent years. The recent decline in electricity demand has continued this trend.

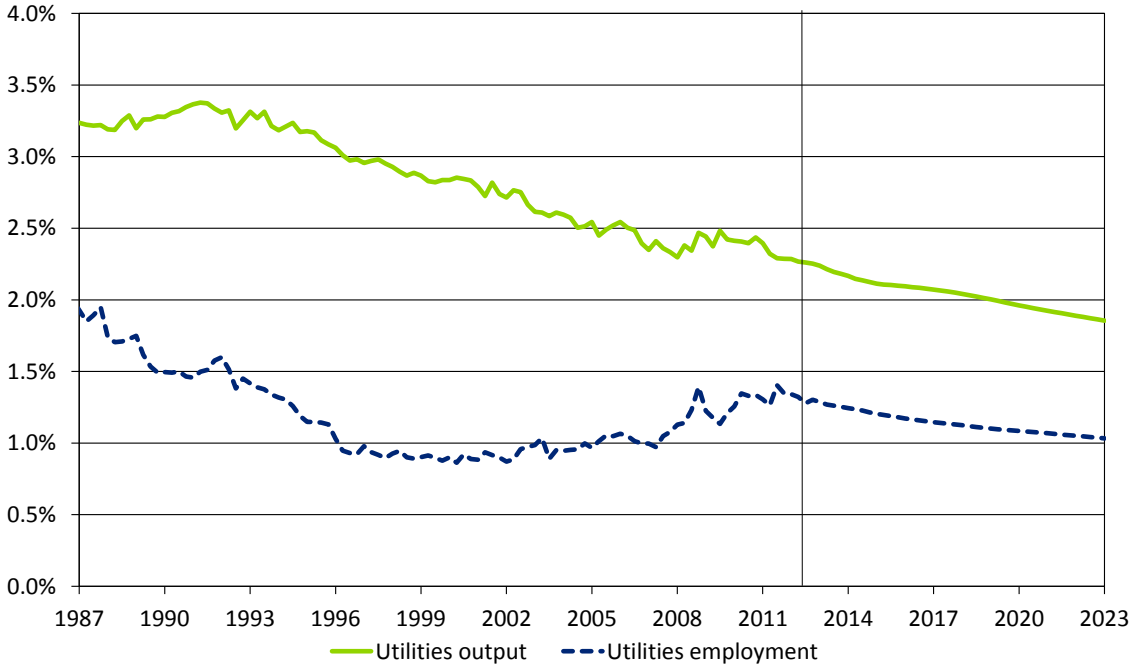
Chart 4.1: Composition of output in the utilities sector



Source: ABS

While the utilities sector at the national level has generally experienced solid growth in recent years, it is falling as a share of overall output and employment. Chart 4.2 indicates that utilities output has been declining as a share of national output since the beginning of the 1990s.

Chart 4.2: The utilities as a share of Australia's economy and employment



Source: ABS, Deloitte Access Economics' macroeconomic model

However, utilities employment as a share of national employment actually began to rise over the past decade in contrast to the decline in the utilities sector's share in national output. These opposing trends of falling output and rising employment have combined to create a large fall in measures of productivity in the utilities sector over the last decade.

While the falling share of national output attributable to the utilities sector is partly due to the rising importance of other sectors in the Australian economy over this time (largely other service sectors), part of the reason is likely to be impact of higher utilities prices on consumer demand.

In the last five years the retail cost of electricity has risen five times faster than the CPI. As discussed earlier, there have been many factors driving that, including the carbon tax and mandatory renewable energy targets, neither of which is as effective as it could be in reducing emissions at minimal cost. The very high reliability standards imposed by State governments are also a significant driver of rises in electricity prices as it encourages additional investment in infrastructure. The need for such investment is exacerbated by the absence of peak pricing in most jurisdictions.

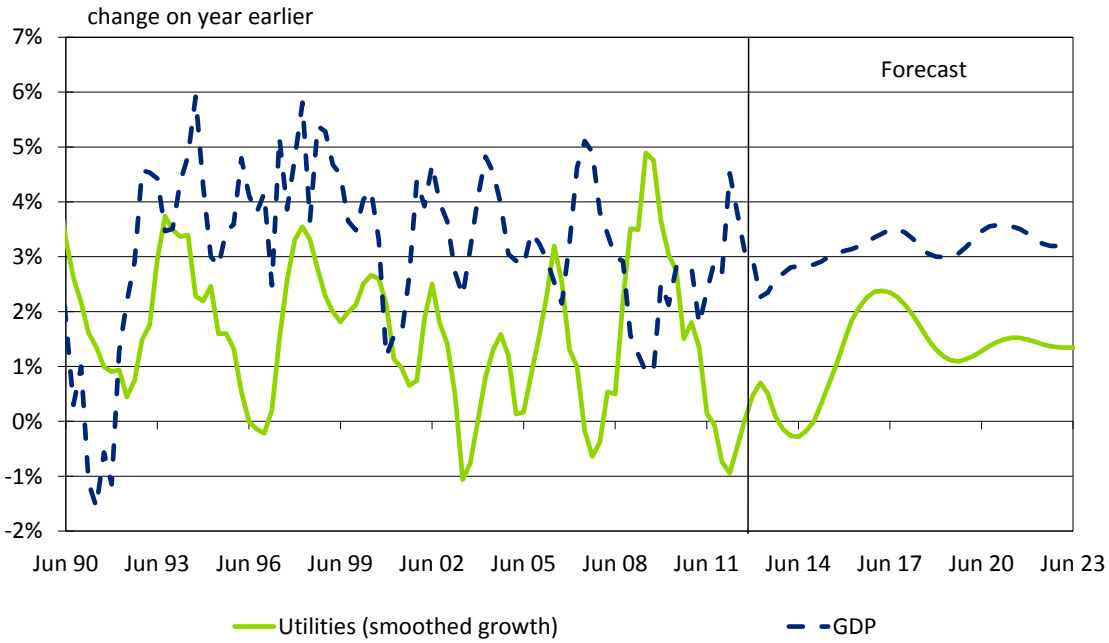
As a result, the electricity system is only rarely used at its full capacity even though that capacity was very expensive to build in the first place.

The impact of these policy issues has slowed output growth in the sector considerably (see Chart 4.3). Price increases of the magnitude experienced in the last five year have an impact even when demand is inelastic.

While demand has fallen from residential properties, most electricity use is by businesses who have also begun to cut back on electricity use. One of the major users of electricity is the manufacturing sector, who account for 31.7% of total electricity demand (IBISWorld 2012). Growth in manufacturing (especially non-ferrous metals refining which is a major user of electricity) has been weak and is likely to remain so over the next few years, partly as a result of the high Australian dollar. Consequently the short term outlook for electricity demand remains modest, as seen in Chart 4.3.

On the supply side, the combination of the carbon price and flatter demand has resulted in some shift in the sources of electricity generation with all the generators brought offline in 2012 being coal fired power stations. Nevertheless, the decline in electricity demand has meant that there is unlikely to be a need for new investments in baseline capacity for at least four years. This will delay a substantial shift towards gas fired power plants, which are expected to account for 24% of total electricity demand in the Eastern states until around 2025 (AER 2012).

Chart 4.3: Utilities output growth



Source: ABS, Deloitte Access Economics' macroeconomic model

Moreover, while demand for gas for electricity generation is likely to grow in the longer term, the existence of major LNG export projects in Queensland and Western Australia has seen increases in production focused largely on export markets.

Indeed, a range of gas users including major electricity generators and manufacturers have been calling for reserving policies aimed at ensuring sufficient domestic gas supplies. While such a policy is unlikely to prove the most efficient response, the current debate does highlight some complex issues emerging in the domestic gas market over coming years.

Other parts of the utilities sector outside electricity and gas have been attracting considerable investment recently. For example, moves by various State governments to shore up water supplies in recent years are starting to bear fruit, including the $3.5 billion Wonthaggi desalination plant which produced its first glass of consumable water in September 2012.

5 The competitor industry outlook

Individual sectors can be expected to see their wage cycles differ from the average:

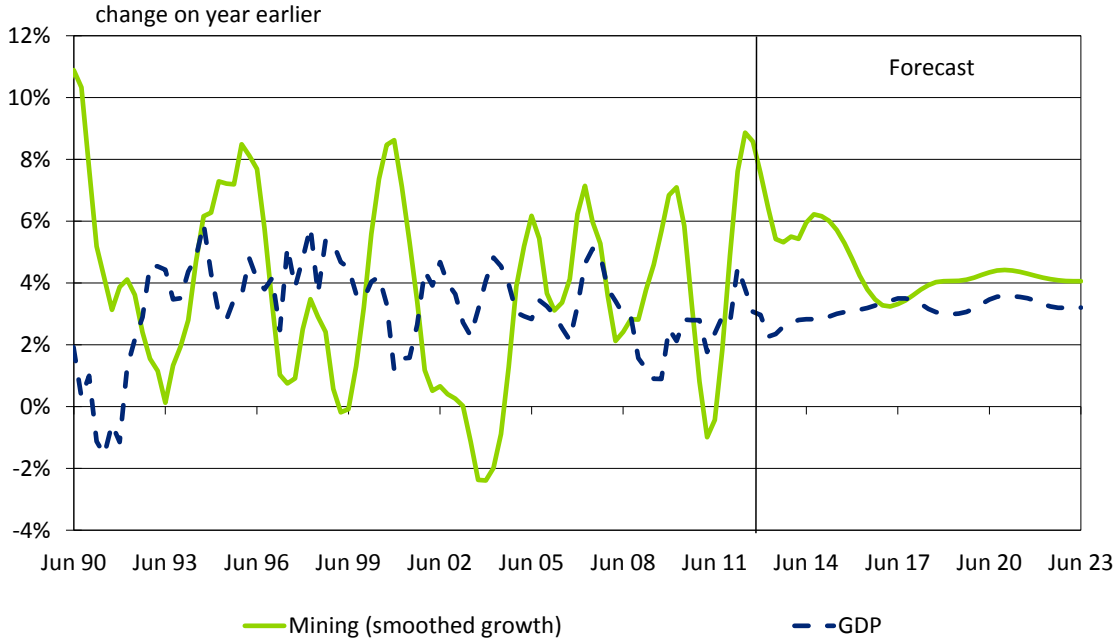
- Longer term wage outcomes by occupation and by sector tend to reflect developments in labour productivity and inflation.
- Shorter term outcomes also reflect the pace of demand and the availability of supply among relevant types of skilled labour.

This chapter discusses the industries which compete most heavily for labour with the utilities sector – the mining, construction and administrative services sectors.

5.1 Mining

For a long time growth in the mining sector has been hobbled by shortages among skilled labour, delays in projects, delays in commissioning, the disastrous and lingering impacts of floods and cyclones, the advent of the global financial crisis, and the controversy over mining taxes. Each of these factors has slowed the supply side response of Australia's mining sector to the historic opportunities currently on offer.

Chart 5.1: Mining output growth



Source: ABS, Deloitte Access Economics' macroeconomic model

But past performance is no guarantee of future performance. The relative slowness of the supply response in the last few years (as well as the recent negatives of cyclones and floods) is about to give way to a massive surge in mining output as a once in a lifetime boost in investment results in rapidly expanding capacity.

It is hard to overstate the size of the mining investment surge. The Government's official commodity forecaster, the Bureau of Resources and Energy Economics (BREE), suggests the next five years will see Australia's LNG production more than double in volume, backed up by a roughly 50% increase in each of iron ore, thermal coal and coking coal.

Other minerals are expected to also average excellent growth rates in output – essentially seeing their output growing at twice the rate of the Australian economy across the same five year period. That's true, for example, for nickel and copper, as well as for gold, alumina and zinc.

Not all the news in the mining outlook is good of course. Overall energy output might be expected to surge thanks to LNG, but Australia's oil production fell by almost a fifth in 2011, dropping to its lowest in more than four decades. Not all of that was due to the continuing run down of production in the Gippsland Basin. A stepped up pace of maintenance work and redevelopment didn't help either, while the combination of weather related interruptions and relatively weak demand were also weighing on the outcome.

Added to that, recent moves by the likes of BHP, Rio Tinto and Xstrata to cut back or delay major investment projects represent setbacks to the otherwise impressive pipeline of business investment, and reinforce the view that we are likely to see the peak in mining investment in the year ahead.

But over the next few years, production is set for a significant expansion, particularly across Australia's major commodities.

- Now that the giant Pluto project is increasingly part of the current production base, the further (and considerable) good news in LNG will come from other projects off the North West Coast, including the massive Gorgon project, the Ichthys LNG project in Darwin, and a range of LNG production based around Gladstone, Queensland.
- The gains in thermal coal are coming as a result of the numerous expansion projects underway in NSW and Queensland, while the good news in coking coal is being pushed along by Wesfarmer's Curragh mine and Xstrata's Newland Northern underground mine.
- Finally, the gains in iron ore volumes will be driven by the likes of Mt Gibson Iron's Extension Hill Direct Shipping Ore project, Rio Tinto's Hamersley Iron Brockman 4, BHP Billiton's Rapid Growth 5 project, and Fortescue Metal Group's expansion at Chichester Hub.

All up, and as Chart 5.1 above shows, that sees the recent gains in investment becoming notable gains in mining output over the next handful of years, comfortably outpacing growth in the Australian economy as a whole across that period.

With Australia's resource sector in the midst of the greatest boost in investment in living memory, you would expect the mining sector in Victoria to be reaping the benefits. Yet that is just not the case. Indeed, it seems that even with an investment portfolio to the value of $412 billion nationally, of which close to $100 billion has been added to the value of definite projects over the past year, Victoria's mining sector remains both (relatively) small and stagnant. Current record investment dollars are being consumed by larger and more lucrative investments in the resource rich States. Victoria's mining sector simply cannot compete with Queensland and Western Australia for investment.

In part, that reflects the reality that the outlook for those components of the resources sector that are linked to domestic demand is far less positive. Victoria's brown coal deposits in particular face an uncertain future as domestic demand from coal fired electricity generators comes under pressure from carbon tax arrangements.

Accordingly, the mining sector is less relevant as a competitor employer for those in the Victorian utilities sector, as most workers would need to change States as well as change jobs to take advantage of the opportunities on offer.

Even so, the sheer scale of developments in the mining sector nationally means that option remains attractive to some Victorians, and mining will remain a source of some competitive pressure on Victorian utilities sector wages over coming years.

5.2 Construction

In recent years, growth in the construction sector has been underpinned by the strong performance of **engineering construction**, the building of the mines, pipes, roads, rail lines and other infrastructure associated with a rapidly expanding resource sector. That resource related strength has outweighed the relatively weak performance of commercial and residential construction.

This can be seen in the increasing share of construction in both national output and employment. Over the past decade, construction has risen from around 6% of national output, to comfortably over 7% of late (see Chart 5.2).

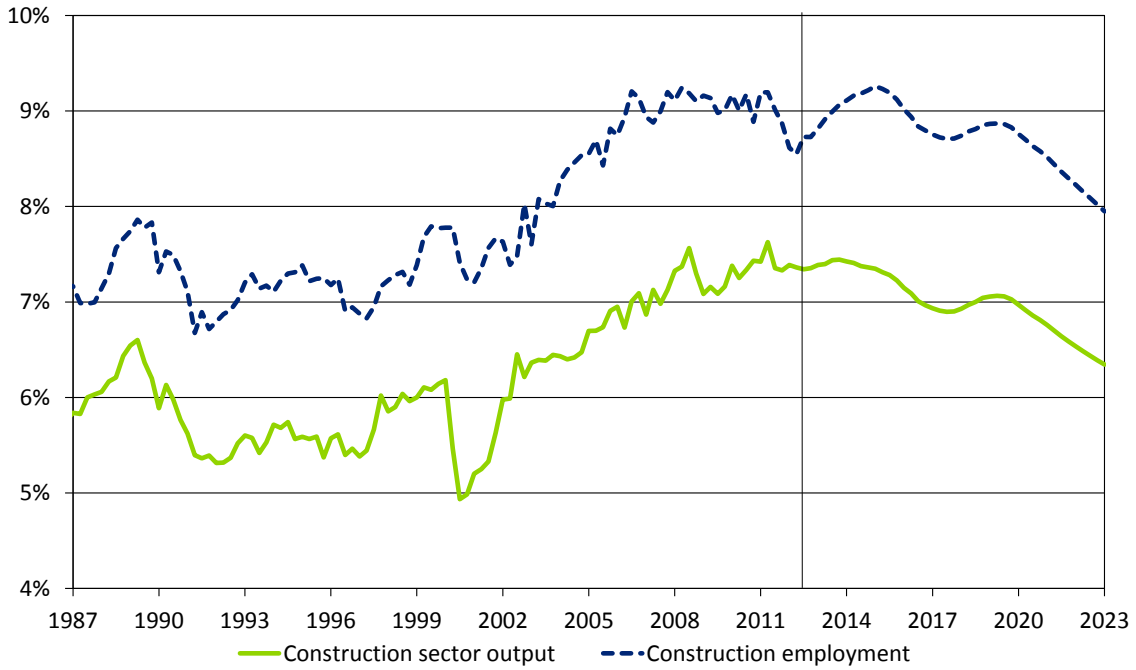
Construction's rising share of the economy is largely due to very strong growth in engineering construction which has been required by the ever expanding mining industry – billion dollar mining projects in northern Australia have become commonplace, and they require vast amounts of construction before the mines and plants become operational. As a result, the total level of engineering construction in Australia has doubled over the last two years.

Nevertheless, despite the strength of engineering construction, a substantial decline in residential construction in recent years has meant that total construction output as a share of the broader economy was essentially unchanged in the year to September 2012.

Looking further forward, the fall in commodity prices experienced in 2012 has meant the outlook for mining construction is not as strong as it was a few years ago with some major projects being delayed, including the expansion of BHP Billiton's Olympic Dam facility in South Australia. Consequently, a peak in mining construction is predicted to occur around late 2013, although the level of engineering construction is still likely to remain relatively high going forward.

By contrast, the **residential construction sector** experienced a significant decline in 2011-12. Housing starts fell by 11.3% and are predicted to grow by just 2.6% in 2012-13. Since residential construction is more labour intensive than other components of the construction sector, this has led employment in the construction sector nationally falling by 40,000 workers in the year to September 2012.

Chart 5.2: Construction as a share of national totals



Source: ABS, Deloitte Access Economics' macroeconomic model

Indeed, if you take out the artificial low caused by the introduction of the GST, housing construction is at a multi-decade low as a share of the Australian economy. However, Deloitte Access Economics forecasts that a number of factors are likely to lead to stronger growth in housing construction from 2013-14:

- lower interest rates (with the Reserve Bank cutting interest rates sharply through 2012);
- increased land release by State Governments, and
- a continuing lift in the migration intake.

These factors are likely to combine to create a recovery in the housing construction cycle, which is expected to take hold in late 2013 and 2014. While Deloitte Access Economics doesn't expect the recovery in the pace of housing construction to be large, it should allow the sector to experience reasonable growth rates and retain its share of national output over the next few years.

The third component of the construction sector is **commercial construction**. This portion of the construction sector is on the wrong side of the two speed divide, with soft retail turnover, faltering office construction and weak business and consumer confidence all hampering new investment. In addition, deep cuts in various State Government budgets may see money for capital works in the health and education sectors ease back over the medium term.

The pipeline of commercial construction investment has weakened considerably over the last year. This can be seen in Table 5.1, which shows the commercial construction projects listed in the Deloitte Access Economics' *Investment Monitor.* Previous falls in the number of projects at the planning stage have resulted in a decline in projects that are either receiving the go ahead, or under way.

While there remains some momentum for commercial construction on the back of decisions that have already been made, that pull back in investment is large enough to suggest growth in commercial construction activity will slow to a crawl over the course of 2013.

That slowdown has its roots in the combination of continued weak growth in the retail sector and cuts to the public sector by both State and Federal governments, which has impacted the demand for new office buildings. Issues in obtaining finance also continue to impact some projects.

Table 5.1: Commercial construction projects (level and change over year to December 2012)

	Definite		In planning		Total	
	$m	% change	$m	% change	$m	% change
Trade	6,778	-10.3	2,688	-38.9	9,466	-20.8
Business parks	2,819	-5.1	1,975	47.3	4,794	11.2
Hotels and resorts	335	9.5	4,004	278.8	4,339	218.3
Offices	2,382	-18.9	3,322	199.8	5,704	41.0
Education	3,646	-82.1	757	27.2	4,403	-79.0
Health and community services	22,122	14.6	1,464	-59.4	23,586	2.9
Culture, recreation & other	8,340	10.4	4,802	14.5	13,142	11.9
Business services	641	-5.7	3,715	0.0	4,356	-0.9
Government	2,209	27.8	130	-75.6	2,339	3.5
Mixed use	15,733	66.7	695	-77.3	16,428	31.4
Total other commercial	**65,005**	**-10.8**	**23,552**	**-0.3**	**88,557**	**-8.2**

Source: Deloitte Access Economics' Investment Monitor

Despite the weak commercial construction pipeline, **engineering construction** may continue to drive activity in the broader construction sector.

Table 5.2 shows that engineering construction projects in the 'definite' category continue to increase – up by a further by 10.9% in the year to December 2012. This solid increase in committed investment is focused in mining, with national broadband and mobile network investment also evident in the communications sector.

However, it is notable that the value of projects in the planning stage has been relatively stable in aggregate over the last year – in part due to uncertainty around commodity prices. Thus while engineering construction is likely to continue to grow in the short term, once resource related construction reaches its peak in late 2013 or early 2014, the industry growth baton will need to pass from engineering construction to a recovery in housing construction.

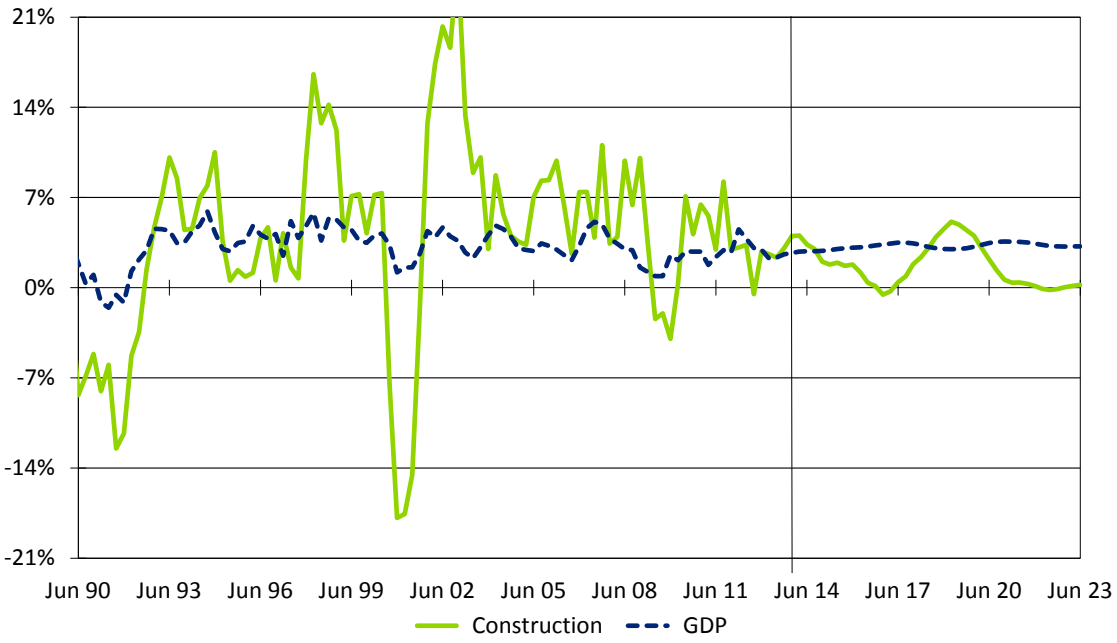
Table 5.2: Engineering construction projects (level and change over year to December 2012)

	Definite		In planning		Total	
	$m	% change	$m	% change	$m	% change
Manufacturing	1,669	-82.5	20,678	-12.5	22,347	-32.7
Transport	62,972	-24.9	211,597	5.6	274,569	-3.4
Communication	44,716	21.7	175	na	44,891	22.2
Mining	251,797	32.9	226,152	4.5	477,949	17.8
Power & water	18,208	-19.2	25,850	-22.5	44,058	-21.2
Rural and forestry	520	14.3	700	na	1,220	168.1
Total engineering	**379,882**	**10.9**	**485,152**	**2.4**	**865,034**	**6.0**

Source: Deloitte Access Economics' *Investment Monitor*

Even if that transition occurs relatively smoothly, the longer term growth outlook for the construction sector is fairly modest due to the weaker outlook for commodity prices and the relatively limited commercial construction pipeline. That being said, the sector is working off a relatively high base so construction output as a proportion of GDP will remain relatively high in historical terms over the next five years.

Chart 5.3: Construction output growth



Source: ABS, Deloitte Access Economics' macroeconomic model

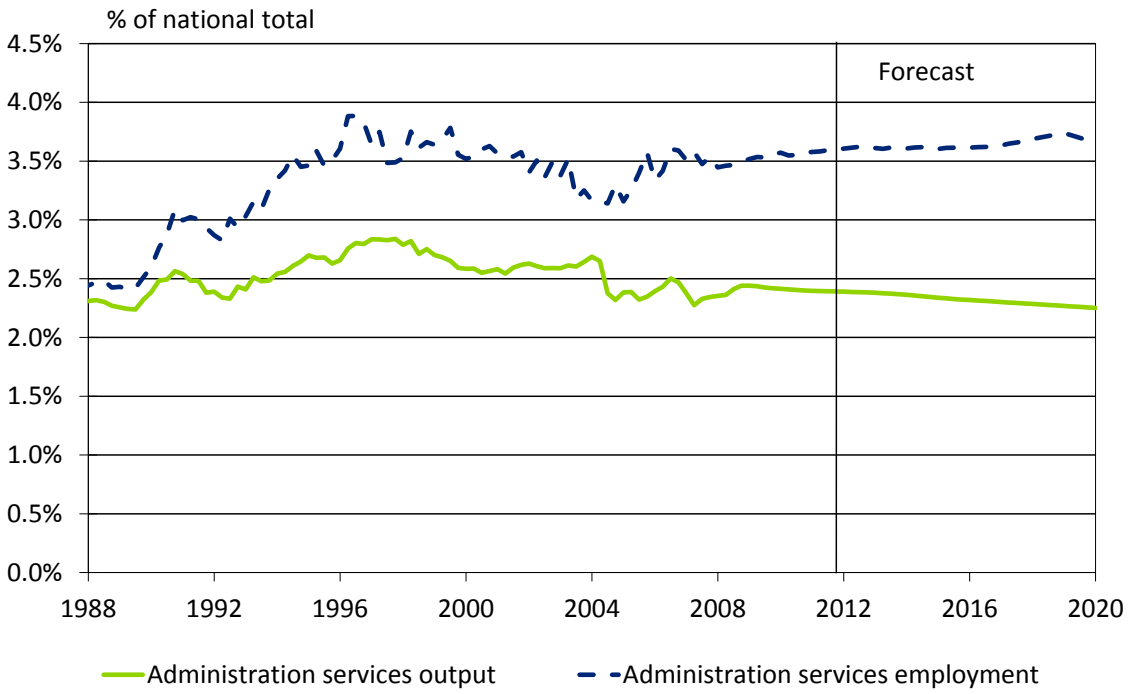
5.3 Administrative services

Administrative services is quite a small sector, accounting for just over 2% of national output, and 3.5% of national employment (see Chart 5.4).

This sector can be broken into two broad areas:

- Administrative services, of which the largest component is employment services (including employment and recruitment services and labour supply services); and
- Building and pest control services.

Chart 5.4: Administrative services share of national



Source: ABS, Deloitte Access Economics' macroeconomic model

The administrative services sector has become increasingly competitive over the last decade, which has led to a decline in profit margins. Chart 5.4 shows that over the past decade employment has risen as a share of national employment, while output has marginally fallen.

The GFC had a substantial impact on the administrative services sector (see Chart 5.5). The sector's peak year-to-year decline in output was 8.8%, exceeded only by manufacturing sector which experienced a peak decline of 11.2%.

This highlights the degree to which the administrative services sector is sensitive to the wider economy – as growth declines and businesses begin to reduce recruitment there is a direct impact on recruitment agencies. Expenditure on cleaning contracts, building maintenance and pest control are also relatively sensitive to the economic cycle. This sensitivity has been seen again since mid-2011, with relatively modest employment growth across the nation leading to weaker growth in the administrative services sector.

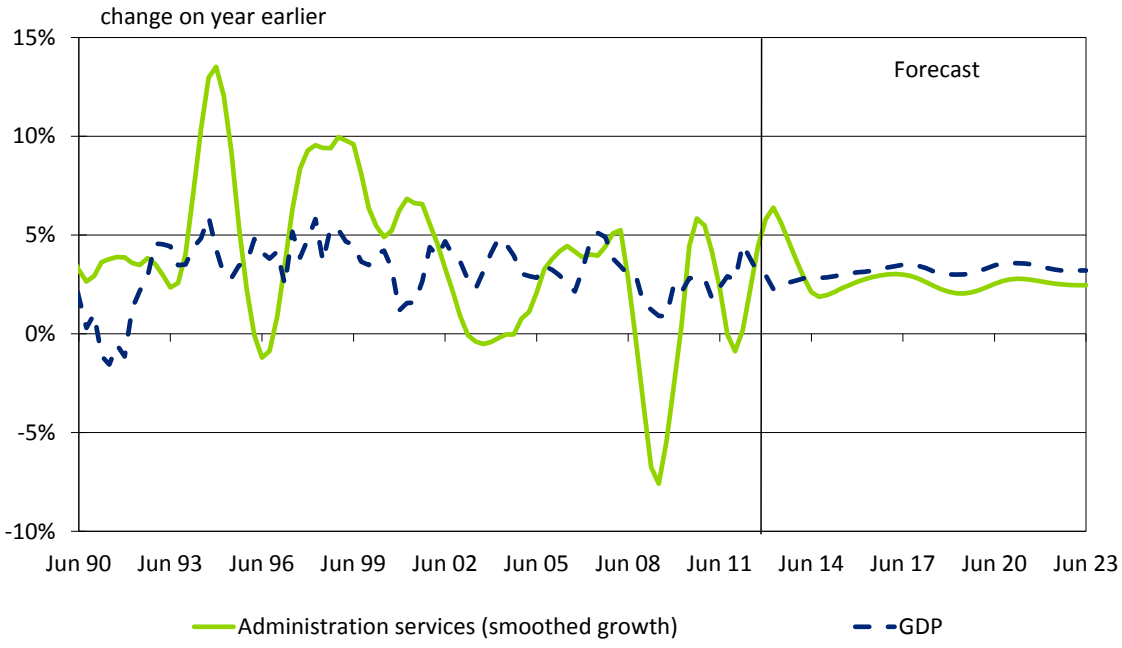
Accordingly, the administrative services sector may continue to be affected by cost cutting by both businesses and governments over the next couple of years, particularly the building management and cleaning portion of the sector. The decision to reduce the size of the public sector workforce in a number of States is also likely to impact the demand for employment services (although many of those made redundant may use employment services to find employment in the private sector).

Over the longer term the outlook for the sector remains solid. While unemployment rates are forecast to increase, Deloitte Access Economics forecasts that they should peak at around 5.75% which is still relatively low by historic standards.

Recruitment activity is, however, likely to grow over time as the rate of baby boomers retiring grows, generating additional demand for employment services to find able candidates to replace them. A growing and ageing population, combined with busier families also bodes well for growth for domestic gardening and cleaning services. Within the administrative services sector, cleaning services – which as a group employs some 120,000 Australians – has continued to grow at modest rates, as firms and individuals continue to move towards outsourcing these services.

This combination leads to the forecast seen in Chart 5.5. Output growth is expected to improve over the next few years, before returning to growth rates that are slightly below GDP growth in the longer term.

Chart 5.5: Administrative services output growth



Source: ABS, Deloitte Access Economics' macroeconomic model

6 The national outlook for wages and prices

This chapter considers a series of related issues affecting the national wage outlook, with the wage outlook then discussed in section 6.3 below.

6.1 Shifts in wage and cost relativities are rarely permanent

Over a long enough time period growth rates in the costs of materials and labour across different regions should not differ too much at all.

That is because, if prices or wages became too different over time, then there would be money to be made in shipping products or people moving home so as to limit those divergences once more.

Similarly, there are some natural limits to the extent or period to which wages and prices can be notably higher or lower in one State or region versus another. For example:

- Workers can move between and within States ("we'll leave Hobart and try our luck in Brisbane").
- Workers can move to Australia from other nations.
- Permanent and temporary (visa 457) migration may be bureaucratically slow to move, but has the potential to ease a transition period.
- As do shifts by permanent residents.
- Shifts by New Zealanders (who face less restrictions on migration than do those from other nations).
- Shifts in wages can and will see people substitute into growing areas related to their existing skills ("I'll leave construction and try my luck in mining").
- Ditto shifts in relative wages can delay retirements or exits ("We'll have baby next year"), as well as encourage new entrants ("I'm going to study electrical engineering, because wages in that occupation are good").
- Shifts in the use of labour due to changes in relative costs ("We'll use more Enrolled Nurses and less Registered Nurses because wages for Registered Nurses have risen relative to those for Enrolled Nurses").

Many of these 'equilibrating factors' can be very slow to operate, meaning that divergences in wages across States (and, for that matter, across sectors and occupations within a State) can persist for long periods.

6.2 The outlook for the CPI in Australia

Inflation is not a pressing problem for the Australian economy at present, with annual rates of inflation remaining at the lower end of the RBA's comfort zone.

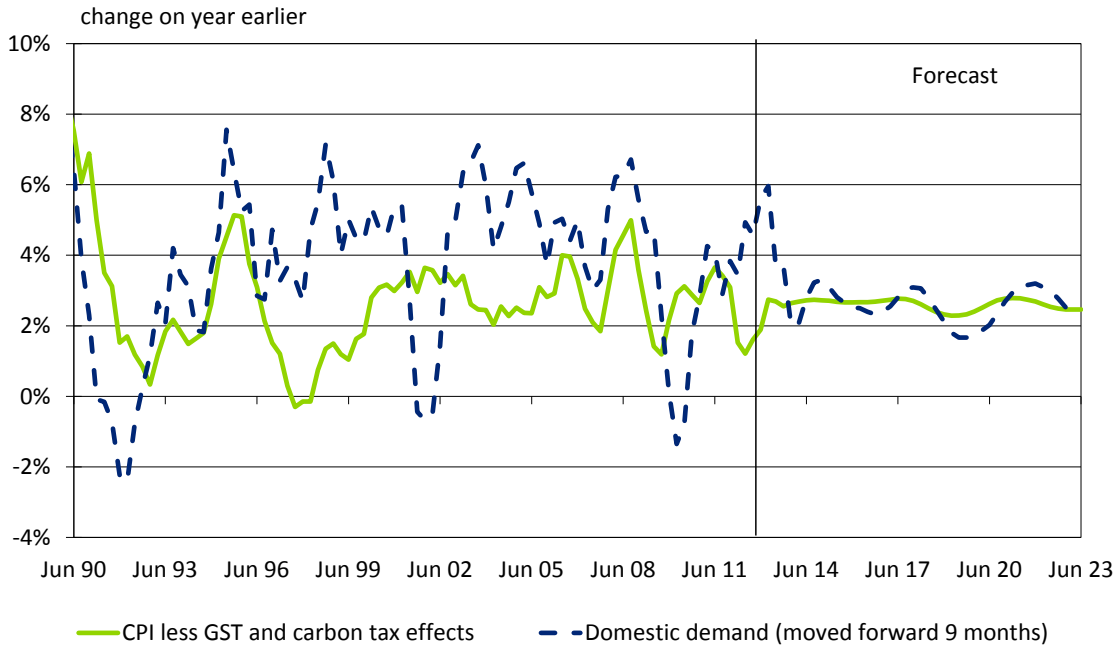
Some one-off policy effects – including the carbon tax and lower health insurance subsidies – have boosted inflation. Yet the overall carbon effect has been smaller than expected and, outside those impacts, inflation is still easing.

That's because most businesses don't have much pricing power, spooked managers are targeting greater cost efficiencies, and the $A is cutting import prices.

In assessing the inflation outlook, it is necessary to look at the three key building blocks of inflation – **demand pressures, labour costs and import prices**.

Demand has been extremely strong, which would ordinarily generate higher inflation. However as shown in Chart 6.1, that hasn't happened lately. In fact the contrast between current and recent conditions against those during the GFC (or other past slowdowns and recessions) could hardly be more marked. The difference is that the demand spike of the moment isn't due to a crush of consumers at department store counters. Rather, it's due to a surge of major resource projects, with Australia home to almost half the world's gas development currently underway.

Chart 6.1: The lagged impact of output on prices



Source: ABS, Deloitte Access Economics' macroeconomic model

Although that is great news for Australia's economy, it has few if any implications for price pressures more generally. In particular, and although we think they'll get better from here, both retail and housing construction have been pretty flat for some time now, and that of itself is enough to help keep demand-driven inflation somewhat subdued.

That said, there remains a core of sectors – ones where pricing isn't constrained by international competition – which are managing to keep overall inflation high. And that's still evident in the numbers, with prices among non-traded products growing by a relatively robust 4.0% over the past year.

However, the latter figure is easing too, as some of the most recent figure is policy-driven (as neither electricity nor health insurance are traded internationally). Yet these two effects are one-offs and, although there will be more carbon price effects still to be felt in coming months, it looks increasingly as if the 'carbon effect' priced into most forecasts – with the carbon tax expected to add something like 0.7% to the level of consumer prices – will turn out to be too high. After all, the biggest single carbon effects were in electricity prices, and even they didn't add too much more than usual to inflation of late. What's more, housing rents – a key driver of overall price pressures in the economy – have been in a slump of late.

Or, in other words, some of the more intractable sectors of domestic-driven inflation are looking less threatening: demand is still weak in the most relevant sectors, and the recent surge of policy-induced inflation was a one off, with its effects now also looking like they may fall short of earlier fears.

Meanwhile, **labour costs** (another key building block of inflation) have been contained by a much needed lift in productivity growth over the last year, helping to limit another key driver of inflation**.**

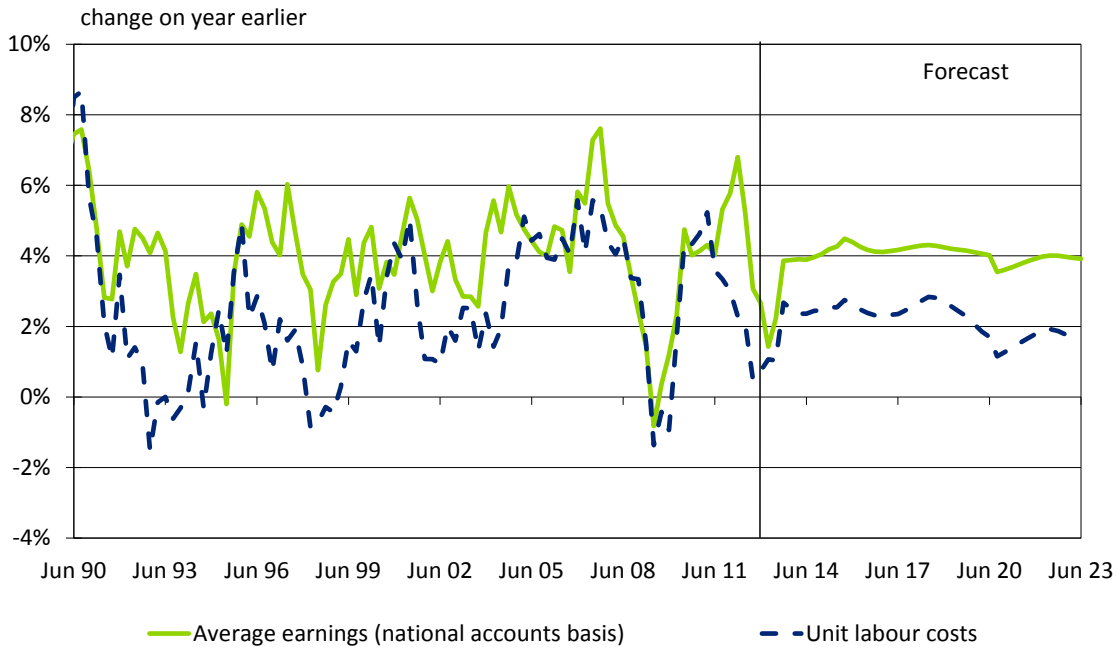
There are two main reasons for that. In the short term, much of the good news on productivity is simply thanks to the tougher environment on profitability – firms are dropping behind where they'd hoped to be on profits, and that's leading them to seek greater efficiencies than they've done for a while. Or, in other words, and is often the case, productivity picks up when profitability falls back.

Yet there's another factor here too. Companies have spent a fortune on lifting their capacity to produce in recent years. The standout example of that is the resources sector. And that spending is increasingly coming onstream as higher production and exports. That's great news, and it is also boosting productivity. For that matter, it will keep boosting productivity for some years to come.

This pick up in productivity is helping to moderate the inflation outlook. That is why prospects for labour costs are now looking better than they have in a while, as can be seen in Chart 6.2 below. Unit labour cost growth – roughly wage growth less productivity growth – dropped to a bare ½% over the past year. That's not much at all. And although we think it will pick up again from its current low (the news on productivity is rather better than it was, but it has probably already peaked) we can't say that labour costs look likely to be troubling the Reserve Bank too much in the next year or two.

And the news is fairly good on the **import price** inflation front too – though, as Chart 6.3 attests, this latter piece of good news may be more temporary, depending on the future path for the $A.

Chart 6.2: Wages and labour costs



Source: ABS, Deloitte Access Economics' macroeconomic model

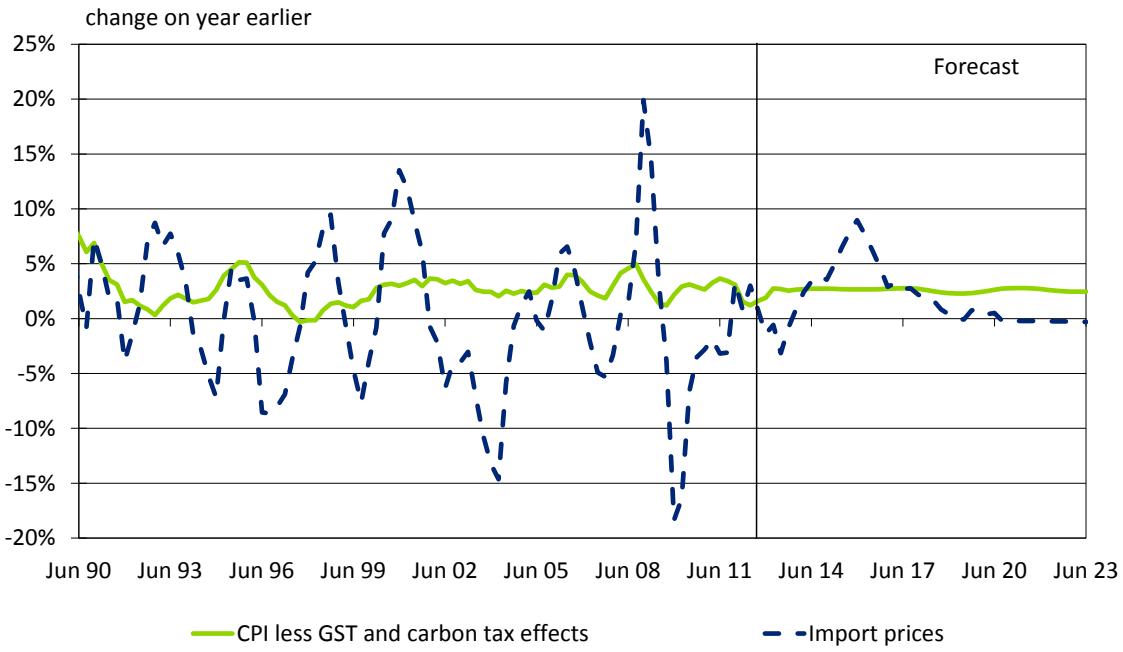
The $A remains at historic highs, with its strength causing significant problems across the Australian industrial landscape, not least because it makes competing foreign goods cheaper for Australian consumers.

However, all it takes is for the $A to steady for it to stop generating downward pressure on import prices. That may not be far away, as current $A strength isn't due to the fundamentals – commodity prices are well off their peaks, and interest rates have fallen pretty notably here. However, the $A is very much benefiting from safe haven effects, as well as from the capital inflows associated with financing the surge in gas development that is underway.

Then again, we don't see the $A floating free of the fundamentals forever. Safe haven effects aren't just affecting Australia – other nations are getting affected too. But we do think they won't last too long – or, at least, not the fears with respect to the $US, though concerns about the euro may very well linger. Therefore our forecasts have the $A gradually linking back with its fundamentals in coming years. In turn, that means import prices may begin to increase in 2015 – though they are unlikely to increase too far.

Nor do the available producer price data point to developing troubles in **upstream pricing**. Prices for domestically produced inputs saw relatively rapid growth ahead of the global financial crisis, before dipping modestly into reverse once the GFC actually arrived (dropping to a cyclical low during 2009), and then recovering to some strong gains as Australia and the world recovered (with the latter phase peaking in 2011).

Chart 6.3: Import prices and inflation



Source: ABS, Deloitte Access Economics' macroeconomic model

The growth in domestic upstream pricing has been a reasonable leading indicator of the underlying CPI. And right now it has eased back from its 2011 highs – another reason why the inflation outlook is now less worrying than it has been.

That combination means that the inflation outlook is relatively straightforward at the moment, with underlying inflation tipped to remain comfortably within the RBA's target range of 2-3%.

If known policy-driven impacts are stripped out, CPI is still easing back, due to a weak market, strong productivity growth and the continuing strength of the $A. So although inflation is unlikely to drop back too much further, it remains subdued at the moment.

Table 6.1: Forecasts for economic growth and inflation

Annual % change	2012-13	2013-14	2014-15	2015-16	2016-17
GDP					
RBA	2¾	2¼ – 3¼	na	na	na
Deloitte Access Economics	2.3	2.8	3.0	3.2	3.5
Year-to % change	**Dec-12**	**Jun-13**	**Dec-13**	**Jun-14**	**Dec-14**
CPI (ex. carbon tax)					
RBA	2½	3¼	2 – 3	2 – 3	2 – 3
Deloitte Access Economics	1.9	2.6	2.6	2.7	2.7

Source: Reserve Bank of Australia, Deloitte Access Economics

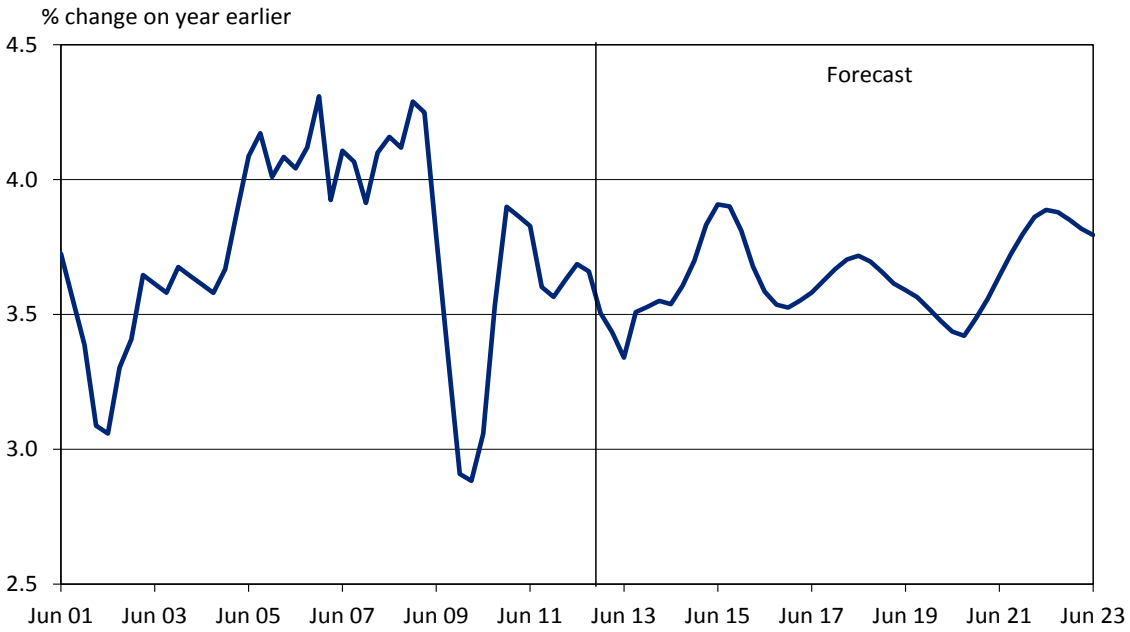
6.3 The outlook for wage growth in Australia

If the RBA is to aim for 2-3% inflation over time, and if labour productivity averages around 1½% a year, that points to wage gains of 4% a year as a sensible outcome. The run up to the GFC saw several years in which wage price index (WPI) growth was between 4 and 4½%. However, the GFC saw wage growth rapidly drop below 3%, before a subsequent recovery and an even more recent easing. That basic pattern across time – strong, weak, recovering, easing – characterises a number of economic indicators, and wages are no exception.

In the past year the WPI racked up a gain of 3.7%. Across sectors, mining remains close to the front of the pack (up by 5.2% in the past year, though wholesale trade was even stronger, at 5.3%), with the utilities also relatively strong, at 4.4%. Wage gains have been weakest in retail (up a miserly 2.3% amid the tough trading conditions of recent years) and accommodation (2.9%).

Western Australia is still the leader on wage growth at the State level (up by 4.5%), and despite Federal cutbacks the ACT was close behind, at 4.3%. Wage growth has been weakest in both Tasmania and Queensland, with both seeing a modest gain of 3.3% over the past year.

Chart 6.4: WPI forecast growth



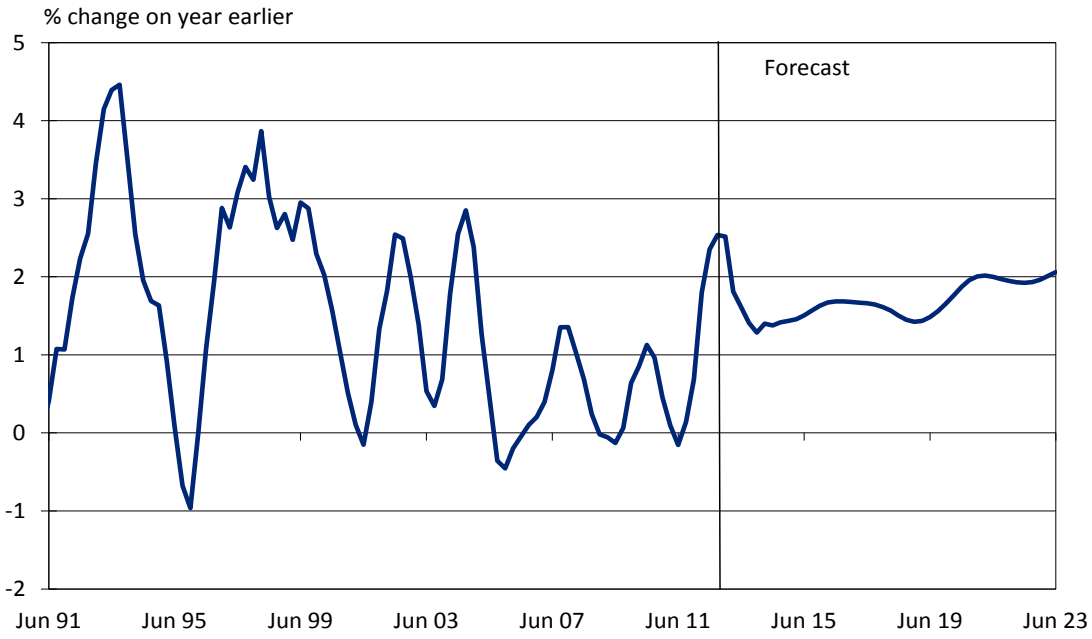
Source: ABS, Deloitte Access Economics' macroeconomic model

Those patterns still tell much the same story of recent years, with more strength in mining and WA, and less elsewhere. But that 'two speed gap' in wage markets has already narrowed somewhat, and indications are that it will continue to do so. After all, the high levels of profitability enjoyed by miners have been notably cut back of late, and we'd expect wage growth differentials to continue to do the same And with the mining sector now more cautious on costs, they are thereby joining the public sector (intent on repairing State and Federal Budget balances) and many others in the private sector too – especially those businesses exposed to the strength in Australia's exchange and interest rates.

That narrowing in growth differentials is likely to occur within a steady overall pace of wage growth, with the WPI close to 3½% for a time, and not advancing much beyond that until 2014-15.

For some time now the most concerning component of the inflation outlook has been labour costs. Although wage growth has been relatively restrained, Australia's productivity performance has been so poor that the effective cost to businesses of workers has been rising relatively rapidly. Over the past year however there has been something of a turn around as companies focus on reducing costs and as significant mining investment comes onstream. However, as Chart 6.5 below shows, that lift in productivity may already have peaked. A slowing of productivity growth expected in 2013 toward long run averages help to restrain overall wage gains to a degree through the year.

Chart 6.5: Productivity growth (change on a year earlier)



Source: ABS, Deloitte Access Economics' macroeconomic model

Table 6.2: National wage forecasts

Calendar year nominal wages forecasts

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
Wage Price Index	3.7	3.6	3.5	3.6	3.9	3.6	3.6	3.7	3.6
Average weekly earnings	4.1	5.0	4.0	3.6	3.9	3.6	3.6	3.7	3.6
Ordinary time earnings	4.4	4.2	4.1	4.2	4.4	4.1	4.1	4.2	4.2
Unit labour costs	3.8	1.4	1.8	2.4	2.6	2.4	2.4	2.8	2.3

Calendar year real wages forecasts

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
Wage Price Index	0.3	1.8	0.4	0.9	1.2	0.9	0.8	1.2	1.2
Average weekly earnings	0.7	3.1	0.9	0.9	1.2	0.9	0.8	1.2	1.2
Ordinary time earnings	1.0	2.3	1.0	1.5	1.7	1.4	1.3	1.7	1.8
Unit labour costs	0.4	-0.4	-1.2	-0.3	-0.1	-0.3	-0.3	0.3	0.0

Source: ABS, Deloitte Access Economics' Labour Cost model

7 General labour cost growth in Victoria

Current developments have different implications across different industries, which is turn implies differing regional effects due to the relative importance of different industries in each State. This chapter discusses the general outlook for wages across Victoria.

Unlike the resource rich States of Western Australia and Queensland, the State has seen little benefit from the current mining boom. That has been a key negative for Victoria amid the higher interest and exchange rates flowing from the mining boom.

However, as the mining boom itself changes gears, that lack of exposure to the boom means Victoria has less to fear from a shrinking pipeline of mining related construction and investment.

That implies a degree of relative strength in wages for Victoria, both as current economic positives affecting this nation and its labour markets fade, and as pressure from interest and exchange rates on manufacturers in the State ease.

Table 7.1 provides a summary of State WPI forecasts to 2019 in real and nominal terms. Additional measures showing expected wage growth after allowance for productivity growth are also given.

Table 7.1: State WPI forecasts

Calendar year changes in nominal Wage Price Index forecasts

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
National	3.7	3.6	3.5	3.6	3.9	3.6	3.6	3.7	3.6
Victoria	3.8	3.3	3.3	3.3	3.7	3.5	3.6	3.6	3.5

Calendar year changes in real Wage Price Index forecasts

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
National	0.3	1.8	0.4	0.9	1.2	0.9	0.8	1.2	1.2
Victoria	0.3	1.6	0.3	0.7	1.2	0.9	0.9	1.2	1.2

Calendar year changes in nominal productivity adjusted Wage Price Index

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
National	3.0	0.9	2.3	2.2	2.3	1.9	2.0	2.2	1.9
Victoria	3.8	1.4	2.2	2.0	1.8	1.9	1.9	2.3	2.1

Calendar year changes in real productivity adjusted Wage Price Index

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
National	-0.4	-0.9	-0.8	-0.5	-0.4	-0.8	-0.8	-0.2	-0.5
Victoria	0.4	-0.4	-0.8	-0.7	-0.7	-0.7	-0.8	-0.1	-0.2

Source: ABS, Deloitte Access Economics' macroeconomic model

Victoria has been on the wrong side of two speed economy pressures, with an above-average share of industries adversely affected by a strong $A (manufacturing, agriculture, higher education) and relative strength in interest rates (housing construction and the retail sector).

Deloitte Access Economics' estimates of Victorian economic growth relative to the matching national figure for Australia have seen a consistent erosion of this State's 'market share' of the nation.

Chart 7.1 maps Victoria's WPI relative to that for Australia as a whole. As is true of consumer prices, wages in Victoria have risen more slowly than they have in Australia as a whole over the past decade. That trend reflects the relative concentration of economic strength in the resource States, which has added to both price and wage pressures in those jurisdictions relative to Victoria.

Following a brief flurry at the start of 2011-12, Victorian wage growth has fallen behind its national counterpart in recent quarters, as a combination of the public sector wage restraint and a cooling in the construction sector helped to bring wage gains below the 3.5% per year level through much of 2012.

Looking ahead, we see a continuation of this trend, albeit at a reduced rate, with the slower trend owing more to a slowdown in the resource States than to more rapid gains in Victoria.

Chart 7.1: Victorian WPI relative to national WPI

Source: ABS, Deloitte Access Economics' macroeconomic model

The slide in relative wages seen in Chart 7.1 in Victoria has had much to do with the mining related strength in the resource states. Much therefore depends on the changing nature of the mining boom, and on recent falls in key commodity prices driven by slower global growth and rising commodity supply.

Not only are these trends likely to result in greater headwinds for wages in Queensland and Western Australia than in Victoria, recent developments suggest that those headwinds will arrive sooner, and prove more challenging than had been predicted through much of 2012.

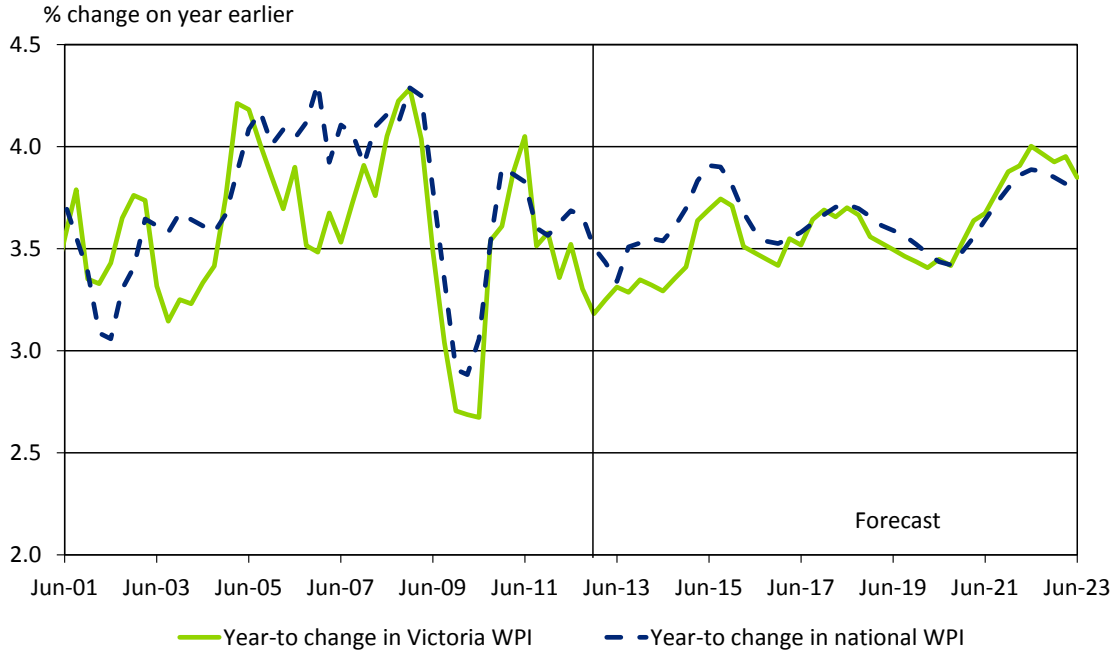
That combination sees Victoria's WPI projected to ease its slide relative to the national level in the short term, with the ratio levelling off as the State's WPI growth moves toward the national average in the long run.

That turnaround reflects two factors:

- The impact of waning strength in wage gains in mining and in engineering construction will be rather more evident in the rest of Australia than in Victoria itself. Victoria's construction sector wages have long been a strong contributor to overall growth, and Victoria's strength in residential construction leaves it less exposed to the outlook for engineering construction (which has been the key driver in other States).
- Even with the impending slowing in the mining boom, 'two speed troubles' will still remain a negative for Victoria's industrial base. In particular, the dollar has shown some resistance to recent interest rate and commodity price movements, and is seen remaining at levels that will hurt manufacturers.

Accordingly, and as Chart 7.2 shows, the growth in Victorian WPI is expected to lift slightly across the next eighteen months or so, but remain below 3.5% per year until the end of 2014.

Chart 7.2: Victoria general labour cost growth



Source: ABS, Deloitte Access Economics' macroeconomic model

That sees Victorian wage growth trailing that for the country as a whole for some time before moving closer to the national average in the long run.

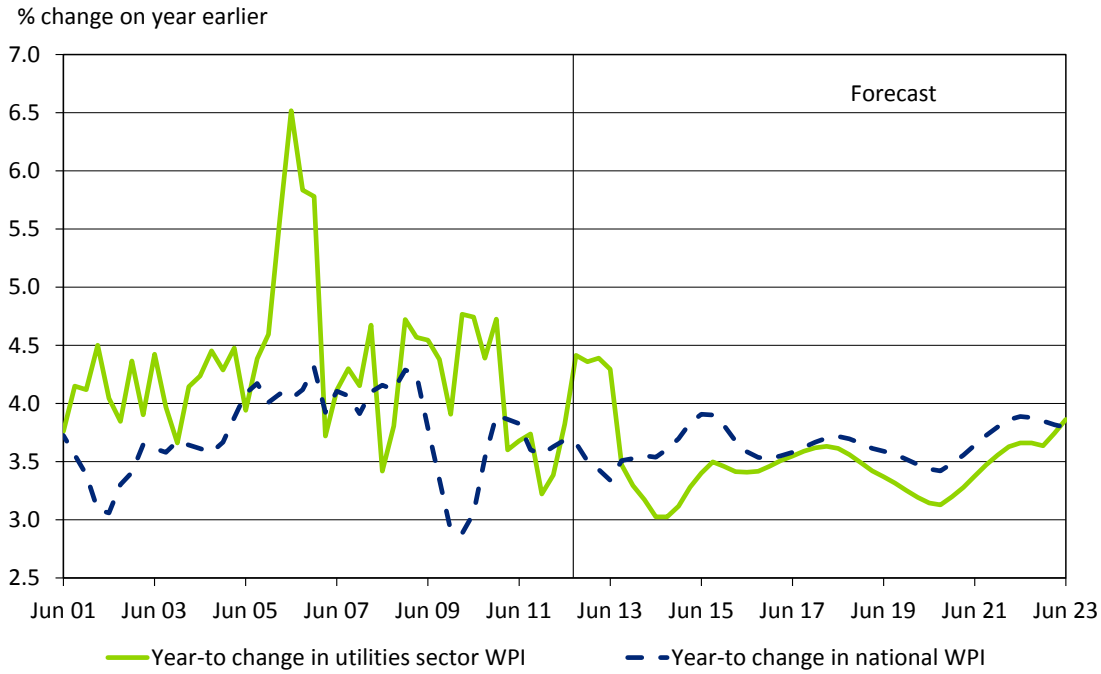
8 The national outlook for wage growth in the utilities sector

This chapter discusses the wage growth outlook for the utilities sector for Australia as a whole.

8.1 Strength in relative wages in the utilities in recent years

Subject to the caveat that the relatively small size of the industry (about 1.3% of total employment) means the wages data is quite volatile, the data indicates that until recently growth in the utilities WPI had run consistently ahead of the national average across the period that WPI data has been published (Chart 8.1).

Chart 8.1: Wage growth nationally and in the utilities



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

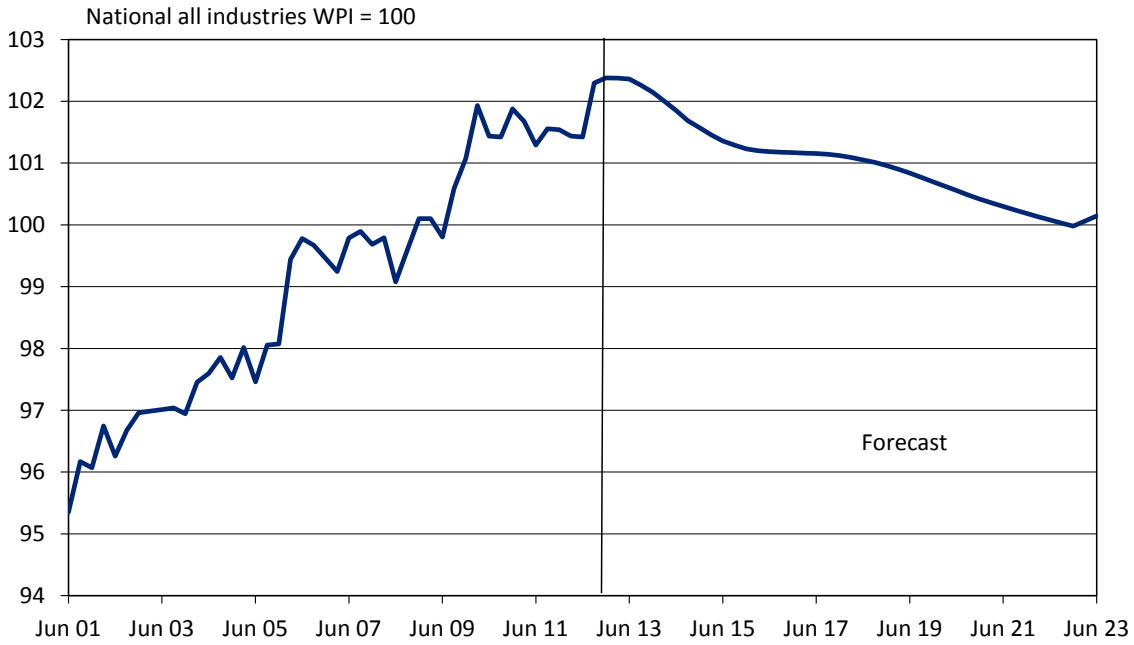
From 2002 to 2008 this relative strength in wage gains in the utilities occurred at a time when Australia's rate of wage increase itself accelerated. Even after the national wage growth rate slipped sharply in 2009, utilities growth stayed quite high and has come down more slowly.

Chart 8.2 illustrates the relative strength of utilities wages more clearly by comparing the level of the utilities WPI to the overall WPI.[3] Over the decade to 2010 the utilities WPI grew by 6%

[3] 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.

more than overall wages, with a very consistent level of relative increase over much of that period. .

Chart 8.2: Utilities WPI relative to national WPI



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

There were a number of reasons for the general acceleration in national wage growth over the decade to 2010, but most revolve around a strong economy and the resultant pressure on prices and on the labour force:

- Job growth averaged 2.2% a year, almost double the 1.2% a year across the 1990s.
- That stronger economy pressured a range of prices, including the price of labour, with rising inflation also leading to rising wage growth.

However, for the utilities sector the composition of the job boom was particularly significant. Demand for blue collar occupations did far better in the past decade than it had over the previous generation. As a result, a number of trades saw shortfalls in available labour, driving labour 'prices' higher. Other things equal, sectors that use relatively more blue collar workers and fewer white collar workers, such as utilities, saw their labour costs tend to rise compared with other industries.

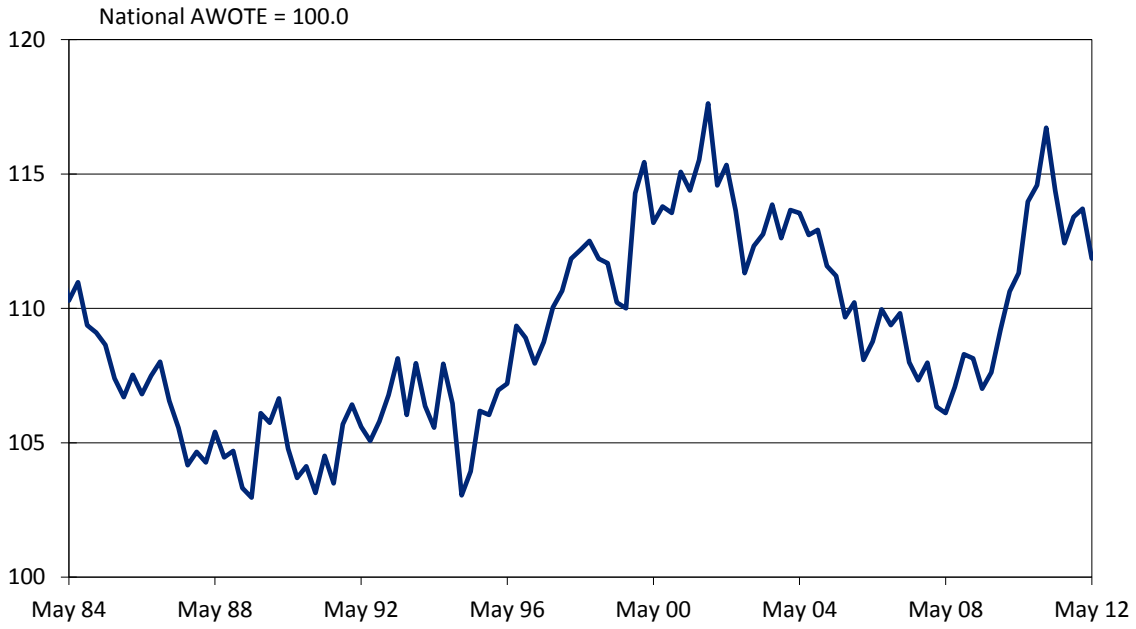
Further, the two speed economy pressures which have seen enormous wages growth in the likes of mining and construction also generated pressure for wage gains in other sectors (such as utilities), as industries were forced to react to higher mining and construction wages so as to help to keep workers in their jobs. The skill shortages created in utilities as a result of competition from other sectors have been a key factor behind the sector's strong wage performance.

Accordingly, it is perhaps no surprise that the Wage Price Index (WPI) in the utilities sector has risen relative to the national average.

Perhaps equally unsurprisingly, some observers assume that the future will be like the past: that the utilities sector will continue to see its wages rise relative to the average in the coming decade – just as they did in the past decade. Deloitte Access Economics disagrees.

Chart 8.2 doesn't go back far enough in time to see if history can shed light on this debate, but the Average Weekly Ordinary Time Earnings (AWOTE) series does. The key difference is that the AWOTE relativities tell a very different story in the pre-1998 period than it does in more recent years – see Chart 8.3 below.

Chart 8.3: The utilities AWOTE relative to the national AWOTE[4]



Source: ABS, Deloitte Access Economics

Chart 8.3 tends to support the 'business cycle' view of wage relativities in the utilities sector rather than the 'permanently increasing' view.

That is not to say that this index must always return to previous values. It is possible that some sort of structural change in the sector (such as the replacement of lower-paid workers with machinery) could have a permanent level change effect on the results – though in theory at least the calculation of more detailed components of the WPI is meant to be cognisant of such structural shifts.

However, even such structural developments will not drive a continuous divergence in growth rates.

Indeed, there are a number of reasons behind our view that utilities sector wages will grow at less than the national average for much of the next decade.

First, **skill shortages are temporary – they don't drive permanent wedges in wage relativities**. The higher wages on offer as a result of skill shortages lead, over time, to reactions on both the

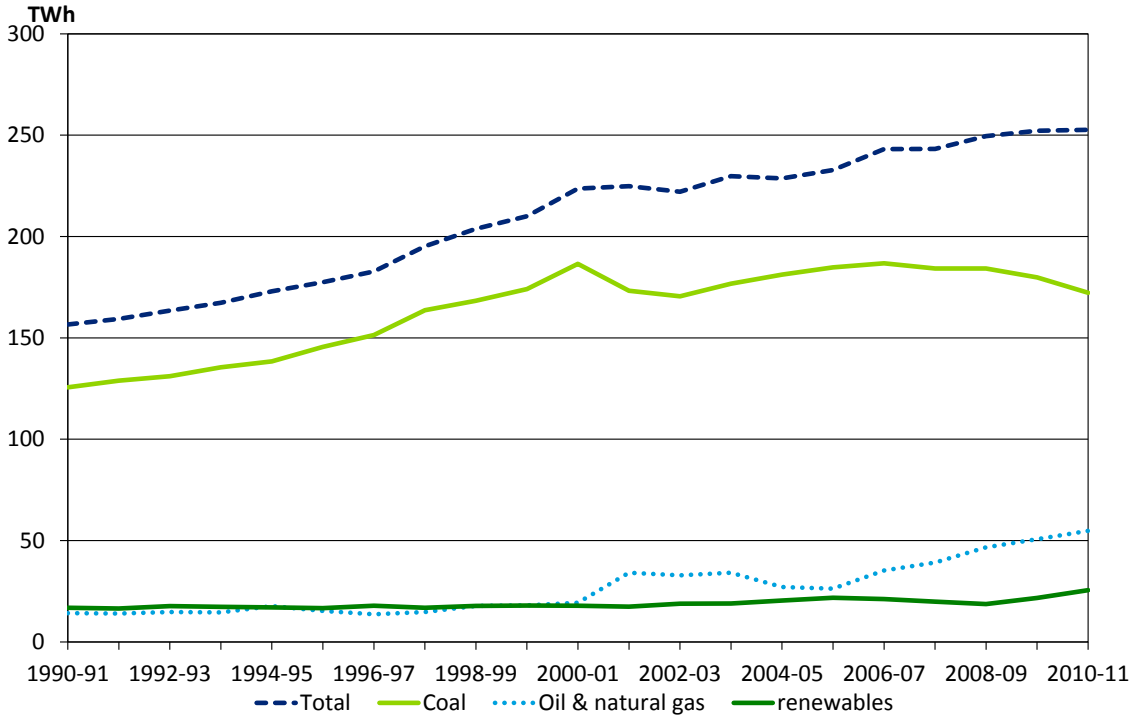
[4] Data before August 1994 has been spliced using the previous definition of the utilities sector.

demand and supply side of labour markets to whittle those shortages away. To fail to forecast an eventual end to skill shortages – and to use them to justify further widening in wage relativities – sits strangely as a view on the longer term outcomes from labour markets.

Second, as shown in Chart 8.4, not only is growth in electricity production trending down, but more and more of this production is being filled by alternatives to coal, most notably oil and natural gas but increasingly by renewables such as solar, wind or hydro power.

With policies such as the carbon price and the Mandatory Renewable Energy Target, which aims for renewables to account for 20% of total electricity production by 2020, now in place, as well as a general consumer sentiment shift toward cleaner forms of energy, this trend is likely to intensify in coming years.

Chart 8.4: Australian electricity generation, by fuel type

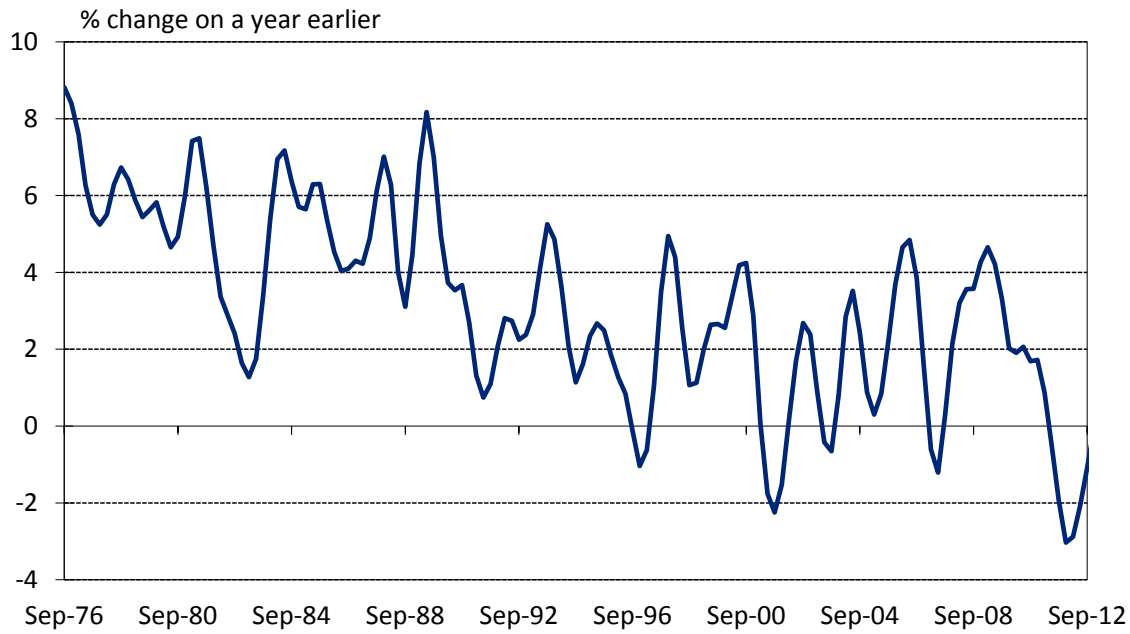


Source: BREE

That said, in the short term at least, policy decisions made in late 2012 will limit the effect of the carbon tax on utilities workers. The first is the scrapping the 'Cash for Closure' program, where the government had intended to pay Australia's dirtiest coal fired power stations to close. Second, the government has scrapped the price floor and instead decided to link the ETS (when it commences in 2015) with the European Union's scheme. This, combined with the ability for firms to meet 12.5% of their liability using Certified Emission Reductions under the Kyoto Protocol, will limit the extent to which domestic abatement will be required to meet companies' liabilities.

Using trend data, the electricity sector is amid its longest and sharpest contraction in output since records began on a consistent basis in the mid-1970s. Output levels have been falling since late 2010 – and are currently 3% below their peak – while the other components of the utilities sector have seen output increase over this period. That moderation in electricity output potentially reduces wage pressure going forward.

Chart 8.5: Year-to growth rates in trend electricity output



Source: ABS, Deloitte Access Economics

8.2 Demand pressures on the utilities sector and its competitors

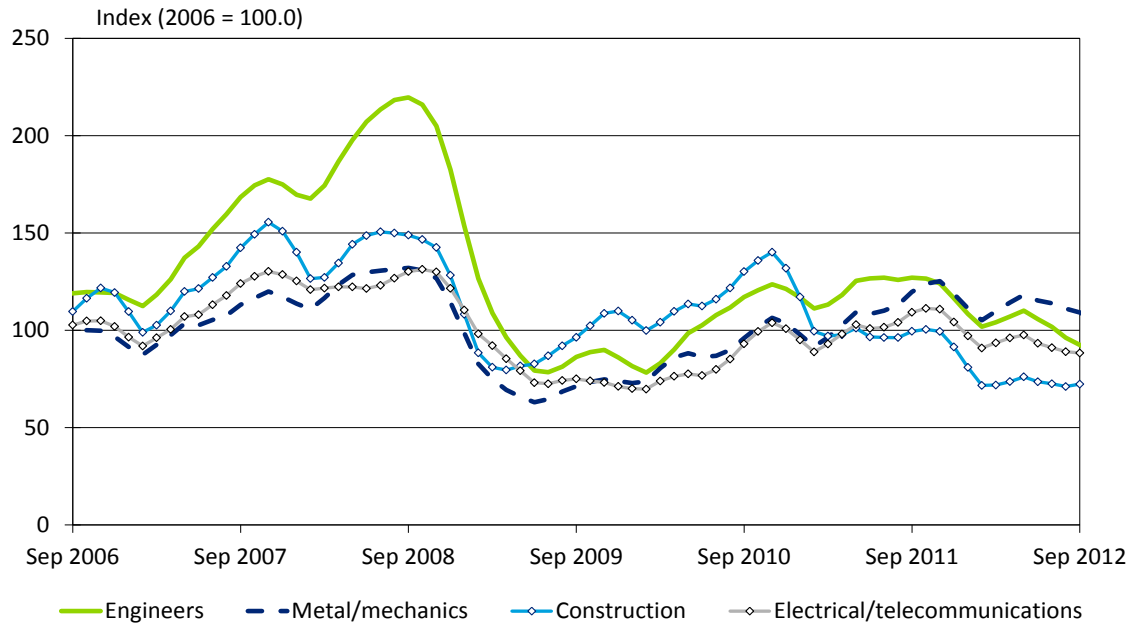
Chart 8.6 below shows vacancies data compiled by the Federal Department of Education, Employment and Workplace Relations (DEEWR), and focuses on vacancies in the trades. Several relevant trades are noted – engineers, metal workers and mechanics, construction workers, and electrical and telecommunications workers.

The performances of the construction and mining sectors are readily evident in the data – with rapidly rising demand for construction and related workers ahead of the GFC, followed by a sharp decline and subsequent rebound.

Demand for construction workers fell sharply in early 2012 as the housing market contracted amid ongoing economic turmoil overseas, and monthly construction ads have remained about 30% lower than the beginning of 2006 ever since. That said, there appears to have been a pick up toward the end of the year, with job vacancies in the three months to November 7% higher than in the 3 months to August.

This likely reflects improvement in the housing market; vacancies for engineering trades, a good proportion of which would be involved with the mining sector, fell sharply toward the end of 2012, with vacancies to the 3 months of November around 30% lower than the corresponding period in 2011.

Chart 8.6: Trades vacancies



Source: DEEWR Vacancy Report

Note: In December 2011 the previous indices, based mainly on newspaper ads, were discontinued and replaced by new indices based on popular job search websites. Data are only available from 2006 for these new indices.

Vacancies for electrical/telecommunications workers and for metalworkers and mechanics have also slowed toward the end of 2012, though these tend to be a fair bit more stable than the others, since they are driven more by general economic activity than by the housing market or the mining sector.

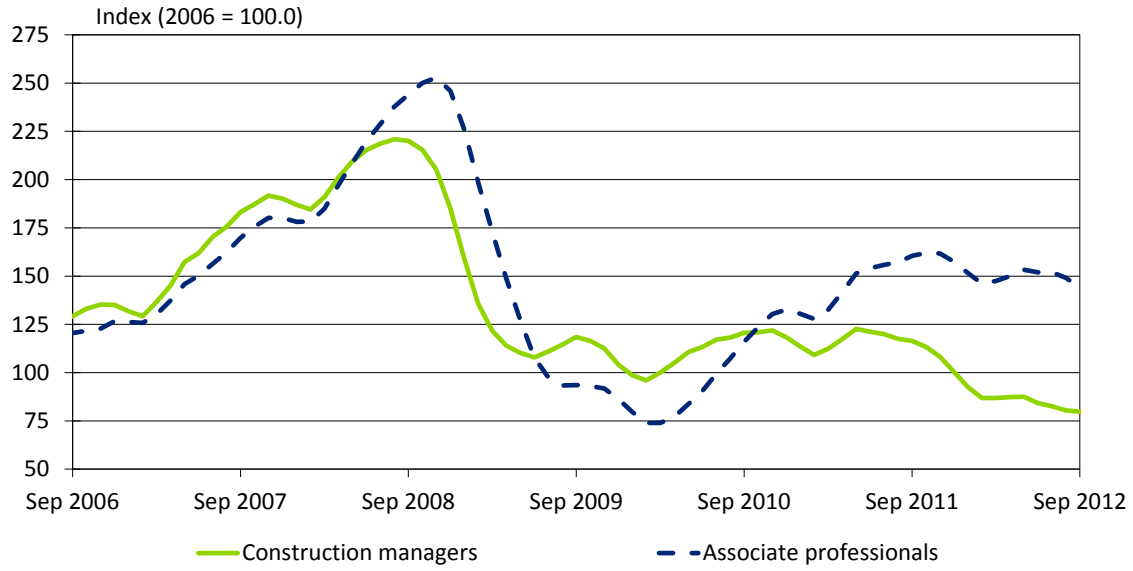
Professional vacancies in building and engineering (seen in Chart 8.7 below) have shown broadly the same movements as the trades, particularly when comparing the two construction sector categories, although there are some differences.

First, movements in demand for professional engineers (associate professionals in the chart above) have displayed stronger demand during periods of relative strength than have trades vacancies, but the downturn toward the end of 2012 has also been marginally more pronounced. This is likely because the professional category displayed above is more heavily oriented toward the mining sector, whereas the trade category contains a greater share of non-mining workers.

The pre-GFC upturn in vacancies for construction managers was also more pronounced than for construction tradespeople. As with engineers, the downturn in vacancies for construction managers has also been slightly more pronounced than for construction tradespeople.

Though the demand for mining related occupations is unlikely to experience another major boom – with the current boom in resources investment expected to peak by late 2013/early 2014 – the rate cuts by the RBA towards the end of 2012, which would not have fully flowed through to the December job vacancy data, should see a pick-up in demand for construction related occupations.

Chart 8.7: Managerial and technical vacancies in building and engineering



Source: DEEWR Vacancy Report

Note: In December 2011 the previous indices, based mainly on newspaper ads, were discontinued and replaced by new indices based on popular job search websites. Data are only available from 2006 for these new indices.

8.3 Comparison with results from enterprise bargaining agreements

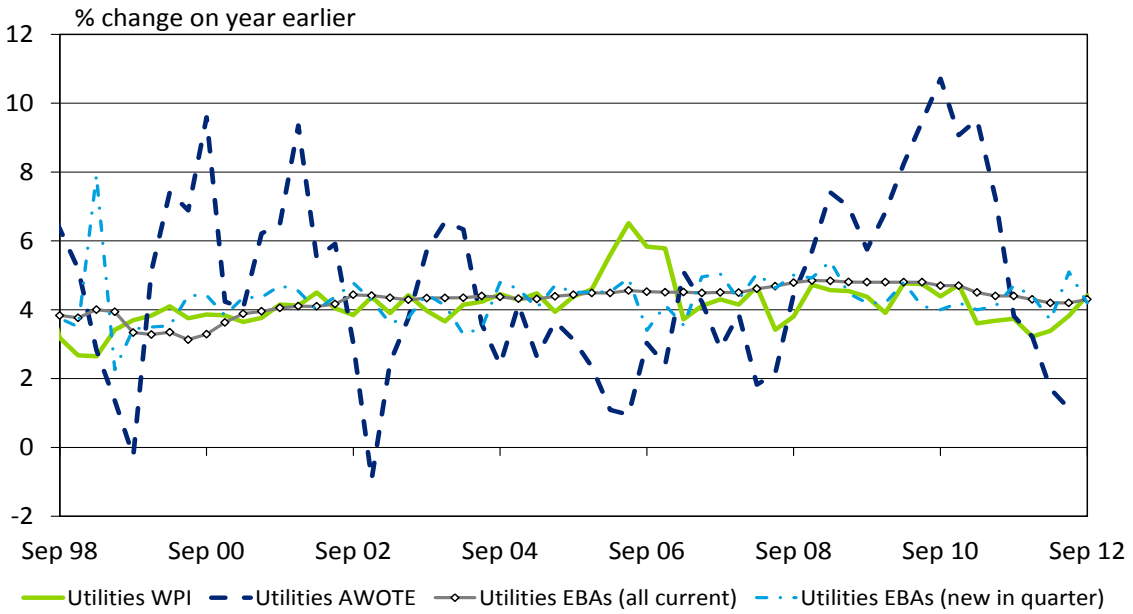
Chart 8.8 compares growth in the utilities sector WPI with a number of other wage growth measurements that are produced on a regular basis.

The first measure shown is average weekly ordinary time earnings (AWOTE) for the national utilities sector. As the chart illustrates, the growth in this wage series is particularly volatile, and this volatility limits its use in forecasting. The next series is the matching measure of wage growth in the utilities, but using the preferred WPI series.

The remaining two series come from the *Trends in Federal Enterprise Bargaining* publication produced by the Department of Education, Employment and Workplace Relations and cover growth in wages under enterprise bargaining agreements (EBAs):

- The third series in the chart shows growth in wages under all agreements current during the quarter. We would expect movements in this measure to be broadly reflective of trends in the broader utilities sector – or in other words, when this series accelerates we would expect a similar acceleration in growth in the sectoral WPI.
- The final series shows annual growth that will occur under any agreements commencing in the quarter shown. This series is more indicative of immediate future trends in the first EBA series – if there were to be, say, a sustained decline in wage growth, then that would show up first in new agreements.

Chart 8.8: Measures of utilities sector wage growth



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

In general, growth in new EBAs in the utilities sector is a solid predictor of the level and trend in the WPI in the immediately following quarters, while the AWOTE movements have been almost unrelated to the EBA results over this time.

As shown in Chart 8.8, wage growth in new EBAs has been strengthening slightly since a subdued period through 2010-11. Outcomes over the past 6 months in particular have exceeded average wage growth across all current agreements, with the latter measure now moving higher for the first time in 4 years. That suggests a degree of short term momentum in wage growth in the sector, which is also consistent with recent strength in the utilities WPI.

8.4 Forecasts of utilities wage growth

Wages in the utilities sector WPI grew by 4.4% in the year to September 2012, comfortably ahead of the national average growth rate of 3.7%. For much of the last decade the utilities WPI has grown comfortably ahead of the national average, for many and varied reasons including skills shortages, competition for labour from other sectors such and mining, and electricity price rises.

However there are reasons to believe that wages in the utilities sector are approaching a turning point – for most of the coming decade wage growth in utilities is expected to be lower than the national average.

Twenty years ago, coal accounted for around 80% of Australia's electricity production mix. But as Chart 8.4 showed, in 2010-11 that share had dropped to 68%. Though it may not seem like much, it highlights a growing and important trend in Australia's energy mix. While it will remain Australia's primary fuel source (at least for the foreseeable future), the dominance of coal is being rapidly encroached by other non-renewable fuels such as oil and natural gas, and by renewable forms of electricity such as solar and wind.

In the five years from 2005-06 to 2010-11 coal production fell by 7% and its share of the national energy mix fell by some 10%, and that was before policies such as the carbon tax and the Renewable Energy Target came into effect. The upshot is that demand for labour in 'traditional' roles such as generation, distribution and retailing of electricity is likely to wane over the next decade, with associated downward pressure on wage growth in the utilities.

Wages in the utilities have also benefitted from the huge sums of money on offer in sectors such as mining and construction. But with the peak of the mining construction and investment boom fast approaching, there are question marks on the sustainability of demand for labour in these sectors, which will soon be fading as a driver of wage competition in the utilities – see Chart 8.6 and Chart 8.7. Skill shortages are temporary, and the shortages that have driven strong growth in the utilities sector in recent years appear to be nearing a turning point.

That said, the mining boom is far from completely over, and as Chart 8.8 showed, year-to wage growth determined in new EBAs for the utilities sector remains robust. That suggests a degree of relative strength in wage growth in the utilities will remain until about mid-2013, before declining below the national average from about 2014.

Annual WPI growth in the utilities sector is expected to reach 4.4% in 2012-13, substantially higher than the corresponding 3.5% growth in the national WPI. Through 2013-14 however, utilities wages are expected to grow more slowly than the national average, at 3.2%.

9 The national outlook for wages in related industries

This chapter discusses the outlook for wage growth in the construction and administrative services sectors. These sectors are likely to compete strongly with the utilities sector to attract and retain workers, although that pressure is likely to be offset by some weakness elsewhere in the economy, including from parts of manufacturing.

9.1 Construction

Australia's construction sector is no bigger than it was a year ago, with that stagnation in output leading the industry to shed more than 40,000 workers in the past year alone. To put it another way, the long running arm wrestle between good news on engineering construction and bad news on residential and commercial construction has seen the negatives begin to overwhelm the positives.

In recent years, much of the construction sector's success has come from engineering construction in and around the mining sector. With the housing and office markets generally struggling in the wake of the GFC and Euro Zone crises, the burgeoning resources investment pipeline provided a plethora of work in the construction sector – bricklayers, crane operators, concreters, and many others, could all find work for the miners.

However as noted earlier, the boom in resources investment looks like peaking in late 2013 or early 2014. Hence, just like the broader economy, the construction sector could potentially find itself lacking its biggest growth driver, which will naturally affect the demand for labour in mining related construction.

Of course, we should point out that we're talking *growth rates* here, not *levels*. There remains an enormous amount of mining investment work both underway and in the pipeline – Deloitte Access Economics' December *Investment Monitor* saw the total value of mining projects in the database rise by $26.9 billion (2.9%) since the September quarter, and by $72 billion (17.7%) since the same time in 2011.

So for many years to come there will continue to be an enormous amount of construction workers employed either directly or indirectly by the mining sector. But looking forward, as current mining projects are completed, the construction workers employed by those projects will find an ever decreasing pool of *new* mining projects from which to find a new job.

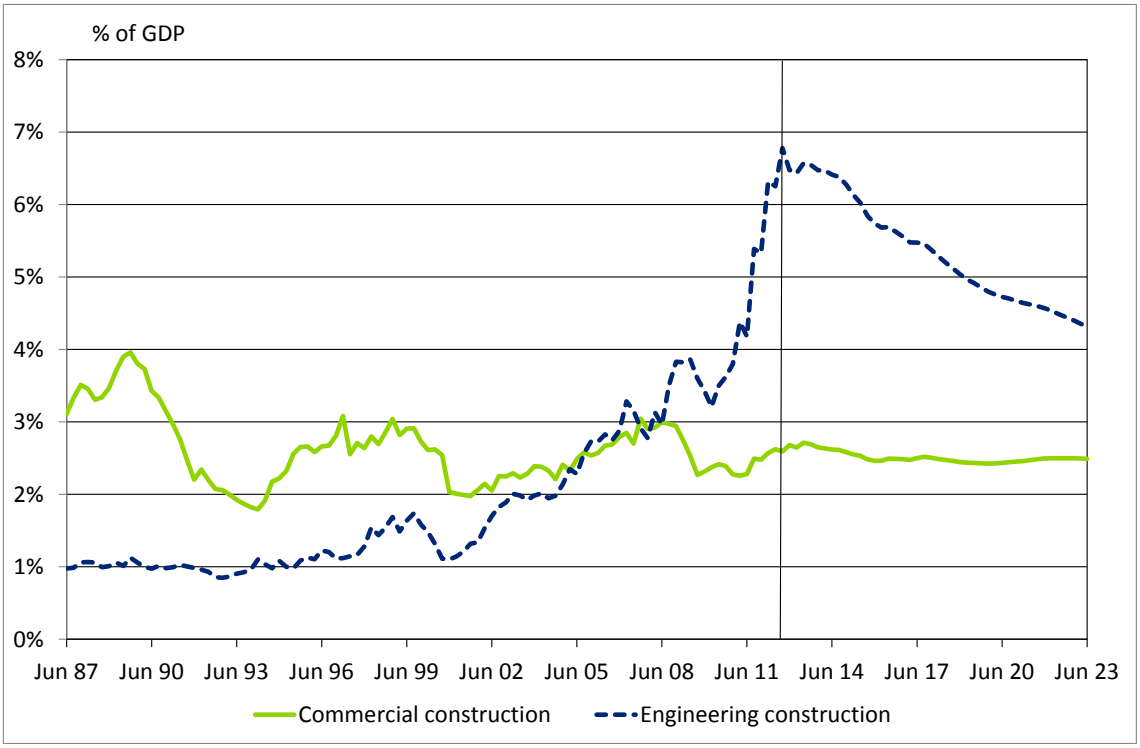
On the other hand, housing construction looks set to turn upwards, as a result of (1) the RBA's successive rate cuts through 2012; (2) generally improving economic conditions both domestically and abroad; (3) population growth beginning to turn up; and (4) the recent floods in Queensland which will require significant amounts of rebuilding work.

9.1.1 Current WPI projections

Given the discussion above, it will be no surprise to learn that engineering construction's share of the national economy is projected to decline fairly steadily over the coming decade. Indeed, this projection is little changed from last time.

That said, the mining boom peaking and the mining boom ending are two very different things. There remains a solid amount of mining construction still to be done, and with several of those projects multi-billion dollar, long term investments. Though engineering construction's share of the economy should tick down in coming years, it will remain well higher than its historical average.

Chart 9.1: Components of construction – commercial and engineering work

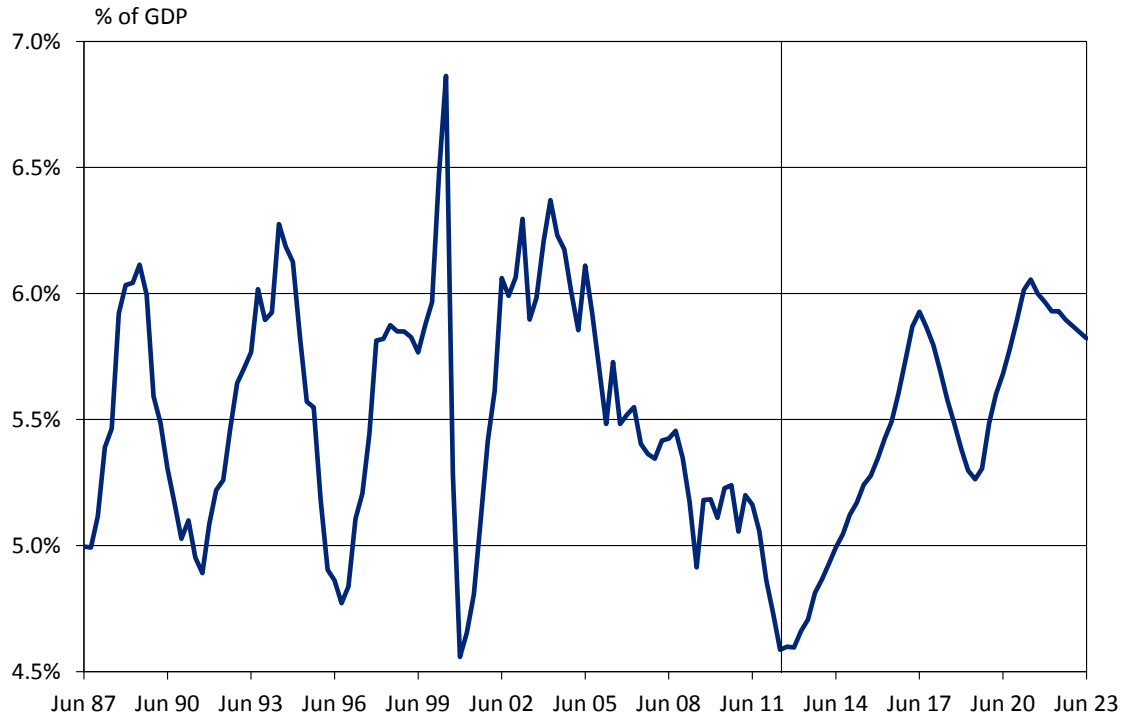


Source: ABS, Deloitte Access Economics

In addition, there are also longer term infrastructure needs that lie outside of the mining sector (the National Broadband Network is a good example) which will help to support construction as the investment phase of the resource boom fades.

Chart 9.2 shows the expected upturn in housing construction (as a share of GDP), which will help to offset a slowdown in engineering construction.

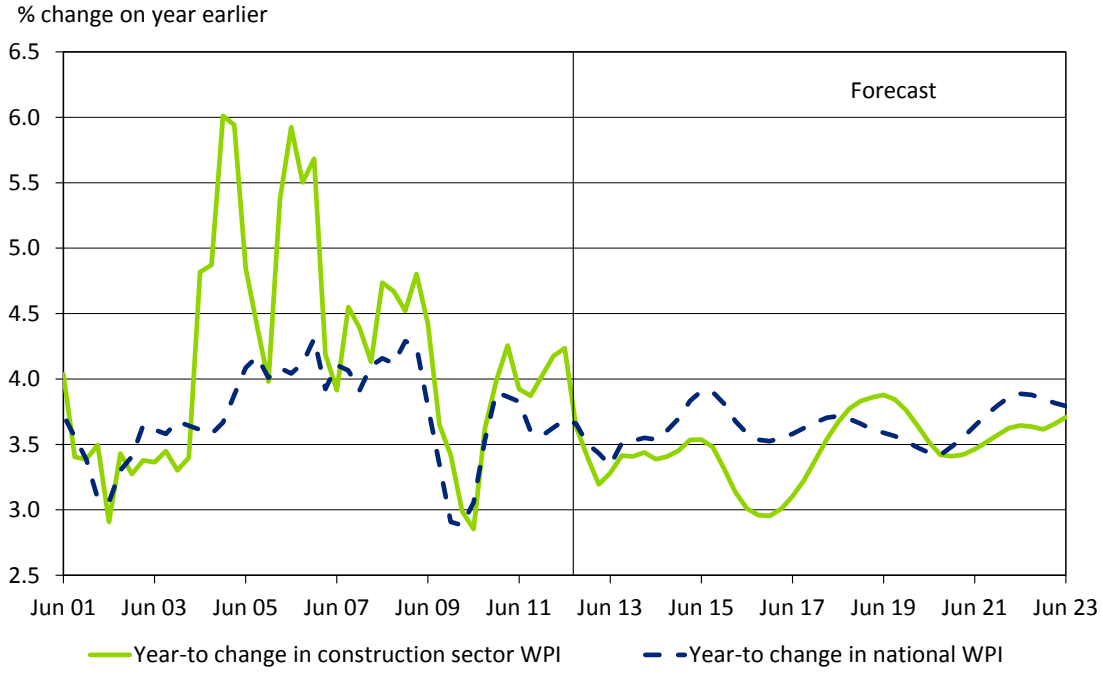
Chart 9.2: Components of construction – housing work



Source: ABS, Deloitte Access Economics

Chart 9.3 shows that wage growth in the construction sector can be quite volatile when compared with the overall WPI.

Chart 9.3: Construction WPI growth forecast



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

The volatility in construction sector wages over the past decade can be attributed in large part to the mining boom – in any one quarter, the commencement of two or three large scale, multi-billion dollar projects could lead to a sudden rush of demand for construction workers to service those projects, causing a spike in WPI growth.

For most of the last decade construction sector wages grew considerably faster than the national average. Construction wages had outpaced those in the wider economy for some time prior to the GFC, and even in the downturn in 2008-09, growth rates were at or slightly ahead of the average.

However, the September quarter of 2012 (the latest available data) saw a sharp fall in annualised growth in the constructions sector's WPI, a fall which was not replicated in the national average and which saw wage growth in construction fall behind the national average for the first time in over two years.

Over the year to September 2012, construction sector wages (measured by the WPI) grew 3.6%, well down on the 4.2% growth recorded in the year to June. By contrast, the Australian average WPI grew by 3.7% in the year to September, matching the June figure of 3.7%.

Indeed, with the mining investment boom now expected to peak in the next year or so, our forecasts for the construction sector's WPI growth in coming years has been revised down somewhat from our forecasts made in October last year.

We now see construction sector wages as growing at roughly 3.5% a year for the next few years, just slightly less than the national WPI, and with a trough in the cycle likely to occur sometime around 2017.

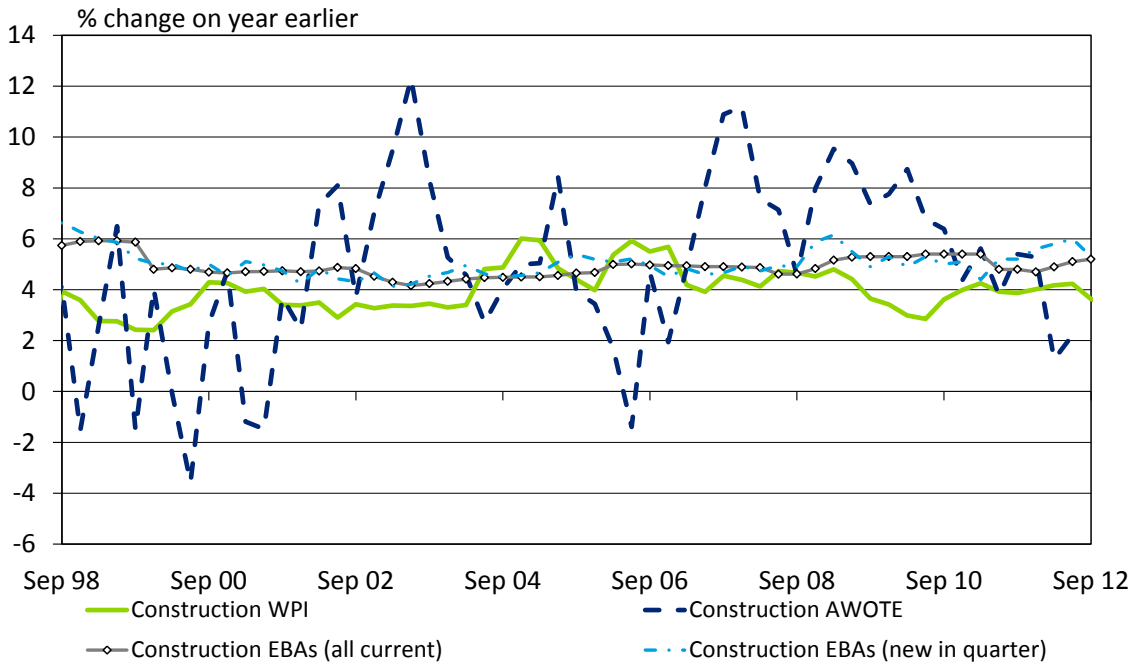
9.1.2 Comparison with EBA results

Chart 9.4 shows the outcomes for wage growth in the construction sector as measured by EBAs, WPI and AWOTE.

The average increase in construction sector wages under current EBAs continues to rise, and in September 2012 was 5.2%, well up on the September 2011 rate of 4.8%. That said, average wage growth under new construction sector EBAs fell sharply, from 6% in the June quarter to 5.3% in the September quarter.

A downturn in EBA wages growth is a strong indicator of an upcoming downturn in general wages growth, particularly in a heavily unionised industry such as construction. Other things equal, this supports our view of a coming downturn in construction sector wages growth.

Chart 9.4: Measures of construction sector wage growth



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

It is worth noting, however, that only around 15% of construction sector employees are covered by the EBAs included here – below the national average and the lowest proportion of the key sectors considered in the report.

9.2 Administrative services

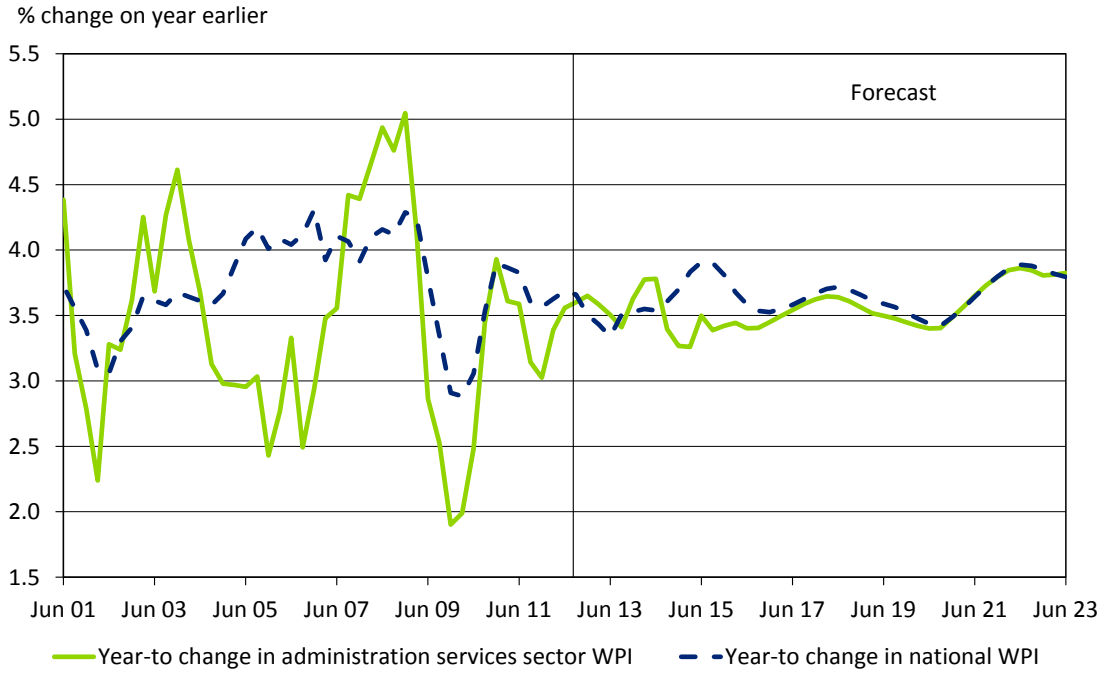
9.2.1 Current WPI projections

Over recent years growth in WPI in the administrative services sector has lagged well behind the national average, though the volatility in the data means there have been some periods of relative strength.

The outlook for this sector is driven mostly by the outlook for the broader business services sector. This group survived the global financial crisis in reasonable shape, before then riding the recovery through to late 2010. But the going has been tougher since then.

Although many in the sector have made hay in selling their services to resource sector companies, the other parts of Australia's economy have been in cost cutting mode. More recently, even the miners are carefully controlling costs. That saw a relatively rapid cooling in demand for business services over the second half of 2012. In fact, the Reserve Bank mentioned professional services in enumerating the factors which helped convince it to cut interest rates in recent months.

Chart 9.5: Administrative services WPI growth forecast



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

That said, concerns over the outlook in mining as well as ongoing cost cutting by governments have resulted in a slight downward revision in administrative services wage forecasts relative to the forecasts made in October 2012.

As Chart 9.5 shows, growth in the WPI in this sector has been volatile in recent years. Wage growth for administrative services workers turned up since December 2011, due in part to increases in the minimum wage through 2011 (the sector includes many workers employed on the minimum wage).

Growth in the September quarter was 3.6%, just higher than growth in the June quarter, and about half a per cent higher than the corresponding growth rate in September 2011. The national WPI grew by 0.6% higher than administrative services in the year to September, though this relativity is expected to reverse in the December quarter, as growth in administrative services wages ticks up slightly while growth in the national WPI turns down.

The broader outlook for this sector is much the same as last time – a brief lift in growth in the short term followed by slightly below average growth over the medium term – and this is reflected in the outlook for wage growth as shown in Chart 9.5. Wage gains for the sector are expected to be a touch below the national average in 2012-13, with a slightly wider gap across the medium term as the sector struggles to keep up with the national average.

In addition, the projection for wages across the medium term also reflects Deloitte Access Economics' view that the pace of growth in the administrative services sector's wages will be held back in relative terms by the sector lying on the wrong side of the longer term trend towards increased skill differentials in wages and salaries.

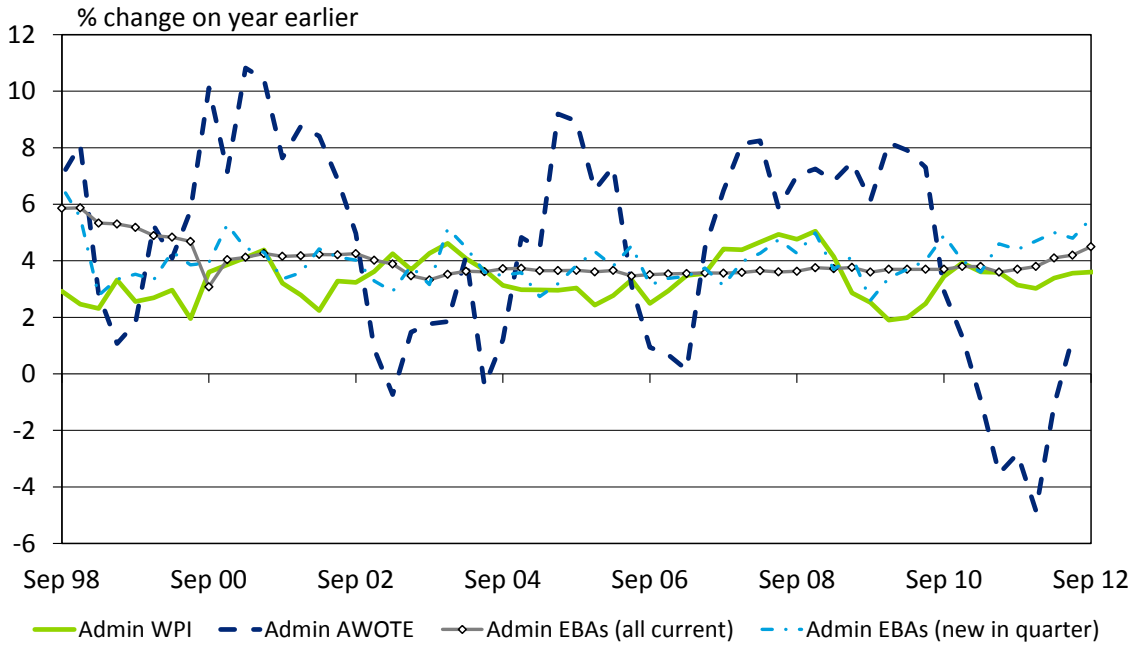
Growth in the sector may also swing towards lower skill components of the sector – such as building cleaning and pest control – which would drive a further wedge in wage gains between this sector and the national average.

That said, the latter phase will not last forever, and wage growth in the administrative services sector is likely to move towards tracking the general rate of WPI increase in the longer term.

9.2.2 Comparison with EBA results

Growth in wages under EBAs in the administrative services sector has picked up since early 2011.

Chart 9.6: Measures of administrative services sector wage growth



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

The administrative services sector has 18% of workers covered by EBAs, a little below the average across all sectors of 19%, and close to 30% in the utilities sector.

Wage gains in new EBAs have picked up from 4.8% in the June quarter to 5.5% in the September quarter. This is one of the fastest growth rates outside of construction and mining (and faster than the matching gains in the WPI measure for this sector).

Though wage growth in administrative services EBAs has been notably higher than the corresponding growth in utilities EBAs, the same cannot be said for the overall WPI, which lags behind that of the utilities sector.

The recent increase in the growth in wages under EBAs for the administrative sector is consistent with the recent lift in the WPI for this sector, and does suggest that a slight upturn in WPI is likely in coming quarters. But with less than 20% of the sector's workers covered by EBAs, we expect the broader negatives associated with cost cutting by key sectors to be the dominant force in the short term.

9.3 Summary results

The forecasts for national and sectoral wage growth are shown in Table 9.1. Forecast components include real and nominal WPI, and real and nominal productivity adjusted WPI.

Table 9.1: National sectoral wage forecasts

Calendar year changes in nominal national industry sector WPI

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
All industries	3.7	3.6	3.5	3.6	3.9	3.6	3.6	3.7	3.6
Utilities	3.6	4.0	3.9	3.1	3.4	3.4	3.6	3.6	3.3
Construction	4.0	3.9	3.3	3.4	3.5	3.0	3.2	3.7	3.8
Administration services	3.3	3.6	3.5	3.6	3.4	3.4	3.6	3.6	3.5

Calendar year changes in real national industry sector Wage Prices

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
All industries	0.3	1.8	0.4	0.9	1.2	0.9	0.8	1.2	1.2
Utilities	0.2	2.1	0.8	0.4	0.7	0.7	0.8	1.1	1.0
Construction	0.6	2.0	0.2	0.7	0.8	0.3	0.4	1.2	1.5
Administration services	0.0	1.7	0.4	0.8	0.7	0.7	0.8	1.1	1.1

Calendar year changes in nominal productivity adjusted Wage Price aggregates

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
All industries	3.0	0.9	2.3	2.2	2.3	1.9	2.0	2.2	1.9
Utilities	3.1	1.6	2.5	1.6	1.7	1.7	1.9	2.1	1.7
Construction	3.0	1.0	2.2	2.4	2.2	1.3	1.5	2.2	2.0
Administration services	3.1	0.8	2.0	2.3	1.9	1.8	2.0	2.2	1.9

Calendar year changes in real productivity adjusted Wage Price aggregates

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
All industries	-0.4	-0.9	-0.8	-0.5	-0.4	-0.8	-0.8	-0.2	-0.5
Utilities	-0.3	-0.3	-0.6	-1.1	-0.9	-1.0	-0.8	-0.4	-0.7
Construction	-0.3	-0.9	-0.8	-0.3	-0.4	-1.4	-1.2	-0.3	-0.3
Administration services	-0.3	-1.0	-1.0	-0.4	-0.8	-0.8	-0.8	-0.2	-0.4

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

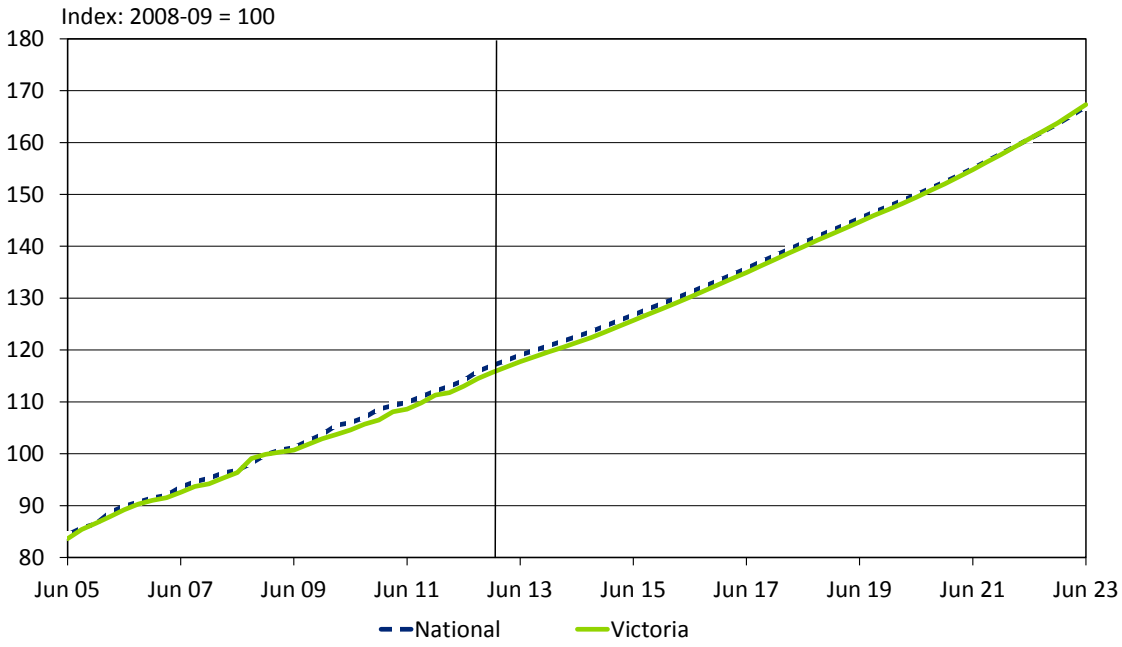
10 The Victorian outlook for wage growth in the utilities and competitor sectors

This chapter sets out the projections for labour costs in the utilities sector in Victoria, and provides additional State level projections for the two additional industry sectors of construction and administrative services.

10.1 State trends

National trends by industry will tend to dominate at the State and Territory level – particularly in the larger States, while volatility ('noise' in the data) can lead to significant movements in smaller jurisdictions.

Chart 10.1: Utilities sector WPI forecasts – national and Victoria



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

As Chart 10.1 above shows, over the longer term the underlying trends in wages in the sector (that is, at the national level) dominate the movements by State – that is, these lines look very similar in both history and forecast.

There can be deviations from State to State, with these differences driven by a combination of:

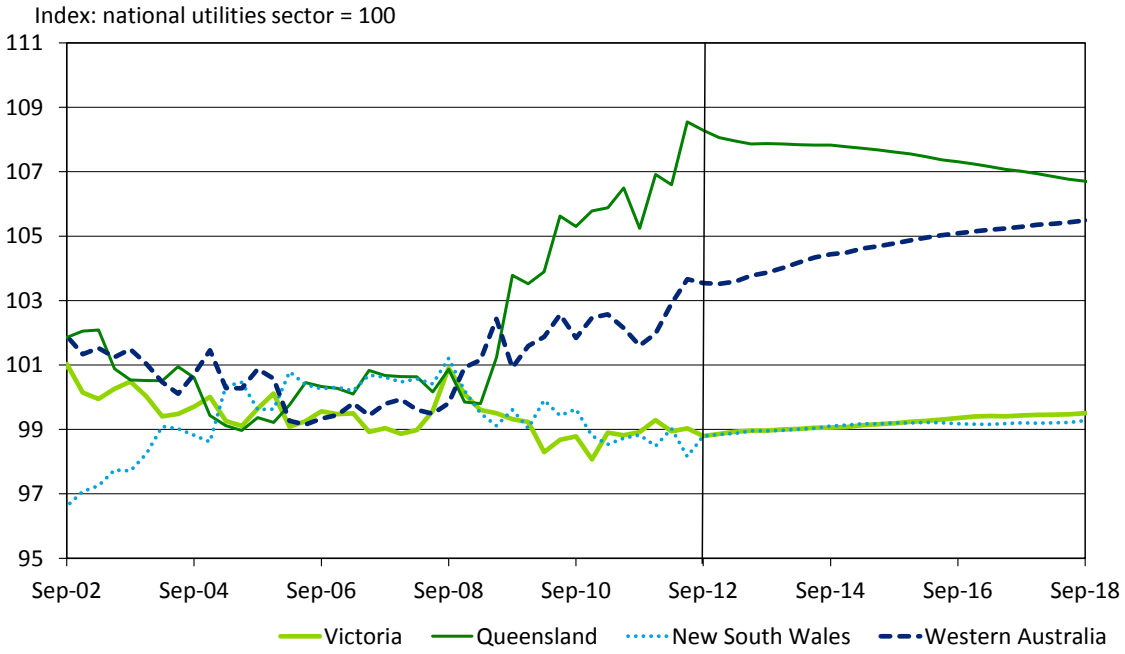
- General trends in State wage growth. Slower growing States will likely see slower WPI growth; and

- 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.

However, as we have stressed elsewhere, there are limits to how far wage rates can deviate over the longer term – large and lingering relative swings in either direction will tend to be limited by competition between State and industries and the ability of workers to move towards better paying jobs.

Overall, the differences in index levels for utilities wages by State are easier to see when expressed in relative terms, as they are in Chart 10.2 below.

Chart 10.2: Relative utilities WPI forecast by State



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

In this chart the national utilities index at any point in time is set to a value of 100 and the index for each State is expressed relative to that value.[5] Both the volatility at the State level and the tendency for indices to revert towards the national average over time are evident.

Although the utilities sector has seen relatively faster wage growth nationally, much of that strength from the late 1990s to around 2005 was due to strength in New South Wales. Wage gains in Victoria were more moderate than those in NSW through to 2005, and the State failed to keep pace with the mining States across the first (pre-GFC) mining boom.

In more recent times the flow-on effects from the Queensland and Western Australia mining sectors have been a more important driver of WPI growth. Utilities wages in those strong mining States has been growing particularly rapidly, helping to hold down Victoria's relative utilities sector WPI since mid-2009. This is not a measure of absolute weakness, just weakness

[5] As noted earlier, this does not imply an ordering for wage levels, as each individual series is an index equal to 100 in 2008-09.

relative to the industry average; an average that has been increasingly dominated by developments in Queensland and Western Australia.

With relative WPI increases seen in WA and Queensland fading further and faster than had been expected, States such as Victoria will see relatively faster growth in utilities WPI compared with a national average that is set to slow as mining related pressures ease.

The forecast profile in Chart 10.2 shows Victoria's relative utilities WPI measure rising slightly over time, despite the State's utilities sector WPI growing less rapidly than its overall WPI measure. Through 2014 and beyond the State's relative WPI measure is expected to make further steady gains over time toward the national average.

However, as the earlier Chart 10.1 makes clear, these deviations are quite modest compared with the general upward movement in the utilities sector WPI.

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. This makes picking point-to-point growth rates particularly hard. The results in Chart 10.2 are therefore more useful in showing the broad trends in relative labour cost movements in the sector over a period of time.

10.2 The utilities sector

Official ABS data show that annual wage gains in Victoria's utilities sector have been running between 3½ and 4½% since 2010, marginally outpacing general wage growth in Victoria, and ahead of the national average for utilities (Chart 10.4 shows a comparison of growth rates).

Over the same period, the State's utilities sector has been increasing its share of Victorian employment. That is expected to continue through 2013, supported by current and recent investment in key infrastructure projects such as the recently completed Wonthaggi desalination plant, and Melbourne Water's $220 million main sewer replacement from Swallow Street (near Beacon Cove) to Wurundjeri Way at Docklands. Elsewhere, works to upgrade the Eastern Treatment Plant at Carrum are due to be finalised this year. In the energy sector, works continue on the $450 million, 52 turbine wind farm at Bald Hills near Inverloch.

While the utilities sector's share of employment has increased across the past decade, it remains relatively capital intensive. Further, as noted above in Chapter 4, weak prospects for output in the utilities will continue to hamper employment prospects in the sector, particularly if recent trends toward reduced electricity demand are maintained.

Yet utilities wages in Victoria have seen a period of solid growth, and have kept pace with a recent upswing in wages in the national utilities sector. That broader lift in utilities wages is expected to continue in the short term, helping to push wage gains in the State near or above the 4% level over the remainder of 2012-13.

Once the current upswing ends, Victoria's utilities sector employment is expected to face a more modest outlook. This reflects the significant challenges for the utilities arising from:

- the 'two speed troubles' gripping the State's manufacturing sector;
- the impact of past price increases for the sector's output, especially electricity;

- the slowdown in housing construction (and hence the pace at which utilities will be connected to new homes); as well as
- the impacts of the carbon price.

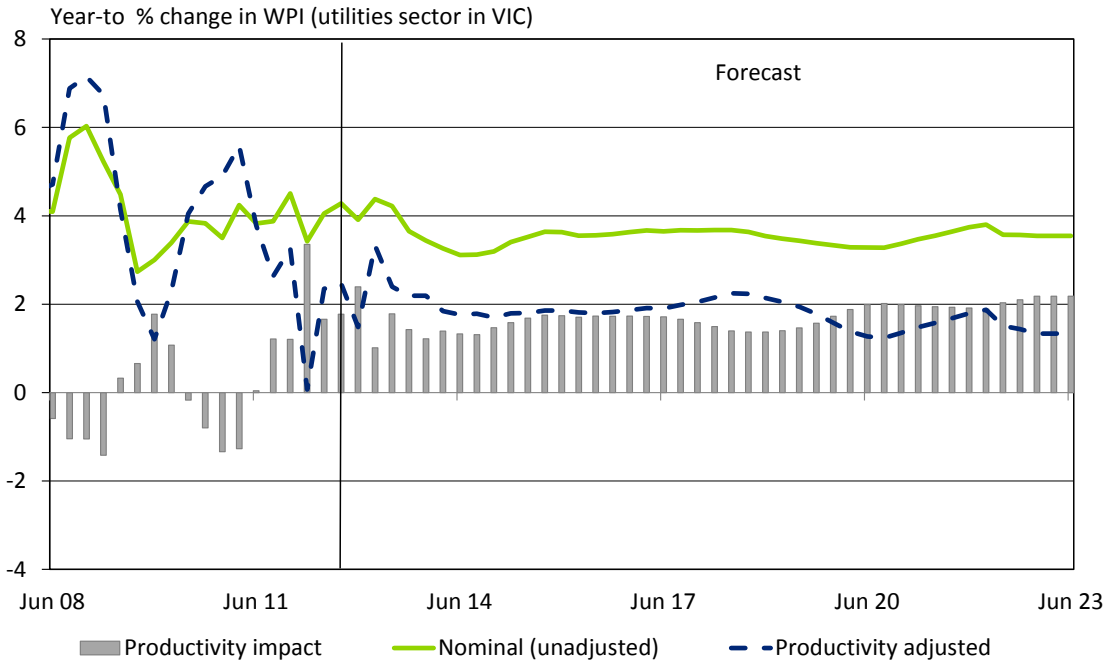
While the Federal Government's decision to abandon its plans to close a number of the State's coal-fired electricity generators means the latter are now likely to have a more gradual effect on the State's electricity generation sector than was in prospect, it will remain a challenge for a State whose energy supply is more emissions intensive than other jurisdictions.

Wage growth will also likely be constrained by further decreases in competition for labour from other key industrial sectors in the State. The declines experienced by manufacturing across 2010 and 2011 have eased somewhat in recent months, while construction and mining employment have remained relatively strong. Yet all three are now heading into a period of much greater uncertainty. As mining related construction pressures ease, alongside a broader cooling of the construction sector in Victoria, wage pressures emerging from these sectors may likewise fall back. That trend will be more evident in Victoria than in Australia in general, particularly with the State's manufacturers exposed to a $A that will remain uncomfortably high for some time.

Indeed, the pace of wage growth in Victoria's utilities sector in the short term may be affected by job losses elsewhere in Victoria's industrial base, particularly if there is a significant slowdown in the State's housing construction sector. That would further ease the pressure on what had until recently been tight labour markets in the State. With the State's unemployment rate expected to continue the steady increases seen over the last 18 months, the task of finding workers will be easier than it had been when unemployment remained near its post-GFC lows. In turn, that will help to moderate pressure on wages in the utilities sector in the short term.

With prospects for output growth in Victoria remaining modest, and with the State's overall WPI growth rate remaining at around 3½% (rather than the 4% seen in early 2012) the State's utilities sector WPI growth is expected to trend lower following a period of solid gains in the short term. That pattern sees utilities WPI growth easing slightly to record solid growth of 3.9% in 2013 before slowing notably to 3.1% in 2014 and then recovering slightly but remaining below the national average at 3.4% for the following two calendar years. Further out, utilities WPI growth is expected to average around 3.6% per year in nominal terms unadjusted for productivity growth (see Chart 10.3).

Chart 10.3: Victorian utilities WPI forecasts



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

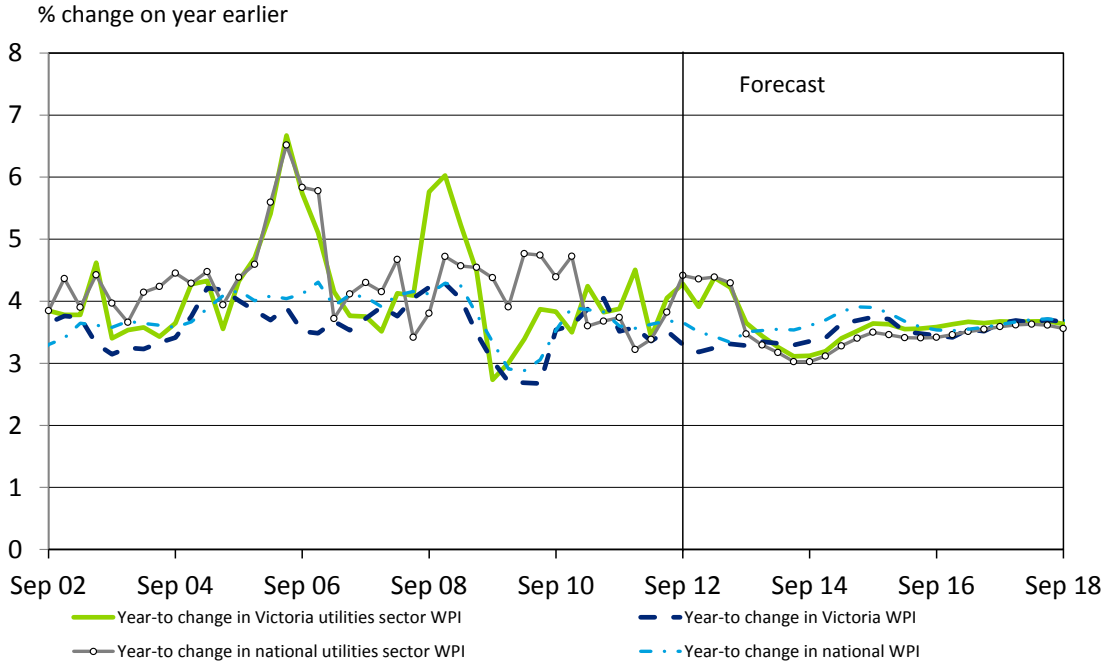
Such a view is consistent with recent outcomes from EBAs in the sector, where average annualised wage increases for new agreements came in at a particularly strong 5.0% in the most recent quarter.

Broader wage growth in Victoria is expected to edge slightly higher through 2013 as two speed pressures begin to ease, providing some additional support to solid wage growth in the utilities sector.

Looking further forward (and as Chart 10.4 illustrates), State utilities WPI should move back into line with other State trends and overall industry trends. That will mark a period where the current strong outperformers (Queensland and Western Australia in terms of States and mining in terms of industries) fall back towards the national average in terms of wage growth.

That trend will also see utilities wages growth fall back behind the national average, reflecting both a reduction in competitive pressures on wages in the sector and a partial unwinding of short term strength in wage gains.

Chart 10.4: Victorian utilities forecast comparison



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

10.3 The construction sector

Construction has been a key contributor to Victoria's economic outperformance of the past decade. A winning combination of strong rates of population growth, sensible zoning policies and (if data on investment spend against housing levels is any guide) relatively modest pricing of new housing production has seen Victoria lead the way in terms of new building.

In part, the State's over-achievement in construction is due to under-achievement in New South Wales over the past decade, as Victoria's relatively more affordable office space, industrial land and housing allowed it to steal a march on its northern neighbour.

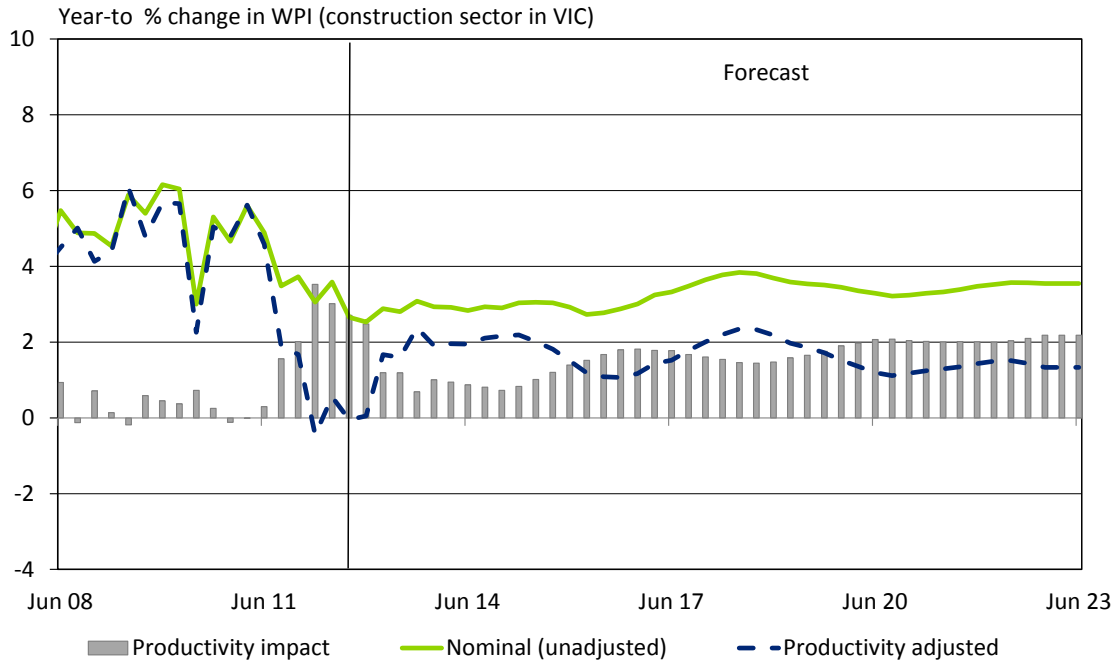
New developments, everything from new subdivisions on the outskirts of Melbourne to the reconstruction efforts following the Black Saturday bushfires and flooding in regional Victoria saw construction activity in the State running well ahead of national trends – easily outpacing activity in New South Wales and Queensland.

Indeed, there were a number of years in which housing starts in Victoria easily surpassed those in NSW and Queensland, and there've even been times in which Victoria's housing activity matched that of the rest of the east coast added together.

Add in the effects of competition for labour from the infrastructure demand of the mining boom in Queensland and Western Australia and the resulting growth in construction wages has notably outpaced the overall WPI growth for the State across the past decade.

Indeed, even the GFC did little to halt the momentum of wage gains in the sector, as Chart 10.5 below shows wage rates stalled for a single quarterly reading before returning to growth above 5% per year.

Chart 10.5: Victorian construction WPI forecasts



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

Yet the stunning success of housing construction in Victoria has now mostly drawn to a close. Wage growth has slowed markedly in the wake of significant falls in housing starts and other leading indicators of activity. As Chart 10.5 also shows, wage growth in the sector has been slowing for some time, and now sits below 3% in the year to the September quarter of 2012.

That is not to say that housing construction in Victoria is facing a major slump, just that it is no longer the growth driver that is once was for the State.

In particular, the combination of solid population growth and lower interest rates will provide some support while Victoria's rental accommodation vacancy rates remain relatively tight (and even seem to be tightening), helping to prevent a more substantial slowdown.

Rather, the key negative for Victoria's housing construction outlook is simply this State's recent successes in this area – which means it hasn't got anything like the pent-up demand evident in some other key States. That leaves the overall housing construction outlook in this State projected to be solid enough, just somewhat less impressive than it is for other parts of the country.

Similarly, activity in Victoria's commercial construction sector remains relatively solid, with a healthy list of works underway. The estimated cost of construction at the Village Docklands project at Collins Square in Melbourne has blown out by a further $200 million, with an expected final cost now estimated at $1.5 billion.

Other major retail and office projects currently underway include Grocon's $1.2 billion development of the old Carlton United Breweries site on the corner of Swanson and Victoria streets; construction of two office towers, a hotel, a medical centre, shops, gymnasium and a pub at 720 Bourke St, Docklands, at a cost of $700 million; as well as a $670 million project to build a new fruit, vegetable, flower and fish market at Epping in Melbourne.

These projects will ensure commercial construction activity remains solid to 2014, the expected end date for all the aforementioned projects. Looking past that, with growth in jobs and consumer spending remaining modest, construction activity in the retail and office market may cool somewhat.

Elsewhere, big public dollars continue to be spent on health infrastructure, with close to $3 billion worth of works underway. Construction continues on the new $1.3 billion Victorian Comprehensive Cancer Centre at Parkville, with works due to finish in 2016, while the $575 million stage 1 development of the Bendigo Hospital is also on track for a 2016 finish. A number of smaller health projects have moved into the construction phase, including a $93 million major upgrade of the Geelong Hospital, a $46 million expansion at the Ballarat Hospital, and a $40 million redevelopment of the Echuca Hospital.

Engineering construction work in Victoria remains relatively modest when compared to the resource rich States. The lack of investment in current and upcoming projects outside the transport and utilities sectors is a good indication that private sector investment dollars are headed elsewhere.

However, the State does have one resource project to cheer about. And it's a big one. That's the $4.4 billion Kipper-Tuna-Turrum Project located 45 kms south east of Lakes Entrance in Bass Strait, which will provide work out to 2016. Other than that, don't expect any significant contribution from Victoria's resource sector in the next few years.

Some large road and rail projects are underway, led by the $5.3 billion regional rail link from West Werribee to Melbourne's Southern Cross Station, which is due for completion in 2016.

Other projects include the $980 million Western Ring Road expansion between the Hume Highway and the West Gate Freeway, due to be available to road users in early 2014, and the $760 million Peninsula Link project to connect the East Link at Carrum Downs to the Mornington Peninsula Freeway at Mount Martha. Also entering the picture is a proposed $500 million third runway at Tullamarine Airport in Melbourne.

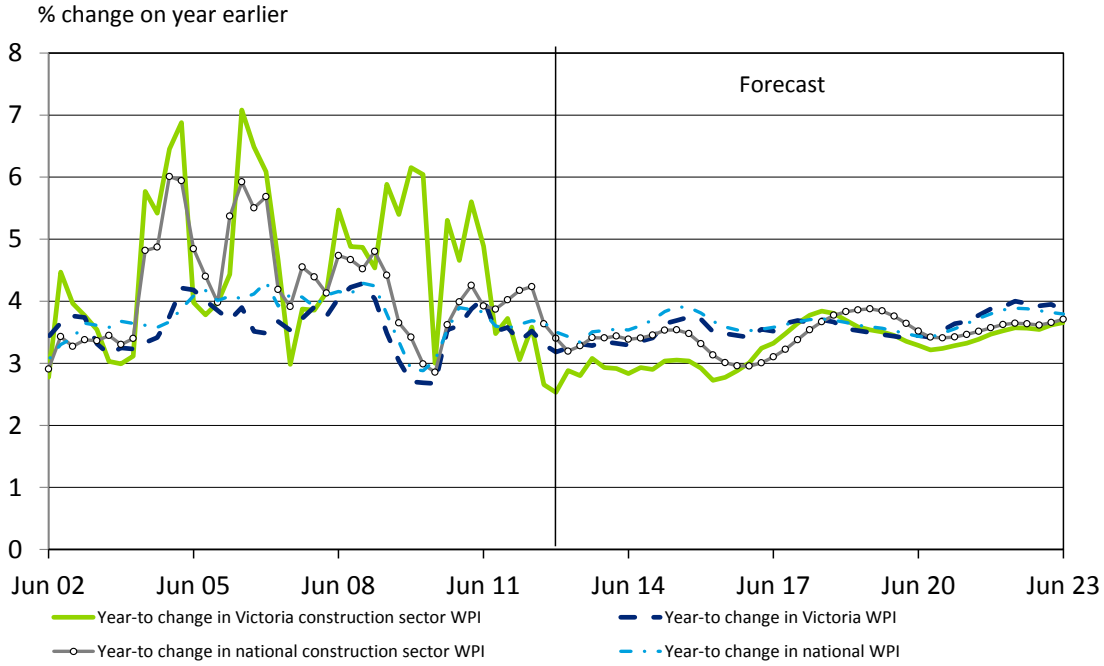
In combination, that says Victoria's engineering construction sector may not have hit the highs seen elsewhere, but neither does it run the same degree of slowdown risks seen elsewhere either.

Overall, the generally weak outlook for growth in the Victorian construction industry suggests little reason to expect that the State's construction sector wage growth will rebound from the easing seen since late 2011.

As Chart 10.6 below shows, Victorian construction sector wages have recently shifted from outpacing their national counterparts to underperforming through much of 2012. Indeed, wages in the construction sector have been rising more slowly than the State's (below average) overall wage growth for some time.

With further weakness in construction expected, and with wages in the sector nationally tipped to move below broader wage growth, that points to a sustained period of soft WPI growth for the construction sector in Victoria.

Chart 10.6: Victoria construction forecast comparison



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

While previous weakness in construction wages was in line with broader wage movements in the Victorian economy, the most recent data show a more pronounced slowdown in the sector than is evident State-wide.

The trend is expected to continue, with WPI growth rates lifting slightly but remaining below the State and national averages. Victoria's construction WPI is expected to remain close to 3% per year for some time, before gaining ground on its national counterpart as the construction cycle turns in 2016.

That is, Victoria is likely to see a sustained period of relative easing in construction wages, aided by the State's recent performance, which has left less (if any) pent up demand for housing (unlike some other States).

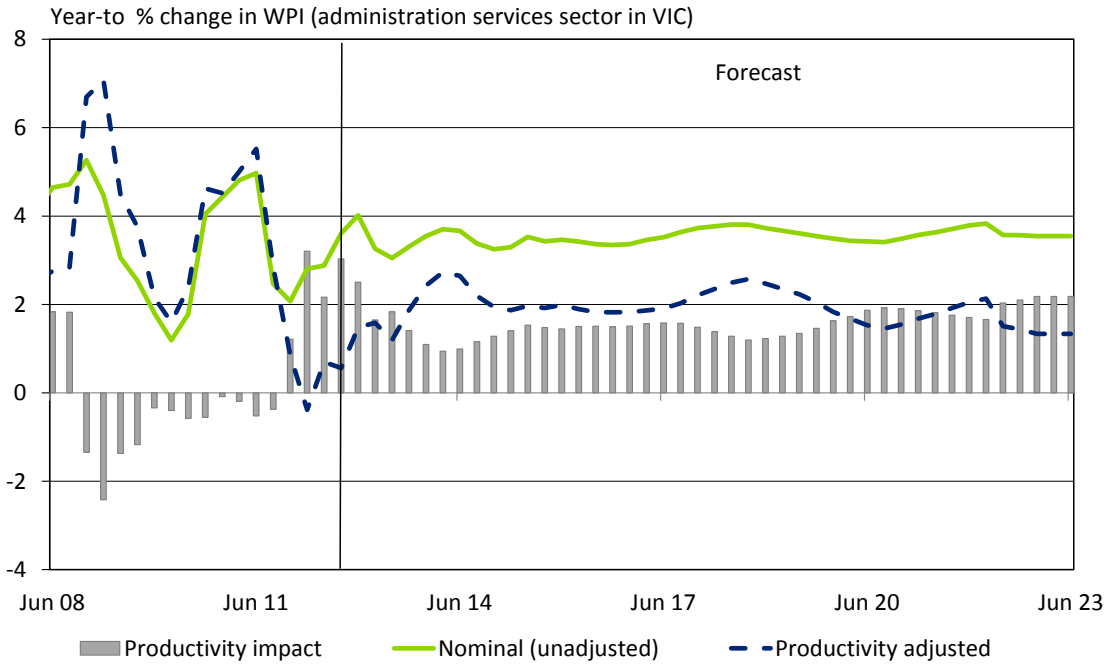
Growth in wages through EBAs has run well ahead of growth recorded in the WPI. This is partially due to the relative low level of coverage of EBAs in the sector (as noted earlier, only around 15% of construction sector employees are covered by the EBAs included here – below the national average and the lowest proportion of the key sectors considered in the report). In addition, 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.

Even so, more recent outcomes from construction sector EBAs reinforce the slowdown in wage pressures in Victoria, with average annualised wage increases of 5.0% - by far the lowest level yet recorded since the data for construction in the State were first compiled in late 2010.

10.4 The administrative services sector

As Chart 10.7 shows, the administrative services sector's local WPI has been on something of a wild ride in recent times, with a major slowdown during the GFC followed by recovery across most of 2011, partly thanks to the rebound in wages generally, partly due to solid employment in the sector, and partly due to one-off impacts from the transition to the *Modern Awards* system which became evident in the September quarter 2010 data.

Chart 10.7: Victorian administrative services WPI forecasts



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

While not as dramatic as the impacts seen in some States (most notably South Australia), this final point was a one-off event.[6] That goes some way to explaining the recent rapid drop off in the year-to growth rates seen in the September quarter of 2011. WPI growth since that point has crept up – with growth in the year to September matching the State and national averages at 3.6%.

Like utilities, the prospects for wages growth in the administrative services sector will be tied largely to movements in other key sectors. The two periods of weakness in recent years coincide with tougher times in Melbourne's property and business services sectors – particularly during a period where Melbourne's CBD struggled for the first time in a decade. Not surprisingly, that weakness translated into reduced demand for building services.

However, the outlook for those sectors has brightened somewhat. Finance sector cost cutting hit earlier and harder in Melbourne's CBD than in Sydney, meaning Melbourne may have already felt most of the pain on this front. While public sector jobs will go in Victoria over this year and next, that is a smaller hit than in some other States – partly because Victoria has done a better job in years past on public sector wage restraint than other States, partly because it

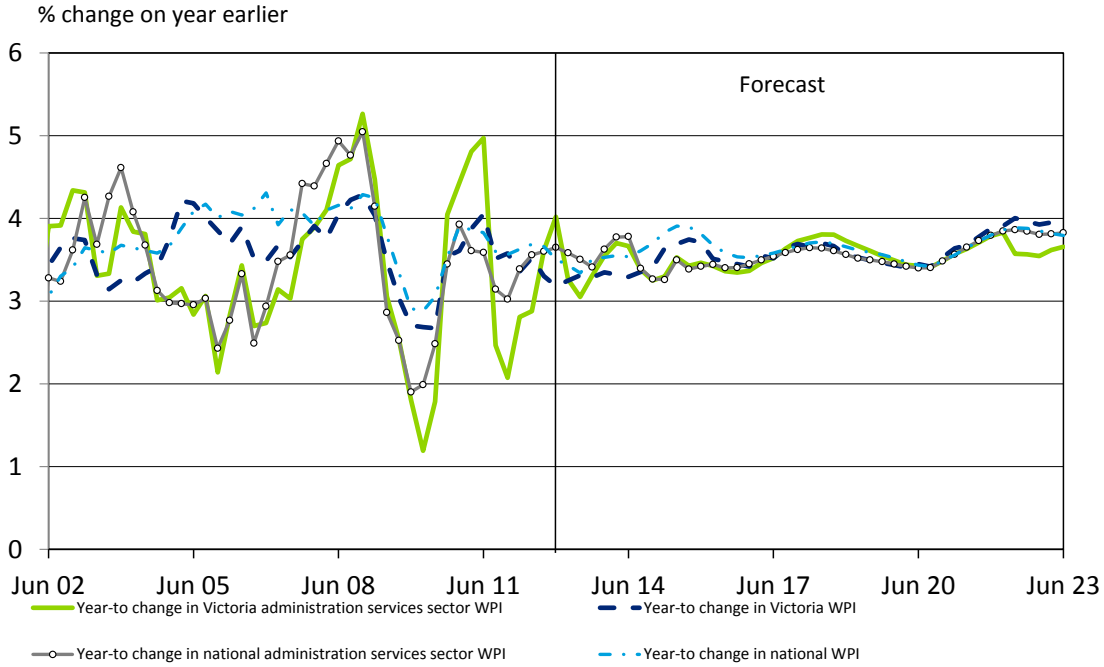
[6] Although, as the chart shows year-to rates of growth, it influences the rate of growth for four periods.

has also done a better job watching headcount. Add in the cyclical recovery expected in property and business services by late 2014 and the scene is set for a return to better news for administrative services.

While the national administrative services sector has seen a similar pattern of growth to Victoria, local growth has seen sharper rises and periods of greater weakness than its national counterpart. To some degree, that reflects the influence of the awards changes, but with the full impact of that one-off jump now having flowed through the data, the gap should close substantially. That will be even more obvious after the end of 2012 when a surprisingly low December 2011 result passes out of the analysis.

Wage gains in the sector are expected to push above the State-wide average through the first half of 2014, reflecting national strength in wages in the sector before underperforming that average through to the end of 2016.

Chart 10.8: Victorian administrative services forecast comparison



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

Like the construction sector and administrative services wages in general, Victorian EBAs have recorded considerably faster increases than the WPI. This in part reflects the relatively low share of workers covered by enterprise bargaining in this area.

10.5 Summary results

Forecasts for sectoral wage growth in Victoria are shown in Table 10.1 below. Forecasts include real and nominal WPI, and real and nominal productivity adjusted WPI.

Table 10.1: Victoria wage forecasts

Calendar year changes in Victoria nominal Wage Price aggregates

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
All industries	3.8	3.3	3.3	3.3	3.7	3.5	3.6	3.6	3.5
Utilities	4.1	3.9	3.9	3.2	3.5	3.6	3.7	3.6	3.4
Construction	4.4	3.0	2.9	2.9	3.0	2.8	3.4	3.8	3.5
Administration services	3.6	3.3	3.3	3.5	3.4	3.4	3.6	3.8	3.6

Calendar year changes in Victoria real Wage Price aggregates

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
All industries	0.3	1.6	0.3	0.7	1.2	0.9	0.9	1.2	1.2
Utilities	0.7	2.2	0.9	0.5	1.0	1.0	0.9	1.1	1.1
Construction	0.9	1.2	-0.1	0.2	0.5	0.3	0.7	1.3	1.2
Administration services	0.1	1.6	0.3	0.8	0.9	0.8	0.8	1.3	1.2

Calendar year changes in Victoria nominal productivity adjusted Wage Price aggregates

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
All industries	3.8	1.4	2.2	2.0	1.8	1.9	1.9	2.3	2.1
Utilities	3.8	1.6	2.5	1.8	1.8	1.8	2.0	2.2	1.8
Construction	3.4	0.0	1.9	2.0	1.9	1.1	1.7	2.3	1.8
Administration services	3.5	0.6	1.8	2.4	1.9	1.8	2.0	2.5	2.1

Calendar year changes in Victoria real productivity adjusted Wage Price aggregates

Annual % change	2011	2012	2013	2014	2015	2016	2017	2018	2019
All industries	0.4	-0.4	-0.8	-0.7	-0.7	-0.7	-0.8	-0.1	-0.2
Utilities	0.4	-0.1	-0.5	-0.8	-0.7	-0.7	-0.7	-0.3	-0.5
Construction	0.0	-1.7	-1.1	-0.6	-0.6	-1.4	-1.0	-0.2	-0.5
Administration services	0.1	-1.1	-1.2	-0.3	-0.6	-0.7	-0.7	0.0	-0.2

Source: ABS, Deloitte Access Economics labour cost model

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Appendix A: 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 B: 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 macroeconomic forecasts presented in this report are based on the June quarter *Business Outlook* publication.

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

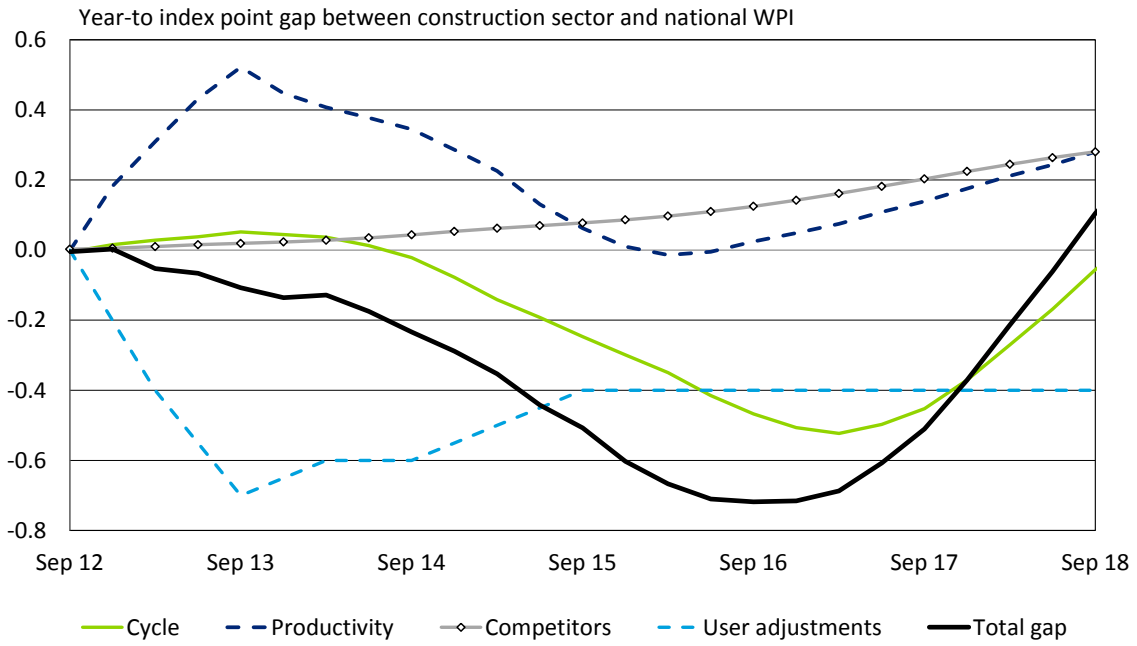
and vice versa. In this model, the key factor is how fast the industry (or State) is growing relative both to the national average, as well as to historical averages. So, while manufacturing growth in the future may be below the national average, if the gap is relatively less that has been seen in recent 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 B.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:

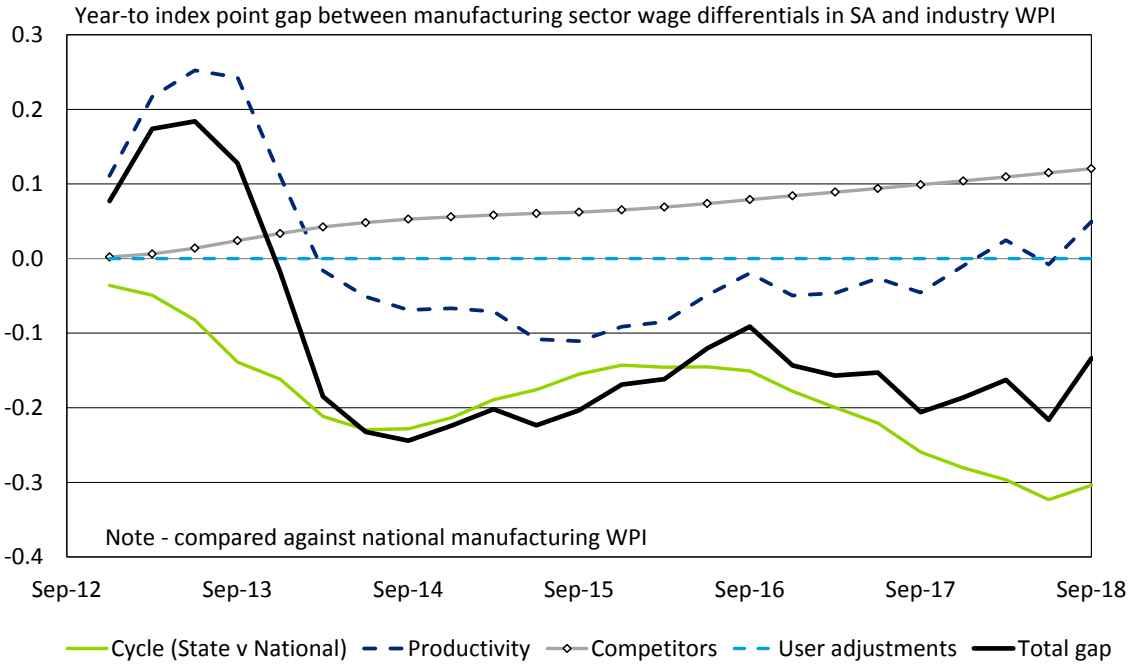
- The recent strength in the construction sector will keep upward pressure on the wages in the sector (represented here by the **Cycle** line). By the end of 2012 growth rates will begin to move in line with the overall economy and the cyclical pressure will diminish (and reverse further out); but
- 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 B.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.

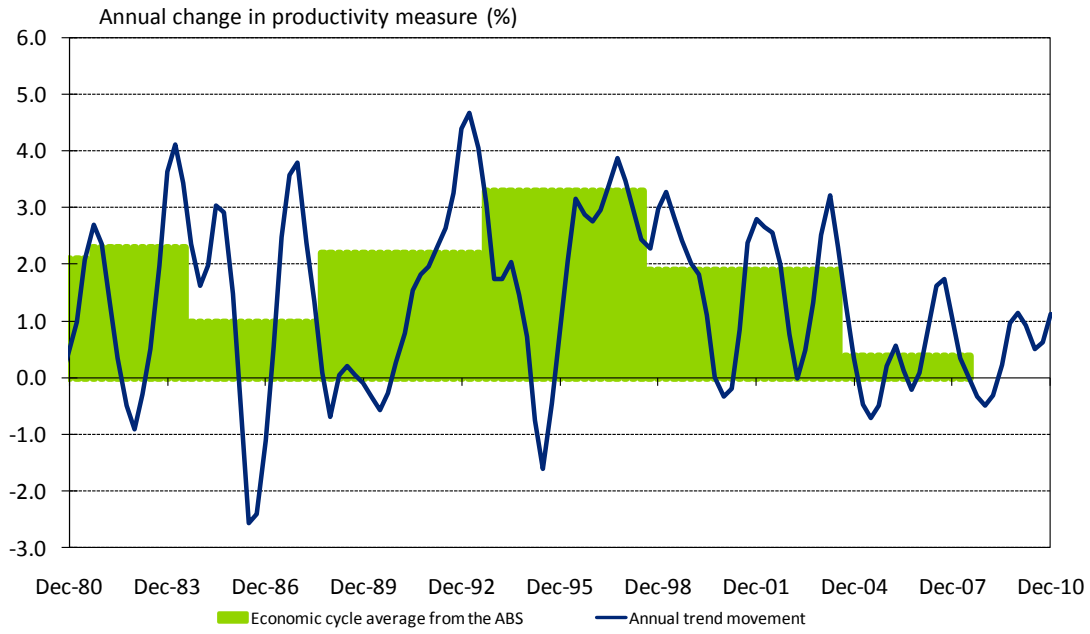
However, labour costs will rise at a different rate due to the effects of labour productivity growth. Effectively, labour productivity measure the number of units of output an individual employee can produce in a given time period. The more units of output each worker can produce, the fewer workers are 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.

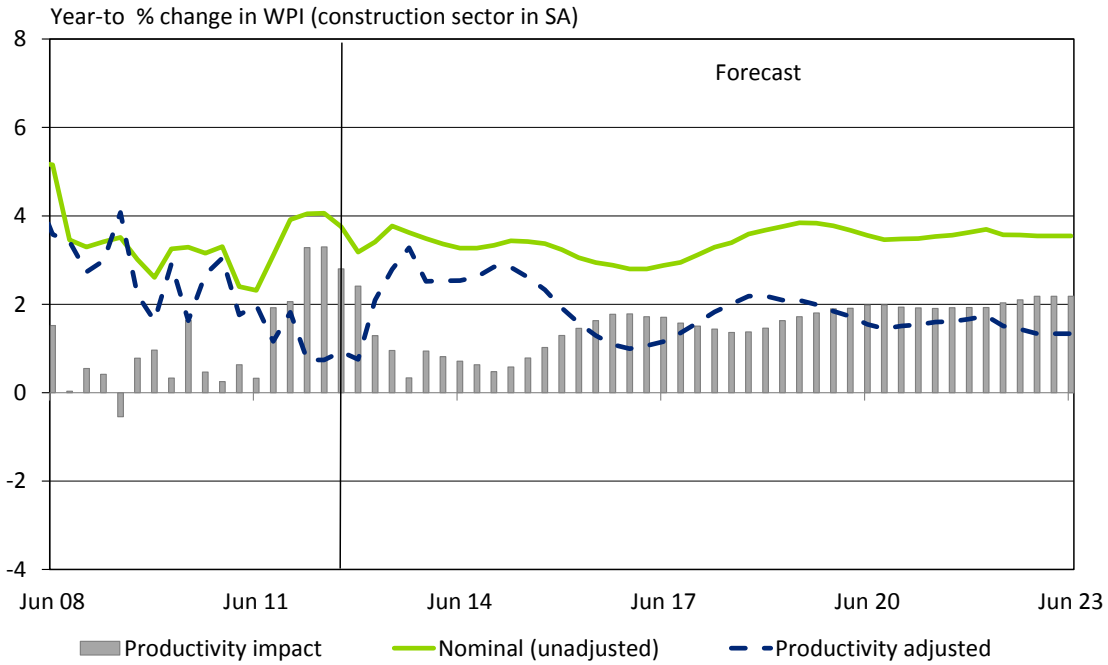
Chart B.3: Growth in productivity – annual methodology vs economic cycle methodology



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 B.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 C: 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.[7] 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

[7] 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.

Summary of the surveys and their key series

Table C.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 DEEWR's Trends in Federal Enterprise Bargaining reports at www.workplace.gov.au/TrendsInFederalEnterpriseBargaining, 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.

Table C.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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