KPMG

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Updated Labour Cost Growth Forecasts

25 March 2009

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KPMG Econtech have indicated within this report the sources of the information provided. We have not sought to independently verify those sources unless otherwise noted within the report.

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The findings in this report are subject to unavoidable statistical variation. While all care has been taken to ensure that the statistical variation is kept to a minimum, care should be taken whenever using this information. This report only takes into account information available to KPMG Econtech up to the date of this report and so its findings may be affected by new information. Should you require clarification of any material, please contact us.

The findings in this report have been formed on the above basis.

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This report is solely for the purpose set out in contract and for the AER information.

This report has been prepared at the request of the AER in accordance with the terms of KPMG Econtech's contract dated 22 January 2009. Other than our responsibility to the AER, neither KPMG Econtech nor any member or employee of KPMG Econtech undertakes responsibility arising in any way from reliance placed by a third party on this report.

Any reliance placed is that party's sole responsibility.

Forecasting Disclaimer

In the course of our work, projections have been prepared on the basis of assumptions and methodology which have been described in our report. It is possible that some of the assumptions underlying our projections may not materialise. Nevertheless, we have applied our professional judgement in making these assumptions, such that they constitute an understandable basis for estimates and projections. Beyond this, to the extent that certain assumptions do not materialise, then you will appreciate that our estimates and projections of achievable results will vary.

Contents

1. Introduction

In accordance with its responsibilities under the National Electricity Rules (NER), the Australian Energy Regulator (AER) is required to make transmission and distribution revenue determinations for associated network service providers in Australia. The AER is currently making determinations for electricity transmission and distribution companies in NSW, Tasmania and the ACT for the regulatory period 1 July 2009 to 30 June 2014[1].

These revenue determinations require the AER to assess claims regarding expected capital and operating expenses. Labour costs are a key input into the electricity transmission and distribution expenses of these companies. In 2007, Econtech developed a Labour Cost Model (LCM) to assist the AER in reviewing annual labour cost growth forecasts submitted by SP AusNet and VENCorp in Victoria.

In September 2008, the AER engaged Econtech to update the LCM and provide annual labour cost forecasts for NSW, Tasmania, the ACT and Australia over the period 2007/08 to 2016/17. Since then the outlook for economic growth in Australia has deteriorated markedly as a result of the global financial crisis. This downward revision in the outlook for economic growth has important implications for the wage growth outlook. Against this backdrop, the AER has engaged KPMG Econtech[2] to update the labour cost forecast for NSW, Tasmania, the ACT and Australia.

These forecasts reflect the following factors.

- An enhanced approach to labour cost forecasting, which was initially used in the September 2008 report.
- National Accounts data up to December 2008 (published by the Australia Bureau of Statistics in early March 2009).
- Average Weekly Earnings data obtained by special request from the Australian Bureau of Statistics (ABS). This includes historical Average Weekly Earnings data up to November 2008.
- The Federal Government Stimulus Package announced in December and February.

This report provides labour cost growth forecasts and commentary for the Mining, Electricity, Gas & Water Supply and Construction industries.

This report is structured as follows.

[1] These companies for NSW and the ACT include EnergyAustralia, Integral Energy, Country Energy and ActewAGL for distribution and Energy Australia and TransGrid for transmission. For Tasmania, this includes the transmission company Transend Networks.
[2] Econtech joined KPMG to be become KPMG Econtech in August 2008.

- Section 2 describes the modelling approach used to forecast labour cost growth rates.
- Section 3 reviews the Electricity, Gas and Water Labour Cost Forecasting Submissions.

While all care, skill and consideration has been used in the preparation of this report, the findings refer to the terms of reference outlined by the AER and are designed to be used only for the specific purpose set out below.

The purpose of this report is to provide updated annual labour cost forecasts for NSW, ACT, Tasmania and Australia over the period 2007/08 to 2016/17. KPMG Econtech has provided labour cost growth forecasts and commentary for the Mining, Electricity, Gas & Water supply and Construction industries.

The findings in this report are subject to unavoidable statistical variation. While all care has been taken to ensure that the statistical variation is kept to a minimum, care should be taken whenever using this information. This report only takes into account information available to KPMG Econtech up to the date of this report and so its findings may be affected by new information.

2. Detailed Labour Cost Forecasts

To generate labour cost forecasts, the aforementioned KPMG Econtech models rely on data and information captured by the ABS. As noted earlier, the unpublished data request from the ABS used in developing the forecasts is Average Weekly Earnings by State by Industry (Catalogue No. 6302.0).

The historical Average Weekly Earnings data series have changed slightly since the previous update. This is because of a change adopted by the ABS in the way that it compiles the Average Weakly Earnings data. Previously, some firms reported wages that were salary sacrificed as wages, while others did not. The ABS has since quantified the extent of mis-reporting and has estimated its impact on the historical series. As a result, the Average Weekly Earnings has been revised to exclude all salary-sacrificed wages to ensure consistency and comparability across time. According to the ABS[3]:

> *The definition of earnings currently used in the AWE* [average weekly earnings] *survey is, broadly, current and regular payments in cash to employees for work done. Thus, earnings series from the AWE survey have historically excluded amounts salary sacrificed, as these have been considered conceptually as payments in kind. However, under the revised conceptual framework for measures of employee remuneration … amounts salary sacrificed are now considered conceptually to be wages and salaries in cash. Accordingly, the AWE survey was redeveloped, and from August 2007, the collection of information on amounts salary sacrificed by employees commenced.* ***However, the AWE series has continued to be published on the old conceptual basis (i.e. exclusive of amounts salary sacrificed) to maintain long term comparability of the time series*** *(emphasis added).*
>
> *Although the AWE survey has conceptually excluded amounts salary sacrificed, in practice, there is evidence that earnings series from the AWE survey have inadvertently included some amounts salary sacrificed. The ABS has been working closely with data providers to identify any instances of mis-reporting, and to amend their reporting practices where necessary.*

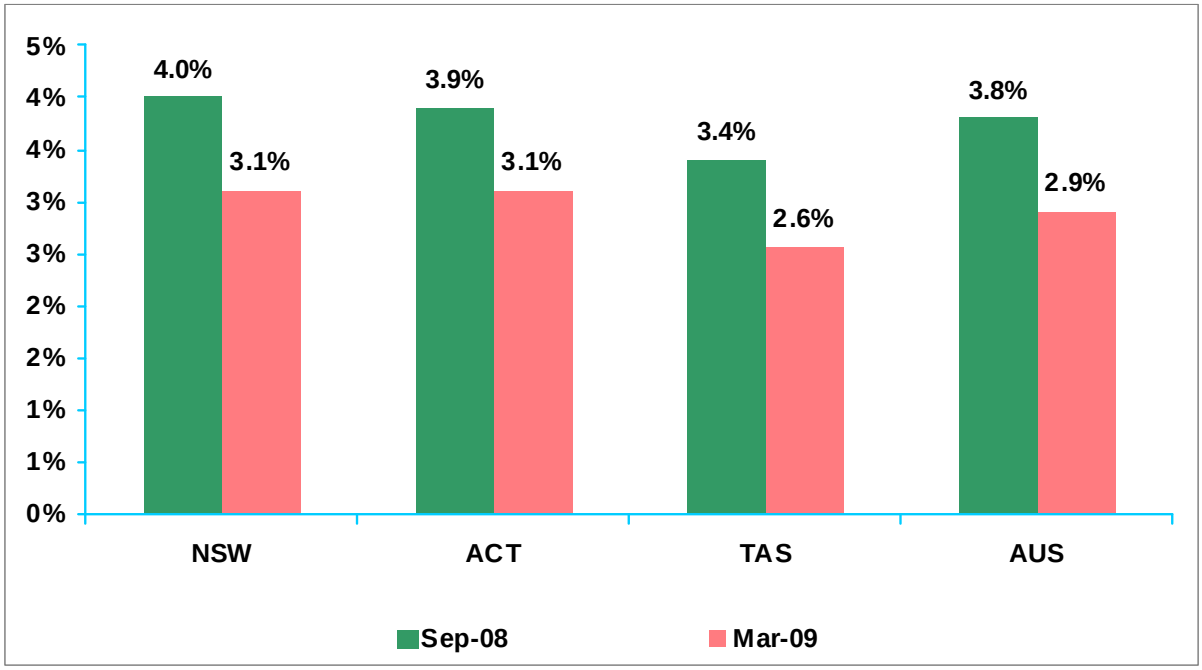
These changes affect historical data back to 1996. In terms of levels, the new historical series is slightly below the old historical series. The revisions become greater for more recent historical data points compared to those data points further back in time; hence growth rates are also affected. Broadly, the growth rates under the revised series are slightly below the old series. The difference ranges from -0.1 percentage points to -0.5 percentage points. The percentage point difference between the old historical series and the revised historical series are shown in Attachment A.

[3] ABS Catalogue No. 6302.0: *Average Weekly Earnings, Australia, August 2008, Explanatory Notes (paras. 21-22).*

2.1 Labour Cost Forecasts by State and by Industry

Labour cost growth projections have moderated sharply across all states since the report in September 2008; this is shown in Chart 2.1 below. Projected compound wage growth for Australia across all industries has slowed from 3.8 per cent to 2.9 per cent. Slowing of a similar magnitude can be seen across all states over the forecast period. Detailed charts comparing the labour cost growth forecasts finalised in September 2008 and the updated forecasts can be found in Attachment D.

Chart 2.1
National Compound Labour Cost Growth Rates by State for All Industries (2007-08 to 2016-17)



Source: LCM

This slowing in labour cost growth can be linked to recent economic developments. Since the previous update, the global financial situation has deteriorated and the Australian economy is not immune. Although in September 2008 KPMG Econtech had already expected slow growth in 2008/09, since then, both consumer and business confidence in Australia have deteriorated and credit markets have remained frozen. Thus, there has been a sharp downward revision in our outlook for growth since September 2008 where it was believed that the global economy was in far better shape and there was still a reasonable chance that Australia would avoid a recession. The Australian economy is now expected to slip into recession in 2009.

The slowdown in consumer demand, business investment and dwelling investment will be enough to push the country into recession in 2009. The only uncertainty now is over the length and severity of the downturn. There have been significant stimulus measures taken by both the federal government (through fiscal policy) and the Reserve Bank of

Australia who have been cutting interest rates aggressively. Our forecast now sees Australia's economic recovery starting in late-2010.

Employment growth generally follows growth in output with a lag. The deterioration in the economic outlook will lead to an easing in the labour market. The unemployment rate is expected to reach 7 per cent by early 2010. Hence skill shortages will become less of an issue in the economy overall, although shortages may still persist in particular occupations. In response to these developments, the Government announced a 14 per cent cut in the 2008/09 permanent skilled migration intake on 16 March 2009. In addition, the sharp slowdown in the Construction industry has led to the removal of building and manufacturing trades from the Critical Skills List. The List is now comprised primarily of health and medical, engineering and IT professions.

Table 2.1
National Nominal Labour Cost Growth Rates, 2007/08 – 2016/17 (%)

	Mining	Electricity, Gas & Water	Construction	All Industries
1996-1997 (h)	2.6	4.8	5.9	3.3
1997-1998 (h)	7.6	7.6	0.7	3.7
1998-1999 (h)	3.1	5.6	5.1	3.4
1999-2000 (h)	3.4	6.2	-3.6	2.6
2000-2001 (h)	5.3	5.9	1.3	4.6
2001-2002 (h)	5.0	7.6	5.1	4.4
2002-2003 (h)	4.2	1.9	8.3	3.9
2003-2004 (h)	3.8	6.2	3.3	5.1
2004-2005 (h)	4.2	2.9	4.0	4.2
2005-2006 (h)	3.1	3.2	4.2	4.4
2006-2007 (h)	5.3	3.4	7.6	4.3
2007-2008 (h)	5.7	2.7	7.1	4.3
2008-2009	2.2	2.3	1.7	1.3
2009-2010	2.2	3.1	0.4	0.6
2010-2011	3.7	4.4	1.6	2.2
2011-2012	5.6	6.0	3.6	4.0
2012-2013	5.7	6.0	3.9	4.4
2013-2014	4.6	4.6	2.7	3.3
2014-2015	3.7	3.6	2.1	2.7
2015-2016	4.3	4.1	3.0	3.4
2016-2017	5.1	4.9	4.1	4.3

Source: LCM. (h) denotes history

Table 2.2 shows the annual growth rates for nominal wages in selected industries in Australia. Table 2.3 shows real growth rates. Most of the differences between these forecasts and the previous projections in September 2008 are due to KPMG Econtech's downward revision in our short to medium term economic projections as a result of the global financial crisis. In particular, our forecasts for business investment have been revised sharply downwards. Total business investment in the economy is now expected to fall in 2009/10 and 2010/11 as businesses find it more difficult to raise investment funds. The forecasts in 2013/14 and beyond remain largely unaffected.

The recent crash in commodity prices has clear implications for labour demand and therefore wage growth in the Mining industry. Mining wage growth in 2009/10 has moderated since the previous update from 3.2 per cent to 1.9 per cent. An expected recovery in commodity prices in 2010 will provide a boost to the mining sector. The rebound in commodity prices and hence the terms-of-trade will be underpinned by a recovery in world industrial production, increasing demand for Australia's mining commodities. Over the medium to long term the terms-of-trade is expected to return to 2005/06 levels, which is high by historical standards. This improvement in the terms-of-trade will lead to increased hiring in the Mining industry which will see Mining wages grow strongly over the medium to long term.

Labour cost forecasts for the Electricity, Gas and Water industry have also moderated. Wages growth projections in 2009/10, for example, have slowed from 5.8 per cent to just 2.7 per cent. This reflects the economic slowdown as well as a slowing in labour demand within other industries that compete for workers with similar skills. The Construction industry and Mining industry, for example, compete with the Utilities sector for workers. The slowing in labour demand in Construction and Mining is freeing up skills shortages in the Utilities sector, leading to slower wage growth. Despite this, projected wage growth in the utilities industry is still well above the figure across all industries over the forecast period. This is because demand for utilities workers remains relatively steady (since utilities services are considered a necessity).

Construction labour cost forecasts have moderated since the last update. Construction wages were previously expected to rise by 3.5 per cent in 2009/10; this figure has been revised downwards to just 0.2 per cent. The projected slowing in the Australian economy, particularly business investment, throughout 2008/09 and 2009/10 has clear implications for the construction industry. The Construction industry sells 90 per cent of its output as investments to other industries. Therefore, the level of investment in the overall economy heavily influences construction activity. Hence, projections for wages growth over this period have eased sharply. The recovery in wages over the longer term, however, will be slightly better than previously expected as an expected recovery in dwelling investment boosts labour demand.

Table 2.2
National Average Nominal Wage Growth and Inflation (% pa)

	Mining	Electricity Gas and Water	Construction	All Industries	CPI Inflation
1987/88 to 1997/98	5.9	5.7	4.5	4.2	3.4
1997/98 to 2007/08	4.3	4.6	4.2	4.1	3.0
2009/10 to 2013/14	4.9	5.2	2.9	3.5	3.4
2007/08 to 2016/17	4.1	4.3	2.6	2.9	2.5

Source: LCM

Table 2.3
National Average Real Wage Growth (% pa)

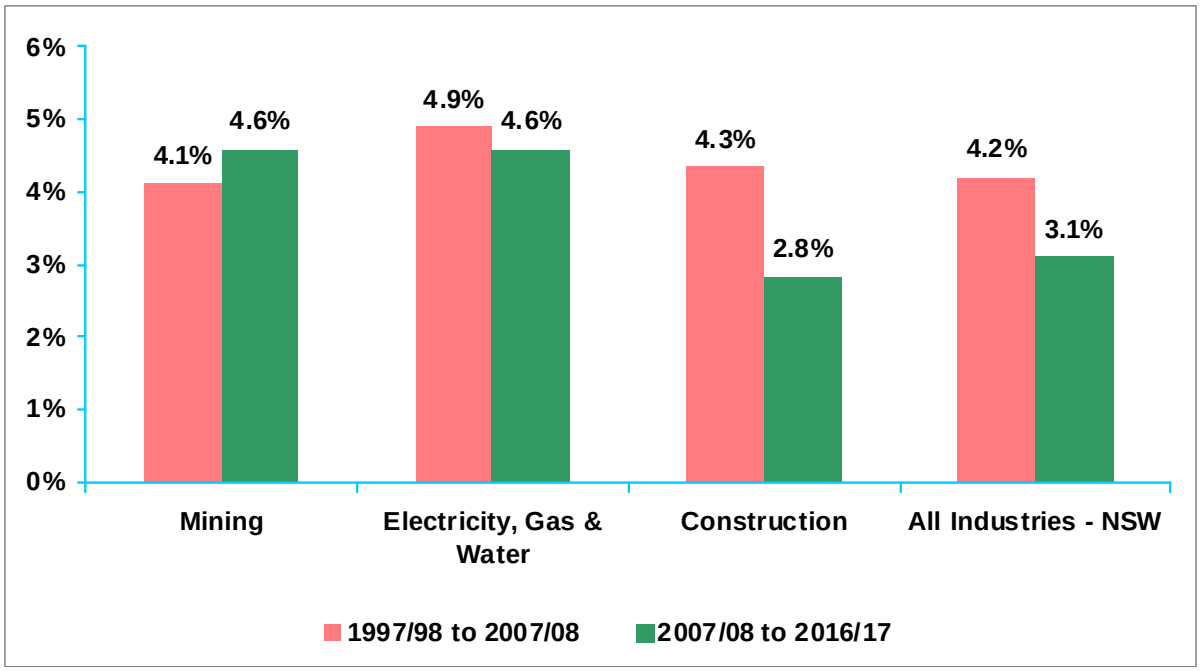
	Mining	Electricity Gas and Water	Construction	All Industries
1987/88 to 1997/98	2.5	2.3	1.0	0.8
1997/98 to 2007/08	1.3	1.5	1.2	1.1
2009/10 to 2013/14	1.5	1.8	-0.4	0.1
2007/08 to 2016/17	1.6	1.8	0.1	0.4

Source: LCM

2.2 Labour Cost Forecasts of Selected Industries in New South Wales

Projected compound labour cost growth rates across all industries in NSW have eased from 4 per cent to 3.2 per cent since the last update. This is shown in Chart D1 in Attachment D. The current economic slowdown is adversely affecting NSW, particularly since it is Australia's main financial hub and the financial sector has been hit directly by the current crisis.

Chart 2.2
Nominal Compound Labour Cost Growth Rates in NSW (% pa)



Source: LCM

The NSW housing market remains quite resilient, led by the perennial Sydney market. Supply shortages will drive construction activity over the forecast period and this should also ensure that any fall in house prices will be mild. Despite this, wage growth projections in the NSW Construction industry have slowed since the last update.

Mining activity in NSW has begun to ease, putting downward pressure on demand for workers in this sector, thus dampening wages growth. A 4.6 per cent increase in wages is expected over the forecast period, compared to a 5.4 per cent projected rise at the last update.

Table 2.4
Nominal Labour Cost Growth Rates in NSW (% pa)

	Mining	Electricity, Gas & Water	Construction	All Industries - NSW
1996-1997 (h)	7.2	4.9	7.9	3.4
1997-1998 (h)	-0.3	7.3	-3.2	2.2
1998-1999 (h)	5.3	8.7	11.3	4.7
1999-2000 (h)	6.0	4.9	-0.7	4.3
2000-2001 (h)	8.0	5.6	1.4	4.3
2001-2002 (h)	4.6	9.8	6.7	4.8
2002-2003 (h)	0.6	-0.3	5.9	2.6
2003-2004 (h)	2.9	10.3	-2.8	5.7
2004-2005 (h)	4.4	0.4	3.9	3.7
2005-2006 (h)	4.7	4.2	5.7	5.4
2006-2007 (h)	4.5	1.8	1.8	2.6
2007-2008 (h)	0.3	4.3	11.2	3.9
2008-2009	2.7	2.6	2.0	1.6
2009-2010	3.1	3.6	0.9	1.0
2010-2011	4.6	4.9	2.1	2.6
2011-2012	6.2	6.4	3.9	4.3
2012-2013	6.2	6.2	4.1	4.6
2013-2014	4.9	4.8	2.9	3.5
2014-2015	4.0	3.7	2.2	2.7
2015-2016	4.4	4.2	3.1	3.4
2016-2017	5.2	4.9	4.2	4.3

Source: LCM, (h) denotes history.

As shown in Table 2.4, most of the slowing in NSW wages growth between this forecast and the September numbers occurs in 2008-09 and 2009-10, with wages returning to their usual path thereafter. This is as expected since general economic conditions show the sharpest deterioration over this period. The performance of the NSW economy over the coming years will largely mirror the performance of the Australian economy as a whole.

Wages growth in the Mining industry will remain high compared to the national average in 2009-10 and 2010-11, even with commodity prices continuing to fall. The Mining industry will see stronger growth in Mining wages thereafter as rising commodity prices boost demand for workers in this sector. Wage growth in the Electricity, Gas and Water industry have eased in the immediate forecast period but still remain above the national average. This is in line with historical trends.

Table 2.5(a)
Average Nominal Wage Growth and Inflation in NSW (% pa)

	Mining	Electricity Gas and Water	Construction	All Industries	CPI Inflation
1987/88 to 1997/98	4.7	5.8	3.3	4.4	3.5
1997/98 to 2007/08	4.1	4.9	4.3	4.2	2.9
2009/10 to 2013/14	5.5	5.5	3.3	3.7	2.8
2007/08 to 2016/17	4.6	4.6	2.8	3.1	2.6

Source: LCM

Table 2.5(b)
Average Real Wage Growth in NSW (% pa)

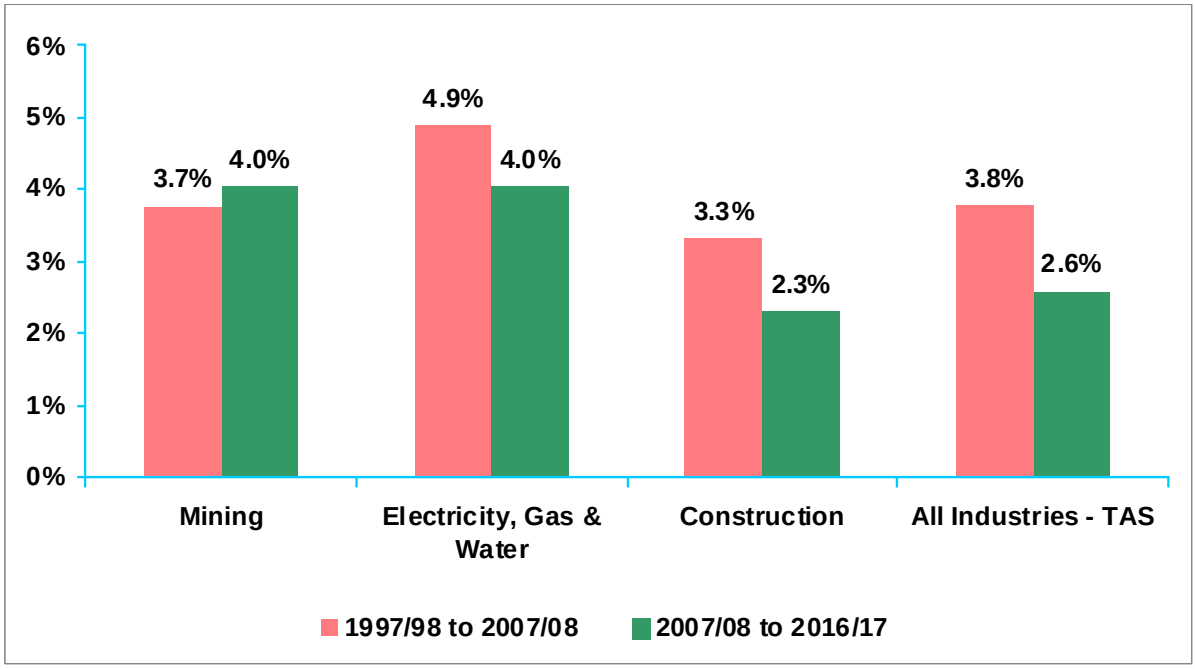
	Mining	Electricity Gas and Water	Construction	All Industries
1987/88 to 1997/98	1.2	2.2	-0.1	0.9
1997/98 to 2007/08	1.2	1.9	1.4	1.2
2009/10 to 2013/14	2.6	2.7	0.5	0.9
2007/08 to 2016/17	2.0	2.0	0.3	0.5

Source: LCM

2.3 Labour Cost Forecasts of Selected Industries in Tasmania

Compound labour cost growth forecasts for Tasmania have eased since the September 2008 report, with labour cost growth moderating across the Mining, Utilities and Construction industries compared to the earlier report. This reflects the deterioration in economic conditions in Tasmania. The deterioration in the global financial situation is a national-level shock affecting all States or Territories. Unlike the NSW economy, the Tasmanian economy does not have a large direct exposure to the Finance and Insurance industry. However, the relatively small size of the Tasmanian economy means that it is affected by major projects. Several major projects have been abandoned or put on hold due to difficulties in raising funds. This includes the Longreach pulp mill and the Musselroe Bay Eco Tourism Development. As shown in Chart 2.1, the annual average compound labour cost growth rate across all industries between 2007/08 and 2016/17, moderated by 0.8 percentage points.

Chart 2.3
Nominal Compound Labour Cost Growth Rates in Tasmania (% pa)



Source: LCM

Projected annual average labour cost growth for the Electricity Gas and Water industry across the forecast period eased from 5.0 per cent in the September 2008 report to 4.0 per cent in this report. Comparable downward revisions in labour cost growth are also seen in both the Construction and Mining industries. This is largely because Tasmanian business investment forecasts have moderated since the previous update, while consumer spending projections are also weaker. Thus labour cost growth projections in Tasmania are also weaker compared to the last update. Detailed charts comparing labour cost forecasts in September 2008 to the current forecasts can be found in Attachment D, Chart D2.

The weakness in business investment in Tasmania, particularly non-dwelling construction investment compared to the earlier forecasts has lead to a moderation in Construction activity in Tasmania. As a result forecasts for labour cost growth in the Tasmanian construction industry has been revised downwards. Projected wage growth in this sector over the forecast period has eased from 3.2 per cent in September 2008 to 2.3 per cent in the current update.

Projections for wage growth in the Utilities sector have deteriorated since the previous update. This is largely linked to downward revisions in our forecasts for business investment and demand in Tasmania, which is expected to reduce demand for workers. However, the annual average compound labour cost growth rate over 2007/08 to 2016/17 in the Electricity, Gas and Water industry is still well above the average annual labour cost growth rate across all industries in Tasmania, 4.0 per cent per annum compared to 2.6 per cent per annum. This is shown in Chart 2.3 above.

Table 2.6
Nominal Labour Cost Growth Rates in Tasmania, 1996/97 to 2016/17 (%)

	Mining	Electricity, Gas & Water	Construction	All Industries - TAS
1996-1997 (h)	1.0%	-0.9%	7.4%	2.9%
1997-1998 (h)	2.9%	12.8%	1.2%	1.9%
1998-1999 (h)	10.3%	13.4%	-3.8%	3.7%
1999-2000 (h)	5.5%	-0.8%	-15.7%	2.5%
2000-2001 (h)	5.4%	6.8%	-5.4%	2.2%
2001-2002 (h)	2.3%	6.2%	10.8%	2.3%
2002-2003 (h)	0.6%	3.5%	12.8%	6.5%
2003-2004 (h)	-0.4%	5.5%	6.0%	3.4%
2004-2005 (h)	5.0%	5.8%	5.1%	7.1%
2005-2006 (h)	4.2%	4.2%	16.5%	3.1%
2006-2007 (h)	-1.2%	2.9%	6.6%	2.3%
2007-2008 (h)	6.2%	1.9%	4.4%	4.7%
2008-2009	2.1%	2.1%	1.5%	0.9%
2009-2010	2.0%	2.5%	-0.1%	0.1%
2010-2011	3.7%	3.9%	1.2%	1.6%
2011-2012	5.5%	5.6%	3.2%	3.5%
2012-2013	5.7%	5.7%	3.6%	4.0%
2013-2014	4.5%	4.4%	2.5%	3.1%
2014-2015	3.7%	3.5%	1.9%	2.5%
2015-2016	4.2%	4.0%	2.9%	3.3%
2016-2017	5.0%	4.8%	4.0%	4.2%

Source: LCM, (h) denotes history.

Wage growth projections in the Tasmanian Mining industry has eased in 2009/10 and 2010/11, as shown in Table 2.6 above. This slowing is less than that experienced by the

Mining industry in other states. However, the Tasmanian Mining industry is quite small with limited information, so this is based on only a few observations.

Wage growth in the Electricity, Gas and Water industry has moderated sharply in the immediate term. Wages in the utilities sector is now expected to increase by 2.2 per cent in 2009/10 compared to our previous projection of 5.4 per cent. Wage growth is expected to remain depressed compared to our previous forecasts until 2011/12, when wages growth begins to accelerate in line with the general recovery in economic conditions.

Wages in the Tasmanian Construction industry are expected to fall in 2009/10 as the financial crisis curbs new business and residential construction and the local housing market continues to weaken. Given the small size of the economy, the performance of the Tasmanian Construction industry is heavily influenced by major projects. Many projects have been delayed or scrapped as developers face difficulties raising funds. This is a sharp deterioration since the last report. The forecast for 2009/10 sees wages falling by 0.1 per cent compared to a previous increase of 3.0 per cent.

Table 2.7(a)
Average Nominal Wage Growth & Inflation in Tasmania (% pa)

	Mining	Electricity Gas and Water	Construction	All Industries	CPI Inflation
1987/88 to 1997/98	4.9	5.4	4.9	3.7	3.3
1997/98 to 2007/08	3.7	4.9	3.3	3.8	2.8
2009/10 to 2013/14	4.8	4.9	2.6	3.1	3.0
2007/08 to 2016/17	4.0	4.0	2.3	2.6	2.7

Source: LCM

Table 2.7(b)
Average Real Wage Growth in Tasmania (% pa)

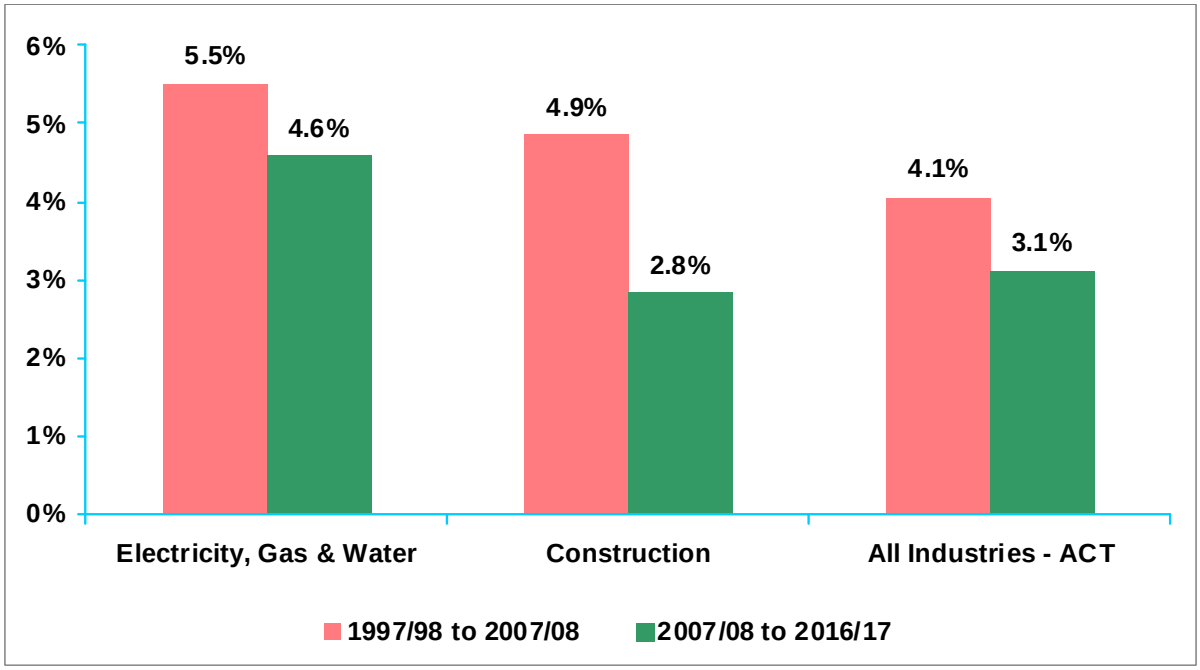
	Mining	Electricity Gas and Water	Construction	All Industries
1987/88 to 1997/98	1.6	2.1	1.6	0.4
1997/98 to 2007/08	0.9	2.0	0.5	0.9
2009/10 to 2013/14	1.7	1.8	-0.4	0.0
2007/08 to 2016/17	1.3	1.3	-0.4	-0.2

Source: LCM

2.4 Labour Cost Forecasts of Selected Industries in the Australian Capital Territory

The ACT has been less affected by the current downturn in economic activity because much of the economy is dependent on the government sector, which is largely acyclical. Notwithstanding, the economic outlook for the ACT has also deteriorated compared to our forecast in September 2008. The previously optimistic forecast for the ACT has now been revised downwards in the wake of public sector job losses and an easing in the ACT housing market. Projected average annual wage growth has eased since the last report from 3.9 per cent to 3.0 per cent over the forecast period. This is shown in Chart D3 in Attachment D. The easing of wages growth pressures in the ACT is in line with an expected slowdown in the rate of employment/hiring by government departments. This will impact on the ACT economy by reducing labour market tightness in general, and also cause a moderation in consumer demand.

Chart 2.4
Nominal Compound Labour Cost Growth Rates in ACT (% pa)



Source: LCM

Given the general easing of labour market tightness within the ACT, the projected compound labour cost growth in the utilities industry has eased from 5.5 per cent to 4.6 per cent since last report. This is also shown in Chart D3 in Attachment D. Similarly, the previous estimate of compound wages growth in the ACT Construction industry has been revised down from 3.7 per cent to 2.8 per cent. Notably, since the ACT economy is largely acyclical, projected wage growth in the construction sector has moderated by less than in other states.

Table 2.8
Nominal Labour Cost Growth Rates in ACT, 1996/97 to 2016/17 (% pa)

	Electricity, Gas & Water	Construction	All Industries - ACT
1996-1997 (h)	6.6%	-14.5%	2.8%
1997-1998 (h)	4.7%	3.5%	6.2%
1998-1999 (h)	8.0%	13.8%	3.3%
1999-2000 (h)	4.6%	-6.2%	1.9%
2000-2001 (h)	8.5%	2.0%	4.2%
2001-2002 (h)	6.8%	0.6%	-0.1%
2002-2003 (h)	3.7%	14.8%	7.1%
2003-2004 (h)	5.3%	-12.4%	3.6%
2004-2005 (h)	3.1%	-10.6%	5.5%
2005-2006 (h)	-3.2%	58.0%	8.6%
2006-2007 (h)	5.7%	-5.0%	4.0%
2007-2008 (h)	13.2%	8.8%	2.8%
2008-2009	2.0%	1.4%	0.9%
2009-2010	3.4%	0.7%	0.8%
2010-2011	4.9%	2.1%	2.6%
2011-2012	6.5%	4.1%	4.4%
2012-2013	6.4%	4.3%	4.7%
2013-2014	4.9%	3.0%	3.6%
2014-2015	3.9%	2.4%	2.9%
2015-2016	4.3%	3.2%	3.6%
2016-2017	5.0%	4.3%	4.5%

Source: LCM (h) denotes history.

Forecast wages growth in utilities has eased primarily in the short term, reflecting an expected slowdown in economic growth over 2009/10 as shown in Table 2.8 above. In 2009/10 wages in the utilities sector look set to grow by 3.0 per cent, compared to the previous figure of 6.1 per cent. Again, this deceleration is not as dramatic as the change in other states.

The construction industry is also expected to experience a slowdown in wages growth, with growth projected at just 0.6 per cent in 2009/10, compared to a previous projection of 3.7 per cent.

There is no specific reason for the strong wage growth in 2007/08 for the utilities sector and this is more likely to be related to sampling issues. Specifically, the result may be due to the small size of the sample as well as the effect of sample rotation. Since the AWE is based on a sample survey, the sample of units changes from quarter to quarter and this can impact the figures at the lower levels, particularly at the state by industry level.

Table 2.9(a)
Average Nominal Wage Growth & Inflation in ACT (% pa)

	Electricity Gas and Water	Construction	All Industries	CPI Inflation
1987/88 to 1997/98	5.6	2.7	4.7	3.3
1997/98 to 2007/08	5.5	4.9	4.1	3.0
2009/10 to 2013/14	5.7	3.4	3.8	2.4
2007/08 to 2016/17	4.6	2.8	3.1	2.4

Source: LCM

Table 2.9(b)
Average Real Wage Growth in ACT (% pa)

	Electricity Gas and Water	Construction	All Industries
1987/88 to 1997/98	2.2	-0.6	1.4
1997/98 to 2007/08	2.4	1.8	1.0
2009/10 to 2013/14	3.2	0.9	1.4
2007/08 to 2016/17	2.2	0.5	0.7

Source: LCM

3. Review of Electricity, Gas and Water Labour Cost Forecasting Submissions

In September 2008 the Australian Energy Regulator (AER) engaged KPMG Econtech[4] to update the Labour Cost Model (LCM) and provide annual labour cost forecasts for New South Wales (NSW), Tasmania and Australian Capital Territory (ACT)[5]. Labour cost growth forecasts and commentary are provided for the Mining, Electricity, Gas & Water supply (EGW) and Construction industries. Part of this report involved reviewing the methodology used to forecast labour costs proposed by the electricity network businesses in NSW and Tasmania. In particular, KPMG Econtech reviewed the following reports:

- Competition Economists Group (CEG), Escalation factors affecting expenditure forecasts – A report for Transend, April 2008; and

- Competition Economists Group (CEG), Escalation factors affecting expenditure forecasts – A report for NSW Electricity Businesses, April 2008.

As part of the revised proposals of the NSW and Tasmanian businesses the CEG prepared the report entitled *Competition Economists Group (CEG), Escalators affecting expenditure forecasts – A report for NSW and Tasmanian Electricity Businesses, January 2009.*

This report reviewed the approach taken by the AER in estimating escalation factors for these businesses. Overall, CEG recommended that the businesses adopt the general wage forecasts and detailed EGW wage forecasts, developed by KPMG Econtech, in their revised regulatory proposals.

As requested by the AER, KPMG Econtech has reviewed CEG's January 2009 report and this note outlines our comments and suggestions for the AER's final determination. Our comments relate mainly to four areas of interest: forecasting methodology, updating of forecasts, EGW labour cost escalators, and general labour cost escalators.

These four areas of interest are discussed in detail below.

[4] In August 2008 Econtech joined the KPMG network to form the entity, KPMG Econtech.
[5] Econtech, Labour Cost Growth Forecasts 2007/08 to 2016/17. September 2008

3.1 Forecasting Methodology

In their latest report, in response to the following AER comment[6]:

> "The AER also does not consider it appropriate to rely on the forecasts presented by Macromonitor because there is no description of the methodology used to forecast wage growth or productivity."

CEG state that both Macromonitor and KPMG Econtech provide full descriptions of methodology[7] and that[8]:

> "The only major methodological difference between Macromonitor and Econtech's forecasts is that Econtech attempts to formalise this process by feeding its expert opinions into a formal mathematical model of the Australian economy to derive its forecast."

KPMG Econtech's methodology for forecasting wages does involve both an economy-wide model, MM2, and a customised forecasting model developed especially for the AER, the LCM. MM2 is a macro-Computable General Equilibrium (CGE) model, designed both for forecasting and policy analysis. The LCM is a model based on regression equations and is used to provide forecasts of labour costs by state and industry. The LCM uses historical wage data collected from the Australian Bureau of Statistics (ABS) and MM2 forecasts (which are also based on ABS historical data) as its main inputs. The assumptions underlying the modelling methodology and regression equations used in the LCM are listed in Attachment A of KPMG Econtech's September 2008 report to the AER. The assumptions underlying MM2 are also publicly available[9]. Hence, although currently no other party has access to either the MM2 or the LCM, it is not a "black box" as described by CEG[10]. The discussion of the MM2 methodology included in Attachment B of KPMG Econtech's September 2008 report to the AER is intended to be general as it is aimed at a wide audience and is not designed to be a full documentation of the model. Indeed, the Attachment clearly indicates that there is further, more detailed, model documentation available.

While it is true that MM2 is based on a series of assumptions, exogenous variables and systematic adjustments, this is a feature of all economic models. KPMG Econtech does not agree with CEG's comments that[11]:

> "Ultimately such a process would be pointless because the drivers of Econtech's forecasts is not 'the model' *per se* but the choice of '*exogenous variables that define the results*'."

The structure of KPMG Econtech's economic models and the economic assumptions

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[6] AER, Draft Decision: New South Wales draft distribution determination 2009-10 to 2013-14, November 2008, p.537.

[7] CEG, Escalators affecting expenditure forecasts – A report for NSW and Tasmanian Electricity Businesses, January 2009, p. 27

[8] CEG, Escalators affecting expenditure forecasts – A report for NSW and Tasmanian Electricity Businesses, January 2009, p. 28

[9] Powell, A.A. and Murphy, C.W., Inside A Modern Macroeconometric Model – A Guide to the Murphy Model, Springer, Berlin, 2nd ed., 455pp.

[10] CEG, Escalators affecting expenditure forecasts – A report for NSW and Tasmanian Electricity Businesses, January 2009, p. 30

[11] Ibid

underlying them are a very important factor into the development of KPMG Econtech's forecasts. The economic assumptions underlying KPMG Econtech's models determine which variables are exogenous to the model and how these exogenous variables interact with the endogenous (model-determined) variables. KPMG Econtech's method for producing forecasts is transparent, as the model structure including the overarching assumption are readily available for review, as discussed above. A list of MM2's key exogenous variables and our assumptions surrounding these variables are discussed in Section 3.5

In addition, the adjustments incorporated in our modelling framework are not applied in an ad-hoc fashion. These adjustments are designed to incorporate key economic information available to KPMG Econtech at the time the forecasts are developed. For example, the March update of our macroeconomic outlook updates MM2 for the December Quarter National Accounts data, amongst other data sets. Given the lag between the actual data point and the release of the data there are three months of information that are not captured by the December Quarter National Accounts.

Importantly, these adjustments are applied to the model in a systematic fashion, either through adjustments to exogenous variables or to the residuals of a particular variable. In this way, our forecasts of key national, state and industry variables are consistent with one another.

In addition, because these adjustments are designed to capture key economic information not contained in the historical data, they are made mainly in the short term (the first 1-2 years of the forecast horizon). Over the medium to longer term these adjustments are guided by economic principles. For example, residuals in the regression equation of a particular variable move towards their historical level or zero.

As discussed in KPMG Econtech's September 2008 report and given that no new information has been provided, it remains difficult to asses the forecast results provided by Macromonitor.

3.2 Updating the Forecasts

CEG state that[12]:

> "If the AER was to seek wage and construction cost forecasts from Econtech this would best be described as re-doing a forecast, rather than 'updating' a forecast in accordance with agreed methodology."

The AER has engaged KPMG Econtech to update the LCM and provide annual labour cost forecasts for New South Wales (NSW), Tasmania and the Australian Capital Territory (ACT). This update will incorporate:

- Updated MM2 forecasts which will incorporate, amongst other updated data sets, the December 2008 Quarterly National Accounts released by the ABS on 4 March 2009.
- November Average Weekly Earnings data released by the ABS in 26 February 2009.

[12] CEG, Escalators affecting expenditure forecasts – A report for NSW and Tasmanian Electricity Businesses, January 2009, p. 13

The procedure used in updating the forecasts does not alter the underlying methodology used to develop the forecasts. It mainly involves re-estimating the regression equations to incorporate the latest historical data points. In other words, the structure of both MM2 and LCM will not change, they will be the same as those used to produce the September 2008 labour cost forecasts. As previously discussed, the modelling methodology for MM2 and LCM is readily available.

The CEG also assert that[13]:

"Ultimately, Econtech's forecasts are the outcome of their professional judgement."

Judgemental adjustments are only one part of KPMG Econtech's forecasting methodology. As discussed above, these adjustments are applied in a systematic fashion, designed to capture key economic information not contained in the historical data. As such, they are applied mainly to the first 1 – 2 years of our forecast horizon.

3.3 EGW Labour Cost Escalators

The CEG correctly identifies the annual growth rates reported by KPMG Econtech as the increase in the average across the four quarters of that particular variable from one financial year to the next. The CEG notes that[14]:

> "…the Econtech escalators cannot reasonably be used to approximate a June on June escalation."

Similarly, KPMG Econtech's annual escalators cannot reasonably be used to approximate a December on December escalation. This is because KPMG Econtech's escalators do not reflect the movement from one quarter to the corresponding quarter in the next financial year. That is, they do not reflect the movement between two points in time; rather it is based on an average across the year. Since it is an average across the year, it is not centered on any particular quarter. KPMG Econtech notes that calculating annual growth rates based on financial year averages reduces the volatility of these growth rates as they are not tied to just two points of data.

KPMG Econtech agrees that the underlying price variable used to deflate nominal escalators and convert them to real escalators must be derived in a consistent manner to the nominal escalators. To facilitate this process Econtech has provided the AER with its quarterly forecasts of CPI in levels. The LCM however is an annual model and provides forecast only on an annual (financial year average) basis. The LCM is able to be extended so that it is able to produce quarterly forecasts. This would allow the AER to calculate annual labour cost escalators on a financial year average basis or a quarter on quarter basis.

Alternatively, the annual index of labour cost can be used to approximate quarterly indexes using the following formula:

I_Sep 2006 = (2*(I_2005/06)+7*(I_2006/07)-1*(I_2007/08))/8

[13] CEG, Escalators affecting expenditure forecasts – A report for NSW and Tasmanian Electricity Businesses, January 2009, p. 14

[14] CEG, Escalators affecting expenditure forecasts – A report for NSW and Tasmanian Electricity Businesses, January 2009, p. 9

I_Dec 2006 = (0*(I_2005/06)+9*(I_2006/07)-1*(I_2007/08))/8

I_Mar 2007 = (-1*(I_2005/06)+9*(I_2006/07)+0*(I_2007/08))/8

I_June 2007 = (-1*(I_2005/06)+7*(I_2006/07)+2*(I_2007/08))/8

The advantage of this method is that the annual (financial year average) growth implied by the constructed quarterly series is the same as the original series. The annual (June on June) growth rates for the September 2008 forecasts implied by the constructed quarterly series are shown in the tables below.

Table 3.1
Annual Nominal Growth in Labour Cost – NSW

	Actual Financial Year	Implied Financial Year	June on June
2008-2009	6.4%	6.4%	6.7%
2009-2010	6.4%	6.4%	6.3%
2010-2011	6.2%	6.2%	6.1%
2011-2012	6.1%	6.1%	6.0%
2012-2013	5.8%	5.8%	5.5%
2013-2014	4.8%	4.8%	4.5%

Table 3.2
Annual Nominal Growth in Labour Cost – TAS

	Actual Financial Year	Implied Financial Year	June on June
2008-2009	5.8%	5.8%	6.4%
2009-2010	5.4%	5.4%	5.3%
2010-2011	5.3%	5.3%	5.3%
2011-2012	5.4%	5.4%	5.3%
2012-2013	5.2%	5.2%	5.0%
2013-2014	4.4%	4.4%	4.1%

Table 3.3
Annual Nominal Growth in Labour Cost – ACT

	Actual Financial Year	Implied Financial Year	June on June
2008-2009	5.8%	5.8%	5.1%
2009-2010	6.1%	6.1%	6.2%
2010-2011	6.1%	6.1%	6.1%
2011-2012	6.1%	6.1%	6.1%
2012-2013	5.9%	5.9%	5.6%
2013-2014	4.9%	4.9%	4.6%

With regard to productivity adjustments, as discussed in KPMG Econtech's September 2008 report, KPMG Econtech's forecasts of labour costs incorporates the compensation to labour for increases in productivity. Labour productivity assumptions are incorporated in MM2 through its labour productivity index. Growth in this index is applicable to the entire labour force. Along with this productivity index MM2 also incorporates assumptions regarding the growth in labour efficiency for each industry. This then allows separate labour productivity assumptions for each 1-digit ANZSIC industry.

3.4 General Labour Cost Escalators

In the earlier reports CEG recommended that KPMG Econtech's economy-wide wage forecast, published in KPMG Econtech's December 2007 ANSIO report be used in the development of cost escalators for various equipment purchases as a general wage forecast[15].

Determining whether this is an appropriate approach in the development of cost escalators for equipment purchases is outside of the scope of KPMG Econtech's terms of reference with the AER. The economy-wide wage forecasts presented in ANSIO are based on the Compensation of Employees measure as opposed to Average Weekly Ordinary Time Earnings measure as indicated in the two CEG reports listed above. Hence, the difference between the forecasts of general wages presented by the CEG and KPMG Econtech can be attributed to the different metrics used to measure wages. Although, the main difference between the forecast of general wages presented by the CEG and Econtech is due to the revision of Econtech's economic outlook since December 2007.

In terms of a general wage forecast, KPMG Econtech has reviewed the historical data and we believe Average Weekly Earnings, as opposed to Compensation of Employees to be the more appropriate wage measure for the AER and this was the measure used in our September 2008 report for the AER.

3.5 Key Exogenous Variables in MM2

The key exogenous variables in MM2 are those relating to KPMG Econtech's foreign inputs or "rest-of-the-world" assumptions. These exogenous variables and our assumptions for these variables are outlined below.

- *Short term interest rates for Japan, United Kingdom, United States and European Union.* These are based on 3-month Eurodollar deposit rates for the Yen, Pound, US Dollar and Euro. As these MM2 financial variables are defined as *beginning of period,* when the forecasts are generated the value of these variables for the first two quarters (of the forecast horizon) is known. Over the medium term, the term structure is used to generate projections of these short-term interest rates. Over the longer term, it is assumed that short-term rates gradually converge to long-term rates.

- *Long-term interest rates (bond rates) for Japan, United Kingdom, United States and European Union*. These are based on 10-year government security yields for the respective countries. As discussed above, the values for the first two quarters of the forecast horizon is known. Over the longer term, long-term interest rates are then extrapolated, allowing for an increase of around 2 percentage points spread across the next two to three years to allow for a risk premium for Australian dollar denominated assets.

- *US dollar exchange rates for the Japanese Yen, United Kingdom Pound and European Union Euro* Apart from the first two quarters of the forecast horizon, the exchange rate profile is derived by using the uncovered interest rate parity condition.

[15] CEG, Escalation factors affecting expenditure forecasts – A report for Transend, April 2008, p 31
CEG, Escalation factors affecting expenditure forecasts – A report for NSW Electricity Businesses, April 2008, p31

- *Global production index*. This exogenous variable broadly follows the IMF's outlook for global growth. In particular:

  June 2008 forecasts – Slowdown in global production growth in 2008/09

  March 2009 forecasts – An even sharper slowdown in global production growth in 2008/09. Global production is expected to fall in 2009/10.

- *Reserve Bank of Australia Non-Rural Commodity Prices*

  June 2008 forecasts – In the short term (2008/09 – 2009/10), further increases in non –rural commodity prices are expected. Over the medium term, falls are expected such that some of the gains in commodity prices are scaled back. Over the longer term KPMG Econtech does not expect any growth in commodity prices in real terms, a standard balanced growth modelling assumption.

  March 2009 forecasts – The gain in commodity prices in 2008/09 is more moderate than previously expected. A sharp fall in commodity prices is expected over 2009/10. Over the medium term a rebound in commodity prices is expected as the world economy recovers. Over the longer term KPMG Econtech does not expect any growth in commodity prices in real terms.

Attachment A – ABS Data Revision

Table A1
Annual Nominal Labour Cost Growth (%) and Percentage Point Difference for the Electricity, Gas and Water Industry

	NSW			ACT			TAS			AUS		
	Old	Revised	Difference	Old	Revised	Difference	Old	Revised	Difference	Old	Revised	Difference
1996-1997	9.5	9.5	0.0	9.1	9.1	0.00	0.9	0.9	0.0	6.9	6.9	0.0
1997-1998	5.1	4.9	-0.2	6.6	6.6	0.00	-0.7	-0.9	-0.2	5.0	4.8	-0.1
1998-1999	7.6	7.3	-0.3	4.7	4.7	0.00	13.2	12.8	-0.4	7.8	7.6	-0.2
1999-2000	9.0	8.7	-0.3	8.0	8.0	0.00	13.7	13.4	-0.3	5.8	5.6	-0.2
2000-2001	5.2	4.9	-0.3	4.6	4.6	0.00	-0.6	-0.8	-0.2	6.5	6.2	-0.2
2001-2002	5.9	5.6	-0.3	8.5	8.5	-0.03	7.1	6.8	-0.3	6.2	5.9	-0.2
2002-2003	10.2	9.8	-0.4	6.9	6.8	-0.07	6.7	6.2	-0.5	7.9	7.6	-0.3
2003-2004	-0.1	-0.3	-0.2	3.8	3.7	-0.02	3.4	3.5	0.0	2.1	1.9	-0.2
2004-2005	10.7	10.3	-0.4	5.4	5.3	-0.01	6.0	5.5	-0.5	6.5	6.2	-0.3
2005-2006	0.7	0.4	-0.3	3.2	3.1	-0.01	6.1	5.8	-0.3	3.1	2.9	-0.2
2006-2007	4.5	4.2	-0.3	-3.1	-3.2	-0.01	4.5	4.2	-0.3	3.5	3.2	-0.2
2007-2008	1.5	1.8	0.3	5.7	5.7	0.00	2.0	2.9	0.9	3.3	3.4	0.2

Attachment B – Real Labour Cost Growth Rates

Table B1
Real Labour Cost Growth Rates in NSW (% pa)

	Mining	Electricity, Gas & Water	Construction	All Industries - NSW
1996-1997 (h)	5.7	3.4	6.4	2.0
1997-1998 (h)	-0.5	7.1	-3.3	2.0
1998-1999 (h)	3.6	6.9	9.5	3.1
1999-2000 (h)	3.5	2.4	-3.0	1.9
2000-2001 (h)	1.6	-0.6	-4.6	-1.8
2001-2002 (h)	1.6	6.6	3.6	1.8
2002-2003 (h)	-2.2	-3.1	3.0	-0.3
2003-2004 (h)	0.7	8.0	-4.8	3.5
2004-2005 (h)	1.9	-2.0	1.4	1.2
2005-2006 (h)	1.6	1.1	2.6	2.4
2006-2007 (h)	1.7	-0.9	-0.8	-0.1
2007-2008 (h)	-2.5	1.3	8.0	0.9
2008-2009	-0.7	-0.7	-1.3	-1.6
2009-2010	2.9	3.3	0.7	0.7
2010-2011	3.3	3.6	0.9	1.3
2011-2012	2.2	2.4	0.0	0.4
2012-2013	1.7	1.7	-0.3	0.1
2013-2014	0.7	0.6	-1.2	-0.6
2014-2015	1.1	0.9	-0.6	-0.1
2015-2016	3.1	2.8	1.8	2.0
2016-2017	3.9	3.6	2.9	3.1

Source: LCM

Table B2
Real Labour Cost Growth Rates in Tasmania (% pa)

	Mining	Electricity, Gas & Water	Construction	All Industries - TAS
1996-1997 (h)	-0.5%	-2.5%	5.9%	1.4%
1997-1998 (h)	3.0	12.9	1.3	2.0
1998-1999 (h)	9.3	12.4	-4.7	2.7
1999-2000 (h)	3.7	-2.6	-17.6	0.6
2000-2001 (h)	-0.4	1.0	-11.1	-3.6
2001-2002 (h)	0.3	4.1	8.7	0.2
2002-2003 (h)	-2.6	0.2	9.6	3.3
2003-2004 (h)	-2.9	3.0	3.4	0.8
2004-2005 (h)	1.8	2.6	1.9	4.0
2005-2006 (h)	1.0	1.0	13.3	-0.1
2006-2007 (h)	-3.7	0.4	4.1	-0.2
2007-2008 (h)	-2.9	-2.9	-2.9	-2.9
2008-2009	-0.8	-0.8	-1.4	-1.9
2009-2010	1.9	2.4	-0.2	0.0
2010-2011	2.5	2.7	0.0	0.5
2011-2012	1.2	1.3	-1.0	-0.7
2012-2013	0.6	0.6	-1.4	-1.0
2013-2014	-0.2	-0.3	-2.1	-1.5
2014-2015	0.4	0.1	-1.3	-0.8
2015-2016	2.6	2.4	1.3	1.7
2016-2017	3.5	3.3	2.6	2.8

Source: LCM

Table B3
Real Labour Cost Growth Rates in ACT (% pa)

	Electricity, Gas & Water	Construction	All Industries - ACT
1996-1997 (h)	5.9	-15.2	2.1
1997-1998 (h)	5.3	4.1	6.8
1998-1999 (h)	7.1	12.9	2.3
1999-2000 (h)	2.3	-8.4	-0.4
2000-2001 (h)	2.3	-4.2	-1.9
2001-2002 (h)	4.3	-1.9	-2.7
2002-2003 (h)	0.5	11.5	3.8
2003-2004 (h)	2.7	-15.1	0.9
2004-2005 (h)	0.9	-12.9	3.2
2005-2006 (h)	-6.8	54.4	5.0
2006-2007 (h)	2.8	-7.9	1.1
2007-2008 (h)	9.3	5.0	-0.8
2008-2009	-1.5	-2.1	-2.5
2009-2010	3.1	0.5	0.5
2010-2011	3.6	0.9	1.3
2011-2012	2.9	0.6	1.0
2012-2013	2.5	0.5	0.9
2013-2014	1.5	-0.4	0.2
2014-2015	1.5	0.1	0.6
2015-2016	3.3	2.2	2.6
2016-2017	4.0	3.2	3.5

Source: LCM

Table B4
National Real Labour Cost Growth Rates (% pa)

	Mining	Electricity, Gas & Water	Construction	All Industries
1996-1997 (h)	1.3	3.5	4.5	1.9
1997-1998 (h)	7.6	7.6	0.8	3.8
1998-1999 (h)	1.8	4.2	3.8	2.0
1999-2000 (h)	1.0	3.8	-5.8	0.2
2000-2001 (h)	-0.6	0.0	-4.4	-1.3
2001-2002 (h)	2.1	4.6	2.2	1.5
2002-2003 (h)	1.1	-1.1	5.1	0.8
2003-2004 (h)	1.4	3.7	0.9	2.7
2004-2005 (h)	1.8	0.4	1.5	1.7
2005-2006 (h)	-0.1	0.0	1.0	1.1
2006-2007 (h)	2.3	0.5	4.6	1.4
2007-2008 (h)	2.2	-0.7	3.6	0.9
2008-2009	-1.2	-1.0	-1.6	-2.0
2009-2010	2.0	2.8	0.1	0.3
2010-2011	2.5	3.1	0.4	1.0
2011-2012	1.6	2.1	-0.3	0.2
2012-2013	1.3	1.5	-0.5	0.0
2013-2014	0.5	0.5	-1.3	-0.7
2014-2015	0.9	0.8	-0.7	-0.1
2015-2016	3.0	2.8	1.7	2.1
2016-2017	3.8	3.6	2.9	3.1

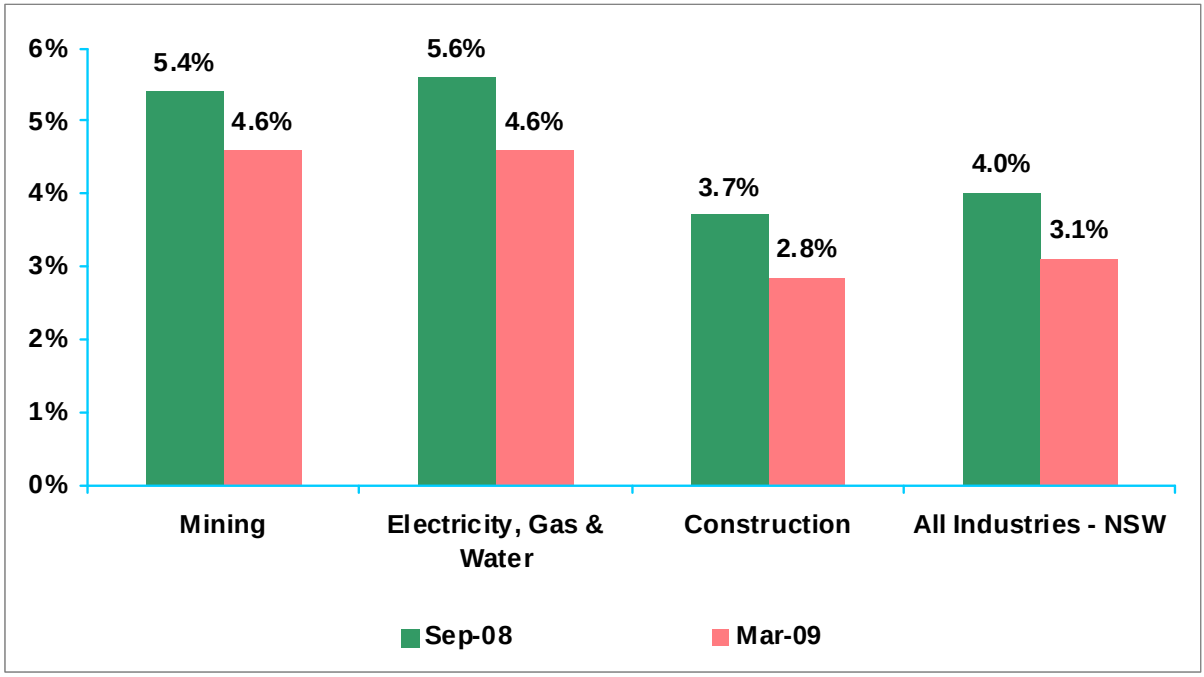
Source: LCM

Attachment C – Forecasts of National Annual Nominal Wage Growth by Industry

-	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
Mining	3.1%	5.3%	5.7%	2.2%	2.2%	3.7%	5.6%	5.7%	4.6%	3.7%	4.3%	5.2%
Manufacturing	3.6%	3.7%	3.5%	1.4%	1.3%	3.1%	5.0%	5.2%	4.1%	3.3%	3.8%	4.7%
Electricity, Gas & Water	3.2%	3.4%	2.7%	2.3%	3.1%	4.4%	6.0%	6.0%	4.6%	3.6%	4.1%	6.3%
Construction	4.2%	7.6%	7.1%	1.7%	0.4%	1.6%	3.6%	3.9%	2.7%	2.1%	3.0%	4.1%
Wholesale Trade	4.4%	3.7%	3.5%	1.2%	0.9%	2.7%	4.7%	5.1%	4.1%	3.4%	4.0%	4.7%
Retail Trade	6.2%	3.3%	5.8%	1.0%	-0.4%	0.8%	2.6%	3.2%	2.4%	1.9%	2.8%	3.6%
Accomm'n, Cafes & Restaurants	4.9%	12.5%	0.6%	-0.7%	-0.7%	2.2%	4.5%	5.0%	3.9%	3.1%	3.7%	4.8%
Transport & Storage	3.3%	2.3%	0.4%	0.4%	0.8%	3.1%	5.1%	5.3%	4.2%	3.4%	3.9%	4.7%
Communication Services	1.4%	4.8%	2.7%	1.2%	1.0%	2.7%	4.5%	4.8%	3.6%	2.9%	3.5%	4.3%
Finance & Insurance	5.6%	2.9%	5.5%	2.3%	1.7%	3.1%	4.8%	5.0%	3.8%	3.1%	3.7%	4.6%
Property & Business Services	7.1%	4.5%	8.2%	2.0%	0.3%	1.2%	2.9%	3.3%	2.5%	2.0%	2.8%	3.9%
Gov't Admin & Defence	3.3%	4.1%	4.3%	1.5%	1.2%	2.6%	4.4%	4.6%	3.6%	2.9%	3.5%	4.4%
Education	4.3%	3.4%	2.5%	0.5%	-0.2%	1.7%	3.6%	4.0%	3.1%	2.4%	3.1%	4.0%
Health & Community Services	1.7%	4.3%	4.5%	1.0%	0.1%	1.6%	3.4%	3.7%	2.7%	2.1%	3.0%	3.9%
Culture & Recreation Services	0.0%	-8.8%	4.9%	1.5%	0.2%	1.1%	2.6%	2.9%	2.0%	1.5%	2.4%	3.0%
Personal & Other Services	9.3%	10.7%	-0.5%	-0.7%	-0.6%	1.9%	4.1%	4.5%	3.4%	2.7%	3.5%	4.3%
Total AUS	4.4%	4.3%	4.3%	1.3%	0.6%	2.2%	4.0%	4.4%	3.3%	2.7%	3.4%	4.3%

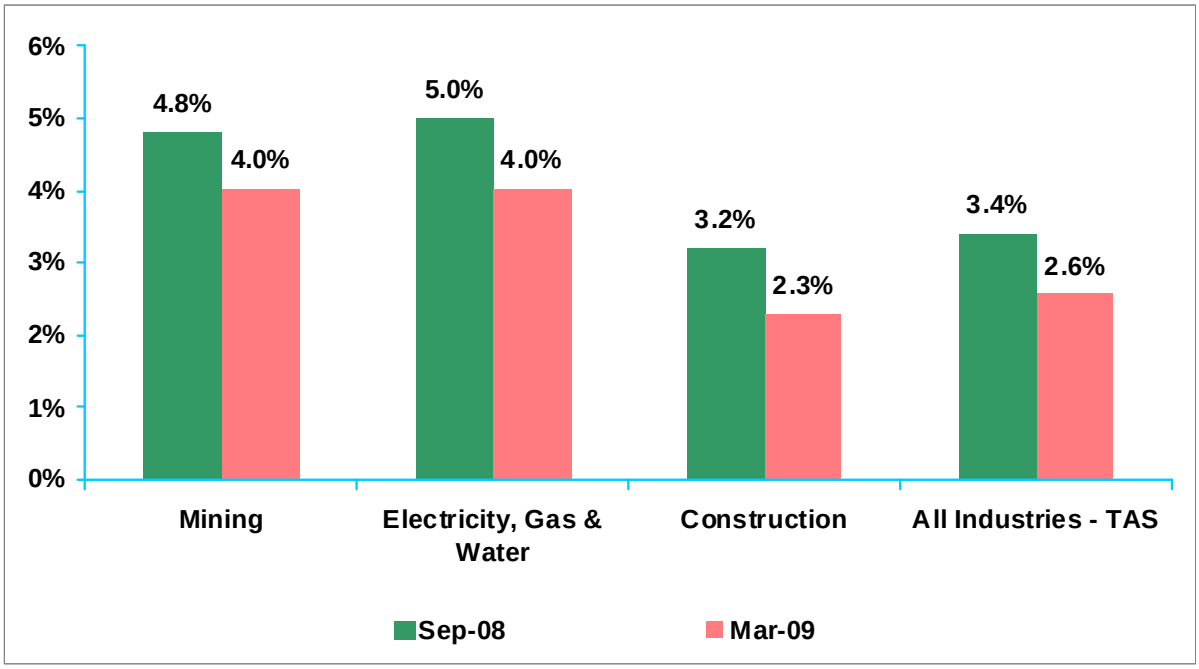
Attachment D – Overall Forecast Comparison

Chart D1
Nominal Compound Labour Cost Growth Rates in NSW
2007/08 – 2016/17 (% pa)



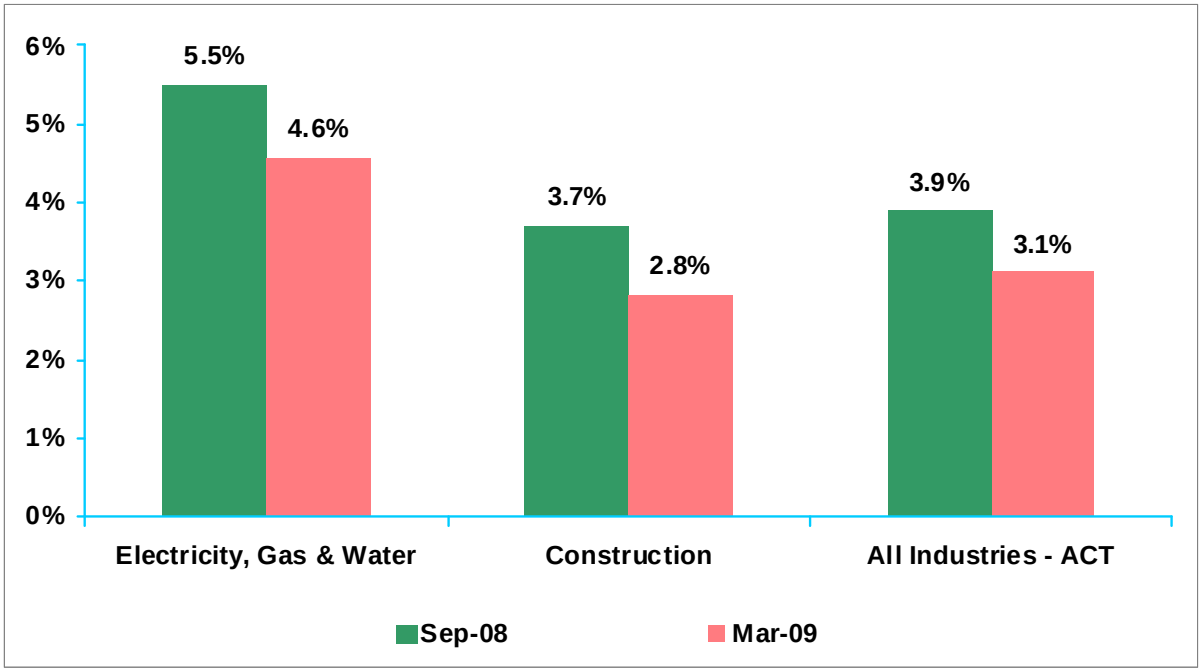
Source: LCM

Chart D2
Nominal Compound Labour Cost Growth Rates in TAS
2007/08 – 2016/17 (% pa)



Source: LCM

Chart D3
Nominal Compound Labour Cost Growth Rates in ACT
2007/08 – 2016/17 (% pa)



Source: LCM