

BEYOND THE UNEMPLOYMENT RATE: IMPLICATIONS FOR SOUTH AUSTRALIAN EMPLOYMENT POLICY

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INTRODUCTION

Australia has again recorded an annualised economic growth rate of about four per cent and so we are back at the top of the OECD league ladder. Nevertheless, the boom seems to be passing an increasing number of Australians by. The problem seems to be that the economy is not creating sufficient decent jobs to adequately distribute the benefits of continued strong economic growth to the broader community (Stillwell, 2000, Bell, 2000, Bell 2002). A problem that Australia shares with other, similar, developed countries such as Canada (Jackson et al., 2000, Burke and Shields, 1999). Moreover, the economic and labour force restructuring that accompanied the recovery from the recession of the early-1990s exacerbated two labour force pathologies. First, an increase in the level of hidden unemployment due to the increase in structural unemployment (Watson, 2000). Second, an increase in visible under employment due to casual and part-time jobs becoming the driver of employment growth in Australia (Bell, 2000). The emergence of these two labour force pathologies increased the level of labour under utilisation in Australia, but by how much?

The official measure of the extent of labour under utilisation in Australia is the trend unemployment rate (Australian Bureau of Statistics, 2002). However, the method by which the trend unemployment rate is calculated means that it does not include accurate estimates of either hidden unemployment, as the hidden unemployed are not actively seeking work and so they are precluded from participating in the Labour Force Survey, nor is visible under employment accurately measured, as the Labour Force Survey does not ask part-time workers who would like to work more hours how many extra hours they would they like to work. Consequently, the official picture of the level of labour under utilisation in Australia is under estimated.

Given these concerns about the accuracy of the official measures of labour under utilisation in Australia, the aim of this paper is to estimate better the unemployment rate in South Australia since 1989, that is over the course of the last business cycle. This will be achieved by using three new measures of labour under utilisation that

have been developed by the author. The following section is a brief re-examination of the South Australian labour force during the 1990s using the real unemployment rate, which adds an estimate of hidden unemployment to the trend unemployment rate. The third section is a re-examination of the South Australian labour force using the hours unemployment rate, which adds an estimate of visible under employment to the trend unemployment rate. The fourth section is a re-examination of the South Australian labour force using the comprehensive unemployment rate, which adds estimates of both hidden unemployment and visible under employment to the trend unemployment rate.

HIDDEN UNEMPLOYMENT: THE REAL UNEMPLOYMENT RATE

The recession of the early-1990s was quite unlike most recent recessions because a substantial amount of structural unemployment was created in addition to the cyclical unemployment that characterises a recession (Watson, 2000; Watson and Callus, 1999; Bell, 2000; Mitchell, 2000). Subsequently, many workers who became unemployed during the recession were unable to be re-employed in their old, or a similar, job, as these jobs had been lost to the economy. Over time, many of these people have simply given up any hope of ever finding appropriate employment and have slipped into the ranks of the hidden unemployed. The Australian Bureau of Statistics collects some information about the level of hidden unemployment during the course of its monthly Labour Force Survey. However, the method by which the Australian Bureau of Statistics administers this survey means that it significantly under estimates the extent of hidden unemployment in Australia, as information about labour force participation is only gathered from people who are employed or actively seeking work during the reference period of the survey. Consequently, the author has developed a labour force indicator that adds an estimate of hidden unemployment to the trend unemployment rate to obtain the real unemployment rate for South Australia. The real unemployment rate is essentially a measure of those people who might reasonably be expected to work in a fully employed economy (Beatty and Fothergill, 1998; 138). Hence, it captures the increased labour under utilisation that results from increases in hidden unemployment.

Beatty and Fothergill (1998; 116) argue that there are essentially three methods by which regional labour markets adjust to the loss of a large number of jobs as a result of economic restructuring. First, is the increase in the demand for labour that accompanies the creation of new jobs in regions that are experiencing employment decline. Second, is the reduction in the supply of labour in regions that are experiencing employment decline as people move to regions where job growth is strong. Third, people may simply disappear into the ranks of those people who are neither employed or unemployed. That is, they become economically inactive and hence become part of the hidden unemployed. The question then becomes how to estimate the number of hidden unemployed in order to ascertain the number of people who might reasonably be expected to work in a fully employed economy. It is argued here that changes in the labour force participation rate provide the basis of such a method. The method by which the real unemployment rate is calculated is set out in Appendix 1.

Table 1: Labour Force Participation Rate, Australia and South Australia, 1989-2003, per cent.

Year	Australia			South Australia		
	Males	Females	Total	Males	Females	Total
1989	75.3	50.6	62.7	74.5	50.2	62.1
1990	75.4	51.9	63.5	74.2	50.4	62.1
1991	75.2	52.2	63.5	75.0	51.7	63.1
1992	74.3	51.9	63.0	73.1	50.5	61.6
1993	73.6	51.5	62.4	72.7	51.1	61.7
1994	73.6	52.4	62.8	71.7	51.3	61.3
1995	73.9	53.2	63.4	71.2	51.9	61.4
1996	73.8	53.8	63.6	71.4	52.1	61.5
1997	73.3	54.0	63.5	70.7	52.9	61.6
1998	73.0	53.6	63.1	70.1	51.0	60.3
1999	72.7	53.7	63.0	70.0	51.1	60.4
2000	72.5	54.7	63.5	70.6	52.2	61.2
2001	72.3	55.1	63.6	68.7	51.7	60.0
2002	72.4	55.3	63.8	69.2	52.7	60.8
2003	72.3	56.6	64.4	69.3	53.9	61.5

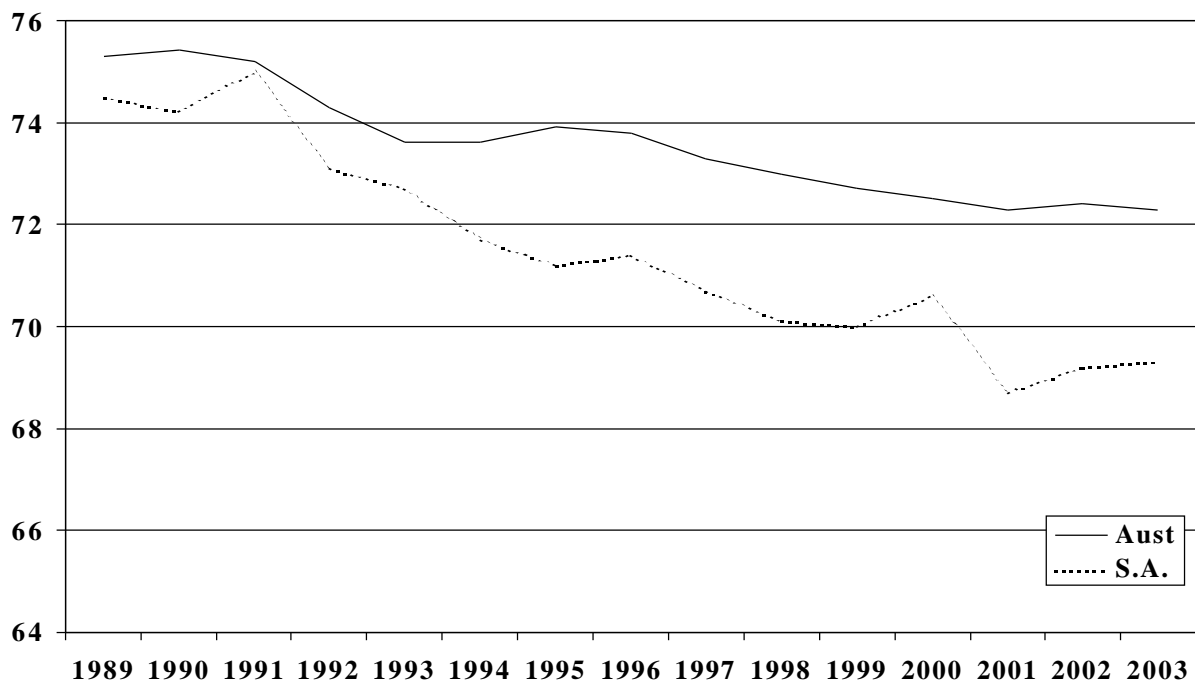
Source: Australia Bureau of Statistics unpublished trend data, figures for February of each year.

One important feature of the South Australian labour force since 1989 is the decline in the labour force participation rate. This fall in the total participation rate is driven by a downward trend in the male participation rate, which has not been fully offset

by the complementary increase in the female participation rate. Both the fall in the South Australian male participation rate and the slower rate of increase of the South Australian female labour force (Table 1) is strong evidence for the existence of hidden unemployment in South Australia.

Table 1 shows that at the peak of the last business cycle there was very little difference between the male labour force participation rates for South Australia and Australia as a whole. However, during the 1990s the difference between these two figures became quite large. Figure 2 clearly shows the male labour force participation rates peaking in Australia and South Australia in 1990 and 1991 respectively and then falling continuously throughout the 1990s. Nationally, the male labour force participation rate peaked at 75.4 per cent in 1990 and fell to 72.3 per cent by 2003. In South Australia the male labour force participation rate peaked at 75.0 per cent in 1991. However, the rate of decline of the male labour force participation rate was much more rapid in South Australia, falling to 69.3 per cent in 2003.

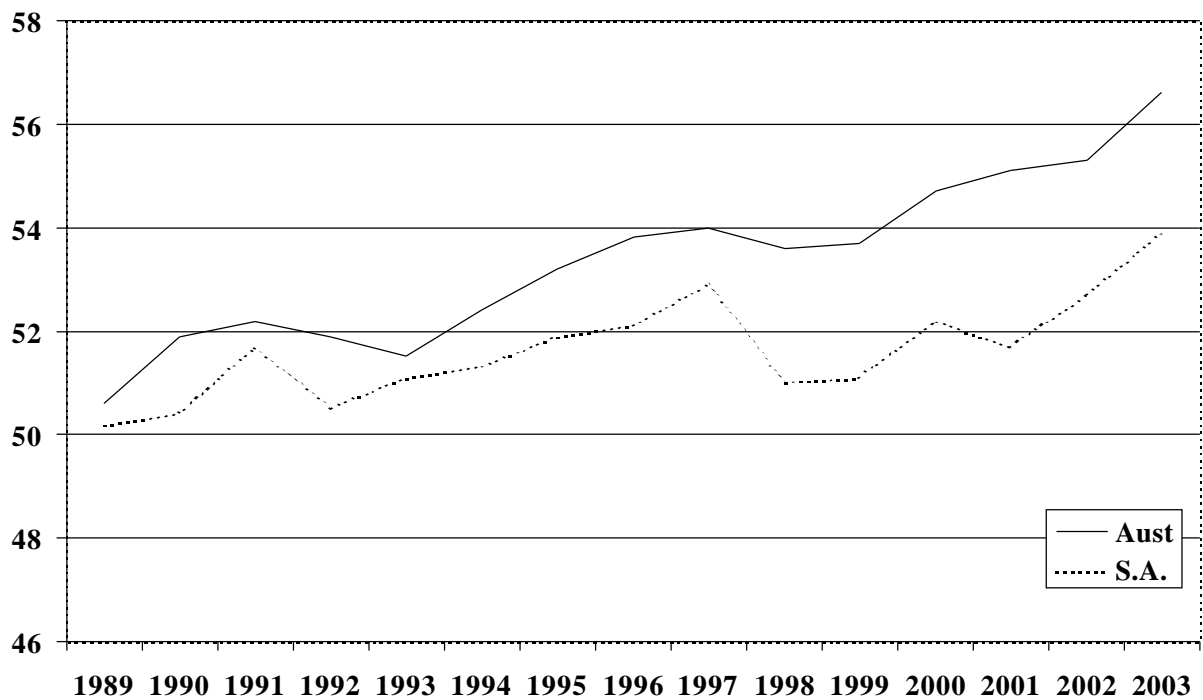
Figure 1: Participation Rates, Australia and South Australia, 1989-2003, per cent, Males.



Source: Australia Bureau of Statistics unpublished trend data, figures for February of each year.

It is argued here that the two maxima that occur in the male labour force participation rates at the end of the 1980s represent the male participation labour force rates that could be expected to occur if the national and South Australian economies were experiencing full employment. Therefore, the decline in the male participation rate, from its peak in 1991, is an indication of growing hidden unemployment in South Australia. Consequently, the male labour force participation rate for 1991 is used as the benchmark for the calculation of male hidden unemployment in South Australia. The estimate of hidden unemployment is then added to trend unemployment rate to obtain the male real unemployment rate.

Figure 2: Participation Rates, Australia and South Australia, 1989-2003, per cent, Females.



Source: Australia Bureau of Statistics unpublished trend data, figures for February of each year.

In contrast to the male labour force participation rate, the female labour force participation rate has been rising constantly since the late-1980s (Table 1). Figure 2 clearly shows that in 1989 there was very little difference between the national and the South Australian female labour force participation rates, but things changed during the 1990s. Nationally, the female participation rate rose from 50.6 per cent in 1989 to 56.6 per cent in 2003. In 1989 the South Australian female labour force participation rate was 50.4 per cent. However, the South Australian female labour

force participation rate rose much more slowly during the 1990s to reach only 53.9 per cent in 2003. The resultant gap between the national and South Australian female participation rates, is also considered to be an indicator of the growth of hidden unemployment in South Australia. Hence, the benchmark for the calculation of the female hidden unemployment in South Australia is the current national female labour force participation rate. The estimate of hidden unemployment is then added to trend unemployment rate to obtain the female real unemployment rate.

Table 2: Trend and Real Unemployment, South Australia, 1989-2003, per cent.

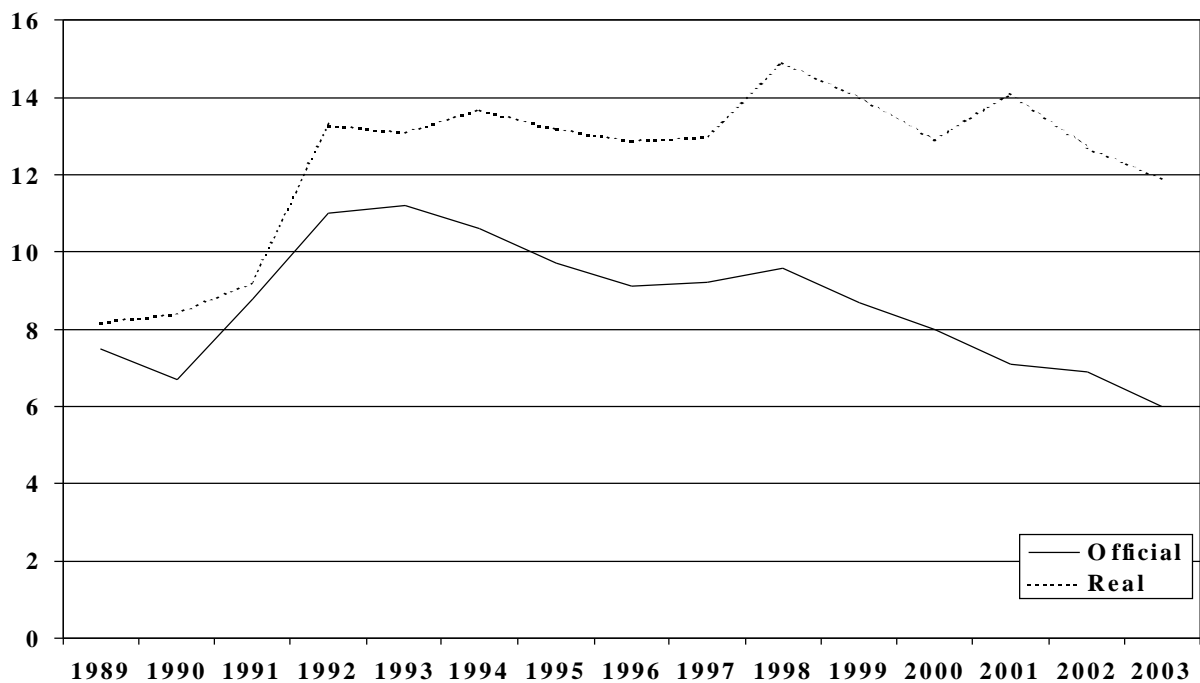
Year	Trend Unemployment Rate			Real Unemployment rate		
	Males	Females	Total	Males	Females	Total
1989	7.7	7.2	7.5	8.3	7.9	8.2
1990	6.7	6.8	6.7	7.7	9.5	8.4
1991	9.2	8.3	8.8	9.2	9.2	9.2
1992	12.1	9.4	11.0	14.4	11.8	13.3
1993	12.3	9.7	11.2	15.0	10.4	13.1
1994	11.4	9.5	10.6	15.3	11.4	13.7
1995	10.5	8.6	9.7	15.1	10.9	13.2
1996	10.0	7.9	9.1	14.3	10.8	12.9
1997	9.9	8.3	9.2	15.1	10.1	13.0
1998	10.0	9.1	9.6	15.9	13.5	14.9
1999	9.4	7.9	8.7	15.4	12.3	14.0
2000	8.3	7.6	8.0	13.6	11.9	12.9
2001	8.1	5.9	7.1	15.9	12.1	14.2
2002	7.5	6.1	6.9	14.7	10.6	12.7
2003	6.6	5.3	6.0	13.7	9.8	11.9

Source: Australia Bureau of Statistics unpublished trend data, figures for February of each year.

In Table 2 and Figure 3, the real unemployment rate for South Australia is compared with the trend unemployment rate. Prior to the onset of the last recession in South Australia, there was some hidden unemployment, as demonstrated by the vertical distance between the two lines in Figure 3. As the South Australian economy peaked in 1991, it prompted a number of people who were not in the labour force to begin to actively seek work. This optimistic revision of the expectations of gaining appropriate employment increased the participation rate and so reduced the level of hidden unemployment. However, once the recession took hold large numbers of people who were marginally attached to the labour force pessimistically reconsidered their chances of gaining appropriate employment, so they left the labour force and the participation rate fell. Consequently, the level of hidden

unemployment jumped by two percentage points early in the contractionary phase of the recession and remained at that level throughout the recession. Then, paradoxically, the participation rate continued to fall, even though the trend unemployment rate fell, hence the level of hidden unemployment rose again during the expansionary phase of the business cycle, which commenced in 1993, to reach about six per cent by 2003.

Figure 3: Official and Real Unemployment, South Australia, 1989-2003, per cent, Persons.



Source: Australia Bureau of Statistics unpublished trend data, figures for February of each year.

The high levels of hidden unemployment that are shown in Table 2 mean that the real unemployment rate for South Australia did not change much during the 1990s (Figure 3), despite the constant falls in the trend unemployment rate during the latter half of the 1990s. Furthermore, other than during the last couple of years, the real unemployment rate for South Australia has shown no tendency to fall despite strong falls in the trend unemployment rate. In 2003, the real unemployment rate in South Australia was 11.9 per cent, which was nearly double the trend unemployment rate of 6.0 per cent.

The economic restructuring that led to the emergence of structural and hidden unemployment as important labour force problems during the 1990s exacerbated another set of problems for the Australian labour force. As the manufacturing sector continued its relative decline during the 1990s, and conversely the service sector increased in importance, employers sought to increase the flexibility of their workforces in order to improve their competitiveness. Increased workplace flexibility has been a feature of the Australian labour market for at least three decades. However, the nature of workplace flexibility has changed in recent years. In the past, flexibility has tended to mean changes in the nature of work and employment relations that benefited employees. Examples of this form of flexibility include flexi-time, job-sharing, maternity leave and the provision of work-based childcare. However, during the 1990s the term flexibility appears to have been quietly re-defined, and turned on its head, to mean changes to the nature of work that benefit employers at the expense of employees (Adam, 2001). This quest for a more responsive, compliant and flexible workforce has led to a significant increase in non-standard forms of employment in Australia.

Indeed, non-standard forms of employment, especially casual and part-time jobs, have been the drivers of employment growth in South Australia for over a decade. This is causing significant amounts of under employment as the aspirations of increasing numbers of workers for full-time work is being frustrated by the actions of employers who are creating part-time, rather than full-time positions (McKay, 1998; Weller and Webber, 2001, Borland, Gregory and Sheehan, 2001). The Australian Bureau of Statistics does collect some information about part-time employees who wish to work more part-time hours. This information is then used by the Australian Bureau of Statistics to calculate its estimate of the extent of visible under employment. However, the official labour force statistics significantly under estimate the extent of visible under employment in Australia (Mitchell and Carlson, 2000).

The hours unemployment rate developed is based on the argument that most part-time workers who are seeking extra hours are actually expressing their preference for full-

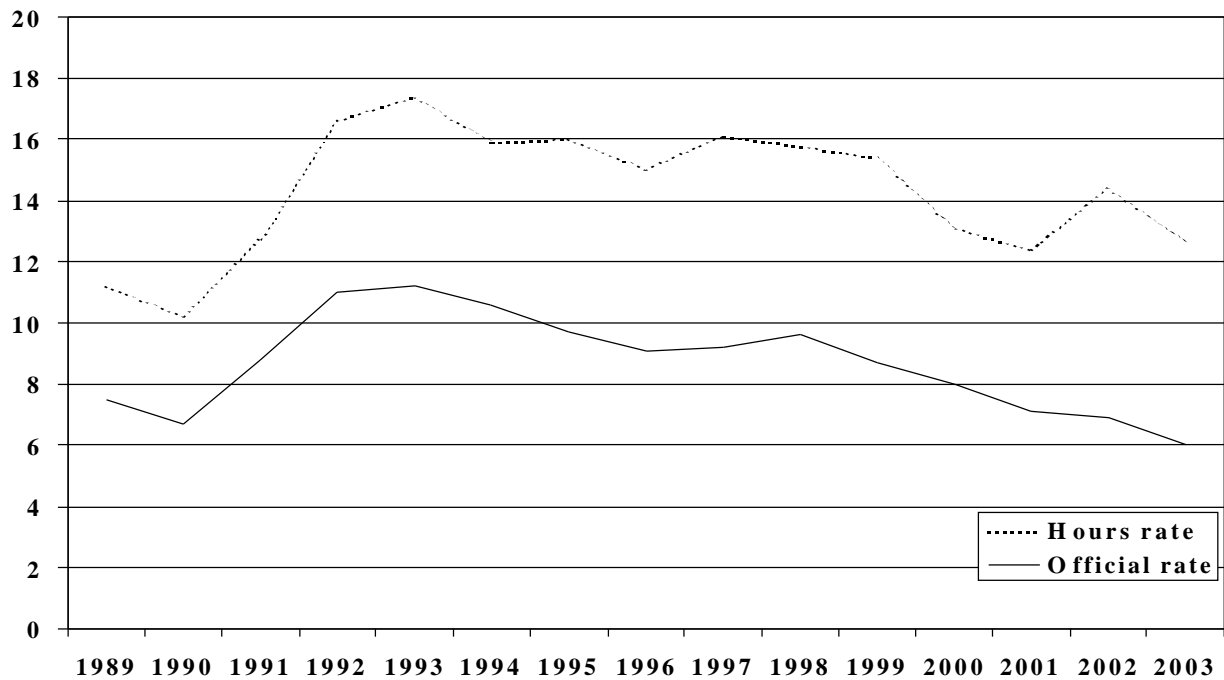
time work and would therefore like to work the number of hours worked on average in Australia. An estimate of visible under employment is added to the trend unemployment rate to obtain the hours unemployment rate. The estimates for the total amount of under utilised labour and the total size of the labour force are then converted to hours to obtain an hours rate of unemployment, rather than a person rate of unemployment. The method by which the hours unemployment rate is calculated is set out in Appendix 2. Figure 4 and Table 3 show movements in the hours unemployment rate for South Australia. In 2003 the hours unemployment rate for South Australia was 12.6 per cent, which is more than double the trend unemployment rate of 6.0 per cent.

Table 3: South Australia, Hours Unemployment Rate, 1989-2003, per cent.

	Males		Females		Persons	
	Hours rate	Official rate	Hours rate	Official rate	Hours rate	Official rate
1989	9.9	7.7	12.5	7.2	11.2	7.5
1990	8.7	6.7	11.7	6.8	10.2	6.7
1991	12.1	9.2	13.5	8.3	12.7	8.8
1992	16.0	12.1	16.6	9.4	16.6	11.0
1993	17.4	12.3	16.6	9.7	17.4	11.2
1994	15.1	11.4	15.9	9.5	15.9	10.6
1995	15.6	10.5	15.7	8.6	16.0	9.7
1996	14.0	10.0	15.3	7.9	15.0	9.1
1997	15.1	9.9	16.3	8.3	16.1	9.2
1998	15.0	10.0	16.0	9.1	15.8	9.6
1999	14.6	9.4	15.7	7.9	15.4	8.7
2000	12.4	8.3	13.2	7.6	13.1	8.0
2001	12.2	8.1	12.4	5.9	12.4	7.1
2002	13.8	7.5	14.4	6.1	14.4	6.9
2003	11.5	6.6	13.2	5.3	12.6	6.0

Source: Australia Bureau of Statistics unpublished trend data, figures for February of each year.

Figure 4: South Australia, Hours Unemployment Rate, 1989-2003, per cent, Persons.



Source: Australia Bureau of Statistics unpublished trend data, figures for February of each year.

THE COMPREHENSIVE UNEMPLOYMENT RATE

The second section of this paper argued that the level of labour under utilisation in South Australia was nearly double the official rate due to the creation of substantial amounts of structural unemployment during the 1990s. The preceding section argued that the level of labour under utilisation in South Australia was also about double the official rate due to the creation of large amounts of part-time work during the 1990s. The real unemployment rate and the hours unemployment rate can be combined to calculate the comprehensive unemployment rate, which adds estimates of both hidden unemployment and visible under employment to the trend unemployment rate to obtain the comprehensive unemployment rate. This section will assess the performance of the South Australian labour force since the late-1980s using the comprehensive unemployment rate, which is also an hours unemployment rate. The method is fully set out in Appendix 3.

Table 4: South Australia, Comprehensive Unemployment Rate, 1989-2003, per cent.

	Males		Females		Persons	
	Comprehensive	Official	Comprehensive	Official	Comprehensive	Official
1989	10.5	7.7	13.2	7.2	11.4	7.5
1990	9.7	6.7	14.3	6.8	11.2	6.7

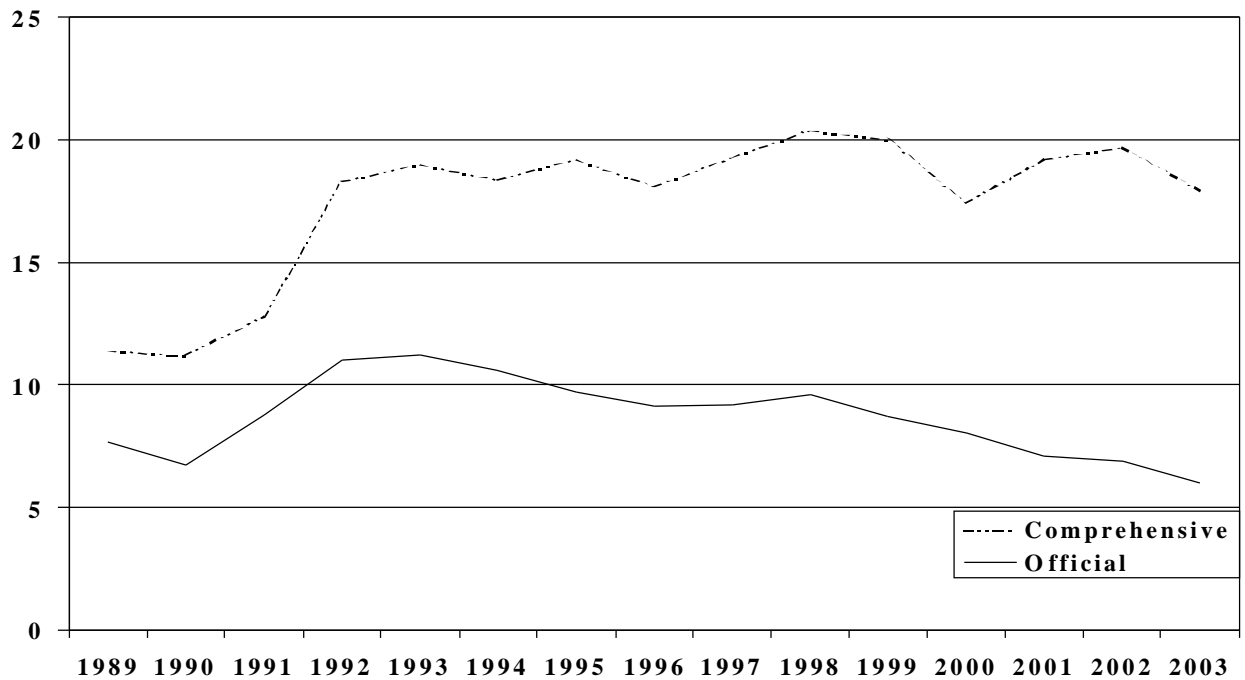
Barrett: Beyond The Unemployment Rate

1991	12.1	9.2	14.3	8.3	12.8	8.8
1992	18.1	12.1	18.9	9.4	18.3	11.0
1993	19.9	12.3	17.3	9.7	19.0	11.2
1994	18.8	11.4	17.7	9.5	18.4	10.6
1995	19.9	10.5	17.7	8.6	19.2	9.7
1996	18.1	10.0	18.0	7.9	18.1	9.1
1997	20.0	9.9	18.0	8.3	19.3	9.2
1998	20.6	10.1	20.1	9.1	20.4	9.6
1999	20.3	9.4	19.5	7.9	20.0	8.7
2000	17.6	8.3	17.2	7.6	17.4	8.0
2001	19.7	8.1	18.1	5.9	19.2	7.1
2002	20.4	7.5	18.4	6.1	19.7	6.9
2003	18.2	6.6	17.4	5.3	17.9	6.0

Source: Australia Bureau of Statistics unpublished trend data, figures for February of each year.

The data presented in Table 4 and Figure 5 tell an interesting story of the experience of the South Australian labour force since the late-1980s that differs markedly from the official story as told by the trend unemployment rate. The comprehensive unemployment rate shows that the cyclical base for labour under utilisation at the height of the boom of the late-1980s was 11.2 per cent, and not 6.7 per cent as shown by the trend unemployment rate. Figure 5 also shows that the comprehensive unemployment rate rose to 19 per cent during the trough of the recession in 1993 and remained close to that level during the remainder of the 1990s. Indeed, there is no evidence that the performance of the South Australian labour force improved during the 1990s as the comprehensive unemployment rate for 2003 was 17.9 per cent, which is 1.1 percentage points higher than the 1993 figure. That is, during the entire expansionary phase of the present business cycle some one-fifth of all labour resources in South Australia remained unemployed. Moreover, the comprehensive unemployment rate for 2003 of 17.9 per cent is nearly three times greater than the trend unemployment rate of 6.0 per cent.

Figure 5: South Australia; Comprehensive Unemployment Rate, 1989-2001, per cent, Persons



Source: Australia Bureau of Statistics unpublished trend data, figures for February of each year.

CONCLUSION

The official labour force statistics show that the South Australian labour market has more than fully recovered from the recession of the early-1990s. However, the official statistics hide two serious labour market problems, hidden unemployment and visible under employment. The two most disturbing features of the official labour force statistics for South Australia are the trends in the labour force participation rates and the rate of part-time job growth. The growth in structural unemployment and part-time employment that occurred during the 1990s has led to the creation of significant amounts of both hidden unemployment and visible under employment in South Australia which is not captured by the official measure of labour under utilisation, the trend unemployment rate. This paper sought to determine the effects of this economic restructuring and labour force restructuring by developing and applying three new measures of labour under utilisation. The real unemployment rate, which is a person rate of unemployment that adds an estimate of hidden unemployment to the trend unemployment rate. The hours unemployment rate, which is an hours rate of unemployment that adds an estimate of visible under employment to the trend unemployment rate. The comprehensive unemployment rate, which is also an hours rate of unemployment that adds estimates of both hidden unemployment and visible under

employment to the trend unemployment rate. These three measures of labour under utilisation suggest that the actual level of unemployment in South Australia is between two and three times the figure obtained from the trend unemployment rate.

The official picture of the South Australian labour market shows the trend unemployment rate peaking in 1993 and then falling over the next decade to levels not seen for nearly a generation. However, the key finding of this paper is that the level of unemployment in South Australia has not fallen appreciably from the peak attained during the trough of the recession in 1993. This finding is in stark contrast to the official picture of the history of the South Australian labour market over the past decade and a half. This re-interpretation of the history of the South Australian labour market has two significant implications for employment, economic and social policy in South Australia in particular and Australia in general.

First, the labour force statistics that are compiled by the Australian Bureau of Statistics using data obtained from the Labour Force Survey do not provide an accurate picture of the contours and dynamics of unemployment in Australia. Consequently, the Australian Bureau of Statistics needs to make two sets of changes to the Labour Force Survey. First, the Australian Bureau of Statistics needs to rethink the questions that it asks. In particular, it needs to ask a suite of questions that will provide labour force analysts with more detailed information about visible under employment. These questions would also provide the basis for the accurate calculation of an hours-rate of unemployment. Second, the Australian Bureau of Statistics needs to rethink the method by which it applies the Labour Force Survey. In particular, it needs to consider deleting the screening questions so that interviewers gather information about the labour force experiences and expectations of all people aged over the minimum school leaving age and not just those people who are employed or actively seeking employment. This different method is acceptable under the International Labour Office, Statistics Convention 150, which provides the method for calculating labour force statistics in all OECD countries. Deleting these screening questions will provide labour market analysts with better information about the level of hidden unemployment in Australia.

Second, Australia is facing a looming labour force crisis as the ageing baby boomer generation retires, to be replaced by a much smaller cohort of labour market entrants, the children of the baby bust generation. Few if any detailed studies have been undertaken in Australia into the labour market effects of these demographic changes. Moreover, little planning has been undertaken in Australia to meet these challenges. However, the findings of this paper suggest that the problem may not be as bad or as immediate as many labour market analysts are predicting. This view is based on the finding that there is a large pool of unemployed and under employed people in Australia who might be able to take some of the jobs vacated by retiring baby boomers. However, the existence of this group of people raises a number of interesting public policy challenges. In particular, what are the obstacles, on both the demand and supply sides of the labour market, that prevent these people (re)entering the labour market and how best to remove these obstacles.

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APPENDIX 1 THE REAL UNEMPLOYMENT RATE

The real unemployment rate is a person rate of unemployment that is intended to be a count of the number of people who might reasonably be expected to work in a fully employed economy, regardless of whether or not they are active job seekers or claimants. This measure adds to the trend unemployment rate estimates of the number of hidden unemployed males and females, which is determined from changes to the labour force participation rate since the early-1990s. The estimates for male and female hidden unemployment are calculated separately due to the differences in the experiences of male and female labour force participation since the end of the 1980s boom.

Males

The estimate for the level of male hidden unemployment is based on the assumption that the labour force participation rate that prevailed in 1990/1991 represents the number of men who might reasonably be expected to work in a fully employed

Australian and South Australian economy. Hence, the reduction in the labour force participation rate reflects the number of males who have given up looking for work and have slipped into the ranks of the hidden unemployed.

1. The labour force participation rate that existed at the peak of the previous business cycle (75.7 per cent for Australia in June 1990 and 75.0 per cent for South Australia in February 1991) is used as the benchmarks for this calculation. These figures are multiplied by the male civilian population age 15 and over to obtain the current male labour force if the male labour force participation rates of the early 1990s still prevailed, this is called the adjusted male labour force.
2. The adjusted male labour force obtained in Step 1 is then used as the denominator for the male real unemployment rate.
3. The difference between the adjusted male labour force obtained in step and the actual male labour force obtained from the trend labour force statistics provides the estimate of male hidden unemployment.
4. The estimate of hidden male unemployment obtained in Step 3 is then added to the official number of unemployed males, derived from the trend labour force statistics, to obtain the numerator of the real unemployment rate equation.
5. The numerator obtained in Step 4 is divided by the denominator obtained in Step 2 and then multiplied by 100 to obtain the male real unemployment rate.

Females

The estimate for the level of female hidden unemployment is based on the assumption that the labour force participation rate that currently prevails nationally represents the number of women who might reasonably be expected to work in a fully employed South Australian economy. Hence, the slower rate of increase in the South Australian female labour force participation rate reflects the number of females who have either given up looking for work or have not sought work and so have slipped into the ranks of the hidden unemployed.

1. The current national female labour force participation rate is used as the benchmark for this calculation. This figure is multiplied by the female civilian population age 15 and over to obtain an estimate of the size of the current South Australian female labour force if the current national female labour force participation rates prevailed in South Australia this is called the adjusted female labour force.
2. The adjusted female labour force obtained in Step 1 is then used as the denominator for the female real unemployment rate equation.
3. The difference between the adjusted female labour force obtained in Step 1 and the actual female labour force obtained from the trend labour force statistics provides the estimate of female hidden unemployment in South Australia.
4. The estimate of hidden female unemployment obtained in Step 3 is then added to the official number of unemployed females, derived from the trend labour force statistics, to obtain the numerator of the real unemployment rate equation.
5. The numerator obtained in Step 4 is divided by the denominator obtained in Step 2, and then multiplied by 100 to obtain the female real unemployment rate.

6. This method implicitly assumes that there is no hidden female unemployment nationally. However, this is not seen as a problem by the author as his focus is the comparison between the national and the South Australian labour forces.

APPENDIX 2 THE HOURS UNEMPLOYMENT RATE

The hours unemployment rate is an hours based unemployment rate that analyses the extent of labour under utilisation from the perspective of the number of hours that the labour force is prepared to work, rather than the number of people in the labour force. This labour force indicator adds an estimate of visible under employment to the official trend unemployment statistics. It is based on the assumption that all part-time workers who are looking for extra hours are implicitly expressing a preference for full-time work. This measure adds an estimate of the number of extra hours that part-time workers who are looking for extra work would like to work (given the assumption that such workers would like to be working full-time rather than part-time) to an estimate of the number of hours that could be worked by the people who are counted as unemployed by the trend unemployment statistics. The calculations for males and females are the same.

1. The number of males in the labour force, derived from the trend labour force statistics, is multiplied by the average number of hours worked by males to obtain the denominator of the equation.
2. The number of unemployed males is multiplied by the average number of hours worked by males to obtain an estimate of the number of labour hours unemployed.
3. The extent of visible under employment is obtained by summing the number of part-time male workers who would like to work more hours and then multiplying this figure by the number of average hours worked by males.
4. The figures obtained in Steps 2 and 3 are summed to obtain the numerator of the equation.
5. The numerator obtained in Step 4 is divided by the denominator obtained in Step 1, and then multiplied by 100 to obtain the hours unemployment rate.

APPENDIX 3 THE COMPREHENSIVE UNEMPLOYMENT RATE

The comprehensive unemployment rate adds to the trend unemployment rate estimates of the level of hidden unemployment and visible under employment, expressed as an hours rate of unemployment. This measure is therefore based on the two sets of assumptions discussed in the previous two appendixes.

Males

1. The numerator for this measure is obtained by adding three separate components;

- an hours rate of unemployment is obtained by multiplying the male trend unemployment rate by the average number of hours worked by males;
 - an hours rate of male hidden unemployment is obtained by multiplying the number of hidden unemployed males obtained in Appendix 1 by the average number of hours worked by males; and
 - the hours based estimate for male labour under utilisation obtained in Appendix 3.
2. The denominator for this measure is obtained by multiplying the denominator obtained for the male real unemployment rate in Appendix 1 by the average number of hours worked for males.
 3. The male comprehensive unemployment rate is then obtained by dividing the numerator obtained in Step 1 with the denominator obtained in Step 2 and then multiplying by 100 to obtain a percentage.

Females

4. The numerator for this measures is obtained by adding three separate components;
 - an hours rate of unemployment is obtained by multiplying the female trend unemployment rate by the average number of hours worked by females;
 - an hours rate of female hidden unemployment is obtained by multiplying the number of hidden unemployed females obtained in Appendix 1 by the average number of hours worked by females; and
 - the hours based estimate for female labour under utilisation obtained in Appendix 3.
5. The denominator for this measure is obtained by multiplying the denominator obtained for the female real unemployment rate in Appendix 1 by the average number of hours worked for males.
6. The comprehensive unemployment rate is then obtained by dividing the numerator obtained in Step 1 with the denominator obtained in Step 2 and then multiplying by 100 to obtain a percentage.

Persons.

7. The numerator is obtained by adding the values obtained in Steps 1 and 4 above.
8. The denominator is obtained by adding the values obtained in Steps 2 and 5 above.
9. The total comprehensive unemployment rate is then obtained by dividing the numerator obtained in Step 7 with the denominator obtained in Step 8 and then multiplying by 100 to obtain a percentage.