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Full Employment Abandoned – the Role of the Public Sector

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ABSTRACT

In the fifty years since the end of World War II, most OECD economies have gone from a situation where the respective governments ensured there were enough jobs to maintain full employment to a state where the same governments use unemployment to control inflation. Full employment has been abandoned in these economies. A major aspect of this move has been the changes that have occurred in public sector employment. Many economies have undergone substantial restructuring of their public sectors with significant employment losses being endured.

In this paper, we examine this decline in public service employment in Australia. It is argued that with private sector employment growing more or less commensurately with the labour force, the withdrawal of public sector employment has contributed significantly to the persistently high unemployment that Australia has experienced. If the governments expected the private sector to provide commensurately more jobs as public sector employment was cut, then they were wrong. The magnitude of private employment growth necessary to compensate for the public sector losses has been historically unattainable on any sustained basis. By failing to expand public employment, at least in line with labour force growth, the governments have allowed unemployment to persist at high levels with the associated high economic, social and personal costs. In this context, we say that at any point in time the government chooses the level of unemployment.

The paper also considers the international public employment. It has been noted that the zeal for public sector reform and large-scale job cutting was largely an Anglo-Saxon phenomenon. In most countries the growth of public sector employment outstripped sluggish employment growth and helped to attenuate the rise in unemployment. Several of these economies experienced negative private employment growth over the period 1970-99. In some economies, like Norway and Portugal, the public sector was a key factor in the maintenance of full employment.

An interesting finding is that the most notable difference between Australia and the USA is not in the performance of private employment growth but in the relative public sector employment growth rates. Over 1970-1999, Australia's average annual private employment growth was 1.91 per cent whereas the US experienced an average rate of 1.88 per cent. We show that if public employment in Australia had achieved growth of US-proportions, Australia would also have had very low unemployment in 1999.

Everyone has the right to work, to free choice of employment, to just and favorable conditions of work and to protection against unemployment.

The United Nations Declaration of Human Rights, September 24 1948.

1.   Introduction

High and persistent unemployment has pervaded almost every OECD country since the mid-1970s. The rising unemployment began with the rapid inflation of the mid-1970s. The inflation left an indelible impression on policy-makers who became captives of the resurgent new labor economics and its macroeconomic counterpart, monetarism. The goal of low inflation led to excessively restrictive fiscal and monetary policy stances by most OECD governments driven by "budget deficit fetishism" (Mitchell 1996, 1998; Wray, 1998).[2] Budgetary restraint restricted the flexibility of the fiscal/monetary policy mix and an excessive reliance on monetary policy to control demand (and hence inflation) ensued. The combined effects of tight monetary policy and restricted fiscal policy led to GDP growth in most OECD countries being generally below that necessary to absorb the growth in the labor force in combination with rising labor productivity.[3] In the fifty years since the end of World War II, most OECD economies have gone from a situation where the respective governments ensured there were enough jobs to maintain full employment to a state where the same governments use unemployment to control inflation. Full employment has been abandoned in these economies.

A major aspect of this move has been the changes that have occurred in public sector employment. Many economies have undergone substantial restructuring of their public sectors with significant employment losses being endured. In Australia, the labour force has grown at an average compound rate of 1.87 per cent per annum since 1970. Over the same period, private employment has averaged 1.91 per cent per annum, whereas public employment has averaged a rate of growth of 0.64 per cent per annum (driven heavily by the growth in the 1970-75 period). Since 1990, the public sector has declined in absolute employment every year with a rapid –2.03 per cent per annum average decline since 1995.

Since the mid-1970s, successive governments have justified the widespread changes in the public sector on efficiency grounds. Verspaandonk (2000) argues in the context of Australian Public Service reform that the "changes have been intended to ensure that the optimal benefit is extracted from public resources. They have been characterised by an emphasis on the efficient use of financial and human resources, the emulation of the private sector, the adoption of market mechanisms and an emphasis on performance control." But the public sector has to meet different objectives than a private profit-seeking firm and the concept of efficiency has to be broader with public service a priority. A concern for social efficiency is clearly different to massive job cutting. As public sector processes were streamlined to avoid waste, the Federal (and State) governments could have expanded public services with the resources released. They chose instead to contract the public sector and cut services because the goal of social efficiency was secondary to the perceived, but mistaken need to create generate budget surpluses (Mitchell, 1998; Wray, 1998).

In this paper, we examine this decline in public service employment in Australia. It is argued that with private sector employment growing more or less commensurately with the labour force, the withdrawal of public sector employment has contributed significantly to the persistently high unemployment that Australia has experienced. If the governments expected the private sector to provide commensurately more jobs as public sector employment was cut, then they were wrong. The magnitude of private employment growth necessary to compensate for the public sector losses has been historically unattainable on any sustained basis. By failing to expand public employment, at least in line with labour force growth, the governments have allowed unemployment to persist at high levels with the associated high economic, social and personal costs (Watts and Mitchell, 2000). In this context, we say that at any point in time the government chooses the level of unemployment.

The paper also considers the international public employment experience and the analysis reveals that public employment in only five countries failed to keep pace with labour force growth (Australia, New Zealand, United Kingdom, USA, and the Netherlands). It has been noted that the zeal for public sector reform and large-scale job cutting was largely an Anglo-Saxon phenomenon (Scharpf, 1999). In most countries the growth of public sector employment outstripped sluggish employment

growth and helped to attenuate the rise in unemployment. Several of these economies experienced negative private employment growth over the period 1970-99. In some economies, like Norway and Portugal, the public sector was a key factor in the maintenance of full employment.

The paper is structured as follows. Section 2 documents the progressive degradation in the way economists talk about full employment that has occurred since Beveridge (1944) defined full employment as being the state where there were enough jobs to match the available workforce willing to work. Sections 3 and 4 analyses the changes that have occurred in the public sector labour market in Australia and in other OECD economies. Empirical results are presented to support the hypothesis that the major explanation for the persistently high unemployment is the failure of the public sector to meet the gap between labour force growth and private sector employment growth. Section 5 presents regression results, which estimate the cyclical sensitivity of public sector employment in Australia. It is found that in the 1990s, public employment began to act in a pro-cyclical fashion for the first time, and that there has been significant structural changes in the composition of labour market employment since the 1960s. Concluding remarks follow.

2. From full employment to persistent unemployment

2.1 A focus on jobs

There have been several stages in the way economists conceive of full employment since the end of World War II (see Mitchell, 2001 for a longer version). The stages have coincided with major changes in economic thinking over this period. Immediately following the War, the emphasis of macroeconomic policy was to promote full employment using budget deficits. Beveridge (1944: 123-135) said:

> The ultimate responsibility for seeing that outlay as a whole, taking public and private outlay together, is sufficient to set up a demand for all the labour seeking employment, must be taken by the State…

The emphasis was on jobs. Beveridge defined full employment as an excess of vacancies at living wages over unemployed persons. Nobel prize winner, the late William Vickrey (1993) said,

> I define genuine full employment as a situation where there are at least as many job openings as there are persons seeking employment, probably calling for a rate of unemployment, as currently measured, of between 1 and 2 percent.

From the end of the War until the mid-1970s, governments assumed this responsibility and they used monetary and fiscal policy to maintain levels of demand sufficient to ensure enough jobs were created to meet the demands of the labour force, given labour productivity growth. Unemployment rates were usually below 2 per cent throughout this period (see Figure 1).

Figure 1 The Aggregate Unemployment Rate Australia – 1861-2000
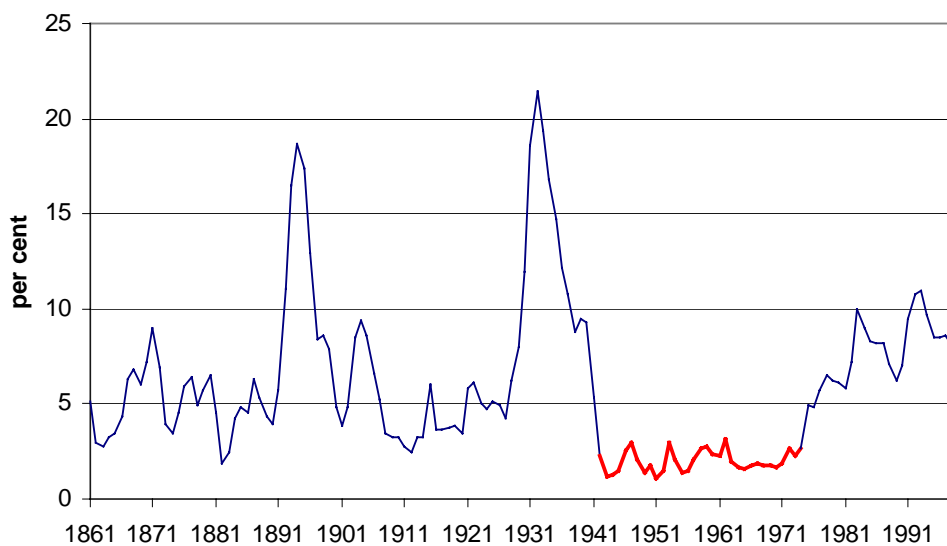
Source: ABS *Labour Force*, 6203.0, Withers *et al* (1985).

The period of low unemployment (and falling inequality) from 1950-1974 was rather short in historical terms. Prior to the Great Depression, the role of government in stabilising economic fluctuations was non-existent. The market system was highly unstable with the unemployment rate rarely below 5 per cent. Economists of the day believed that mass unemployment was impossible because the market would always adjust prices to ensure full employment. This is despite very high unemployment in the 1890s. The Great Depression taught us that free market policies, like cutting wage rates, did not solve mass unemployment.

2.2   The focus on unemployment

Economists soon shifted the focus from jobs to unemployment. The debate about what constituted the irreducible minimum rate of unemployment (Bancroft, 1950; Dunlop,

1950; and Slichter, 1950), gave way to models of unemployment and inflation (Mitchell, 1999c). The Phillips curve in its various guises proposes a relationship between unemployment and inflation and raises the question of the existence and nature of a trade-off between nominal and real economic outcomes. Full employment was no longer debated in terms of a number of jobs. Instead it was defined as the rate of unemployment that was politically acceptable in the light of some accompanying inflation rate.

2.3   The paradigm shift - the Natural Rate Hypothesis

This concept of full employment was challenged by expectations-augmented Phillips curve of Friedman (1968) and Phelps (1967), which established the concept of the natural rate of unemployment (NRU). Allegedly, the inflation-unemployment tradeoff was, in fact, a trade-off between unemployment and unexpected inflation. When all expectations are realised, the NRU is the only unemployment rate consistent with stable inflation. Mitchell (1999d, 2001) argues that this was a major theoretical break from the existing Phillips curve orthodoxy because the causality from quantity disequilibria to price changes was reversed. Unemployment was considered voluntary – the outcome of optimising choices by individuals between work and leisure. Accordingly, discretionary aggregate demand management was considered futile and so the link between the use of budget deficits to restore deficient demand and the maintenance of low unemployment was abandoned - Says Law was restored.

Full employment occurred at the NRU even if that involved considerable unemployment. Mitchell (1987b) describes how Australian economists defined full employment in the mid-1980s as being equivalent to an 8 per cent unemployment rate. According to the theory, the NRU could only be reduced by microeconomic changes if it was considered to be excessive. As a consequence, the policy debate became increasingly concentrated on deregulation, privatisation, and reductions in the provisions of the Welfare State (Thurow, 1983; Ormerod, 1994). Unemployment continued to persist at high levels.

2.4   The NAIRU

The NRU is closely related to the concept of the non-accelerating inflation rate of unemployment (NAIRU), first proposed by Modigliani and Papademos (1975).

Modigliani and Papademos (1975: 142) said a NAIRU existed, "such that, as long as unemployment is above it, inflation can be expected to decline". A common consensus developed of a constant NAIRU, differentiated from the NRU by theoretical nuance, but with the same policy message.[4] The resulting "fight-inflation-first" message has dominated public policy makers since the first oil shocks of the 1970s, and has exacted a harsh toll in the form of persistently high unemployment. Full employment as initially conceived was abandoned (Hughes, 1980).[5]

2.5   The Reserve Bank and the NAIRU

The Reserve Bank of Australia (RBA) was legally constituted to pursue full employment as one of its three goals (price stability and general welfare being the others). The functions of the RBA Board are set out in Section 10 of the Reserve Bank Act 1959. However, the RBA has been significantly influenced by the NAIRU concept and it conducts monetary policy in Australia to meet an openly published inflation target. The persistently high unemployment in Australia over the last 25 years, would suggest that the RBA is not working within its legal charter.

In September 1996, the Treasurer and Reserve Bank Governor issued the *Statement on the Conduct of Monetary Policy*, which set out how the RBA was approaching its goals, and articulated that inflation control was its primary policy target (RBA, 1996: 2): The RBA emphasises the complementary role that "disciplined fiscal policy" has to play in an inflation-first strategy. There was no discussion about the links between full employment and price stability except that price stability in some way generated full employment even though the former required disciplined monetary and fiscal policy to achieve it. In a stagflation environment if price spirals reflect cost-push and distributional conflict factors the RBA will always have to control inflation by imposing unemployment.

The RBA answers this apparent contradiction by arguing that the trade-off between inflation and unemployment is not a long-run concern because, following NAIRU logic, it simply doesn't exist. Edey (1999), the Head of Economic Analysis at the RBA, says, "Ultimately the growth performance of the economy is determined by the economy's innate productive capacity, and it cannot be permanently stimulated by an expansionary monetary policy stance. Any attempt to do so simply results in rising

inflation." The empirical evidence is clear that the economy has not provided enough jobs since the mid-1970s and the conduct of monetary policy has contributed to the malaise. The RBA has forced the unemployed to engage in an involuntary fight against inflation and the fiscal authorities have further worsened the situation with complementary austerity.

2.6   The impact of the policy changes

Since 1974, the ideas of free market economists have dominated the policy debate despite being discredited during the Great Depression. The resulting policies were based on a belief that the market would generate full employment if left to operate without government regulation.[6]

Figure 2 Labour Force and Employment (persons), Australia, 1950-2000
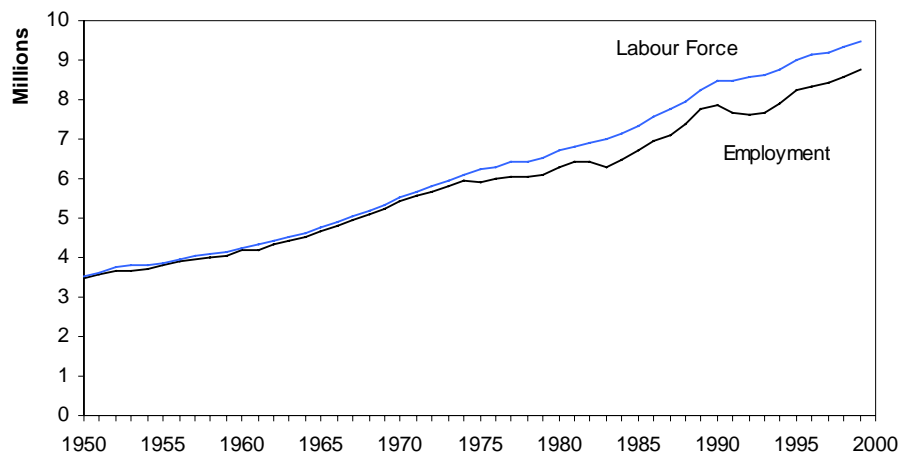
Figure 2, shows that since the change in policy stance in the mid-1970s total employment has failed to grow in proportion to the labour force. This divergence between total employment and the labour force reflects the performance of both private and public employment, which are analysed in the next section. We show that over the 30 years to 1999 the public sector has substantially reduced its role as an employer, and the private sector has been unable to generate compensatory increases in jobs growth. The result has been the persistently high unemployment since the mid-1970s.

3   The withdrawal of public sector employment

3.1   A simple model

We begin with a labour force definition:

(1) $L = P + P_g + U$

where L is the labour force and P is total private employment, P_g is total public employment, and U is total unemployment. U is the sum of frictional unemployment (U_f) and demand-deficient unemployment (U_d).

Full employment is taken to mean the provision of enough public and private jobs to match labour supply[7] minus some constant proportion α of frictional unemployment.[8] We define the private employment gap, *PGAP* as the level of public employment required to achieve full employment once private employment is determined. So:

(2) $PGAP = \left[L(1-\alpha) - P \right] = P_g + U_d$

If P_g < *PGAP*, then U_d will be positive and the economy departs from full employment. Accordingly, we define the unemployment gap (*UGAP*) as:

(3) $UGAP = U_d = PGAP - P_g$

For given rates of labour force growth (r_L) and private employment growth (r_P), the one-period change from time t in *PGAP* is:

(4) $\Delta PGAP_t = L_t(1-\alpha)r_L - P_t r_P$

PGAP varies with the respective growth rates and the private employment rate. From Equations (2) to (4), we can derive the public employment growth rate that ensures a stationary level of U_d from period t:

(5) $r_g = \dfrac{1}{P_{gt}} \left[L_t r_L (1-\alpha) - P_t r_P \right]$

where r_g is the public employment growth rate. This condition has to be satisfied each period for full employment to be maintained. The right-hand side of (5) is

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$\left(\Delta PGAP_t / P_{gt}\right)$, which tells us that the greater the increase in the private employment gap, the greater must r_g be for demand-deficient unemployment to remain constant. *UGAP* will be positive if *P* and/or P_g are insufficient to match the labour force (net of frictional unemployment). With reasonable assumptions made about labour force growth (conditioned by the magnitudes common since the mid-1970s) and the cyclical nature of private employment growth, it becomes manifestly obvious that sustained full employment requires a robust and counter-cyclical public employment growth rate.

3.2   The Australian experience

What have been the effects of the policy changes discussed in Section 2 on public sector employment and the ability of the economy to sustain full employment? A marked fact about the labour market in Australia over the last 25 years or so is the withdrawal of the public sector as an employer. Table 1 summarises the sectoral employment aggregates between 1970 and 1999 for wage and salary earners, while Table 2 reports the average (compound) annual growth rates for various periods for total employment across the major sectoral categories. The public sector in Australia has been shrinking since the mid 1980s, both absolutely and as a proportion of total employment. Over the period 1984-1999 there was an overall decline in public sector employment of 11.8 per cent, the largest decline being at the Commonwealth level (-41.8 per cent). The share of public employment in total employment also declined, by one-third between 1984 and 1999 from 31.3 per cent in 1984 to 20.3 per cent in 1999.

From Table 2, we see that private employment grew on average at a rate of 1.91 per cent per annum compared to the labour force, which grew by 1.87 per cent per annum for the period 1970-1999. *PGAP* exhibited positive growth over this period because $r_P < L_t(1-\alpha)r_L / P_t$. The private employment rate (using total civilian employment) was 76.5 per cent in 1970 and rose to 77.5 per cent by 1990. Overall public sector employment growth (averaging 0.6 per cent per annum) did not satisfy Equation (5) and unemployment soared (net of the proportional growth in frictional unemployment).

Table 1 Sectoral employment trends for wage and salary earners in Australia, 1970 to 1999

Sector	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Commonwealth	329.2	396.2	397.4	434.4	406.7	410.3	397	382.3	359.8	371.7	354.8	287.7	264.7	245.6
% of total employment	6.1	6.9	6.8	7.8	6.2	6.5	6.4	6.1	5.6	5.6	5.2	4.2	3.8	3.4
State	620.8	893.4	1004.1	1108.8	1179.1	1160.2	1139.8	1129.3	1069.3	1077.8	1075.9	1047.6	1070.7	1079.9
% of total employment	11.6	15.5	17.2	19.9	18.0	18.4	18.4	17.9	16.8	16.1	15.6	15.2	15.4	15.0
Local	104.7	139.5	129.8	153.8	160.3	160.9	161.1	163.5	159.2	153.5	154.7	148.8	138	138.7
% of total employment	1.9	2.4	2.2	2.8	2.4	2.6	2.6	2.6	2.5	2.3	2.2	2.2	2.0	1.9
Total Public Sector	1054.7	1429.1	1531.3	1697	1746.1	1731.4	1697.9	1675.1	1588.3	1603	1585.4	1484.1	1473.4	1464.2
% of total employment	19.6	24.9	26.2	30.4	26.7	27.5	27.4	26.5	24.9	24.0	23.0	21.6	21.2	20.3
Total Private Sector	4317	4317	4317	3885	4801.9	4574.3	4508.7	4642.4	4791	5078.7	5298.9	5390.2	5461	5759.1
% of total employment	80.4	75.1	73.8	69.6	73.3	72.5	72.6	73.5	75.1	76.0	77.0	78.4	78.8	79.7
Total Employment	5371.7	5746.1	5848.3	5582	6548	6305.7	6206.6	6317.5	6379.3	6681.7	6884.3	6874.3	6934.4	7223.3

Source: ABS, Civilian Employees, Australia, various, APS Statistical Bulletin, various (Public Service and Merit Protection Commission), ABS, The Labour Force, Australia, 6203.0, ABS, Wage and Salary Earners, Australia, 6248.0

Table 2 Annual labour market growth rates for various periods by sector

Period	Private		PTE		GG		Public		Total		LF		PGAP		UN	
	Growth	Change	Growth	Change	Growth	Change	Growth	Change	Growth	Change	Growth	Change	Growth	Change	Growth	Change
1970-1999	1.9	3100.2	-2.8	-262.5	1.8	508.0	0.6	245.5	1.7	3345.8	1.9	3934.3	1.73	834.1	7.1	588.5
1970-1975	1.1	239.1	0.3	7.1	5.9	242.8	3.8	249.9	1.7	489.1	2.4	704.3	6.33	465.2	27.3	215.2
1975-1985	1.2	544.5	0.7	34.2	2.0	217.1	1.6	251.3	1.3	795.7	1.6	1091.7	2.75	547.2	7.0	296.0
1985-1990	4.1	1112.5	-1.9	-47.2	1.2	76.1	0.3	28.9	3.2	1141.5	2.9	1131.8	0.17	19.3	-0.3	-9.7
1990-1995	1.7	550.0	-6.9	-137.1	-0.4	-23.8	-1.9	-160.9	1.0	389.0	1.3	566.0	0.14	16.0	5.4	177.0
1995-1999	2.4	654.1	-11.0	-119.5	-0.1	-4.2	-2.0	-123.7	1.6	530.5	1.2	440.5	-2.36	-213.6	-3.1	-90.0

Source: ABS Labour Force, 6248.0. Growth is the average annual compound growth rate and change in the absolute change in thousands. Private is private total employment, PTE is public trading enterprises employment, GG is general government employment, Public is total public employment, Total is total employment, LF is the labour force, PGAP is the private employment gap, and UN is total unemployment.

Assuming full employment prevailed in 1970, Equation (5) tells us that the required average annual (compound) rate in public employment had to 2.12 per cent per annum compared to the actual rate of 0.6 per cent. This would equate to an extra 764.1 thousand jobs in the public sector. General Government employment increased by 508 thousand jobs, which was roughly proportional with labour force growth. However, following the mass privatisations in the late 1980s and throughout the 1990s, employment in the public enterprises has plummeted (304 thousand jobs lost since 1985). The losses accelerated in the 1990s. The privatisations transferred public sector employment to the private sector. But the growth in private employment has not been sufficient to offset the public sector losses.

The evidence negates the claims that the private sector would absorb workers released from the public sector after the severe cutbacks. The private sector has not been able to increase its employment growth sufficiently. The *PGAP* has only fallen in recent years after a combination of historically strong private employment growth and below average labour force growth. Further, while private sector employment growth has more or less matched labour force growth, there has been a dramatic rise in the ratio of part-time employment. This may reflect the changing preferences of the workforce for casual arrangements. But ABS data shows that since 1978, the percentage of part-time workers who wanted to work more hours had doubled (now at around 29 per cent). Mitchell and Carlson (2000) have developed two hours-based measures of the unemployment rate, which show that there is substantial underemployment in the Australian labour market.

Figure 3 plots the *UGAP* (right hand scale), the *PGAP* (left hand scale), and total public employment (left hand scale) for the period 1970 to 1999. The frictional unemployment proportion α is computed as the average unemployment rate from 1965-1969 (for all countries in this paper). For Australia, this means that full employment would require unemployment of 168.4 thousand (against actual unemployment of 680.6 thousand) in 1999. The rising unemployment gap over the period is indicative of the failure of public sector employment to satisfy Equation (5), which would have required it to grow proportionately with the labour force and to respond in a counter-cyclical manner sufficient to offset to the cyclical variations in private sector employment.

Figure 3 Public Employment, Private Employment Gap, Unemployment Gap, 1970-1999
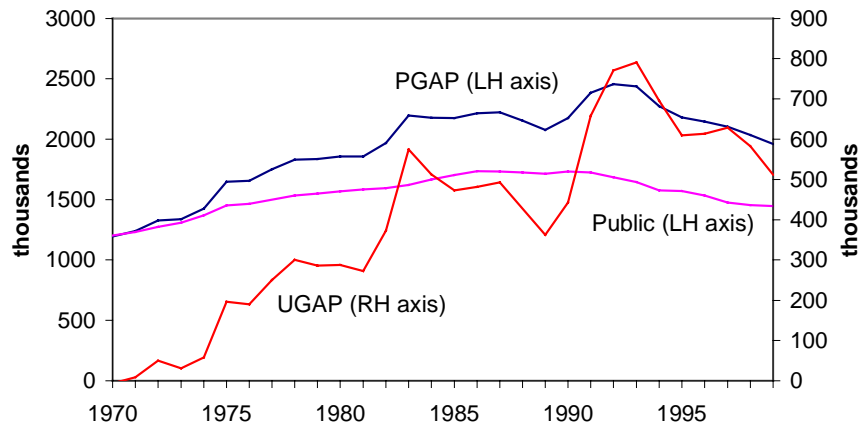
The *PGAP* rose sharply over 1973 and 1974 with private employment growth slowing to 1.4 per cent in 1973 and then –2.3 per cent in 1974 (see Appendix Table). The labour force grew at 2.5 and 2.6 per cent per annum for 1973 and 1974, respectively. The public sector responded in 1974 and 1975 with significant increases in employment growth, which constrained, to a modest extent, the rise in the unemployment rate. In 1975, unemployment grew by 141 thousand. Despite a slowing labour force growth rate in the second half of the 1970s the private gap continued to rise with private employment growth being poor (and negative again in 1978). Over 1979-1981, unemployment fell in total by a meagre 20.4 thousand with both private employment and the labour force growth accelerating fuelled by the minerals boom rhetoric. It was in retrospect, the calm before the storm. Demand plunged sharply over 1982 and 1983 with the cyclical decline in private employment growth (-0.1 in 1982 and –3.0 in 1983), and public employment growth failed to respond sufficiently (0.6 in 1982 and 1.7 in 1983). Unemployment rose by 305.7 thousand over this period. The economy was not able to provide enough jobs over the decade from 1975 to 1985. Labour force growth (averaging 1.63 per cent per annum) outstripped the parlous private employment growth (averaging 1.16 per cent per annum) and public sector employment grew in proportion with the labour force.

The recovery period from 1985 to 1990 saw a major resurgence in private employment growth (averaging 4.09 per cent per annum adding 1,112.5 thousand jobs) and labour force growth (averaging 2.92 per cent per annum adding 1,131.8 thousand available workers). As a consequence, the private employment gap

continued to grow (by 19.3 thousand). The public sector was at the beginning of its major decline with 47.2 thousand jobs being lost in the public trading enterprises (average decline of –1.94 per cent per annum) and only 76.1 thousand added through general government (growth averaged 1.24 per cent per annum). The unemployment gap fell by only 28.6 thousand over this period because the public sector only chose to achieve average employment growth of 0.34 per cent per annum. Private sector employment growth in this period was at the upper end of the possible. The failure of the public sector to provide satisfactory employment growth meant that the economy was unable to build on the private sector growth and reduce unemployment significantly. As an example, even if the public sector had have grown in proportion to the labour force during this period, an extra 246.3 thousand jobs would have been created and the unemployment gap would have fallen from 452.7 thousand to 206.4 thousand by 1990. The period demonstrated that full employment was unlikely to be achieved if the public sector did not increase its contribution to employment substantially. Australia locked itself into this high unemployment level because the public contribution did not come. It was a major opportunity missed.

The recession in 1990-92 was the first example of the public sector employment failing to exhibit counter-cyclical behaviour. Between 1990 and 1992, private employment slumped (losing 175 thousand jobs) and over the 5-year period to 1995, the private sector added half as many jobs (550 thousand) as they did in the last half of the 1980s. This slowdown in employment creation was exacerbated by the public sector choosing to lose 160.9 thousand jobs over 1990-95. Unemployment soared as a result (rising 177 thousand), building on the stock that was built up in the 1980s by deficient public employment. The asymmetry noticed in the 1980s, whereby the unemployment level increases quickly in a downturn but fails to fall as quickly during expansion was also observed in the 1990s. Despite stronger private growth between 1995-1999 (adding 654 thousand jobs when the labour force expanded by only 440.5 thousand), unemployment only fell by 90 thousand. The continued public sector decline (losing 123.7 thousand jobs) meant that the stronger private sector could not be consolidated upon to bring substantial reductions in unemployment.

As an experiment, Figure 4 shows the relationship between the private employment gap and public sector employment assuming that public employment growth matched

labour force growth over the period (ignoring discouraged worker effects and therefore understating the problem). The result is that 610.5 thousand jobs would have been created by 1999 with the official unemployment rate being 0.7 per cent. As a result, the economy would have been operating at over-full employment at that point in time. In other words, the explicit decision by the government to withdraw from its employment responsibility has been instrumental in generating the high unemployment we still face.

Figure 4 Actual and simulated public employment and the private employment gap, 1970-99
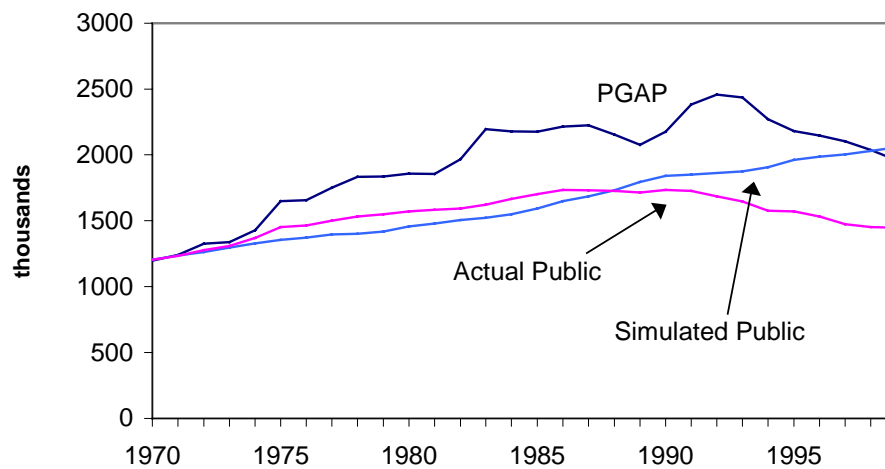
4   The international experience

Table 4 shows public employment shares and unemployment rates for as many OECD countries that comparable data was available. Japan, Norway, Switzerland, and to a lesser extent the USA, Sweden, Austria and Portugal stand out as having low unemployment rates. The first three mentioned never followed the high unemployment path that most of the OECD economies trod (see discussion in Mitchell, 1996).[9] The economies that avoided the plunge into high unemployment maintained a "sector of the economy which effectively functions as an employer of the last resort, which absorbs the shocks which occur from time to time..." (Ormerod, 1994: 203).

There appears to be no strict relationship between the relative size of public sector (general government) employment and the unemployment rate. Table 4 also shows the percentage total public employment closure of *PGAP* between 1970-1999. The

higher the percentage, the lower the build up of demand-deficient unemployment over that period. The best performers were the United States (105.8 per cent), Portugal (99.6 per cent), Ireland (98.9 per cent), Norway (91.0 per cent), and Denmark (76.9 per cent). Australia (32.1 per cent), Germany (31.5 per cent), and New Zealand (25.7 per cent) clearly had the lowest public sector percentage contribution over the period.[10]

Table 5 (in four sections) shows growth rates and changes for private, public, and total employment, the labour force, and changes in the *PGAP* and the *UGAP*. Several features can be noted. First, public employment in only five countries failed to keep pace with labour force growth (Australia, New Zealand, United Kingdom, the Netherlands, and to a lesser extent the USA). It has been noted that the zeal for public sector reform and large-scale job cutting was largely an Anglo-Saxon phenomenon (Scharpf, 1999). In most countries the growth of public sector employment outstripped sluggish labour force growth and helped to attenuate the rise in unemployment. Second, public sector employment in many countries shifted form being counter-cyclical in the 1970s to being pro-cyclical in the 1990s (Austria, Australia, Belgium, Denmark, Finland, Italy, The Netherlands, New Zealand, Sweden, and the United Kingdom (switched in the 1980s). Third, several economies experienced negative private employment growth over the period 1970-99 (Belgium, Denmark, Finland, Italy, Spain and Sweden). Fourth, a common trend was the declining growth in public employment in the late 1990s in many European economies (Austria, Belgium, Finland, France, Germany, Italy, the Netherlands, and Sweden). Most notable is the fact that in some economies, like Norway and Portugal, the public sector has sustained steady employment growth since 1970 and that has been a key factor in the maintenance of full employment. Fifth, the relatively low unemployment rate in the United States is often attributed to their relatively free labour markets and wage fixing mechanisms (for example, Macfarlane, 1997). But our analysis makes it clear that the public sector employment growth (averaging 1.6 per cent per annum) in the United States has nearly tracked labour force growth (averaging 1.8 per cent per annum) and after allowing for frictional unemployment increases has more than closed the *PGAP*, thus complementing the strong private employment growth. However, the most notable difference between Australia and the USA is not in the performance of private employment growth but in the relative

public sector employment growth rates. Over 1970-1999, Australia's average annual private employment growth was 1.91 per cent whereas the US experienced an average rate of 1.88 per cent. As Figure 4 shows, if public employment in Australia had achieved growth of US-proportions, Australia would also have had very low unemployment in 1999.

Austria experienced sluggish labour force growth (0.6 per cent per annum) over the 1970-1999 period, and public employment (2.1 per cent per annum) outstripped private growth (0.3 per cent). The *PGAP* rose throughout this period and Austria's unemployment position worsened as it cut back public employment in the 1990s. Public sector employment still maintained a counter-cyclical role in the recessions during the 1980s and 1990s. In Belgium, private growth over 1970-1999 was negative, and public employment growth was twice the rate of the labour force growth. The 206 thousand jobs added in the public sector over this period certainly restricted the rise in unemployment. In the 1990s, the public sector also abandoned its counter-cyclical employment role and unemployment worsened. Over 1970-1999, Denmark also experienced negative private sector growth (losing 76 thousand jobs) whereas public growth (2.4 per cent per annum) was 4 times the labour force growth (average per annum). The change in public employment (404 thousand) nearly matched labour force expansion (455 thousand). Most of this growth occurred in the 1970-89 period. The private sector in Finland lost 100 thousand jobs over 1970-1999, with severe losses in the early 1990s recession. The public sector certainly played a strong role in modifying the unemployment in the period up to the 1990s but abandoned its counter-cyclical role in the 1990s. The sharp rise in unemployment coincided with this change in public sector role.

The Netherlands is an interesting case as it has not sustained strong public employment growth but has also been able to bring its unemployment rate down to 3.3 per cent in 1999. However, there is evidence that the pace of labour force growth has been restrained by attractive disability pensions and that the ratio of part-time to full-time employment has increased markedly (Muysken, 1998).

Portugal's private sector growth (averaging 1.0 per cent per annum) lagged behind labour force growth (averaging 1.4 per cent per annum) since 1970. But Portugal has avoided the high unemployment that would have arisen under these circumstances

because their rate of public sector growth has been 3 times that of the labour force since 1970. Their public employment share has nearly trebled over this period. Importantly, the public sector played a strong counter-cyclical role in the early 1990s as recession hit private employment levels keeping the unemployment rate overall below the OECD average during 1990-95. As private sector growth resumed between 1995-99, the public sector reduced its employment growth. The economy now has very low unemployment rates.

Japan's public employment share is the lowest of all the countries examined and has barely changed over the 1970-1999 period. It also avoided the rise in unemployment in the 1970s and the early 1990s. It is important to note that in both periods, when the private employment growth rate was slower than usual, the public employment growth picked up, thus providing a counter-cyclical offset. Further, in 1995-1999 period, unemployment rose to historically high levels in Japan as public employment growth plummeted to match the parlous state of the private sector labour market. So to some extent it is not necessarily the size of the public employment share that is important but at which points in the cycle public employment growth increases and decreases.

Norway is also notable because it avoided the stagflation period completely, although the European-wide recession in the 1990s did see unemployment rise. Norway experienced the major labour market changes that have occurred across the OECD. First, labour force participation rates increased from 60 per cent in 1972 to 70 per cent in 1997. Second, 44 per cent of working age women had paid employment in 1972 but this rose to 64 per cent in 1997 (one of the highest female participation rates in the OECD). Third, it has undergone a substantial change in its industrial and employment composition. The manufacturing sector has declined sharply and increasing numbers are employed in the service sector, with the public employment share rising sharply. While the shift towards service sector employment is a common trend in OECD economies, the increase in Norwegian public sector employment is striking (public employment share doubled since 1966 and it added twice as many jobs as the private sector over the 1970-1999 period).

There are several reasons for the sustained strength in Norway's labour market (Hanisch, 1998). First, it has enjoyed substantial export income from oil and gas.

Second, there have been a strong public sector presence in the labour market; a factor not replicated in most other OECD economies. Public job creation programs were expanded in the early 1990s (1988 - 8,000 jobs provided, 1994 - 64,000 jobs) and combined with on-the-job training schemes designed to maintain an evolving skill base in the labour force. The job slots are cut back as the private sector expands. The job creation schemes are targetted at vulnerable groups like the youth. Norway has one of the lowest youth unemployment rates because the government introduced a Youth Guarantee with provides anyone under the age of 20 a public sector job if they are unable to get a private sector job. In addition, and again unlike many other countries, the government is committed to assisting older workers and occupationally handicapped workers maintain employment via the job creation schemes. The Australian government policy, not dissimilar to most OECD governments, has been to induce these workers into inactivity by appropriate scaling of benefits. Third, the government also manages a series of large public investment projects, similar to Japan, which expand when private sector activity is waning. Several major projects have helped to maintain strong public demand in the labour market (for example, a new national hospital in Oslo and a new airport). The U.S. Department of Labor (1994) noted, "The single most important element of Norway's post-war labor market policy has been the goal of full employment.

In the 1980s, Sweden was held out as a model for Australia to follow (see Department of Trade, 1987). At that time, it had full employment, strong public sector employment growth, but had experienced consistent negative private employment growth since the 1970s. The recession hit the economy badly and nearly half a million jobs were shed between 1990-95. In contrast to Norway, the public sector followed the other Scandinavian countries and cut public sector employment during the recession, exacerbating the private losses. The recovery then begins from higher unemployment rate than otherwise.

Switzerland is another country that has avoided the stagflation experienced by most other countries during the 1970s, and was only moderately affected by the recession of the early 1990s. Public sector employment has been growing in importance even though it is still below average for the countries examined. Lane (1999), however, suggests that with major OECD data revisions recently for Switzerland, that it is not

the outlier once thought in this regard. Bernauer (1999) says, "Switzerland is much closer to the standard West–European "welfare state" than to the Anglo–Saxon "welfare society" in terms of its share of the public sector in GDP. … the Swiss Public Choice school has based one of its key–propositions – that the peculiar features of Switzerland's political system are responsible for the small size of its public sector – on data that massively underestimate the size of the Swiss public economy." Certainly, in the 1970-75 period, when the private sector was in recession, public employment in Switzerland played a counter-cyclical role and unemployment hardly rose. Again, in the early 1990s, public employment provided a major offset to the private sector employment losses.

A final notable point is that the United Kingdom was the only country to exhibit negative public sector growth between 1970-1999 (averaging –0.7 per cent per annum) with heavy job losses occurring (around 1.5 million) in the 1990-95 period. During the recession, there was also negative labour force growth and this constrained the rise in unemployment. While the private sector added 2.5 million jobs between 1985-90 and 1.4 million jobs between 1995-99, the unemployment rate was still nearly 6 per cent at the end of the decade because the private sector could not match the sum of the labour force growth and the public withdrawal.

It appears reasonable to conclude that the economies that avoided the plunge into high unemployment benefitted from counter-cyclical public employment activity and a strong commitment by the government to full employment. In this sense, the economies maintained at least a semblance of an employer of the last resort capacity.

Table 4 General government employment shares and unemployment rates in selected OECD countries by year

	Public/ PGAP[a]	Government Share of Total Employment (%)							Aggregate Unemployment Rate (%)						
	%	1970	1975	1980	1985	1990	1995	1999	1970	1975	1980	1985	1990	1995	1999
Canada	75.6	20.7	22.5	20.4	21.6	21.5	21.9	20.3	5.7	6.9	7.5	10.5	8.1	9.4	7.6
USA	105.8	16.0	17.1	16.4	15.3	15.4	15.4	15.1	4.9	8.5	7.2	7.2	5.6	5.6	4.2
Australia	32.1	13.6	16.6	17.4	17.7	16.1	15.1	14.0	1.7	4.9	6.0	8.2	7.0	8.5	7.2
Japan	38.0	7.7	8.7	8.8	8.7	8.1	8.3	8.3	1.2	1.9	2.0	2.6	2.1	3.2	4.7
NZ	25.7	15.8	17.3	17.9	16.3	16.6	14.1	13.7	0.1	0.3	2.5	3.5	7.8	6.3	6.8
Austria	60.2	9.0	10.6	11.7	13.3	14.0	14.6	14.2	2.3	2.1	1.8	4.8	5.4	6.6	6.6
Belgium	39.5	13.3	15.3	18.3	19.7	19.0	18.3	18.0	1.3	3.5	6.7	10.4	6.7	9.9	9.0
Denmark	76.9	17.0	23.3	28.0	29.3	29.6	30.3	29.9	1.3	5.2	6.9	8.9	9.4	10.2	5.5
Finland	56.2	13.5	16.5	19.3	21.5	23.0	25.8	24.3	1.9	2.3	4.7	5.1	3.2	15.2	10.2
France	46.3	18.0	19.3	20.2	22.3	23.3	25.2	24.7	2.5	4.0	6.2	10.2	8.9	11.6	11.1
Germany	31.5	11.2	13.8	14.6	15.5	15.1	13.2	12.4	0.6	4.0	3.2	8.0	6.2	8.1	9.0
Ireland	98.9	10.6	12.7	14.5	15.9	14.4	13.6	11.2	5.8	7.3	7.3	17.4	13.7	12.2	5.5
Italy	38.4	12.2	14.4	15.4	16.7	17.3	18.0	16.8	5.4	5.9	7.6	10.1	11.4	11.7	11.4
Netherlands	49.5	11.1	12.5	13.4	14.3	13.2	12.0	10.7	1.0	5.8	6.1	8.3	6.2	6.9	3.3
Norway	91.0	17.7	21.4	24.1	25.6	26.4	31.5	30.9	1.4	2.2	1.7	2.6	5.2	4.9	3.2
Portugal	99.6	8.5	9.2	11.6	11.6	14.8	18.3	18.7	4.3	4.0	8.4	8.9	4.9	7.2	4.4
Spain	39.9	4.9	6.8	9.3	9.9	13.1	14.4	15.5	2.7	4.1	10.9	20.9	15.7	22.7	15.9
Sweden	72.5	20.9	25.7	30.7	33.3	32.0	32.1	31.2	2.6	1.6	5.1	2.8	1.7	7.7	5.6
Switzerland	69.1	9.9	12.0	13.4	13.3	12.9	13.9	13.6	0.0	0.3	0.2	1.0	0.5	4.2	2.7
UK	(b)	18.1	20.8	21.2	21.6	19.5	14.2	13.3	2.4	3.6	6.1	11.6	5.9	8.6	5.9
Average		13.5	15.8	17.3	18.2	18.3	18.5	17.8	2.5	3.9	5.4	8.1	6.8	9.0	7.0

Source: OECD Economic Outlook Database, 1960-1999. The government employment refers to general government employees only. The unemployment rates are based on the individual country definitions.

a) Public/*PGAP* is the ratio of changes in total public employment to changes in *PGAP* for the period 1970-1999.

b) Over the period, UK public employment fell by 838 thousand whereas the *PGAP* grew by 218.4 thousand.

Table 5 Annual average growth rates and changes (000's) for various periods

	Public		Private		Total		Labour Force		PGAP	UGAP
	Growth	Change	Growth	Change	Growth	Change	Growth	Change	Change	Change
Austria										
1970-1999	2.1	255.7	0.3	251.6	0.5	507.2	0.6	687.7	425.0	169.4
1970-1975	4.1	70.5	0.5	75.2	0.8	145.8	0.9	156.1	78.4	7.8
1975-1980	2.5	50.4	0.2	29.5	0.4	79.9	0.4	77.6	46.8	-3.6
1980-1985	2.2	49.7	-0.8	-130.3	-0.4	-80.6	0.0	5.7	135.9	86.2
1985-1990	1.9	48.5	0.7	114.6	0.9	163.1	1.0	189.4	71.7	23.3
1990-1995	1.4	37.1	0.4	71.3	0.6	108.4	0.8	158.3	84.5	47.4
1995-1999	0.0	-0.6	0.7	91.3	0.6	90.7	0.6	100.6	7.7	8.3
Australia										
1970-1999	0.6	245.5	1.9	3100.2	1.7	3345.8	1.9	3934.3	764.1	518.5
1970-1975	3.8	249.9	1.1	239.1	1.7	489.1	2.4	704.3	452.7	202.7
1975-1980	2.3	117.7	1.0	248.6	1.2	366.2	1.6	466.0	209.1	91.5
1980-1985	1.6	133.6	1.5	295.9	1.5	429.5	1.8	625.7	318.7	185.1
1985-1990	0.3	28.9	4.1	1112.5	3.2	1141.5	2.9	1131.8	-0.8	-29.8
1990-1995	-1.9	-160.9	1.7	550.0	1.0	389.0	1.3	566.0	5.9	166.9
1995-1999	-2.0	-123.7	2.4	654.1	1.6	530.5	1.2	440.5	-221.4	-97.8
Belgium										
1970-1999	1.2	206.2	0.0	-18.6	0.2	187.6	0.5	522.6	525.0	318.8
1970-1975	3.0	79.4	-0.2	-25.4	0.3	54.1	0.7	141.6	162.6	83.1
1975-1980	3.7	114.2	-0.7	-109.2	0.0	5.0	0.7	128.7	233.9	119.7
1980-1985	0.6	22.2	-1.1	-163.7	-0.8	-141.5	0.0	5.8	169.3	147.1
1985-1990	0.3	9.4	1.2	170.7	1.0	180.1	0.2	39.6	-132.3	-141.7
1990-1995	-0.9	-32.3	0.0	2.0	-0.2	-30.2	0.5	110.7	105.2	137.5
1995-1999	0.5	13.2	0.9	106.9	0.8	120.1	0.6	96.2	-13.7	-26.9
Canada										
1970-1999	2.1	1315.5	2.1	5296.9	2.1	6612.4	2.2	7325.2	1739.1	423.6
1970-1975	5.0	452.7	2.8	912.6	3.2	1365.2	3.5	1579.3	604.4	151.7
1975-1980	1.5	166.3	4.2	1628.9	3.6	1795.2	3.7	2002.7	294.7	128.4
1980-1985	2.3	275.0	0.9	385.9	1.2	661.0	1.8	1144.3	713.2	438.2
1985-1990	2.1	276.4	2.2	1066.6	2.2	1342.9	1.7	1122.0	11.1	-265.3
1990-1995	0.8	115.6	0.3	157.7	0.4	273.3	0.7	505.8	328.1	212.5
1995-1999	0.3	29.5	2.6	1145.2	2.1	1174.7	1.6	971.2	1739.1	423.6
Denmark										
1970-1999	2.4	404.3	-0.1	-76.4	0.4	327.9	0.6	455.5	525.7	121.4
1970-1975	6.5	149.0	-1.6	-152.7	0.0	-3.6	0.8	96.9	248.2	99.2
1975-1980	4.6	139.4	-0.4	-33.4	0.9	105.9	1.2	159.2	190.5	51.1
1980-1985	1.7	61.0	0.3	30.1	0.7	91.0	1.2	159.0	126.8	65.8
1985-1990	0.5	17.4	0.2	18.0	0.3	35.4	0.4	55.3	36.5	19.1
1990-1995	0.0	-1.5	-0.7	-65.3	-0.5	-66.8	-0.4	-50.1	15.9	17.4
1995-1999	1.2	39.0	1.7	126.9	1.6	165.9	0.3	35.2	-92.1	-131.1

Source: OECD Economic Outlook Database, 1960-1999.

Table 5 (continued) Annual average growth rates and changes (000's) for various periods

	Public		Private		Total		Labour Force		PGAP	UGAP
	Growth	Change	Growth	Change	Growth	Change	Growth	Change	Change	Change
Finland										
1970-1999	2.3	270.2	-0.2	-100.7	0.3	169.6	0.6	389.6	480.4	210.2
1970-1975	5.1	80.6	0.2	14.7	0.9	95.3	1.0	105.0	87.7	7.0
1975-1980	4.1	82.5	0.3	24.5	0.9	107.0	1.5	170.4	141.6	59.1
1980-1985	3.1	73.3	0.4	35.8	0.9	109.1	1.0	124.1	85.2	11.9
1985-1990	1.9	52.0	0.2	15.5	0.5	67.5	0.2	20.0	4.0	-48.0
1990-1995	-1.2	-33.0	-4.2	-372.7	-3.5	-405.7	-0.8	-105.5	269.9	302.9
1995-1999	0.7	14.8	2.8	181.6	2.3	196.4	0.8	75.6	-107.9	-122.7
France										
1970-1999	1.5	1959.3	0.1	477.2	0.4	2436.6	0.7	4811.1	4235.9	2276.5
1970-1975	2.0	382.0	0.3	215.4	0.6	597.4	0.9	968.3	733.2	351.2
1975-1980	1.5	319.5	0.3	226.6	0.5	546.1	1.0	1111.5	862.3	542.7
1980-1985	2.2	511.6	-0.9	-810.1	-0.3	-298.5	0.6	710.3	1505.8	994.3
1985-1990	1.0	261.8	0.8	677.3	0.9	939.1	0.5	667.5	-23.4	-285.2
1990-1995	1.3	354.3	-0.7	-570.5	-0.2	-216.3	0.4	516.7	1076.6	722.4
1995-1999	0.6	130.3	1.1	738.5	1.0	868.8	0.8	836.9	81.4	-48.9
Germany										
1970-1999	1.4	1512.0	1.0	8034.0	1.1	9546.0	1.4	12960.5	4801.7	3289.7
1970-1975	3.8	605.3	-1.0	-1145.3	-0.4	-540.0	0.3	385.5	1527.0	921.8
1975-1980	1.9	345.8	0.5	614.3	0.7	960.0	0.6	774.8	153.0	-192.7
1980-1985	0.9	189.0	-0.6	-680.0	-0.4	-491.0	0.7	924.0	1595.1	1406.1
1985-1990	0.9	187.3	1.6	1802.8	1.5	1990.0	1.1	1569.3	-248.6	-435.9
1990-1995	2.2	490.8	5.5	7458.3	5.0	7949.0	5.5	9263.8	1716.3	1225.5
1995-1999	-1.6	-306.0	0.0	-16.0	-0.2	-322.0	0.0	43.3	58.8	364.8
Ireland										
1970-1999	1.6	67.2	1.5	488.5	1.5	555.7	1.5	585.1	67.9	0.7
1970-1975	4.1	24.7	-0.1	-4.7	0.4	20.0	0.7	39.0	41.8	17.1
1975-1980	4.2	30.9	1.1	52.1	1.5	83.0	1.5	90.0	33.5	2.6
1980-1985	0.5	3.8	-1.8	-83.8	-1.4	-80.0	0.9	55.0	136.1	132.3
1985-1990	-1.5	-12.3	1.3	62.3	0.9	50.0	0.0	3.0	-59.4	-47.1
1990-1995	1.2	9.7	2.8	145.3	2.6	155.0	2.3	154.0	1.1	-8.6
1995-1999	1.5	10.4	6.5	317.3	5.9	327.7	3.9	244.1	-85.2	-95.6
Italy										
1970-1999	1.3	1084.4	0.0	29.7	0.2	1114.1	0.5	2976.1	2823.6	1739.2
1970-1975	3.8	483.4	-0.1	-91.3	0.4	392.1	0.5	475.5	547.2	63.8
1975-1980	2.3	345.7	0.7	615.7	1.0	961.4	1.2	1294.4	625.3	279.6
1980-1985	1.5	245.2	-0.4	-331.8	-0.1	-86.6	0.6	634.8	940.4	695.2
1985-1990	1.1	188.8	0.2	185.5	0.4	374.3	0.5	540.3	332.5	143.7
1990-1995	-0.3	-54.1	-1.3	-1114.1	-1.1	-1168.2	-0.6	-641.7	498.9	553.0
1995-1999	-0.9	-124.6	1.2	765.8	0.8	641.2	0.7	672.8	-120.7	3.9

Source: OECD Economic Outlook Database, 1960-1999.

Table 5 (continued) Annual average growth rates and changes (000's) for various periods

	Public		Private		Total		Labour Force		PGAP	UGAP
	Growth	Change	Growth	Change	Growth	Change	Growth	Change	Change	Change
Japan										
1970-1999	1.1	1455.8	0.8	12218.4	0.8	13674.2	0.9	16248.8	3832.8	2377.0
1970-1975	2.8	580.0	0.3	693.7	0.5	1273.7	0.6	1676.7	962.7	382.7
1975-1980	1.5	350.0	1.1	2792.0	1.2	3142.0	1.2	3281.5	449.6	99.6
1980-1985	0.6	160.0	1.0	2544.4	1.0	2704.4	1.1	3131.1	548.6	388.6
1985-1990	0.2	50.0	1.6	4374.9	1.5	4424.9	1.4	4197.1	-228.8	-278.8
1990-1995	1.2	300.0	0.6	1781.1	0.7	2081.1	0.9	2841.9	1026.2	726.2
1995-1999	0.1	15.8	0.0	32.3	0.0	48.1	0.4	1120.5	1074.5	1058.7
Netherlands										
1970-1999	0.8	155.2	1.1	1626.4	1.1	1781.6	1.1	1959.1	313.5	158.4
1970-1975	2.2	63.9	-0.5	-113.0	-0.2	-49.1	0.4	101.9	213.9	150.0
1975-1980	2.2	72.6	0.6	140.8	0.8	213.3	0.9	235.3	92.3	19.7
1980-1985	0.7	26.1	-0.7	-164.9	-0.5	-138.8	0.6	155.2	318.6	292.5
1985-1990	-0.1	-1.9	2.6	597.1	2.3	595.2	1.5	442.2	-159.2	-157.2
1990-1995	-0.4	-14.5	1.7	433.5	1.4	419.0	1.7	522.8	84.2	98.7
1995-1999	0.3	9.1	3.3	732.9	2.9	742.0	1.9	501.6	-236.3	-245.3
Norway										
1970-1999	3.1	413.4	0.5	206.2	1.1	619.6	1.2	671.1	454.5	41.1
1970-1975	5.0	81.0	0.2	11.3	1.1	92.3	1.3	108.6	95.6	14.6
1975-1980	4.4	89.1	1.2	87.0	2.0	176.1	1.8	168.5	78.9	-10.2
1980-1985	2.4	57.4	0.7	48.9	1.1	106.3	1.3	127.3	76.4	19.0
1985-1990	2.3	62.1	-0.6	-46.8	0.2	15.3	0.7	73.9	119.5	57.4
1990-1995	2.3	69.9	-0.3	-19.5	0.5	50.4	0.4	45.4	64.2	-5.7
1995-1999	2.0	53.9	2.1	125.3	2.1	179.2	1.6	147.5	19.8	-34.1
New Zealand										
1970-1999	0.7	43.1	1.3	466.5	1.2	509.6	1.4	635.6	167.4	124.3
1970-1975	4.2	44.4	2.0	109.2	2.4	153.7	2.4	156.4	46.8	2.3
1975-1980	1.5	18.6	0.6	37.2	0.8	55.8	1.2	89.1	51.7	33.1
1980-1985	-0.5	-6.5	1.7	107.0	1.3	100.5	1.6	119.3	12.0	18.5
1985-1990	-0.6	-7.0	-1.0	-62.0	-0.9	-69.1	0.0	-1.0	61.1	68.1
1990-1995	-0.9	-11.5	3.0	197.5	2.4	186.0	2.1	172.8	-25.2	-13.7
1995-1999	0.5	5.0	1.3	77.8	1.2	82.8	1.4	99.0	21.0	16.0
Portugal										
1970-1999	4.1	572.2	1.0	959.1	1.4	1531.3	1.4	1604.4	574.2	1.9
1970-1975	4.0	55.8	2.3	328.3	2.4	384.1	2.3	390.6	44.9	-10.9
1975-1980	5.8	103.0	0.5	77.0	1.0	180.0	2.0	367.7	274.4	171.4
1980-1985	5.1	117.0	0.2	38.8	0.8	155.8	1.0	191.3	144.1	27.1
1985-1990	4.1	120.3	1.6	264.3	2.0	384.6	1.1	232.2	-42.5	-162.8
1990-1995	3.3	117.2	-0.4	-69.5	0.2	47.6	0.7	158.8	221.2	104.1
1995-1999	1.9	59.0	2.3	320.1	2.2	379.1	1.4	263.9	-68.0	-127.0

Source: OECD Economic Outlook Database, 1960-1999.

Table 5 (continued) Annual average growth rates and changes (000's) for various periods

|	Public		Private		Total		Labour Force		PGAP	UGAP
	Growth	Change	Growth	Change	Growth	Change	Growth	Change	Change	Change
Spain										
1970-1999	4.3	1437.0	0.0	1.5	0.4	1438.5	0.9	3702.8	3597.9	2160.9
1970-1975	7.6	266.9	0.2	94.3	0.6	361.2	0.9	560.8	450.8	183.9
1975-1980	5.2	251.2	-1.6	-909.2	-1.1	-658.0	0.4	276.0	1177.4	926.2
1980-1985	3.9	237.0	-2.3	-1186.4	-1.6	-949.4	0.8	524.6	1696.4	1459.4
1985-1990	5.6	423.2	2.6	1327.2	3.0	1750.4	1.7	1201.4	-159.3	-582.5
1990-1995	1.2	109.2	-1.4	-762.4	-1.0	-653.2	0.7	531.1	1278.7	1169.5
1995-1999	1.9	149.5	3.3	1438.0	3.1	1587.5	0.9	609.0	-846.0	-995.5
Sweden										
1970-1999	1.6	461.7	-0.3	-248.5	0.2	213.3	0.3	395.1	636.4	174.7
1970-1975	5.3	238.2	-0.2	-30.2	1.1	208.0	1.1	216.2	242.5	4.3
1975-1980	4.5	255.2	-0.5	-82.0	0.8	173.2	0.9	190.9	269.5	14.3
1980-1985	1.7	112.8	-0.7	-105.0	0.0	7.8	0.2	47.3	151.5	38.7
1985-1990	0.3	24.1	1.5	216.7	1.1	240.8	0.9	191.7	-28.4	-52.5
1990-1995	-2.3	-158.4	-2.3	-337.6	-2.3	-496.0	-1.1	-239.0	102.9	261.3
1995-1999	-0.2	-10.2	0.8	89.6	0.5	79.4	-0.1	-12.1	-101.5	-91.3
Switzerland										
1970-1999	1.8	216.2	0.6	524.4	0.7	740.6	0.8	837.2	312.7	96.5
1970-1975	3.7	61.4	-0.6	-85.9	-0.2	-24.5	-0.1	-14.4	71.5	10.1
1975-1980	2.7	53.5	0.0	4.7	0.4	58.3	0.3	54.3	49.6	-3.9
1980-1985	1.0	21.7	1.2	166.5	1.2	188.3	1.3	212.3	45.8	24.1
1985-1990	1.9	45.3	2.7	421.2	2.6	466.5	2.6	454.3	33.1	-12.3
1990-1995	1.4	34.2	-0.3	-54.4	-0.1	-20.3	0.6	114.9	169.4	135.2
1995-1999	0.0	0.0	0.5	72.4	0.5	72.4	0.1	15.7	-56.6	-56.6
United Kingdom										
1970-1999	-0.7	-838.4	0.6	3561.5	0.4	2723.1	0.5	3852.6	218.4	1056.8
1970-1975	3.0	724.0	-0.4	-438.5	0.2	285.5	0.5	616.0	1042.9	318.9
1975-1980	0.5	135.0	0.1	50.9	0.1	185.9	0.7	879.9	812.4	677.4
1980-1985	-0.1	-31.0	-0.6	-601.6	-0.5	-632.6	0.7	956.4	1540.0	1571.0
1985-1990	-0.2	-51.0	2.5	2527.4	1.9	2476.4	0.7	939.2	-1606.0	-1555.0
1990-1995	-6.7	-1553.0	0.6	642.8	-0.7	-910.2	-0.1	-128.7	-769.1	783.9
1995-1999	-0.4	-62.4	1.5	1380.5	1.2	1318.1	0.5	589.8	-801.8	-739.4
United States										
1970-1999	1.6	7599.5	1.9	47224.2	1.8	54823.7	1.8	56572.8	7176.9	-422.6
1970-1975	3.2	2127.3	1.5	5034.2	1.8	7161.5	2.5	10973.8	5518.3	3391.0
1975-1980	2.0	1563.6	3.1	11909.5	3.0	13473.1	2.7	13204.2	787.8	-775.8
1980-1985	0.2	151.5	1.8	7699.2	1.5	7850.7	1.5	8493.4	468.2	316.7
1985-1990	2.2	1912.1	2.1	9729.6	2.1	11641.7	1.7	10389.3	260.8	-1651.2
1990-1995	1.1	987.2	1.0	5125.4	1.0	6112.6	1.0	6458.5	1085.2	98.0
1995-1999	1.1	857.8	1.8	7726.3	1.7	8584.2	1.3	7053.7	-943.4	-1801.3

Source: OECD Economic Outlook Database, 1960-1999.

5.   Public and private sector employment elasticities

5.1   Business Cycles in Australia

In this section we seek to estimate the public and private sector employment elasticities and to test whether these have changed over the course of several business cycles since 1966. Figure 6 charts the growth of real GDP (per cent per annum) from September 1960 to December 1999 (left-hand scale) and the unemployment rate (right-hand scale).

Figure 6 Real GDP Growth and the Unemployment Rate in Australia, 1960–2000
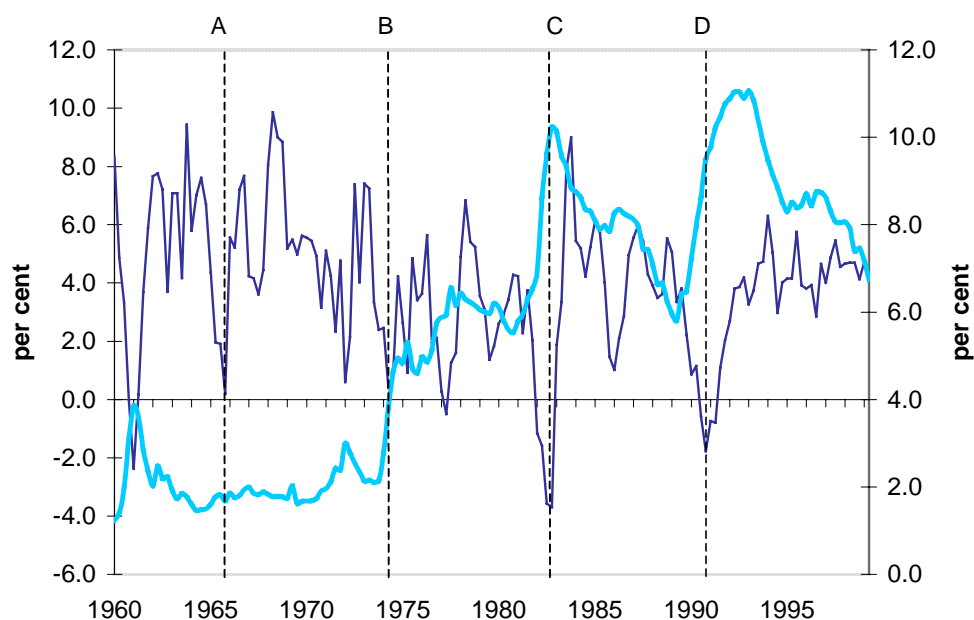
Source: ABS Ausstats National Accounts and Labour Force Tables 6203.0. Real GDP growth is plotted on the left-hand scale and the unemployment rate is plotted on the right-hand scale.

It is clearly difficult to neatly define complete cycles. Given the data availability, our approach in this paper is to divide the sample into four sub-samples, defined by GDP phases from trough to peak and back to trough. There are three major limitations with this approach in practice. First, it is difficult to objectively measure a trough. We have used a method that relates a local minimum growth period with rising unemployment. We do not treat a local output growth minimum as a turning point in the cycle if the unemployment rate does not rise significantly. What is significant is a matter of judgement. Second, there are not four distinct cycles defined by the data. The starting period and ending period of the sample do not coincide with the start or finish of a

cyclical phase. The coherent data on public sector employment by category (General Government, Defence, and Public Trading Enterprises) starts in the second quarter 1966. The first of our cycles was already mature at this point. We are thus unable to capture the complete period of low unemployment rates. Third, we have no way of distinguishing the quality of each cyclical period. There is also the pragmatic concern of having enough observations within each sub-sample to allow meaningful statistical analysis including regression. Table 6 defines the four periods of cyclical activity and reports the means and variance of the annual growth rates in GDP and employment.

Table 6 Business cycles from June 1966 to December 1999

Business Cycle	Period	GDP Growth		Employment Growth	
		Mean	Variance	Mean	Variance
Cycle 1	1966(2) to 1974(4)	4.92	5.79	3.00	1.03
Cycle 2	1975(1) to 1983(2)	2.37	6.05	0.87	2.27
Cycle 3	1983(3) to 1991(2)	3.83	5.36	2.65	4.16
Cycle 4	1991(3) to 1999(4)	3.83	2.35	1.48	3.40
Entire period	1966(2) to 1999(4)	3.75	5.62	1.99	3.37

Source: ABS Ausstats National Accounts
Annual growth rates are the basis of the summary statistics.

A notable feature is that the variance around the strong average employment growth over Cycle 1 was relatively small, in comparison to the large variance in GDP growth over the same period. Over the subsequent cycles, the variation in employment growth has increased by more than 3 times as its mean has declined by around 50 per cent. GDP growth has become less variable and lower on average.

5.2   Estimating the cyclical pattern of sectoral employment in Australia

To calculate the cyclical sensitivity of employment by sector (general government, defence, public trading enterprises and private), the following general log-linear regression was estimated:

$$N_{it} = \beta_1 + \beta_2 TIME + \beta_3 (PT/N)_t + \beta_4 N_t + \varepsilon_t$$

where $N_{i,t}$ is the ith sector's employment at time t, and N_t is total economy-wide employment at time t, ε_t is a stochastic error term. The equations included a sector-

specific linear trend term (*TIME*) and an economy-wide trend term (*PT/N*), which is the ratio of part-time employment to total employment. The employment-population ratio was also tried as a measure of aggregate activity and produced very similar results. We report the results using the economy-wide employment measure. Table 7 describes the various dummy variables that were used to test segmented trends and cyclical variations in intercept and cyclical sensitivity. To minimise the residual serial correlation, which may arise due to a misspecified dynamic structure, the residuals were modelled as autoregressive processes with log likelihood tests used in each case to determine the order of the autoregression of the residuals. A testing-down process simplified the final equations by deleting statistically insignificant variables at the 5 per cent level. The key β_4 variable was however left in each regression. The complete results are available on request from the author.

Table 7 Dummy variables used in regression analysis

Dummy Variables	Interactive Dummies	Segmented Trends
D2 =1 for Cycle 2; 0 other	*D2N = D2* x *N*	*D2TIME = D2* x *TIME*
D3 =1 for Cycle 3 0 other	*D3N = D3* x *N*	*D3TIME = D3*x *TIME*
D4 =1 for Cycle 4 0 other	*D4N = D4* x *N*	*D5TIME = D4* x *TIME*

Table 8 shows the estimated employment elasticities for each sector by cyclical period (using the interactive slope results where statistically significant). The public sector was disaggregated into general government, public trading enterprises, and defence services. The β_4 estimates clearly indicate the divergent cyclical sensitivities of the sectoral employment levels to changes in total employment. A value above unity indicates that the employment in that sector increases disproportionately to total employment rises. A value below unity indicates a less than proportionate response by that sector's employment to total employment expansion. A negative value indicates a counter-cyclical response. The results indicate that there has been some structural instability in the labour market over the period concerned with the private elasticity being positively shocked in Cycle 2 and the public employment elasticities all being negatively shocked in Cycle 4. In terms of the segmented trends hypothesis, only the general government equation showed evidence of a variable trend function over the different cycles. There was no instability detected in the third cycle in any function.

The period of estimates of β_4 are computed by taking the benchmark model (September 1966 to December 1974) and then adding (subtracting) the coefficients of statistically significant interactive dummy variables for the relevant cyclical period. For example, the general government employment elasticity for the benchmark period is –0.49, which indicates a counter-cyclical response by that sector's employment to total employment expansion. To substantiate the hypothesis that the public sector played a role as an employer of the last resort during the expansionary phase up until the mid-1970s, this coefficient would have to be negative. The counter-cyclical behaviour changes over the course of the last cycle (-0.49 + 1.02 = 0.53). General government employment now exhibits a positive business cycle elasticity. For public trading enterprise employment, the effects of privatisation are very clearly displayed. Employment in the benchmark period was less than proportionately responsive to the business cycle (β_4 =0.64). When total employment rose (fell) by one per cent, employment in public trading enterprises rose (fell) by 0.64 per cent. Structural instability in this behaviour occurs in Cycle 4 and a dramatic reversal in the responsiveness occurs with β_4 =-2.09. Some care should be taken in interpreting this result. The period concerned was marked by consistent employment growth and consistent decline in public trading enterprise employment. Defence employment appears to be counter-cyclical, although only the final cycle is a statistical significant result. Private employment is strongly responsive as would be expected. There is evidence of instability in the elasticity during Cycle 2 (rising from 1.24 to 1.37).

Table 8 Estimated sectoral employment functions, 1966(3) to 1999(4)

Period Estimates of β	GG	PTE	Defence	Private
1966(2) to 1974(4)	-0.49	0.64	-0.20	1.24
1975(1) to 1983(2)	-0.49	0.64	-0.20	1.37
1983(3) to 1991(2)	-0.49	0.64	-0.20	1.24
1991(3) to 1999(4)	0.53	-2.09	-1.19	1.24

GG is the log of general government employment, PTE is the log of public trading enterprises employment, Defence is the log of defence employment, Private is the log of private employment.

6.   Conclusions

In this paper we have examined the trends in private and public employment in Australia and other OECD countries spanning the period before unemployment became a major problem to the present day. The international comparison is revealing. The public sector in Australia has performed poorly and its failure to grow at least in proportion with the labour force is a substantial reason why full employment has evaded us. Changes in Australian public sector employment since 1970 have covered only 32.1 per cent of the gap between labour force change and the change in private employment (allowing for a constant proportion of frictional unemployment). Other countries have had a much more active public sector in this respect, with the United States (105.8 per cent), Portugal (99.6 per cent), Ireland (98.9 per cent), Norway (91.0 per cent), and Denmark (76.9 per cent) being the most active, and their respective unemployment rate has been commensurately lower. The example of the United States is worth noting. It is often claimed that its low unemployment rate is a function of its deregulated economy with more flexibility in wages and the like. Over the period 1970-1999, its private sector employment growth rate was not significantly higher than the labour force growth rate (1.9 per cent per annum compared to 1.8 per cent per annum). But notable was the fact that the public sector (1.6 per cent per annum) did not allow the *PGAP* to balloon.

For Australia, the data has been complicated by the massive privatisations that have occurred, particularly in the 1990s. Some of the declines in public sector employment are in fact transfers to the private sector. There are two interpretations of the failure to return to full employment over the 1970-1999 period: (a) the private sector failed to deliver enough jobs in its own right (net of the transfer), and/or (b) the public sector chose to abandon the full employment ideal. The government may argue that it believed the private sector would take up the gap left by the public sector failing to achieve growth commensurate with the labour force. But this would have required historically high private employment growth rates. There have also been enough years for the government to see that this wish was not going to come true and that the responsibility for maintaining full employment was theirs alone. Until the public sector restores a commitment to full employment, Australia will languish with high unemployment and the resulting increases in inequality.

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Appendix

Table A Annual labour force, public employment and private employment growth and changes in unemployment from 1968-1999

	Private Growth % per annum	PS growth % per annum	LF growth % per annum	Change in Unemployment 000s
1970	4.1	3.2	3.7	-5.6
1971	2.4	2.5	2.7	17.5
1972	0.9	3.5	2.2	44.2
1973	3.2	2.5	2.7	-17.0
1974	1.4	4.7	2.6	29.6
1975	-2.3	6.1	1.9	140.9
1976	1.6	0.9	1.2	-5.2
1977	0.3	2.4	1.8	62.4
1978	-1.3	2.2	0.4	50.1
1979	1.4	1.2	1.1	-12.8
1980	3.5	1.2	2.8	5.3
1981	2.3	1.0	1.6	-13.9
1982	-0.1	0.6	1.6	102.4
1983	-3.0	1.7	1.3	203.3
1984	3.0	2.7	1.8	-59.2
1985	4.0	2.2	2.7	-36.4
1986	4.3	1.8	3.5	12.9
1987	3.0	-0.1	2.2	13.9
1988	5.1	-0.3	2.7	-61.6
1989	6.4	-0.7	3.7	-59.8
1990	1.7	1.1	2.5	84.9
1991	-2.7	-0.3	0.6	216.0
1992	-0.2	-2.4	0.7	113.6
1993	1.2	-2.4	0.6	20.9
1994	5.2	-4.2	1.7	-92.3
1995	5.4	-0.3	2.9	-81.2
1996	2.2	-2.5	1.2	5.4
1997	1.7	-3.7	0.9	16.2
1998	2.7	-1.5	1.3	-43.2
1999	2.8	-0.4	1.4	-68.4

Notes

[1] The author is Professor of Economics and Director of the Centre of Full Employment and Equity, University of Newcastle, NSW 2308 Australia.

[2] Mass unemployment arises because the budget deficit is too small relative to the desires of the private sector to meet its tax obligations, to save and to hold money for transactions purposes. The solution to this problem is for government to use deficit spending to ensure that enough jobs are created. Mitchell (1996, 1998, 1999a, 1999b, 1999c) and Mitchell and Watts, 1987) are more specific and advocates a Job Guarantee.

[3] Mitchell (1996) provides extensive analysis and data to support this contention.

[4] Mitchell (1987a, 1987b) discusses the importance of the assumption of cyclical invariance.

[5] Interestingly, Hughes (1980: 191) argues that since 1955 "the history of the Australian labour market has been one long retreat from full employment. Whether we take peaks or troughs in percentages, there has been a gradual upward trend through successive turns of the business cycle." He argues that full employment became over-full employment in political jargon, as it was associated with inflation, balance of payments problems and strikes. The question is whether the 0.5 per cent unemployment rate characteristic of the early 1950s reflected more a state of labour shortage than a frictional level of unemployment. A simple one-tail t-test to determine whether any differences exists between the sample means for the periods 1948-1956 and 1956-1974 (excluding 1962) indicates that the two samples failed to establish any difference at the five percent level of significance. We omitted 1962, as it was a cyclical outlier. Inclusion of 1962 leads to the conclusion that the hypothesis holds only at the 10 per cent level of significance. Taken together, we conclude that the two periods behave similarly.

[6] Even before the OPEC oil price hikes, Australian fiscal policy had been moving in the wrong direction. Between 1972 and 1974, prior to the rapid escalation in wage rates in 1974, with migration rates falling, the labour market became increasingly tight. Food price rises were also causing a persistency in the inflation rate. The correct approach would have seen some fiscal tightening. This was anathema to the newly elected Labour Government. Although there was an increase in public spending in 1974, most of it was in the form of increased transfers to pensioners and the unemployed. Overall, public spending as a percentage of GDP fell severely in 1973-74. The ratio rose again late in the next financial year but by then unemployment was climbing. It was clear that the first stage in abandoning full employment came at the Premiers' Conference in early June 1974. Hughes (1980: 87) argues that the Whitlam Government had become caught up in the inflationary-expectations rhetoric, which dominated Treasury economics. Hughes (1980: 50) argues, "The Treasury, in particular, steadily attempted to lock Australia into a deficit fetishism that was to seriously disrupt economic discussion in later years." By the 1975 Federal Budget brought down by Bill Hayden, who had replaced the discredited Jim Cairns as Treasurer, it was clear that there was a bi-lateral political acceptance for a private enterprise-led recovery to higher employment. The fiscal austerity was approved by key exporting sectors (mining and agriculture) because domestic stagnancy meant that union wage demands are lower (Hughes, 1980: 45-47).

[7] Labour supply in this context is equal to the current labour force, although we clearly recognise the importance of marginal workers not in the labour force.

[8] Frictional embraces structural factors. These factors are sometimes differentiated by spatial and skill-mismatch factors. The latter is somewhat contentious because in a tight labour market firms usually offer jobs with appropriate training implicit. A coherent regional policy with an active public sector labour market will also reduce the spatial imbalances significantly.

[9] The US labour market is often introduced as the model that we should follow given it has lower unemployment rates than most other countries. It should be noted that in 1977 the incarceration rate per 100,000 residents was 129. By 1998 it had risen to 460. A simple computation assuming the 1977 weights and that the extra prisoners become unemployed workers adds about 0.65 of a percent to the aggregate unemployment rate in the USA (US Department of Justice, Bureau of Justice Statistics).

[10] This ignores the United Kingdom, which experienced a net loss of public employment over 1970-1999.