Deloitte Access Economics

Forecast growth in labour costs: update of December 2010 report

Report prepared for the AER

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Deloitte.

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Director
Australian Energy Regulator
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Dear Adam

Update report for Queensland and South Australian utilities sector LPI

Attached is our updated report on the LPI for South Australia and Queensland utilities sector.

It follows our initial report, dated 13 December 2010.

Yours sincerely,

Chris Richardson
Director
Deloitte Access Economics Pty Ltd

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Executive Summary

The Australian Energy Regulator (AER) commissioned Access Economics (we joined Deloitte to become Deloitte Access Economics on 8 March 2011) to provide forecasts for labour costs growth for the electricity, gas, water and waste services (utilities) industry to 2017-18 for Queensland and South Australia, as well as for Australia as a whole.

Specifically, AER requested:

- A comparative analysis of forecast labour costs for the utilities industry across States;
- A comparative analysis of forecast labour costs for the utilities industry with other industries that compete for utilities workers (mining, construction and administration services);
- A comparison of the forecasts of general labour cost growth across States; and
- How market conditions are expected to affect the labour forecasts.

The initial report was completed in December 2010 and this report provides an update to those earlier forecasts.

The broader macro outlook

Stronger than expected commodity prices have been sufficient to keep the outlook for Australia on solid ground and enough to outweigh the short term negatives caused by the series of domestic natural disasters in Queensland, as well as those in Japan and New Zealand.

The key question for global growth was always **just how much of the early recovery was being sustained by government stimulus, and therefore how far growth would fall back once the assistance was removed**. The early news is excellent – talk of a double dip in the rich world has all but disappeared.

That was been assisted by the nervousness that the revolutions which swept through the Arab world have caused emerging economy policymakers. As a result of their renewed desire to keep their populace happy, they have continued to move far too slowly to rein in their still galloping growth. That has extended the stay of industrial commodity prices in the stratosphere. The latter have hit record highs and have now been joined there by food prices as well – which may cause the very unrest in some countries that their policymakers are so keen to avoid. With emerging economies seeing their growth ease slightly and the developed world seeing its growth strengthen, 2011 and 2012 should see above trend global growth.

While Australia watched horrified as floods and cyclones hit at home and earthquakes and tsunamis caused tragedies abroad, world prices for the industrial and farm commodities we have in abundance surged past the peaks they hit back in mid-2008. **That means the world is begging Australia to grow faster**. Yet, despite that, the pace of Australia's recovery has stalled of late.

In part that reflects some 'two speed economy' negatives: a resource boom brings with it higher interest and exchange rates, and that mix is weighing heavily on some sectors. At the same time it is hard for the key growth positives to gain traction – mining and engineering

construction want to grow very fast, but their expansion is being dogged by slow bureaucratic and corporate approval processes as well as by skill shortages. The latter may become acute over the next two years, because Australia's growth prospects rest on a very narrow base of sectors, occupations and States, and because policy moves are making it harder to migrate here.

Migrant numbers are dropping fast, dragging down Australia's overall population growth. Yet job gains are robust, and are set to stay that way a while longer. That split in demand and supply trends points to rising skill shortages and further falls in unemployment. Remember that mining and construction – employers of one in ten Australians – are very reliant on the one million workers here on temporary visas. Unless numbers of the latter ramp up fast, unemployment could soon drop to rates last seen decades ago.

Looking through the volatility that floods, cyclones and oil prices will cause, the downswing in inflation has pretty much run its course. Demand pressures are already rising at a time when spare capacity is modest, while the weakness in productivity gains means labour cost growth is travelling faster than inflation, and the $A's downward force on import prices is easing too. So underlying inflation has bottomed and will now head back up.

Deloitte Access Economics sees the trends in price inflation joining wage growth, whose acceleration is well underway.

The rapid employment growth seen in recent times in the utilities has almost matched that in mining, and those two sectors have seen the fastest wage growth across Australian industries in the past year.

Recent wage forecasting performance

At the time of the original report (13 December 2010) prepared for AER, the September 2010 quarter Labour Price Index (LPI) data (ABS Cat. No. 6345.0) were the latest available. The December quarter 2010 data LPI data have subsequently been released.

The numbers of particular interest are those for overall wage growth in Australia, those in the utilities, construction, mining and administration services sectors, as well as the comparative results for Queensland and South Australia.

In terms of growth in the final quarter of 2010, actual total Australian LPI for the December quarter of 2010 grew by 1.04%, some 0.27 percentage points faster than our forecast of 0.77% across this period in the 13 December report.[1]

Table i shows more detail in the difference between our earlier projections and the results for December quarter 2010.

There are two points to bear in mind:

- The smaller sectoral results are more volatile than the total measurement given the relatively small sample sizes involved.

[1] It should be noted that the official figures are rounded to one decimal place, and that could change the true rate of growth. Based on the possible range of values that the unrounded measure of wages could actually take, the true rate of growth across the period theoretically could range from 0.95% to 1.14%.

- The State-specific LPI measures for the utilities sector are not published by the ABS and are therefore a comparison of our earlier forecasts with our updated estimates for the December quarter results.

Table i: December quarter 2010 LPI outcomes

% change in December qtr 2010	Forecast (Dec. 2010)	Actual	Difference
All industries	0.77	1.04	0.27
Utilities	0.72	1.50	0.78
Mining	0.72	1.42	0.69
Construction	0.95	0.94	0.00
Administration services	0.50	0.76	0.26
Utilities sector			
Queensland	0.69	1.66	0.97
South Australia	0.81	1.05	0.25

Source: Australian Bureau of Statistics, Deloitte Access Economics labour cost model (for Qld and SA utilities data estimates).

In essence, Deloitte Access Economics' 13 December 2010 expected the acceleration in LPI in the middle part of 2010 to continue as the economy remain on a solid trajectory, but growth in fact accelerated faster still, partly as the world economy moved further away from fears of a double-dip recession and partly as the fears of skill shortages began to intensify.

As the table also shows:

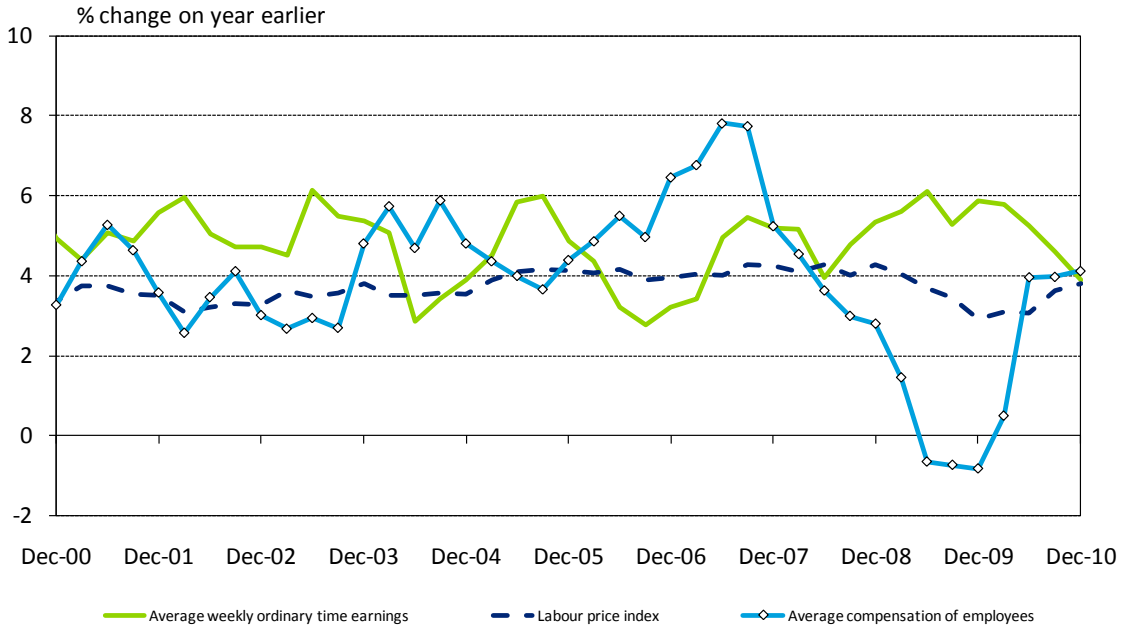
- Growth in the LPI was relatively strong in the utilities sector (at 1.5% in the quarter) and in mining (rising 1.4% in that period).
- Growth in admin services (0.76% in the quarter) LPI was slightly greater than our forecast (the 26 percentage point gap being in line with the overall gap of 27 percentage points).
- Construction, by contrast, grew largely as expected (0.94% in the quarter).

Comparisons of results for the utilities sector at the State level are subject to caveats as the historical results are themselves estimates and are updated in line with underlying trends in employment and wage rates. As noted here, the gaps between our previous forecast for LPI growth was larger in Queensland – where skill shortages and supply pressures have been more notable – than in South Australia – where those impacts have been relatively less.

The volatility in wage measures provided by the ABS continues to be evident. However, the measures have now reconverged (as they did in 2007 and previously in 2001 and 2004) after seeing their largest divergences of recent times. While LPI growth has picked up again across the second half of 2010 amid continuing economic recovery, growth in average compensation has been stable and AWOTE growth has eased sharply. All measures grew by around 4% in the year to December 2010. Further measures examined later, such as growth in wages covered by enterprise bargaining agreements, show similar rates of growth, although the EBA series have remained close to LPI growth rates for some time.

The striking difference in volatility in these measures is apparent in the chart below. Even more striking is the cyclical divergence between the AWOTE and average compensation measures over the past two years.

Chart i: Labour cost growth, various measures



Source: ABS

The updated outlook for labour costs

Developments in recent months have affected the wage outlook since the time of Access Economics' 13 December 2010 report for the AER. Our wage forecasts in the short term are slightly stronger than earlier forecast, with the gap modest at the national level, and beginning to unwind from early 2012.

The key drivers of the change are:

- Floods and cyclones are dramatic (and often very costly) events, but they generally do little to weaken the economic outlook (and, as noted below, they will actually add to the task ahead for skilled construction workers). The real impacts can be seen through a lowering of expected growth in mining and construction in particular during 2011.
- Offsetting that is the fact that commodity prices have been higher in recent months than previous expected. That adds notably to the 'desire to develop' by the resource sector and those who sell to it – and that will have an upward impact on some sectoral employment levels.
- While employment demand will be higher than forecast, employment supply trends are moving in the other direction. Migration levels have fallen faster than previously expected, with particularly large declines in Queensland, Western Australia and the Northern Territory. Those States may still have the fastest growing populations in the country, but the gap above the national average has decreased substantially.
- These two labour market developments intersect via wages. The unemployment rate will fall faster than previously expected. Higher than expected participation rates will mitigate the shortfalls somewhat, but the final result will be stronger upward pressure on wage rates.

- The employment story is evident in the utilities and mining sectors, both of which are expected to maintain their strong 2010 gains through 2011 (with mining growing further from there) rather than seeing a period of easing employment growth as was anticipated in the 13 December 2010 report.
- The general wage pressures will be relatively more critical in those areas of developing skill shortages, and in those areas boosted by post-flood reconstruction.

It should be noted that none of the above points are major changes to the outlook – in fact they reinforce the relative themes of the 13 December 2010 results.

While the main impact of changes is likely to boost the growth in the LPI, there have been some trends in the other direction:

- The continuing rise in the $A has further dampened expectations of a rebound in manufacturing. That will be of particular importance in South Australia, where some workers may be freed up, while the lower LPI growth in manufacturing may take some pressure off wages in competitor industries.
- Sharp declines in world uranium prices (around 20% this year) due to the problems at the Fukushima Nuclear Facility may increase uncertainty over the Olympic Dam mine development. That too may limit wage growth in South Australia.
- Moreover, while the utilities sector will see upwards wage pressures from skill shortages, the further delays now expected in housing starts will limit demand growth for connecting new homes to power, water and gas services, taking some pressure off the utilities relative to our 13 December 2010 forecasts.

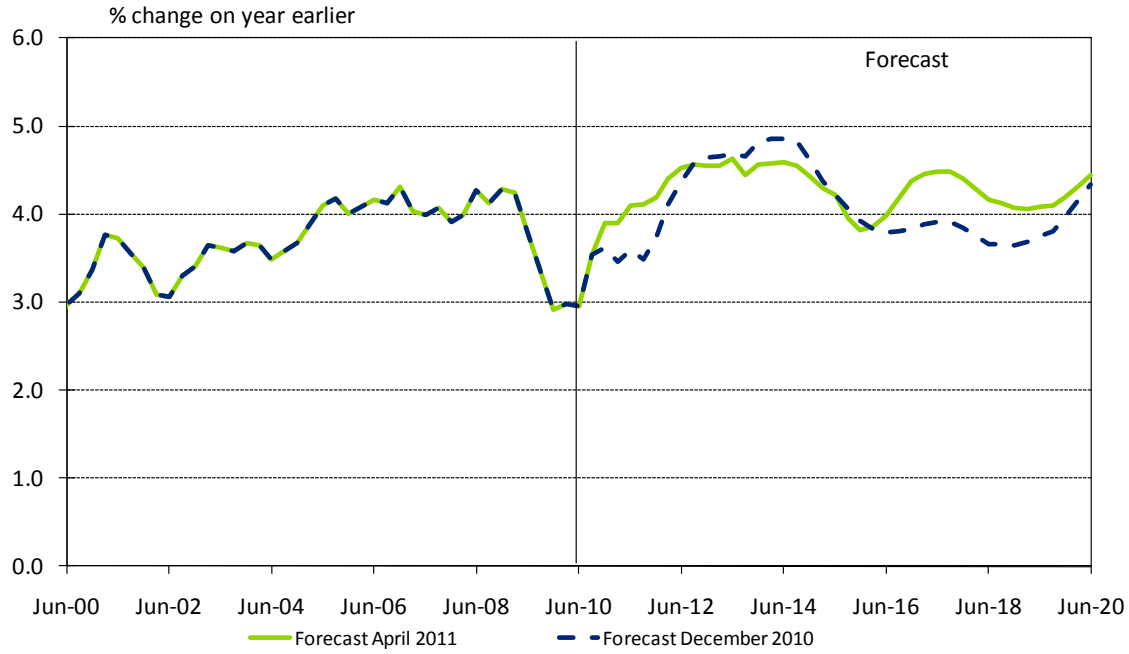
These changes are not large. Overall, the updated expectation for 2010-11 LPI growth is now 3.9% – just 0.3 percentage points higher than the 3.6% forecast in the 13 December 2010 report. Growth in 2011-12 is also higher, at 4.3% rather than 3.9%.

While there are short term increases in LPI growth, the medium term sees slightly lower expectations. Chart ii shows our previous and current forecasts for growth in the national Labour Price Index.

The forecasts now include actual LPI data to December 2010 as well as information from the September and December quarter 2010 national accounts, which provide estimates of output nationally, by industry and by State.[2]

[2] For States, the ABS only produces quarterly estimates of State Final Demand (SFD) and international merchandise trade. Some additional components of output, net international service trade, interstate trade and changes in stocks at the State level, are estimated by Access Economics to create a full State quarterly output measure. Note that Access Economics' full forecast round in the wake of the release of the September quarter 2010 national accounts had not been finalised by the time of the 13 December 2010 report. The timing of that report only allowed us to include interim forecasts for the Australian, State and sectoral economies, rather than fully updated forecasts.

Chart ii: Changes to the forecast LPI (all industries)



Source: Deloitte Access Economics macroeconomic model

Conditions in the utilities sector

Demand for the utilities can be affected by both its residential component (linked to the residential construction cycle) and its industrial component (linked with trends in the manufacturing and mining sectors).

Both of those components have seen recent changes that have driven expectations for utilities demand in different directions since the 13 December 2010 report. In summary:

- The outlook for residential construction has weakened due to slower population growth and expectations of higher interest rates; but
- Reconstruction from Queensland's natural disasters has the opposite effect.
- Manufacturing continues to struggle against the rising $A and strong import competition, while mining output was also temporarily hit by floods in Queensland; but
- The outlook for mining is stronger in the medium term as commodity prices remain strong and the global economy remains on tracks.

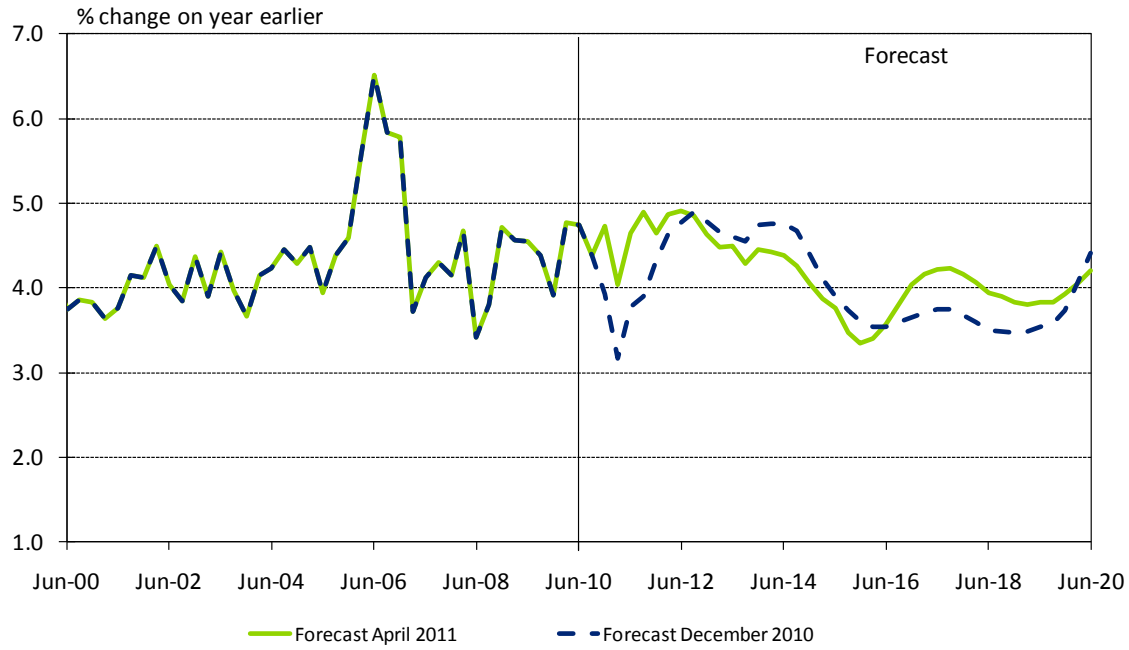
Yet, despite the shifts in demand patterns, supply is the key to the utilities sector's outlook.

Australia is seeing investment in water, with the public sector willing to build desalination plants to feed the urban need for water security and certainty. But private electricity and gas businesses are left up in the air. There is a big need for investment in baseload capacity, but little willingness to follow through in the absence of clear carbon pricing rules for the future.

Utilities wage growth

Chart iii shows current and previous projections for growth in the utilities sector LPI.

Chart iii: Changes to the forecast utilities sector LPI



Source: Deloitte Access Economics macroeconomic model

Like the sectoral output picture, changes to the overall rate of expected wage growth in the utilities sector have been affected by a number of contradictory factors, including:

- A relatively strong jump in the December quarter – reflecting the generally faster LPI growth across all industries but an even larger jump in utilities.
- A decline in skilled migration placing upward pressure on wages.
- Short term output declines offsetting those pressures, both directly through the utilities sector itself, but also through the slower growth in housing starts and in manufacturing.
- Once the initial impacts have been dealt with, wage growth may ease back towards earlier projections (and, as a result, medium term growth rates are lower than previously forecast). However wage levels are modestly but consistently higher in these latest forecasts than they were in the 13 December 2010 report.

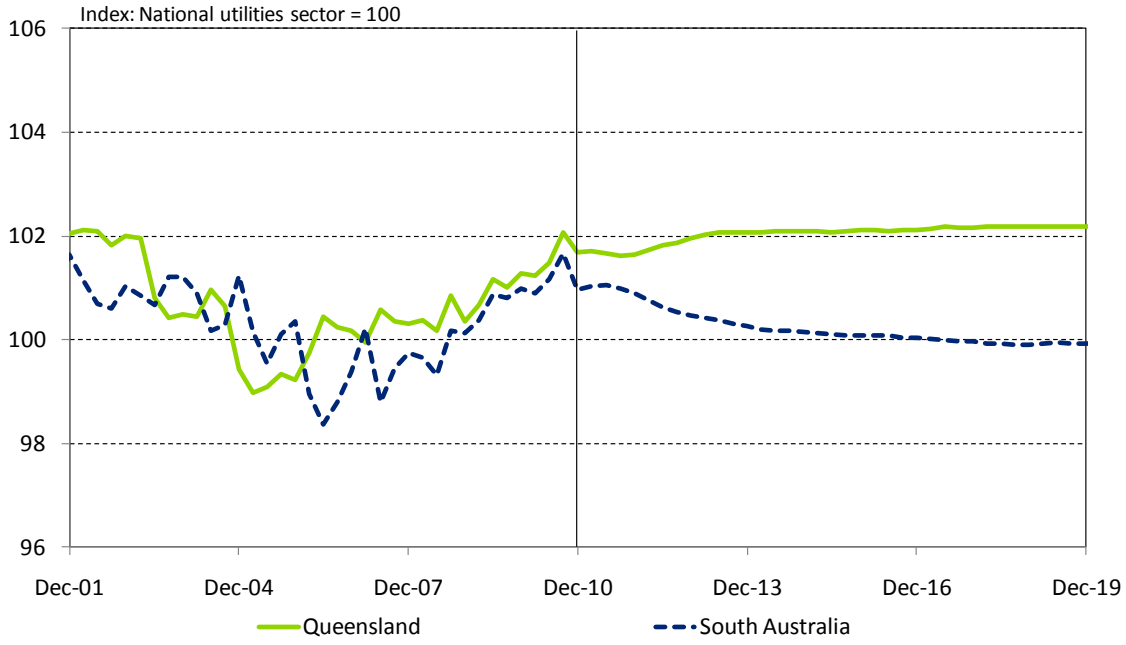
Utilities wage growth at the State level

Chart iv shows the relative utilities LPI movements that are expected in the forecast period in Queensland and South Australia. Since 2007 the strength in utilities LPI has been seen in Queensland, South Australia, Western Australia and the Northern Territory – the other States having lost ground in relative terms.

Compared with the 13 December 2010 report, the largest change is in the relative decline in South Australian utilities sector wages across the forecast period. The forecasts here show the South Australian utilities sector LPI falling back by around 2 percentage points relative to the national rate from its mid 2010 high point. The initial report saw a fall only half as large across that period. The change reflects increasing uncertainty in South Australia, mostly with respect to its manufacturing sector, as well as the poor LPI results at the end of 2010.

By contrast the Queensland utilities sector wage appears to have lifted sharply in recent quarters and its relative longer term prospects have improved marginally. As no utilities sector LPI for Queensland or South Australia is published by the ABS, this is an estimated based on a combination of growth implied by the national growth in utilities LPI (which is faster than those seen in New South Wales or Victoria) and growth in AWOTE in the Queensland utilities sector.

Chart iv: Relative movements in utilities sector LPI by State



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

In addition to the data shown here, wages in Western Australia and the Northern Territory are expected to rise in relative terms (similar to the forecast for Queensland) as competition for workers from the booming national mining sector pushes up wage rates. This too is likely to have a downward impact on the relative levels of utilities wages in New South Wales and other States.

The best measure of wage growth

The ABS publishes a number of measures relating to the remuneration of employees. 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.

The two main series referred to in this report are:

- the **labour price index** (or LPI) excluding bonuses, which is an index measure of the cost of a unit of labour; and

- **average weekly ordinary time earnings** (AWOTE), which is a dollar measure of the average weekly pay to a full-time adult worker for their standard hours of work.

When discussing wage measures, the ABS notes that:

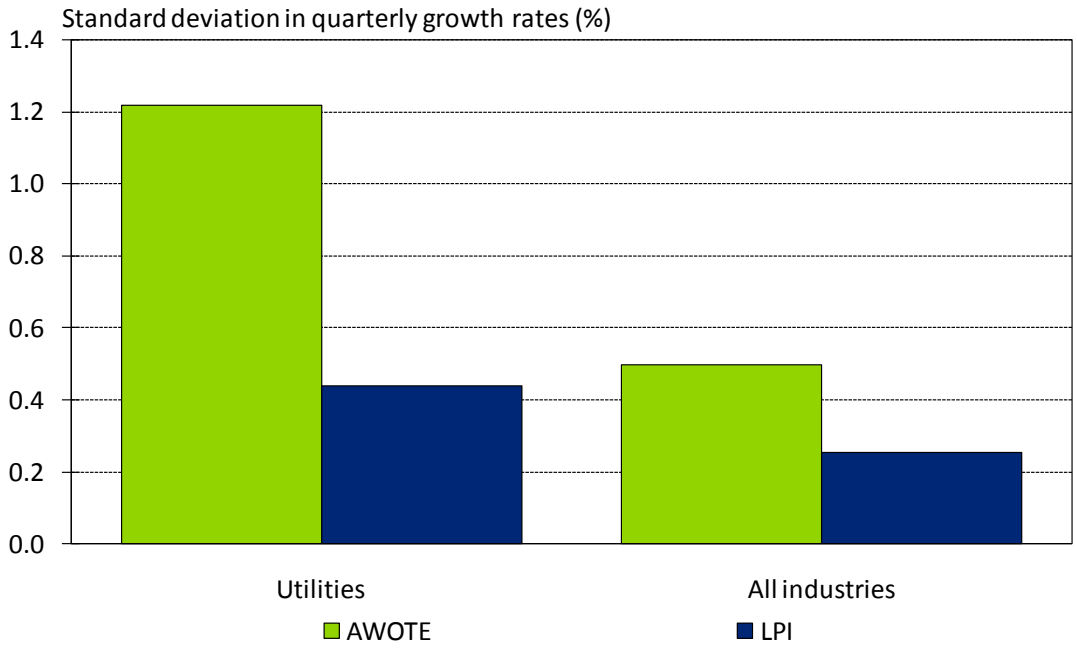
> *"Information on changes in the price of labour is available from the quarterly Labour Price Index (LPI). The LPI is compiled from information collected from businesses on changes in wage and non-wage costs. Information collected on wages is used to produce a Wage Price Index (WPI).*
>
> *The WPI was first compiled for the September quarter 1997 and is the main ABS measure of changes in wages. The WPI measures quarterly changes over time in the cost to an employer of employing labour, and is unaffected by changes in the quality or quantity of work performed."*

As the above discussion from the ABS suggests, they see the LPI as their preferred measure for "changes in the price of labour".

That is the task at hand here, and hence the LPI (excluding bonuses) is Deloitte Access Economics' preferred measure for this type of analysis.

Indeed, the LPI was originally developed because of the shortcomings of existing wage measures for this type of analysis. For example, AWOTE is affected by shifts in the composition of employment. Hence if a sector employs relatively more high paid full time workers over time (as has happened in manufacturing as low skilled jobs have been lost to competitors in developing Asia), then that will tend to raise measured AWOTE even if the wage levels for a given level of skill have not changed at all.

Chart v: Standard deviation in quarterly wage growth, ten years to December 2010



Source: ABS, Deloitte Access Economics

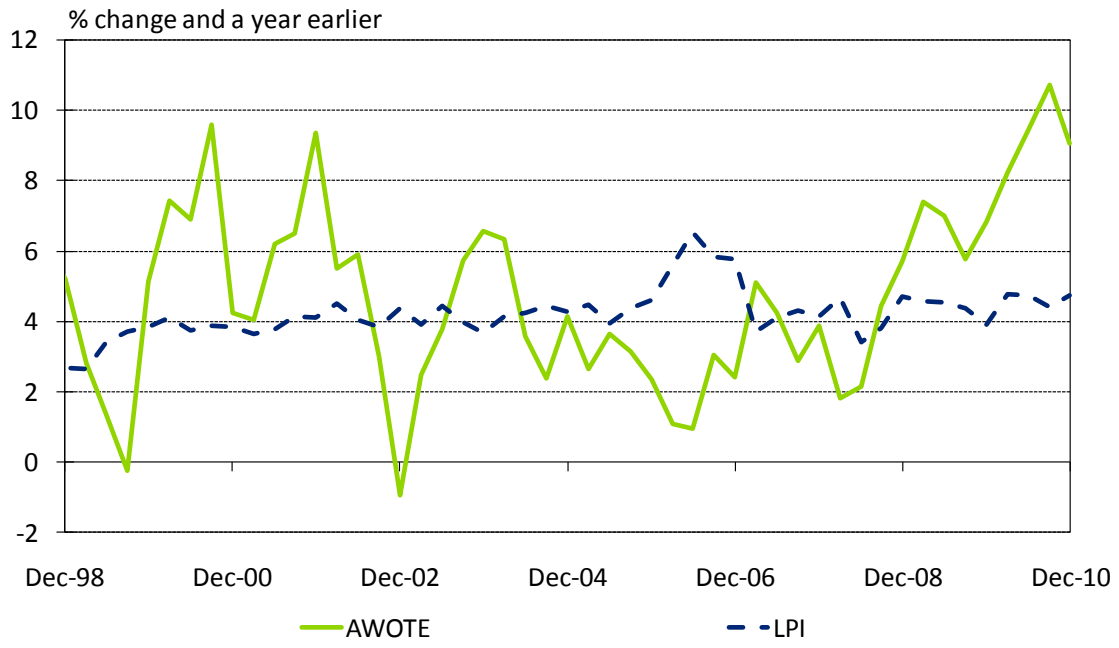
Compositional effects tend to make AWOTE far more volatile than the LPI. Chart v above shows the standard deviation in quarterly growth for AWOTE and LPI in the utilities sector and across all industries over the past decade. The chart shows that AWOTE has been notably more volatile than the LPI over the last decade. The chart also shows that for a small sector (such as the utilities) the difference in volatility is even greater.

As the analysis at issue here is not merely at the sectoral level, but at the sectoral by State level, these volatility problems rapidly compound.

These compositional effects and the resultant volatility make AWOTE a poor base for undertaking wage forecasts for the utilities sector. The volatility in the series does not accurately reflect wage outcomes for utilities employees, and can result in starting point (or "jumping off") problems at the beginning of the forecast period.

The latter point is highlighted by Chart vi below. It shows year-to growth in AWOTE and LPI for the utilities sector.

Chart vi: Growth in AWOTE and LPI, Australian utilities sector



Source: ABS, Deloitte Access Economics

While the greater volatility in the AWOTE series compared to the LPI series is clear, the chart also shows a recent surge in wage growth as measured by AWOTE. Utilities wages grew by 10.7% over the year to August 2010 according to the AWOTE measure – nearly two-and-a-half times the pace recorded by the LPI series – before easing to 9.1% in the year to November 2010.

More broadly, compositional changes arising from the business cycle, changed educational levels, the pace of recruitment and retirement, the degree of outsourcing, changed relativities in the employment of men and women and compositional changes arising from shifts in average hours worked can all distort AWOTE as a proxy for "changes in the price of labour".

Moreover, the ABS is currently reviewing its production of AWE and AWOTE measures at the industry by State level (that is, the AWOTE for the utilities sector in South Australia and Queensland). This information was communicated to subscribers at the time of the ABS' release of December quarter 2010 data. One of the reasons for this change is the high standard error of the estimates 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 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 the State by industry samples can be readily compared.

This problem obviously leads to questionable comparability of detailed AWE and AWOTE results from quarter to quarter as the changes may be driven by changes in the sample, rather than changes in wages.

The LPI, by contrast, suffers as little as possible from this problem because their sample follows specific "jobs" over an extended period (at least five years). This limits the rotation problems that the AWE/AWOTE series is suffering from. That said, 'best measure' is not the same as 'perfect measure', and there are also drawbacks to using the LPI:

- First, the LPI is published by State and by sector separately, but not by State and by sector. That is, the LPI for NSW is published, and the mining sector LPI is also published, however the NSW mining sector LPI is not. The latter data are 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 LPI at the 'by State and by sector' level.[3] 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 and AWOTE data which it is willing to release. This phase will eliminate one of the remaining arguments in favour of using AWE or AWOTE over the LPI 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 LPI (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).

If these compositional effects are occurring, then they should also be having an impact on the productivity of the sector's workforce. That is, the higher skills should mean higher productivity – meaning that if the utilities are choosing to have a higher skilled workforce then, other things equal, that higher skilled workforce should be able to achieve the same output than would otherwise be achieved with fewer (less skilled) workers. Or, in other words, cost impacts on utilities providers from this treatment of skills in the LPI measure are likely to be more apparent than real.

Moreover, it is worth stressing that this treatment in the LPI applies to skills – not to the much broader measure of 'productivity'. That is, for example, if someone goes on a course and that qualifies them for a pay increment, then the ABS tries to remove the latter from its LPI measure.

[3] See Appendix D.

However, the ABS makes no matching adjustment for the impact on productivity of workers being able to work with better equipment and/or new technology, or for the impact of productivity from 'working smarter' (such as more efficient organisational arrangements, and entrepreneurial activities).

Hence any such bias is unlikely to be large, and must be balanced against the rather more significant types of problems with AWOTE measures discussed above (and highlighted even at the national level in Chart v and Chart vi).

Summary results

Summary tables of results follow.

Table ii: Summary results – key variables

Financial year changes in key variables

Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Output	1.4	2.3	2.3	3.8	3.5	3.1	3.1	3.4	3.4	3.0
Consumer price index	3.1	2.3	3.0	2.7	2.7	2.6	2.4	2.7	2.7	2.4
Labour Price index	4.1	3.0	3.9	4.3	4.6	4.5	4.4	3.9	4.4	4.3
Average weekly earnings	3.8	5.3	3.7	3.9	4.7	4.9	4.4	3.4	3.8	3.7

Source: ABS, Deloitte Access Economics macroeconomic model

Table iii: Summary results – economic variables

Financial year changes in key Economic variables

Annual % change (unless noted)	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Consumption										
Private sector	0.2	2.1	3.0	3.0	3.1	2.9	3.0	3.0	3.1	2.8
Public sector	2.8	1.7	3.4	1.9	2.3	2.1	2.1	1.9	2.0	1.9
Private sector investment										
Non-business housing	-1.9	2.1	3.8	10.2	5.9	-2.0	2.1	9.7	5.8	-4.8
Non-business real estate	-15.6	10.7	-9.9	13.1	5.7	-1.5	2.3	9.6	6.4	-3.5
Non-residential building	-5.3	-18.7	-0.7	6.4	6.1	5.8	2.3	3.3	7.1	4.5
Engineering construction	24.2	0.9	10.8	17.9	12.0	6.7	-0.5	0.1	3.8	1.3
Machinery and equipment	-3.3	-4.8	-1.3	10.7	4.3	1.1	4.2	9.1	9.1	6.6
IP and livestock	0.8	3.3	6.9	16.3	7.2	3.9	2.1	4.8	6.9	4.5
Public investment										
General Government	6.9	29.8	8.1	-0.1	-5.1	-3.0	0.4	2.2	1.4	1.0
Public enterprises	3.4	17.9	4.9	27.0	7.9	3.4	1.8	4.6	6.6	4.1
Domestic final demand	0.8	2.1	3.2	5.2	3.6	2.4	2.5	3.6	3.8	2.4
Private sector	0.1	0.7	2.8	5.7	4.2	2.7	2.7	4.0	4.3	2.5
Public sector	3.4	7.0	4.3	3.3	1.4	1.4	1.8	2.2	2.3	2.0
Gross national expenditure	0.2	2.4	3.2	5.1	3.6	2.3	2.5	3.6	3.9	2.5
Interntional trade										
Exports	2.6	5.1	4.5	8.6	10.6	9.6	8.9	7.4	6.6	6.1
Imports	-3.3	4.9	10.2	13.3	10.6	6.1	6.4	7.9	7.9	4.6
Net (% additon to growth)	3.7	-1.8	-1.3	-1.2	0.6	0.7	0.4	-0.4	-0.2	0.6
Total output (GDP)	1.4	2.3	2.3	3.8	3.5	3.1	3.1	3.4	3.4	3.0
Non farm output	1.1	2.3	1.9	4.0	3.5	3.1	3.1	3.4	3.4	2.9
Employment	1.7	1.2	3.2	3.1	2.6	1.7	1.2	1.3	1.3	0.9
Unemployment rate (%)	4.9	5.5	5.1	4.3	4.3	4.3	4.5	4.6	4.4	4.5

Source: ABS, Deloitte Access Economics macroeconomic model

Table iv: Summary results – wages and prices

Financial year changes in national wage and prices variables

Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Consumer price index (CPI)	3.1	2.3	3.0	2.7	2.7	2.6	2.4	2.7	2.7	2.4
Labour price index (LPI)										
Nominal	4.1	3.0	3.9	4.3	4.6	4.5	4.4	3.9	4.4	4.3
Real	0.9	0.7	0.9	1.5	1.8	1.9	1.9	1.2	1.6	1.9
Average weekly earnings (AWE)										
Nominal	3.8	5.3	3.7	3.9	4.7	4.9	4.4	3.4	3.8	3.7
Real	0.7	2.9	0.7	1.2	1.9	2.2	1.9	0.7	1.0	1.3
Average weekly ordinary time earnings (AWOTE)										
Nominal	5.5	5.6	3.8	3.8	4.8	5.0	4.8	3.9	4.3	4.3
Real	2.3	3.2	0.8	1.0	2.0	2.3	2.3	1.2	1.5	1.9
Unit labour costs										
Nominal	2.2	-0.2	5.0	1.2	3.7	4.2	2.9	2.0	2.5	2.4
Real	-0.9	-2.5	1.9	-1.5	0.9	1.5	0.4	-0.6	-0.2	0.0

Source: ABS, Deloitte Access Economics macroeconomic model

Table v: Summary results – National sectoral wages

Financial year changes in nominal national industry sector LPI

Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
All industries	4.1	3.0	3.9	4.3	4.6	4.5	4.4	3.9	4.4	4.3
Utilities	4.4	4.5	4.5	4.8	4.6	4.4	4.0	3.4	4.1	4.1
Mining	5.7	3.6	4.0	4.4	4.7	5.1	5.1	4.4	4.4	4.2
Construction	4.6	3.2	4.3	5.1	5.3	4.8	4.6	3.9	3.9	4.0
Administration services	4.2	2.2	4.1	3.6	3.7	3.9	3.7	3.4	4.1	4.1

Source: ABS, Deloitte Access Economics labour cost model

Table vi: Summary results – State utilities sector

Financial year changes in nominal utilities sector LPI

Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
National	4.4	4.5	4.5	4.8	4.6	4.4	4.0	3.4	4.1	4.1
Queensland	4.9	5.0	5.0	4.8	4.9	4.5	4.0	3.5	4.1	4.1
South Australia	5.3	5.0	4.7	4.5	4.2	4.2	3.9	3.4	4.0	4.0

Source: ABS, Deloitte Access Economics labour cost model

Deloitte Access Economics

23 April 2011

1 Background

The Australian Energy Regulator (AER) commissioned Access Economics (we joined Deloitte to become Deloitte Access Economics on 8 March 2011) to provide forecasts for labour costs growth for the electricity, gas, water and waste services (utilities) industry to 2017-18 for Queensland and South Australia, as well as for Australia as a whole.

Specifically, AER requested:

- A comparative analysis of forecast labour costs for the utilities industry across States;
- A comparative analysis of forecast labour costs for the utilities industry with other industries that compete for utilities workers (mining, construction and administration services);
- A comparison of the forecasts of general labour cost growth across States; and
- How market conditions are expected to affect the labour forecasts.

The initial report was completed in December 2010 and this report provides an update to those earlier forecasts. In the intervening period the Australian Bureau of Statistics (ABS) has released December quarter 2011 wage measures, as well as detailed economic growth results for the same period.

Deloitte Access Economics' update report includes:

- **Changes to the national economic outlook**, covering the broad international economy and domestic developments, as well as changes in the outlook for commodity prices (see Chapter 2).
- **Developments in wages and prices,** covering the LPI itself, other measures of wages and the CPI (see Chapter 3).
- **Projections of State economies**, (see Chapter 4), covering changes since the previous report as well as wage movements for New South Wales, Victoria, Queensland, South Australia and the ACT.
- **The outlook for the utilities sector**, looking first at changes to the industry outlook, the changes to sectoral wage projections, and then an overview of the latest national industry projections (see Chapter 5).
- **The outlook for competitor and related sectors**, covering mining, construction, manufacturing and administration services. It examines changes the economic outlook for each, as well as the updated projections (see Chapter 6).
- The report then provides **updated detailed forecasts at the State level of wage growth in the utilities and competitor industries** (see Chapter 7).
- The report concludes with a consideration of **the debate over 'the best' measure of labour costs**.
- **The Appendices** cover regional wage and price variations, as well as an outline of the methodology used in the Deloitte Access Economics macro model and the Deloitte Access Economics wage model, a discussion of different wage measures, and a discussion of data sources and derivation. A table of changes to historical data is also included.

2 Changes to the economic outlook

2.1 The global outlook

The key question for global growth was always just how big a letdown the passing of stimulus spending would prove. The early news is excellent – talk of a double dip in the rich world has all but disappeared, albeit partly because emerging economy policymakers (spooked by the revolutions which swept through the Arab world) continue to move far too slowly to rein in their still galloping growth. That has extended the stay of industrial commodity prices in the stratosphere. The latter have hit record highs and have now been joined there by food prices as well. With emerging economies seeing their growth ease slightly and the developed world seeing its growth strengthen, 2011 and 2012 should see above trend global growth even though both families and governments want to save more than they have been doing.

Talk of double dip in the **United States** has faded: the patient is stable, and the news from the recovery ward is encouraging. It is true that there are some very important headwinds – the pace of housing construction remains strikingly low, while government spending is falling and there are further falls ahead (in part because federal stimulus is running out and in part because state governments are battling big operating deficits). And the recovery in investment spending by businesses remains tentative because, for many sectors, capacity utilisation is still low and the need to add new capacity is not yet urgent.

That is why unemployment is still almost 9%, and it is clear that there is still a long grind ahead. Yet perspective is handy here. US recovery is happening. It is just that, as is often the case in the aftermath of financial crises, that recovery is proving to be disappointingly slow. Moreover, there are growing grounds for optimism the further ahead you look. Although the return to strength in business investment has been tentative thus far, it is clear that there will be further gains ahead on that front. And there is only one way for housing construction to go from here – housing activity hasn't been this weak as a share of the US economy since World War Two. Finally, $US weakness (especially against the yen) is helping exports. Indeed, exports have accounted for nearly half the US expansion since the recession ended in mid-2009.

The news out of **Japan** has been awful. Yet it has suffered a far greater human tragedy than it has an economic tragedy. That is not to belittle Japan's pain – it has been awful. Moreover, it came as a hit to an economy which was already weak, and one in which the ability of the central bank to help out is hamstrung by official interest rates having been close to zero for a decade. Yet that hasn't stopped the Bank of Japan (quite correctly) pumping in a lot of money, while the Government is digging deep to assist with the rebuilding task. Although a renewed bout of recession is not impossible, we expect the resultant weakness will be temporary and that the usual V-shaped impact of disaster – bad at first, then getting better – will be evident here too, with rebuilding underway by mid-2011 and those effects quite notable in 2012.

Europe is recovering amid a series of positives for growth, including the lower euro and the ability to sell to galloping emerging economies in Asia. Those positives are outweighing some admittedly important negatives, with most of the latter revolving around the high costs weighing on the weak southern fringe of the continent and the impact of sky high commodity

prices. The latter may cause even more damage than they should. The surge in commodity prices is acting (other things equal) to slow the economy at the same time as it raises inflation. The European Central Bank should have ignored such cost push inflation. But it didn't. Raising interest rates was dumb, meaning the continent is now dealing with tightening in both monetary and fiscal policy. Yet that mix will merely slow Europe's recovery rather than halt it.

The **United Kingdom's** recovery is continuing, but business confidence is down, and so too are economic growth forecasts. The outlook is battling higher indirect taxes and a series of government spending cuts (the latter are much needed, but not needed yet). Hence the coming year will still be a testing time for the UK outlook, and the pace of recovery is not expected to substantially strengthen across that period.

The emerging economies of Asia reacted even more strongly to the global financial crisis than did the rich economies – they cut interest rates, cut taxes and boosted government spending and the availability of loans from state banks. That stomp on the accelerator soon swung trends into domestic demand positives, meaning that the recovery in export demand which soon followed rapidly sent growth in much of Asia back to high rates.

That has essentially been the story in **China**. The good news is that China continues to respond to rising inflation with rising interest rates. That is a much need attempt at discipline. However, it remains a modest attempt – rates are only ever so gently going upwards, and interest rates are less of a lever in China than they are in the advanced economies. So inflation is on the rise, and many policymakers are worried by that. But they are even more worried that trying to rein in growth too hard could threaten the implicit social contract guaranteeing employment for the many workers flocking to China's cities.

Therein lies the rub – the revolutions that swept the Arab world in early 2011 provided yet more ammunition to Asian leaders who prefer to err on the side of having growth too fast rather than too slow.

And that's exactly what China is experiencing: great growth with too little by way of policy measures to slow it. Accordingly, and despite an economy travelling too fast and evidence of that in rising inflation and worryingly high property prices in some cities, the cost of bank finance in China remains close to zero. That suggests inflation will prove a stubborn foe. After all, the occasional night on the singing sauce is not a worry, but China's problem is that it has been living with the stimulus provided by cheap money for too long. In turn, cash-starved local governments are forced to fund themselves by selling land, a practice which ties their funding all too closely to China's pumped up real estate markets.

Looking longer term, and given its investment and export sectors are still on steroids, China's growth model remains unbalanced, and a much needed transition to higher wages and more spending by families (accompanied by lower profits and slower spending growth by businesses) will have to occur some time.

India's growth surge continues, and it has spread widely across its economy. It isn't just manufacturing motoring along but a range of sectors which have continued to expand. Indeed the problem of the moment for India is not too little growth, but arguably too much, with inflation on the rise even after allowing for the impact of higher commodity prices. Growth should remain pretty good despite the usual bugbears. Those bugbears do remain problematic, including infrastructure that is just not up to the task, governments who opt for

populist policies (bribery scandals continue to dominate the national parliament rather than a focus on achievable reforms) and inadequacies in the education system.

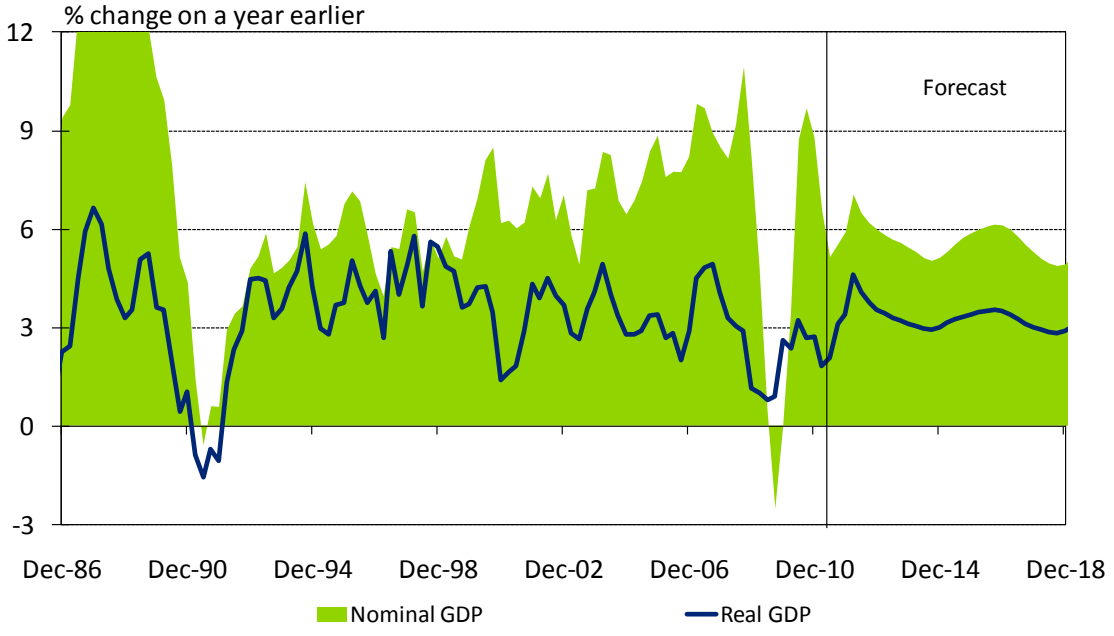
These are important negatives. But they merely take the top off what are otherwise excellent growth prospects. That said, India's current account and fiscal deficits are a reminder that other important constraints remain, while the uptrend in inflation suggests that the Reserve Bank of India will need to wind up interest rates over the next year or so – perhaps notably. That will be frustrating for many manufacturers given that the rupee has already appreciated as sharply as it has in recent times.

2.2 The Australian outlook

The world wants Australia to grow faster – its price signals are begging us for more than we can hope to supply at prices that we've never seen before.

As a result, Australian national income has been set soaring at rates well above those seen in the other rich nations of the world. Moreover, that good fortune comes at a time when Australia's economy has already seen twenty years of growth without a recession, meaning that the great job gains of the last eighteen months have cut unemployment back below 5%, with every likelihood of further falls ahead as skill shortages spread across several key sectors and some States.

Chart 2.1: Output growth in the Australian economy



Source: ABS, Deloitte Access Economics' macroeconomic model

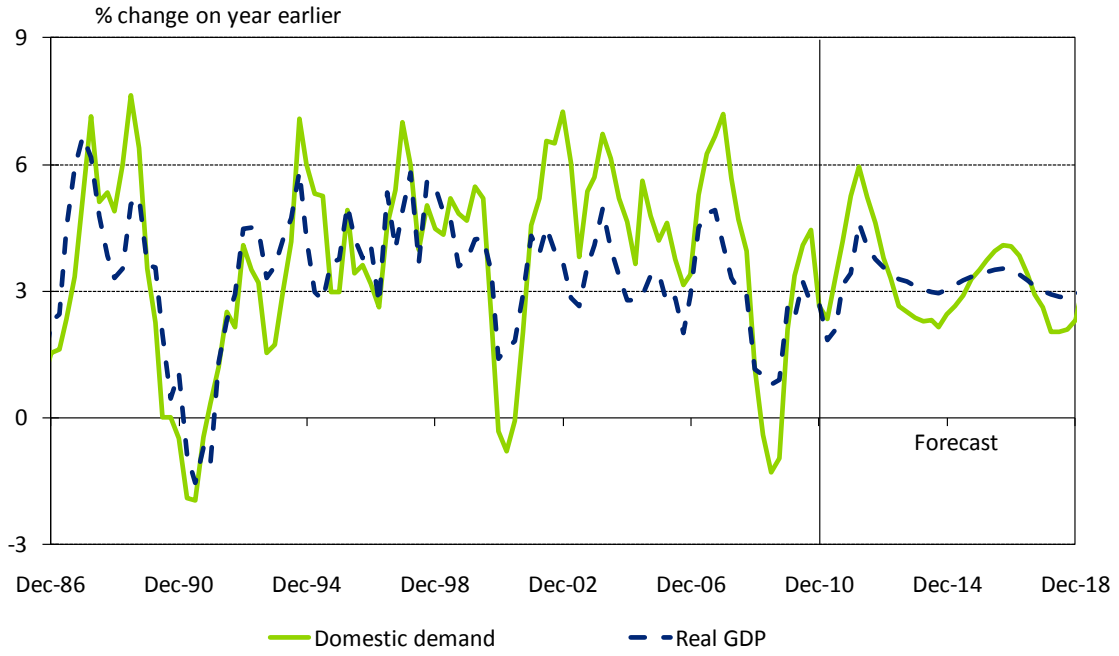
Yet at the same time that the world would love to be able to buy more from Australia, our recovery has flat-lined, with real output growth – seen in Chart 2.1 above – levelling off for more than a year now at an average of just 2¾%. Ordinarily recoveries see rather more rapid gains in growth as the unemployed find jobs and as factories return to full capacity. And

indeed there has been much good news in Australia since our own modest slowdown through the global financial crisis: for example, job growth has boomed.

In part the flat-lining evident in real economic growth is occurring because the cocktail of high interest and exchange rates which accompanied the surge in prices for Australian exports has undercut growth in key industries such as manufacturing, retail, tourism and international education, while the sharp slowdown in population gains is combining with higher interest rates to delay recovery in housing and construction. Moreover, the risk of further increases in interest rates has spooked many families who know they have to consolidate the start to their saving that they've made in the last year and a half. That code of conservatism among consumers has undermined a traditional driver of growth during recoveries.

Yet a look back at Chart 2.1 helps to explain why Deloitte Access Economics still sees skill shortages and interest rate hikes as more likely to dominate the headlines of the coming year than poor retailing conditions and more manufacturing job losses. We have added nominal GDP to that chart. The latter is a less than perfect proxy for national income, but it helps to illustrate the big gap in output and income growth over the last decade – a gap not typically seen in times past. Rising prices for our exports and falling prices for some of our imports have delivered real purchasing power to the economy on a platter.

Chart 2.2: Real (year-to) output and domestic demand growth in the Australian economy



Source: ABS, Deloitte Access Economics' macroeconomic model

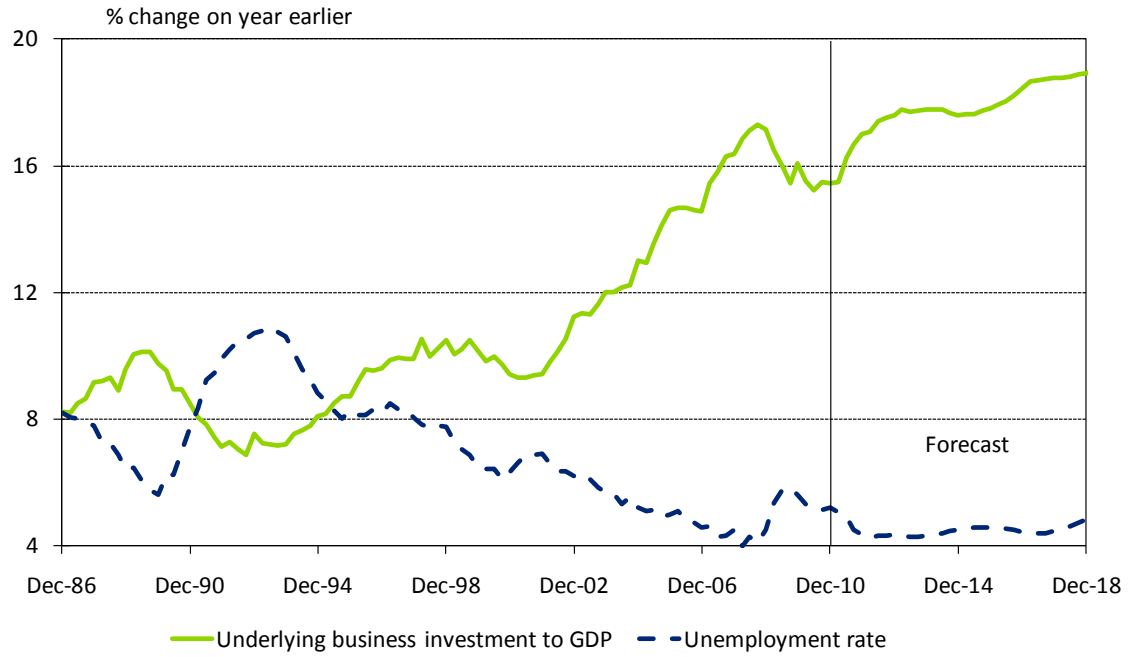
Of course, not everybody is taking advantage of that increased spending power. Families know that they've spent too much for too long, and they are deliberately saving more money than they've done for decades. Similarly, State and Federal Governments are finally being more careful with their spending because their budgets remain under considerable pressure. That patchy performance across demand categories – with families and governments in first gear while business spending picks up speed – means that the recovery in demand from a

slowdown is somewhat less evident in Chart 2.2 than Australia has usually seen in past recoveries.

Rather, the central driver of growth in Australia's economy is business spending on new investment – new mines, roads, ports and the like. But where the demand growth is strongest is where skill shortages are already greatest, with that combination raising the risk of firing up inflation rates here at home.

Chart 2.3 shows the remarkable gain in business investment spending as a share of the economy over the past decade, as well as the projection that the current investment boom will – like industrial commodity prices – prove stronger for longer, with iconic projects such as the Gorgon gas development in Western Australia well underway and the NBN roll-out starting.

Chart 2.3: Business investment and the unemployment rate



Source: ABS, Deloitte Access Economics' macroeconomic model

Yet at the same time as the world is sending price signals begging us to grow faster, Australia's ability to do just that is increasingly constrained. On the one hand there are supply side shortcomings – population growth is falling away very fast, and the supply of workers living in the right State and having the right skills to match the surge in available jobs leaves us with a less than perfect match. Similarly, the cruel impact of floods and cyclones has placed a short term dent in Australia's productive capacity, particularly our ability to export to the world.

That said, Deloitte Access Economics should be clear that we don't see the series of natural disasters at home or abroad as major growth inhibitors beyond the next six months or so. Terrible human tragedies are rarely also economic tragedies, with the overall productive capacity of economies not usually gravely affected, or not for long, and the rebuilding phase likely to swamp the bad news arising from lost confidence. Accordingly, Australia's local woes and the earthquakes and tsunamis affecting key trading partners such as Japan and New Zealand are likely to prove short term hurdles for Australian economic growth rather than

lingering negatives. That said, a watching brief is needed for further developments in north Africa and the Middle East (it is hard to envisage a happy outcome in Libya anytime soon) as well as on Japan's nuclear crisis.

But the problems bedevilling the growth outlook are more than just supply side shortfalls. The demand side story has its own pitfalls. Consumers are cautious, government stimulus spending has peaked and now enters a phase of wind back, while housing construction is only limping along and forward indicators suggest weakness rather than strength.

That leaves the short term growth hopes of Australia's economy tied closely to business investment – in particular, that part of business spending on capacity expansion which is not imported. The news on the latter front is excellent – both the Arup-Deloitte Access Economics *Investment Monitor* and the Australian Bureau of Statistics capex surveys point to a significant surge in the offing. And yet business investment spending accounts for only one in every six dollars of the Australian economy. That is not a very broad base upon which to pin the growth hopes of a nation.

As Chart 2.3 shows, Deloitte Access Economics sees some very good news on the investment front – good enough to provide much of the growth in the Australian economy over the coming year. However, such narrowly-based growth is particularly susceptible to bad news – skill shortages, rising wage and material costs, delays in go ahead at the corporate level or regulatory approval from State and or Federal Governments may all prove to be a spanner in the works of the pace of pick up in investment spending, and hence the continuing recovery in Australia's economy.

On balance, and as Chart 2.2 above shows, Deloitte Access Economics sees Australian economic growth suffering a short term whipsaw as output falls from flood and cyclone effects but then catches up later in 2011. Abstracting from those one-off effects, real growth remains solid rather than spectacular. Rather, and as Chart 2.1 – seen earlier – shows, the action in the short term remains in the pace of nominal growth in Australia. The latter reflects the tremendous pay rise the world is currently sending our way across many of the commodities that Australia produces and sells to the world.

Table 1.1 sets out Deloitte Access Economics' forecasts to 2013-14.

Table 2.1: Forecasts

Outcomes and estimates (a)	Forecasts				
	2009-10 Year Average	2010-11 Year Average	2011-12 Year Average	2012-13 Year Average	2013-14 Year Average
Panel A – Demand and Output (b)					
Private consumption	2.1%	3.0%	3.0%	3.1%	2.9%
Private investment					
Dwellings	2.1%	3.8%	10.2%	5.9%	-2.0%
Business investment	-4.8%	3.9%	13.7%	7.2%	3.9%
Non-dwelling construction	-7.6%	7.0%	14.3%	9.8%	6.3%
Equipment	-5.3%	-0.4%	11.8%	4.5%	1.1%
Private final demand	0.6%	2.8%	5.7%	4.2%	2.7%
Public final demand	7.0%	4.3%	3.3%	1.4%	1.4%
Total final demand	2.1%	3.2%	5.2%	3.6%	2.4%
Increase in stocks (c)					
Private non-farm	0.1%	0.1%	0.1%	0.1%	-0.1%
Farm and public authority	0.2%	0.0%	-0.1%	0.0%	0.0%
Gross national expenditure	2.4%	3.2%	5.1%	3.6%	2.3%
Exports of goods and services	5.1%	4.5%	8.6%	10.6%	9.6%
Imports of goods and services	4.9%	10.2%	13.3%	10.6%	6.1%
Net exports (c)	0.7%	-0.5%	-1.7%	-1.8%	-0.9%
Real gross domestic product	2.3%	2.3%	3.8%	3.5%	3.1%
Non-farm product	2.3%	1.8%	4.4%	3.9%	3.1%
Farm product	2.7%	27.0%	-15.5%	-13.1%	0.9%
Nominal gross domestic product	2.3%	7.5%	6.2%	5.9%	5.3%
Panel B – Expenditure Excl. Asset Sales					
Underlying business investment	-4.9%	3.1%	12.9%	7.2%	3.8%
Underlying non-dwelling construction	-8.2%	6.1%	13.5%	9.9%	6.4%
Underlying equipment	-4.8%	-1.3%	10.7%	4.3%	1.1%
Underlying private final demand	0.7%	2.8%	5.7%	4.2%	2.7%
Underlying public final demand	7.0%	4.3%	3.3%	1.4%	1.4%
Panel C – Other Economic Measures (d)					
Prices and wages					
Consumer price index	2.3%	3.0%	2.7%	2.7%	2.6%
'Underlying' measure	1.8%	2.2%	2.6%	2.8%	2.6%
Gross product deflator	0.0%	5.1%	2.3%	2.3%	2.2%
Average earnings (e)	0.7%	3.6%	3.9%	4.7%	5.4%
Average weekly earnings (f)	5.3%	3.7%	3.9%	4.7%	4.9%
Labour market					
Employment (labour force survey basis)	1.2%	3.2%	3.1%	2.6%	1.7%
Unemployment rate (per cent)	5.5%	5.1%	4.3%	4.3%	4.3%
Participation rate (per cent)	65.3%	65.7%	66.1%	66.7%	66.9%
External accounts					
Terms of trade	-4.4%	16.8%	0.8%	-4.5%	-4.3%
Current account balance ($billion)	-53.3	-25.9	-28.5	-43.9	-55.7
Percentage of GDP	-4.2%	-1.9%	-1.9%	-2.8%	-3.4%
Panel D – International Assumptions					
Major trading partners					
Real GDP	2.8%	5.1%	4.6%	4.6%	4.4%
Inflation	1.2%	2.6%	2.8%	2.6%	2.6%
Crude oil (Tapis $US/barrel)	78.99	97.80	101.09	95.79	91.92
TWI index (Index points)	68.56	73.26	75.48	70.77	66.56

Source: Deloitte Access Economics

(a) Calculated using seasonally adjusted data. (b) Chain-weighted volume measures. Unless otherwise indicated, figures are percentage change on previous year. (c) Percentage point contribution to change in GDP. (d) Percentage change on preceding year unless otherwise noted. (e) National accounts basis. (f) Survey basis.

3 The national wage outlook

3.1 Recent national wage growth

After a period of notable deviation, wage growth measures have begun to move back in line again. Indeed, both the Labour Price Index and AWOTE – Average Weekly Ordinary Time Earnings – grew by 3.9% in the last year. Gains in both the public and private sectors have also been exactly 3.9% over the past year.

Only the national accounts measure of earnings and Average Weekly Earnings are growing faster, at 4.1% and 4.3%, respectively, with recent enterprise bargains splitting the difference, at 4.2% (see Table 3.1). The measure for growth in all current EBAs has been stable at 4.1% for some time now, with the rate of increase in new agreements steadily increasing towards this rate.

Table 3.1: Wage growth in enterprise bargaining agreements

Quarter	Private sector			Public sector			Total			Total
	# of agmts	Employees ('000)	Wage rise (% annual)	# of agmts	Employees ('000)	Wage rise (% annual)	# of agmts	Employees ('000)	Wage rise (% annual)	All current agreements
Mar-09	2,129	104.5	4.8	55	12.2	4.5	2,184	116.7	4.6	4.1
Jun-09	5,266	278.4	4.1	120	138.3	4.1	5,386	416.7	3.9	4.2
Sep-09	1,559	147.2	3.7	41	43.0	3.6	1,600	190.2	3.6	4.1
Dec-09	1,131	164.9	3.9	60	60.8	4.2	1,191	225.7	3.9	4.1
Mar-10	2,019	173.6	3.8	66	58.6	4.6	2,085	232.2	4.1	4.1
Jun-10	1,664	198.7	3.9	58	60.2	4.2	1,722	258.9	4.0	4.1
Sep-10	2,207	198.8	4.1	78	43.0	4.7	2,285	241.8	4.2	4.1

Source: Department of Workplace Relations Agreements database

The rapid employment growth seen in recent times in the utilities has almost matched that in mining, and those two sectors have seen the fastest wage growth across Australian industries in the past year. Professional services are also up there near the top, followed by education and finance. In contrast, the weakest wage growth has been in the transport sector. Looking across States, Queensland and Western Australia – not surprisingly – take the lead, with wage gains slower in the likes of Tasmania, Victoria and NSW.

It's no wonder that wages are gathering pace – job growth has been strong, lifting demand more than expected previously. And migration rates have fallen, cutting relatively more into the growth of the working age population (particularly those aged 18-35). That means supply is already lower than previously expected and the projected rate of growth in working age population from here has been wound back as well. That leaves supply worse than expected, making it more difficult to deal with one-off changes in demand. And those demand shifts are now likely, given the reconstruction required in Queensland following the flooding and cyclonic conditions of recent months.

Those developments add to a further complication – the unwinding of the relatively moderate wage rises seen during the GFC. Employees agreed to a period of slower wage rises in 2009 amid fears at the time that unemployment would jump. (The slowdown in wage growth at that time was also affected by the minimum wage freeze that occurred in 2009.)

Those twin prompts to the recovery in wage growth – great job demand on the one hand, and the desire for a catch up in earnings on the other – would ordinarily have driven even faster wage increases than seen over the past year.

Yet there have been mitigating factors. The main source of relief has been the increased willingness of older Australians to put off retirement and for women to return to the workforce. That surge in participation has helped job numbers to grow fast without unemployment rates dropping to levels characterised by very sharp skill shortages.

Even so, wage growth has been picking up for a while now, and that phase has not finished yet. Recent job growth has been great, and prospective job growth looks solid too, and that rapid increase in demand will give employees bargaining power, especially in sectors and States where job markets are tighter. Add in the fact that numbers of new migrants are fading, and that is a recipe for wage growth to gather further pace. Indeed, skill shortages are already on the rise, and they are projected to become quite sharp in key sectors and States.

3.2 Recent wage growth versus projected wage growth

Only one wage release (for the December quarter 2010) has been issued since Access Economics' 13 December 2010 report. That saw the Australian LPI rise by 1.04%, some 0.27 percentage points faster than the projected rate of increase.

Table 3.2 shows more detail in the difference between our earlier projections and the results for December quarter 2010.

There are two points to bear in mind:

- The smaller sectoral results are more volatile than the total measurement given the relatively small sample sizes involved.
- The State-specific LPI measures for the utilities sector are not published by the ABS and are therefore a comparison of our earlier forecasts with our updated estimates for the December quarter results.

Table 3.2: December quarter 2010 LPI outcomes

% change in December qtr 2010	Forecast (Dec. 2010)	Actual	Difference
All industries	0.77	1.04	0.27
Utilities	0.72	1.50	0.78
Mining	0.72	1.42	0.69
Construction	0.95	0.94	0.00
Administration services	0.50	0.76	0.26
Utilities sector			
Queensland	0.69	1.66	0.97
South Australia	0.81	1.05	0.25

Source: Australian Bureau of Statistics, Deloitte Access Economics labour cost model (for Qld and SA utilities data estimates).

In essence, Access Economics' 13 December 2010 report expected the acceleration in LPI in the middle part of 2010 to be maintained as the economy remain on a solid trajectory, but

growth in fact accelerated, partly as the world economy moved further away from fears of a double-dip recession and partly as the fears of skill shortages began to intensify.

As the table also shows:

- growth in the LPI was relatively strong in the utilities sector (at 1.5% in the quarter) and in mining (rising 1.4% in that period). Both grew at around twice the rate we had forecast in the last report
- growth in admin services (0.76% in the quarter) LPI was slightly greater than our forecast (the 26 percentage point gap being in line with the overall gap of 27 percentage points).
- Construction, by contrast, grew largely as expected (0.94% in the quarter), implying relative growth rates in the sector were slightly weaker than anticipated.

Comparisons of results for the utilities sector at the State level are somewhat fraught as the historical results are themselves estimates and are updated in line with underlying trends in employment and wage rates. As noted here, the gaps between our previous forecast for LPI growth was larger in Queensland – where skill shortages and supply pressures have been relatively strong – than in South Australia – where those impacts have been relatively less.

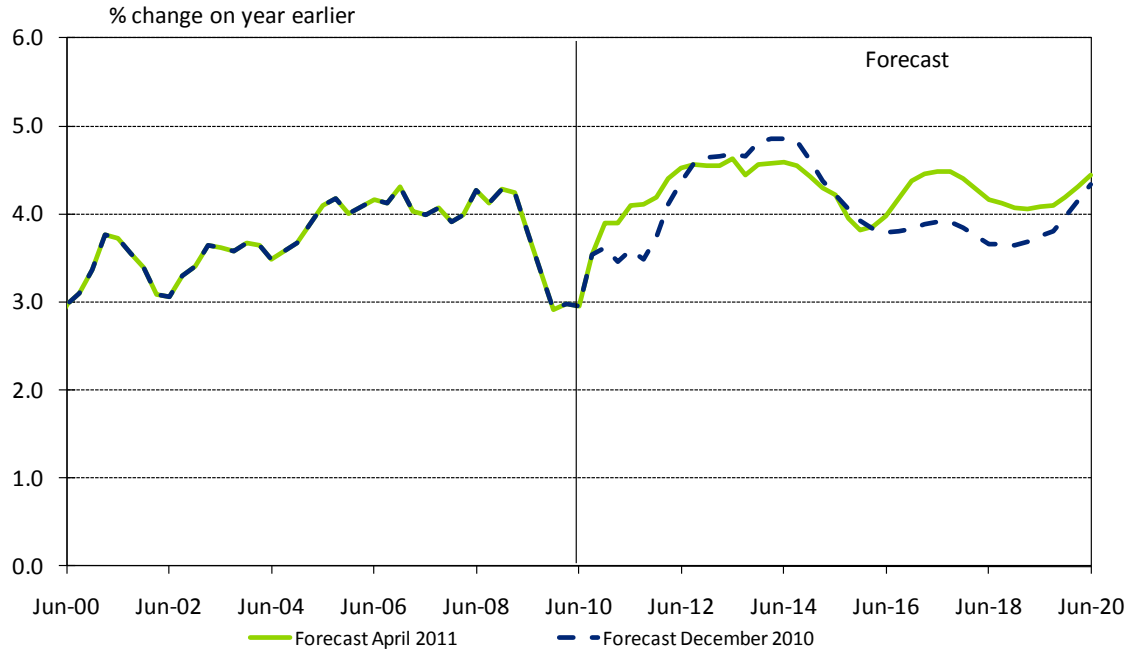
3.3 Short term wage forecasts

Developments in recent months have affected the wage outlook since the time of Access Economics' 13 December 2010 report for the AER.

Our short term wage forecasts are now a little stronger than they were in December. That gap is modest at the national level – peaking at about 0.5 percentage points in year-to terms, and is not consistent across sectors or States:

- As noted in the previous section, the ABS estimates for the December quarter were stronger than projected, reflecting a slightly stronger pick-up in employment demand, stronger than expected commodity prices and the beginnings of a re-run of skill shortages – particularly in the relevant industries covered in this report and in Queensland – seen in the last wage boom.
- Looking ahead, with commodity prices remaining relatively strong, that adds notably to the 'desire to develop' both by the resource sector itself (and hence mining demand) as well as those who sell into it (and hence construction demand).
- Employment growth expectations have lifted even as output expectations have eased. While employment growth in 2010-11 is now expected to be 3.2% rather than 3.1%, the gap widens significantly in 2011-12, where employment is now projected to largely maintain its momentum – rising by a further 3.1%, well above the 2.2% forecast earlier. By the end of 2012 the national unemployment rate may be around one percentage point lower than earlier predictions suggested (see Table 3.3).
- And while the outlook for labour demand is stronger, the outlook for labour supply is weaker, with slightly lower migration expectations. Increases in participation rates (and the lower unemployment rate) are a partial compensation for the labour supply shortfall, but the total picture is one of more short term upward pressure on the LPI.

Chart 3.1: Changing forecasts of the LPI



Source: ABS, Deloitte Access Economics' macroeconomic model

At the detailed sector level, the existing themes in our 13 December 2010 report have been maintained or strengthened by recent developments:

- Natural disasters may cut into economic output in the short term (hence the hit to mining in particular) but they lead to periods of reconstruction that necessarily lift demand for skilled workers.
- Forecasts for utilities sector employment have been lifted in line with the continued strength in the sector. Similar changes have been made to the expectations for mining sector employment. The previous forecasts saw a period of moderation in both sector's employment levels through 2011 before strength then returned. The current projections suggest 2011 will be almost as strong as recent years, with growth moderating in 2012.

There are some offsetting factors:

- Construction sector job growth is likely to be delayed by the slower than expected growth in the level of housing starts in Australia (with higher interest rates and lower population growth both contributing). That has flow-on implications for the utilities sector as the slower growth in housing stock will require fewer connections for power, water and gas service.
- The weakening outlook for the manufacturing sector – with the rise in the $A further cutting into demand for local products such as cars and wine – will limit the 'competitor wage' effect from that sector. That is more of a negative for South Australia than other States in general (and Queensland in particular).
- A possible longer term negative for South Australia is the slightly higher level of uncertainty around Olympic Dam. While increases in global commodity prices are of benefit to the project, the nuclear accident at Fukushima may yet have cast a cloud over future world uranium demand. Some measures of uranium prices have dipped sharply in

recent months – the U_3O_8 price quoted by the Ux Consulting Company[4] has dipped from US$73.50 per pound in early February to US$58.50 in early April, a fall of over 20%.

The upshot is that overall expectations for wage growth at the national level are slightly higher through 2012 before easing back towards earlier projections. Growth may be consistently stronger than earlier anticipated through the first half of 2011, with the largest gaps in utilities and mining, with smaller impacts obvious in the construction sector.

These changes are not large. Overall, the final 2010-11 expectation for LPI growth is now 3.9% – 0.3 percentage points higher than the 13 December 2010 report. Growth expectations for 2011-12 are similarly increased – from 3.9% to 4.3%. Beyond that the rates of increase are now projected to be slightly lower (around 0.15 percentage points per year) as the current period of strength gives way to more moderate wage growth.

3.4 The outlook for the CPI

Inflation in Australia is still falling, reflecting the weaker growth of recent years (which has sparked discounting among retailers, as they have suffered more than most from weak demand), as well as lower rates of wage growth and a big increase in the $A. With all those three key drivers – demand growth, wage growth and the $A's impact on import prices – constraining inflation, it is no wonder that underlying inflation fell to 2¼% through 2010.

However, this recent phase won't last: a series of one-offs are about to substantially boost headline inflation, while underlying inflation is also expected to start rising sooner rather than later.

It is worth noting some short term impacts on the headline CPI first. Floods and cyclones have had significant effects on fruit and vegetable prices, and the revolutions that swept the Arab world in early 2011 have seen a hike in the oil prices as well. Yet the first will almost certainly ease by the end of the year (barring more storms) and the latter may yet also ebb away.

What may prove to be longer lasting is an uptrend in underlying consumer price inflation. That has resultant from a gradual strength in demand pressures. In part that is because housing rents are still chasing the considerable increase in housing prices in recent years, and those rents can be expected to continue to grow at healthy rates for some time yet. Similarly gains in health, education and the utilities (electricity, gas and water) prices remain high. These sectors are well insulated from competition, and the 'cost plus' nature of pricing (and the need to provide further incentives to the utilities sector to invest in more base load capacity) point to further price gains ahead.

Accordingly it may be that the easing in consumer price inflation pressures thanks to weak demand has already run its course, and that the next big move in inflationary pressures on this front will be upward.

There are also growing pressures from labour costs. The problem is not that wage growth, while picking up, is merely back in a range long since acknowledged by the Reserve Bank to be

[4] See http://www.uxc.com/review/uxc_Prices.aspx

safe. Rather, the problem is that Reserve Bank comfort levels on wage gains are conditional on the associated strength of productivity.

That is a problem because Australia's productivity performance has been particularly poor.

Add that poor productivity performance to rising wage growth, and the pace of increase in unit labour prices – the true cost to business of employing workers – has already jumped back to the highest seen since late 2006, and is travelling at rates that Deloitte Access Economics is not comfortable with. **We see labour costs not merely as a potential problem for the inflation outlook, but as an already current danger.**

The final area of concern is in import prices. Although Australians have benefited very much from the weakness in import prices across the period when the $A has been making big strides, it is worth stressing that continuing good gains on the inflation front from this sector requires not merely a high $A, but a rising one. As we don't forecast further increases in the $A for the moment, it is no surprise that Deloitte Access Economics forecasts' see the good news for pricing pressures from the $A abating rapidly through the rest of 2011.

Our expectation for the CPI growth in 2010-11 is 3.0% – slightly higher than the 13 December 2010 expectation of 2.9%.

Table 3.3: Changes in major economic aggregate forecasts (financial year basis)[5]

Changes in Australian forecasts (financial year)

Year-to % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
GDP										
Dec-10	1.2	2.3	3.7	3.6	3.3	2.9	3.0	3.3	3.3	2.9
Apr-11	1.4	2.3	2.3	3.8	3.5	3.1	3.1	3.4	3.4	3.0
Difference	0.3	-0.1	-1.4	0.2	0.2	0.2	0.1	0.1	0.1	0.1
CPI										
Dec-10	3.1	2.3	2.9	3.0	2.9	2.5	2.4	2.7	2.7	2.3
Apr-11	3.1	2.3	3.0	2.7	2.7	2.6	2.4	2.7	2.7	2.4
Difference	0.0	0.0	0.1	-0.3	-0.2	0.1	0.0	0.0	0.0	0.0
LPI										
Dec-10	4.1	3.0	3.6	3.9	4.6	4.8	4.5	3.9	3.9	3.8
Apr-11	4.1	3.0	3.9	4.3	4.6	4.5	4.4	3.9	4.4	4.3
Difference	0.0	0.0	0.3	0.4	-0.1	-0.3	-0.1	0.0	0.5	0.5
AWE										
Dec-10	3.8	5.3	3.2	4.1	4.9	4.7	4.1	3.0	2.9	2.8
Apr-11	3.8	5.3	3.7	3.9	4.7	4.9	4.4	3.4	3.8	3.7
Difference	0.0	0.0	0.5	-0.2	-0.2	0.2	0.3	0.4	0.9	0.9
AWOTE										
Dec-10	5.5	5.6	3.5	4.0	5.1	4.9	4.5	3.5	3.3	3.3
Apr-11	5.5	5.6	3.8	3.8	4.8	5.0	4.8	3.9	4.3	4.3
Difference	0.0	0.0	0.3	-0.3	-0.4	0.1	0.3	0.4	0.9	1.0
Unit labour costs										
Dec-10	-0.6	-1.7	-2.0	-0.6	1.0	1.6	0.6	-0.3	-0.1	0.4
Apr-11	-2.6	-0.4	-0.4	-1.1	1.3	1.9	0.8	-0.4	0.0	0.2
Difference	-1.9	1.3	1.6	-0.5	0.3	0.3	0.2	-0.1	0.1	-0.2
Employment										
Dec-10	1.7	1.2	3.1	2.2	1.3	1.0	0.7	1.1	1.5	1.4
Apr-11	1.7	1.2	3.2	3.1	2.6	1.7	1.2	1.3	1.3	0.9
Difference	0.0	0.0	0.1	0.9	1.3	0.8	0.5	0.2	-0.2	-0.5
Unemployment rate										
Dec-10	4.9	5.5	4.9	4.8	5.2	5.5	5.6	5.6	5.4	5.3
Apr-11	4.9	5.5	5.1	4.3	4.3	4.3	4.5	4.6	4.4	4.5
Difference	0.0	0.0	0.1	-0.5	-0.8	-1.1	-1.1	-1.1	-1.0	-0.8

Source: Deloitte Access Economics

[5] Real variables are now expressed in 2008-09 dollar terms, while the previous forecasts used the 2007-08 year for prices. This reflects the annual update the ABS applies to real national accounts variables. One effect of the update is to change historical growth rates for real variables (such as GDP).

4 State outlooks and wage projections

Current developments have different implications across different parts of Australia. Floods and cyclones have given Queensland a bad bruising. Given it was recovering slower than most anyway, that is a blow. But the rebound will come, and different will force its way back up the State league ladder soon enough, joining Western Australia at the top.

On the other hand, Tasmania, Victoria and the ACT are being dragged down by consumer caution as families react to higher interest rates by cinching their belts. Tasmania and South Australia are also feeling the effect of business caution on expanding capacity.

4.1 Technical notes

The revisions to our forecasts over the past four months are mainly driven by the changing economic climate.

However, State results are also affected by a number of technical points that should be borne in mind:

- Unlike the national accounts, State accounts do not produce output estimates on a quarterly basis, only in annual terms. The components that are not released each quarter, notably estimates of interstate trade, are often revised notably each year. This can change historic estimates of growth, particularly for smaller States and Territories. Deloitte Access Economics uses its own in-house methodology to create quarterly historical estimates of State output, which use (in part) historical job levels by industry.
- Seasonal employment patterns have been revised (as happens each February) and the ABS have updated recent labour force trends with information from population surveys. This results in revisions to what were the most recent job statistics in the last report.
- The ABS has updated its price basis for the calculation of real economic variables from 2007-08 to 2008-09, resulting in modest changes to historical growth rates and the estimated "jumping-off points" for our forecasts.

In general, these impacts are not particularly significant, though they are a reminder that State level results are subject to greater caveats than matching Australian aggregates.

4.2 Queensland

4.2.1 Changes to the outlook

The usual rule of thumb is that natural disasters are more human tragedies than they are economic disasters. However, the sheer impact of the State's early 2011 floods and cyclones generated some enormous short term losses to output.

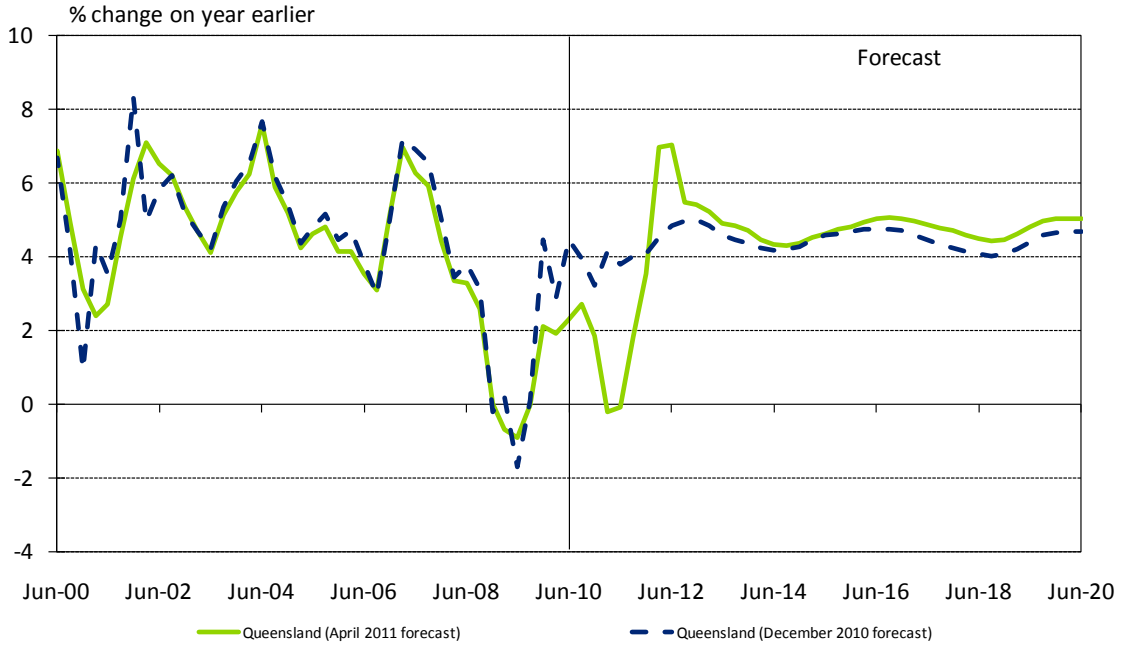
Mines couldn't be worked; sugar, banana and cotton crops were destroyed; livestock drowned; wheat fields were flooded; building sites were abandoned; employees couldn't make

it to work; shoppers couldn't get to the stores; and tourists stayed away in droves – the impact was huge.

How huge? The most commonly quoted estimate for Queensland's costs arising from these natural disasters is $4 billion, and it could well be higher. (Certainly if lost coal output hit 25 million tonnes, as is possible, and some 30,000 homes in the State had notable flood damage, then the cost may well be higher than the oft-quoted $4 billion.)

Moreover, this series of unfortunate events came atop a State still struggling to gain traction in the wake of the global financial crisis. It is harder to get a loan in the Sunshine State than elsewhere in Australia, and that difficulty in finding finance is weighing on both housing construction – especially of apartments, and perhaps most notably on the Gold Coast – and commercial construction in Queensland.

Chart 4.1: Queensland output forecast change



Source: ABS, Deloitte Access Economics' macroeconomic model

Those broader (and longer lasting points) are why Chart 4.1 shows weakness in output growth well below recent rates recently and in the immediate future – the effects of the weather have been to weaken the outlook even further. Neither point, by the way, implies that Queensland doesn't have an excellent future. It does – as recent coal seam gas announcements attest. What this State does have is a particularly weak 2010 and a particularly poor start to its 2011 growth.

The news won't stay nearly this weak for long. The rebound expected in Chart 4.1 will come: coal output will lift sharply, reconstruction and repair work will begin on homes and infrastructure, and families will spend insurance money to replace some of their lost possessions. Indeed, there is early evidence that the latter has already begun, and the other rebound factors will happen too.

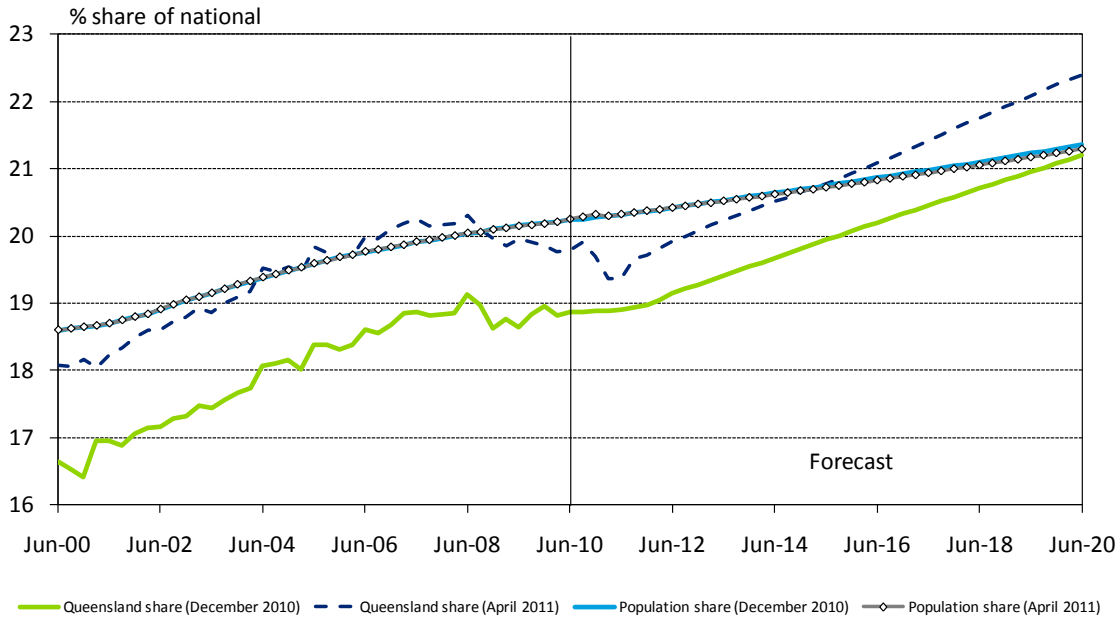
That drives the V-shaped pattern seen in economic growth in the State in the near future. Yet even the rebuilding rebound won't be as timely as it might otherwise have been. If Queensland's housing construction – ignoring flood and cyclone effects – remains in the doldrums, then there should be the construction workers available to rebuild sooner rather than later. However, if the State's construction workers are getting pulled into work in the Bowen Basin or NBN construction in northern NSW or into big projects in Western Australia, then the flood and cyclone rebuilding task will prove slower than hoped.

Similarly, there are some other hidden costs to the growth outlook here. Although the Federal Government is assisting, a portion of the costs fall to the State Government, which will have to juggle some much needed infrastructure money away from other priorities. That is a particular problem in a high population growth State, as those gains in people mean a large infrastructure deficit looms unless more money is projected in soon.

Changes in State output shares shown in Chart 4.2 (a "real terms" measure) need to be split into two separate effects:

- **The change in the price basis**. This re-weights all expenditure components to their 2008-09 shares of total expenditure, rather than 2007-08 shares. As a result, Queensland's historical share of output has been lifted significantly.
- **The change in the outlook**. That is most obviously in the short term, where a period of expected stagnation through 2011 is now replace by a short lived dip in response to the flood and cyclonic conditions of early 2011.

Chart 4.2: Queensland output and population forecast change



Source: ABS, Deloitte Access Economics' macroeconomic model

The longer term outlook remains very good; the continuing global industrial revolution will fuel Queensland's coal surge, boosting its export strength. Once the current downturn has been negotiated the State will once again carve out a growing share of output and population. As

Chart 4.2 suggests, the relative population increase will ease, cut back by lower international migration and easing trends in internal movement.

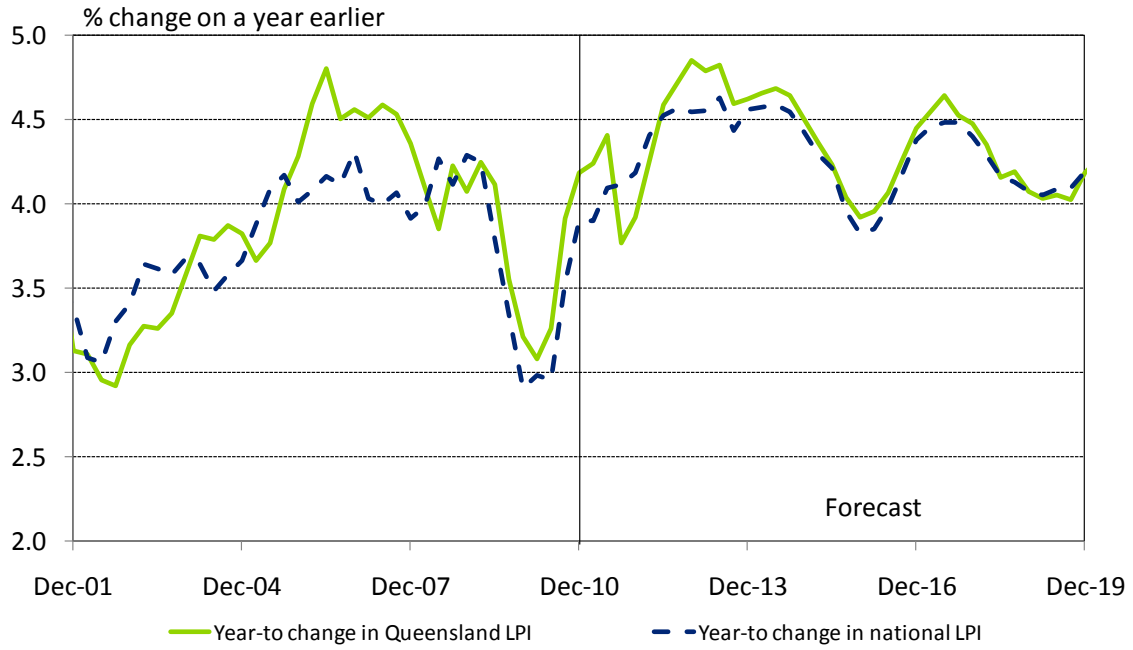
4.2.2 Current LPI projections

Queensland's economy has grown faster than the national average across the past two decades, boosted by generally strong population growth – particularly in the south-east of the State – and as well as good growth in tourism and retail.

That said, the Queensland economy was hit particularly hard by the 2008-09 global downturn. Initially mining and tourism were hit hard, but a shortfall in commercial financing has had a lingering impact on the State's important construction sector, while the surging $A has hurt the agricultural sector and intensified the problems for Queensland's tourism industry.

Those developments temporarily pulled the State's rate of LPI growth – which was notably ahead of the national average from 2004 to 2007 – back into line with that average (as seen in Chart 4.3).

Chart 4.3: Queensland general labour cost growth



Source: ABS, Deloitte Access Economics' macroeconomic model

Although the expected path of output growth is slightly slower than previously forecast, the Queensland economy will still be an increasingly important part of the national economy in the longer term. As a result, that will tend to drive labour cost growth in the State above the rate expected nationally. However, the 'hole' in output growth through 2011 is expected to have a short term dampening impact on wages. After jumping relatively rapidly in the September quarter, the latest wage growth for Queensland was slower than the national average. That is expected to continue in 2011, but will not show up in year-to growth terms (as shown in Chart 4.3) until September 2011 when the strong September 2010 result is removed from the analysis.

As the State's economy then rebounds, LPI growth rates move back above the national average.

The longer term outlook for wages in Queensland is unlikely to be far above the national average over an extended period of time. Much of the wage differential between Queensland and other States has been wound back in recent years (whereas the level of average weekly earnings in Queensland in 2000 were more than 10% below those in New South Wales and 5% below the national rate, now they are equal or higher than those measures).

That will limit some of the upside potential for LPI growth (which is measured in index, rather than absolute dollar, terms).

Overall – and ignoring the relatively sharp jump in mid-2010 – the forecast profile of Queensland's LPI growth is almost the same as the national rate. The recent declines in LPI growth have given way to a period of rapidly acceleration back towards the results seen during the first resources boom. Indeed, this is not surprising given we expect the Australian economy to be heading back into a second phase of resources boom over the next two years.

4.3 South Australia

4.3.1 Changes to the outlook

The basics are simple: South Australia's economy suffered badly through the 1980s and 1990s, but achieved a relative recovery in the past decade. That recovery saw average growth rates for the States output improve, meaning that South Australia did a better job at hanging on to its share of Australia's economy in recent years, although as Chart 4.5 shows, it has not been completely successful.

Those were impressive achievements, not least because – as Chart 4.5 also makes clear – the decline in South Australia's share of Australia's population has continued. Even more impressively, the State managed a respectable economic outcome despite being on the wrong side of Australia's two speed economy – the dominant driver of State divergences in recent years.

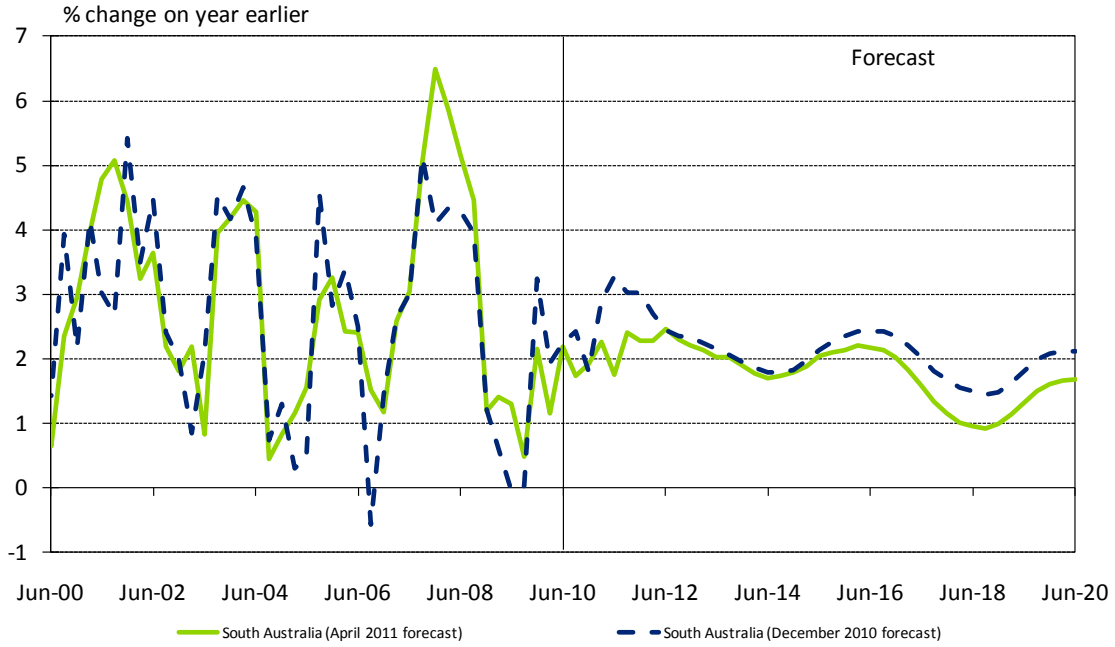
The latter is an important point to understand. One day South Australia will be a titan of the global resource landscape. It is a world class minerals province, with almost 40% of the globe's known recoverable uranium reserves, as well as significant volumes of copper, gold and silver. Moreover, the State's comparative advantage in mining lifted further in the past decade. It did not do so particularly because miners discovered new deposits, but because the world 'discovered' additional demand for minerals.

The result is the State has the potential to be a big player in global resource markets. For example, the expansion at Olympic Dam has a construction cost of around $21 billion. If it goes ahead – and it is expected that BHP Billiton will say 'yes' in early 2012 despite the potential for recent developments to affect the future of Japan's nuclear energy sector – then it would become the world's largest mine.

There has been relatively less change to the outlook for South Australia since the last report than there have been for Queensland. With the stimulus spending that helped boost growth in 2009 continuing to be wound back over the next year or two, the upswing in economic

performance seen in the State may stall. South Australia was a relatively large beneficiary of Federal stimulus and is at relatively higher risk as the trend unwinds. In addition, the slow progress in the development of new infrastructure projects remains a concern for future State output.

Chart 4.4: SA output forecast change

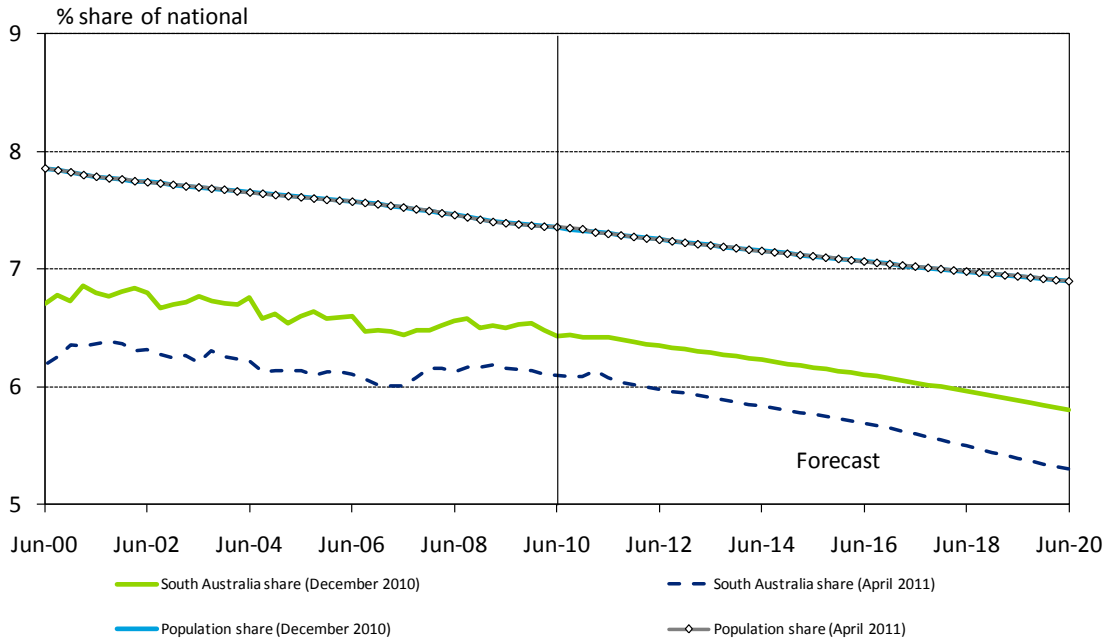


Source: ABS, Deloitte Access Economics' macroeconomic model

Yet overall the implications are modest. As Chart 4.4 suggests, the weakness in manufacturing in particular as the $A has made further gains means that growth in 2011 may be slightly lower than expected in the last report, albeit still in line with earlier expectations from there until the middle of the decade. Beyond that growth is slightly weaker reflecting the slower rate of population growth in the State – a downgrade driven by the relatively rapid cutback in migration rates to Australia.

That is not a relative change, it affects the whole of Australia and (as Chart 4.5 shows) South Australia's expected share of population is almost unchanged from the 13 December 2010 report. Output shares have been revised significantly in history as the change in price basis has benefited Western Australia and Queensland to the cost of other States. In general however, the slightly decrease in South Australia's economic importance over time is still expected to cut around 0.5 percentage points from the State's output share by 2020.

Chart 4.5: South Australian output and population forecast change



Source: ABS, Deloitte Access Economics' macroeconomic model

4.3.2 Current LPI projections

South Australia's LPI growth has typically been more closely linked to that seen in manufacturing than is evident in most other States – not only is the latter sector relatively more important to the South Australian economy, but it is also a sector where wage growth has been particularly volatile.

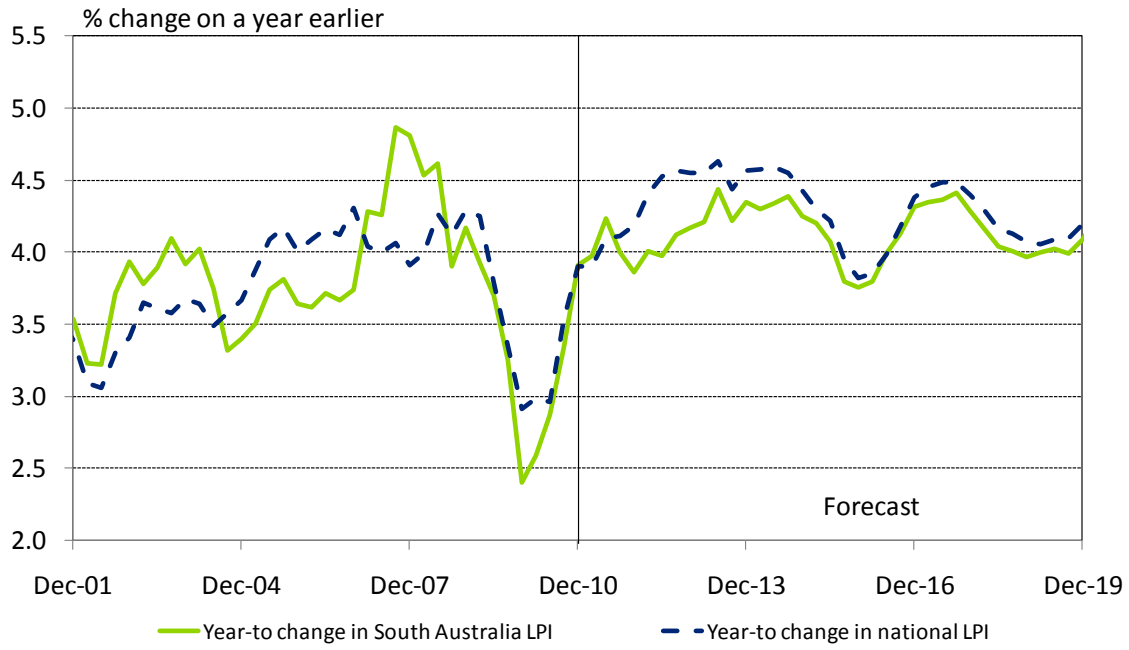
The poor performance of manufacturing during the GFC cut into South Australia's LPI growth, which slipped from nearly 5% in 2007 to just half that pace in 2009. Yet the impact from here will be more mixed. While manufacturing continues to struggle, with exports limited by the high $A and hurt by strong import competition from Asian economies, it cannot continue to see its wages lag further behind the average in relative terms.

That may see sectoral wages 'catch-up' to the growth seen in competitor sectors. As this process occurs both within sectors and between States, South Australian wage growth rates will need to remain reasonably in touch with the national average.

As a result South Australia may see its rate of LPI growth slightly closer to the national rate (as shown in Chart 4.6). In the short term the generally slower growth currently seen in the economy – largely due to the weakness in wage gains in the manufacturing sector – will keep the State's LPI growth below the national equivalent.

Eventually wage growth rates should largely converge. The development of the State's mining potential may eventually push rates above the national average.

Chart 4.6: South Australia general labour cost growth



Source: ABS, Deloitte Access Economics' macroeconomic model

5 The utilities sector economic 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, Revision 1.0 of 2006) covers economic units engaged in the provision of:

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

This sector buys inputs from sectors such as mining, manufacturing and property and business services, and – reflecting the nature of its products – sells its output to a wide base of business sectors and to residential users.

5.1 Utilities sector projections

5.1.1 Changes to the outlook

Demand for the utilities marches to the beat of several different drums:

- **the connection of new homes to electricity, gas and water supply**. This component of the sector is linked most notably to the residential construction cycle;
- **industrial use**. This component links in with trends in the manufacturing and mining sectors, both of which are especially large users of the utilities; and
- **the weather**. A less predictable driver of demand, but one which has seen demand for water boosted on the west coast in the past year, but cut significantly on the east coast. In both cases the reason has been largest *La Nina* event since 1917.

Each of these three factors has seen recent changes that have driven expectations for utilities demand in different directions since the 13 December 2010 report. In summary:

- The outlook for residential construction has weakened due to slower population growth and expectations of higher interest rates; but
- Reconstruction from Queensland's natural disasters will have the opposite effect.
- Manufacturing continues to struggle against the rising $A and strong import competition, while mining output was temporarily hit by floods in Queensland; but
- The outlook for mining is stronger in the medium term as commodity prices remain strong and the global economy remains on track.

Yet, despite the shifts in demand patterns, supply is the key to the utilities sector's outlook.

The problem here is that no one yet knows what 'the rules' are going to be. Australia is seeing significant investment in water, with the public sector willing to build desalination plants to feed the urban need for water security and certainty.

Unfortunately, private electricity and gas businesses are still being left up in the air. There is a big need for investment in baseload capacity, but little willingness to follow through given the absence of clear rules for the future. The Federal Government has not helped on this score. After a lack of consultation on mining taxes became a key negative point against those proposed changes, the Federal Government did move early to flag its intentions around the introduction of carbon taxes. These would eventually give way to market-based cap and trade mechanisms. But last year's lack of consultation has become this year's lack of detail, leaving many worried as to exactly what lies ahead. The response from business so far has been to gradually pile in on the proposal, with upwards of 40 interest groups now having raised objections to the proposals.

Those supply problems are an elemnt the edging down of medium term growth expectations for the utilities sector – shown in Chart 5.1. The outlook for the next year is considerably weaker, although recent historical growth rates have also been lowered by the change in base year for real output estimation.

The utilities sector did not see a downturn in 2009 (in fact growth hit a high during this period). That was due to sharp growth in electricity output (up 10.5% in the year to June 2009) and water and waste services (which leapt by 20% at the start of 2009).

There were a number of reasons for that period of faster growth (including rapid population growth), but perhaps the main one is that the public sector found itself on the wrong side of voter displeasure as a long period of under-investment in Australia's urban infrastructure led to increasing frustration with services.

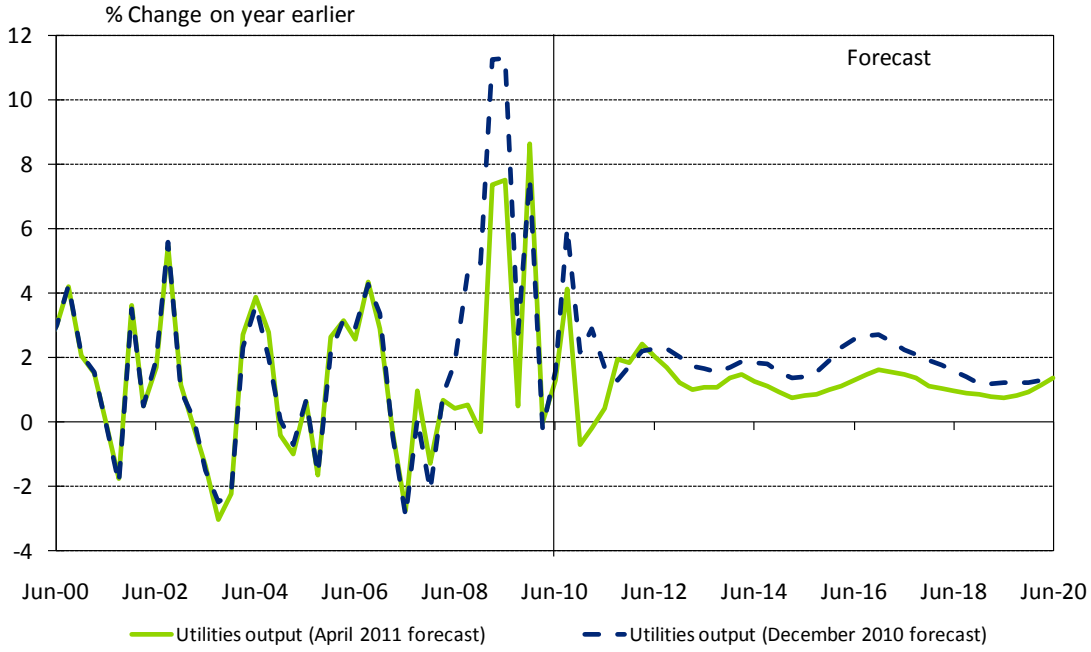
Although the timing and the nature of the recent lift in output varied from State to State, there was a greater willingness to spend on desalination plants and dams in the water sector, and on generation and distribution capacity in the electricity sector. However, the boost to the supply side capacity of the sector began when State Governments and their Federal funders had rather more money than they do today. Moreover, population growth is fading, while the pace of new housing construction starts, which had picked up earlier in 2010, is now dropping back once more. That combination underpins the relatively modest outlook for sectoral output growth, as does the lack of a settled carbon pricing policy in Australia

Yet even though the demand outlook is weaker than before, the utilities sector will still have to compete for its workforce in an environment in which the continued (and very strong) return to resource boom conditions raises the bar of the available wages in competitor sectors.

Add to that the lowered outlook for the growth in labour supply, and it is not surprising that wage levels and relativities in the utilities sector are also lifting relative to the national LPI compared with the patterns seen in our 13 December 2010 report for the AER.

Chart 5.1 shows that there has been a modest downward revision to the utilities output forecast since the 13 December 2010 report. Deloitte Access Economics now sees a slightly stronger short term dip from the recent growth. A recovery should emerge soon thereafter, with growth close to 1.5% per year expected over much of the forecast period.

Chart 5.1: Utilities output forecast change



Source: ABS, Deloitte Access Economics' macroeconomic model

5.1.2 Current LPI projections

LPI growth in the utilities sector has been surprisingly stable – all the more so given the sector's relatively small size. Year-to rates of increase in the sector's LPI have remained between 3.4% and 4.8% since early 2007 – a range that is similar to that exhibited by LPI growth rates for the nation overall (between 2.9% and 4.3% growth over the same period).

Moreover, as Chart 5.2 shows, our forecasts of utilities LPI growth expect that sort of result to be maintained over the next few years. LPI growth in the utilities sector is expected to average slightly more over that period – remaining close to 5% per year until 2012 and above 4% per year until 2014.

The chart also shows a moderate upward revision to be short term outlook for the LPI in the utilities sector. This reflects the combination of:

- A better than expected result in the December quarter data (growing by 1.5% in the quarter, ahead of the previously forecast 0.7%);
- Stronger flow on economic growth for key competitor sectors from high commodity prices;
- A generally faster rate of growth in expected overall LPI; and
- Rising labour supply constraints from slower population growth and lower skilled migration.

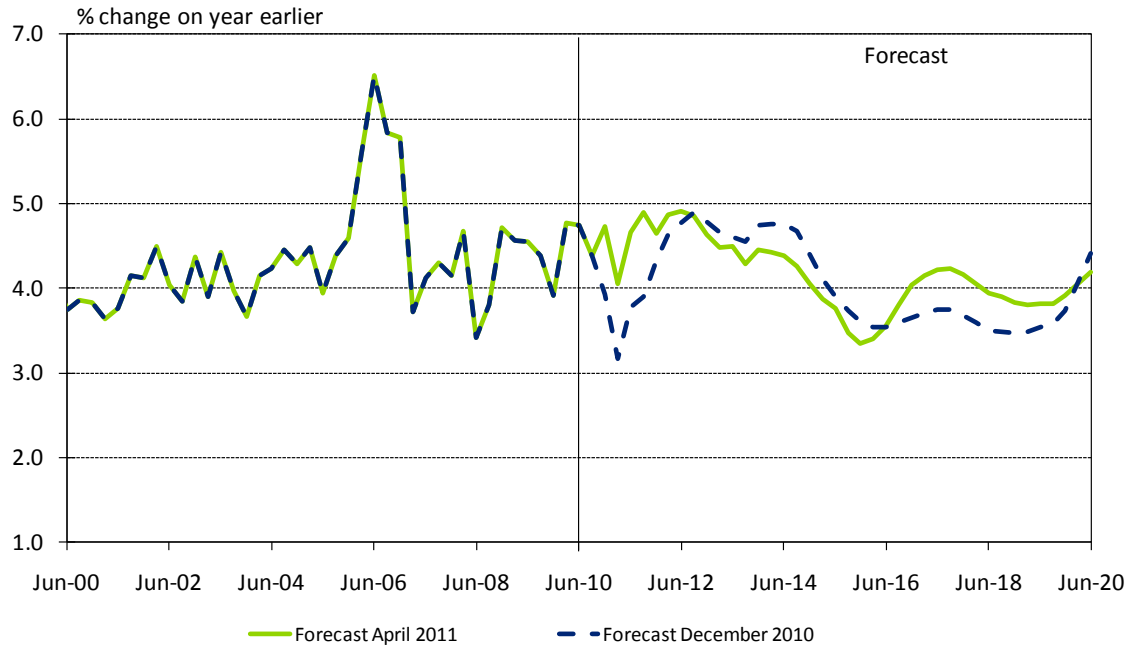
While the short term LPI outlook for the utilities is stronger, the medium term sees slightly slower rates of growth. Again this flows mainly from the overall national picture (where faster short term growth is followed by more moderate rises).

While the short term boost is projected to be unwound slightly, it does not completely disappear – utilities (and overall LPI) levels remain modestly higher than in the earlier forecast.

The gap between the two closes significantly between 2012 and 2016, but remains evident.

The key driver is that is the longer term strength in employment, which rises faster through the medium term than earlier forecast. Yet the same factors that we have typically expected to cut into longer term utilities wage growth – including declines in relative sectoral productivity and the eventually easing of the 'competitor' wage pressures (as growth in the mining sector LPI begins to move into line with the national average) – will limit the ability of the utilities sector LPI to moves faster than the overall national LPI rate in the longer run.

Chart 5.2: Changes in the forecast for utilities LPI growth



Source: ABS, Deloitte Access Economics' labour cost model

Wages in the utilities sector will be pulled in different directions by different factors.

In general, slightly slower rates of productivity growth constrain wages. Productivity levels in the utilities sector are much higher than most industries, but there are significant differences across the various sub-sectors of the utilities sector – electricity is particularly high (more than twice the level of output per employee seen in the gas sector, itself currently well above that in the water and sewerage sector). As a result, compositional effects within the industry can drive overall sectoral wage growth in differing directions.

As Deloitte Access Economics has noted before, the outcome of the debate over carbon pricing and the eventual path of output from alternative energy sectors could mean the trend in relative productivity will be greater than allowed for here, which would place further downward pressure on sectoral wages.

That still has limits. In the short term the momentum of growth in the sector and the emerging shortfall in migration, population and labour force growth is likely to place moderate but important pressure on wages due to skill shortages.

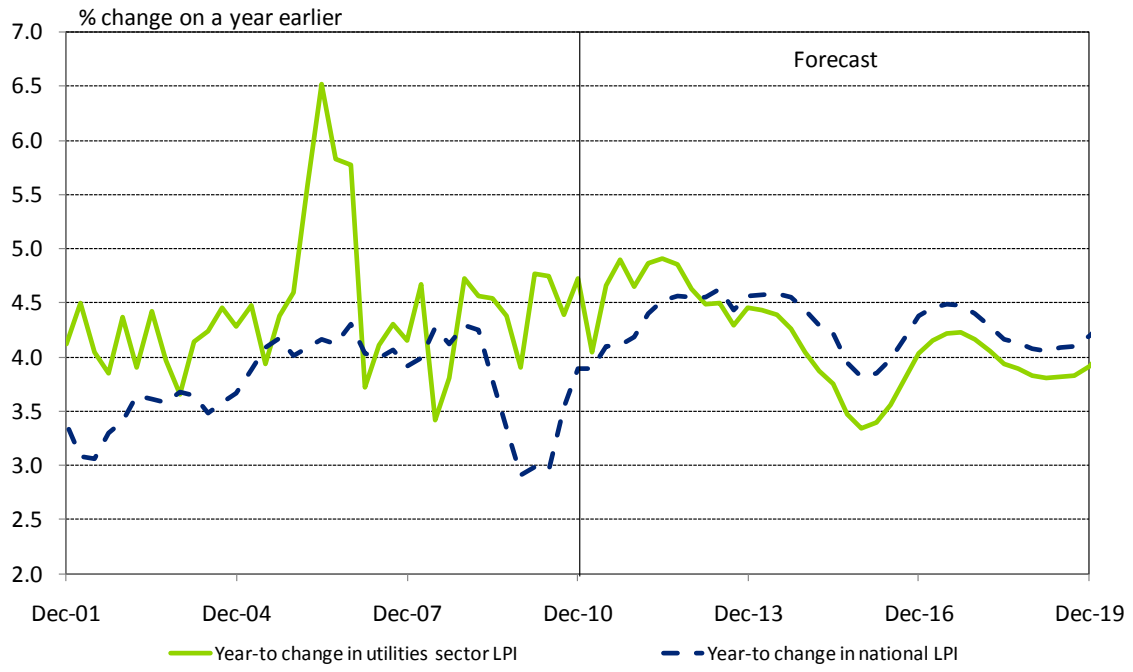
As seen in the last upturn (and partially in the downturn) even the fear of further shortages can be sufficient to move wages higher (or prevent them from declining notably) – particularly as the effects of skills demand on wages during the pre-GFC period are still fresh in the minds of employers.

The impact of wages in competing sectors is also a significant driver of movements in the utilities sector, with the mining sector placing some upward pressure on utilities wages, but with the manufacturing sector acting as an important constraining factor.

Over the medium term we would judge the impacts from the manufacturing sector to be slightly more significant – which largely explains why utilities sector wages lag the national average in the medium term.

Overall however, it is the short term boost to growth that dominates these forecasts. The impacts of that surge do fade, but the outlook for the utilities LPI remains modestly but consistently above where it was previously.

Chart 5.3: Forecast wage growth nationally and in the utilities sector



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

5.1.3 Comparison with EBA results

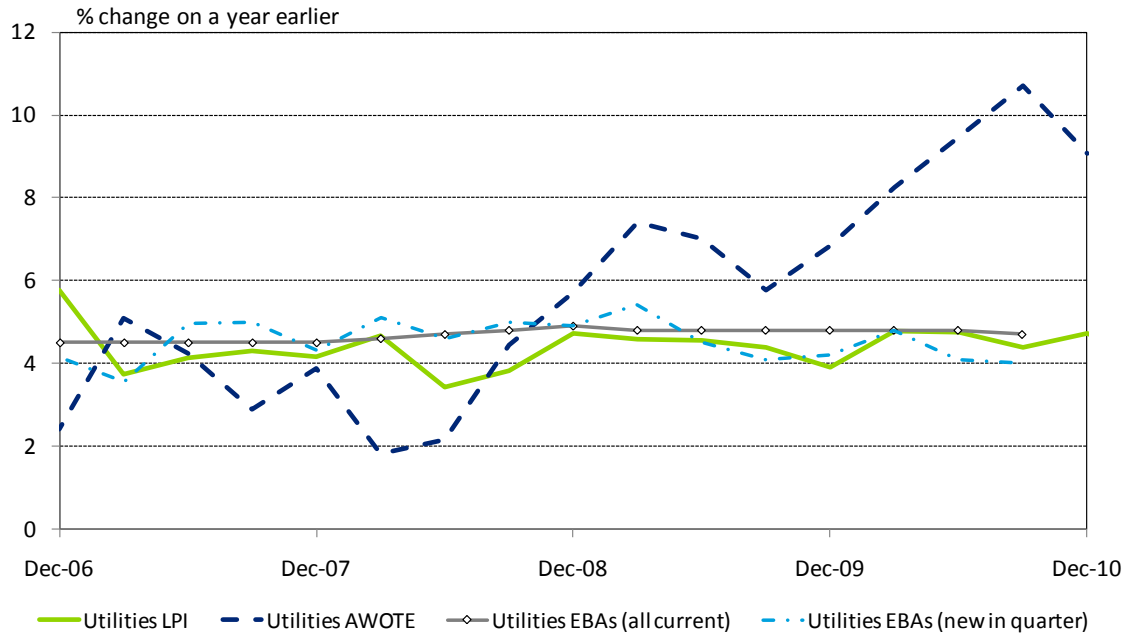
Chart 5.4 below compares growth in the utilities sector LPI with a number of other wage growth measurements that are produced on a regular basis.

The first measure shown is the **AWOTE** result for the national utilities sector. As the chart illustrates, the growth in this wage series is particularly volatile, and, as noted elsewhere in this update, this volatility limits its use in forecasting.

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. Two series are shown:

- the first (**all current EBAs**) shows growth over the preceding year 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 LPI;
- the second (**all new EBAs in quarter**) series shows annualised growth that will occur under any agreements commencing in the quarter shown. This series is more indicative of future trends in the first EBA series – for example, if there were to be a sustained decline in wage growth that will occur under new agreements we would expect the actual rates received to gradually fall in line with the rate as older (and more generous) agreements end.

Chart 5.4: Measures of utilities sector wage growth



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

As noted elsewhere in the report, the AWOTE series shows a far higher degree of volatility than does the LPI series. It also bears little relation to the measured increases found in relevant EBAs across this period.

By contrast the LPI series follows a similar path to the EBA measures, tending to lag slightly behind movements in new agreements. The latest results from the Department of Education, Employment and Workplace Relations continue to suggest a minor moderation in upcoming wage growth, some of which flowed through to the slight decrease in utilities LPI growth in mid-2010.

The latest rate of growth (4.7% per annum for all agreements operating at the end of September 2010, slightly down on results evident through 2009 and early 2010) will have an impact on growth over the medium term – only around 9% of agreements are re-negotiated in any given quarter, meaning a typical agreement lasts around three years.

6 Competitor industry economic outlooks

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

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

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

Impacts from natural disasters mean that some sectors start the year on the back foot – most notably farmers and miners. Moreover, the long hoped for recovery in housing starts is being further delayed as higher interest rates and lower first homeowner subsidies take their toll. That means the expected storyline for 2011 sectoral growth, with mining and construction leading the way, looks less likely than it did at the end of 2010.

Yet even with the recovery in housing activity dragging the chain, the sheer size of the surge in engineering work that is underway seems set to propel construction growth through the course of 2011, moving it towards the fastest in the nation. There is good news in business services too. Although the wider economy is very patchy, professionals are riding a lift in corporate profits. And then there are the sectors with strong underlying fundamentals, such as drives the further projected growth in health (despite tight State Budgets).

However, the prosperity of the moment is narrowly based. Most manufacturers are being very hard hit by the $A, while currency questions are also affecting foreign student numbers and the tourism sector. Similarly, the swing to saving among Gen Y is keeping retailers on the back foot. Even the public sector looks set to slow as stimulus run its course.

In brief for the key sectors we expect that, **like the utilities sector, construction and mining will take a hit in terms of economic growth potential through 2011, although all three will soon rebound.** In each case the expectation of the acceleration through 2010 being maintained into a further year of solid growth in 2011 has been upset by one-off factors, which should unwind across the year.

That said, weakness in output is not the same as weakness in employment for these sectors.

Administration services bucked those trends in recent quarters, although it should soon revert to more stable growth.

6.1 Mining sector projections

6.1.1 Changes to the outlook

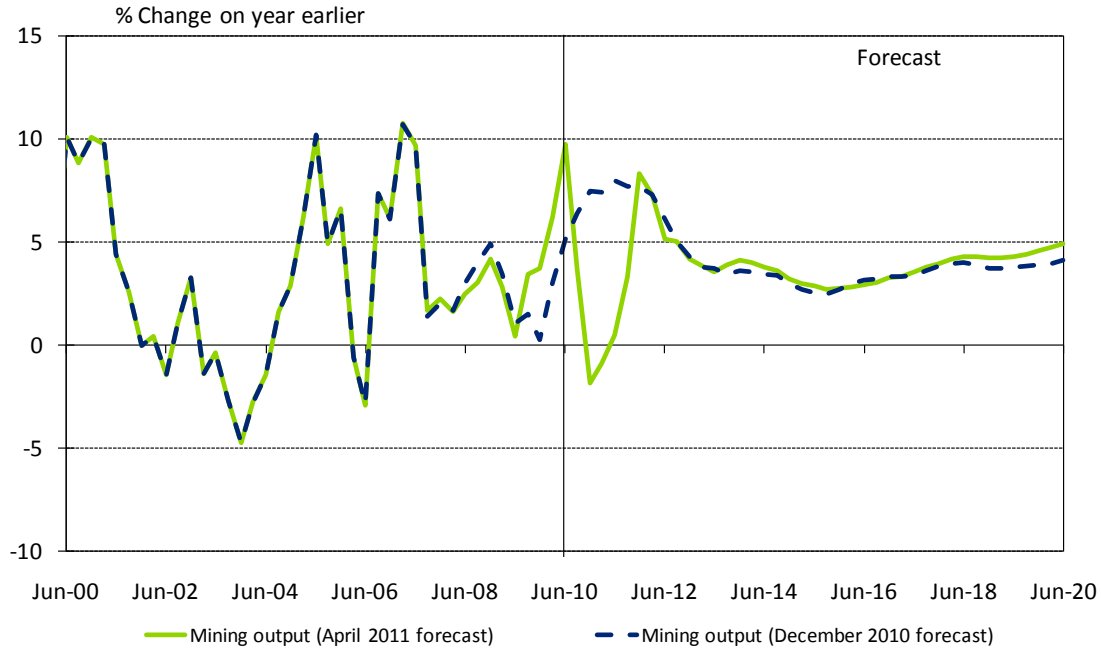
Chart 6.1 below shows:

- **the mining sector maintains a strong outlook**, particularly solid for a sector that just a decade ago was being derided as an old world drag on Australian economic growth prospects; but
- **the impacts of floods in late 2010 and early 2011 were substantial**, keeping real output levels relatively stagnant (and hence cutting into rates of measured year-to output growth for the next twelve months).

As Deloitte Access Economics has also stressed, it won't be a lack of desire that will stop Australia digging as deep as we'd like as fast as we'd like. Rather, we will be tripping over a series of supply side obstacles:

- **First**, government and internal corporate approval processes are complex, and it simply takes time to green light big dollar developments no matter how tempting current commodity prices look.
- **Second**, and most importantly, skill shortages are likely to cruel the sector's growth hopes no matter how cashed up it is. The unemployment rate is already back below 5%, and the fastest employment growth in the land is in mining. Although miners can hope to steal workers away from employers in construction and the utilities, the combination of specific skill needs on the one hand and remote work locations on the other suggest that skill shortages in Australia's mining sector are about to become rather more notable.

Chart 6.1: Mining output forecast change



Source: ABS, Deloitte Access Economics' macroeconomic model

Yet those supply side constraints will simply slow this sector's advance. The next few years will still see an enormous lift in production in LNG (think the likes of Gorgon, Pluto and North Rankin), iron ore (the fifth stage of BHP Billiton's Rapid Growth project, Gindalbie Gold's iron ore mine and pelletising plant near Geraldton, and Atlas Specialty Metals' Pardoo magnetite iron ore) and coal (Rio Tinto's extension of the Kestrel longwall mine in Queensland's Bowen Basin, Xstrata's Anvill Hill opencut coal mine near Muswellbrook).

The reason that supply constraints will delay rather than prevent long term expansion is the demand side of the equation. Demand from emerging Asia is excellent, and prices for key commodities such as coal and iron ore remain elevated. One can argue the short term strength of Chinese industrial commodity demand, and Deloitte Access Economics certainly has its doubts on that score. Yet it cannot be argued that the longer term strength of developing country demand for industrial commodities is anything but strong.

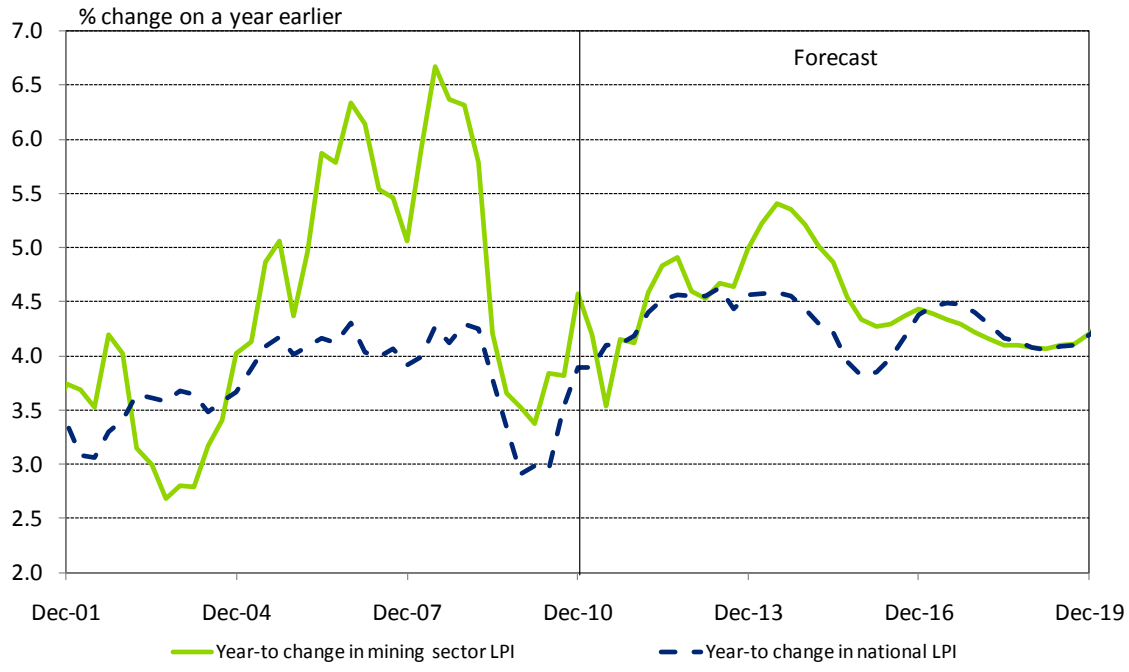
Deloitte Access Economics sees mining sector output growth of 6.0% in 2011-12 and a further 4.2% increase in 2012-13. ABARES is even more optimistic still, seeing gains of 8.3% in 2011-12 and 5.8% in 2012-13.

6.1.2 Current LPI projections

The mining sector is one of the key competitors for the utilities sector.

The relative interchangability of skills in a notable proportion of the utilities sector to mining work means that differences in wage differentials are more likely to see workers move from the lower paying sector to the higher. (Or, failing that, allow them to suggest the possibility of that move when they conduct wage negotiations.)

Chart 6.2: Mining LPI growth forecast



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

This was the case during the commodity price boom, which generated strong growth in both profits and employment (though not output) in the mining sector. The extent of the skill shortage saw mining wages grow at annual rates of around 6% for several years (see Chart 6.2).

While the outlook for mining output growth turned down sharply since the 13 December 2010 report, the demand for labour has been rather less affected, and the impacts on the short term outlook for the LPI in the sector are more mixed.

Strength in late 2010 (pre-flood damage) saw wage growth accelerate ahead of earlier expectations, with the December quarter 2010 seeing mining LPI rise by 1.4%, above our earlier expectations of 0.7%. Yet the changes from here onwards are modest. While we don't expect the recent gains to be lost, neither do we expect the acceleration to be maintained.

While short term output will be hurt by the Queensland floods, the boom in world commodity demand has remained ahead of our expectations from 13 December 2010 report. Further strength from China – where policymakers will be even more aware of the dangers of underperforming economies thanks to the turmoil in north Africa and parts of the middle east – and the banishing of double-dip recession fears globally augurs well for the mining sector in the medium term.

On balance, as Chart 6.2 shows, mining LPI growth is likely to soon lift again – initially in line with the national upswing and then ahead of it as the second resources boom peaks. Growth in the later years returns to be close to national average rates, implying that the mining sector will largely maintain the gains it will make in relative terms. That sort of outperformance is often difficult to maintain over the longer term unless it is backed up by a matching relative gain in productivity, or by a significant underlying shift in economic performance.

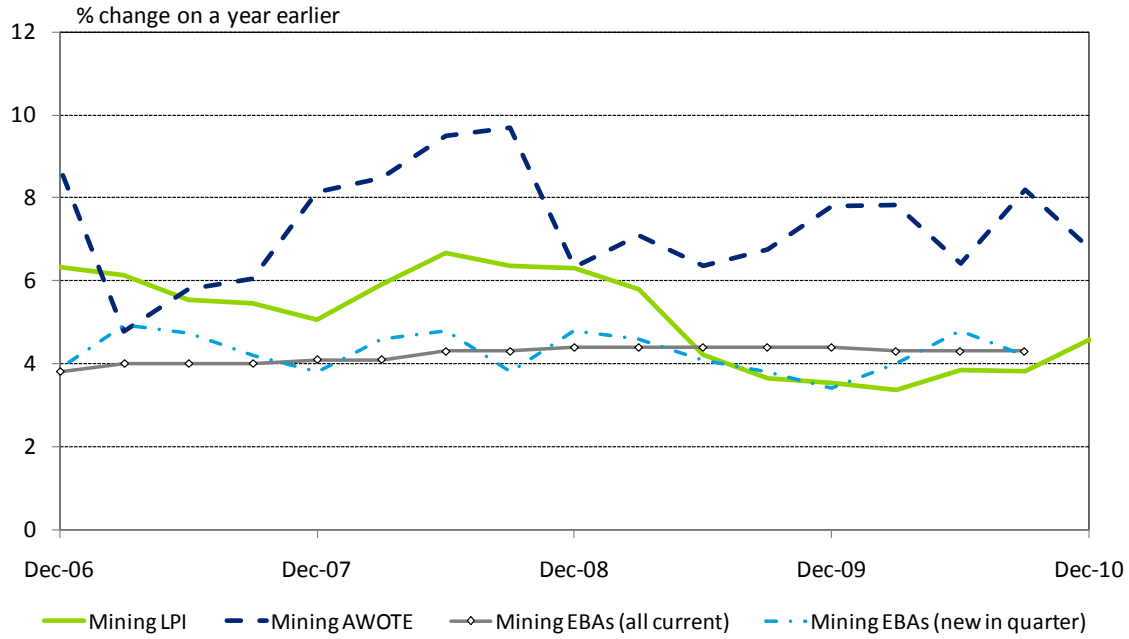
It should also be noted that, in dollar terms, a 4-5% rise in mining wages is rather larger than a 4-5% increase in general wage rates. While these figures are an index in LPI terms, and while AWE and AWOTE growth measures have differed significantly from the LPI itself, the two should be linked over economic cycles. As mining wage levels (in terms of actual dollars) are around 60% above the average, the absolute increases are similarly larger than those in the general workforce.

6.1.3 Comparison with EBA results

There has been a correlation between the movements in the LPI and the trends in new EBAs in the mining sector (see Chart 6.3), reflecting the widespread use of EBAs in the sector (around 23% of workers in the industry were covered by EBAs at the end of 2009).

There has also been a far closer relationship between the LPI and AWE series in this sector – suggesting slightly less compositional shifts such as changing average work hours. Growth in the AWOTE series has remained well above other measures since 2008, although the gap has been more consistently than that seen in the other sectors in this update report.

Chart 6.3: Measures of mining sector wage growth



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

The first half of 2010 saw the first signs of rising wage pressures through the LPI and EBA measures – although the overall EBA growth measure has eased, partly because of the weak growth seen in 2009.

The latest EBA results were lower than expected, although that may be a temporary hiatus, with the LPI measure pushing higher at the end of the year.

6.2 Construction sector projections

6.2.1 Changes to the outlook

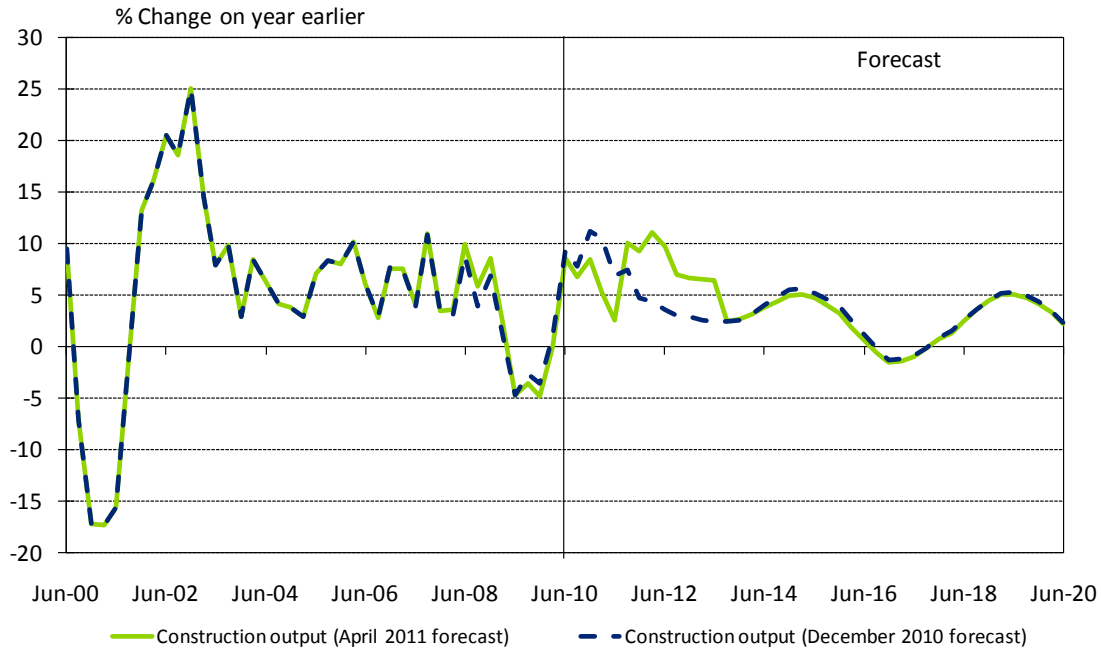
As the above discussion of mining prospects makes clear, Australia has what the world wants. But to get it requires work – construction work. Therefore one of the clearest implications of that will be a surge in engineering construction spending in Australia over the next few years.

The big dollar engineering projects that are either already underway or announced are enough off their own bat to send this key part of Australia's construction sector into overdrive.

Yet as good as the news is on engineering construction, the outlook grows ever more frustrating for **housing construction** – and the latter is the bigger contributor to the overall construction sector.

That is why the forecasts seen in Chart 6.4 struggle to gain much altitude in the short term.

Chart 6.4: Construction output forecast change



Source: ABS, Deloitte Access Economics' macroeconomic model

There are twin-barrelled problems on the residential front: interest rates rose and first home owner grants fell through 2010, and that year finished with a Reserve Bank interest rate rise being topped up by the banks themselves. The outlook for housing construction has been beating a rapid retreat ever since. Nor does it help that many big residential developers – who build big apartment complexes – are still struggling to get finance even when they get considerable pre-commitments to their developments.

Add in the fast fade in population growth that is now underway, and it is no wonder that leading indicators of residential activity have taken a powder.

Housing starts in 2011 will struggle to break 160,000 – a poor performance given the considerable lack of housing construction in recent years and the resultant pent up demand for new homes.

That said, as poor as leading indicators look at the moment, chances are that the upturn in housing construction is better seen as delayed than denied. This nation has simply built too few houses for too long, leaving the average number of people in a dwelling going up for the first time in a century. That squeeze will create its own push for more construction. So too will the overall tightness of residential vacancy rates.

Moreover, the twin disasters of floods and cyclones will also add to housing activity in 2011 and 2012. The damage was particularly bad in Queensland, leaving behind 30,000 damaged homes.

The outlook for **commercial construction** lies closer to the delayed recovery projected for housing activity than it does to the robust good news expected for engineering construction. In common with the housing outlook, short term activity is likely to be relatively weak. That is

because a bunch of offices and shopping malls didn't get the go ahead for construction during the global financial crisis, so they aren't being built at the moment.

However, demand growth is good in office markets and it is set to improve in retail, and the current weakness in construction in those sectors means that vacancy rates are likely to be headed down sooner rather than later. That is already beginning to prompt some movement at the station, with projected activity in commercial construction seen lifting in 2012 and reaching a position of greater strength by 2013.

On balance that will leave construction as one of the fastest growing sectors in Australia – just not quite as fast growing as it looked likely to be a year ago.

6.2.2 Current LPI projections

As with the mining sector, the long run of economic growth seen in Australia was good news for the wages of workers in the construction industry. The broad surge in construction activity, including demand for new houses, home renovations and office construction saw the demand for construction workers rise, and hence labour costs rose – at times sharply (see Chart 6.5).

While the surges subsided with the GFC, growth remained above the national average, and we expect the upswing in wage performance to be led by the construction just as much as by mining. So far that has been the case, with a sharp acceleration in construction sector LPI growth.

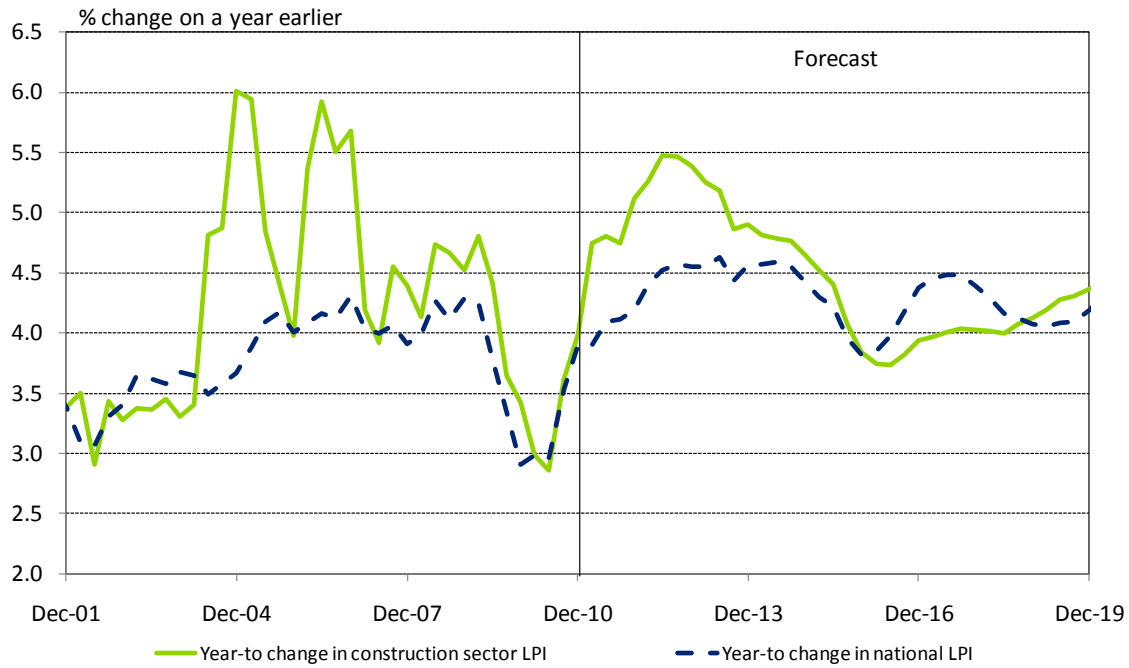
The December 2010 LPI results for the construction sector were in line with our expectations. However, as noted, our expectations for construction sector wages were that they would grow faster than the average in the quarter. That did not occur.

As in previous work undertaken for the AER, the forecasts in this update report see greater relative strength in both mining and construction wages compared with the national LPI level in the next few years. Growth in construction sector wages should reach 5.5% per year by 2012 – well ahead of the national average but below the rates reached in the middle of the last decade.

That phase of excess growth is projected to prove temporary – mainly due to the role of the supply side, as more workers leave occupations in other sectors, arrive from overseas, put off study, stay longer in the workforce, or return to the workforce. As that is a longer term pattern, the short term outlook has been upgraded due in part to lower population growth (particularly overseas migration).

As we have often noted, the stronger-than-average demand boost to mining and construction provides a significant impact on wage relativities, but not a permanent one.

Chart 6.5: Construction LPI growth forecast



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

6.2.3 Comparison with EBA results

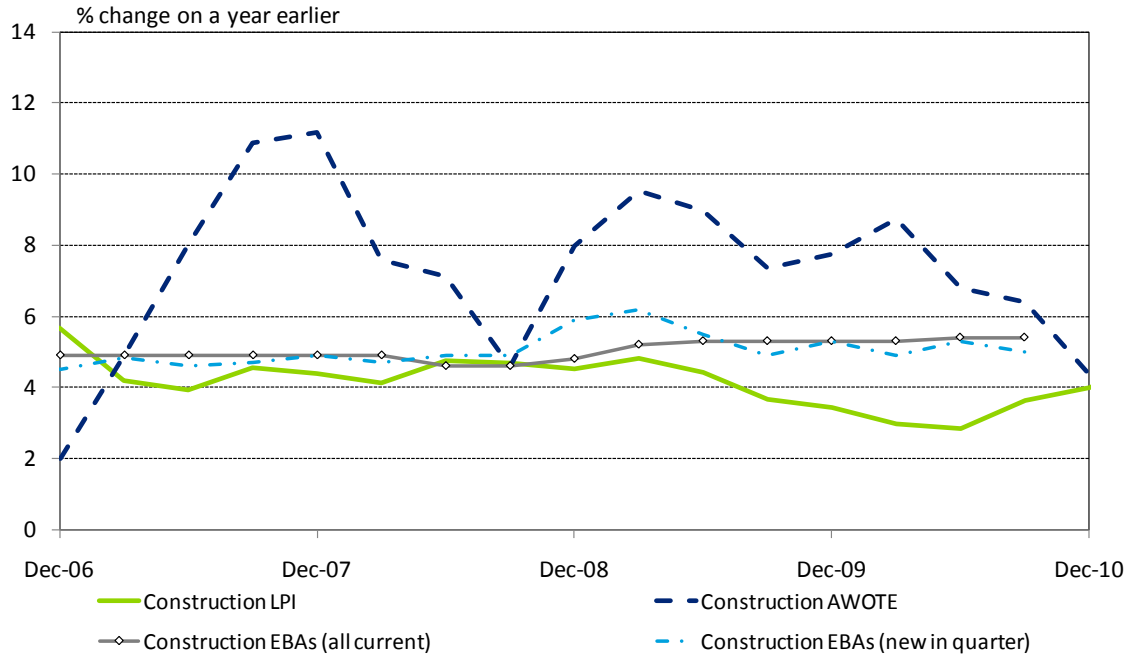
Comparative wage results for the construction sector differ from the other sectors considered here, with EBA results well ahead of the comparative LPI measures.

That said, the gap has begun to close, with growth in the LPI increasing sharply across the second half of 2010 at the same time as the rate of increase in sectoral AWOTE slumped to its slowest since 2006.

Growth rates in wages negotiated via EBAs remains were ahead of the national average (growth is close to 5½% per year, while the all industries average is only marginally above 4%). EBA growth rates have been trending upwards in the sector since mid-2008 – accelerating by around one percentage point at the same time as total growth rates have been very stable.

It is also worth remembering 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.

Chart 6.6: Measures of construction sector wage growth



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

6.3 Administrative services sector projections

6.3.1 Recent sectoral developments

This is a 'catch all' sector, containing disparate sectoral elements with a range of different economic drivers.

Specifically, the administrative and support services sector of the Australian economy consists primarily of building cleaning, pest control and gardening services on the one hand and employment services (recruitment, placement) on the other.

Each accounts for about half the employment in the administrative and support services sector. The sector also has a presence in call centre employment, document preparation, and credit reporting.

We often used to use the example of cement as a product that had a lot of natural protection – it was both low value and heavy, making it harder for imports to make inroads. You may think of the administrative services much the same way – naturally protected from import competition – but events of the last couple of years are starting to see advances in technology combined with the ready availability of low cost professional services such as labour based in the likes of India to mean admin services in Australia are starting to see competition from the rest of the world.

Of course, it isn't thought of as 'competition'. If it has a label, it is typically 'outsourcing'. But the rise of outsourced activities to other nations is a reminder that the some services too are losing a degree of market share to imports.

In addition, the decline in office demand and a slowdown in growth in the need for some maintenance services were a key area of weakness in the economic downturn, as was the fall in demand for employment services, which were squeezed both in demand terms (fewer jobs on offer, lower recruitment levels) and supply terms (relatively fewer workers who kept jobs were willing to look elsewhere for employment, preferring some level of certainty).

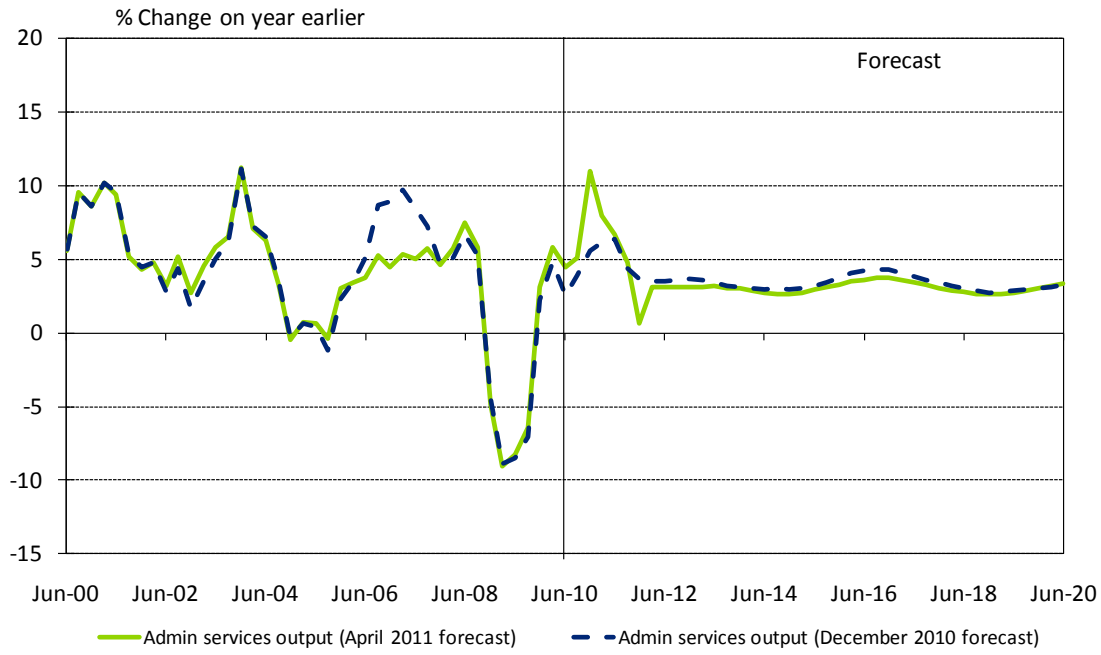
In addition, some gardening and related services went back 'in-house' through the crisis, as both corporates and families trimmed back their spending. That worsened structural weakness in the demand for these services, which has been affected by weaker than average rainfall along the east coast since 2002-03.

The good news for the sector is that activity is strengthening as national income leverages the resources boom, meaning that the local market for a number of services is more active than most. Upstream work from professional services (the ones that this sector 'supports'), such as increasing demand for mergers and acquisitions is also generating good demand.

However, this is a bellwether sector, and it too is feeling the 'two speed' strains evident in the wider Australian economy. Demand for services from some sectors and some States remains patchy. That colours the outlook.

Yet the last six months in particular have been impressive. Administration services – particularly employment placement services and travel agents – have benefited from increased demand for workers (and the increasing confidence of workers to change jobs) and the currency-driven shift towards international travel – less affected so far by the boom in internet bookings. And a lot of those GFC impacts have unwound. Employment in building management and pest control has recovered rapidly over the past eighteen months – pushing back towards previous highs.

Chart 6.7: Administration services output forecast change



Source: ABS, Deloitte Access Economics' macroeconomic model

Chart 6.7 above shows that the sharp decline in output during the GFC was short lived, and outlook growth returned to trend by early 2010. Yet the second half of the year was a revelation, with output growth leaping above 10% in the year to December.

We don't expect that outperformance to last, and the sector should move back in line with the growth in the general economy (bear in mind the downward 'spike' in growth in December 2011 is a mirror of the upward jump in December 2010 which we feel is an overstatement of the real position).

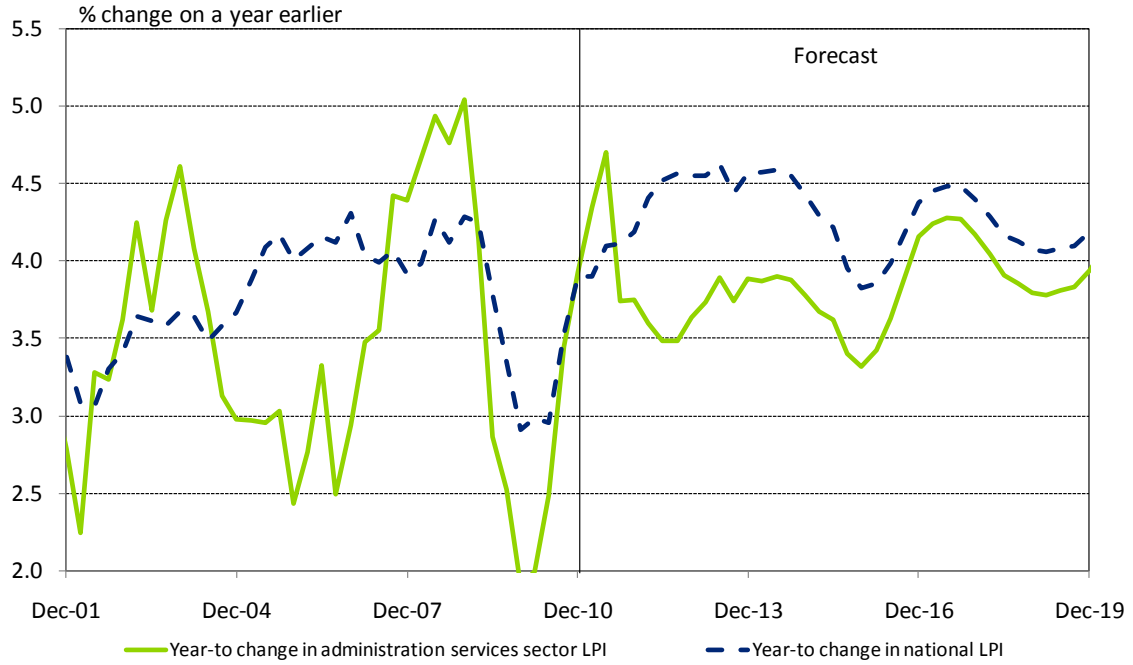
Chart 6.7 shows that the short term outlook has lifted but the longer term outlook is basically unchanged.

6.3.2 Current LPI projections

There is a marked similarity in the profiles of output growth and LPI growth for the administration services sector. Just as output growth rates fell well below the overall rate in 2009, so too did LPI growth rates fall well below the national average (see Chart 6.8).

Similarly, just as output growth in the sector has spiked in recent months, so to have LPI expectations. Year-to growth in the LPI is already in line with the overall average, and should move ahead of the pack n the early part of 2011.

Chart 6.8: Administration services LPI growth forecast



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

As Chart 6.8 above shows, growth in the LPI in this sector has been volatile in recent years – having moved from well below the national average from 2005 to 2006, to well above in 2007 to well below in 2009 as the market slumped. Part of that volatility can be explained by the administration services sector's focus on providing services to other sectors. Demand tends to rise once other sectors have begun to grow stronger – for example as the last resources boom

gathered pace, demand for head hunters and placement agencies began to grow rapidly, but these sectors were the first dropped once the problems in global finance emerged.

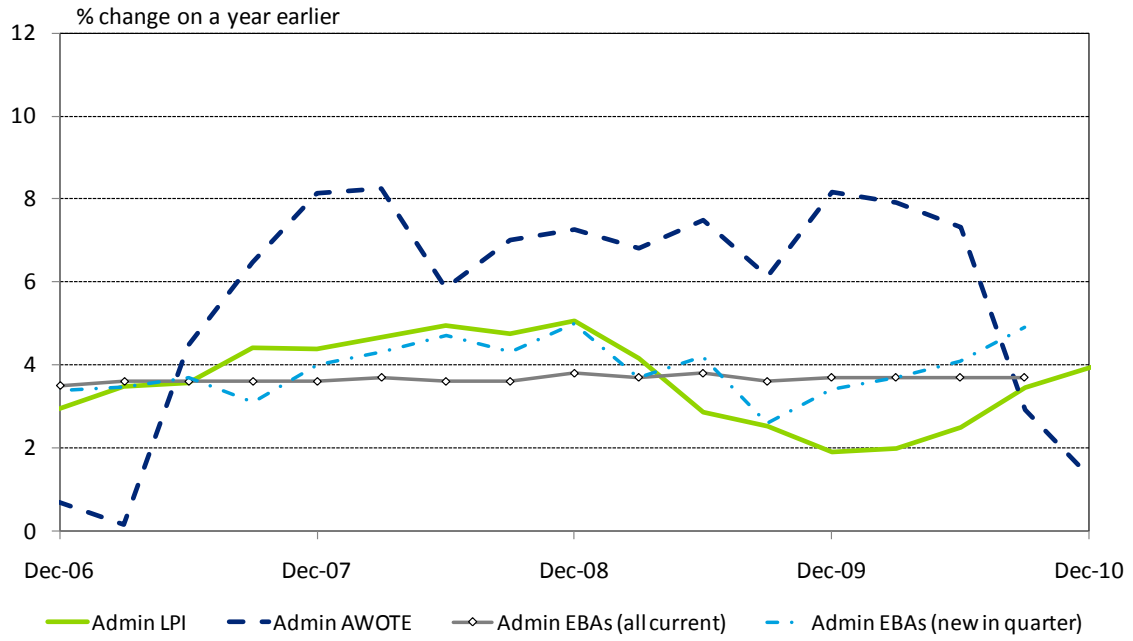
Although we expect the short term to move ahead of the average, Deloitte Access Economics projects that the pace of growth in the sector's wages will struggle to keep up with the average in the medium term. As noted above, other sectors are more likely to see growth driven by skill shortages and (unlike utilities and to a lesser extent manufacturing) this sector is not a competitor with those sectors, limiting the likelihood of 'catch-up' wage demands. Moreover, average skill levels are lower, whereas there is a longer term trend towards an increased skill differential 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 – driving a compositional wedge between this sector and the national average. That will not last forever, and gradually wage growth in the sector is likely to move towards tracking the general rate of LPI increase.

6.3.3 Comparison with EBA results

Growth in wages under EBAs in the administration services sector had been easing across 2009, in line with the measured performance of the LPI in the sector. Growth in wages in new EBAs began to recover around six months before the LPI measure showed signs of a turnaround. As with most other sectors, AWOTE levels surged had been growing very rapidly recently, but growth rates have slipped during the last six months. Unlike other sectors however, AWOTE growth is now well below the LPI equivalent.

Chart 6.9: Measures of administration services sector wage growth



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

Slightly fewer than average workers in this sector are covered by EBAs (around 18% – compared with 19% overall and close to 30% in the utilities sector). Agreements in this sector

have tended to run for a relatively long period (around a year longer on average in the last couple of years) suggesting it may take longer for the acceleration in general wage growth to flow through to this sector – constraining wage growth somewhat in the short term.

6.4 Sectoral projections at the national level

The following tables outline our expectations of growth in national LPIs in the utilities sector, and in its key competitors.

Table 6.1: Industry LPI forecasts – nominal

Financial year changes in nominal national industry sector LPI

Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
All industries	4.1	3.0	3.9	4.3	4.6	4.5	4.4	3.9	4.4	4.3
Utilities	4.4	4.5	4.5	4.8	4.6	4.4	4.0	3.4	4.1	4.1
Mining	5.7	3.6	4.0	4.4	4.7	5.1	5.1	4.4	4.4	4.2
Construction	4.6	3.2	4.3	5.1	5.3	4.8	4.6	3.9	3.9	4.0
Administration services	4.2	2.2	4.1	3.6	3.7	3.9	3.7	3.4	4.1	4.1

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

Table 6.2: Industry LPI forecasts – real

Financial year changes in real national industry sector Labour Prices

Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
All industries	0.9	0.7	0.9	1.5	1.8	1.9	1.9	1.2	1.6	1.9
Utilities	1.2	2.1	1.4	2.1	1.8	1.8	1.5	0.8	1.3	1.7
Mining	2.4	1.2	1.0	1.7	1.9	2.4	2.6	1.7	1.6	1.8
Construction	1.4	0.9	1.3	2.4	2.5	2.2	2.1	1.2	1.2	1.6
Administration services	1.0	-0.1	1.1	0.9	0.9	1.2	1.3	0.8	1.4	1.7

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

7 Utilities and competitor sector wage growth by State

This chapter sets out the updated projections for LPI projections at the State level for the utilities sector and in the three key competitor industry sectors.

7.1 Technical changes since the last report

The key factors affecting industry history and projections (particularly the change in the base year for the calculation of 'real' economic variables) and the State history and forecasts have also affected our detailed results.

While there is some additional discussion of these matters in Appendix D, the key points to bear in mind are:

- Not all industries have LPI published for all States (see Table D.1 for a detailed list). Some of those for which data is suppressed do have forecasts for average weekly earnings available. As noted later, the differential movements in overall AWOTE (compared with overall LPI) need to be accounted for if the AWOTE measure is used to inform an estimate of the detailed LPI measure.
- Where no State-specific industry LPI or AWOTE figures are available, a combination of the overall national growth rate for that sector and the overall State growth rate is assumed. Among the key sectors shown here, this only affects the mining sectors in the ACT and Victoria, which are particularly small.[6] (Note that ABS is reducing over time the range of sectoral by State level AWE and AWOTE data which it is willing to release – and may cease altogether at the end of 2011 – see Section 8.5 for further discussion.)

7.2 National 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 the smaller jurisdictions.

Forecasts for national and sectoral wage growth are shown in Table 7.1. The forecast variables include real and nominal LPI, and real and nominal productivity adjusted LPI.

Table 7.1: National wage forecasts

Financial year changes in nominal national industry sector LPI

Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
All industries	4.1	3.0	3.9	4.3	4.6	4.5	4.4	3.9	4.4	4.3
Utilities	4.4	4.5	4.5	4.8	4.6	4.4	4.0	3.4	4.1	4.1
Mining	5.7	3.6	4.0	4.4	4.7	5.1	5.1	4.4	4.4	4.2
Construction	4.6	3.2	4.3	5.1	5.3	4.8	4.6	3.9	3.9	4.0
Administration services	4.2	2.2	4.1	3.6	3.7	3.9	3.7	3.4	4.1	4.1

[6] The ACT's mining industry commonly shows up as having no employment in the labour force survey estimates, while Victoria's mining sector employs around 10,000 people in a total labour force of 2.7 million.

Financial year changes in real national industry sector Labour Prices

Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
All industries	0.9	0.7	0.9	1.5	1.8	1.9	1.9	1.2	1.6	1.9
Utilities	1.2	2.1	1.4	2.1	1.8	1.8	1.5	0.8	1.3	1.7
Mining	2.4	1.2	1.0	1.7	1.9	2.4	2.6	1.7	1.6	1.8
Construction	1.4	0.9	1.3	2.4	2.5	2.2	2.1	1.2	1.2	1.6
Administration services	1.0	-0.1	1.1	0.9	0.9	1.2	1.3	0.8	1.4	1.7

Financial year changes in nominal productivity adjusted Labour Price aggregates

Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
All industries	4.3	2.0	4.7	3.5	3.6	3.2	2.4	1.8	2.3	2.3
Utilities	5.3	3.2	5.8	4.1	3.7	3.1	2.1	1.3	2.0	2.1
Mining	7.2	2.3	6.3	3.8	3.8	3.7	3.3	2.3	2.4	2.1
Construction	4.9	2.3	4.8	4.2	4.2	3.7	2.6	1.8	2.2	2.1
Administration services	4.9	2.0	4.9	3.1	2.8	2.5	1.8	1.3	2.0	2.0

Financial year changes in real productivity adjusted Labour Price aggregates

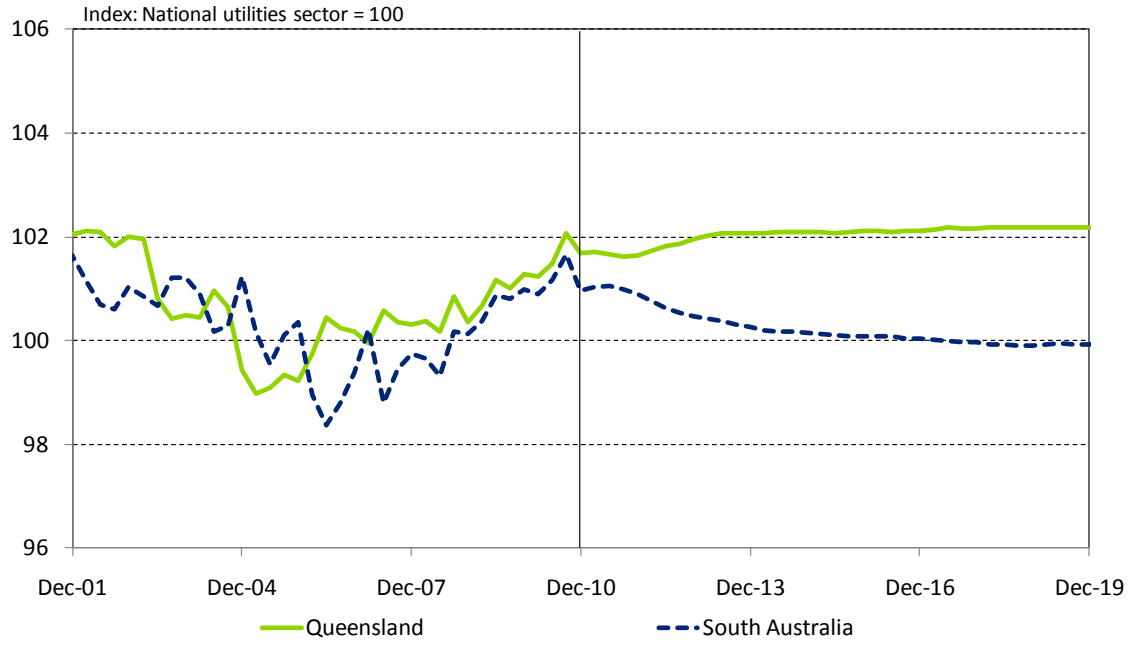
Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
All industries	1.2	-0.3	1.7	0.8	0.9	0.6	0.0	-0.9	-0.4	-0.1
Utilities	2.1	0.9	2.8	1.3	0.9	0.4	-0.3	-1.3	-0.7	-0.3
Mining	4.0	0.0	3.2	1.1	1.0	1.1	0.8	-0.4	-0.3	-0.2
Construction	1.7	0.0	1.8	1.4	1.4	1.0	0.2	-0.8	-0.5	-0.2
Administration services	1.7	-0.4	1.9	0.3	0.0	-0.1	-0.6	-1.4	-0.7	-0.3

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

Relative movements in the utilities sector LPI by State are shown in Chart 7.1. The general downward trend in the Queensland and South Australian results from 2001 to 2005 reflect the long run upswing in New South Wales' utilities LPI across that period.

Since 2007 the strength in utilities LPI has been seen in Queensland, South Australia, Western Australia and the Northern Territory – the other States having lost ground in relative terms.

Chart 7.1: Relative movement in utilities sector LPI by State



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

Both Queensland and South Australia have undergone an extended period of recovery in relative wage rates in the utilities sector after seeing declines from 2000 to 2005. That is not surprising given the strength in competitor industries to those sectors – the local strength of the mining boom across most of that period has flowed on to wage demands in other industries – most crucially construction.

Such was the strength of momentum in construction when the GFC hit, and such was the size of the pipeline of work yet to be done, that relative wage movements in the utilities sectors of the resource-intensive States were not able to be undone. While total wage growth slipped, it slipped relatively more in other industries than it did in the utilities, construction and mining.

There are some divergences from here. The strength of the States during the GFC meant that the negative impacts of falling manufacturing wages on the South Australian utilities LPI were not significant. Yet that underlying drag cannot be avoided forever. It will have a negative impact on utilities sector wages in general, but there will be relatively more impact in South Australia.

7.3 Queensland projections

Table 7.2: Queensland wage forecasts

Financial year changes in Queensland nominal Labour Price aggregates

Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
All industries	4.2	3.3	4.2	4.1	4.8	4.6	4.4	4.0	4.5	4.4
Utilities	4.9	5.0	5.0	4.8	4.9	4.5	4.0	3.5	4.1	4.1
Mining	6.7	3.8	3.9	4.2	5.0	5.2	5.3	4.5	4.5	4.3
Construction	5.9	2.9	3.8	5.0	5.7	5.1	4.8	4.1	4.1	4.2
Administration services	4.3	1.6	3.9	3.5	4.1	4.2	4.0	3.7	4.4	4.3

Financial year changes in Queensland real Labour Price aggregates

Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
All industries	0.4	0.6	0.9	1.6	1.9	1.7	1.7	1.1	1.5	1.9
Utilities	1.1	2.2	1.7	2.2	2.0	1.5	1.3	0.6	1.2	1.6
Mining	2.9	1.0	0.7	1.6	2.1	2.3	2.5	1.6	1.6	1.8
Construction	2.0	0.2	0.6	2.4	2.8	2.1	2.1	1.1	1.2	1.7
Administration services	0.5	-1.1	0.6	0.9	1.3	1.2	1.3	0.8	1.4	1.8

Financial year changes in Queensland nominal productivity adjusted Labour Price aggregates

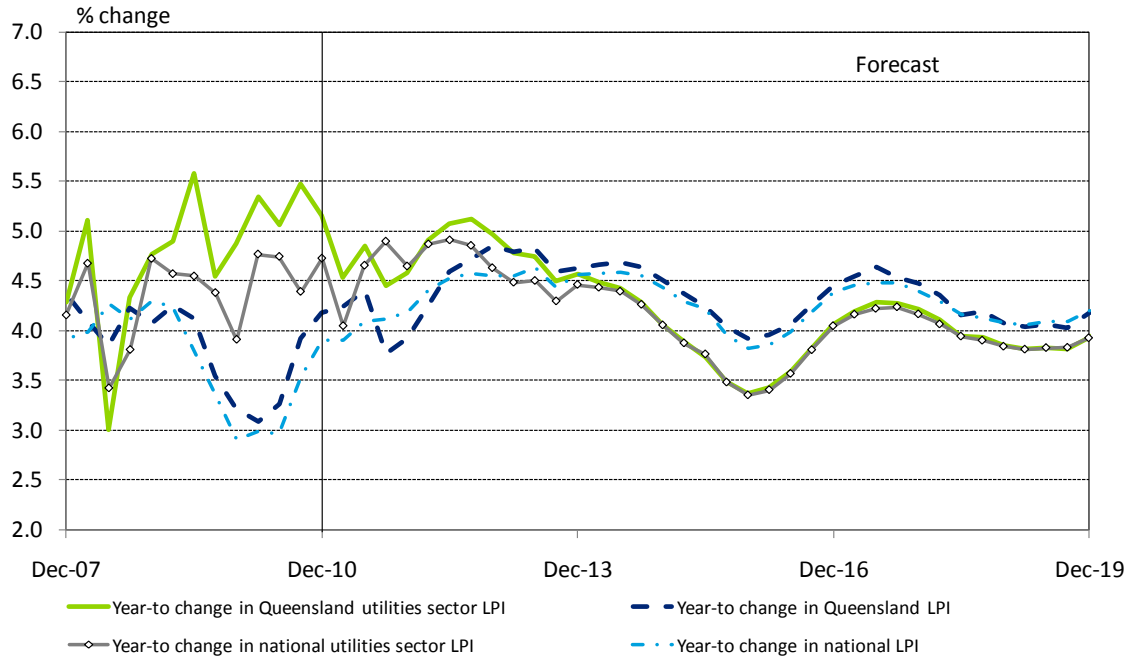
Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
All industries	6.6	2.2	5.4	3.2	2.8	2.4	2.1	1.1	1.6	1.6
Utilities	6.7	3.7	6.6	4.0	3.7	2.9	2.0	1.2	1.8	1.9
Mining	9.4	2.4	6.7	3.6	3.9	3.7	3.4	2.4	2.4	2.0
Construction	6.7	2.1	4.2	3.9	4.2	3.7	2.7	1.9	2.4	2.1
Administration services	5.7	1.6	4.7	3.0	3.0	2.6	2.1	1.4	2.0	2.0

Financial year changes in Queensland real productivity adjusted Labour Price aggregates

Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
All industries	2.7	-0.5	2.1	0.6	0.0	-0.5	-0.6	-1.7	-1.2	-0.8
Utilities	2.9	1.0	3.2	1.4	0.9	0.0	-0.6	-1.6	-1.1	-0.6
Mining	5.5	-0.3	3.4	1.1	1.0	0.7	0.7	-0.5	-0.5	-0.4
Construction	2.9	-0.6	0.9	1.3	1.4	0.8	0.0	-0.9	-0.5	-0.3
Administration services	1.8	-1.0	1.4	0.4	0.2	-0.3	-0.6	-1.5	-0.8	-0.4

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

Chart 7.2: Queensland utilities forecast comparison



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

7.4 South Australian projections

Table 7.3: South Australian wage forecasts

Financial year changes in South Australian nominal Labour Price aggregates

Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
All industries	3.9	2.8	3.9	4.0	4.2	4.3	4.2	3.8	4.3	4.2
Utilities	5.3	5.0	4.7	4.5	4.2	4.2	3.9	3.4	4.0	4.0
Mining	5.4	3.7	3.9	4.0	4.3	4.9	5.0	4.3	4.3	4.1
Construction	3.5	3.2	3.1	4.6	5.1	4.8	4.6	3.9	4.0	4.0
Administration services	4.0	2.3	6.9	3.0	3.1	3.5	3.5	3.2	3.9	3.8

Financial year changes in South Australian real Labour Price aggregates

Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
All industries	0.7	0.6	1.0	1.5	1.5	1.5	1.7	1.1	1.5	1.9
Utilities	2.1	2.8	1.8	2.0	1.5	1.4	1.3	0.7	1.2	1.7
Mining	2.2	1.5	1.0	1.6	1.5	2.1	2.4	1.5	1.5	1.7
Construction	0.3	1.0	0.2	2.1	2.3	2.0	2.1	1.2	1.2	1.7
Administration services	0.8	0.1	3.9	0.6	0.4	0.7	0.9	0.5	1.2	1.5

Financial year changes in South Australian nominal productivity adjusted Labour Price aggregates

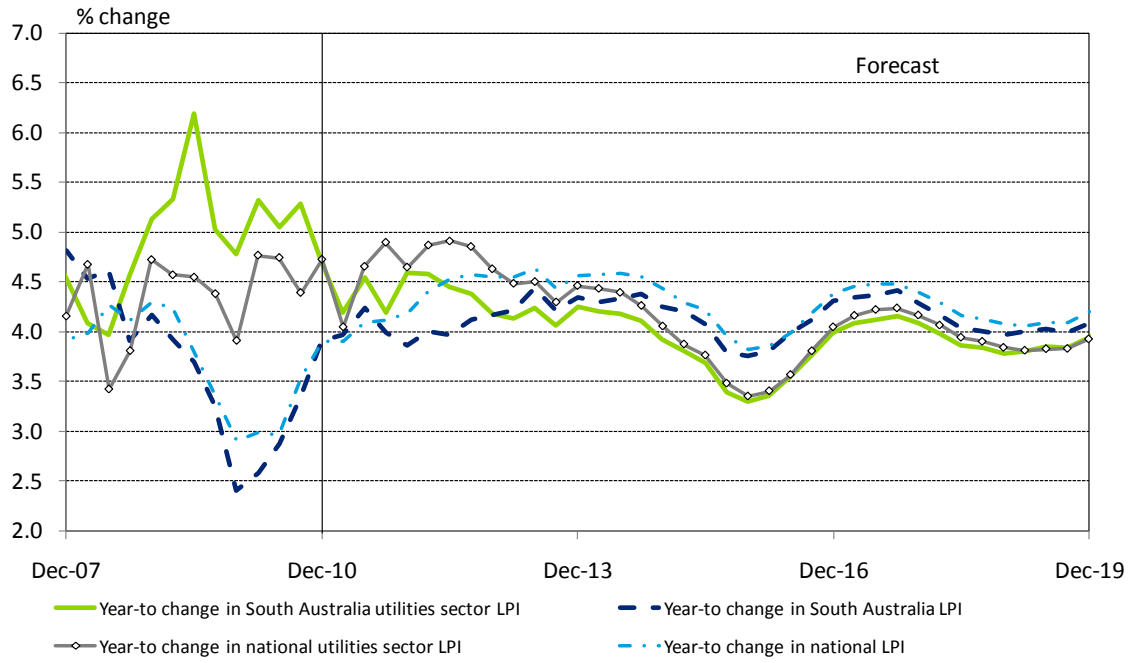
Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
All industries	4.3	2.7	3.7	4.7	3.9	3.5	2.6	2.0	2.9	3.1
Utilities	6.5	3.7	6.2	3.9	3.5	2.9	2.1	1.4	2.0	2.2
Mining	7.6	2.4	6.8	3.7	3.6	3.6	3.3	2.4	2.4	2.2
Construction	3.7	2.4	3.2	3.7	4.0	3.8	2.7	2.0	2.6	2.3
Administration services	4.8	2.5	7.5	2.7	2.3	2.2	1.6	1.1	1.9	1.9

Financial year changes in South Australian real productivity adjusted Labour Price aggregates

Annual % change	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
All industries	1.1	0.5	0.8	2.3	1.1	0.7	0.1	-0.7	0.2	0.8
Utilities	3.2	1.5	3.2	1.5	0.7	0.2	-0.4	-1.3	-0.7	-0.1
Mining	4.3	0.2	3.9	1.2	0.9	0.9	0.8	-0.3	-0.3	-0.1
Construction	0.5	0.3	0.4	1.2	1.2	1.1	0.2	-0.7	-0.2	0.1
Administration services	1.5	0.3	4.5	0.3	-0.4	-0.5	-0.8	-1.5	-0.8	-0.4

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

Chart 7.3: South Australian utilities forecast comparison



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

8 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 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.

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

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 8.2 (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.

8.1 The best measure: AWOTE or LPI?

The BIS Shrapnel report *Wages Outlook for the Electricity Distribution Sector in Victoria* of July 2010 argues (at pages A1 and A2) that:

> *"… the LPI reflects pure price changes, and does not measure variations in quality or quantity of work performed. However, like the CPI (Consumer Price Index), the weights are fixed in a base year, so that the further away from that base and the more the composition of the labour market changes over time, the more 'out of date' the measure becomes.*
>
> *Importantly, the LPI does not reflect changes in the skill levels of employees within industries or for the overall workforce, and will therefore understate (or overstate) wage inflation if the overall skill levels increase (or decrease). The labour price index is also likely to understate true wage inflationary pressures as it does not capture situations where promotions are given in order to achieve a higher salary for a given individual, often to retain them in a tight labour market.*
>
> *Average weekly earnings would be boosted by employers promoting employees (with an associated wage increase), but promoting employees to a higher occupation category would not necessarily show up in the labour price index. However, the employer's total wages bill (and unit labour costs) would be higher.*
>
> *For this reason, BIS Shrapnel prefers using AWOTE as the measure that best reflects the increase in wage cost changes (or unit labour costs, net of productivity increases) for business and the public sector across the economy. On the other hand, labour price index can be used as a measure of underlying wage inflation in the economy."*

8.2 The Deloitte Access Economics view

The ABS view, as quoted above, is that:

> *"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 changes in wages. The WPI measures quarterly changes over time in the cost to an employer of employing labour, and is unaffected by changes in the quality or quantity of work performed."*

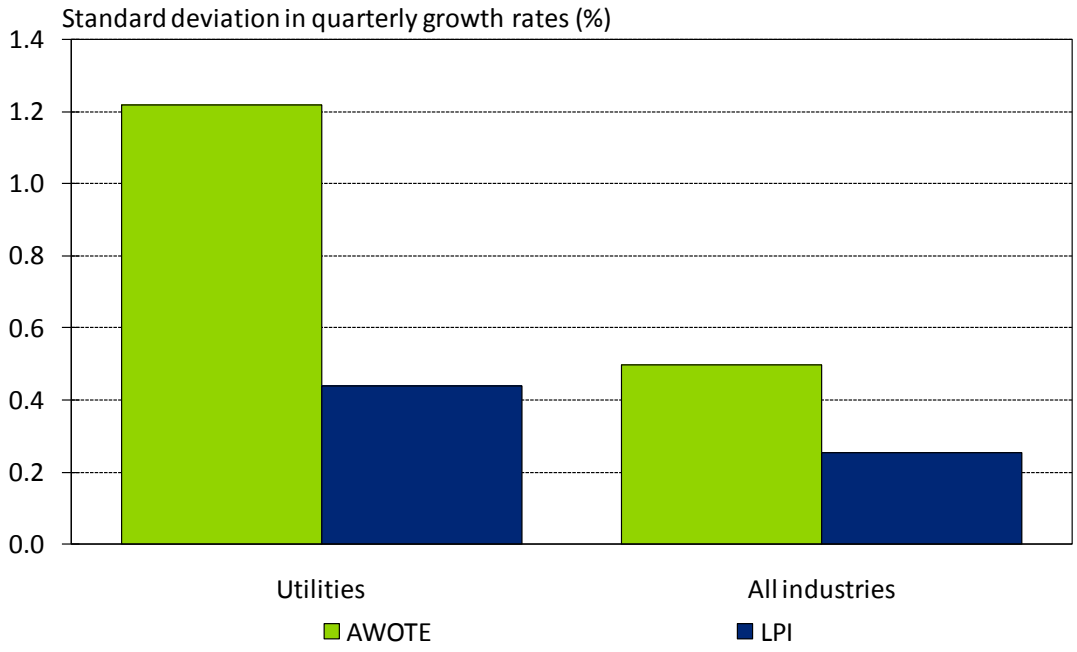
As the above discussion from the ABS suggests, they see the LPI as their preferred measure for "changes in the price of labour".

That is the task at hand here, and hence the LPI (excluding bonuses) is Deloitte Access Economics' preferred measure for this type of analysis.

Indeed, the LPI was originally developed because of the shortcomings of existing wage measures for this type of analysis. For example, AWOTE is affected by shifts in the composition of employment. Hence if a sector employs relatively more high paid full time workers over time (as has happened in manufacturing as low skilled jobs have been lost to competitors in developing Asia), then that will tend to raise measured AWOTE even if the wage levels for a given level of skill have not changed at all.

Those compositional effects tend to make AWOTE far more volatile than the LPI. Chart 8.1 shows the standard deviation in quarterly growth for AWOTE and LPI in the utilities sector and across all industries over the past decade. The chart shows that AWOTE has been notably more volatile than the LPI over the last decade.

Chart 8.1: Standard deviation in quarterly wage growth, ten years to December 2010



Source: ABS, Deloitte Access Economics

These volatility problems become more pronounced at greater levels of disaggregation, with the difference in volatility more pronounced in the utilities sector than across all industries as a whole (quarter-to-quarter changes are some two to three times more volatile for the AWOTE measure than the LPI measure).

The higher level of volatility at the industry level compared with the national level is to be expected due to the smaller sample size (indeed, similar patterns are evident at the State level) as each individual wage movement has a much larger impact on the utilities sector than it does nationally.

As a result, effects such as timing and unusual movements in individual firms have a greater effect on quarter-to-quarter movements, increasing the measured level of volatility in the smaller segment.

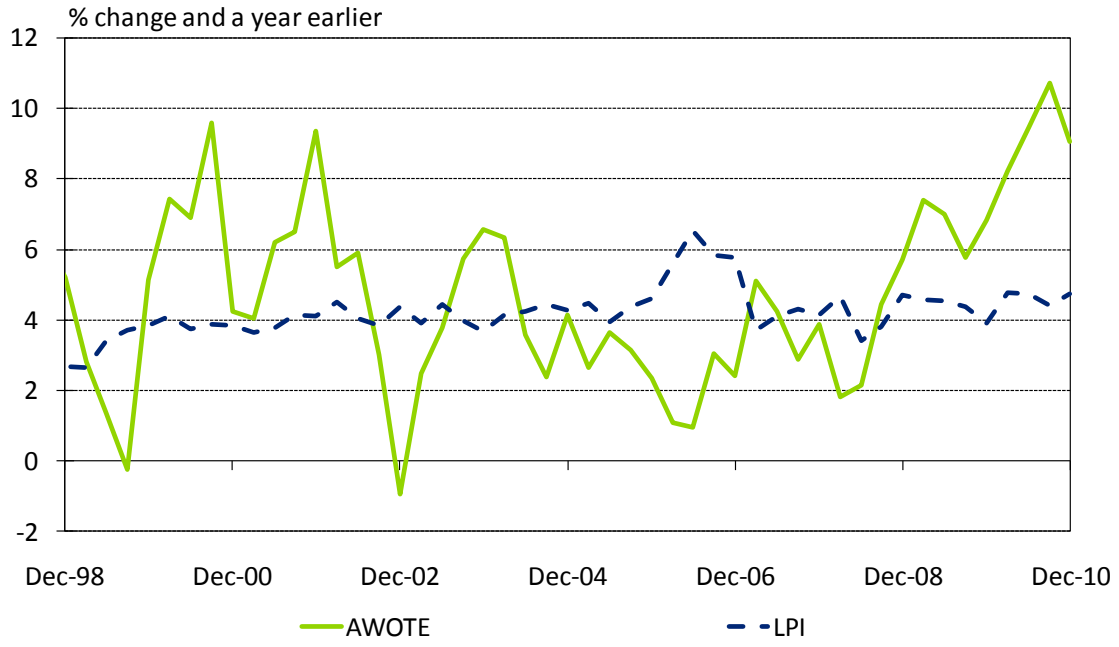
As the analysis at issue here is not merely at the sectoral level, but at the sectoral by State level, these volatility problems rapidly compound.

However, sample size does not explain the even more significant difference in volatility between the LPI and AWOTE wage measures.

These compositional effects and the resultant volatility make AWOTE a poor base for undertaking wage forecasts for the utilities sector. The volatility in the series does not accurately reflect wage outcomes for utilities employees, and can result in starting point (or "jumping off") problems at the beginning of the forecast period.

The latter point is highlighted by Chart 8.2 below. It shows year-to growth in AWOTE and LPI for the utilities sector.

Chart 8.2: Growth in AWOTE and LPI, Australian utilities sector



Source: ABS, Deloitte Access Economics

While the greater volatility in the AWOTE series compared to the LPI series is clear, the chart also shows a recent surge in wage growth as measured by AWOTE. Utilities wages grew by 10.7% over the year to August 2010 according to the AWOTE measure – nearly two-and-a-half times the pace recorded by the LPI series – before easing to 9.1% in the year to November 2010.

Few observers are likely to claim that AWOTE is providing a more accurate indicator of recent developments in the cost of labour in the utilities sector.

It is therefore worth calculating the degree of compositional change that would explain the current divergence in the AWOTE and LPI assessments of the pace of wage growth in the utilities sector over the past year – that is, generating 10.7% growth instead of 4.4% growth.

Say the compositional change that other commentators are concerned about involved firing 1% of the workforce, and then hiring replacements. Further, for the sake of the simplicity of the example, assume that the average wage in the sector is $100,000 a year.

To get a gap in wage growth equal to that evident currently (10.7% growth instead of 4.4% growth) as a result of such compositional change, then the past year would have to have seen 1% of the workforce (some 1,300 people) earning only half the average ($50,000) being sacked, with their replacements earning an average of almost fourteen times that ($680,000).

That result is unlikely.

Professor Jeff Borland raised questions in response to our calculation above in his 'Labour Cost Escalation report' prepared for Envestra limited, and dated 23 March 2011.

He argues that the Access Economics' example is "misleading" in part because labour turnover is quite high.

Hence Professor Borland's Table 1 (following his Paragraph 10) provides a benchmark for quantifying the impact of compositional change on wage costs in the utilities sector in recent years.

The table below replicates that used by Professor Borland, but adds the relevant wages for these occupations as at August 2008.

It would be preferable to use the wages attaching to these occupations in the utilities sector itself, rather than for Australia as a whole, but these data are not available at that level of disaggregation. However, using a proxy of occupational wages at the national level is unlikely to have an impact on the following results.

The additional feature in Table 8.1 below is that, when weighted for relative wages across these occupations, it shows that composition productivity effects in the utilities sector should have been reducing the average wage payable in the sector by about 0.8 percentage points in each of the last two years.

Table 8.1: Impact on average wages of compositional change in employment in the utilities

	Wages as at August 2008 ($)	Share (%) Nov-08	Share (%) Nov-09	Share (%) Nov-10
Managers	$ 1,405.90	12.2	10.6	11.2
Professionals	$ 1,488.80	17.6	16.3	14.2
Technicians and Trades Workers	$ 1,083.30	23.6	27.6	25.4
Community and Personal Service Workers	$ 880.50	-	-	-
Clerical and Administrative Workers	$ 945.30	19.6	19.5	22.4
Sales Workers	$ 933.60	3.4	2.4	3.0
Machinery Operators and Drivers	$ 1,039.40	14.2	13.8	15.7
Labourers	$ 847.30	9.4	9.8	8.3
All occupations				
Weighted average AWOTE		$ 1,133.47	$ 1,123.90	$ 1,115.07
Change due to compositional effects			-0.8%	-0.8%

These calculations indicate that the utilities sector has been saving money by, on average, moving to a less skilled workforce.

As a key issue here is whether AWOTE or LPI is the better measure to base the AER's judgements on, it is therefore particularly noteworthy that this calculation shows that compositional effects do not explain the gap.

Indeed they go the other way.

More broadly, compositional changes arising from the business cycle, changed educational levels, the pace of recruitment and retirement, the degree of outsourcing, changed relativities in the employment of men and women and compositional changes arising from shifts in average hours worked can all distort AWOTE as a proxy for "changes in the price of labour".

8.3 Drawbacks to using the LPI measure

That said, 'best measure' is not the same as 'perfect measure', and there are also drawbacks to using the LPI:

- First, the LPI is published by State and by sector separately, but not by State and by sector. That is, the LPI for NSW is published, and the mining sector LPI is also published, however the NSW mining sector LPI 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 LPI at the 'by State and by sector' level. Appendix D 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 and AWOTE data which it is willing to release. This phase will eliminate one of the remaining arguments in favour of using AWE or AWOTE over the LPI 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 LPI (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).

As noted above, BIS Shrapnel argue that:

> *"Importantly, the LPI does not reflect changes in the skill levels of employees within industries or for the overall workforce, and will therefore understate (or overstate) wage inflation if the overall skill levels increase (or decrease)."*

However, there is an important flaw in such arguments. If these compositional effects are occurring, then they should also be having an impact on the productivity of the sector's workforce.

Compositional change in skill mix is a business choice. If the business chooses to pay for a skill mix with a higher (or lower) average wage, then it also gets the associated productivity benefit (loss) of that decision.

That is, the higher skills should mean higher productivity – meaning that if the utilities are choosing to have a higher skilled workforce then, other things equal, that higher skilled workforce should be able to achieve the same output than would otherwise be achieved with fewer (less skilled) workers.

Or, in other words, cost impacts on utilities providers from this treatment of skills in the LPI measure are likely to be more apparent than real.

Moreover, it is worth stressing that this treatment in the LPI applies to skills – not to the much broader measure of 'productivity'. That is, for example, if someone goes on a course and that qualifies them for a pay increment, then the ABS tries to remove the latter from its LPI measure.

However, the ABS makes no matching adjustment for the impact on productivity of workers being able to work with better equipment and/or new technology, or for the impact of productivity from 'working smarter' (such as more efficient organisational arrangements, and entrepreneurial activities).

Hence any such bias is unlikely to be large, and must be balanced against the rather more significant types of problems with AWOTE measures discussed above (and highlighted even at the national level in Chart 8.1 and Chart 8.2).

8.4 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[8], and takes account of these in its short term forecasting if they appear likely to have a material impact.

[8] See www.workplace.gov.au/TrendsInFederalEnterpriseBargaining

Table 8.2: 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)

8.5 Further issues

The ABS is currently reviewing its production of AWE and AWOTE measures at the industry by State level (that is, the AWOTE for the utilities sector in South Australia and Queensland). This information was communicated to subscribers at the time of the ABS' release of December quarter 2010 data.

One of the reasons for this change is the high standard error of the estimates 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 problem obviously leads 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 LPI, by contrast, suffers as little as possible from this problem because their sample follows specific "jobs" over an extended period (at least five years). This limits the rotation problems that the AWE/AWOTE series is suffering from.

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: Regional wage variations in Australia

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 Adelaide and try our luck in Perth").
- 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 (Australians who decide to go to London next year rather than this, or to come back from working in Canada because prospects are now better here).
- Shifts by New Zealanders (who face fewer 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").

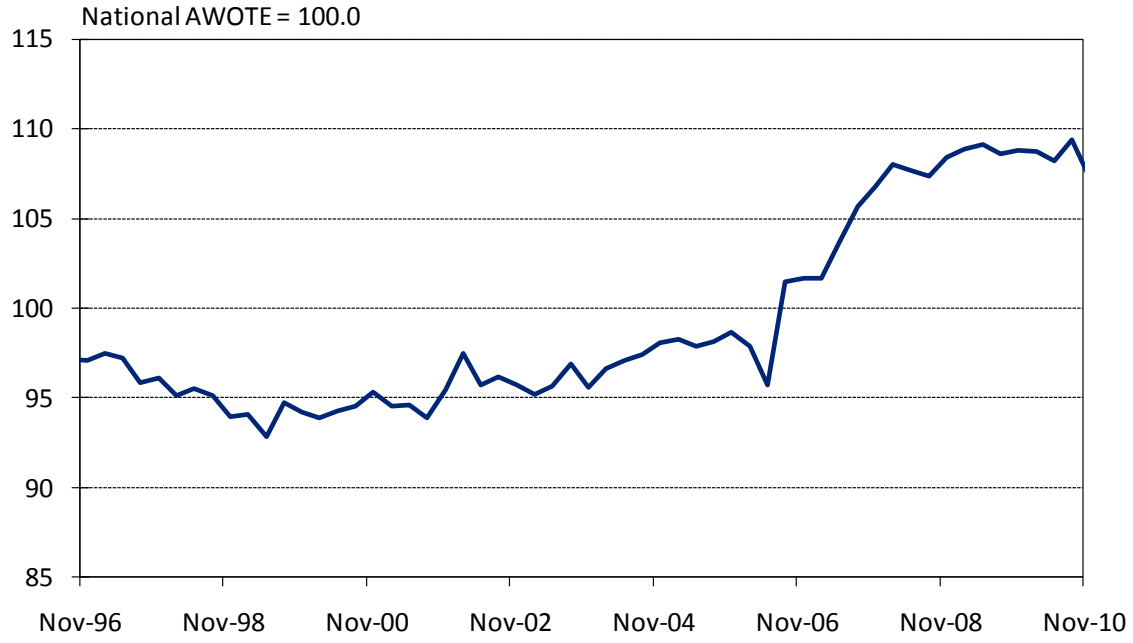
Many of these 'equilibrating factors' can be very slow to operate, meaning that divergences in wages across States (and, for that matter, across sectors and occupations within a State) can persist for long periods.

However, they will tend to narrow over time as these supply and demand factors in labour (and materials) markets gradually make their presence felt.

An example is Western Australian wages relative to national wages, as seen in the chart below.

That ratio rose during the boom, but is now starting to level off, and the next move in this ratio is likely to be downward.

Chart B.1: Western Australian wages relative to national wages



Source: ABS

Appendix C: Macroeconomic and wage forecasting methodology

Introduction

The model used by Deloitte Access Economics to forecast the LPI 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 LPI measures at more detailed levels.

The macroeconomic forecasts presented in this report are based on preliminary estimates from the AEM model (March 2010). The reason these forecasts can only be regarded as preliminary is that while the key December quarter output variables (contained in the quarterly national accounts publication) have been released a number of other important variables are not yet available. Key among these are the December quarter dwelling commencements (housing starts) as well as February employment levels. Both variables will have a considerable impact on our view of the current state of the Australian economy, as well as the short term output. As such the forecasts underlying this model will differ to some degree from those that will appear in the March quarter *Business Outlook* publication, with the level of difference depending largely on these latter economic releases.

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 Treasury Secretary Ken Henry noted in March 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 LPI will move, and the remainder of the modelling determines which industry, State and industries within States will see their LPI measures grow faster or slower than this value.

Industry and State Labour Price Indices

Modelling of specific labour price indices (LPIs) begins with the movements in the total Australian LPI – 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:

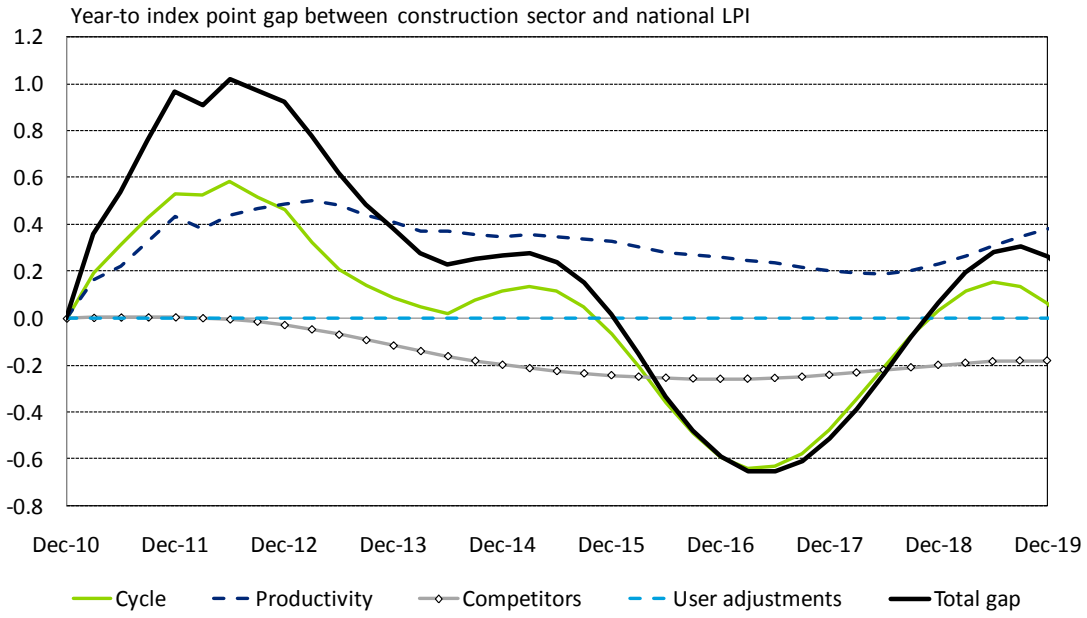
- **Business cycle factors**. Deviations in industry (or State) performance from the national average. Faster growing industries and States will tend to see faster growth in wages and vice versa. In this model, the key factor is how fast the industry (or State) is growing relative both to the national 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 LPI 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 LPI may not be reflective of movements in the wages of individual employees. In an extreme case, it would be possible for (say) all the high-paid workers in an industry to take a pay cut but the overall LPI measure in

the industry to rise is all the low-paid workers left the industry all together – shifting the average wage towards the higher level.

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



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

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

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

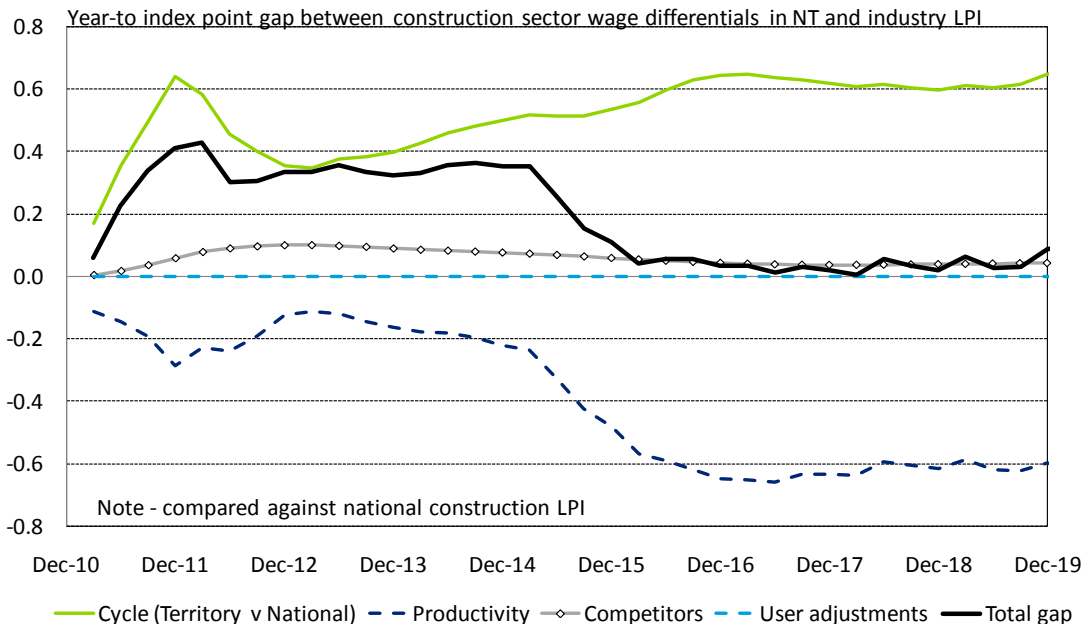
- The recent strength in the construction sector will keep upward pressure on the wages in the sector (represented here by the **Cycle** line). By the end of 2012 growth rates will begin to move in line with the overall economy and the cyclical pressure will diminish (and reverse further out); but
- The higher rate of productivity growth in the utilities sector will put upward pressure on the LPI 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 LPI) means the sector will face minor downward wage pressure from other sectors. Weakness in the manufacturing sector is 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 LPI 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 LPI. So the chart below implies that Northern Territory's construction sector LPI will:

- Grow relative fast as Territory'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 Northern Territory's LPI is currently low by historical standards, but will be constrained in the longer run as the LPI soon grows ahead of the national rate.

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



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

Labour prices versus labour costs

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

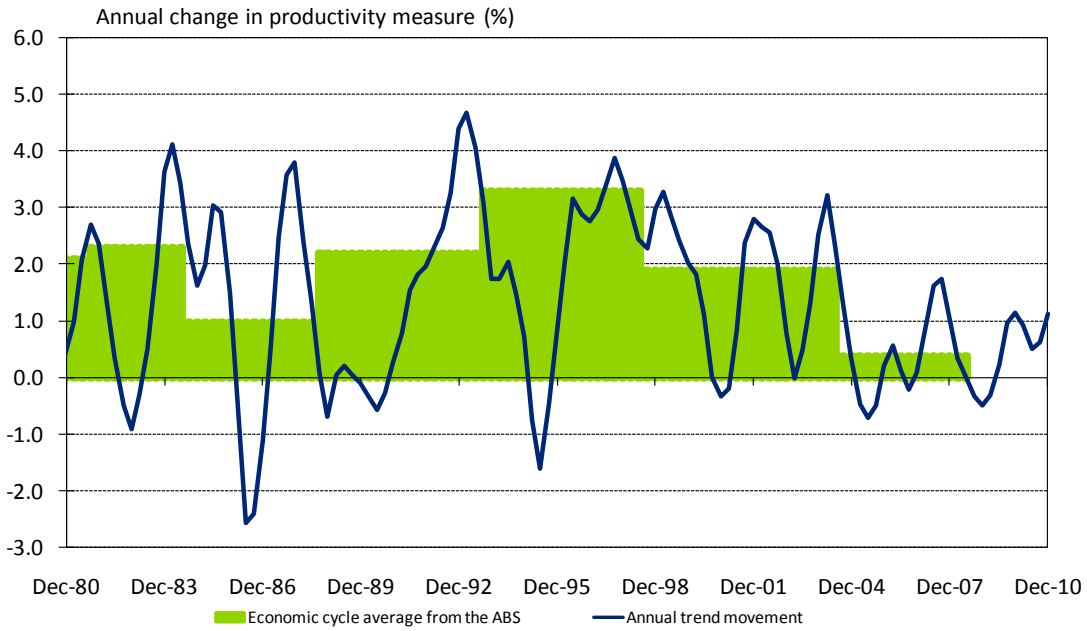
However, labour costs will rise at a different rate due to the effects of labour productivity growth. Effectively, labour productivity measure the number of units of output an individual employee can produce in a given time period. The more units of output each worker can produce, the fewer workers are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

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

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

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

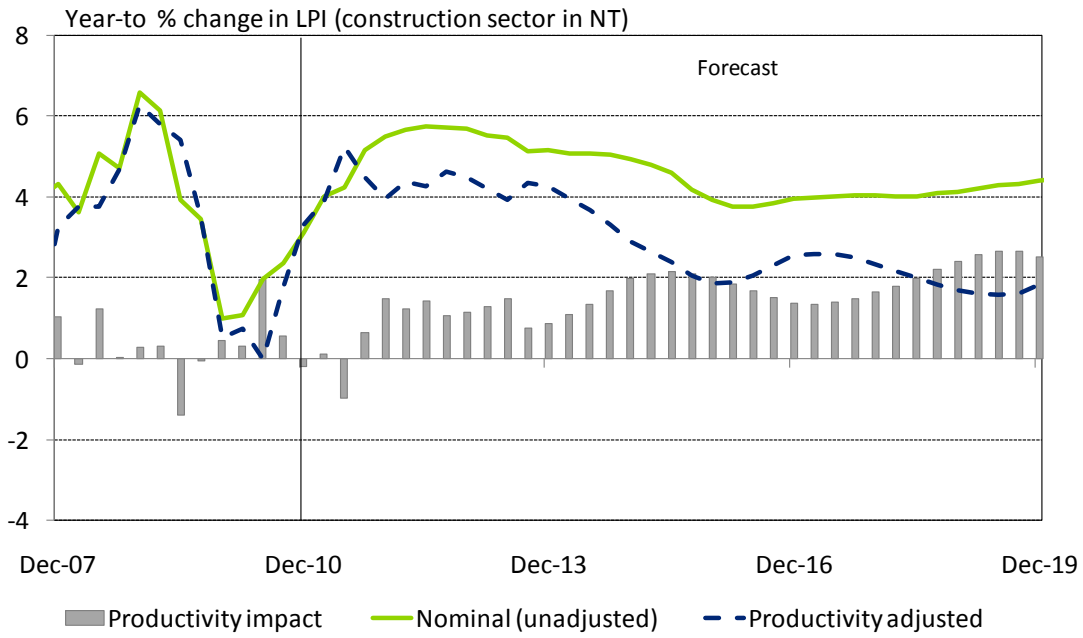
Chart C.3: Growth in productivity – annual methodology vs economic cycle methodology



Source: ABS

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

Chart C.4: Sample measure of forecast productivity effects



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

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

Appendix D: LPI sectoral history at the State level

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

The following table shows (for the key States and sectors modelled) which data is available in time series for the LPI and (for those where LPI is not available) AWOTE. These are data series provided on the new ANZSIC06 basis. In the case of LPI data this has been provided across the period from September quarter 2008 to December quarter 2010 (ten quarters of data on a consistent basis).

For the AWOTE data only estimates for the past seven quarters (since May 2009[9]) have been calculated by the ABS.

Table D.1: Wage data series availability

	Utilities	Mining	Construction	Administration services
Queensland	AWOTE	LPI	LPI	LPI
South Australia	AWOTE	AWOTE	AWOTE	LPI

Source: ABS

As the table shows, we have some data for all the utilities series and competitor industries. However, the overall AWORE data itself is not consistent with the LPI data for Australia (as noted in the chart in the executive summary), so rather than using the raw data, to obtain a State by industry LPI we have used the deviations in the AWOTE growth from State AWOTE averages and applied a consistent ratio to the known State LPIs.

In other words, if the Queensland utilities sector AWOTE measure is rising faster than the overall Queensland AWOTE measure, then we allow the Queensland utilities sector LPI measure to rise faster than Queensland's overall LPI over the past six months. Because the AWOTE data has been far more volatile than LPI in recent years, we limit the deviations that this might imply[10].

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

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

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