Appendix D

Outlook for Labour Markets and Costs to 2016/17: Electricity, Gas and Water Sector
Australia and South Australia

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Australia and South Australia

Final Report

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Prepared by BIS Shrapnel for

ElectraNet

Contents

Table 1.1: Summary of Nominal and Real Wages Growth
Electricity, Gas & Water Sector, Australia and South Australia

Year Ended June	Nominal Wages Growth			Real Wages Growth (3)		
	Labour Price Index, Aust (1)	Average Weekly Ord Time Earnings (2)		Average Weekly Ord Time Earnings (2)		Headline CPI
	Australia %CH	Australia %CH	South Australia %CH	Australia %CH	South Australia %CH	Inflation %CH
1989		5.2	5.2	-2.1	-2.1	7.3
1990		9.1	6.8	1.1	-1.2	8.0
1991		4.6	7.9	-0.7	2.6	5.3
1992		6.3	3.6	4.4	1.7	1.9
1993		2.4	0.3	1.4	-0.7	1.0
1994		3.2	5.1	1.4	3.3	1.8
1995		3.1	5.2	-0.1	2.0	3.2
1996		7.0	2.1	2.7	-2.2	4.2
1997		6.9	10.2	5.5	8.9	1.3
1998		8.2	10.8	8.2	10.8	0.0
1999	3.1	4.0	3.1	2.7	1.8	1.3
2000	3.9	7.2	6.8	4.8	4.4	2.4
2001	3.9	7.1	5.4	1.1	-0.6	6.0
2002	4.3	7.8	7.2	4.9	4.4	2.9
		0.0				0.0
2003	4.3	3.3	8.6	0.2	5.5	3.1
2004	4.4	7.4	4.7	5.0	2.3	2.4
2005	4.3	3.9	0.6	1.5	-1.8	2.4
2006	5.5	1.5	2.4	-1.7	-0.8	3.2
2007e	5.8	4.4	6.2	1.3	3.1	3.1
Forecasts						
2008	5.8	6.2	5.6	3.2	2.6	3.0
2009	5.2	5.6	5.6	2.7	2.7	2.9
2010	4.5	5.3	6.0	3.0	3.7	2.3
2011	4.7	6.1	6.3	3.2	3.4	2.9
2012	5.2	5.9	5.9	2.7	2.7	3.2
2013	4.9	5.8	5.6	2.7	2.5	3.2
2014	4.3	5.0	4.7	2.3	2.0	2.7
2015	4.9	5.4	5.1	2.9	2.6	2.5
2016	5.2	6.1	5.9	2.9	2.7	3.2
2017	5.2	6.1	6.0	2.5	2.4	3.6
Long Term Averages						
1990-00		5.3	5.5	3.0	3.2	2.2
2001-07	4.6	5.0	5.0	1.7	1.7	3.3
2008-12	5.1	5.8	5.9	3.0	3.0	2.9
2008-17	5.0	5.7	5.7	2.8	2.7	2.9
2008-13	4.9	5.7	5.9	2.9	3.0	2.9

e : estimate Source: BIS Shrapnel, ABS data

(1) Ordinary time hours excluding bonuses.

(2) Earnings of males only are used in order to obtain the most consistent time series. Data is year ended May.

(3) Nominal wages growth deflated by headline CPI inflation.

1. SUMMARY

- BIS Shrapnel was engaged by ElectraNet to provide an expert opinion regarding the outlook for labour costs and labour market issues relevant to the electricity sector over a period that extends to 2016/17. For the purposes of estimating wage cost changes in ElectraNet's operating expenses, BIS Shrapnel recommends that movements in average weekly ordinary time earnings (AWOTE) for the electricity, gas and water sector should be used.
- Having considered the available data, it is BIS Shrapnel's opinion that wages growth in the electricity, gas and water (utilities) sector will, on average, continue to outpace national wages growth over the next ten years to 2016/17 — with national utilities wages growth expressed in average weekly ordinary time earnings forecast to average 5.7 per cent per annum (compared to the national all industries average of 5.2 per cent p.a.) and growth in the labour price index forecast to average 5.0 per cent p.a. (national all industries average 4.2 per cent). The faster wages growth expected in the electricity, gas and water sector over the next ten years is in line with historical movements over the past 15 years.
- Wages growth (AWOTE) in the South Australian utilities sector is forecast to average 5.9 per cent in the next regulatory reset period running from 2008/09 to 2012/13 (see table 1.1).
- Real wages growth forecast over the next decade is forecast to average around 2.8 per cent per annum both for the Australian and South Australian utilities sectors. This is based on forecast headline CPI inflation of 2.9 per cent a year on average and forecast wages growth (AWOTE) in the utilities sector of 5.7 per cent a year on average.
- The Australian economy carries good momentum at present, and growth is set to strengthen in 2007. Consumer demand, investment, public expenditure and employment growth are expected to maintain solid growth over 2007 and into 2008. But capacity constraints and labour shortages will persist and mean even moderate growth will be hard to sustain without generating inflationary pressures. The tight labour market means wages growth will continue to rise over the short term, with wages growth expected rise above 5 per cent in 2007, pushing price inflation over the Reserve Bank's 3 per cent ceiling.
- The current economic cycle is forecast to peak in 2007 with higher interest rates, downswings in key investment cycles and a slowdown in world growth driving a downturn from 2008. Consequently, a stalling of employment growth in 2008/09 will impact on wages growth. Subsequently, stronger employment growth over 2010/11 and 2011/12 will again lead to a tightening of the labour market and another upsurge in wage inflation.
- Skills shortages have been evident in the electricity, gas and water sector for the past three years, which is demonstrated in the sharp increase in job vacancies during this period. The latest 'skills in demand' lists released by the Department of Employment and Workplace Relations show that all states are experiencing skills shortages in the engineering trades, while shortages in the electrical trades are also widespread.
- The utilities sector will continue to compete against the mining, construction and manufacturing sectors for skilled labour with similar skills (i.e. engineers, engineering trades, gas-fitters, electricians, etc). Mining investment will remain at very high levels over the medium term, while construction will stay strong due to non-dwelling building and infrastructure activity and, later this decade, a recovery in residential construction. This points to the need to offer high wages to keep skilled labour in the electricity, gas and water sector.
- Utilities wages (i.e. AWOTE) growth in South Australia is forecast to average 5.7 per cent per annum over the next decade – the same as the national utilities average, which is also in line with historical trends. However, BIS Shrapnel is forecasting slightly faster growth in AWOTE in South Australia (compared to the national average) over the five years from 2007/08 to 2011/12, because of a marked strengthening in employment in the mining, construction and manufacturing sectors in the state. Employment growth in these key competing sectors in South Australia is collectively expected to outpace the Australian average, particularly over 2009/10 to 2011/12, with surging mining investment and defence-related work key factors in the strengthening over this period.

Table 2.1: Australia – Key Economic Indicators
Financial Years

Year Ended June					Forecasts						Average
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013-17
EXPENDITURE ON GDP (at average 2002/03 prices)											
Consumption											
– Private	3.4	5.3	4.3	2.6	3.8	3.3	2.7	3.9	4.5	4.0	3.7
– Government	3.2	3.9	3.9	3.3	3.9	3.8	2.5	2.0	3.3	3.6	3.4
Private Investment											
– Dwellings	15.0	4.1	-1.5	-3.9	2.1	-2.4	6.8	10.9	7.1	3.0	1.9
– Real Estate Transfer Exp.	5.0	-2.0	-16.6	1.5	-5.7	-0.1	16.0	10.5	0.0	-10.0	2.1
– New Non-Dwelling Construction (+)	27.6	8.5	8.8	21.6	11.2	2.7	-12.2	-4.1	2.6	3.4	4.1
– New Equipment (+)	17.2	14.5	15.4	14.5	2.5	1.8	-3.6	7.2	16.6	13.5	8.7
– Livestock	-47.1	125.6	3.6	1.7	-31.6	25.0	3.0	10.0	-3.5	3.0	0.3
– Intangible Fixed Assets	11.8	4.9	7.8	8.7	12.6	6.7	2.5	5.0	11.0	13.5	7.8
– New Business Investment (+)	18.5	12.7	12.0	16.2	5.8	2.9	-6.2	3.0	11.0	10.2	7.1
Total New Private Investment (+)	**15.8**	**8.4**	**5.1**	**9.1**	**4.1**	**1.3**	**-1.6**	**5.7**	**9.1**	**6.8**	**5.4**
New Public Investment (+)	6.1	2.4	9.2	8.3	14.9	-9.6	-4.2	-5.3	1.7	10.6	3.0
Domestic Demand	**5.9**	**5.8**	**4.6**	**4.4**	**4.3**	**2.4**	**1.5**	**3.7**	**5.2**	**4.8**	**4.1**
Stock Contribution (*)	0.1	0.6	-0.1	-0.3	-0.1	0.1	-0.1	0.4	0.2	0.1	-0.1
Gross National Expenditure (GNE)	**6.0**	**6.3**	**4.5**	**4.1**	**4.1**	**2.5**	**1.4**	**4.0**	**5.4**	**4.9**	**4.0**
Exports	**-0.4**	**2.1**	**3.1**	**2.2**	**5.0**	**8.6**	**7.4**	**7.1**	**6.3**	**5.0**	**5.6**
Imports	**13.1**	**13.0**	**12.1**	**7.2**	**8.6**	**4.5**	**0.3**	**6.6**	**13.3**	**10.7**	**7.5**
External Contribution (*)	-2.9	-2.3	-1.8	-1.0	-0.8	0.7	1.5	0.0	-1.7	-1.5	-0.6
Statistical Discrepancy (*)	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0
GDP	**3.2**	**4.1**	**2.7**	**2.9**	**3.3**	**3.2**	**2.9**	**4.0**	**3.8**	**3.4**	**3.4**
Inflation											
CPI (Yr Avg)	3.1	2.4	2.4	3.2	3.1	3.0	2.9	2.3	2.9	3.2	3.0
CPI (Jun on Jun)	2.7	2.5	2.5	4.0	2.2	3.2	2.7	2.4	2.9	3.3	3.0
Baseline (Jun on Jun)	2.7	1.9	2.3	2.4	3.0	3.2	3.0	2.6	3.0	3.3	3.0
Labour Price Index (Jun on Jun)	3.6	3.5	4.1	4.1	4.6	4.2	3.6	3.9	4.5	4.6	4.4
Average Weekly Earnings (Jun on Jun)	6.5	2.8	5.9	3.5	5.5	5.3	4.7	4.7	5.7	5.5	5.1
Average Weekly Earnings (Yr Avg)	5.2	4.7	4.5	4.9	4.4	5.6	4.9	4.5	5.3	5.6	5.1
Employment											
– Employment Growth (Yr Avg)	2.5	1.8	2.9	2.3	2.7	1.9	0.7	1.4	3.0	2.6	1.8
– Employment Growth (May on May) (%)	2.5	2.0	3.4	1.7	2.8	1.4	0.5	2.2	3.0	2.4	1.8
– Unemployment Rate (May) (%)	6.2	5.5	5.2	4.9	4.5	5.1	5.9	5.5	4.7	4.0	4.1
Non-farm Labour Productivity	1.8	1.4	-0.2	0.6	1.3	0.8	2.2	2.5	1.1	0.7	1.6
Interest Rates (30 June)											
– Cash Rate	4.8	5.3	5.5	5.8	6.5	6.5	6.0	6.0	6.5	7.0	
– 90–day Bank Bill	4.7	5.5	5.7	6.0	6.7	6.5	6.0	6.2	6.7	7.2	
– 10–year Govt. Bonds	5.0	5.9	5.1	5.8	6.0	5.6	5.5	6.3	6.5	6.4	
– Prime Overdraft (upper rate)	8.4	8.9	9.1	9.4	10.1	10.1	9.6	9.6	10.1	10.6	
– Housing (variable)	6.6	7.1	7.3	7.6	8.3	8.3	7.8	7.8	8.3	8.8	
Exchange Rates											
– US$ per A$ (Yr Avg)	0.58	0.71	0.75	0.75	0.78	0.74	0.65	0.64	0.73	0.76	
– US$ per A$ (30 June)	0.67	0.69	0.76	0.74	0.79	0.69	0.61	0.69	0.75	0.77	
– SDRs per A$ (30 June)	0.48	0.47	0.52	0.51	0.52	0.46	0.41	0.48	0.53	0.54	
– Trade Weighted Index of A$: 1970 = 1000 (30 June)	59.4	59.1	64.5	62.2	64.1	57.3	52.9	58.4	63.0	63.8	

e: estimate ; nf: not forecast Source: BIS Shrapnel 'Long Term Forecasts:2006-2021', ABS Data, RBA

+Expenditure on new assets (or construction work done). Excludes sales (or purchases) of second hand assets.
*Contribution to growth in GDP

2. MACROECONOMIC OVERVIEW — AUSTRALIA

- The Australian economy continues to move through a long upswing cycle. The short term outlook remains positive, with solid business investment to continue driving good growth. But performances are diverging widely across different parts of the economy and capacity constraints mean even moderate growth will be hard to sustain from here, and will add to inflationary pressures. With a further interest rate rise (or rises) to come in 2007, and downswings in key investment cycles, a marked domestic downturn looms from 2008. At this stage, the economy looks likely to avoid a recession, with a housing construction led recovery gaining traction in 2009, but there is a major risk of a bigger boom-bust cycle.
- Headline GDP growth slowed in 2006, but the data belies the strength of the economy. Domestic demand and employment growth were still strong, but the economy was hampered by skills shortages, capacity constraints and temporary price effects.
- Stronger growth should come through in 2007. The economy has entered 2007 carrying good momentum from the last quarter of 2006. Employment growth is strong, consumer confidence has bounced back after the three interest rate rises in 2006 and consumer spending has accelerated. Furthermore, a sharp rise in the value of imports in the December quarter suggests that equipment investment and non-farm stocks have also recovered from the temporary weakness of the June and September quarters last year. With governments still spending up big for (recent and) upcoming elections and to catch up on infrastructure investment, the only weak spot continues to be new dwelling construction. While most housing markets are not oversupplied, they will remain hostage to affordability problems and interest rate moves, with under-building leading to a major stock deficiency by 2008.
- Moreover, growth will be more broad-based through 2007. Consumer demand is expected to firm as the effects of the temporary spikes in petrol and food prices, that came through in 2006, unwind. Meanwhile, healthy finances will underpin another year of strong public sector expenditure. Easing capacity constraints will boost metals and minerals exports, but the external sector will remain weak as the drought will constrain rural production and as a high A$ continues to cause problems for the manufacturing and tourism sectors. And while conditions remain broadly favourable there is scope for more generalised and non-residential building investment to come through and support overall activity.
- The investment boom, which has been a key driver of growth over the past four years, is starting to lose momentum. The boom has been sustained because the major cycles came through in succession. We are now reaching a point where the present drivers are peaking, but no other cycle is ready to take up the slack. However, we expect that there is still enough momentum to drive a further, modest rise in activity in 2007:
    - Engineering construction — after an exceptionally strong period, growth in mining investment is slowing, and although public sector infrastructure activity is still rising strongly, the contribution to growth from mining activity has been so significant that total growth for the engineering construction sector is also now slowing.
    - Non-residential building — this was the last investment cycle to display a significant pick up in total activity and carries the most momentum. Further strong growth is expected through 2007 as an upswing in office construction gathers pace and broadens to include the Sydney and Melbourne markets. Other growth sectors include hotels and warehouses.
    - Machinery & equipment investment — this category is nearing the tail end of its cycle after four years of very strong growth. Replacement demand and capacity building investment

have been largely satisfied, but demand for generalised business investment will remain at a high level while conditions remain broadly favourable.

- Residential construction — the weakness of Sydney has continued to drag down overall activity, despite exceptionally strong activity in Perth and patchy growth in other markets. Although there is now strong underlying demand in the Sydney and Brisbane markets, we will not see a significant increase in activity while interest rates are still rising.

- However, growth is becoming harder to sustain. The economy continues to be constrained by skills shortages and limited productive capacity, which have effectively put a speed limit on the growth rate which can be achieved without a significant escalation in inflation. We have yet to see a blow-out in costs and prices, but this has been as much the result of good luck as good economic management — compared to other periods of strong economic activity, higher wage and consumer price inflation has taken considerably longer to come through.

- But we have finally seen a marked pick up in baseline inflation, which ended 2006 close to the top end of the Reserve Bank's 2 to 3 per cent target range. Previously, falling prices for tradeable goods and services (those which are exposed to foreign competition) had been offsetting rising non-tradeables inflation, but with world inflation on the rise and the dampening effect of a rising $A largely over, tradeables inflation is now on an upward track.

- Weak productivity growth, higher wage bills, capacity constraints in key domestic industries and rising prices for raw materials (particularly commodities) are pushing up unit production costs and hurting company profitability. As firms were able to build up profit margins during the period of weak inflation and a rising $A, they were willing to accept a slight erosion in margins when stronger inflation first emerged in order to protect their market share. However, margins are now being squeezed and firms are increasingly having to pass on rising costs in the form of higher prices. With prices on the rise, we expect to see stronger wage inflation come through over the coming year as employees move to protect real wages and as employers bid up wages to attract scarce skilled labour.

- Consequently, we expect that the Reserve Bank will be forced to raise rates again in 2007. How growth pans out will depend very much on how quickly and strongly inflation comes through and how consumers respond to a further tightening in monetary policy. Although consumers have been fairly resilient to date, we expect that — given the high levels of household debt — it would only take one or two more rate rises to reach the point where the burden of repayments is sufficient to trigger a significant weakening in consumer demand.

- We expect that the slowdown in consumer spending, along with the start of a demand-driven downturn in key investment cycles and an easing in world growth, will be sufficient to turn momentum in the economy more generally over 2008, with businesses responding to the slackening in demand by delaying hiring and investment decisions. Although we are not expecting a pronounced downturn in any single growth driver, the combined effect of a broad-based easing in activity will be a marked slowdown in domestic demand through 2008.

- The commodity price boom and the sharp appreciation of the $A since 2003 have been closely linked. As demand and supply realign through 2008, we expect to see sharp falls in commodity prices, which together with the weaker outlook for investment and interest rates will see speculators abandon the $A. It is likely that the high level of speculative activity will see the currency undershoot on the way down before returning to a more 'fair' exchange rate.

- Despite the slowdown in domestic demand, headline GDP growth is expected to hold up reasonably well in 2008, supported by a strong positive external sector contribution. Weaker investment, higher levels of productive capacity, and a subdued household sector will

constrain demand for imports. Meanwhile, resource exports will continue growing strongly as capacity ramps up (including port expansions), while the depreciation in the $A will increase the competitiveness of local manufacturers who had been unable to compete during the period of the high $A.

- However, the downturn will not be protracted. Investment will run out of steam and consumers will be temporarily cash constrained, but markets will not be generally oversupplied and the rise in unemployment will be modest. As inflationary pressures ease, allowing interest rates to be lowered, demand will regain momentum led by dwelling construction and consumer spending, with a broader upturn in investment and employment expected by early next decade. Even though investment has been strong, most industry sectors and markets will not be facing much in the way of oversupply or excess capacity once the cycle turns down.
- Generally speaking, the current round of investment has been a badly needed catch-up after years of under-investment rather than a speculative cycle. Indeed, during the current investment cycle, we don't expect investment to go 'over the top', i.e. speculative activity leading to a build up of excess supply. In particular, office construction activity only started to pick up significantly in 2006 and is unlikely to have time to reach boom levels before domestic demand and employment growth turns down. Consequently, it will not take long for any excess supply to be absorbed and for markets to tighten sufficiently to warrant a new round of investment.
- As investment strengthens we will see the return of stronger employment growth. But because we will not have seen a substantial rise in unemployment, it will not be long before the problems of labour shortages return. And with not much in the way of excess productive capacity the economy will quickly return to the point where it is nudging its growth speed limit and a build up of inflation once again threatens.
- GDP growth is forecast to re-accelerate from 2.9 per cent in 2005/06 to 3.3 per cent over 2006/07, slowing to 3.2 per cent in 2007/08 and further to 2.9 per cent in 2008/09 (growth bottoms out at 2.6 per cent in calendar 2008), before picking up to around 4 per cent again over in 2009/10 and 2010/11, before again easing over the following two years. However, the cycle may prove to be more volatile, depending on the timing and magnitude of key investment cycles, and the rise in inflation and interest rates.
- Over the 2013 to 2017 period, GDP growth is forecast to average 3.4 per cent p.a. Growth is projected to pick up from an interest-rate induced downturn around 2012/13 and pick up momentum as another major investment phase drives stronger employment growth, again leading to a tightening in labour markets and rising wage and price inflation pressures by 2016.
- Depending on the build up of inflation and households' sensitivity to further rate rises, the timing and shape of the cycle could change. If consumer demand continues to display resilience the cycle could be extended. This would give more time for investment to come through leading to a bigger build up in inflation, requiring a more aggressive tightening in rates and resulting in a sharper downturn and longer recovery period.
- Despite a remarkable run, Australia has not solved its economic problems. The economy has been more stable since the early 1990s, but remains prone to major cycles in activity. Capacity constraints and labour shortages will be a recurring problem, limiting growth over the medium to longer term and resulting in persistent higher wage and price inflation relative to the past decade.

Table 3 .1: Wages and Prices — Australia
Year Average Growth

Year Ended June	Average Weekly Ordinary Time Earnings[1]		Labour Price Index	Official/ Headline Inflation CPI		BIS Shrapnel Baseline CPI (2)
	$	%CH	2003/04=100	89/90=100	%CH	%CH
1989	515.7	7.2		92.6	7.3	5.7
1990	552.2	7.1		100.0	8.0	4.8
1991	588.3	6.5		105.3	5.3	5.4
1992	615.4	4.6		107.3	1.9	4.6
1993	627.2	1.9		108.4	1.0	3.4
1994	646.0	3.0		110.4	1.8	3.1
1995	673.0	4.2		113.9	3.2	1.7
1996	705.1	4.8		118.8	4.2	2.8
1997	731.4	3.7		120.3	1.3	3.2
1998	763.6	4.4		120.3	0.0	3.2
1999	790.0	3.5	3.2	121.9	1.3	1.5
2000	816.0	3.3	2.9	124.8	2.4	1.9
2001	857.5	5.1	3.5	132.2	6.0	2.6
2002	903.7	5.4	3.4	136.0	2.9	3.5
2003	950.7	5.2	3.5	140.2	3.1	2.9
2004	995.3	4.7	3.6	143.5	2.4	2.3
2005	1 040.2	4.5	3.8	147.0	2.4	2.1
2006	1 091.6	4.9	4.1	151.7	3.2	2.3
2007e	1 139.7	4.4	4.2	156.4	3.1	2.8
Forecasts						
2008	1 203.8	5.6	4.4	161.2	3.0	3.3
2009	1 263.2	4.9	3.8	165.9	2.9	3.1
2010	1 320.0	4.5	3.7	169.7	2.3	2.6
2011	1 390.4	5.3	4.2	174.6	2.9	2.9
2012	1 468.4	5.6	4.5	180.1	3.2	3.2
2013	1 546.9	5.4	4.4	185.8	3.2	3.2
2014	1 620.4	4.8	3.8	190.8	2.7	2.7
2015	1 692.5	4.5	4.3	195.6	2.5	2.5
2016	1 783.9	5.4	4.7	201.8	3.2	3.2
2017	1 885.6	5.7	4.6	209.1	3.6	3.6
Long Term Averages						
1990-00	4.0			2.2		3.1
2001-07	4.9		3.7	3.3		2.6
2008-12	5.2		4.1	2.9		3.0
2013-17	5.1		4.4	3.0		3.0

e : estimate Source: BIS Shrapnel, ABS Data

(1) Earnings of males only are used in order to obtain the most consistent time series.

(2) Baseline CPI excludes GST effects, mortgage interest charges, fuel and fruit and vegetables

3. WAGES AND INFLATION OUTLOOK— AUSTRALIA

The key determinants of nominal wages growth are consumer price inflation productivity and the relative tightness of the labour market (i.e. the demand for labour compared to the supply of labour). Price inflation, in turn, is primarily determined by unit labour costs, i.e. wage increases adjusted for productivity increases. Other factors which also influence price inflation include the exchange rate, the stage of the business cycle and the level of competition in markets generally.

3.1 A note on different wage measures

Several different measures of wages growth are referred to in this report, each differing slightly both in terms of their construction and appropriateness for measuring different aspects of labour costs. The following provides a brief summary of the main measures, what they are used for and why.

The main wage measures are:

- Average Weekly Earnings — average weekly total gross before tax earnings per employee. The measure includes both earnings from standard hours and from overtime, bonuses, etc. It is derived by dividing weekly total earnings by an estimate of the number of employees.
- Average Weekly Ordinary Time Earnings (AWOTE) — earnings gained from working the standard number of hours per week. It includes agreed base rates of pay, over-award payments, penalty rates and other allowances, commissions and retainers; bonuses and incentive payments (including profit share schemes), leave pay and salary payments made to directors. AWOTE excludes overtime payments, termination payments and other payments not related to the reference period. AWOTE for males is used for long-term series of wage inflation as it excludes the compositional effects of shifts between males and females and the equal pay legislation of the 1970s.
- The Labour Price Index (LPI) — a CPI-style measure of changes in wage and salary costs based on a weighted combination of a surveyed ‘basket’ of jobs. The LPI used in this report excludes bonuses. The LPI also excludes the effect of changes in the quality or quantity of work performed and most importantly, the compositional effects of shifts within the labour market, such as shifts between sectors and within firms.

Each measure provides a slightly different gauge of labour costs. However, the main distinction between average earnings measures and the labour price index relate to the influence of compositional shifts in employment. A large fall in the number of lower paid employees, or in employment in an industry with lower average wages, will increase average weekly earnings (all else being equal). While this is a true reflection of the average cost of labour to businesses, it is not necessarily the best measure of ongoing wage inflation (i.e. trends in wage-setting behaviour in the labour market).

The labour price index was specifically designed to get around this problem. It uses a weighted average of wage inflation across a range of closely specified jobs. 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.

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.

3.2 Wage formation changed in the 1990s

The nature of wage formation in Australia changed dramatically over the 1990s. Once the labour market effects of the deep early 1990s recession eventually wore off, it became increasingly apparent that both wages growth and price inflation had made a permanent down-shift. A range of factors have helped keep both lower since then, but the most important was a shift to decentralised wage-setting ushered in by the Federal Industrial Relations and Workplace Relations Acts in 1996, which created a tougher bargaining environment, tipping the wage bargaining system in favour of enterprise agreements and individual contracts. The new Act also indirectly accelerated the decline in unionisation with the shift to non-union agreements, while the continued strong growth in non-unionised industry sectors also contributed to lower unionisation rates.

As well as changing the balance of power between employers and employees, the shift has altered the relationship between economic activity, employment and wages. In particular, wages growth is not only lower but has become more stable as a result.

Over time, the operation of the Act also produced a lengthening in the average duration of wage contracts — average enterprise agreements now run for two years, although many include 'escalation' clauses that provide higher wages if inflation runs higher than expected. The longer duration of wage contracts means wage pressures are now slower to respond to changing economic conditions. Businesses also have more flexibility when it comes to meeting changes in demand, and are more readily able to change the number of hours worked rather than employment levels or wages in response to a slowdown in activity.

However, the shift to a decentralised system of wage determination has not altered the fundamental supply and demand drivers of wages. The new system has reduced the threat of a 'union-driven' rise in wages growth but it does not preclude a 'market-driven' rise, i.e. one driven by strong demand and supply shortages. Indeed, a more market-oriented system may make wages *more* prone to strong rises, especially when skilled labour is in short supply.

A market-driven acceleration in wages would be driven primarily by the section of the workforce who are on individual contracts or other salary arrangements. The evolution of wage determination over the past two decades has seen the workforce effectively split into three segments, with wages set by different mechanisms and with wage outcomes showing large divergences over the past decade:

- Those dependent on awards, i.e. increases now to be set by the Fair Pay Commission (formerly by the Australian Industrial Relations Commission), covering around 20 per cent of all employees.
- Those on registered collective agreements negotiated under enterprise bargaining, who now account for over 40 per cent of all employees.

- The remaining 39 per cent of employees on individual contracts or other salary arrangements, which includes a high proportion of more highly skilled workers.

The 'wages growth by workforce segment' table (table 3.2) show a large divergence in earnings growth in the 1990s, which we expect to continue. Key factors influencing wage outcomes in the individual contract segment include supply and demand fundamentals, particularly for skilled labour, and overall profit growth. Average weekly ordinary time earnings include bonuses and incentives, which in turn are primarily driven by profit.

Table 3.2: Wages Growth by Workforce Segment
Moving Annual Totals, Percent Change

	Year Average Percent Change												
								Forecast					
Year Ended June	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Proportion of Workforce													
Awards Only	24%	23%	21%	21%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Collective Agreements	36%	36%	37%	37%	41%	41%	41%	41%	41%	41%	41%	41%	41%
Individual Contracts, Other	40%	41%	42%	42%	39%	39%	39%	39%	39%	39%	39%	39%	39%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
AWOTE													
Awards Only	1.4	1.8	1.8	2.0	1.9	1.9	1.6	1.0	2.3	1.6	1.5	1.9	2.1
Collective Agreements	3.7	3.8	4.0	4.1	4.1	4.2	4.3	4.3	4.5	4.2	4.0	4.3	4.4
Individual Contracts, Other	4.2	8.1	8.5	7.7	6.7	6.2	7.3	6.3	8.4	7.3	6.6	8.0	8.7
AWOTE (Males)	**3.3**	**5.1**	**5.4**	**5.2**	**4.7**	**4.5**	**4.9**	**4.4**	**5.6**	**4.9**	**4.5**	**5.3**	**5.6**
Labour Price Index													
Awards Only	1.4	1.8	1.8	2.0	1.9	1.9	1.6	1.0	2.3	1.6	1.5	1.9	2.1
Collective Agreements	3.7	3.8	4.0	4.1	4.1	4.2	4.3	4.3	4.5	4.2	4.0	4.3	4.4
Individual Contracts, Other	3.2	4.2	3.5	3.8	3.9	4.4	5.2	5.7	5.6	4.2	4.2	5.5	5.8
Labour Price Index	**2.9**	**3.5**	**3.3**	**3.5**	**3.6**	**3.8**	**4.1**	**4.2**	**4.5**	**3.7**	**3.6**	**4.3**	**4.5**
Compositional Effects + Bonuses,etc	0.4	1.6	2.1	1.7	1.1	0.7	0.8	0.2	1.1	1.2	0.9	1.0	1.1

Source: BIS Shrapnel, ACCIRT, ABS, DEWR

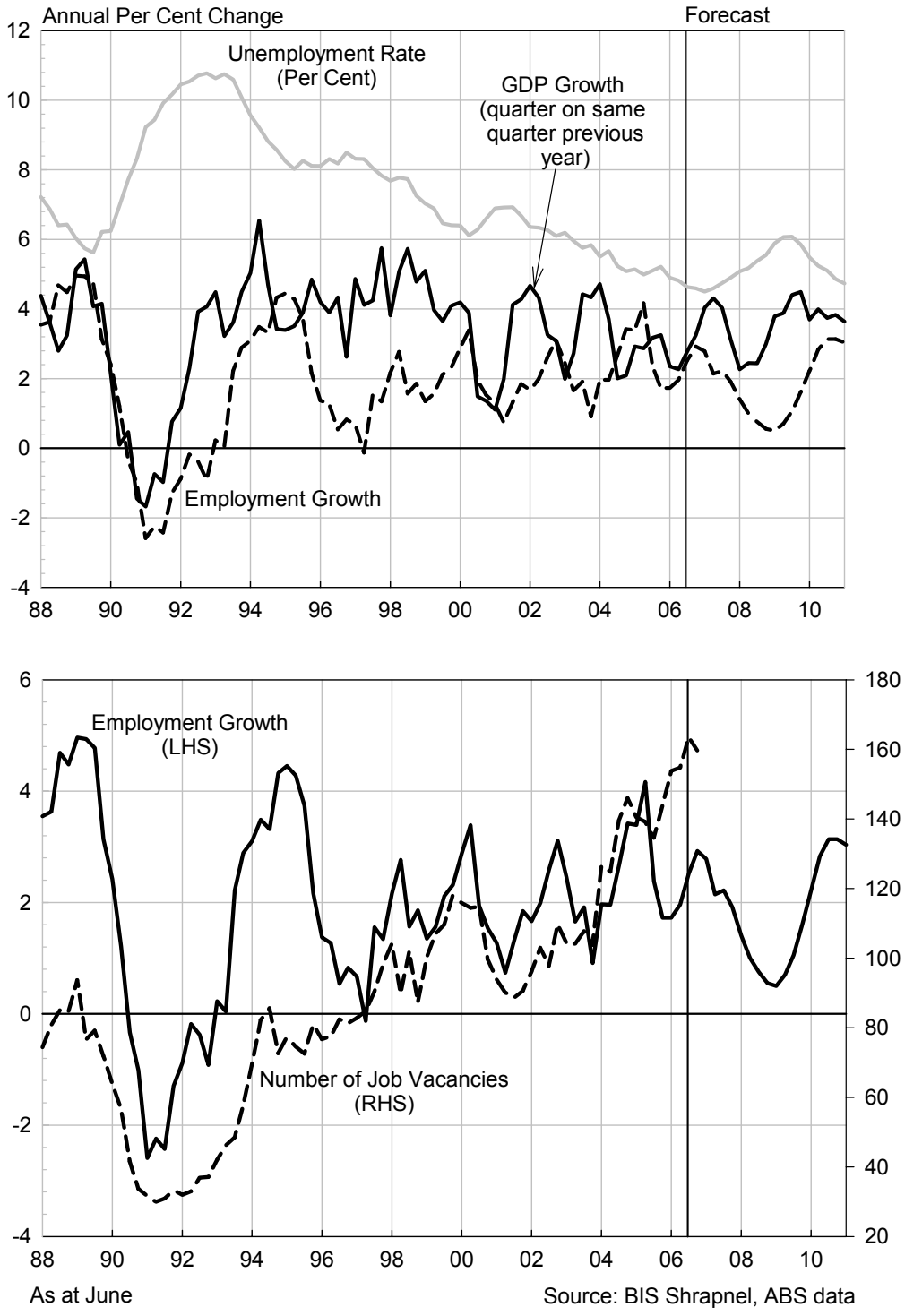
3.3 Wages growth has been higher since 2000

The last six years has seen a significant rise in wages growth. Whereas annual growth in average weekly earnings averaged 3.9 per cent in the five years to June 2000, it has averaged 4.9 per cent over the first half of the 2000s. The pick-up is also apparent in the wage cost index, which has seen a steady rise in wages growth since 2001/02 with the tempo increasingly significantly since mid-2004.

Although the rise in wages growth since 1999/2000 has been sustained for several years now, it has been driven by different factors along the way:

- The initial rise came during the 'dot-com' boom — with a shortage of skilled workers (IT professionals in particular) combined with strong economic growth and rising profits.
- The 2000/01 slowdown would normally have led to a significant slowdown in wages growth but had a fairly minor effect due to the longer duration of wage contracts and to businesses reducing hours worked instead of wages.
- Wage pressures started to resurface as the domestic economic recovery strengthened in 2002, but wages were again relatively slow to respond to the shift as the initial recovery in hiring was patchy with confidence undermined by weak external conditions and a series of negative shocks (terrorist attacks, war, drought, sharp stockmarket declines etc).

Chart 3.1: Employment and Unemployment



- Composition factors appear to have added to overall growth in AWOTE over 2000/01 to 2002/03, with employment growth in higher paid occupations outpacing employment growth in the lower paid occupations. Surging profits also contributed to increased bonuses, incentives and commissions. These compositional effects and bonuses, etc are apparent in the difference between the growth in the LPI compared to AWOTE (see table 3.2), where these effects added between 1.6 to 2.1 per cent over those three years, while the LPI only grew by 3.3 to 3.5 per cent.
- Since 2004, underlying wages growth — as measured by the LPI — has accelerated from around 3.5 per cent to over 4 per cent — a historically high level since the index's inception in September 1997. Meanwhile, the compositional effects have now narrowed the gap between AWOTE and the LPI. Skills shortages have slowed in growth in the higher paid occupations, while the strong growth in employment in 2004/05 and again in calendar 2006 appears to have largely been in lower paid (i.e. less skilled) occupations.

- We believe the latest rise in underlying wage pressures marks a significant change.
- Labour markets are now unambiguously tight with the unemployment rate running consistently under 5 per cent, down from 7 per cent in 2001. Labour markets have tightened considerably since late 2004, coinciding with employment growth accelerating to over 4 per cent in the 12 months to August 2005, the strongest increase since the mid-90s. More importantly, job vacancies have also surged pushing well over 20% (and recently over 30%) of total unemployed since mid 2004. This is well above historical levels — the average since 1979 has been just 12 per cent, only pushing near 20 per cent for the first time at the height of the 'dot-com' boom. In other words, labour demand has started to outstrip supply at an unprecedented rate.

3.4 Current state of play — Labour Market is Tight, Wage Pressures Increasing

The labour market is still very tight. Employers have been struggling to fill vacancies, especially for skilled workers. The demand side of the labour market is very strong – employment growth is running at 3 per cent, job vacancies are at record levels and there has been further growth in job ads over recent months.

On the supply side, the unemployment rate is at a 30 year low level of around 4.5 per cent with only 492,500 people unemployed, while the participation rate, at around 65 per cent, is at its highest recorded level.

Employment growth accelerated through 2006 and is now running at 3 per cent through-the-year to January 2007. Almost 300,000 new jobs have been created over the past 12 months, but more importantly, 200,500 of these jobs have been full-time positions.

Strong 'pent-up' demand for labour is still present. Job vacancies grew 5.9 per cent in the 3 months to November to reach a new peak of 163,700 (seasonally adjusted). The number of job

Job Vacancies as % of Unemployed
Total Australia

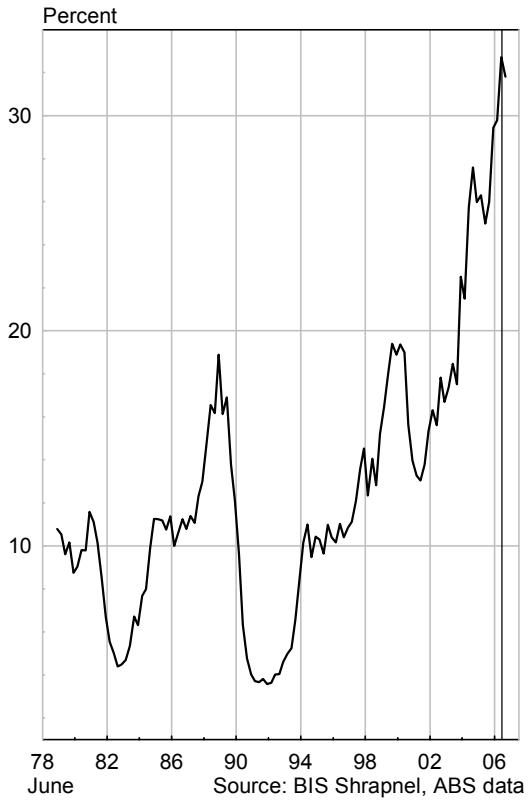
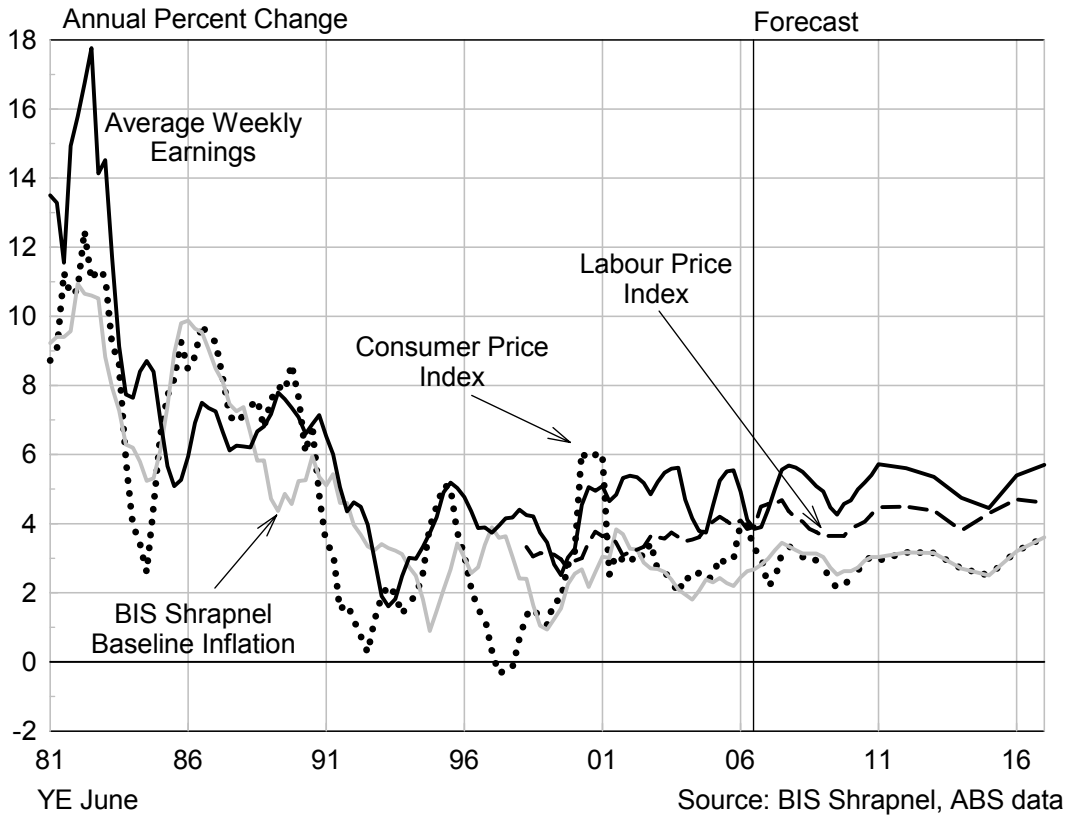
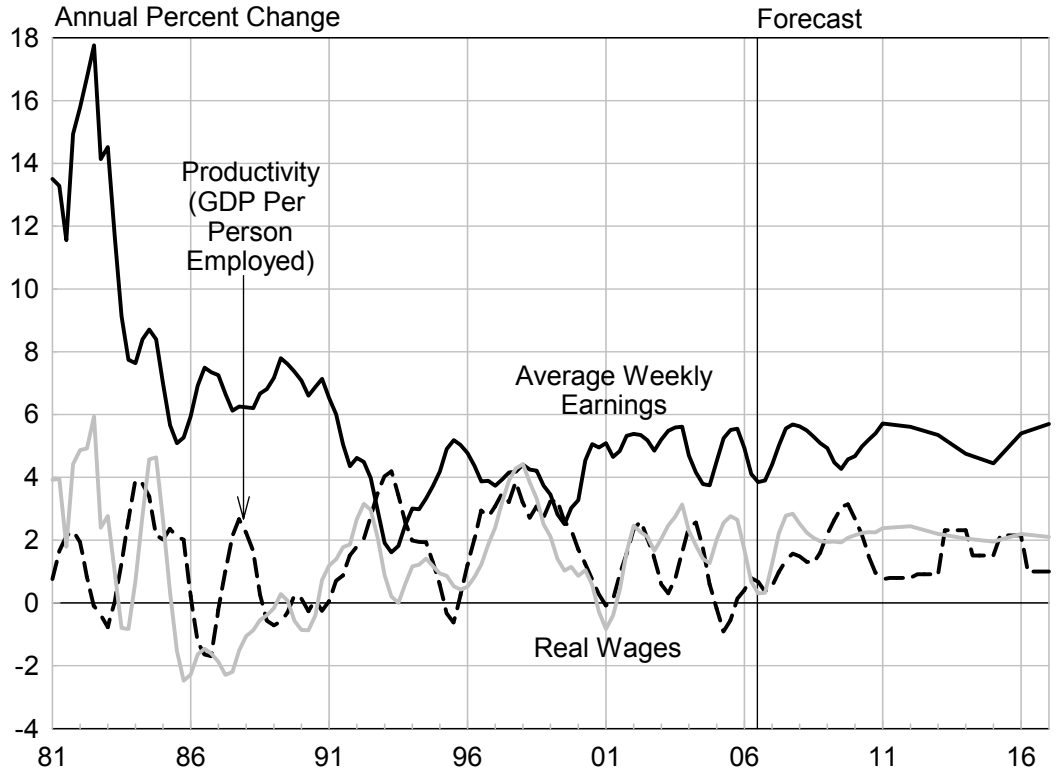


Chart 3.2: Wages and Prices



Productivity and Real Wages



vacancies grew steadily through 2006, and in November 2006 were 21 per cent higher than November 2005. Demands on the remaining pool of spare labour are at unprecedented levels – job vacancies are running at around 33 per cent of total unemployed. Putting this another way, if all of these vacancies were filled out of the existing pool of spare labour, Australia would have an unemployment rate of 3.2 per cent, not 4.5 per cent.

Clearly there is significant 'pent-up' demand for skilled labour that is not readily available from Australia's dwindling pool of unemployed workers. Businesses seeking skilled workers are increasingly looking to poach staff from other businesses — the head-hunters are back in force. Strong profits and the urgency with which some businesses looking to expand capacity also means they are willing and able to offer the higher wages necessary to attract (and retain) staff. Tight labour markets can be slow to generate a wider pick-up in wages growth. Even when demand is strong, the proportion of workers moving from job to job is relatively small. And with wages for 60 per cent of workers set by awards or collective agreements many wage arrangements are less affected by market conditions. However, as labour shortages persist and businesses find they must 'meet the market' on remuneration in order to attract and retain staff, wages will eventually start to accelerate. The segment on individual contracts will lead the way and indeed, there are already signs that wages are starting to pick up in this part of the market (see table 3.2).

Despite the tightening in the labour market over 2006, wages growth did not appear to accelerate. However, both measures of aggregate wages growth (AWOTE and LPI) have been affected by the six-month delay in the granting of the increase in Federal Award minimum rates. Whereas in past years, the National Wage Case decisions in May would normally come into effect in the September quarter, delays associated with the introduction of the Australian Fair Pay Commission mean the latest review did not come into effect until December 1, with most of the impact on wage measures appearing in the March quarter.

As such, the latest figures are misleading and should be treated with caution. The timing delay means there will be a sustained dip in wages growth through the second half of 2006 before a sharp surge comes through in early 2007. Our estimates suggest the dip could take roughly 0.3 to 0.5 percentage points off annual wages growth initially before adding at about 0.5 to 0.8 percentage points once the award rise comes through). Because of the delay, the latest review also covers an 18 month period instead of the usual 12. The decision to give a $27.36 increase for those earning up to $700/week and a $22.04 increase for those earning more is significantly larger compares with the previous increase of around $17/week. Adjusting for the extra 6 month period gives an annual equivalent of around $18/week.

Bearing this in mind, a closer analysis of the latest data suggests wages growth is still running at close to 4 per cent and may even have picked up slightly. Key segments affected by awards such as labourers and elementary clerical, sales and service workers showed a big drop in wages growth in the September quarter, to their lowest levels since 2001, but other segments showed a continuation of strong growth in the quarter. Moreover, a measure of wage costs including bonuses has held at around 4 per cent, suggesting that that once adjusted for the delay in awards, underlying growth in total remuneration has picked up.

In addition, the LPI data (table 4.1) shows that labour shortages are starting to fuel an acceleration in underlying wage inflation in a number of critical sectors — particularly electricity, gas and water, mining, construction, wholesale trade, transport and storage and property and business services, while public sector wages growth has continued its above-average growth since mid-2003.

While a combination of compositional effects (see section 3.3) and the delay in the Fair Pay decision has recently seen the unusual situation of the LPI increasing faster than AWOTE through 2006, the strength of these rises in underlying wage inflation (as represented by the LPI) will eventually come through in the AWOTE measures over the next one-to-two years.

Meanwhile, productivity growth is still weak — less than 1 per cent per annum — and will only improve slowly over 2007. With unit labour costs still rising at well over 4 per cent a year, it will be very difficult to contain price inflation.

3.5 Short-term Outlook — Wage and Price Inflation Higher in 2007 and into 2008

We believe the latest up-shift in wages marks the start of a 'market-driven' surge that will be sustained for several years. Although employment growth is forecast to ease through the year from the current 3 per cent per annum back toward 2 per cent per annum by the end of 2007, the unemployment rate will remain between below 5 per cent and skilled labour shortages will persist. Household consumption expenditure has picked up recently due to a combination of strong employment growth and more purchasing power flowing from lower petrol and fruit prices. Consumer and related employment demand sectors should remain buoyant through the first half of 2007. Meanwhile, business investment — although slowing — combined with healthy public investment, will continue to drive solid growth in employment.

The upshot is that skilled labour will remain in short supply and wages will remain under pressure. Overall, wages growth is forecast to strengthen over 2007, accelerating to well over 4.5 per cent in terms of the wage cost index in 'through-the-year terms' (i.e. quarter-over-corresponding quarter of the previous year) and back to around 6 per cent for AWOTE in through-the-year terms. In 'year average growth' terms, wages growth is forecast to average 4.6 per cent for the labour price index and 5.5 per cent in terms of average weekly ordinary time earnings in calendar 2007, with growth at similar levels in 2007/08 financial year. However, there is likely to be a wide variation across different parts of the labour market:

- Increases will be stronger at the skilled end, with wages growth around 6 per cent in wage cost index terms, and well over 7 per cent in AWOTE terms (i.e. after bonuses/incentives and 'promotions' are included).
- The pick-up in wages growth in collective agreements will be slower as these take time to get renegotiated — many will only rise as they incorporate the effects of higher inflation.
- Awards will continue to lag behind, and will tend to rise at an even lower rate after 2007 as the Federal Government's new WorkChoices legislation is implemented, and the Fair Pay Commission attempts to limit future increases in award wages.

There is significant uncertainty surrounding the wages outlook. On the downside:

- The WorkChoices legislation could see significantly lower wages growth in collective agreements as well as awards, although the early signs are that the changes are mainly affecting penal rates and other conditions (i.e. non-wage labour costs) rather than wages.
- Many businesses may also remain cautious about giving overly-generous pay increases until they are sure the economy is on track for continued growth.
- Similarly, employees may be slow to realise the shift in the balance of power in labour markets, and may continue to see job security as more important than higher wages.

But there are substantial upside risks as well:

- The WorkChoices reforms may see employers again look to 'buy change', e.g. with higher one-off wage rises given in exchange for employees moving onto individual contracts.
- We may see harder bargaining from unions — although an outbreak of union militancy is unlikely, bit specific sectors could still drive wage settlements higher through this period.
- Skill shortages could drive an even stronger wage surge in the 'market-driven' segment — shortages emerged as a serious problem in the 1999/2000 peak in activity, with the AWOTE contribution from the workforce segment on individual contracts sustained at well over 7 per cent for the next two years (see Table 3.2). Shortages will be more severe this time around, and although the AWOTE contribution is forecast to again go over 8 per cent, it may go even higher.

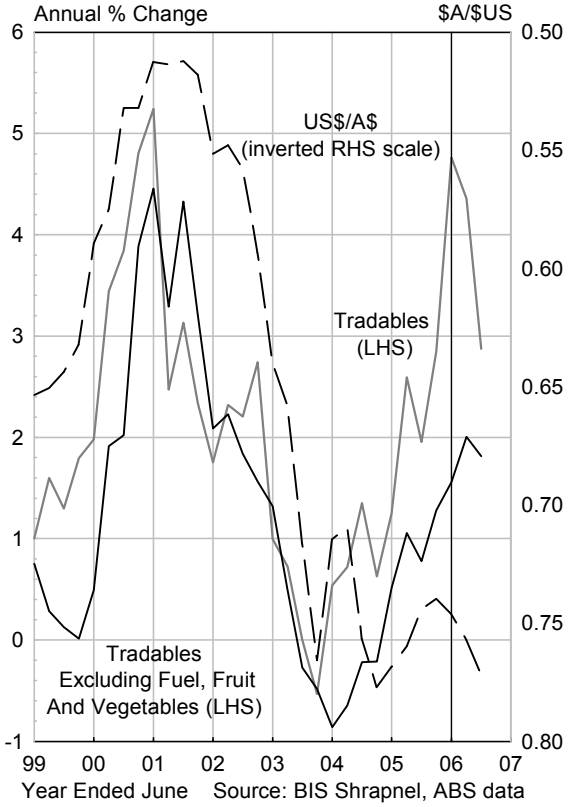
Our forecast assumes underlying wages growth (in labour price index terms) is contained below 5 per cent through the peak of the cycle. However, labour shortages will be more intense than at any time since the early 1970s. With the new wage bargaining environment untested in extremely tight labour market conditions, it is unclear how wages will develop through this period.

Also adding to the upside in wages will be higher underlying consumer price inflation in 2007 and 2008. Although headline CPI eased from 4.0 per cent in the June quarter, 2006 to 3.3 per cent in the December quarter 2006 as the mid-year spikes in oil and fruit prices unwound, underlying inflation increased from 2.4 per cent to 2.7 per cent at the same time. We are forecasting underlying inflation to rise further in 2007 and push over 3 per cent during the second half of the year and average over 3 per cent in 2007 and 2008. Meanwhile, headline CPI will ease further in through-the-year terms, but after the temporary spikes in petrol and fruit prices wash out, headline CPI will average around 3 per cent in both 2006/07 and 2007/08. These higher inflation outcomes will also underpin overall wage demands.

Key factors adding to underlying inflationary pressures:

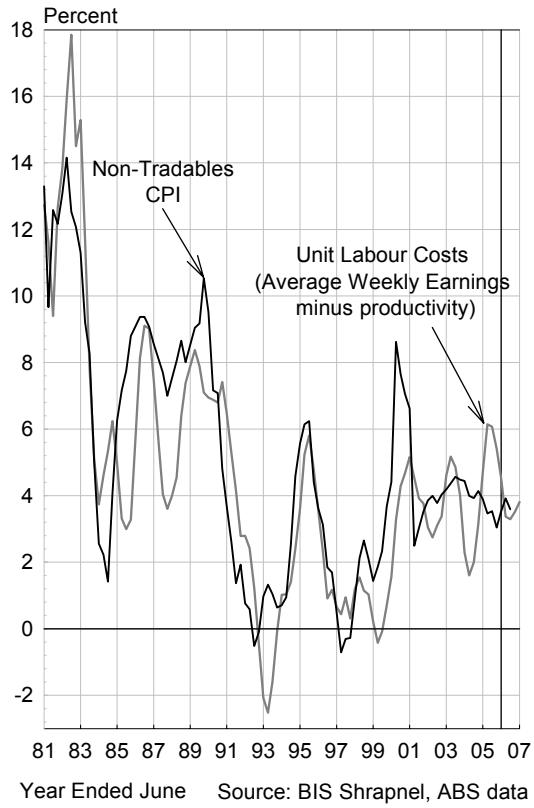
- The drought — will provide some offset to the fall in banana prices, constraining production of fruit, vegetables and cereals. Higher costs for feed may also pass through into dairy and poultry prices. Conversely, dry conditions will encourage farmers to increase livestock slaughter, which will put downward pressure on meat prices. While the drought is likely to break later this year, lower prices for cereals, dairy products and some other foods are unlikely before the end of the year, when the harvest of the winter crop pushes down cereal and feed prices. Meanwhile, a breaking in the drought will see reduced livestock slaughter, with the reduced supply and strong overseas demand pushing up meat prices. Overall, food prices are likely to be flat (or decline slightly) in the March quarter, but increase strongly over the rest of the year.
- The exchange rate – while the exchange rate is forecast to remain in a US$0.76 to US$0.78 band over the first half of this year, both falling commodity prices and little chance of an interest rate rise after mid-year (when we are in election mode) will push the exchange rate down toward US$.70 by the end of the year. This will add upward pressure to tradeable inflation. In addition, the second round effects of high oil and commodity prices are starting to feed into consumer inflation overseas, while these effects have been present in capital goods and particularly intermediate goods prices for some time now.
- Rents – tight rental markets will continue to push up rents.

Tradeables Inflation & Exchange Rate



Unit Labour Costs & Non-Tradables CPI

Annual Per Cent Change



- Margins – profitability is under pressure as a result of higher wage costs, higher materials and fuel costs, capacity constraints and weak productivity growth. Although oil prices are likely to fall further through 2007 and materials (commodity) prices will also pull back, it is unlikely producers will pass on these costs reductions. As the chart shows, margins are off their 2004 peaks, as producers absorbed some of the higher costs on the way up. Conversely, they are unlikely to pass on all of the lower fuel and materials costs through to consumers on the way down – particularly in an environment of strong demand.

The main dampening factor for underlying inflation will be an expected improvement in productivity — slowly through 2007 but strengthening in 2008 as new capacity comes onstream (and ramps up) from the current (and most recent) investment boom.

As a result of the slowdown in domestic demand through 2008, profits will come under significant pressure and employment is expected to decline. However, the easing in labour markets may be slow to affect wages. Inflation is expected to hold up at relatively high levels initially, keeping wages growth relatively strong in areas where agreements are partially or wholly indexed to inflation.

3.6 Medium to Longer Term Outlook – Wages Growth Eases but Pressures Persist

Overall, we expect growth in AWOTE to ease during 2008 and 2009, with AWOTE growth forecast to be 4.9 per cent in 2008/09 and 4.5 per cent in 2009/10. At the same time, the sharp slowdown in employment growth over 2008 and 2009 will push up the unemployment rate to a forecast peak of only 6.1 per cent by the end of 2009.

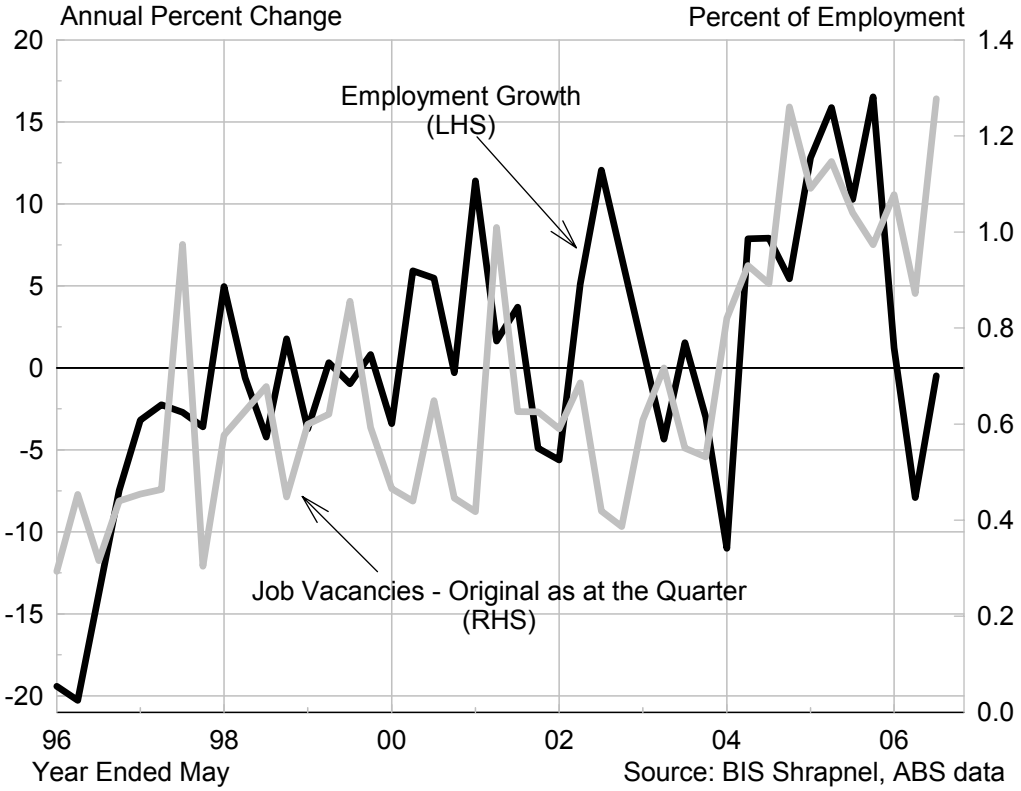
Subsequently, lower interest rates, the housing construction recovery, stronger household consumer spending and a turnaround in business investment will drive a recovery in employment growth, which will gather pace over 2010/11 and 2011/12. This is projected to quickly push the unemployment rate down, falling below 5 per cent again by early 2011. With the labour market again showing signs of tightness and skilled labour shortages re-emerging, we expect wage pressures to be re-ignited, with both AWOTE and the LPI rising to well over 5 per cent and 4 per cent respectively (see table 3.1). We are projecting the economy to peak in the next cycle during 2011/12, before growth in both output and employment eases in 2012/13, which should relieve some wage pressures at that time.

Note that there is unlikely to be much impact from Australia's ageing workforce on the labour supply over the next five years. Although 2011 marks the first year that the baby-boomer generation starts to reach the official retirement age, and many will opt to take early retirement, the main effects on the aggregate labour supply don't really start to hit until the middle of next decade.

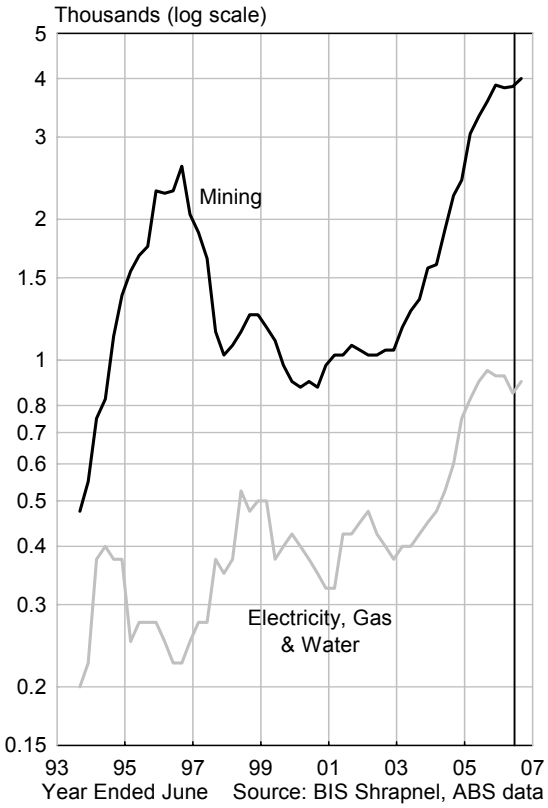
Nevertheless, Australia will continue to experience sustained labour shortages in the decade to 2020 (and beyond), and these shortages will become more significant as the workforce ages. As Austral's 'baby boomers' generation move into the 65+ age group, the growth of the 15-64 year old component of Australia's working age population (the overwhelming majority of Australia's workforce) will begin to slow.

With more people retiring, the supply of labour will increase at a slower rate through the coming decade. This will lead not only to skilled labour shortages, but total labour shortages. Meanwhile, the demand for labour will continue to rise – particularly in periods of strong investment and economic growth. These sustained labour shortages will result in a long term upward bias in wage inflationary pressures.

Chart 4.1: Employment Growth and Job Vacancies
- Electricity, Water and Gas



Job Vacancies
Moving Annual Averages



4. WAGE PRESSURES IN THE ELECTRICITY, GAS & WATER INDUSTRIES

4.1 Strong demand for skilled labour will keep wage rises higher in the utilities sector

Unfortunately we do not have more reliable measures of labour supply that shed light on shortages by industry sector or occupation. However, we can infer where the problems are likely to be on the basis of recent employment growth and the overall level of job vacancies (which tells us both about the demand for labour and the difficulty businesses are having in filling positions).

Skills shortages have been evident in the electricity, gas and water sector for the past two to three years as demonstrated by the sharp increase (to historically high levels) in job vacancies during this period (see chart). In some segments and occupations skills shortages have been chronic.

The latest 'Skills in Demand' lists released by the Department of Employment and Workplace Relations shows that all states are currently experiencing shortages of skilled labour for engineers, other professionals and tradespeople who are in high demand by the electricity, gas and water sector – and who are also sought in the mining, construction and manufacturing sectors. Shortages are being reported for:

- electrical engineers, with shortages in the specialisations of sub-station and power engineering, design and heavy industrial engineering being highlighted for some states.
- civil and mechanical engineers
- electrical powerline trades
- electricians
- metal fitters, metal fabrication and welding trades
- plumber and gasfitters
- electronic instrument trades

Vacancies have been rising and strong demand for increasingly scarce labour has seen the price of labour (i.e. wages) bid up significantly over the past 18 months. Underlying wages growth as measured by the labour price index has accelerated particularly since early 2006, with the LPI in the June quarter 2006 6.8 per cent higher than the June quarter 2005, and was still 5.9 per cent through calendar 2006. Growth over the past 18 months is the fastest rate of growth in the LPI for the electricity, gas and water sector since its inception in 1997, and is well above the steady 4 to 4.5 per cent per annum growth exhibited over the 2000 to 2005 period. It also represents the fastest wages growth (in labour price index terms) of all the industry sectors, including mining and construction, which have also been reporting severe skilled labour shortages.

On the other hand, the growth in average weekly earnings in the electricity, gas and water sector has actually slowed in comparison, particularly over 2005/06, due to composition effects of strong employment growth in the sector. Total employment in the electricity, gas and water industry increased 16.4 per cent between May 2005 and May 2006 (a year average growth of 13.9 per cent – see table 4.4). Given the low AWOTE (average weekly ordinary time earnings) growth of 1.8 percent from May 2005 to May 2006 (compared to the LPI of 6.9 per cent), it is likely the biggest growth in employment was in the lower paid segments in the industry sector, which would have pushed down the average wage for the whole sector of 2005/06.

Table 4.1: Labour Price Index Growth by Industry Sector Occupation and by State

Sector	% of Total Employment Nov 2006	Labour Price Index Annual Percent Change							Five-Year Average
		June '02	June '03	June '04	June '05	Jun '06	Sep '06	Dec'06	
Private	83.4	3.2	3.4	3.4	4.0	4.0	4.3	4.9	3.6
Public	16.6	3.1	4.2	4.0	4.7	4.4	4.2	4.5	4.3
Industry									
Mining	1.4	3.4	3.2	3.2	4.9	5.7	5.9	6.5	4.3
Manufacturing	10.7	3.1	3.7	3.4	4.0	3.6	3.4	3.4	3.6
Electricity, gas and water supply	0.8	4.0	4.5	4.7	3.8	6.8	6.0	5.9	4.7
Construction	9.6	2.8	3.7	4.3	4.9	5.4	4.9	5.1	4.3
Wholesale trade	4.8	2.7	3.5	3.1	3.6	3.7	3.3	4.2	3.5
Retail trade	15.1	2.8	3.0	3.4	3.6	3.3	2.7	2.3	3.1
Accommodation, cafes and restaurants	4.9	2.9	3.6	2.2	3.2	3.3	2.4	2.0	2.9
Transport and storage	4.6	2.6	3.5	3.1	3.1	4.6	3.8	3.9	3.5
Communication services	1.8	3.3	2.3	3.5	3.2	3.4	3.5	3.8	3.5
Finance and insurance	4.0	3.8	3.4	3.6	4.4	3.9	3.8	3.9	3.7
Property and business services	12.5	2.9	3.4	3.3	3.4	4.0	4.4	4.4	3.6
Government administration and defence	4.8	3.2	3.9	4.3	4.9	3.9	4.1	4.0	4.1
Education	7.2	3.4	4.7	3.6	5.6	4.4	4.1	4.4	4.3
Health and community services	10.9	3.2	3.7	4.1	4.1	4.5	4.1	4.4	4.2
Cultural and recreational services	2.8	3.1	3.8	3.3	4.4	3.3	3.5	3.4	3.7
Personal and other services	4.1	4.0	3.3	3.1	4.0	3.8	3.7	4.0	3.7
Occupation									
Managers & administrators	8.2	3.2	3.5	3.3	4.3	3.7	3.8	4.3	3.7
Professionals	19.3	3.4	4.1	3.6	4.4	4.5	4.3	4.5	4.1
Associate professionals	13.1	3.2	3.3	3.2	4.1	3.8	3.8	4.0	3.7
Tradepersons & related workers	12.7	3.1	3.5	3.6	4.5	4.7	4.3	3.7	3.8
Advanced clerical & service workers	3.7	2.4	3.3	4.0	3.6	3.8	3.8	3.8	3.6
Intermediate clerical, sales & service workers	16.5	3.2	3.5	3.7	3.8	3.8	3.5	3.5	3.6
Intermediate production & transport workers	8.6	2.9	3.4	3.8	4.0	4.8	4.1	4.1	3.8
Elementary clerical sales & service workers	8.3	2.8	3.3	3.2	3.5	3.5	2.6	2.7	3.2
Labourers & related workers	8.5	3.1	3.2	3.5	4.1	3.9	3.2	3.3	3.5
State/Territory									
New South Wales	32.3	3.1	3.8	3.8	3.9	4.0	3.8	3.8	3.7
Victoria	24.6	3.4	3.4	3.3	4.3	3.8	3.5	3.5	3.6
Queensland	20.2	2.9	3.3	3.7	3.9	4.8	4.5	4.5	3.9
South Australia	7.4	3.2	4.0	3.7	3.8	3.7	3.7	3.7	3.7
Western Australia	10.5	2.8	3.5	3.1	5.0	4.6	4.3	4.6	4.0
Tasmania	2.2	3.1	3.3	3.2	4.8	4.0	4.0	4.2	3.8
Northern Territory	1.0	3.3	3.1	3.7	4.2	4.0	4.1	3.5	3.5
Australian Capital Territory (ACT)	1.8	3.0	3.6	4.1	4.9	4.0	4.0	4.1	4.0
Total All[(1)]	100.0	3.2	3.6	3.5	4.1	4.1	3.8	3.9	3.7

1) Excludes Agriculture, Forestry & Fishing.

Source: BIS Shrapnel, ABS data

Following the strong growth in employment over the four quarters to May 2006, there was a sharp drop in recorded employment in electricity, gas and water over the six months to November 2006 (-7.8 per cent) before rebounding again in the three months to February 2007 (+6.8 per cent, seasonally adjusted). AWOTE growth in the utilities sector rebounded in the three months to August, but then surprisingly weakened in the three months to November. Nevertheless, given the high underlying rate indicated by the LPI, we expect an increased probability of higher AWOTE figures over the next one-to-two years.

The divergent growth patterns of average weekly ordinary time earnings (AWOTE) and the labour price index over 2006 highlight the problems associated with changes in the composition of employment within industries.

This strong growth in employment since 2002 has been associated with a pick-up in infrastructure and maintenance work as well as an ongoing reversal in the sharp losses in employment seen through the 1990s. Privatisation and rationalisation were the drivers of the job cuts in the 1990s, but in some cases the desire to be streamlined left only a 'skeleton' crew in-house for routine operations and emergency disruptions, while capital and maintenance works (both minor and major) tended to be contracted out. Capital expenditure in the utilities sector during the 1990s was also relatively low, and this may also have contributed to weaker employment.

Table 4.2: Australia
AWOTE Growth by Industry Sector

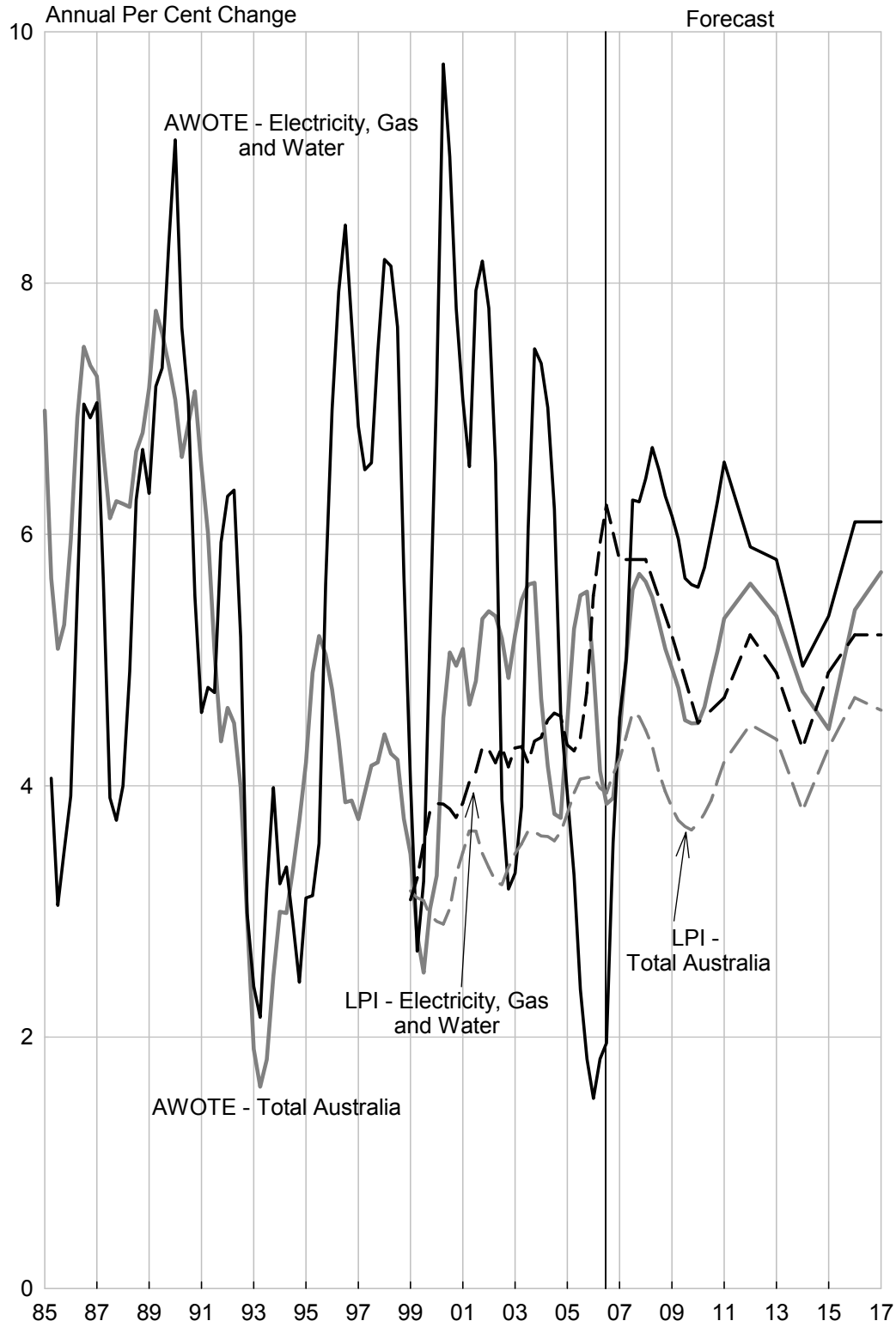
Industry Sector	% of Total Employment Nov 2006	Average Weekly Earnings(1)								
		$ At Nov '06	Annual Percent Change							Five-Year Average
			May '01	May '02	May '03	May '04	May '05	May '06	Nov '06	
Mining	1.4	1 713.60	4.9	4.5	3.6	3.8	4.7	6.4	9.2	5.0
Manufacturing	10.7	1 004.90	3.0	6.3	10.0	3.5	3.7	3.9	5.4	5.4
Electricity, Gas & Water Supply	0.8	1 281.80	7.2	5.3	5.5	5.0	2.9	2.5	2.6	3.4
Construction	9.6	987.40	-2.0	9.0	13.1	3.0	9.2	-0.8	1.4	4.8
Wholesale Trade	4.8	1 019.90	5.5	3.5	2.8	5.8	5.3	3.2	5.8	5.0
Retail Trade	15.1	804.20	2.0	3.8	7.3	3.2	4.3	8.8	3.1	4.9
Accommodation, Cafes & Rest.	4.9	782.90	6.6	2.8	2.7	0.6	2.3	6.8	10.2	3.4
Transport & Storage	4.6	1 046.40	4.6	0.8	5.7	5.6	7.3	5.4	2.2	4.4
Communication Services	1.8	1 156.80	3.0	6.5	0.6	0.1	4.6	5.5	4.9	3.5
Finance & Insurance	4.0	1 338.60	3.7	6.1	7.9	4.8	5.4	4.1	2.1	4.8
Property & Business Services	12.5	1 113.10	9.8	8.1	2.9	-1.8	7.5	5.0	2.4	3.3
Government Admin & Defence	4.8	1 145.80	5.8	4.3	2.6	6.0	5.6	5.0	3.9	4.6
Education	7.2	1 174.50	7.1	3.3	4.2	4.1	5.2	4.7	3.9	4.3
Health & Community Services	10.9	1 028.40	5.6	2.9	6.3	6.0	5.2	-0.6	1.5	4.1
Cultural & Recreational Services	2.8	1 011.80	6.3	7.7	8.5	1.1	10.1	-8.2	-3.5	3.4
Personal & Other Services	4.1	1 016.40	8.0	6.8	2.5	0.4	8.2	2.9	1.3	3.6
Total All Industries(2)	100.0	1 058.60	5.3	5.2	6.3	3.1	6.0	3.5	3.2	4.5

e: estimate
Source: BIS Shrapnel, ABS data
(1) Full Time Adult Ordinary Time earnings for persons
(2) Excludes Agriculture, Forestry and Fishing sector

The emergence of skilled labour shortages over recent years has encouraged firms to boost their in-house response capabilities, while increasing competition has shifted the business focus towards customer service in order to enhance product differentiation with an accompanying increase in employment not directly related to the provision of electricity, gas and water services. The entrance of new players in the sector has also exacerbated this situation as it has increased demand for all occupations within this sector.

Nevertheless, the recent pattern of wages growth continues the historical trend where wages growth in the electricity, gas and water sector has averaged higher than the total Australian national (all industry) average. The labour price index growth has consistently been above the

Chart 4.2: AWOTE & LPI
Total Australia and Electricity, Gas and Water
Moving Annual Averages



Year Ended June

Source: BIS Shrapnel, ABS data

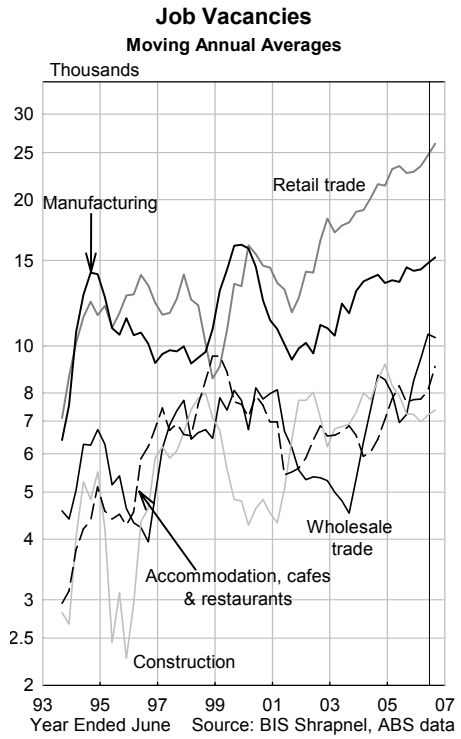
national average since the index's inception in 1997 (except in 1998/99) and has averaged 0.7 per cent higher over 1998 to 2006. While growth in average weekly ordinary time earnings of the electricity, gas and water sector has displayed considerably more volatility (mainly related to compositional effects) over the 18-year period since 1988/89, AWOTE growth in the sector has still averaged 0.9 per cent higher than the national average.

We expect wages growth in the electricity, gas and water sector to push well above the national average (which is forecast to average over 5 per cent in AWOTE terms) over the next two years, given the relatively high levels of job vacancies in the sector and the current levels of skills shortages being reported. Increased demand for labour will continue in the sector over the next two years at least.

A number of electricity utilities across several states are embarking on major maintenance and refurbishments of their networks. Added to this is our expectation that a number of peak, intermediate and base load power stations will be built over the next decade, while local reticulation construction will continue to be driven by new housing and industrial and commercial demand.

The electricity, gas and water sector is having to compete against mining, construction and manufacturing, all of which are experiencing strong demand for skilled labour with similar desired skills (i.e. engineers, engineering trades, gas-fitters, electricians, etc). Vacancies are at historically high levels in all these sectors (see charts). Mining is well into an extraordinary investment boom which has at least two more years to run at elevated levels. We are anticipating some decline in investment levels later this decade, but overall resources investment will still stay at historically high levels. Meanwhile, construction will stay strong due to non-dwelling building and infrastructure activity and, later this decade, a recovery in residential construction. This points to the need to offer high wages to attract and retain skilled labour in electricity, gas and water.

Electricity, gas and water supplies are essential services where reliability of supply is paramount. Accordingly, this requires adequate skilled labour to maintain reliability of supply. Unlike other sectors experiencing labour shortages, routine activity cannot be postponed in the electricity, gas and water sector until a point where labour becomes less scarce or cheaper.



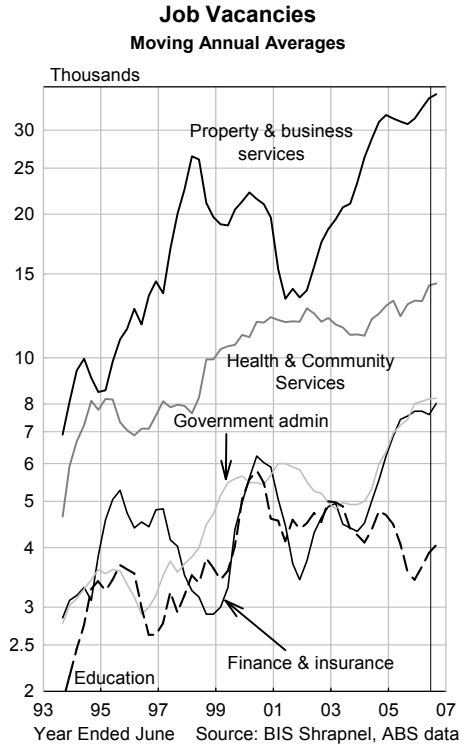


Table 4.3: Average Weekly Ordinary Time Earnings and Labour Price Index
Total Australia and Electricity, Gas & Water
(Year Average Growth)

Year Ended June	Average Weekly Ordinary Time Earnings ([1])				Labour Price Index ([2])			
	Total Australia		Electricity, Gas and Water		Total Australia		Electricity, Gas and Water	
	$	%CH	$	%CH	Index	%CH	Index	%CH
1989	515.7	7.2	521.9	5.2				
1990	552.2	7.1	569.6	9.1				
1991	588.3	6.5	595.7	4.6				
1992	615.4	4.6	633.3	6.3				
1993	627.2	1.9	648.5	2.4				
1994	646.0	3.0	669.4	3.2				
1995	673.0	4.2	690.2	3.1				
1996	705.1	4.8	738.4	7.0				
1997	731.4	3.7	789.1	6.9				
1998	763.6	4.4	853.7	8.2	82.2		79.2	
1999	790.0	3.5	888.1	4.0	84.8	3.2	81.7	3.1
2000	816.0	3.3	951.9	7.2	87.3	2.9	84.8	3.9
2001	857.5	5.1	1,019.3	7.1	90.3	3.5	88.1	3.9
2002	903.7	5.4	1,098.8	7.8	93.3	3.4	91.9	4.3
2003	950.7	5.2	1,135.1	3.3	96.5	3.5	95.8	4.3
2004	995.3	4.7	1,218.6	7.4	100.0	3.6	100.0	4.4
2005	1 040.2	4.5	1,266.6	3.9	103.8	3.8	104.3	4.3
2006	1 091.6	4.9	1,285.8	1.5	108.0	4.1	110.1	5.5
2007e	1 139.7	4.4	1,342.3	4.4	112.5	4.2	116.5	5.8
Forecasts								
2008	1 203.8	5.6	1,425.5	6.2	117.5	4.4	123.2	5.8
2009	1 263.2	4.9	1,505.4	5.6	122.0	3.8	129.6	5.2
2010	1 320.0	4.5	1,585.2	5.3	126.6	3.7	135.5	4.5
2011	1 390.4	5.3	1,681.9	6.1	131.9	4.2	141.8	4.7
2012	1 468.4	5.6	1,781.1	5.9	137.8	4.5	149.2	5.2
2013	1 546.9	5.4	1,884.4	5.8	143.8	4.4	156.5	4.9
2014	1 620.4	4.8	1,977.7	5.0	149.3	3.8	163.2	4.3
2015	1 692.5	4.5	2,083.5	5.4	155.7	4.3	171.2	4.9
2016	1 783.9	5.4	2,210.6	6.1	163.0	4.7	180.1	5.2
2017	1 885.6	5.7	2,345.4	6.1	170.5	4.6	189.5	5.2
Long Term Averages								
1990-00	4.0		5.3					
2001-07	4.9		5.0		3.7		4.6	
2008-12	5.2		5.8		4.1		5.1	
2013-17	5.1		5.7		4.4		4.9	

e : estimate

(1) Earnings of males only are used in order to obtain the most consistent time series. Data is year ended May.

(2) Ordinary time hours excluding bonuses.

Further out, the utilities sector will not be immune from the forecast downturn in employment growth and easing in wage inflationary pressures over 2008/09 and 2009/10. However, wages growth in the electricity, gas, water sector, while easing, is unlikely to drop below the national average during these two years. Thereafter, we expect that it once again should remain comfortably above the national average during the upturn.

Overall, it is BIS Shrapnel's opinion that wages growth in the electricity, gas, water sector — expressed in average weekly ordinary time earnings (AWOTE) — will average 5.7 per cent per annum (0.5 per cent higher than the national AWOTE average of 5.2 per cent per annum) over the next ten years from 2007/08 to 2016/17. Meanwhile, we anticipate growth in the labour price index (LPI) for the electricity, gas, water sector will average 5.0 per cent per annum (0.6 per cent higher than national LPI growth of 4.2 per cent per annum) over the ten years to 2016/17. The faster wages growth expected in the electricity, gas and water sector over the next six years is in line with historical movements over the past 15 years (see table 4.3).

For the purposes of estimating wage cost changes in ElectraNet's operating expenses, BIS Shrapnel recommends that movements in average weekly ordinary time earnings (AWOTE) for the electricity, gas and water sector should be used, for the following reasons:

- AWOTE includes all wage costs relevant to business and government, including over-award payments, bonuses and incentives. It also captures the effect of promotions for employees (with a higher salary), which increases an employer's total wage bill. The labour price index does not include bonuses or incentives and because it measures wage change based on a fixed basket of occupations, it does not pick up the effect on the total firm's wage bill of a promotion (promotions to a higher occupation category are often given by employers because they may be constrained by an enterprise or other agreement preventing them giving a wage increase within a certain award). A discussion of the relative merits of the AWOTE is given in section 3.1.
- ElectraNet's employees are mostly categorised to the electricity, gas and water sector. This sector is a largely capital intensive industry whose employees have higher skill, productivity and commensurate wage levels than most other sectors (see table 4.2). With many of the particular skills relevant to the electricity, gas and water sector expected to remain in relatively high demand, wage increases are expected to remain higher in this industry than the national average. In addition, the overall national average tends to be dragged down by the lower wage and skilled sectors such as the Retail Trade, Wholesale Trade, Accommodation, Cafés and Restaurants, and also Manufacturing and Construction. These sectors tend to be highly cyclical, with weaker employment suffered during downturns impacting on wages growth in particular.

We have included year-to-year movements for AWOTE in the electricity, gas and water sector over the ten years to 2016/17, which are presented in tables 1.1 and 4.3 (and chart 4.2). Real AWOTE movements, deflated using the headline CPI series, are presented in table 1.1. However, note these year-to-year movements are *indicative only*, and are based on the midpoint of our opinion of the divergence between average wages in the electricity, gas and water sector and that of the national average. We have made an *indicative* allowance in AWOTE movements for compositional changes of employment within the sector through the cycle, which can distort year-to-year movements. We have, however, not carried out a full detailed analysis of occupations within the sector. Such an analysis is outside the scope of this study.

Table 4.4: Total Australia
Output and Employment

Year Ended June	Gross Domestic Product $m(04/05$'s)	A%Ch	Employment '000	A%Ch	Productivity $'000/empl.	A%Ch
1986	477 933	4.4	6862	4.3	69647	
1987	489 488	2.4	7057	2.8	69366	-0.4
1988	514 737	5.2	7271	3.0	70795	2.1
1989	533 775	3.7	7564	4.0	70571	-0.3
1990	554 773	3.9	7849	3.8	70682	0.2
1991	551 197	-0.6	7802	-0.6	70648	0.0
1992	551 458	0.0	7658	-1.8	72007	1.9
1993	571 871	3.7	7659	0.0	74669	3.7
1994	595 329	4.1	7803	1.9	76298	2.2
1995	622 057	4.5	8114	4.0	76664	0.5
1996	647 659	4.1	8331	2.7	77745	1.4
1997	673 099	3.9	8403	0.9	80099	3.0
1998	703 258	4.5	8518	1.4	82557	3.1
1999	739 628	5.2	8689	2.0	85120	3.1
2000	769 045	4.0	8869	2.1	86708	1.9
2001	784 017	1.9	9058	2.1	86558	-0.2
2002	813 543	3.8	9166	1.2	88760	2.5
2003	839 188	3.2	9393	2.5	89346	0.7
2004	873 197	4.1	9563	1.8	91306	2.2
2005	896 567	2.7	9845	2.9	91068	-0.3
2006	922 636	2.9	10067	2.3	91650	0.6
2007e	953 492	3.3	10335	2.7	92261	0.7
Forecasts						
2008	983 900	3.2	10536	1.9	93388	1.2
2009	1 012 170	2.9	10609	0.7	95402	2.2
2010	1 052 660	4.0	10754	1.4	97889	2.6
2011	1 093 180	3.8	11080	3.0	98663	0.8
2012	1 130 290	3.4	11368	2.6	99428	0.8
2013	1 157 570	2.4	11538	1.5	100323	0.9
2014	1 194 800	3.2	11642	0.9	102626	2.3
2015	1 236 780	3.5	11875	2.0	104148	1.5
2016	1 293 060	4.6	12160	2.4	106336	2.1
2017	1 334 438	3.2	12428	2.2	107376	1.0
Long Term Averages						
1986-2006	3.3		1.9		1.4	
1990-1995	2.3		0.7		1.6	
1996-2000	4.3		1.8		2.5	
2001-2007	3.1		2.2		0.9	
Forecasts						
2008-12	3.5		1.9		1.5	
2013-17	3.4		1.8		1.6	

e : estimate

Source: BIS Shrapnel, ABS data

Table 4.5: Electricity, Gas and Water — Australia
Output and Employment

Year Ended June	Gross Value Added $m(04/05$'s)	A%Ch	Employment '000	A%Ch	Productivity $'000/empl.	A%Ch
1986	13 914	3.8	144.1	5.6	96.5	-1.7
1987	14 227	2.2	133.0	-7.7	107.0	10.8
1988	14 923	4.9	124.2	-6.6	120.2	12.3
1989	15 592	4.5	119.3	-4.0	130.7	8.8
1990	16 347	4.8	108.7	-8.9	150.4	15.0
1991	16 609	1.6	103.4	-4.9	160.7	6.8
1992	16 752	0.9	106.2	2.8	157.7	-1.8
1993	17 044	1.7	97.6	-8.1	174.7	10.8
1994	17 584	3.2	92.2	-5.5	190.7	9.2
1995	18 032	2.5	86.8	-5.9	207.9	9.0
1996	18 273	1.3	80.6	-7.1	226.6	9.0
1997	18 213	-0.3	66.5	-17.6	274.1	20.9
1998	18 857	3.5	64.5	-3.0	292.5	6.7
1999	19 164	1.6	64.9	0.6	295.5	1.0
2000	19 539	2.0	64.2	-1.0	304.2	2.9
2001	19 840	1.5	65.4	1.8	303.6	-0.2
2002	19 690	-0.8	67.3	2.9	292.8	-3.6
2003	19 867	0.9	72.5	7.8	274.1	-6.4
2004	20 000	0.7	75.0	3.4	266.8	-2.7
2005	20 146	0.7	76.5	2.1	263.2	-1.3
2006	20 471	1.6	87.2	13.9	234.9	-10.8
2007e	21 170	3.4	85.2	-2.3	248.5	5.8
Forecasts						
2008	21 660	2.3	87.9	3.1	246.5	-0.8
2009	22 030	1.7	88.1	0.3	250.0	1.4
2010	22 430	1.8	88.6	0.5	253.3	1.3
2011	22 790	1.6	89.4	0.9	255.0	0.7
2012	23 130	1.5	91.6	2.5	252.5	-1.0
2013	23 410	1.2	91.8	0.2	255.0	1.0
2014	23 740	1.4	91.1	-0.8	260.6	2.2
2015	24 240	2.1	91.6	0.6	264.5	1.5
2016	24 770	2.2	92.5	1.0	267.7	1.2
2017	25 265	2.0	93.4	1.0	270.4	1.0
Long Term Averages						
1986-2006	1.9		-2.5		4.5	
1990-1995	2.0		-4.4		6.7	
1996-2000	1.6		-5.8		7.9	
2001-2007	1.2		4.1		-2.8	
Forecasts						
2008-12	1.8		1.5		0.3	
2013-17	1.8		0.4		1.4	

e : estimate

Source: BIS Shrapnel, ABS data

4.2 Slow productivity growth will also put pressure on unit labour costs

Productivity is another key factor influencing unit labour costs and overall profitability in the electricity, gas and water sector. Increases in wages can be offset by productivity increases per employee. BIS Shrapnel is predicting productivity (output per employee) in the electricity, gas and water sector to increase by an average 0.8 per cent per annum over the next ten years from 2007/08 to 2016/17 (see table 4.5). This compares with an annual average of 1.5 per cent per annum for total Australia (see table 4.4). Note the real output measure for the utilities sector is Gross Value Added (GVA) in constant 2004/05 prices. Gross Value Added is gross output minus intermediate inputs — in other words, the real value added in production. GVA is not industry revenue or industry profit.

The average productivity growth of 0.8 per cent per annum forecast for the utilities sector over the next ten years compares unfavourably with the average of 7.3 per cent per annum achieved in the 1990s, but is better than the last seven years, when real output per worker declined by an average of 2.8 per cent per annum (including 2006/07, when productivity is estimated to have surged 5.8 per cent).

The strong growth in productivity achieved in the second half of the 1980s and during the 1990s flowed from the corporation and privatisation of the (mainly) public sector utilities which forced them to become more efficient. The move to enterprise bargaining during the 1990s also contributed to the increased efficiency, with many of the productivity gains coming from the elimination of inefficient manning practices and other significant one-off gains. This saw employment in the sector more than halve by the late 1990s and output per employee more than triple (see table 4.5).

However, the relatively ‘easy’ efficiency enhancing measures have now been implemented — with ‘all the low hanging fruit having now been picked’, further productivity gains are now likely to be much harder to achieve over the medium term. Indeed, the significant labour shedding — which drove the productivity gains in the 1987 to 2000 period — was probably overdone, as suggested by the solid growth in employment despite low output growth since 2000/01, and a reversal of the previous productivity gains. New entrants to the industry may have also contributed to the employment growth since 2000/01, although a number of the utilities have had to increase employment levels to address both run-down infrastructure and the need for new connections to service the large growth in new housing over the first half of the decade. With a number of utilities across several states expected to maintain — or even increase — major capital works, upgrading of infrastructure and maintenance programs over the next few years, employment levels are expected to at least hold at around current levels, before easing later this decade.

However, only modest growth in output is expected over the medium to long term — meaning that only relatively weak growth in productivity will result, given some minor growth in employment.

Real gross value added is forecast to average only 1.8 per cent per annum growth for the period 2007/08 to 2016/17. Continued demand management and energy efficiency measures are key factors underpinning this modest growth – although this is higher than the 1.2 per cent per annum averaged over the last seven years from 2000/01 to 2006/07 inclusive.

5. SOUTH AUSTRALIA – OUTLOOK FOR ECONOMY, LABOUR MARKET & WAGES

5.1 Economic outlook for South Australia

The South Australian economy is expected to bounce back in 2007/08 – with Gross State Product (GSP) forecast to increase 2.9 per cent – after severe drought cut GSP growth to an estimated 1.0 per cent. Growth is then expected to weaken sharply in 2008/09 before growth rebounds to a forecast 5.0 per cent in 2009/10. This rebound is expected to be led by strong growth in business investment, with a pick up in dwelling and public investment also contributing. The lower Australian dollar projected over 2008/09 and 2009/2010 – coupled with new capacity coming onstream from mining, manufacturing and defence-related investment – will also underpin stronger export growth. While an easing in output (GSP) growth back below 3 per cent is expected over the following two years, State Final Demand (i.e. state consumption and capital expenditure by the private and public sectors) is expected to remain strong over 2009/10 to 2011/12, underpinned by solid investment. In turn, this strong phase of investment will be a key driver of healthy employment growth over this period – averaging over 2 per cent p.a. (compared to the long term growth rate of 1.1 per cent p.a.).

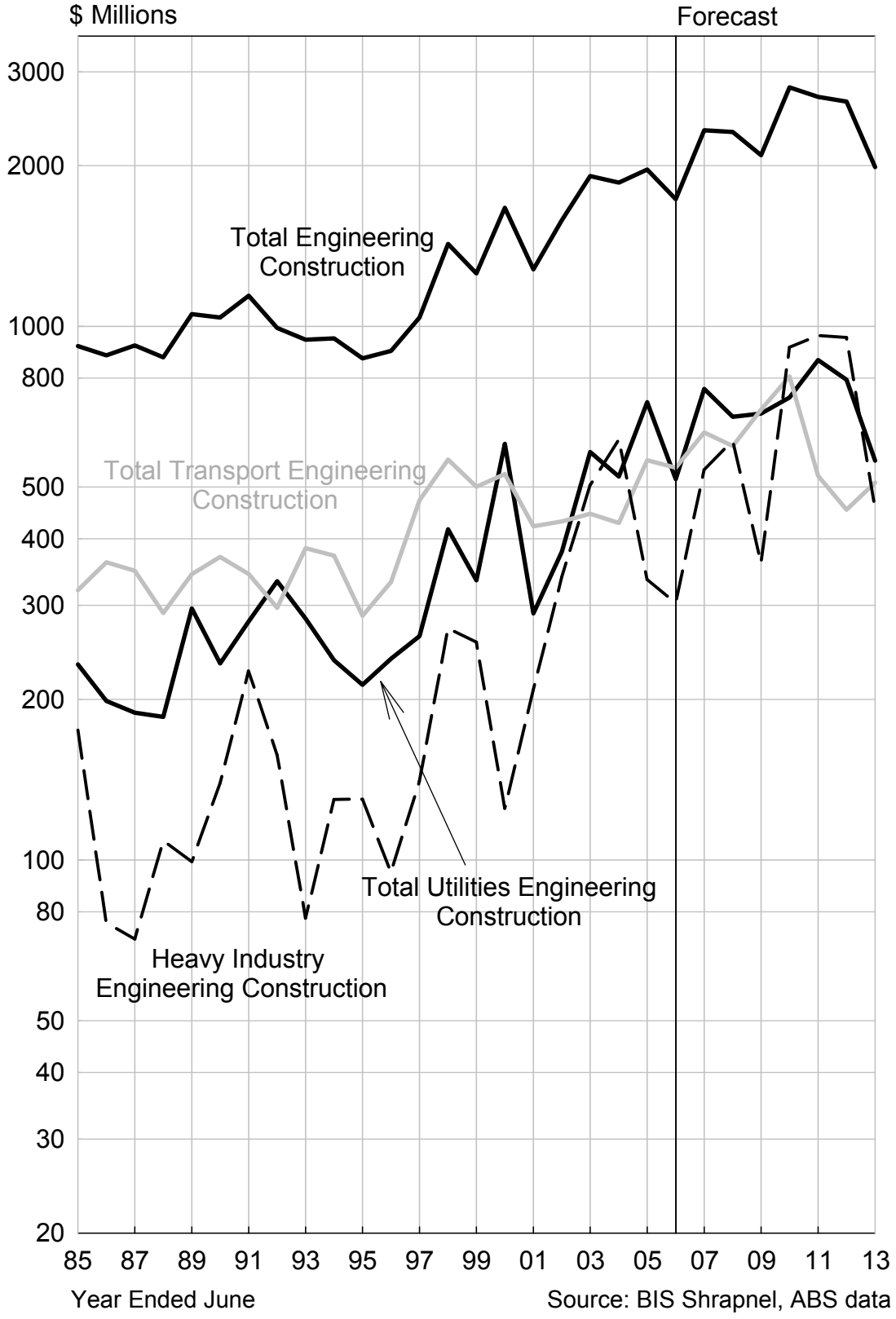
Over the next five years to 2011/12, annual GSP growth is forecast to average 2.9 per cent, while employment growth is forecast to average 1.6 per cent per annum (compared to 1.9 per cent p.a. over the five years to 2006/07). Over the five years to 2016/17, GSP growth is projected to average 2.6 per cent, with employment growth slowing back to its long term average of 1.1 per cent per annum.

Table 5.1: Key Economic Indicators - South Australia
Financial Years

Year Ended June					Forecasts						Average
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013-17
Consumption											
– Private	3.7	3.3	3.5	1.9	2.7	2.5	2.1	3.5	4.4	3.2	3.5
– Government	1.9	3.5	4.7	2.6	2.5	3.1	2.5	2.0	3.3	4.3	3.1
Total Investment	**19.8**	**11.5**	**5.6**	**0.3**	**3.2**	**-1.9**	**-1.3**	**11.7**	**7.2**	**3.5**	**3.8**
State Final Demand	**6.4**	**5.1**	**4.2**	**1.7**	**2.7**	**1.6**	**1.4**	**5.0**	**4.8**	**3.5**	**3.5**
Gross State Product	**1.8**	**3.8**	**1.2**	**2.2**	**1.0**	**2.9**	**1.7**	**5.0**	**2.7**	**2.3**	**3.2**
Employment											
– Employment Growth (Yr Avg)	2.8	1.4	1.9	1.7	1.9	1.2	0.2	2.1	2.9	1.5	1.3
– Unemployment Rate (May) (%)	6.3	6.4	5.5	5.0	nf	nf	nf	nf	nf	nf	nf

e: estimate ; nf: not forecast Source: BIS Shrapnel, ABS Data

Chart 5.1: Total Engineering Construction – South Australia
Constant 2004/05 Prices



5.2 Outlook for utilities, mining, construction and manufacturing sectors

5.2.1 Prospects for capital expenditure by sector

BIS Shrapnel regularly provides specific forecasts of engineering construction, building, activity (both dwelling and non-residential buildings) and mining investment by state. While the outlook varies by sector, the overall picture is for sustained high levels of capital expenditure in the utilities, mining, construction and manufacturing sectors to 2011/12.

Our forecasts indicate that South Australia is on the cusp of another strong phase of growth in engineering construction activity (see chart 5.1). Looming capacity constraints in port, electricity and manufacturing infrastructure are expected to play a significant role in sustaining high levels of activity over the next five years, as will continued healthy levels of public sector spending, particularly on roads and bridges, following the weakness of 2003/04. Importantly, as with Queensland and Western Australia, South Australia is well-placed to take advantage of the next leg in the resources investment boom, with the next expansion at Olympic Dam and several other more minor works expected to commence in the next few years.

We are forecasting total engineering construction activity to rise over 2006/07 and 2007/08. A wave of new projects slated to commence across most sectors, along with a ramping up of some big roads, electricity and minerals projects, will drive the rebound in engineering construction during this time.

Our forecast of the next economic slowdown, in combination with some major projects nearing completion, will see activity fall back in 2008/09. However, it is important to note that our forecast is for a relatively mild downturn (compared to many other states). The commencement of some works associated with the Olympic Dam expansion, as well as the start or ramp-up of several significant road projects (the much-discussed Northern Access Road and greater works on the notorious South Road).

Engineering construction activity is then expected to strengthen significantly through 2009/10, which will see work done reach a new peak. The main driver here will be the first full year of work on the expansion at Olympic Dam, with support to come from associated works (water, rail and electricity) and continued work on the major road projects.

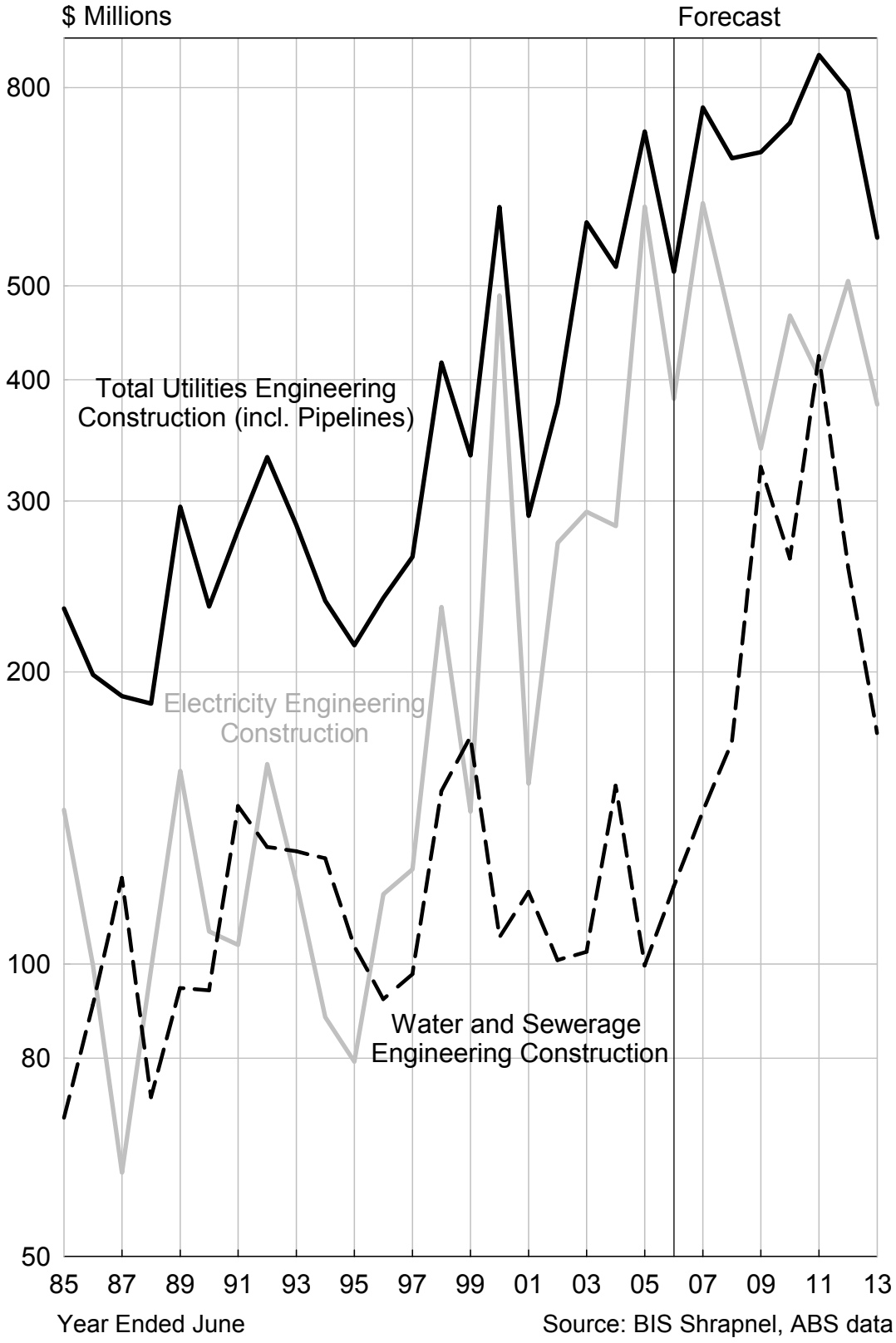
As the expansion of Olympic Dam (and the associated works) and the major road projects come to a close in the early years of the 2010s, we do not foresee any similar sized works in the pipeline to take up the slack. As a consequence, we are forecasting activity to fall back over the decade to 2020/21.

The period between now and 2010/11 will be the strongest five-year period of engineering construction on record. Activity is expected to average $2.5 billion per annum (all prices in constant 2004/05 prices) over 2006/07—2010/11, some 36 per cent higher than the previous five year period. Over the five year period to 2015/16, work done will average almost $1.9 billion per annum, an average level slightly higher than that of the 2001/02—2005/06 period.

Mining and Heavy Industry

Heavy industry engineering construction activity (mainly mining and heavy industrial manufacturing related structures) fell for a second consecutive year in 2005/06 to $303 million. Despite activity being halved from its peak in 2003/04, it remained at a level nearly double that which was experienced through the 1990s. OneSteel's $355 million "Project Magnet" development

Chart 5.2: Utilities Engineering Construction – South Australia
Constant 2004/05 Prices



and the $70 million Mindarie mineral sands project by Australian Zircon provided the bulk of the work in 2005/06 and are expected to be completed in 2006/07.

Activity is expected to grow strongly from here however, with work done expected to double over the next two years alone, driven by:

- Oxiana's $775 million Prominent Hill copper/gold project, which commenced construction in the September quarter 2006 and will provide a solid base of work in 2006/07 and 2007/08 equating to around $340 million in direct engineering construction work,
- The commencement of a new zircon project in the Eucla Basin by Iluka Resources in 2007/08, based on positive exploration and technical studies in 2005, for which we have allocated around $250 million in total project value,
- A wave of small to medium size copper, zinc and uranium projects slated to commence construction over 2006/07 and 2007/08, and
- The commencement of the $650 million Penola pulp mill project which aims to produce up to one million tonnes of woodchips by 2009/10.

We expect activity to fall in 2008/09 as most of the major projects mentioned above wind down to completion. However, 2008/09 represents merely a calming before the storm. Dominating our forecasts of engineering construction activity in South Australia from 2008/09 is the proposed $6.5 billion expansion of BHP Billiton's Olympic Dam copper/uranium/gold mine. Not only will this project boost heavy industry work done, but related infrastructure needs for the project will also provide a boost to construction in other engineering segments including electricity, rail, roads, water and gas pipelines.

Given favourable technical reports and the robust outlook for mineral prices, our forecasts assume that the Olympic Dam expansion goes ahead in 2008/09, with production coming on stream from 2012/13. Whilst we are forecasting the expansion to commence in 2008/09, the bulk of work done is expected to come through in 2009/10 and 2010/11. The total project cost has been revised up from $5 billion to $6.5 billion. We have allocated $5 billion of the total project cost to on-site mining works, with the remaining $1.5 billion as other infrastructure, both on and off-site, including:

- up to $150 million for a 90 kilometre railway from Pimba to Olympic Dam,
- up to $700 million for water supplies (in the form of a desalination plant and a pipeline link to the Murray River or from a bore in the Great Artesian Basin),
- $400 million for electricity generation (likely to be gas-fired),
- around $90 million for associated gas pipelines, and
- a further $160 million for electricity, port and road upgrades.

In recent years, the ABS has been allocating a greater proportion of heavy industry projects as engineering construction. Consequently, we expect that around 50 per cent of the $5 billion mining project cost will be allocated as engineering construction over the four years to 2011/12. However, there is the possibility that this proportion and/or the total project cost could end up even higher than this. It is important to note that given the size of this project, any changes to the timing and/or cost will greatly affect the levels of total engineering construction activity over the forecast period.

Chart 5.3: Total Engineering Construction
Australia vs South Australia

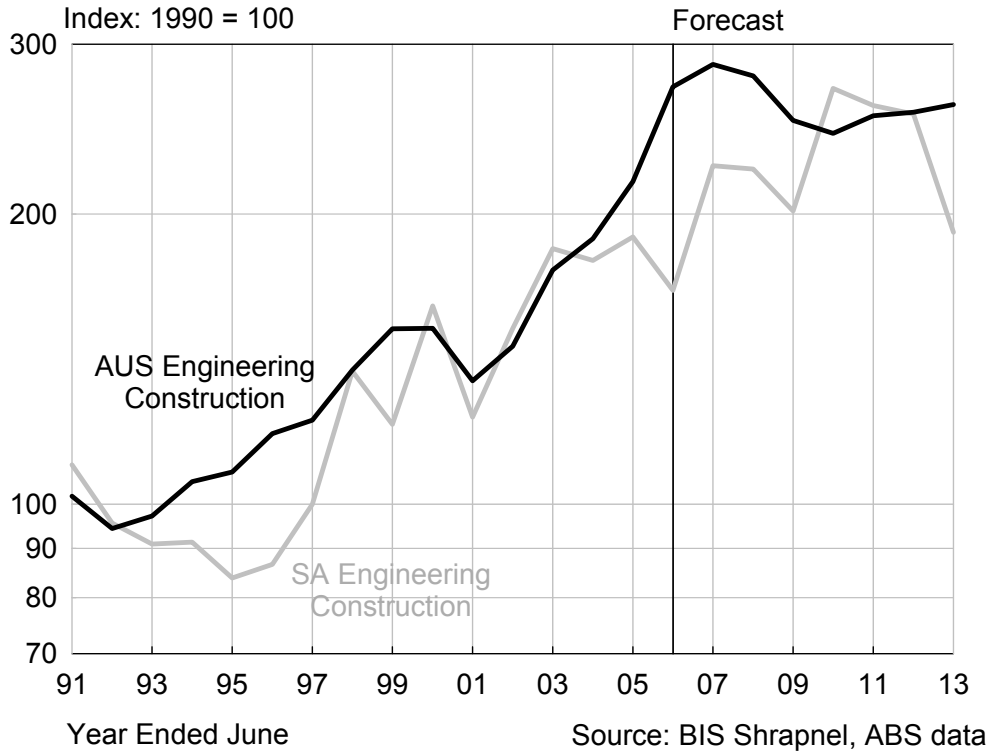
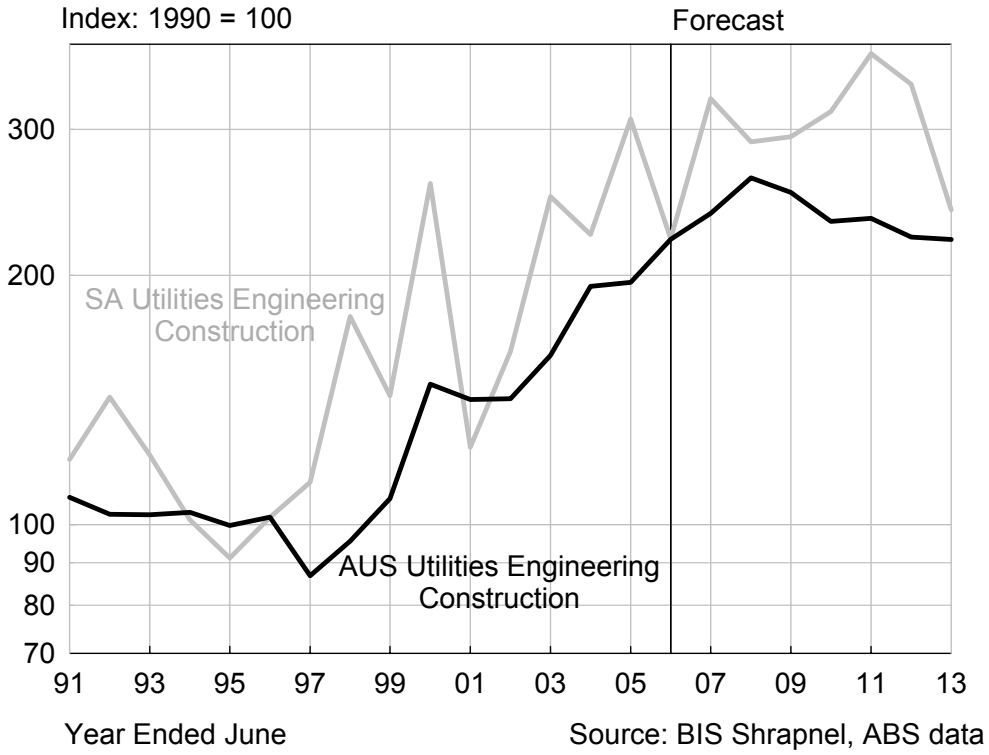


Chart 5.4: Utilities Engineering Construction
Australia vs South Australia



The Olympic Dam expansion should see mining and heavy industry work done peak in 2009/10 and maintain this level in 2010/11. However, the winding down of work at Olympic Dam after 2010/11— with no other very large projects to take its place — is expected to see heavy industry work done slump considerably. Overall, heavy industry work done is expected to average $743 million per annum over the next five years, but fall back to around $345 million per annum across the subsequent five year period.

Water Storage and Supply, Sewerage and Draining and Pipelines

A sustained period of expansion is expected for water engineering construction over the next five years. Most of the work is expected to come from the private sector with BHP Billiton planning to spend $700 million on a desalination plant ($300 million) and 330km pipeline ($400 million) from the River Murray. A proposal for a second $330 million desalination plant at Port Augusta to be built by Acquasol will further boost water activity. Overall, we forecast water engineering construction activity to peak in 2010/11, but return back to a more normal level over the following decade.

Meanwhile, sewerage and drainage construction will be higher, on average, over the next five years. This is despite lower levels of housing activity (compared to the 2004 – 2006 period), which tends to reduce the level of water and sewerage reticulation activity. Pipelines activity (predominantly for gas) will also be subdued over the next five years.

Electricity Generation, Transmission and Supply

Following a doubling of electricity construction work done over 2004/05 (making electricity, if only temporarily, the largest subcategory of engineering construction work in the state), activity fell back to $383 million in 2005/06. We expect electricity activity to rise significantly in 2006/07 to over $600 million as some big new projects commence. Wind farm construction once again will be the major driver of activity. Major projects during this period include the ramping up of work on the $300 million second stage of the Lake Bonney wind farm, followed by the commencements of the $235 million Hallett wind farm and the first stage of the Barunga wind farm worth $200 million.

Electricity construction is expected to fall over 2007/08 and 2008/09. However, this decline could be cushioned by increased support (which could take the form of subsidies) from all levels of Government towards renewable energy. This could aid further wind farm and geothermal development in South Australia. In particular, the Barunga wind farm will only use about one-third of the available wind farm site, which leaves the door open for further stages of this project in the future. Any action where renewable energy targets are lifted will be the spark needed for the development of a series of wind farms. We anticipate another rise in electricity engineering construction late in the decade to coincide with the power requirements of the Olympic Dam expansion.

Electricity construction will also be boosted by higher levels of activity related to the upgrading and replacing of transmission and sub-station infrastructure. These higher levels form a significant portion of the increased electricity engineering construction expected over the next decade. In part, they are a response to underinvestment in electricity infrastructure in South Australia during the 1990s (see chart 5.2), with a portion of the higher levels representing a ‘catch-up’ on asset replacement and renewal, in order to improve reliability and augment the system.

We expect a healthy level of activity to persist in the decade to 2020/21, as upgrades and work on traditional electricity sources continues to be supplemented by activity on wind and geothermal energy.

Table 5.2: Industry Structure and Growth – South Australia

Industry Sectors	Proportions of Gross Domestic Product - 2007(e) South Aust. %	Australia %	Real Annual Growth 2002 to 2007(e) South Aust. %	Australia %	Forecast Annual Growth 2007 to 2012 South Aust.	Australia
Agriculture	3.8	2.4	-9.4	-3.5	7.9	5.8
Mining	2.3	5.2	0.0	1.6	5.1	6.1
Manufacturing	13.7	10.3	1.1	1.1	2.7	2.0
Food, Beverages & Tobacco	*3.2*	*2.1*	*-0.7*	*0.4*	*3.7*	*1.8*
Textiles, Clothing & Footwear	*0.3*	*0.4*	*-10.4*	*-8.2*	*-0.5*	*-0.8*
Wood & Paper Products	*1.4*	*0.7*	*1.7*	*-0.1*	*1.0*	*2.9*
Printing, Publishing etc	*1.1*	*1.1*	*1.4*	*0.4*	*0.3*	*0.7*
Petrol. Chem & Coal Products	*1.2*	*1.3*	*-5.8*	*-1.2*	*3.8*	*2.6*
Non-Metallic Mineral Products	*0.6*	*0.5*	*4.9*	*5.9*	*0.2*	*2.0*
Metal Products	*1.7*	*2.0*	*3.5*	*2.6*	*2.3*	*1.5*
Machinery & Equipment	*3.7*	*1.8*	*1.0*	*3.8*	*3.8*	*2.8*
Other Manufacturing	*0.4*	*0.4*	*-2.4*	*-1.7*	*-1.4*	*1.8*
Electricity, Gas & Water	2.8	2.2	2.0	1.5	2.0	1.8
Construction	6.0	7.0	6.7	8.7	-0.5	1.3
Wholesale Trade	4.2	4.9	2.8	3.8	3.2	3.7
Retail Trade	5.8	5.8	2.7	3.9	2.3	3.5
Accommodation, Cafes & Restaurants	2.1	2.2	3.2	3.8	3.5	3.7
Transport & Storage	4.7	4.7	4.9	5.0	4.0	3.8
Communications	2.6	2.9	6.2	6.2	4.9	6.0
Finance & Insurance	6.0	7.2	2.2	3.8	3.0	3.8
Property & Business Services	9.2	11.9	1.8	3.3	3.3	4.4
Government Admin. & Defence	3.5	3.8	1.2	2.1	2.3	2.7
Education	4.7	4.1	-0.2	1.5	1.0	1.9
Health & Community Services	7.3	6.0	2.6	4.0	2.8	3.9
Cultural & Recreational Services	1.5	1.5	1.8	4.5	4.0	3.6
Personal & Other Services	2.4	1.9	1.9	2.8	1.9	2.9
Ownership of Dwellings	8.5	8.0	4.1	4.0	3.0	3.7
TOTAL GSP	100.0	100.0	2.7	3.2	2.9	3.5
Contributions to South Aust. Growth:						
- Industry Structure (*)	-	-	3.3	-	3.2	-
- Relative Industry Performance	-	-	-0.6	-	-0.3	-

(e) Year End June 2007 is an estimate

(*) Growth in GSP if each state industry sector grew at the same rate as comparable Australian Sector

Source: ABS, BIS Shrapnel

Other Construction, Manufacturing and Defence-Related Sectors

New dwelling building activity is forecast to decline sharply in 2007/08 and remain weak until early next decade. However, this weakness will be largely offset by moderate to strong growth in alterations and additions activity. Meanwhile, non-residential building activity is forecast to suffer a steep decline over 2007/08 to 2009/10, before recovering from 2010/11.

Manufacturing investment – apart from the large projects discussed in the heavy industry section – is currently suffering from the effects of the high A$ on industry profitability and from problems in the motor vehicle sector. However, we expect manufacturing investment to improve from 2008/09 as a result of the fall in the dollar boosting competitiveness and improved rural conditions which should boost investment in the food and beverages sector.

But the most significant impetus to increased capital expenditure in the manufacturing sector is the awarding of the $7 billion air warfare destroyer (AWD) contract to South Australia. Already, around $250 million is being spent on shipbuilding and related infrastructure at Techport, where the destroyers will be built. Other companies will also be investing in upgraded systems and infrastructure as contracts are awarded, both for the AWD and other large defence contracts.

Other defence-related projects over the next few years include a $500 million project to accommodate a 1200-strong mechanised army battalion, an $80 million project involving the construction of ground support facilities at the Edinburgh RAAF airbase and a $51 million stage redevelopment of Edinburgh airbase.

5.2.2 Prospects for output and employment by sector

The overall outlook for the utilities, mining, construction and manufacturing sectors in South Australia is sound over the medium to long term, as indicated by table 5.2. Table 5.2 also indicates that these industries are key sectors in the South Australian economy (except Mining). Tables 5.3 and 5.7 provide historical data and forecasts of both output and employment for these sectors for both South Australia and Australia. Real Gross Value added (in constant 2004/05 prices) is used as the output measure. Real GVA for the Australian sectors is available quarterly from the National Accounts, but states' GVA is only available annually and only in current prices. Therefore, the Australian implicit price deflator for each sector is used for the relevant sector in each state to estimate real GVA historically.

In the short term, growth in the construction sector is forecast to decline over the next two years, as dwelling and non-dwelling building activity weakens, and engineering construction plateaus at a high level. Construction output is then forecast to surge in 2009/10 and remain at the projected historically high levels over the following two years, before falling back over 2012/13 and 2013/14. Although construction at the $6.7 billion Olympic Dam expansion provides the biggest boost to construction activity over the 2009 to 2012 period, the recovery in dwelling and non-dwelling building also contribute to the higher overall construction levels. Employment in the construction sector also pushes up to high levels over this period.

Mining sector employment has almost tripled over the past five years, while output growth has declined, largely due to lower grades and problems at Olympic Dam and falling oil and gas production. Over this period, there have been higher levels of mining investment (also boosting employment levels in the sector) and we now expect strong growth in mining output as this past (and high current levels of) mining investment come onstream. Employment will increase further over the next two years (although at a modest rate) as production ramps up at these mines – including the Middleback iron ore mines related to Project Magnet, Mindarie mineral sands project, Prominent Hill, Honeymoon, Angas Zinc and Kanmantoo Mines. Employment is expected to

Table 5.3: South Australia: Electricity, Gas and Water
Output and Employment

Year Ended June	Gross Value Added		Employment		Productivity	
	$m(04/05$'s)	A%Ch	'000	A%Ch	$'000/empl.	A%Ch
1986	1015.3	5.6	10.2	0.7	99.5	4.9
1987	935.2	-7.9	11.0	8.1	84.8	-14.8
1988	1154.0	23.4	10.8	-2.3	107.1	26.3
1989	1029.1	-10.8	11.2	3.9	91.9	-14.2
1990	1089.2	5.8	10.1	-9.8	107.8	17.4
1991	1135.1	4.2	8.6	-15.3	132.8	23.1
1992	1148.5	1.2	9.5	11.4	120.6	-9.2
1993	1220.1	6.2	9.0	-5.8	135.9	12.7
1994	1062.3	-12.9	6.9	-22.8	153.4	12.8
1995	1213.4	14.2	5.2	-24.2	231.2	50.7
1996	1380.6	13.8	7.1	35.6	193.9	-16.1
1997	1549.4	12.2	6.2	-13.1	250.5	29.2
1998	1716.1	10.8	5.1	-18.3	339.5	35.5
1999	1556.2	-9.3	4.6	-9.9	341.5	0.6
2000	1616.1	3.8	5.1	12.9	314.2	-8.0
2001	1634.1	1.1	5.1	-0.5	319.3	1.7
2002	1556.7	-4.7	5.1	-1.3	308.2	-3.5
2003	1604.4	3.1	5.7	13.2	280.6	-9.0
2004	1617.3	0.8	5.3	-6.5	302.7	7.9
2005	1652.2	2.2	6.1	14.0	271.3	-10.4
2006	1686.3	2.1	6.5	7.3	258.1	-4.9
2007e	1716.7	1.8	6.3	-3.4	272.1	5.4
Forecasts						
2008	1761.3	2.6	6.5	3.4	269.9	-0.8
2009	1798.3	2.1	6.6	0.9	273.1	1.2
2010	1834.2	2.0	6.7	1.7	273.9	0.3
2011	1867.3	1.8	6.8	2.1	273.1	-0.3
2012	1899.0	1.7	7.0	2.2	271.7	-0.5
2013	1950.3	2.7	7.1	1.7	274.5	1.0
2014	2020.5	3.6	7.2	0.9	281.9	2.7
2015	2058.9	1.9	7.2	0.9	284.7	1.0
2016	2104.2	2.2	7.3	1.0	288.1	1.2
2017	2148.4	2.1	7.4	1.1	291.0	1.0
Long Term Averages						
1986-2006	2.6		-2.2		4.9	
1990-1995	2.2		-12.3		16.5	
1996-2000	5.9		-0.4		6.3	
2001-2007	0.9		3.0		-2.0	
Forecasts						
2008-12	2.0		2.1		0.0	
2013-17	2.5		1.1		1.4	

e : estimate

Source: BIS Shrapnel, ABS data

receive another boost around 2009/10 as construction on Olympic Dam expansion begins (although most of the contractor construction workforce is categorised to the construction sector), and then again over 2012/13 and 2013/04 as the operational phase of Olympic Dam ramps up.

Output in the electricity, gas and water sectors is forecast to average around 2 per cent per annum over the next five years, with the stronger output expected for 2007/08 related to higher demand from three major industrial users – OneSteel, Port Pirie and Olympic Dam. Higher production is anticipated at the three facilities as current short term problems are fixed and as pellet production from Project Magnet comes onstream. Meanwhile, employment growth is forecast to steadily increase over the next five years, by around 2 per cent per annum. A significant portion of the increased workforce in the utilities sector is related to:

- capital expenditure, network upgrades and maintenance expenditure is projected to be at much higher levels, on average, over the next five years (and following five years), compared to the past five years, and particularly the 1990s. Indeed, the higher levels of long term programs to upgrade networks and increase maintenance are part of a 'catch-up' phase of upgrading and maintenance after relatively low levels of expenditure in these areas during the 1990s.
- an increasing desire to increase engineering construction and design and maintenance capabilities and skills within the utilities sector, which has been given added impetus from the escalation in contractor costs over recent years.

We have combined these first 3 sectors – utilities, mining and construction – for Australia and South Australia in tables 5.4 and 5.5 to highlight the combined strength of employment growth over the past six years. The tables and chart 5.5 also show that employment growth in the combined South Australian sectors is expected to outstrip its Australian counterpart over the next five year, particularly around 2009/10.

BIS Shrapnel is forecasting an improved performance from the manufacturing sector over the next decade. The Food, Beverages and Tobacco (FBT) sub-sector (which accounts for around one-quarter of total Manufacturing GVA) is estimated to have been seriously impacted by the severe drought in 2006/07, especially affecting the key wine sector. However, we expect the FBT sub-sector to lead the bounceback in production in 2007/08, and maintain good growth over the next decade – drought notwithstanding. Meanwhile, building materials manufacturers will follow the building and construction cycle. The Metal Products manufacturing sub-sector will also be influenced by the construction cycle (especially the non-dwelling construction segment both for South Australia and Australia), and be boosted by new capacity coming onstream at Whyalla and Olympic Dam.

The expected decline in the Australian dollar over 2008 and 2009 will help improve competitiveness in export markets and against imports, and provide a boost to the overall manufacturing sector over 2008/09 and 2009/10. At the same time, we expect the $7 billion Air Warfare Destroyer contract to provide a substantial boost to manufacturing, especially from 2009/10 and 2010/11 when the operational (ship construction) phase ramps up. The state government estimated in August 2006 that over the 10 year life of the AWD project, it will make a direct impact of $574 million with another $609 million in spin-off benefits. They estimated that this will create 3,000 jobs, 1,700 directly attributable to the project and 1,300 jobs from the flow-on effects. More recent estimates from the state government (March, 2007) put the contribution from the AWD project at 4,000 direct and indirect jobs created. Furthermore, a new report from the SA Centre for Economic Studies forecast 2,700 new jobs in the defence-related sector by 2010.

Table 5.4: Gross Value Added and Employment
Electricity, Gas & Water, Mining and Construction Sectors - Australia

Year Ended	Electricity, Gas & Water				Mining				Construction				Sub-total of 3 Sectors			
	GVA		Employment		GVA		Employment		GVA		Employment		GVA		Employment	
June	$m(04/05$s)	A%Ch	'000	A%Ch	$m(04/05$s)	A%Ch	'000	A%Ch	$m(04/05$s)	A%Ch	'000	A%Ch	$m(04/05$s)	A%Ch	'000	A%Ch
1985	13399		136.5		20584		94.1		27076		470.7		61059		701.3	
1986	13914	3.8	144.1	5.6	22745	10.5	105.8	12.5	28598	5.6	477.7	1.5	65257	6.9	727.7	3.8
1987	14227	2.2	133.0	-7.7	21323	-6.3	101.1	-4.5	27742	-3.0	503.7	5.4	63292	-3.0	737.8	1.4
1988	14923	4.9	124.2	-6.6	25137	17.9	97.7	-3.3	29942	7.9	507.8	0.8	70002	10.6	729.7	-1.1
1989	15592	4.5	119.3	-4.0	26388	5.0	98.0	0.3	32993	10.2	571.3	12.5	74973	7.1	788.5	8.1
1990	16347	4.8	108.7	-8.9	29036	10.0	103.9	6.0	33749	2.3	603.3	5.6	79132	5.5	815.9	3.5
1991	16609	1.6	103.4	-4.9	30687	5.7	95.1	-8.5	31552	-6.5	575.0	-4.7	78848	-0.4	773.5	-5.2
1992	16752	0.9	106.2	2.8	32090	4.6	89.7	-5.7	28928	-8.3	519.4	-9.7	77770	-1.4	715.4	-7.5
1993	17044	1.7	97.6	-8.1	32410	1.0	86.8	-3.3	30633	5.9	535.1	3.0	80087	3.0	719.5	0.6
1994	17584	3.2	92.2	-5.5	32975	1.7	89.4	3.0	32521	6.2	559.7	4.6	83080	3.7	741.3	3.0
1995	18032	2.5	86.8	-5.9	35337	7.2	86.1	-3.7	34304	5.5	591.4	5.7	87673	5.5	764.3	3.1
1996	18273	1.3	80.6	-7.1	38276	8.3	85.0	-1.3	34828	1.5	602.4	1.9	91377	4.2	768.0	0.5
1997	18213	-0.3	66.5	-17.6	38786	1.3	86.3	1.4	35712	2.5	587.9	-2.4	92711	1.5	740.6	-3.6
1998	18857	3.5	64.5	-3.0	40156	3.5	82.8	-4.0	39314	10.1	598.7	1.8	98327	6.1	745.9	0.7
1999	19164	1.6	64.9	0.6	40022	-0.3	80.0	-3.3	42848	9.0	632.4	5.6	102034	3.8	777.3	4.2
2000	19539	2.0	64.2	-1.0	42468	6.1	77.9	-2.7	45488	6.2	687.1	8.6	107495	5.4	829.2	6.7
2001	19840	1.5	65.4	1.8	45704	7.6	78.5	0.8	39106	-14.0	670.1	-2.5	104650	-2.6	814.0	-1.8
2002	19690	-0.8	67.3	2.9	45735	0.1	81.2	3.4	43776	11.9	694.6	3.7	109201	4.3	843.0	3.6
2003	19867	0.9	72.5	7.8	45596	-0.3	88.2	8.7	50974	16.4	718.2	3.4	116437	6.6	878.9	4.3
2004	20000	0.7	75.0	3.4	43949	-3.6	88.2	0.0	54353	6.6	776.7	8.2	118302	1.6	939.9	6.9
2005	20146	0.7	76.5	2.1	46152	5.0	106.4	20.6	56941	4.8	837.3	7.8	123239	4.2	1020.3	8.5
2006	20471	1.6	87.2	13.9	45241	-2.0	129.6	21.9	62406	9.6	876.3	4.7	128118	4.0	1093.1	7.1
2007e	21170	3.4	85.2	-2.3	49580	9.6	137.2	5.8	66570	6.7	940.7	7.3	137320	7.2	1163.0	6.4
Forecast																
2008	21660	2.3	87.6	2.8	54240	9.4	139.7	1.9	67040	0.7	942.6	0.2	142940	4.1	1169.9	0.6
2009	22030	1.7	87.7	0.1	58900	8.6	141.2	1.0	65120	-2.9	920.2	-2.4	146050	2.2	1149.1	-1.8
2010	22430	1.8	86.7	-1.1	61610	4.6	137.4	-2.7	65970	1.3	922.1	0.2	150010	2.7	1146.1	-0.3
2011	22790	1.6	87.2	0.6	64140	4.1	136.8	-0.4	68950	4.5	958.9	4.0	155880	3.9	1183.0	3.2
2012	23130	1.5	89.4	2.5	66710	4.0	136.9	0.0	70860	2.8	985.5	2.8	160700	3.1	1211.7	2.4
2013	23410	1.2	89.6	0.2	68980	3.4	134.8	-1.5	71380	0.7	1013.0	2.8	163770	1.9	1237.3	2.1
2014	23740	1.4	88.9	-0.8	72150	4.6	134.9	0.1	71010	-0.5	997.8	-1.5	166900	1.9	1221.5	-1.3
2015	24240	2.1	89.4	0.6	76480	6.0	138.2	2.4	73430	3.4	1025.6	2.8	174150	4.3	1253.2	2.6
2016	24770	2.2	90.3	1.0	79920	4.5	139.3	0.9	78030	6.3	1066.4	4.0	182720	4.9	1296.0	3.4
2017	25265	2.0	91.2	1.0	83916	5.0	138.0	-0.9	83102	6.5	1092.0	2.4	192283	5.2	1321.2	1.9
Compound Annual Average Growth Rates																
1985-2006	2.0		-2.1		3.8		1.5		4.1		3.0		3.6		2.1	
2001-2007	1.2		4.1		2.2		8.4		5.6		4.6		3.6		5.0	
2008-12	1.8		1.0		6.1		-0.1		1.3		0.9		3.2		0.8	
2013-17	1.8		0.4		4.7		0.2		3.2		2.1		3.7		1.7	

e: estimate

Source: BIS Shrapnel, ABS Data

Table 5.5: Gross Value Added and Employment
Electricity, Gas & Water, Mining and Construction Sectors - South Australia

Year Ended	Electricity, Gas & Water				Mining				Construction				Sub-total of 3 Sectors			
	GVA		Employment		GVA		Employment		GVA		Employment		GVA		Employment	
June	$m(04/05$s)	A%Ch	'000	A%Ch	$m(04/05$s)	A%Ch	'000	A%Ch	$m(04/05$s)	A%Ch	'000	A%Ch	$m(04/05$s)	A%Ch	'000	A%Ch
1985	962		10.1		1438		6.9		2259		39.6		4659		56.7	
1986	1015	5.6	10.2	0.7	2148	49.4	8.8	27.3	2311	2.3	38.9	-1.9	5475	17.5	57.9	2.1
1987	935	-7.9	11.0	8.1	1533	-28.6	9.0	2.0	2179	-5.7	42.5	9.3	4647	-15.1	62.5	7.9
1988	1154	23.4	10.8	-2.3	1664	8.6	5.5	-39.4	2310	6.0	39.2	-7.6	5128	10.4	55.5	-11.2
1989	1029	-10.8	11.2	3.9	1625	-2.4	4.2	-22.5	2443	5.8	40.0	2.0	5097	-0.6	55.4	0.0
1990	1089	5.8	10.1	-9.8	1338	-17.7	5.1	21.3	2501	2.4	37.0	-7.6	4928	-3.3	52.2	-5.9
1991	1135	4.2	8.6	-15.3	1333	-0.3	4.9	-4.4	2533	1.3	38.9	5.3	5002	1.5	52.4	0.3
1992	1148	1.2	9.5	11.4	1316	-1.3	4.0	-17.9	2126	-16.1	41.3	6.2	4590	-8.2	54.9	4.8
1993	1220	6.2	9.0	-5.8	1476	12.2	4.7	16.8	2079	-2.2	38.2	-7.5	4775	4.0	51.9	-5.4
1994	1062	-12.9	6.9	-22.8	1407	-4.7	4.9	3.2	2151	3.5	35.7	-6.6	4620	-3.2	47.5	-8.5
1995	1213	14.2	5.2	-24.2	1445	2.7	4.0	-16.7	2242	4.2	36.2	1.4	4900	6.1	45.5	-4.2
1996	1381	13.8	7.1	35.6	1682	16.4	3.7	-7.2	2243	0.1	34.7	-4.1	5305	8.3	45.5	0.2
1997	1549	12.2	6.2	-13.1	1382	-17.8	3.4	-9.1	2261	0.8	35.2	1.6	5192	-2.1	44.8	-1.6
1998	1716	10.8	5.1	-18.3	1576	14.0	3.6	7.2	2530	11.9	35.9	2.0	5821	12.1	44.6	-0.4
1999	1556	-9.3	4.6	-9.9	1401	-11.1	4.1	11.7	2457	-2.9	36.8	2.5	5414	-7.0	45.5	1.9
2000	1616	3.8	5.1	12.9	1694	20.9	3.2	-22.1	2714	10.5	45.2	22.7	6024	11.3	53.5	17.7
2001	1634	1.1	5.1	-0.5	1689	-0.3	3.6	13.6	2323	-14.4	41.1	-9.0	5647	-6.3	49.8	-6.9
2002	1557	-4.7	5.1	-1.3	1390	-17.7	4.0	11.8	2675	15.1	45.3	10.2	5622	-0.4	54.4	9.1
2003	1604	3.1	5.7	13.2	1579	13.6	5.5	35.2	3101	15.9	46.5	2.7	6285	11.8	57.7	6.1
2004	1617	0.8	5.3	-6.5	1295	-18.0	6.7	23.3	3220	3.8	48.1	3.4	6133	-2.4	60.1	4.3
2005	1652	2.2	6.1	14.0	1357	4.8	7.6	13.0	3362	4.4	52.0	8.2	6371	3.9	65.7	9.2
2006	1686	2.1	6.5	7.3	1224	-9.8	9.4	24.0	3334	-0.8	51.5	-1.0	6244	-2.0	67.4	2.7
2007e	1717	1.8	6.3	-3.4	1387	13.3	11.7	24.7	3693	10.8	57.1	10.9	6796	8.8	75.2	11.5
Forecasts																
2008	1761	2.6	6.5	3.4	1465	5.7	12.2	4.2	3576	-3.1	60.1	5.3	6803	0.1	78.9	5.0
2009	1798	2.1	6.6	0.9	1584	8.1	12.6	3.0	3321	-7.1	57.0	-5.2	6703	-1.5	76.1	-3.5
2010	1834	2.0	6.7	1.7	1713	8.2	13.8	9.3	3668	10.5	59.5	4.5	7216	7.7	80.0	5.0
2011	1867	1.8	6.8	2.1	1753	2.3	13.4	-2.6	3642	-0.7	61.0	2.5	7262	0.6	81.2	1.6
2012	1899	1.7	7.0	2.2	1779	1.5	12.9	-3.8	3605	-1.0	61.0	0.0	7283	0.3	80.9	-0.5
2013	1950	2.7	7.1	1.7	1929	8.4	13.5	4.7	3166	-12.2	58.7	-3.8	7045	-3.3	79.3	-2.0
2014	2020	3.6	7.2	0.9	2268	17.6	14.2	5.0	3034	-4.2	56.8	-3.2	7323	3.9	78.1	-1.4
2015	2059	1.9	7.2	0.9	2386	5.2	14.2	-0.3	3155	4.0	57.6	1.4	7601	3.8	78.9	1.0
2016	2104	2.2	7.3	1.0	2360	-1.1	13.9	-1.7	3386	7.3	59.0	2.5	7850	3.3	80.2	1.6
2017	2148	2.1	7.4	1.1	2313	-2.0	13.6	-2.0	3553	4.9	60.7	2.9	8014	2.1	81.7	1.9
Compound Annual Average Growth Rates																
1985-2006	2.7		-2.1		-0.8		1.5		1.9		1.3		1.4		0.8	
2001-2007	0.9		3.0		-2.8		20.5		4.5		3.4		1.7		5.0	
2008-12	2.0		2.1		5.1		1.9		-0.5		1.3		1.4		1.5	
2013-17	2.5		1.1		5.4		1.1		-0.3		-0.1		1.9		0.2	

e: estimate

Source: BIS Shrapnel, ABS Data

Table 5.6: Gross Value Added and Employment
Utilities, Mining, Construction and Manufacturing Sectors - South Australia

Year Ended	Utilities, Mining & Construction				Manufacturing				Sub-total of 4 Sectors			
	GVA		Employment		GVA		Employment		GVA		Employment	
June	$m(04/05$s)	A%Ch	'000	A%Ch	$m(04/05$s)	A%Ch	'000	A%Ch	$m(04/05$s)	A%Ch	'000	A%Ch
1985	4659		56.7		5859		109.5		10518		166.2	
1986	5475	17.5	57.9	2.1	6015	2.7	106.0	-3.2	11490	9.2	163.8	-1.4
1987	4647	-15.1	62.5	7.9	6200	3.1	100.3	-5.3	10847	-5.6	162.8	-0.6
1988	5128	10.4	55.5	-11.2	6741	8.7	103.0	2.7	11869	9.4	158.5	-2.7
1989	5097	-0.6	55.4	0.0	7456	10.6	106.9	3.8	12553	5.8	162.3	2.4
1990	4928	-3.3	52.2	-5.9	7838	5.1	117.2	9.6	12767	1.7	169.3	4.3
1991	5002	1.5	52.4	0.3	7590	-3.2	109.5	-6.6	12591	-1.4	161.8	-4.4
1992	4590	-8.2	54.9	4.8	7248	-4.5	95.4	-12.9	11839	-6.0	150.2	-7.2
1993	4775	4.0	51.9	-5.4	7154	-1.3	95.3	-0.1	11929	0.8	147.2	-2.0
1994	4620	-3.2	47.5	-8.5	7477	4.5	94.8	-0.5	12097	1.4	142.3	-3.3
1995	4900	6.1	45.5	-4.2	7341	-1.8	104.8	10.5	12241	1.2	150.3	5.6
1996	5305	8.3	45.5	0.2	7437	1.3	99.0	-5.6	12743	4.1	144.5	-3.8
1997	5192	-2.1	44.8	-1.6	7609	2.3	97.0	-2.0	12801	0.5	141.8	-1.9
1998	5821	12.1	44.6	-0.4	8026	5.5	100.3	3.4	13847	8.2	145.0	2.2
1999	5414	-7.0	45.5	1.9	7591	-5.4	93.6	-6.7	13005	-6.1	139.1	-4.0
2000	6024	11.3	53.5	17.7	7541	-0.7	97.5	4.2	13565	4.3	151.0	8.6
2001	5647	-6.3	49.8	-6.9	7541	0.0	92.2	-5.5	13188	-2.8	142.0	-6.0
2002	5622	-0.4	54.4	9.1	7958	5.5	95.3	3.4	13580	3.0	149.7	5.4
2003	6285	11.8	57.7	6.1	8709	9.4	95.8	0.5	14994	10.4	153.5	2.5
2004	6133	-2.4	60.1	4.3	8669	-0.5	101.5	5.9	14802	-1.3	161.6	5.3
2005	6371	3.9	65.7	9.2	8407	-3.0	93.3	-8.1	14779	-0.2	159.0	-1.6
2006	6244	-2.0	67.4	2.7	8546	1.7	95.2	2.1	14790	0.1	162.7	2.3
2007e	6796	8.8	75.2	11.5	8396	-1.8	94.7	-0.5	15192	2.7	169.9	4.4
Forecast												
2008	6803	0.1	78.9	5.0	8568	2.1	92.1	-2.8	15371	1.2	171.0	0.6
2009	6703	-1.5	76.1	-3.5	8611	0.5	91.8	-0.3	15314	-0.4	167.9	-1.8
2010	7216	7.7	80.0	5.0	9027	4.8	94.8	3.3	16243	6.1	174.8	4.1
2011	7262	0.6	81.2	1.6	9417	4.3	97.3	2.7	16679	2.7	178.6	2.2
2012	7283	0.3	80.9	-0.5	9574	1.7	97.2	-0.1	16857	1.1	178.1	-0.3
2013	7045	-3.3	79.3	-2.0	9638	0.7	95.9	-1.4	16684	-1.0	175.2	-1.7
2014	7323	3.9	78.1	-1.4	9899	2.7	96.3	0.5	17222	3.2	174.5	-0.4
2015	7601	3.8	78.9	1.0	10219	3.2	97.6	1.3	17819	3.5	176.5	1.2
2016	7850	3.3	80.2	1.6	10545	3.2	98.7	1.2	18395	3.2	178.9	1.4
2017	8014	2.1	81.7	1.9	10840	2.8	100.0	1.3	18855	2.5	181.7	1.5
Compound Annual Average Growth Rates												
1985-2006	1.4		0.8		1.8		-0.7		1.6		-0.1	
2001-2007	1.7		5.0		1.5		-0.4		1.6		1.7	
2008-12	1.4		1.5		2.7		0.5		2.1		0.9	
2013-17	1.9		0.2		2.5		0.6		2.3		0.4	

e: estimate

Source: BIS Shrapnel, ABS Data

Table 5.7: Gross Value Added and Employment
Manufacturing Sector - Australia and South Australia

	Australia				South Australia			
Year Ended	GVA		Employment		GVA		Employment	
June	$m(04/05$s)	A%Ch	'000	A%Ch	$m(04/05$s)	A%Ch	'000	A%Ch
1985	67950		1139.3		5859		109.5	
1986	68383	0.6	1129.1	-0.9	6015	2.7	106.0	-3.2
1987	70254	2.7	1125.9	-0.3	6200	3.1	100.3	-5.3
1988	74940	6.7	1160.3	3.1	6741	8.7	103.0	2.7
1989	79256	5.8	1202.7	3.6	7456	10.6	106.9	3.8
1990	78322	-1.2	1202.1	0.0	7838	5.1	117.2	9.6
1991	76597	-2.2	1146.2	-4.7	7590	-3.2	109.5	-6.6
1992	74326	-3.0	1087.9	-5.1	7248	-4.5	95.4	-12.9
1993	75913	2.1	1088.8	0.1	7154	-1.3	95.3	-0.1
1994	79299	4.5	1094.6	0.5	7477	4.5	94.8	-0.5
1995	80983	2.1	1117.5	2.1	7341	-1.8	104.8	10.5
1996	82367	1.7	1113.7	-0.3	7437	1.3	99.0	-5.6
1997	84118	2.1	1131.9	1.6	7609	2.3	97.0	-2.0
1998	86616	3.0	1123.4	-0.7	8026	5.5	100.3	3.4
1999	88438	2.1	1079.7	-3.9	7591	-5.4	93.6	-6.7
2000	89191	0.9	1099.5	1.8	7541	-0.7	97.5	4.2
2001	91195	2.2	1113.2	1.3	7541	0.0	92.2	-5.5
2002	93132	2.1	1081.4	-2.9	7958	5.5	95.3	3.4
2003	96528	3.6	1114.1	3.0	8709	9.4	95.8	0.5
2004	97422	0.9	1070.2	-3.9	8669	-0.5	101.5	5.9
2005	96366	-1.1	1086.3	1.5	8407	-3.0	93.3	-8.1
2006	95989	-0.4	1062.4	-2.2	8546	1.7	95.2	2.1
2007e	98410	2.5	1056.0	-0.6	8396	-1.8	94.7	-0.5
Forecasts								
2008	98970	0.6	1051.5	-0.4	8568	2.1	92.1	-2.8
2009	100160	1.2	1043.3	-0.8	8611	0.5	91.8	-0.3
2010	103610	3.4	1049.8	0.6	9027	4.8	94.8	3.3
2011	106520	2.8	1062.3	1.2	9417	4.3	97.3	2.7
2012	108140	1.5	1059.4	-0.3	9574	1.7	97.2	-0.1
2013	108930	0.7	1045.2	-1.3	9638	0.7	95.9	-1.4
2014	110680	1.6	1038.1	-0.7	9899	2.7	96.3	0.5
2015	114170	3.2	1049.8	1.1	10219	3.2	97.6	1.3
2016	117930	3.3	1062.1	1.2	10545	3.2	98.7	1.2
2017	120878	2.5	1077.9	1.5	10840	2.8	100.0	1.3
Compound Annual Average Growth Rates								
1985-2006	1.7		-0.3		1.8		-0.7	
2001-2007	1.4		-0.6		1.5		-0.4	
2008-12	1.9		0.1		2.7		0.5	
2013-17	2.3		0.3		2.5		0.6	

e: estimate

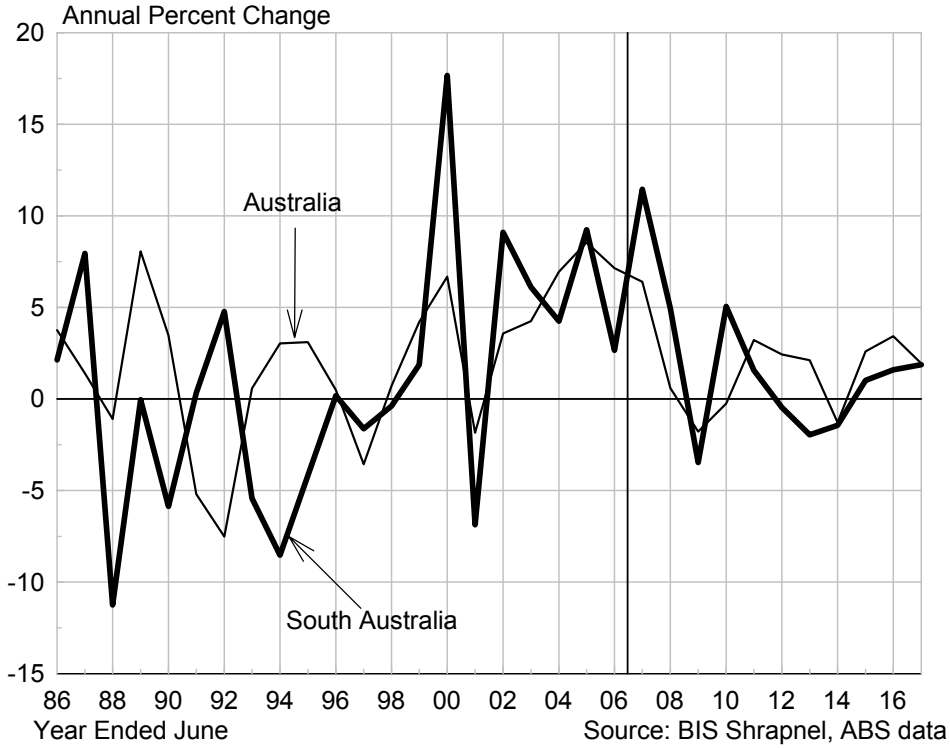
Source: BIS Shrapnel, ABS Data

The direct impacts will be predominantly in the Machinery and Equipment manufacturing (M & EM) sub-sector – the largest manufacturing sub-sector in South Australia – and these positive impacts should more than outweigh ongoing problems in the significant motor vehicle segment in M & EM.

As South Australia builds its capabilities in defence-related manufacturing, it is also likely to win at least one of the multi-million contracts to be decided in coming years – the $3.5 billion land 121 replacement field vehicles, the $1.5 billion Air 7000 Maritime Patrol and the $1 billion satellite communications project. Indeed, the SA government has a 'State Defence Sector Plan' which aims to increase the number of defence related jobs in SA from 16,000 to 28,000 by 2013 and double the economic contribution at the State's defence sector to $2 billion in the same time frame.

Overall, the combined boost from the lower A$ and AWD contract (plus potentially more defence contracts) means that manufacturing output and employment is forecast to grow strongly over 2009/10 and 2010/11.

Chart 5.5: Employment Growth in Utilities, Mining & Construction Sectors
Moving Annual Totals



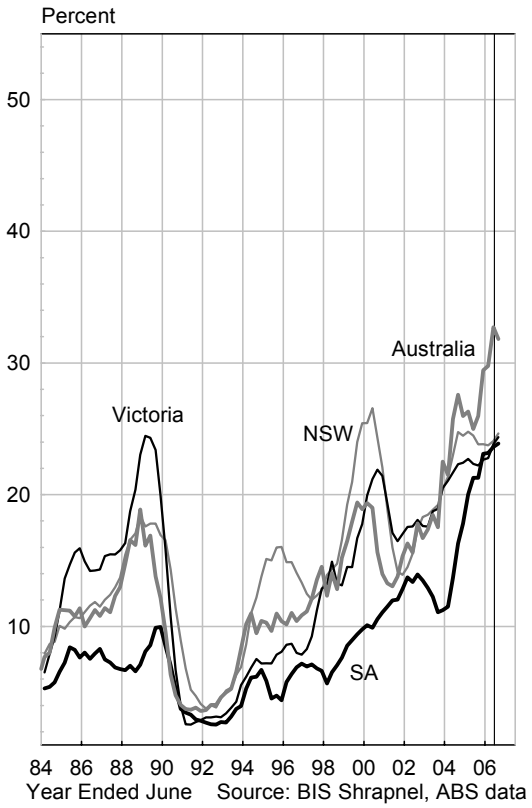
5.3 Outlook for utilities wages growth in South Australia

Labour market conditions are tight across all states, including South Australia, as indicated by the chart below which shows vacancies for each state as a proportion of state-wide unemployment. Although the charts indicate that the labour markets in Queensland and Western Australia are tighter, it shows that the labour market in South Australia has tightened considerably over the past two years. Job vacancies in South Australia have been over 20 per cent of the total unemployed in that state since mid 2005, a level which is well above long term averages.

Although some job markets are effectively national (or at least encompass several states/territories), the state based job vacancies and employment measures provide some idea of the extent of localised labour market pressures. The measures indicate tight labour market conditions in South Australia which are exacerbating wage pressures.

With regard to wage pressures in the electricity, gas and water sectors in each state, the current demand for labour across virtually all states is quite strong. Employment growth has been particularly robust over recent years Australia-wide, with strong growth occurring in South Australia over 2004/05 and 2005/06. Further growth in employment in the sector is expected in most states – including South Australia – over the next one-to-two years, with continued strong demand for labour maintaining relatively high wage pressures within each states' utilities sector.

Job Vacancies as % of Unemployed
Moving Annual Averages



Job Vacancies as % of Unemployed
Moving Annual Averages

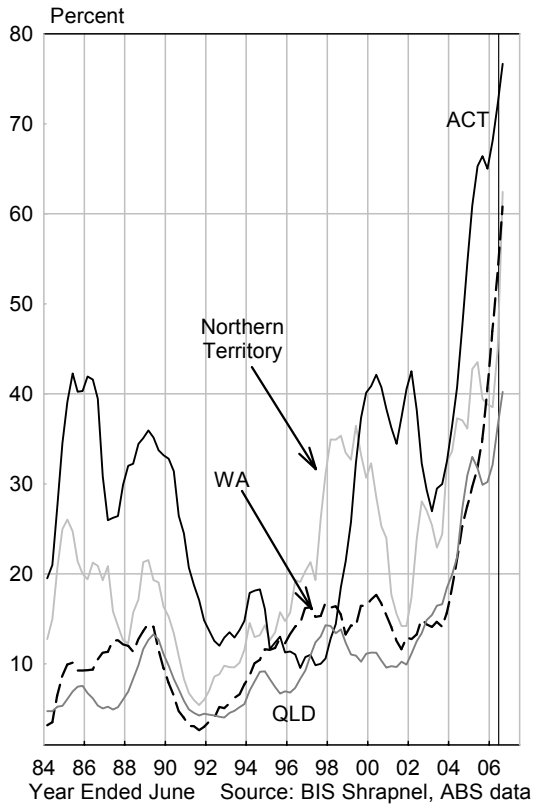


Table 5.8: Average Weekly Ordinary Time Earnings - Adult Males
Electricity, Gas & Water, Mining, Construction and Manufacturing Sectors – Australia
(Year Average Growth)

Year Ended	Electricity, Gas & Water		Mining		Construction		Manufacturing		Total Australia	
May	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch
1985	424.3		517.9		391.3		365.1		398.6	
1986	440.9	3.9	559.7	8.1	411.5	5.1	383.6	5.1	422.3	6.0
1987	472.0	7.0	600.8	7.3	445.5	8.3	410.3	7.0	453.0	7.3
1988	490.9	4.0	631.0	5.0	469.7	5.4	434.2	5.8	481.2	6.2
1989	521.9	6.3	674.4	6.9	501.3	6.7	464.8	7.1	515.7	7.2
1990	569.6	9.1	715.1	6.0	553.5	10.4	508.6	9.4	552.2	7.1
1991	595.7	4.6	762.7	6.7	572.8	3.5	539.7	6.1	588.3	6.5
1992	633.3	6.3	839.1	10.0	598.8	4.5	559.4	3.6	615.4	4.6
1993	648.5	2.4	882.8	5.2	585.1	-2.3	568.4	1.6	627.2	1.9
1994	669.4	3.2	985.6	11.6	613.2	4.8	581.3	2.3	646.0	3.0
1995	690.2	3.1	976.8	-0.9	636.3	3.8	619.1	6.5	673.0	4.2
1996	738.4	7.0	1059.9	8.5	668.9	5.1	644.5	4.1	705.1	4.8
1997	789.1	6.9	1093.1	3.1	700.7	4.8	658.8	2.2	731.4	3.7
1998	853.7	8.2	1183.2	8.2	734.4	4.8	696.6	5.7	763.6	4.4
1999	888.1	4.0	1223.4	3.4	760.6	3.6	727.3	4.4	790.0	3.5
2000	951.9	7.2	1283.6	4.9	756.4	-0.6	743.8	2.3	816.0	3.3
2001	1019.3	7.1	1354.8	5.5	765.9	1.3	760.7	2.3	857.5	5.1
2002	1098.8	7.8	1392.8	2.8	799.7	4.4	817.8	7.5	903.7	5.4
2003	1135.1	3.3	1445.3	3.8	866.9	8.4	892.5	9.1	950.7	5.2
2004	1218.6	7.4	1531.2	5.9	908.8	4.8	930.2	4.2	995.3	4.7
2005	1266.6	3.9	1575.1	2.9	966.4	6.3	952.8	2.4	1040.2	4.5
2006	1285.8	1.5	1659.6	5.4	990.2	2.5	1000.8	5.0	1091.6	4.9
2007e	1342.3	4.4							1139.7	4.4
Forecast										
2008	1425.5	6.2							1203.8	5.6
2009	1505.4	5.6							1263.2	4.9
2010	1585.2	5.3							1320.0	4.5
2011	1681.9	6.1							1390.4	5.3
2012	1781.1	5.9							1468.4	5.6
2013	1884.4	5.8							1546.9	5.4
2014	1977.7	5.0							1620.4	4.8
2015	2083.5	5.3							1692.5	4.5
2016	2210.6	6.1							1783.9	5.4
2017	2345.4	6.1							1885.6	5.7
Compound Annual Average Growth Rates										
1985-2006	5.4		5.7		4.5		4.9		4.9	
1990-2000	5.3		6.0		3.2		3.9		4.0	
2000-2006	5.1		4.4		4.6		5.1		5.0	
2007-2017	5.7		-		-		-		5.2	

Source: BIS Shrapnel, ABS data

Table 5.9: Average Weekly Ordinary Time Earnings - Adult Males
Electricity, Gas & Water, Mining, Construction and Manufacturing Sectors - South Australia
(Year Average Growth)

Year Ended	Electricity, Gas & Water		Mining		Construction		Manufacturing		Total South Australia	
May	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch
1985	397.3		484.8		375.0		346.1		381.9	
1986	413.3	4.0	547.3	12.9	408.2	8.9	365.9	5.7	406.3	6.4
1987	438.3	6.1	582.2	6.4	428.9	5.1	389.6	6.5	431.8	6.3
1988	466.8	6.5	598.3	2.8	458.5	6.9	405.6	4.1	458.6	6.2
1989	491.1	5.2	637.4	6.5	477.0	4.0	427.1	5.3	481.5	5.0
1990	524.7	6.8	634.9	-0.4	501.4	5.1	475.8	11.4	517.5	7.5
1991	566.4	7.9	701.3	10.5	540.7	7.8	514.1	8.0	561.3	8.5
1992	586.7	3.6	814.4	16.1	565.0	4.5	536.8	4.4	588.4	4.8
1993	588.7	0.3	853.5	4.8	573.0	1.4	537.5	0.1	610.1	3.7
1994	618.8	5.1	869.5	1.9	556.0	-3.0	549.5	2.2	625.1	2.5
1995	650.7	5.2	884.9	1.8	531.2	-4.5	573.1	4.3	632.7	1.2
1996	664.2	2.1	956.5	8.1	565.4	6.4	605.1	5.6	653.8	3.3
1997	731.9	10.2	990.6	3.6	592.3	4.8	623.9	3.1	678.2	3.7
1998	811.0	10.8	1031.2	4.1	646.7	9.2	641.5	2.8	705.6	4.0
1999	836.5	3.1	1039.0	0.8	703.8	8.8	694.3	8.2	741.2	5.0
2000	893.5	6.8	1157.3	11.4	718.6	2.1	676.8	-2.5	756.8	2.1
2001	941.7	5.4	1244.0	7.5	847.4	17.9	695.5	2.8	811.3	7.2
2002	1009.9	7.2	1221.0	-1.8	797.0	-5.9	746.9	7.4	830.2	2.3
2003	1096.5	8.6	1341.7	9.9	713.9	-10.4	809.2	8.3	864.9	4.2
2004	1147.6	4.7	1534.7	14.4	800.5	12.1	870.7	7.6	897.3	3.8
2005	1155.0	0.6	1617.4	5.4	963.1	20.3	925.4	6.3	945.5	5.4
2006	1182.2	2.4	1582.5	-2.2	968.6	0.6	949.1	2.6	999.7	5.7
2007e	1255.5	6.2								
Forecast										
2008	1325.8	5.6								
2009	1400.1	5.6								
2010	1484.1	6.0								
2011	1577.6	6.3								
2012	1670.7	5.9								
2013	1764.2	5.6								
2014	1846.3	4.7								
2015	1941.3	5.1								
2016	2055.9	5.9								
2017	2179.2	6.0								
Compound Annual Average Growth Rates										
1985-2006	5.3		5.8		4.6		4.9		4.7	
1990-2000	5.5		6.2		3.7		3.6		3.9	
2000-2006	4.8		5.4		5.1		5.8		4.7	
2007-2017	5.7		-		-		-		-	

Source: BIS Shrapnel, ABS data

Table 5.10: Electricity, Gas & Water
Average Weekly Ordinary Time Earnings - Adult Males by State
$ Million

Year Ended May	NSW		VIC		QLD		SA		WA		TAS		NT		ACT		AUSTRALIA	
	Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg	
	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch
1985	430.8		426.9		434.5		397.3		408.7		405.7		493.4		402.0		424.3	
1986	445.0	3.3	445.4	4.3	454.9	4.7	413.3	4.0	430.9	5.4	425.2	4.8	518.6	5.1	443.6	10.4	440.9	3.9
1987	479.5	7.7	477.1	7.1	487.3	7.1	438.3	6.1	447.1	3.8	444.6	4.6	534.4	3.1	441.6	-0.4	472.0	7.0
1988	494.0	3.0	501.0	5.0	498.1	2.2	466.8	6.5	467.4	4.5	468.5	5.4	524.5	-1.8	442.6	0.2	490.9	4.0
1989	526.6	6.6	525.0	4.8	544.9	9.4	491.1	5.2	507.3	8.6	502.3	7.2	529.0	0.9	505.5	14.2	521.9	6.3
1990	558.1	6.0	610.2	16.2	560.6	2.9	524.7	6.8	554.4	9.3	512.5	2.0	626.9	18.5	560.3	10.8	569.6	9.1
1991	587.2	5.2	635.7	4.2	575.1	2.6	566.4	7.9	573.1	3.4	559.1	9.1	477.6	-23.8	560.3	0.0	595.7	4.6
1992	634.1	8.0	674.0	6.0	598.4	4.1	586.7	3.6	607.2	6.0	573.4	2.6	666.8	39.6	610.6	9.0	633.3	6.3
1993	639.5	0.8	714.5	6.0	607.8	1.6	588.7	0.3	622.1	2.4	609.8	6.4	690.9	3.6	610.2	-0.1	648.5	2.4
1994	668.0	4.5	725.8	1.6	631.9	4.0	618.8	5.1	636.0	2.2	674.2	10.6	686.1	-0.7	620.9	1.7	669.4	3.2
1995	681.0	1.9	737.7	1.6	664.3	5.1	650.7	5.2	686.9	8.0	706.5	4.8	723.3	5.4	642.8	3.5	690.2	3.1
1996	751.0	10.3	767.5	4.0	707.9	6.6	664.2	2.1	743.3	8.2	732.2	3.6	723.5	0.0	722.2	12.4	738.4	7.0
1997	803.6	7.0	827.2	7.8	756.2	6.8	731.9	10.2	792.5	6.6	739.3	1.0	753.2	4.1	765.4	6.0	789.1	6.9
1998	879.6	9.5	899.0	8.7	790.4	4.5	811.0	10.8	858.0	8.3	804.2	8.8	803.2	6.6	830.6	8.5	853.7	8.2
1999	902.0	2.5	915.0	1.8	840.2	6.3	836.5	3.1	907.0	5.7	909.9	13.1	847.9	5.6	900.3	8.4	888.1	4.0
2000	963.0	6.8	1001.7	9.5	920.1	9.5	893.5	6.8	964.6	6.3	895.8	-1.5	1103.7	30.2	950.4	5.6	951.9	7.2
2001	1032.3	7.2	1075.9	7.4	969.2	5.3	941.7	5.4	1028.7	6.6	1007.8	12.5	1050.7	-4.8	1012.3	6.5	1019.3	7.1
2002	1140.7	10.5	1148.6	6.8	1017.3	5.0	1009.9	7.2	1109.4	7.8	1078.8	7.0	1098.5	4.5	1087.5	7.4	1098.8	7.8
2003	1150.4	0.9	1203.2	4.7	1057.3	3.9	1096.5	8.6	1172.9	5.7	1124.7	4.3	1097.9	-0.1	1112.0	2.2	1135.1	3.3
2004	1253.5	9.0	1218.9	1.3	1205.9	14.0	1147.6	4.7	1220.3	4.0	1188.1	5.6	1091.2	-0.6	1226.2	10.3	1218.6	7.4
2005	1259.2	0.5	1268.6	4.1	1338.5	11.0	1155.0	0.6	1257.3	3.0	1239.3	4.3	1177.6	7.9	1278.6	4.3	1266.6	3.9
2006	1292.5	2.6	1264.6	-0.3	1284.5	-4.0	1182.2	2.4	1379.4	9.7	1335.2	7.7	1291.5	9.7	1206.7	-5.6	1285.8	1.5
2007e							1255.5	6.2									1342.3	4.4
Forecast																		
2008							1325.8	5.6									1425.5	6.2
2009							1400.1	5.6									1505.4	5.6
2010							1484.1	6.0									1585.2	5.3
2011							1577.6	6.3									1681.9	6.1
2012							1670.7	5.9									1781.1	5.9
2013							1764.2	5.6									1884.4	5.8
2014							1846.3	4.7									1977.7	5.0
2015							1941.3	5.1									2083.5	5.4
2016							2055.9	5.9									2210.6	6.1
2017							2179.2	6.0									2345.4	6.1
Compound Annual Average Growth Rates																		
1985-2006	5.4		5.3		5.3		5.3		6.0		5.8		4.7		5.4		5.4	
1990-2000	5.6		5.1		5.1		5.5		5.7		5.7		5.8		5.4		5.3	
2000-2006	5.0		4.0		5.7		4.8		6.1		6.9		2.7		4.1		5.1	
2007-2017	-		-		-		5.7		-		-		-		-		5.7	

e: estimate

Source: BIS Shrapnel, ABS Data

Table 5.10 shows the history of wage movements in the electricity, gas and water sector by state from 1985 to 2006. Average Weekly Ordinary Time Earnings (AWOTE) for adult males is used in the wage analysis, rather than persons, for continuity and because males dominate the engineering professions and tradespersons (and indeed the whole workforce) in the utilities sector. Tables 5.11 to 5.14 also show AWOTE for adult males by state for the Mining, Construction, Manufacturing and Total (all industries) from 1985 to 2006.

Table 5.10 shows that long term wages growth in the utilities sector across the states has been fairly uniform – most of the states are close to the 5.4 per cent annual average, except for Western Australia and Tasmania, which have averaged 6.0 per cent and 5.8 per cent respectively. It is likely that the wide year-to-year divergences between states are due to compositioned effects. Over the next decade, we have assumed that the historical uniformity of wages growth in the utilities sector across the states to continue.

The South Australian utilities sector will need to offer competitive wages (and similar increases) to retain its existing workforce and attract new recruits. While overall wage pressures in Western Australian and Queensland may lead to higher wage outcomes in those two states' utilities over the next one-to-two years, we believe that growth in AWOTE (and also the labour price index) in South Australia's electricity, gas and water sector will be close to the national average for the electricity, gas and water sector over the next decade.

However, over the next five years, we believe there is scope for wages growth in the South Australian utilities sector to be *higher* than the national average. Our forecasts for AWOTE growth in the South Australian and Australian utilities sectors are presented in tables 5.8, 5.9 and 5.10. There are four key reasons for this upside we have forecast:

1 Interstate Relatvities

The South Australian utilities sector has the lowest AWOTE of all the states. While this has been partly justified in the past by the states' lower cost of living (particularly housing), the increased competition across the states for workers with skills relevant to the utilities sector means that the South Australian utilities sector may have to offer increased wages to compete with other states' utilities sectors, let alone other South Australian industries. A relevant example (or precedent) could be Queensland. Average wages in the Queensland utilities sector were lower than the South Australian equivalent in 2002/03 (see table 5.10), but then experienced substantial rises over 2003/04 and 2004/05 as competition for skilled workers from other sectors increased – particularly from the construction and resources sector in Queensland

2 Strong Intrastate Demand for Similarly Skilled Labour

South Australia is forecast to experience strong demand for labour – and particularly skilled workers – in the mining, construction and manufacturing sectors over the 2009/10 to 2011/12 period (as detailed in section 5.2.2). As previously mentioned, these sectors are the main competitors to the utilities sector for workers with similarly desired skills, particularly tradespersons. To compete with these other industry sectors within the state, the utilities sector may need to offer higher increases.

3 Faster Growth in Demand for Skilled Labour in South Australia Over Next 5 Years

Growth in employment in the key industry sectors of mining, construction and utilities combined in South Australia is forecast to outstrip the Australian equivalent over the 2007/08 to 2011/12 period – see tables 5.4 and 5.5 and chart 5.5. Accordingly, the South Australian

utilities sector will need to offer higher wage increases to attract and retain the necessary labour. In addition, labour demand from South Australia's manufacturing sector is also expected to outstrip the national manufacturing average (see table 5.7), particularly over the 2009/10 to 2011/12 period when the AWD project ramps up. It is important to note that the AWD and other defence-related projects need workers with higher skill levels than the overall manufacturing average. In the press release released by the SA Centre for Economic Studies regarding their report on "Defence Industry Workforce Requirements, 2006-2010", it claimed the majority of jobs would be professionals and managers, although the biggest increase in jobs would be among tradespeople.

4 Stronger Growth in South Australian Utilities and Total Engineering Construction

Charts 5.3 and 5.4 compare engineering construction work done for Australia and South Australia in total engineering construction and utilities construction (includes electricity generation, transmission and supply, water storage and supply, sewerage and drainage and pipelines construction). The chart of total engineering construction shows that South Australia has lagged the national growth since 2002/03. However, total Australian engineering construction is expected to peak in 2006/07 before weakening over the three years to 2009/10 and then plateau. Meanwhile, South Australian total engineering construction is forecast to increase strongly in 2009/10 and maintain record levels of construction to 2011/12.

Similarly for utilities, Australian utilities engineering construction is forecast to rise further and peak in 2007/08, before weakening over the following five years. But utilities engineering construction in South Australia, we expect another strong increase over 2009/10 and 2010/11 to a new peak, before weakening.

These later strong growth periods and peaks for South Australia compared to Australia are expected to add to pressures to raise utilities wages above the national average over the 2009/10 to 2011/12 period.

Table 5.11: Mining
Average Weekly Ordinary Time Earnings - Adult Males by State

Year Ended May	NSW		VIC		QLD		SA		WA		TAS		NT		ACT		AUSTRALIA	
	Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg	
	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch
1985	538.4		499.3		522.9		484.8		505.3		456.4		475.8		328.9		517.9	
1986	584.5	8.6	567.3	13.6	558.9	6.9	547.3	12.9	536.0	6.1	509.8	11.7	491.0	3.2	519.9	58.1	559.7	8.1
1987	647.4	10.8	631.6	11.3	584.7	4.6	582.2	6.4	563.8	5.2	540.7	6.1	479.8	-2.3	554.7	6.7	600.8	7.3
1988	651.6	0.6	706.5	11.9	630.3	7.8	598.3	2.8	600.5	6.5	550.7	1.8	542.9	13.1	636.6	14.8	631.0	5.0
1989	696.7	6.9	775.9	9.8	654.9	3.9	637.4	6.5	650.4	8.3	628.6	14.1	535.3	-1.4	755.1	18.6	674.4	6.9
1990	729.7	4.7	809.4	4.3	725.8	10.8	634.9	-0.4	700.1	7.6	670.9	6.7	650.8	21.6	674.9	-10.6	715.1	6.0
1991	819.4	12.3	679.2	-16.1	770.8	6.2	701.3	10.5	730.2	4.3	765.7	14.1	662.9	1.9	618.7	-8.3	762.7	6.7
1992	953.9	16.4	690.6	1.7	795.6	3.2	814.4	16.1	808.7	10.8	734.4	-4.1	667.6	0.7	627.9	1.5	839.1	10.0
1993	941.6	-1.3	669.9	-3.0	879.3	10.5	853.5	4.8	925.3	14.4	729.1	-0.7	811.3	21.5	654.8	4.3	882.8	5.2
1994	994.8	5.7	822.5	22.8	999.4	13.7	869.5	1.9	1088.7	17.7	786.6	7.9	848.3	4.6	647.0	-1.2	985.6	11.6
1995	956.8	-3.8	645.9	-21.5	1020.2	2.1	884.9	1.8	1043.0	-4.2	895.3	13.8	868.6	2.4	556.5	-14.0	976.8	-0.9
1996	981.9	2.6	755.4	17.0	1123.6	10.1	956.5	8.1	1175.3	12.7	932.8	4.2	966.8	11.3	677.3	21.7	1059.9	8.5
1997	1039.8	5.9	934.0	23.6	1177.6	4.8	990.6	3.6	1115.9	-5.1	910.4	-2.4	1151.5	19.1	755.8	11.6	1093.1	3.1
1998	1083.1	4.2	1113.1	19.2	1358.8	15.4	1031.2	4.1	1185.5	6.2	1021.8	12.2	1188.9	3.2	649.5	-14.1	1183.2	8.2
1999	1162.3	7.3	1156.6	3.9	1325.8	-2.4	1039.0	0.8	1244.1	4.9	1071.8	4.9	1097.2	-7.7	701.4	8.0	1223.4	3.4
2000	1239.8	6.7	1030.6	-10.9	1270.7	-4.2	1157.3	11.4	1396.7	12.3	1154.6	7.7	1172.5	6.9	750.8	7.0	1283.6	4.9
2001	1322.7	6.7	1124.5	9.1	1357.8	6.9	1244.0	7.5	1414.0	1.2	1220.0	5.7	1291.0	10.1	696.4	-7.2	1354.8	5.5
2002	1355.5	2.5	946.4	-15.8	1449.4	6.7	1221.0	-1.8	1457.3	3.1	1215.8	-0.3	1376.6	6.6	829.5	19.1	1392.8	2.8
2003	1376.6	1.6	1227.6	29.7	1529.6	5.5	1341.7	9.9	1523.3	4.5	1222.4	0.5	1325.6	-3.7	760.3	-8.3	1445.3	3.8
2004	1527.3	11.0	1502.2	22.4	1459.3	-4.6	1534.7	14.4	1620.0	6.3	1222.8	0.0	1519.0	14.6	1088.9	43.2	1531.2	5.9
2005	1610.7	5.5	1531.9	2.0	1503.0	3.0	1617.4	5.4	1619.7	0.0	1271.4	4.0	1625.1	7.0	1028.6	-5.5	1575.1	2.9
2006	1702.6	5.7	1601.9	4.6	1627.7	8.3	1582.5	-2.2	1676.1	3.5	1369.4	7.7	1817.5	11.8	1142.6	11.1	1659.6	5.4
2007e																		
Forecast																		
2008																		
2009																		
2010																		
2011																		
2012																		
2013																		
2014																		
2015																		
2016																		
2017																		
Compound Annual Average Growth Rates																		
1985-2006	5.6		5.7		5.6		5.8		5.9		5.4		6.6		6.1		5.7	
1990-2000	5.4		2.4		5.8		6.2		7.2		5.6		6.1		1.1		6.0	
2000-2006	5.4		7.6		4.2		5.4		3.1		2.9		7.6		7.2		4.4	
2007-2017	-		-		-		-		-		-		-		-		-	

e: estimate

Source: BIS Shrapnel, ABS Data

Table 5.12: Construction
Average Weekly Ordinary Time Earnings - Adult Males by State

Year Ended May	NSW		VIC		QLD		SA		WA		TAS		NT		ACT		AUSTRALIA	
	Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg	
	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch
1985	399.0		377.0		393.9		375.0		397.1		388.1		377.8		427.7		391.3	
1986	420.6	5.4	406.6	7.8	394.2	0.1	408.2	8.9	412.3	3.8	409.4	5.5	415.6	10.0	470.8	10.1	411.5	5.1
1987	444.8	5.8	448.9	10.4	431.1	9.3	428.9	5.1	459.0	11.3	430.4	5.1	456.9	9.9	498.6	5.9	445.5	8.3
1988	473.9	6.5	480.3	7.0	462.8	7.4	458.5	6.9	450.5	-1.9	441.9	2.7	476.1	4.2	512.8	2.9	469.7	5.4
1989	509.7	7.6	509.8	6.1	496.3	7.2	477.0	4.0	479.6	6.5	467.0	5.7	475.3	-0.2	554.2	8.1	501.3	6.7
1990	590.6	15.9	542.8	6.5	504.4	1.6	501.4	5.1	570.1	18.9	489.8	4.9	475.8	0.1	627.9	13.3	553.5	10.4
1991	577.6	-2.2	574.5	5.8	543.4	7.7	540.7	7.8	631.0	10.7	512.7	4.7	517.8	8.8	570.3	-9.2	572.8	3.5
1992	615.9	6.6	577.4	0.5	564.8	3.9	565.0	4.5	687.7	9.0	539.4	5.2	580.5	12.1	593.4	4.0	598.8	4.5
1993	611.3	-0.7	556.1	-3.7	562.6	-0.4	573.0	1.4	629.5	-8.5	537.1	-0.4	572.1	-1.4	660.2	11.3	585.1	-2.3
1994	607.8	-0.6	618.6	11.2	603.6	7.3	556.0	-3.0	678.2	7.7	560.8	4.4	597.7	4.5	637.3	-3.5	613.2	4.8
1995	685.1	12.7	623.6	0.8	581.9	-3.6	531.2	-4.5	712.7	5.1	551.1	-1.7	699.6	17.1	688.2	8.0	636.3	3.8
1996	702.6	2.6	643.0	3.1	669.3	15.0	565.4	6.4	721.3	1.2	650.9	18.1	576.3	-17.6	800.8	16.4	668.9	5.1
1997	763.5	8.7	663.7	3.2	708.3	5.8	592.3	4.8	748.1	3.7	744.3	14.3	606.9	5.3	687.0	-14.2	700.7	4.8
1998	721.9	-5.4	765.4	15.3	724.3	2.3	646.7	9.2	747.1	-0.1	701.5	-5.7	656.3	8.1	705.8	2.7	734.4	4.8
1999	770.8	6.8	718.8	-6.1	780.1	7.7	703.8	8.8	808.8	8.3	730.4	4.1	683.3	4.1	746.2	5.7	760.6	3.6
2000	776.0	0.7	713.9	-0.7	723.0	-7.3	718.6	2.1	909.1	12.4	672.3	-8.0	843.1	23.4	739.5	-0.9	756.4	-0.6
2001	774.2	-0.2	749.1	4.9	712.2	-1.5	847.4	17.9	837.4	-7.9	660.6	-1.7	798.8	-5.2	770.0	4.1	765.9	1.3
2002	830.3	7.2	769.2	2.7	766.5	7.6	797.0	-5.9	839.1	0.2	695.1	5.2	781.4	-2.2	777.2	0.9	799.7	4.4
2003	910.0	9.6	864.9	12.4	854.9	11.5	713.9	-10.4	840.5	0.2	703.3	1.2	869.9	11.3	851.1	9.5	866.9	8.4
2004	922.7	1.4	909.4	5.1	914.7	7.0	800.5	12.1	925.3	10.1	718.3	2.1	900.2	3.5	781.3	-8.2	908.8	4.8
2005	968.7	5.0	949.5	4.4	971.4	6.2	963.1	20.3	1039.9	12.4	787.1	9.6	956.6	6.3	802.1	2.7	966.4	6.3
2006	956.8	-1.2	969.8	2.1	983.0	1.2	968.6	0.6	1089.8	4.8	900.7	14.4	955.5	-0.1	1184.8	47.7	990.2	2.5
2007e Forecast																		
2008																		
2009																		
2010																		
2011																		
2012																		
2013																		
2014																		
2015																		
2016																		
2017																		
Compound Annual Average Growth Rates																		
1985-2006	4.3		4.6		4.5		4.6		4.9		4.1		4.5		5.0		4.5	
1990-2000	2.8		2.8		3.7		3.7		4.8		3.2		5.9		1.6		3.2	
2000-2006	3.6		5.2		5.3		5.1		3.1		5.0		2.1		8.2		4.6	
2007-2017	-		-		-		-		-		-		-		-		-	

e: estimate

Source: BIS Shrapnel, ABS Data

Table 5.13: Manufacturing
Average Weekly Ordinary Time Earnings - Adult Males by State

Year Ended May	NSW		VIC		QLD		SA		WA		TAS		NT		ACT		AUSTRALIA	
	Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg	
	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch
1985	379.8		362.1		351.3		346.1		361.5		360.1		411.8		375.9		365.1	
1986	397.3	4.6	384.0	6.0	362.7	3.2	365.9	5.7	369.9	2.3	380.7	5.7	415.2	0.8	398.9	6.1	383.6	5.1
1987	426.3	7.3	413.8	7.8	380.0	4.8	389.6	6.5	391.8	5.9	402.1	5.6	456.9	10.0	441.9	10.8	410.3	7.0
1988	447.8	5.0	440.9	6.6	405.3	6.7	405.6	4.1	417.4	6.5	434.8	8.1	470.6	3.0	450.8	2.0	434.2	5.8
1989	482.5	7.7	472.4	7.1	429.6	6.0	427.1	5.3	446.0	6.8	469.1	7.9	558.2	18.6	466.2	3.4	464.8	7.1
1990	530.0	9.8	515.0	9.0	469.9	9.4	475.8	11.4	486.5	9.1	510.8	8.9	555.9	-0.4	535.7	14.9	508.6	9.4
1991	567.1	7.0	536.8	4.2	500.7	6.6	514.1	8.0	517.8	6.4	546.5	7.0	645.9	16.2	536.5	0.1	539.7	6.1
1992	585.9	3.3	559.6	4.2	514.7	2.8	536.8	4.4	548.6	6.0	564.4	3.3	685.7	6.2	548.7	2.3	559.4	3.6
1993	584.3	-0.3	573.8	2.6	531.2	3.2	537.5	0.1	578.2	5.4	565.5	0.2	721.6	5.2	557.3	1.6	568.4	1.6
1994	594.5	1.7	590.0	2.8	535.8	0.9	549.5	2.2	627.0	8.4	564.5	-0.2	689.2	-4.5	608.4	9.2	581.3	2.3
1995	653.4	9.9	622.5	5.5	577.6	7.8	573.1	4.3	612.5	-2.3	572.0	1.3	729.0	5.8	582.8	-4.2	619.1	6.5
1996	681.0	4.2	646.6	3.9	585.1	1.3	605.1	5.6	648.1	5.8	597.7	4.5	768.8	5.5	684.9	17.5	644.5	4.1
1997	688.0	1.0	654.7	1.3	608.3	4.0	623.9	3.1	672.7	3.8	661.4	10.7	758.6	-1.3	827.2	20.8	658.8	2.2
1998	724.7	5.3	697.2	6.5	643.3	5.7	641.5	2.8	726.0	7.9	702.1	6.2	893.1	17.7	890.9	7.7	696.6	5.7
1999	745.2	2.8	742.2	6.5	663.1	3.1	694.3	8.2	735.6	1.3	716.2	2.0	978.6	9.6	776.0	-12.9	727.3	4.4
2000	800.4	7.4	730.0	-1.7	682.1	2.9	676.8	-2.5	765.7	4.1	732.7	2.3	1020.5	4.3	659.2	-15.1	743.8	2.3
2001	806.6	0.8	769.2	5.4	688.3	0.9	695.5	2.8	761.5	-0.6	751.5	2.6	978.4	-4.1	830.4	26.0	760.7	2.3
2002	874.5	8.4	847.6	10.2	699.8	1.7	746.9	7.4	836.1	9.8	780.1	3.8	952.1	-2.7	886.2	6.7	817.8	7.5
2003	952.8	8.9	934.7	10.3	766.1	9.5	809.2	8.3	880.4	5.3	833.3	6.8	993.1	4.3	872.0	-1.6	892.5	9.1
2004	993.3	4.3	923.9	-1.2	853.8	11.5	870.7	7.6	972.1	10.4	865.6	3.9	984.6	-0.9	847.8	-2.8	930.2	4.2
2005	986.0	-0.7	950.6	2.9	868.3	1.7	925.4	6.3	1047.9	7.8	887.4	2.5	1137.4	15.5	1037.4	22.4	952.8	2.4
2006	1058.6	7.4	978.1	2.9	891.6	2.7	949.1	2.6	1156.2	10.3	943.2	6.3	1366.5	20.1	1091.8	5.2	1000.8	5.0
2007e																		
Forecast																		
2008																		
2009																		
2010																		
2011																		
2012																		
2013																		
2014																		
2015																		
2016																		
2017																		
Compound Annual Average Growth Rates																		
1985-2006	5.0		4.8		4.5		4.9		5.7		4.7		5.9		5.2		4.9	
1990-2000	4.2		3.6		3.8		3.6		4.6		3.7		6.3		2.1		3.9	
2000-2006	4.8		5.0		4.6		5.8		7.1		4.3		5.0		8.8		5.1	
2007-2017	-		-		-		-		-		-		-		-		-	

e: estimate

Source: BIS Shrapnel, ABS Data

Table 5.14: Total
Average Weekly Ordinary Time Earnings - Adult Males by State

Year Ended May	NSW		VIC		QLD		SA		WA		TAS		NT		ACT		AUSTRALIA	
	Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg		Year Avg	
	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch	$	A%Ch
1985	407.5		394.9		382.6		381.9		400.4		388.1		430.7		472.7		398.6	
1986	429.9	5.5	419.6	6.2	403.4	5.4	406.3	6.4	427.1	6.7	415.9	7.2	458.3	6.4	502.9	6.4	422.3	6.0
1987	458.4	6.6	451.5	7.6	439.1	8.9	431.8	6.3	459.3	7.5	439.0	5.6	490.5	7.0	536.4	6.7	453.0	7.3
1988	482.7	5.3	487.0	7.9	460.8	4.9	458.6	6.2	491.3	7.0	463.5	5.6	513.3	4.7	566.8	5.7	481.2	6.2
1989	525.9	8.9	519.7	6.7	486.6	5.6	481.5	5.0	525.2	6.9	500.5	8.0	533.1	3.8	597.3	5.4	515.7	7.2
1990	572.3	8.8	554.6	6.7	512.1	5.2	517.5	7.5	553.2	5.3	534.7	6.8	555.1	4.1	633.8	6.1	552.2	7.1
1991	602.4	5.3	590.1	6.4	553.1	8.0	561.3	8.5	600.5	8.5	559.8	4.7	600.0	8.1	677.5	6.9	588.3	6.5
1992	637.3	5.8	611.7	3.7	572.8	3.6	588.4	4.8	628.5	4.7	580.6	3.7	647.4	7.9	709.1	4.7	615.4	4.6
1993	640.6	0.5	628.8	2.8	588.5	2.7	610.1	3.7	636.0	1.2	594.8	2.4	665.0	2.7	736.5	3.9	627.2	1.9
1994	660.6	3.1	642.5	2.2	612.4	4.1	625.1	2.5	657.1	3.3	622.2	4.6	666.2	0.2	761.1	3.3	646.0	3.0
1995	700.9	6.1	667.7	3.9	626.7	2.3	632.7	1.2	693.0	5.5	632.3	1.6	688.3	3.3	780.9	2.6	673.0	4.2
1996	741.7	5.8	692.8	3.7	651.8	4.0	653.8	3.3	735.6	6.1	649.7	2.7	709.2	3.0	825.7	5.7	705.1	4.8
1997	766.2	3.3	720.4	4.0	684.9	5.1	678.2	3.7	748.8	1.8	692.1	6.5	740.1	4.4	851.6	3.1	731.4	3.7
1998	789.6	3.1	758.1	5.2	722.5	5.5	705.6	4.0	786.2	5.0	729.3	5.4	779.1	5.3	881.6	3.5	763.6	4.4
1999	825.3	4.5	776.2	2.4	744.0	3.0	741.2	5.0	810.7	3.1	737.6	1.1	795.9	2.2	896.3	1.7	790.0	3.5
2000	865.2	4.8	787.5	1.5	757.1	1.8	756.8	2.1	850.6	4.9	766.6	3.9	833.6	4.7	948.6	5.8	816.0	3.3
2001	909.8	5.2	821.1	4.3	800.5	5.7	811.3	7.2	890.0	4.6	785.9	2.5	865.1	3.8	1008.6	6.3	857.5	5.1
2002	963.9	5.9	884.1	7.7	836.4	4.5	830.2	2.3	923.0	3.7	814.9	3.7	893.4	3.3	1012.1	0.3	903.7	5.4
2003	1007.1	4.5	952.8	7.8	864.7	3.4	864.9	4.2	964.7	4.5	854.6	4.9	930.8	4.2	1106.9	9.4	950.7	5.2
2004	1039.5	3.2	1001.9	5.2	924.0	6.9	897.3	3.8	1023.1	6.1	873.2	2.2	984.1	5.7	1143.0	3.3	995.3	4.7
2005	1073.8	3.3	1043.9	4.2	977.0	5.7	945.5	5.4	1087.4	6.3	923.4	5.7	1068.9	8.6	1216.7	6.5	1040.2	4.5
2006	1145.0	6.6	1070.0	2.5	1019.0	4.3	999.7	5.7	1155.2	6.2	968.0	4.8	1125.8	5.3	1266.9	4.1	1091.6	4.9
2007e																	1139.7	4.4
Forecast																		
2008																	1203.8	5.6
2009																	1263.2	4.9
2010																	1320.0	4.5
2011																	1390.4	5.3
2012																	1468.4	5.6
2013																	1546.9	5.4
2014																	1620.4	4.8
2015																	1692.5	4.5
2016																	1783.9	5.4
2017																	1885.6	5.7
Compound Annual Average Growth Rates																		
1985-2006	5.0		4.9		4.8		4.7		5.2		4.4		4.7		4.8		4.9	
1990-2000	4.2		3.6		4.0		3.9		4.4		3.7		4.1		4.1		4.0	
2000-2006	4.8		5.2		5.1		4.7		5.2		4.0		5.1		4.9		5.0	
2007-2017	-		-		-		-		-		-		-		-		5.2	

e: estimate

Source: BIS Shrapnel, ABS Data

6. REVIEW OF ACCESS ECONOMICS REPORT: "WAGE GROWTH FORECASTS IN THE UTILITIES SECTOR"

The Australian Energy Regulator (AER) recently commissioned a report from Access Economics Pty Ltd (AE) on the outlook for wages in the utilities sector to 2015/16. This section will address the findings of the Access Economics report, with particular reference to areas of difference between AE and BIS Shrapnel regarding the wage and productivity forecasts presented in sections 1 to 5 of this report for ElectraNet.

6.1 Summary of Review — Major Differences BIS Shrapnel V. Access Economics

Overall, BIS Shrapnel believes that AE has underestimated nominal wages growth and overestimated productivity growth in the utilities sector to 2016. The main source of the difference between BIS Shrapnel and AE is that BIS Shrapnel believes the labour market for the utilities, mining and construction sector will remain relatively tight for longer than AE, thus leading to the maintenance of higher wages in the utilities sector over the period from 2009/10 to 2015/16.

Key reasons why BIS Shrapnel expects higher employment and wages than AE in the utilities sector include:

- a major phase of network infrastructure upgrades and maintenance now underway, combined with a desire to increase the 'in-house' skills within the utilities sector, will sustain the current strong demand for skilled labour in the utilities sector for a number of years.
- with this strong demand for skilled labour to continue, the utilities sector will need to continue to offer higher wages (and higher wages growth) to both attract and retain skilled labour.
- the delivery of electricity, gas and water (and sewerage) are essential services. The utilities sector must retain adequate skilled labour in order to maintain reliability of supply, and with the demand for skilled labour in the utilities, mining and construction to remain relatively solid over the short, medium and long-terms, it is likely wages growth in the utilities sector will remain above the national (all industries) average, as it has on average, for the past two decades.

With reference to South Australia (and the states generally), the above reasons are equally relevant, particularly as South Australia is expected to increase capital expenditure on network infrastructure and maintenance over the next five years, while at the same time competing against the state's mining, construction and manufacturing sectors for skilled labour in the 2009/10 to 2011/12 period. Furthermore, the nominal wages growth measures Access Economics uses at the state level are questionable, because historical and current data for the labour price index (which AE uses) are not available for most states, including South Australia.

6.2 Review of Total Australia Wage, Price and Productivity Forecasts

While BIS Shrapnel is in broad agreement with AE that underlying price inflation is expected to move higher over the next two years, we believe that higher national wage outcomes (than AE) combined with lower national productivity (than forecast by AE) will underpin higher price inflation, both for headline CPI and underlying inflation. Both of BIS Shrapnel's price inflation measure — headline and baseline — are projected to average 2.9 per cent per annum over the next decade, while AE's headline and underlying measure appear to average around 2.5 per cent p.a. Although BIS Shrapnel's 'Baseline' inflation measure is different to the 'Underlying CPI Index' used by AE (table1, page 14 and footnote 2 on page 2 of AE report), we expect inflationary pressures to re-emerge by 2010/11 once domestic demand picks up strongly through 2009/10, 2010/11 and 2011/12, with the BIS Shrapnel Baseline inflation and headline inflation measures to accelerate (see table 3.1) at a faster rate than the forecasts provided in table 1 of the AE report.

Table 6.1: Access Economics Wage & Productivity Growth Using Labour Price Index

	All Industries - Access Economics Forecasts						Utilities - Access Economics forecasts					
Year Ended June	Labour Price Index Nominal Wage		Wage-Productivity(2)		Implied productivity(3)		Labour Price Index Nominal Wage		Wage-Productivity(2)		Implied productivity(3)	
	index	%ch	index	%ch	$000/empl.	%ch	index	%ch	index	%ch	$000/empl.	%ch
1998	82.2		90.8		82.6		79.2		73.0		292.5	
1999	84.8	3.2	90.9	0.1	85.1	3.1	81.7	3.1	74.5	2.1	295.5	1.0
2000	87.3	2.9	91.8	1.1	86.7	1.9	84.8	3.9	75.2	0.9	304.2	2.9
2001	90.3	3.5	95.2	3.6	86.6	-0.2	88.1	3.9	78.2	4.1	303.6	-0.2
2002	93.3	3.4	95.9	0.8	88.8	2.5	91.9	4.3	84.4	7.8	292.8	-3.6
2003	96.5	3.5	98.6	2.8	89.3	0.7	95.8	4.3	93.4	10.7	274.1	-6.4
2004	100.0	3.6	100.0	1.4	91.3	2.2	100.0	4.4	100.0	7.1	266.8	-2.7
2005	103.8	3.8	104.0	4.0	91.1	-0.3	104.3	4.3	105.7	5.7	263.2	-1.3
2006	108.0	4.1	107.6	3.4	91.6	0.6	110.1	5.5	122.9	16.3	234.9	-10.8
2007f	112.6	4.3	110.3	2.5	93.3	1.8	116.0	5.4	126.9	3.3	239.8	2.1
Forecasts												
2008	117.8	4.6	112.1	1.6	96.1	3.0	122.9	5.9	127.7	0.6	252.5	5.3
2009	122.8	4.2	113.6	1.4	98.8	2.8	129.3	5.2	131.6	3.1	257.8	2.1
2010	127.9	4.2	116.4	2.4	100.6	1.8	133.6	3.4	136.0	3.3	258.1	0.1
2011	133.3	4.2	119.6	2.8	102.0	1.4	138.2	3.4	138.7	2.0	261.7	1.4
2012	138.6	4.0	122.2	2.2	103.8	1.8	143.6	3.9	141.6	2.1	266.4	1.8
2013	143.9	3.8	124.6	1.9	105.8	1.9	148.5	3.4	144.0	1.7	270.9	1.7
2014	149.4	3.8	127.2	2.1	107.6	1.7	153.7	3.5	146.6	1.8	275.5	1.7
2015	156.4	4.7	130.4	2.5	109.9	2.2	159.3	3.7	149.4	1.9	280.5	1.8
2016	163.7	4.7	133.5	2.4	112.5	2.3	165.4	3.8	152.5	2.1	285.2	1.7
Long Term Averages												
1986-2006												
1990-00												
1998-2006	3.5		2.1		1.3		4.2		6.7		-2.7	
2001-07	3.7		2.7		1.1		4.6		7.8		-3.3	
2008-13	4.2		2.0		2.1		4.2		2.1		2.1	
2008-16	4.2		2.1		2.1		4.0		2.1		1.9	
2002-06	3.7		2.5		1.1		4.6		9.4		-5.0	
2007-11	4.3		2.1		2.2		4.7		2.5		2.2	
2012-16	4.2		2.2		2.0		3.7		1.9		1.7	
2007-16	4.2		2.2		2.1		4.2		2.2		2.0	

f Access Economic forecast

Source: , ABS data

(1) Average weekly ordinary time earnings for persons

(2) Nominal wage excluding productivity

(3) Forecasts derived from difference between Nominal Wage and Wage-Productivity in table on page iii of AE Report. Actuals to 2006 from National Accounts and Labour Force data

Table 6.2: BIS Shrapnel Wage & Productivity Growth Using Labour Price Index

	All Industries						Utilities					
Year Ended June	Labour Price Index Nominal Wage		Wage-Productivity(2)		Productivity(3)		Labour Price Index Nominal Wage		Wage-Productivity(2)		Productivity(3)	
	index	%ch	index	%ch	$000/empl.	%ch	index	%ch	index	%ch	$000/empl.	%ch
1998	82.2		90.8		82.6		79.2		73.0		292.5	
1999	84.8	3.2	90.9	0.1	85.1	3.1	81.7	3.1	74.5	2.1	295.5	1.0
2000	87.3	2.9	91.8	1.1	86.7	1.9	84.8	3.9	75.2	0.9	304.2	2.9
2001	90.3	3.5	95.2	3.6	86.6	-0.2	88.1	3.9	78.2	4.1	303.6	-0.2
2002	93.3	3.4	95.9	0.8	88.8	2.5	91.9	4.3	84.4	7.8	292.8	-3.6
2003	96.5	3.5	98.6	2.8	89.3	0.7	95.8	4.3	93.4	10.7	274.1	-6.4
2004	100.0	3.6	100.0	1.4	91.3	2.2	100.0	4.4	100.0	7.1	266.8	-2.7
2005	103.8	3.8	104.0	4.0	91.1	-0.3	104.3	4.3	105.7	5.7	263.2	-1.3
2006	108.0	4.1	107.6	3.4	91.6	0.6	110.1	5.5	122.9	16.3	234.9	-10.8
2007f	112.5	4.2	111.4	3.5	92.3	0.7	116.5	5.8	122.8	0.0	248.5	5.8
Forecasts												
2008	117.5	4.4	115.0	3.2	93.4	1.2	123.2	5.8	130.9	6.6	246.5	-0.8
2009	122.0	3.8	116.9	1.7	95.4	2.2	129.6	5.2	135.9	3.8	250.0	1.4
2010	126.6	3.7	118.2	1.1	97.9	2.6	135.5	4.5	140.3	3.2	253.3	1.3
2011	131.9	4.2	122.2	3.4	98.7	0.8	141.8	4.7	145.9	4.0	255.0	0.7
2012	137.8	4.5	126.8	3.7	99.4	0.8	149.2	5.2	154.9	6.2	252.5	-1.0
2013	143.8	4.4	131.2	3.5	100.3	0.9	156.5	4.9	161.0	3.9	255.0	1.0
2014	149.3	3.8	133.1	1.5	102.6	2.3	163.2	4.3	164.3	2.1	260.6	2.2
2015	155.7	4.3	136.9	2.8	104.1	1.5	171.2	4.9	169.9	3.4	264.5	1.5
2016	163.0	4.7	140.4	2.6	106.3	2.1	180.1	5.2	176.7	4.0	267.7	1.2
Long Term Averages												
1986-2006												
1990-00												
1998-2006	3.5		2.1		1.3		4.2		6.7		-2.7	
2001-07	3.7		2.8		0.9		4.6		7.3		-2.8	
2008-13	4.2		2.8		1.4		5.0		4.6		0.4	
2008-16	4.2		2.6		1.6		5.0		4.1		0.8	
2002-06	3.7		2.5		1.1		4.6		9.4		-5.0	
2007-11	4.1		2.6		1.5		5.2		3.5		1.7	
2012-16	4.3		2.8		1.5		4.9		3.9		1.0	
2007-16	4.2		2.7		1.5		5.0		3.7		1.3	

f BIS Shrapnel forecast

Source: BIS Shrapnel, ABS data

(1) Average weekly ordinary time earnings for persons

(2) Nominal wage excluding productivity

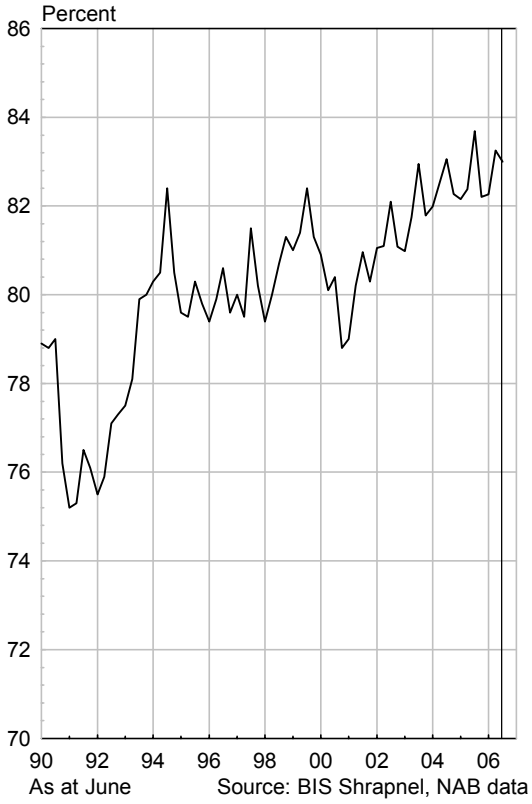
(3) Forecasts from BIS Shrapnel. Actuals to 2006 from National Accounts and Labour Force data

Given that underlying inflation is a key component of wages growth (as stated in AE report, page 1), this will tend to push up wages. The labour market is also expected to remain relatively tight over the medium term, while BIS Shrapnel's lower productivity forecast means unit labour costs are higher, forcing businesses to pass on these higher costs in the form of higher prices.

The economy is close to a 'full capacity' economy, with low unemployment rate, chronic skills shortages and high capacity utilisation being key indicators of this phenomenon. While the investment boom of recent years (and expected to run another year) will add new capacity — and ease physical capacity restraints in the goods producing (and exporting) sector in particular — a lack of new labour supply (particularly skilled labour) will leave the labour still relatively tight. Over the past decade, cutbacks to tertiary education in real terms means the growth of the skills base of the workforce has not kept pace with demand. While some measures are now being implemented to address in adequate education funding, it will still take the best part of a decade to sufficiently build up the skills base to drive strong increases in productivity.

Capacity utilisation

Proportion of available capacity



As at June Source: BIS Shrapnel, NAB data

Productivity growth per employee has increased by only 0.9 per cent on average since 2000. This compares unfavourably with the 2.1 per cent averaged through the 1990s, and the long run rate of around 1.5 per cent. Key factors driving the strong productivity growth during the 1990s were:

- the increasing utilisation of spare capacity, both physical capacity and among the employed, following the recession in 1990/91 which resulted in a considerable fall in capacity utilisation and a sharp rise in unemployment.
- a series of major industrial relations and labour market reforms, plus other microeconomic reforms over the 1980s and 1990s which improved the efficiency of the use of both labour and capital.
- the rapid take-up and widespread proliferation of computers and other information technology added to productivity.
- the expansion of the tertiary education sector in the 1980s and early 1990s provided the expanded skills base to take advantage of the new technology and labour market and microeconomic reforms.

BIS Shrapnel is forecasting national productivity growth to average 1.5 per cent per annum over the next 10 years to 2015/16 — similar to the long run average — while AE has forecast productivity growth to average to 2.1 per cent over the same period — the same as the 1990s. However, to achieve such a strong rate of productivity growth seems more like 'a leap of faith'. While the current investment boom will add to capacity (particularly export capacity), there are a number of factors while will limit productivity growth over the next decade:

- most of the IR, labour market and microeconomic reforms have been done. Further reforms will only add marginally to efficiency and productivity (including the Federal Government's 'WorkChoices' legalisation). In effect, all the 'easily reached, low hanging fruit' has been picked.
- further technology applications are unlikely to add as much to productivity growth as in the 1990s.
- there is little spare capacity in the labour market. Australian workers are already working close to the longest hours in the industrialised world. On our forecasts, the rate of unemployment tops out at around 6 per cent during the 2008/09 domestic downturn, but following the recovery, quickly falls back below 5 per cent and toward 4.5 per cent again during 2011. Added to this is an acceleration in the ageing of the workforce after 2011.
- even if an 'education revolution' started now, a significant expansion of tertiary education (including trade skills) would not produce a marked strengthening in productivity before 5 years and would probably take close to a decade to manifest fully.

6.3 Review of Utilities Wage, Employment and Productivity Forecasts: Australia and South Australia

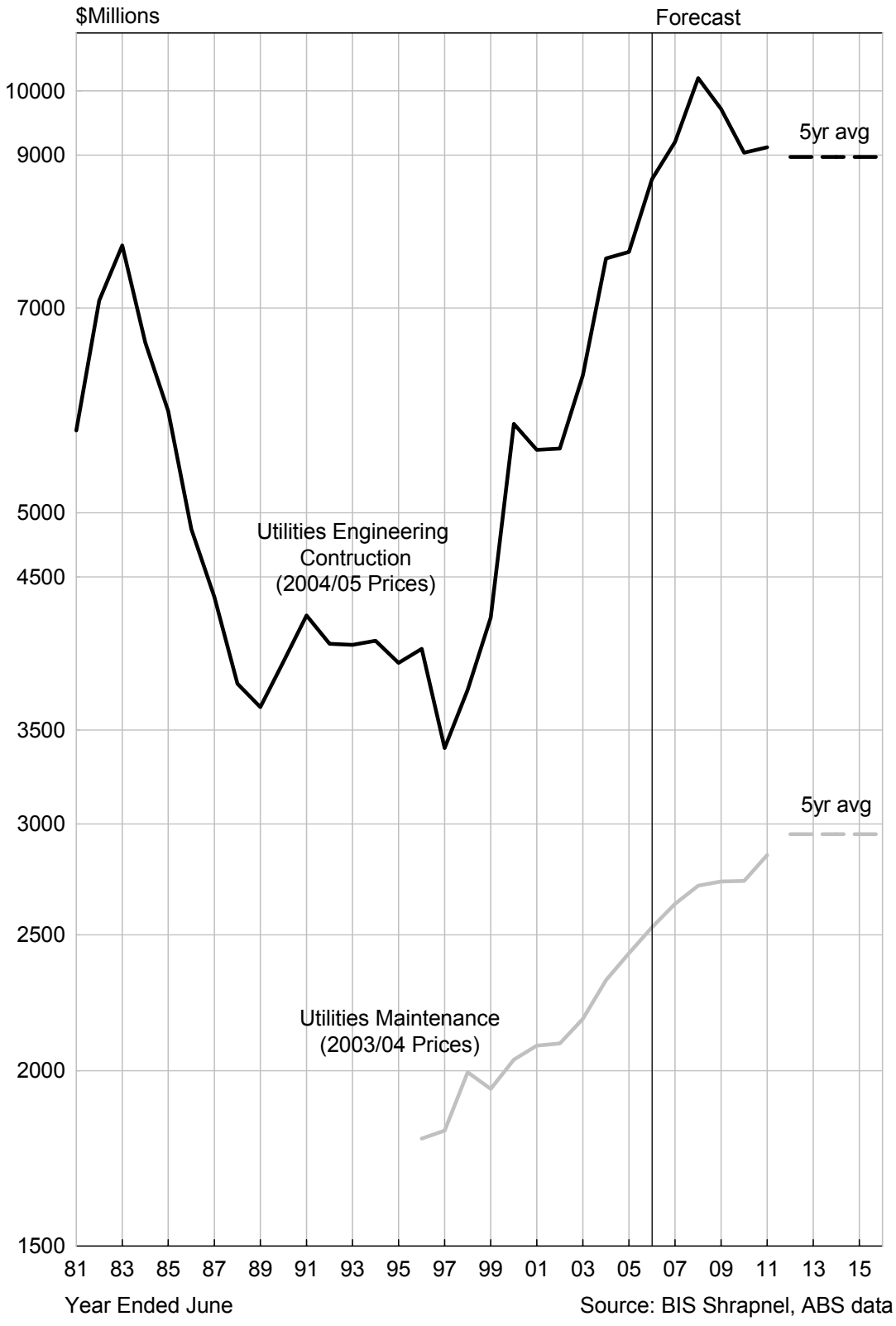
AE's forecasts of output in the Australian utilities sector (as presented in chart 9, page 10 of AE report) appear to be broadly similar to BIS Shrapnel's, apart from the near-term period to 2008. However, AE's outlook for employment, wages and productivity (the latter two indicators are shown in table 6.1) are somewhat different to BIS Shrapnel's forecasts, which are presented in table 4.5 and table 6.2.

Overall, BIS Shrapnel has higher employment and wages growth forecasts and lower productivity forecasts for the utilities sector than AE. BIS Shrapnel is forecasting employment growth in the utilities sector to average 0.9 per cent per annum over the next decade. Employment growth in the utilities sector was very strong over the 2001 – 2006 period, averaging 5.9 per cent p.a. — much higher than the national average. Employment surged almost 14 per cent in 2005/06, but fell back sharply in the second half of calendar 2006. We expect employment to bounce back over 2007 before stabilising over 2008/09, and subsequently pick up modestly over the following three years. Little growth is then projected over the 2013 to 2016 period.

They key reasons for BIS Shrapnel's higher employment growth (modest though it is) compared to AE are a large long-term capital works and maintenance program and a desire to increase engineering, construction and maintenance skills within the utilities sector.

Both capital and maintenance expenditure is expected to be at higher levels, on average, over the next decade, compared to the past decade — as presented in BIS Shrapnel's reports *Engineering Construction in Australia: 2006 to 2021* and *Maintenance in Australia: 2005 to 2010.* Chart 6.1 provides a summary from these reports of the combined utilities sector (electricity generation and supply, gas pipelines and water and sewerage) expenditure on engineering construction and maintenance. Although the construction of major projects (such as major pipelines, power stations and water/wastewater treatment works) will still be mostly contracted out to companies classified to the construction sector, long term programs covering upgrades are increasingly being brought 'in-house', rather than contracted out. There has been a growing desire to build up in-house capabilities and skills, which has been given added impetus from the escalation of contractor costs over recent years. Furthermore, the much higher levels of the long term programs to upgrade networks and increase maintenance are part of a 'catch-up' phase of upgrading and maintenance after weak levels of expenditure in these areas during the 1990s.

Chart 6.1
Utilities Construction and Maintenance – Australia
(Constant Prices)



Given these larger long term capital works and maintenance programs, it is unlikely employment levels will fall from 2006/07 to 2011/12, as implied by AE's productivity, output and employment forecasts presented in chart 4 of the AE report.

The main reason provided by AE for the decline in employment growth is their "longer term expectations for productivity growth in the utilities sector are that it will return to growth in line with national trends. As we [Access Economics] anticipate utilities sector output will lag the broader economy, this implies relatively weak employment growth in the sector to maintain productivity growth" (page 5, AE report). However, the AE report provides no reasons or evidence to support their claim that employment levels in the sector are expected to fall. The AE report simply states that "the recent strength in [utilities] sector employment is anticipated to ease in the next few years allowing productivity levels to rebound" (page 6, AE report).

The AE report suggests that the significant increases in employment over recent years is due largely to the "construction of new infrastructure [which] is related to expected future demand for electricity and water rather than demand right at the moment, [and this] increasing employment can be required to run new facilities even before their output is fully utilised" (page 6 of AE report).

While this argument has some merit, AE's employment forecasts would suggest the construction boom in new utilities infrastructure is now over, and that no new facilities are expected over the next 6 years which would require increased employment.

However, as the accompanying chart shows, utilities infrastructure (i.e. engineering construction work done) and maintenance expenditure are forecast to experience further strong increases in utilities employment over the next two years. And while the engineering construction forecasts show a decline over 2008/09 and 2009/10, most of this is related to the completion of a number of major power stations, water/wastewater treatment plants and dams. Meanwhile, construction work on transmission and distribution upgrades and expansions, and on maintenance work generally, is expected to be maintained or even increased. With work on upgrades and maintenance increasingly being brought 'in-house' (i.e. into the utilities sector), employment is expected to increase over the next two-to-three years.

The sharp easing in wages growth in the utilities sector in 2009/10 predicted by AE is based on their "broad expectation that the impact of skills shortages in the industry (and the economy in general) will decline across the next three years". While we also expect some easing in wage pressures, we believe it is highly unlikely that wages growth in the utilities sector would remain well below the national average for the seven years from 2009/10 to 2015/16.

The utilities sector will still compete with the mining and construction sectors for skilled labour, and as table 5.3 shows, the demand for labour in these sectors (combined) is expected to remain strong in 2006/07, and only ease modestly over 2007/08 and 2008/09, before again picking up from 2009/10 through to 2012/13. Both the utilities and mining sectors in particular, as well as that part of the construction sector building infrastructure, will still need to offer relatively higher wages to both retain and attract skilled labour. Given that the very strong demand for engineers and skilled tradespersons in these sectors is currently outstripping the supply of those skilled labour types, the modest easing in overall labour demand for the 3 combined sectors will probably only see that portion of the labour market approach balance, but still remain relatively tight in historical terms. Accordingly, we expect wages growth in the utilities, mining sector to remain above the national average, in line with historical trends. We have provided an analysis of AWOTE (table 6.3), as this has a much longer historical series (back to the early 1980s) of wages and productivity.

Table 6.3
BIS Shrapnel Wage & Productivity Growth
Using AWOTE

	All Industries - persons				All Industries						Utilities					
Year Ended June	Access Economics Forecast AWOTE(1)		BIS Shrapnel Forecast AWOTE(1)		AWOTE - Males Nominal Wage		Wage-Productivity(2)		Productivity(3)		AWOTE - Males Nominal Wage		Wage-Productivity(2)		Productivity(3)	
	$/week	%ch	$/week	%ch	$/week	%ch	index	%ch	$000/empl.	%ch	$/week	%ch	index	%ch	$000/empl.	%ch
1998	716.8	4.1	716.8	4.1	763.6	4.4	84.7	1.3	82.6	3.1	853.7	8.2	64.6	1.5	292.5	6.7
1999	743.3	3.7	743.3	3.7	790.0	3.5	85.0	0.4	85.1	3.1	888.1	4.0	66.5	3.0	295.5	1.0
2000	768.2	3.4	768.2	3.4	816.0	3.3	86.2	1.4	86.7	1.9	951.9	7.2	69.4	4.2	304.2	2.9
2001	808.8	5.3	808.8	5.3	857.5	5.1	90.7	5.3	86.6	-0.2	1019.3	7.1	74.4	7.3	303.6	-0.2
2002	853.6	5.5	853.6	5.5	903.7	5.4	93.3	2.8	88.8	2.5	1098.8	7.8	82.9	11.4	292.8	-3.6
2003	897.6	5.2	897.6	5.2	950.7	5.2	97.6	4.5	89.3	0.7	1135.1	3.3	90.9	9.7	274.1	-6.4
2004	941.3	4.9	941.3	4.9	995.3	4.7	100.0	2.5	91.3	2.2	1218.6	7.4	100.0	10.0	266.8	-2.7
2005	984.7	4.6	984.7	4.6	1040.2	4.5	104.8	4.8	91.1	-0.3	1266.6	3.9	105.3	5.3	263.2	-1.3
2006	1032.0	4.8	1032.0	4.8	1091.6	4.9	109.3	4.3	91.6	0.6	1285.8	1.5	118.2	12.3	234.9	-10.8
2007f	1072.4	3.9	1074.9	4.2	1139.7	4.4	113.4	3.7	92.3	0.7	1342.3	4.4	116.5	-1.4	248.5	5.8
Forecasts																
2008	1126.0	5.0	1136.7	5.7	1203.8	5.6	118.4	4.4	93.4	1.2	1425.5	6.2	124.7	7.0	246.5	-0.8
2009	1170.3	3.9	1192.4	4.9	1263.2	4.9	121.6	2.8	95.4	2.2	1505.4	5.6	129.9	4.2	250.0	1.4
2010	1217.3	4.0	1244.8	4.4	1320.0	4.5	123.9	1.9	97.9	2.6	1585.2	5.3	135.1	4.0	253.3	1.3
2011	1262.8	3.7	1311.2	5.3	1390.4	5.3	129.6	4.5	98.7	0.8	1681.9	6.1	142.4	5.4	255.0	0.7
2012			1384.7	5.6	1468.4	5.6	135.8	4.8	99.4	0.8	1781.1	5.9	152.2	6.9	252.5	-1.0
2013			1458.8	5.4	1546.9	5.4	141.9	4.4	100.3	0.9	1884.4	5.8	159.5	4.8	255.0	1.0
2014			1528.1	4.8	1620.4	4.8	145.4	2.5	102.6	2.3	1978.6	5.0	164.0	2.8	260.6	2.2
2015			1596.1	4.5	1692.5	4.5	149.7	3.0	104.1	1.5	2085.5	5.4	170.4	3.9	264.5	1.5
2016			1682.3	5.4	1783.9	5.4	154.6	3.3	106.3	2.1	2212.7	6.1	178.7	4.9	267.7	1.2
Long Term Averages																
1986-2006	4.9		4.9		4.9		3.5		1.4		5.5		0.4		4.5	
1990-00	4.0		4.0		4.0		1.9		2.1		5.3		-2.4		7.3	
1998-2006	4.7		4.7		4.6		3.2		1.3		5.3		7.8		-2.7	
2001-07	4.9		4.9		4.9		4.0		0.9		5.0		7.7		-2.8	
2008-13			5.2		5.2		3.8		1.4		5.8		5.4		0.4	
2008-16			5.1		5.1		3.5		1.6		5.7		4.9		0.8	
2002-06	5.0		5.0		4.9		3.8		1.1		4.8		9.7		-5.0	
2007-11	4.1		4.9		5.0		3.5		1.5		5.5		3.8		1.7	
2012-16			5.1		5.1		3.6		1.5		5.6		4.7		1.0	
2007-16			5.0		5.0		3.5		1.5		5.6		4.2		1.3	

Another key reason why BIS Shrapnel expects utilities wages growth to remain above the national average is that electricity, gas and water (and sewerage) are essential services, where reliability of supply is paramount. As explained in section 4.1, the utilities sector *must* retain adequate skilled labour to maintain reliability of supply. The network upgrades, maintenance and other routine activity in the utilities sector cannot be postponed until labour costs fall, or labour shortages ease.

The state based wage measures used by Access Economics are questionable. The table on page iii of the AE report does not state which nominal wage measure is used for the states. It appears to use the labour price index, as the 'All Industries' national nominal wage growth forecasts in this table match those titled labour price index in table 4 on page 18 of the report. However, BIS Shrapnel's enquiries to the Australian Bureau of Statistics found that the ABS is prepared to release current and historical data of the labour price index for the electricity, gas and water sector for only NSW, Victoria and the national average. Historical estimates for the utilities LPI in other states are simply not available! Average weekly ordinary time earnings (AWOTE) data for adult males for the electricity, gas and water sector are, however, available for each state on a quarterly basis back to November 1983.

As discussed in section 3 of this report, BIS Shrapnel believes the most appropriate wage measure which should be used is the AWOTE measure. The reasons are set out in section 3. Accordingly, we have included the AWOTE analysis to 2015/16 for both the national (all industries) and utilities sector (see table 6.3). A comparison of AE's forecast for the national wage (to 2010/11 only) is also shown in table 6.3.

With regard to the specific South Australian wages growth forecasts presented in the table on page iii of the Access Economics report, the same pattern of wages growth occurs at the state level, i.e. wages growth stays strong (around 5.4%) for 2007/08 and 2008/09 before decelerating sharply in 2009/10 to 3.5%, remaining in a 3.5% to 4.0% band until 2015/16. As no specific reason was given for the state based utilities wage forecasts, we assume AE applied the same logic as it (inadequately) described for the national forecasts.

Accordingly, our reasons for rejecting the AE Australian utilities wage forecasts are broadly the same for rejecting their South Australian utilities wage forecasts, as set out in this section, and in section 5.3 of this report.

APPENDIX A: State Estimates of Utilities Output and Productivity

Table A1: Gross Value Added
Electricity, Gas & Water by State

	NSW		VIC		QLD		SA		WA		TAS		NT		ACT		AUSTRALIA	
Year Ended	Gross Value Added		Gross Value Added		Gross Value Added		Gross Value Added		Gross Value Added		Gross Value Added		Gross Value Added		Gross Value Added		Gross Value Added	
June	$m(04/05$s)	A%Ch	$m(04/05$s)	A%Ch	$m(04/05$s)	A%Ch	$m(04/05$s)	A%Ch	$m(04/05$s)	A%Ch	$m(04/05$s)	A%Ch	$m(04/05$s)	A%Ch	$m(04/05$s)	A%Ch	$m(04/05$s)	A%Ch
1985	5216	3.6	3990	5.6	1727	8.9	962	7.8	1010	10.8	425	12.1	110	10.0	75	3.3	13399	6.2
1986	5226	0.2	4125	3.4	1929	11.7	1015	5.6	1151	14.0	454	7.0	84	-23.6	80	7.3	13914	3.8
1987	5011	-4.1	4471	8.4	2048	6.2	935	-7.9	1285	11.6	448	-1.3	93	10.5	98	22.0	14227	2.2
1988	5210	4.0	4503	0.7	2087	1.9	1154	23.4	1332	3.6	489	9.1	148	59.3	135	38.2	14923	4.9
1989	5863	12.5	4587	1.8	2162	3.6	1029	-10.8	1342	0.8	471	-3.7	142	-3.8	184	35.8	15592	4.5
1990	5732	-2.2	4910	7.0	2244	3.8	1089	5.8	1505	12.1	468	-0.6	175	22.8	229	24.3	16347	4.8
1991	6135	7.0	4654	-5.2	2243	0.0	1135	4.2	1563	3.9	470	0.4	166	-4.9	246	7.7	16609	1.6
1992	6396	4.2	4532	-2.6	2222	-0.9	1148	1.2	1500	-4.0	490	4.3	182	9.5	285	15.9	16752	0.9
1993	6466	1.1	4628	2.1	2243	1.0	1220	6.2	1484	-1.1	550	12.2	162	-10.8	293	2.8	17044	1.7
1994	6567	1.6	4896	5.8	2427	8.2	1062	-12.9	1600	7.8	560	1.8	163	0.6	313	6.7	17584	3.2
1995	6794	3.5	4793	-2.1	2532	4.3	1213	14.2	1631	2.0	597	6.5	123	-24.3	354	13.0	18032	2.5
1996	6155	-9.4	5167	7.8	2624	3.6	1381	13.8	1820	11.6	662	11.0	146	18.1	314	-11.2	18273	1.3
1997	5968	-3.0	5200	0.6	2370	-9.7	1549	12.2	2021	11.1	649	-2.0	143	-2.2	312	-0.8	18213	-0.3
1998	6056	1.5	5034	-3.2	2651	11.9	1716	10.8	2220	9.9	658	1.3	149	4.4	366	17.3	18857	3.5
1999	5143	-15.1	5833	15.9	2718	2.5	1556	-9.3	2602	17.2	704	7.0	178	19.9	418	14.3	19164	1.6
2000	5411	5.2	5821	-0.2	2727	0.3	1616	3.8	2658	2.1	707	0.5	174	-2.6	419	0.2	19539	2.0
2001	5680	5.0	5629	-3.3	2810	3.1	1634	1.1	2745	3.3	725	2.5	174	0.3	426	1.7	19840	1.5
2002	5698	0.3	5507	-2.2	2883	2.6	1557	-4.7	2711	-1.3	728	0.4	171	-2.2	413	-3.1	19690	-0.8
2003	5787	1.6	5502	-0.1	2938	1.9	1604	3.1	2630	-3.0	746	2.5	170	0.0	472	14.2	19867	0.9
2004	5702	-1.5	5610	2.0	2983	1.6	1617	0.8	2656	1.0	758	1.7	176	3.2	482	2.1	20000	0.7
2005	5706	0.1	5668	1.0	2979	-0.1	1652	2.2	2712	2.1	759	0.1	177	0.3	478	-0.7	20146	0.7
2006	5835	2.3	5789	2.1	3198	7.4	1686	2.1	2682	-1.1	722	-4.9	165	-6.8	457	-4.5	20471	1.6
2007e							1717	1.8									21170	3.4
Forecast																		
2008							1761	2.6									21660	2.3
2009							1798	2.1									22030	1.7
2010							1834	2.0									22430	1.8
2011							1867	1.8									22790	1.6
2012							1899	1.7									23130	1.5
2013							1950	2.7									23410	1.2
2014							2020	3.6									23740	1.4
2015							2059	1.9									24240	2.1
2016							2104	2.2									24770	2.2
2017							2148	2.1									25265	2.0
Compound Annual Average Growth Rates																		
1985-2006	0.5		1.8		3.0		2.7		4.8		2.6		1.9		9.0		2.0	
1990-2000	-0.6		1.7		2.0		4.0		5.9		4.2		0.0		6.2		1.8	
2000-2006	1.3		-0.1		2.7		0.7		0.2		0.3		-0.9		1.5		0.8	
2007-2017	-		-		-		2.3		-		-		-		-		1.8	

e: estimate

Source: BIS Shrapnel, ABS Data

Table A2: Employment
Electricity, Gas & Water by State

Year Ended June	NSW Employment '000	NSW A%Ch	VIC Employment '000	VIC A%Ch	QLD Employment '000	QLD A%Ch	SA Employment '000	SA A%Ch	WA Employment '000	WA A%Ch	TAS Employment '000	TAS A%Ch	NT Employment '000	NT A%Ch	ACT Employment '000	ACT A%Ch	AUSTRALIA Employment '000	AUSTRALIA A%Ch
1983																		
1984																		
1985	52.6		37.9		17.1		10.1		10.9		6.1		0.9		0.8		136.5	
1986	55.7	5.9	41.3	9.0	18.8	10.0	10.2	0.7	10.4	-4.4	6.3	3.3	0.5	-46.4	1.0	14.0	144.2	5.6
1987	49.3	-11.6	37.3	-9.8	17.4	-7.2	11.0	8.1	11.5	10.6	5.4	-14.3	0.2	-60.0	0.9	-5.3	133.0	-7.8
1988	48.1	-2.4	34.3	-7.9	14.7	-15.9	10.8	-2.3	10.1	-12.6	4.7	-13.0	0.4	112.5	1.3	38.9	124.2	-6.6
1989	41.8	-13.1	35.5	3.5	14.5	-1.2	11.2	3.9	10.4	2.7	3.8	-18.6	0.6	29.4	1.6	24.0	119.2	-4.0
1990	40.4	-3.2	28.9	-18.6	14.3	-1.6	10.1	-9.8	9.6	-7.5	4.0	3.3	0.2	-63.6	1.4	-12.9	108.8	-8.8
1991	38.2	-5.5	28.1	-2.9	12.4	-12.8	8.6	-15.3	10.3	7.8	3.6	-8.2	0.5	137.5	1.6	20.4	103.3	-5.0
1992	40.4	5.7	25.7	-8.4	14.6	17.7	9.5	11.4	10.3	-0.5	3.5	-4.8	0.6	15.8	1.7	4.6	106.2	2.8
1993	38.1	-5.6	21.4	-17.0	14.3	-2.4	9.0	-5.8	10.1	-1.5	3.3	-4.3	0.6	0.0	1.0	-41.2	97.7	-8.0
1994	36.3	-4.9	22.6	5.6	13.6	-5.1	6.9	-22.8	9.0	-11.6	2.7	-17.4	0.3	-40.9	1.0	-5.0	92.3	-5.6
1995	34.2	-5.7	20.3	-10.0	13.6	0.4	5.2	-24.2	9.7	8.1	2.1	-22.0	0.5	46.2	1.1	18.4	86.8	-5.9
1996	29.3	-14.4	18.3	-9.9	13.9	2.4	7.1	35.6	8.5	-11.9	2.1	-3.5	0.7	42.1	0.6	-44.4	80.5	-7.2
1997	22.9	-22.0	13.8	-24.9	13.3	-4.7	6.2	-13.1	7.6	-10.9	1.6	-22.0	0.5	-33.3	0.7	16.0	66.4	-17.5
1998	23.3	1.9	14.3	3.8	12.2	-7.9	5.1	-18.3	6.9	-8.9	1.8	12.5	0.3	-38.9	0.6	-13.8	64.5	-3.0
1999	22.7	-2.6	16.8	17.3	12.0	-2.2	4.6	-9.9	6.1	-12.3	1.6	-9.7	0.4	36.4	0.8	32.0	64.8	0.6
2000	22.3	-1.5	15.2	-9.4	11.0	-7.9	5.1	12.9	8.0	32.1	1.5	-7.7	0.3	-20.0	0.8	-6.1	64.2	-0.9
2001	22.1	-1.0	15.7	3.1	10.2	-7.3	5.1	-0.5	9.0	12.1	1.6	3.3	0.9	191.7	0.9	19.4	65.4	1.8
2002	22.0	-0.6	16.5	5.6	13.9	36.3	5.1	-1.3	6.5	-28.1	2.1	32.3	0.6	-37.1	0.7	-29.7	67.2	2.7
2003	26.8	22.0	16.4	-1.0	11.9	-14.6	5.7	13.2	7.9	21.3	1.9	-9.5	0.7	32.4	1.2	88.4	72.4	7.8
2004	26.6	-0.7	17.3	5.8	14.0	17.9	5.3	-6.5	7.1	-9.5	2.5	32.4	0.9	22.5	1.2	1.6	75.0	3.5
2005	22.7	-14.6	19.2	10.8	14.1	0.5	6.1	14.0	10.0	40.1	2.5	0.8	1.2	38.4	0.8	-34.8	76.5	2.1
2006	25.2	10.9	21.4	11.8	19.7	39.8	6.5	7.3	9.4	-5.2	2.4	-4.6	1.2	0.2	1.3	57.7	87.2	13.9
2007e							6.3	-3.4									84.6	-2.9
Forecast																		
2008							6.5	3.4									87.3	3.1
2009							6.6	0.9									87.6	0.3
2010							6.7	1.7									87.4	-0.3
2011							6.8	2.1									88.3	1.0
2012							7.0	2.2									90.2	2.2
2013							7.1	1.7									90.6	0.4
2014							7.2	0.9									90.0	-0.7
2015							7.2	0.9									90.6	0.7
2016							7.3	1.0									91.3	0.8
2017							7.4	1.1									92.2	0.9
Compound Annual Average Growth Rates																		
1985-2006	-3.4		-2.7		0.7		-2.1		-0.7		-4.4		1.4		2.1		-2.1	
1990-2000	-5.8		-6.2		-2.6		-6.5		-1.8		-9.2		4.1		-5.4		-5.1	
2000-2006	2.0		5.9		10.2		4.1		2.7		7.9		26.6		8.7		5.2	
2007-2017	-		-		-		1.6		-		-		-		-		0.9	

e: estimate

Source: BIS Shrapnel, ABS Data

Table A3: Productivity
Electricity, Gas & Water by State

Year Ended	NSW		VIC		QLD		SA		WA		TAS		NT		ACT		AUSTRALIA	
	Productivity		Productivity		Productivity		Productivity		Productivity		Productivity		Productivity		Productivity		Productivity	
June	GVA/empl.	A%Ch	GVA/empl.	A%Ch	GVA/empl.	A%Ch	GVA/empl.	A%Ch	GVA/empl.	A%Ch	GVA/empl.	A%Ch	GVA/empl.	A%Ch	GVA/empl.	A%Ch	GVA/empl.	A%Ch
1985	99.2		105.3		101.2		94.9		92.6		69.6		117.8		89.9		98.2	
1986	93.8	-5.4	99.9	-5.1	102.8	1.5	99.5	4.9	110.4	19.2	72.1	3.6	167.9	42.6	84.6	-5.9	96.5	-1.7
1987	101.8	8.5	120.0	20.2	117.6	14.4	84.8	-14.8	111.5	1.0	83.0	15.1	463.7	176.2	108.9	28.8	107.0	10.9
1988	108.4	6.6	131.3	9.4	142.5	21.2	107.1	26.3	132.2	18.6	104.0	25.3	347.7	-25.0	108.4	-0.5	120.1	12.3
1989	140.3	29.4	129.2	-1.6	149.4	4.9	91.9	-14.2	129.7	-1.9	123.1	18.3	258.6	-25.6	118.7	9.5	130.8	8.9
1990	141.8	1.0	169.9	31.5	157.5	5.4	107.8	17.4	157.2	21.2	118.4	-3.7	873.6	237.8	169.3	42.7	150.3	14.9
1991	160.6	13.3	165.8	-2.4	180.5	14.6	132.8	23.1	151.4	-3.7	129.6	9.4	349.7	-60.0	151.5	-10.6	160.8	7.0
1992	158.4	-1.4	176.2	6.3	151.9	-15.8	120.6	-9.2	146.0	-3.5	142.0	9.6	330.7	-5.4	167.8	10.8	157.7	-1.9
1993	169.6	7.1	216.8	23.0	157.1	3.5	135.9	12.7	146.5	0.4	166.7	17.3	295.1	-10.8	293.2	74.7	174.5	10.6
1994	181.0	6.7	217.1	0.2	179.1	14.0	153.4	12.8	178.7	22.0	205.5	23.3	502.3	70.2	329.4	12.3	190.6	9.3
1995	198.5	9.7	236.1	8.7	186.2	3.9	231.2	50.7	168.6	-5.7	280.8	36.6	260.0	-48.2	314.4	-4.6	207.8	9.0
1996	210.1	5.8	282.3	19.6	188.4	1.2	193.9	-16.1	213.5	26.6	323.0	15.0	216.0	-16.9	502.7	59.9	226.9	9.2
1997	261.2	24.3	378.2	34.0	178.5	-5.3	250.5	29.2	266.0	24.6	405.7	25.6	317.1	46.8	429.9	-14.5	274.1	20.8
1998	260.2	-0.4	352.6	-6.8	216.8	21.5	339.5	35.5	320.6	20.6	365.4	-9.9	541.5	70.8	585.2	36.1	292.6	6.7
1999	226.8	-12.8	348.3	-1.2	227.4	4.9	341.5	0.6	428.3	33.6	433.0	18.5	476.0	-12.1	506.6	-13.4	295.6	1.0
2000	242.4	6.9	383.6	10.1	247.9	9.0	314.2	-8.0	331.2	-22.7	471.2	8.8	579.6	21.8	540.5	6.7	304.1	2.9
2001	257.0	6.0	359.7	-6.2	275.5	11.1	319.3	1.7	305.1	-7.9	467.6	-0.8	199.2	-65.6	460.7	-14.8	303.3	-0.3
2002	259.3	0.9	333.3	-7.3	207.4	-24.7	308.2	-3.5	418.7	37.2	355.0	-24.1	310.0	55.6	635.5	38.0	293.1	-3.4
2003	215.8	-16.8	336.5	1.0	247.5	19.3	280.6	-9.0	334.8	-20.0	402.0	13.2	234.1	-24.5	385.1	-39.4	274.3	-6.4
2004	214.1	-0.8	324.2	-3.7	213.2	-13.9	302.7	7.9	373.4	11.5	308.8	-23.2	197.3	-15.7	387.1	0.5	266.8	-2.8
2005	251.0	17.2	295.6	-8.8	211.9	-0.6	271.3	-10.4	272.2	-27.1	306.6	-0.7	143.0	-27.5	589.5	52.3	263.2	-1.3
2006	231.5	-7.8	270.0	-8.7	162.7	-23.2	258.1	-4.9	284.0	4.4	305.7	-0.3	132.9	-7.0	357.2	-39.4	234.9	-10.8
2007e							272.1	5.4									250.1	6.5
Forecast																		
2008							269.9	-0.8									248.1	-0.8
2009							273.1	1.2									251.5	1.4
2010							273.9	0.3									256.8	2.1
2011							273.1	-0.3									258.2	0.6
2012							271.7	-0.5									256.3	-0.7
2013							274.5	1.0									258.4	0.8
2014							281.9	2.7									263.8	2.1
2015							284.7	1.0									267.5	1.4
2016							288.1	1.2									271.2	1.4
2017							291.0	1.0									274.1	1.1
Compound Annual Average Growth Rates																		
1985-2006	4.1		4.6		2.3		4.9		5.5		7.3		0.6		6.8		4.2	
1990-2000	5.5		8.5		4.6		11.3		7.7		14.8		-4.0		12.3		7.3	
2000-2006	-0.8		-5.7		-6.8		-3.2		-2.5		-7.0		-21.8		-6.7		-4.2	
2007-2017	-		-		-		0.7		-		-		-		-		0.9	

e: estimate

Source: BIS Shrapnel, ABS Data