

## Low Pay or No Pay? The Economics of the Minimum Wage

### The minimum wage hits the least skilled the hardest, argues Philip Lewis

New ways of setting wages for low-paid workers are an important and controversial part of the Federal Government's package of labour market reform. The Minister for Employment and Workplace Relations, Kevin Andrews, announced on 26 May that:

'A new body called the Fair Pay Commission (AFPC) will be established to set minimum wage rates...' and 'these arrangements will establish a better balance between fair pay and employment'.<sup>1</sup>

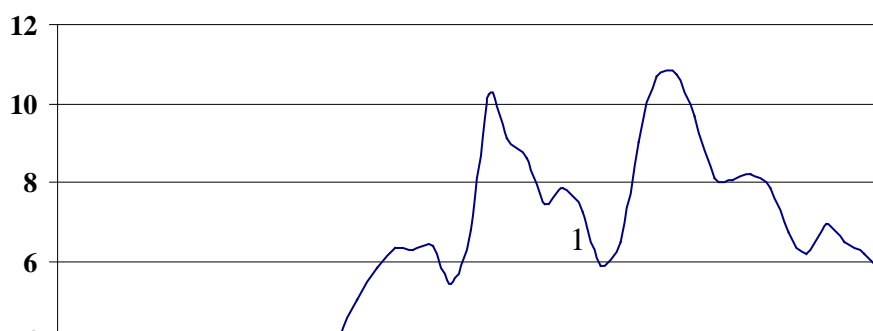
His statement assumes that employment, unemployment and minimum wages are intrinsically related. This may seem fairly obvious to those who were educated in the simple economic proposition that demand and price are inversely related for most things—including labour. However, the minimum wage is one of the most emotive and, yet, least understood issues in economic and labour market debates.

### How big is the problem?

#### *Unemployment*

The Australian Bureau of Statistics (ABS) provides an internationally recognised measure of the unemployment rate. Figure 1 shows Australia's unemployment rate since the 1960s. Until the mid 1970s the historical average was about 2%, but the rate rose almost continuously until the early 1980s. The so called 'oil shock' demanded considerable structural adjustment. The impact of the Accord in reducing real wages can be seen in the early 1980s, and the effect of the huge rise in interest rates in the early 1990s is clearly evident. Over 14 years of extraordinary, by OECD standards, economic growth have been accompanied by a decline in the unemployment rate to about 5% in January 2005 or 533,000 people.

**Figure 1: Unemployment Rate, 1960-2004, %**



Source: Australian Bureau of Statistics, *AUSTATS* database

Three observations from Figure 1 are clear. First, macroeconomic policy can be very effective in increasing unemployment, as witnessed by ‘the recession we had to have’ in the late 1980s. Second, there is ‘hysteresis’ in unemployment—one off shocks have long lasting effects—so policymakers must be extremely careful in tightening monetary policy. Third, as is evident from 14 years of remarkable economic growth, unemployment is not going to be solved by macroeconomic policy.

The reasons for the rise in unemployment have been discussed elsewhere.<sup>2</sup> In summary, external shocks, globalisation and technical change significantly changed the nature of demand for labour. Service sector employment, part-time and casual work, and demand for knowledge-based and people skills all increased, while demand for manual skills declined. Perhaps the most significant impact has been on employment of males. Table 1 shows the annualised rate (not compounded) of growth in employment over different intervals of time.

**Table 1: Employment Growth, annualised percentage change**

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	1981-2001	1993-2003	1998-2003
Full-time Males	0.8	1.5	0.9
Full-time Females	2.5	2.2	1.8
Full-time Persons	1.2	1.4	1.3
Part-time Males	11.3	6.2	7.8

Part-time Females	5.7	4.4	4.7
Part-time Persons	6.8	4.9	5.5

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Source: *Labour Force*, ABS Cat. No. 6203.0

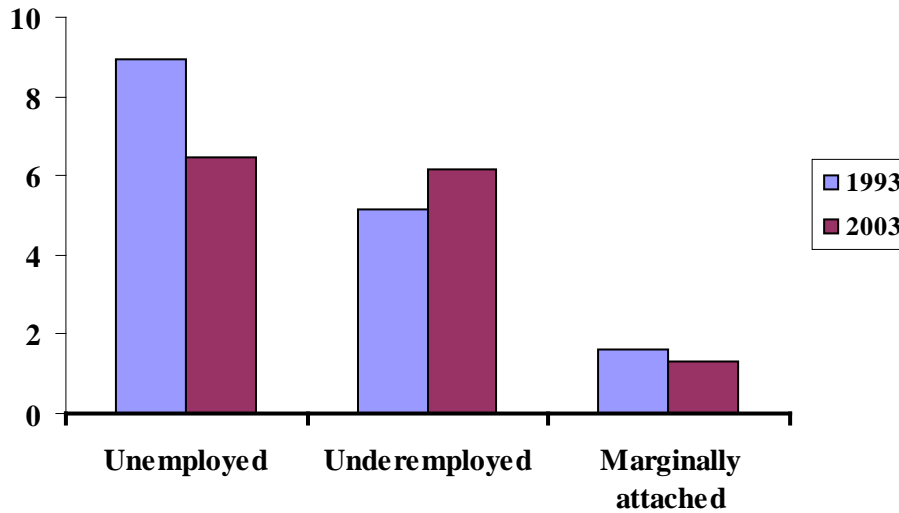
The first column shows the annualised growth rate over the relatively long term, 20 years. In order to examine whether these growth trends were one-off or continuing the remaining columns show the respective growth rates over the last ten and five years. Interestingly, it appears that the trends of the last two decades are fairly persistent with most recent growth rates similar to the longer term trends. By way of comparison the corresponding rate of growth in the adult population, which is approximately the growth in labour supply, was about 1.5%.

### *Underemployment*

The unemployment rate has shortcomings as an estimate of excess supply of labour. For instance, in the *Labour Force Survey*, from which the unemployment estimates are derived, it is only necessary to have worked for one hour in the survey week to be classified as employed. To be classified as unemployed respondents must pass a number of tests regarding their readiness for work and their efforts to seek work actively.

There are a number of other measures which throw light on the extent of under utilisation of labour. One of these is the *underemployed*, those who are employed part-time but who would like to and are ready to work full-time, plus those who normally work full-time but at the time of the survey, because of economic circumstances, are working part-time. Another measure is the *marginally attached*, who want work but do not satisfy the strict availability criteria. They are those who are actively looking for work, but not available at the time of the survey or are available to start work but did not believe they could find a job. Another definition of marginal attachment used by the ABS relates to those either looking for work, available for work or would look for work if they could. In September 2004 this stood at over 855,000 persons.

**Figure 2: Labour Underutilisation, 1993 and 2003, %**



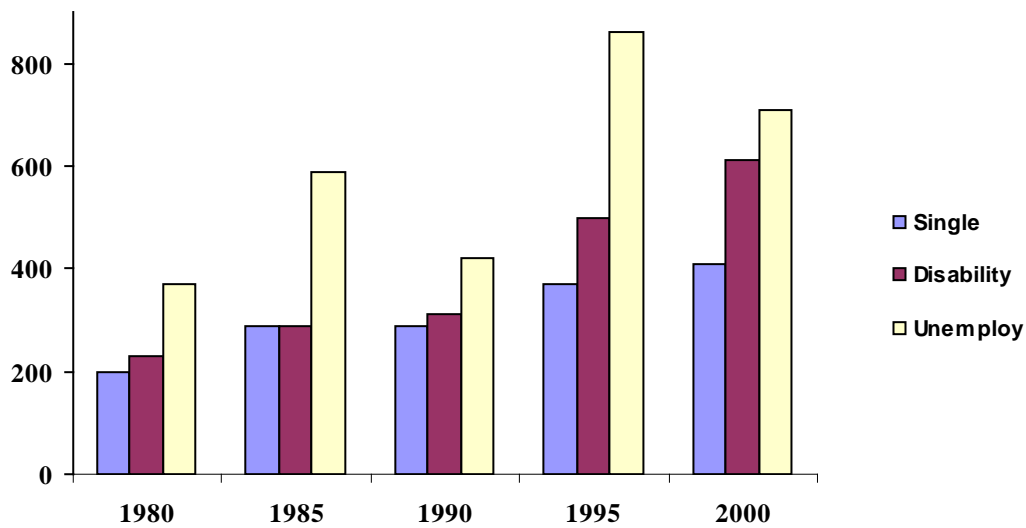
*Source: Underemployed Workers, ABS Cat. 6265.0*

Figure 2 shows how these different measures have changed over the decade to 2003. Clearly the unemployment rate fell significantly over the period while the under employment rate actually rose, while there was little change in the marginally attached. Thus, adding the underemployed and marginally attached more than doubles the official number of unemployed to about 1.3 million.

The number of people on social security payments is another possible indicator of unemployment. The ABS bases its estimates of the unemployed according to individual's responses to survey questions. However, eligibility for social security payments is determined by an individual's awareness of and the ability to convince Centrelink of eligibility for benefits.

Figure 3 shows how the number receiving certain categories, namely sole parent, disability and unemployment benefit changed over time. There are some interesting features of these data in terms of the number of recipients at any point in time and with respect to trends over time.

**Figure 3: Social Security Recipients, 1980-2000**



Source: Winter, J. (2000), *Social Security Recipients*, Research Note no 15, Department of the Parliamentary Library

The number of people on unemployment benefit tracks roughly the ABS unemployment estimates. However, in every year the number of people receiving unemployment benefits exceeded the number unemployed—by 22% in 2000! The number of people receiving single parent pensions more than doubled over the 20 years up to 2000. Perhaps most interesting is the rise in people on disability pensions in inverse relation to those on unemployment benefit. There appears to have been a movement from unemployment benefits to pensions which, while reducing the figures for those on unemployment benefits, is costly for government since pensions are indexed to average weekly earnings while unemployment benefits are indexed to the Consumer Price Index.

In summary the extent of the unemployment problem is somewhere between 533,000 and 1.7 million people.

### **The economics of the minimum wage**

The starting point here is the standard neoclassical analysis. If average wages are held at a minimum then labour supply exceeds labour demand and, therefore, unemployment results. There is considerable empirical research on the labour market in Australia and the effect of rises in average wages on employment.<sup>3</sup> This research indicates that a 10% increase in average wages reduces employment by about 8%. Thus, moderation in *average* wages increases employment and, with the usual caveat that all other things are equal, unemployment will fall.

However, this analysis is *not* appropriate for analysing the effects of the minimum wage. Since most workers would obtain a wage higher than the minimum anyway, the minimum wage increases the wages only of those who would otherwise receive the lowest wages. The effect on the *average* wage is small and, thus, the impact on total employment and unemployment is also small. This theoretical argument is supported by international empirical evidence which shows that the impacts of minimum wages on *total* employment and unemployment are small.<sup>4</sup> Andrew Leigh also presents evidence for Australia which indicates a small but significant effect.<sup>5</sup>

To get to grips with the effects of a minimum wage it is necessary to dig deeper into the operations of the labour market. In reality there is not a single labour market but rather very *many labour markets* each with their own supply and demand. An important characteristic of the multitude of labour markets is *substitutability*. Although it is common, particularly in the professions, to think of occupations being rigidly defined, in practice there is a great deal of substitutability between workers.

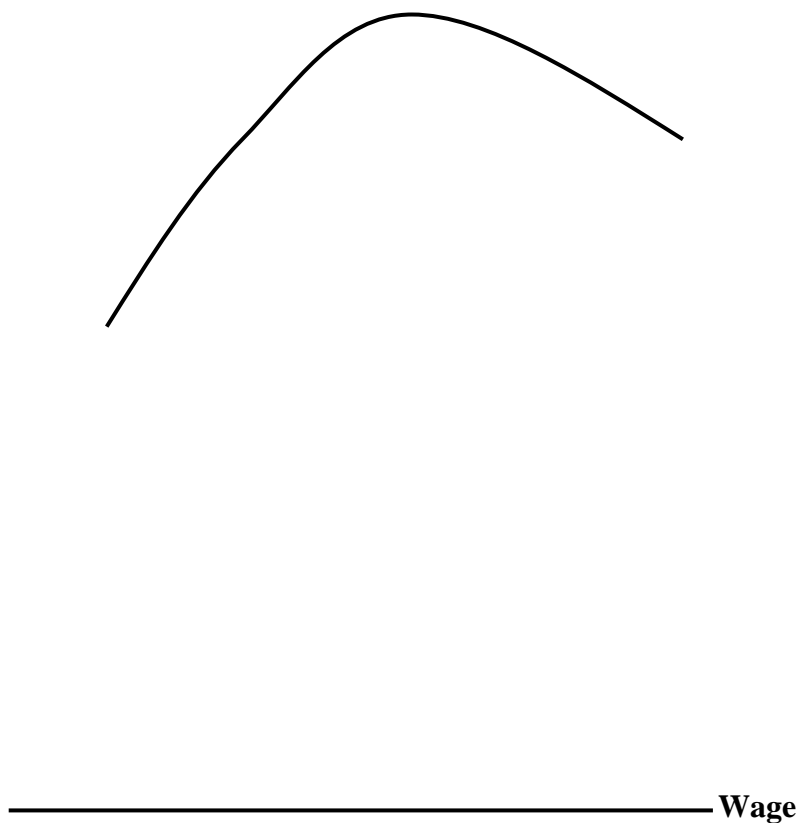
In an earlier paper<sup>6</sup> I used the example of a hospital. Employment in a hospital will be determined by markets for specialists, doctors, nurses, clerks, cleaners etc., each with different amounts of required skills and characteristics resulting in different wages. Intuitively, tasks would seem to be quite segmented according to the degree of skill and specialisation of employees. However, at various times relatively junior doctors can perform duties of specialists, registered nurses often perform duties which would well be the domain of doctors, particularly in rural areas. TAFE-trained enrolled nurses can be substituted for university trained registered nurses and, increasingly, particularly in aged care, relatively unqualified ‘carers’ perform duties which were once the province of nurses.

Most empirical studies of individual labour markets point to the high degree of substitutability, with respect to demand, between types of labour. There is also strong evidence that, given the degree of substitutability, the demand for labour in these more narrowly defined labour markets is highly responsive to *relative* wages.<sup>7</sup> Also, generally, the lower skilled the worker then the more responsive is demand to relative wages. In addition to demand being highly responsive to relative wages research shows that labour supply is also responsive to relative wages.<sup>8</sup>

In the absence of legislated minimum wages, the distribution of workers by wage would look similar to Figure 4 below.

**Figure 4: The Distribution of Workers by Wage in a Free Market**

**Number of  
Workers**

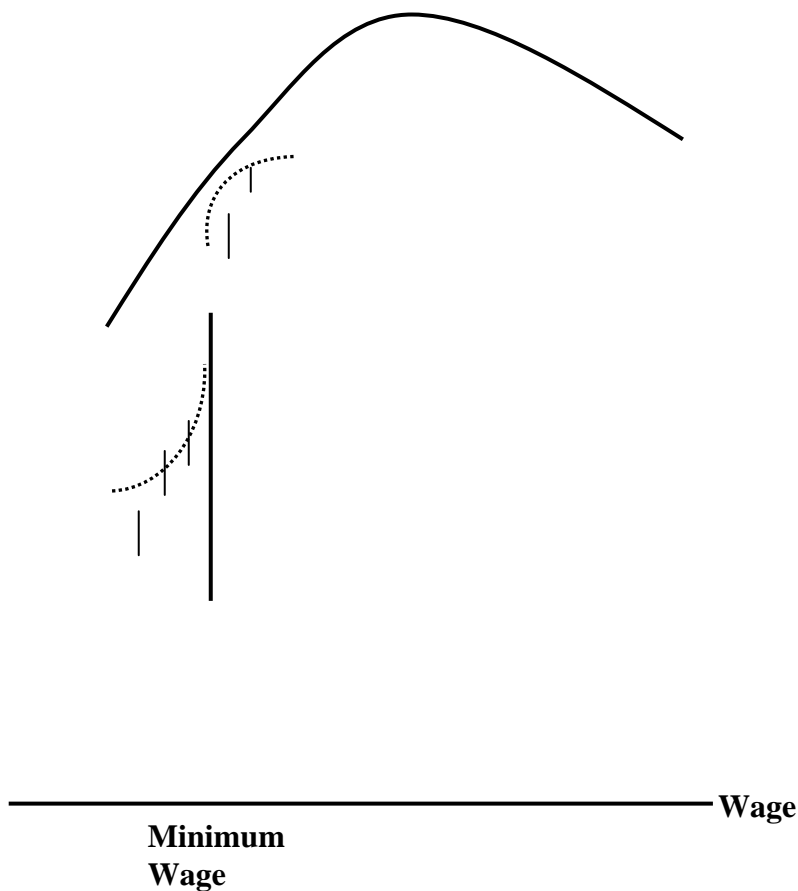


Lower skilled workers receive low wages and are at the left of the distribution. Higher skilled workers receive higher wages and are to the right of the lower paid. The majority of workers are located around the median.

Given the above framework it is relatively easy to understand the impact of minimum wages on employment and unemployment. Minimum wages affect only those in low skilled, low paid jobs. These individuals are, generally, very poor substitutes for the majority of the workforce and, therefore, minimum wages have little impact on the wages and employment of most workers. However, those workers earning just above the minimum wage are highly substitutable for those who would otherwise earn below the minimum. This is because although there is still a skill differential between them the jobs are still, relatively, unskilled. After the imposition of a minimum wage the distribution of workers looks like that below.

**Figure 5: The Distribution of Workers by Wage After the Imposition of a Minimum Wage**

**Number of  
Workers**



The dotted line shows the new distribution after imposing a minimum wage.

If it is completely binding no one is now employed below the minimum wage. However there is likely to be some leakage as employers and workers enter into illegal employment relationships to circumvent the legislation. The lower shaded area represents the loss of employment of workers now priced out of the labour market and the upper shaded area represents the increase in employment of workers substituted for those displaced. The upper area is less than the lower area since the higher wage results in some substitution of capital for labour and reduced output with higher production costs.

Firms employ fewer of those who would have earned below the minimum wage and, therefore, unemployment among this group rises. However, these workers are substituted by more workers earning just above the minimum wage, which is one reason why minimum wages are supported by unions—employees in jobs are better off. The net effect on *total* employment may be difficult to detect. However, there is a large fall in employment of workers who could otherwise have earned below the minimum wage. Minimum wages are mainly about *distribution*. Income is redistributed away from the worst off, the unemployed, and taxpayers who pay for social security benefits. Income is redistributed to those whose wages are higher than they would otherwise be without the minimum wage.



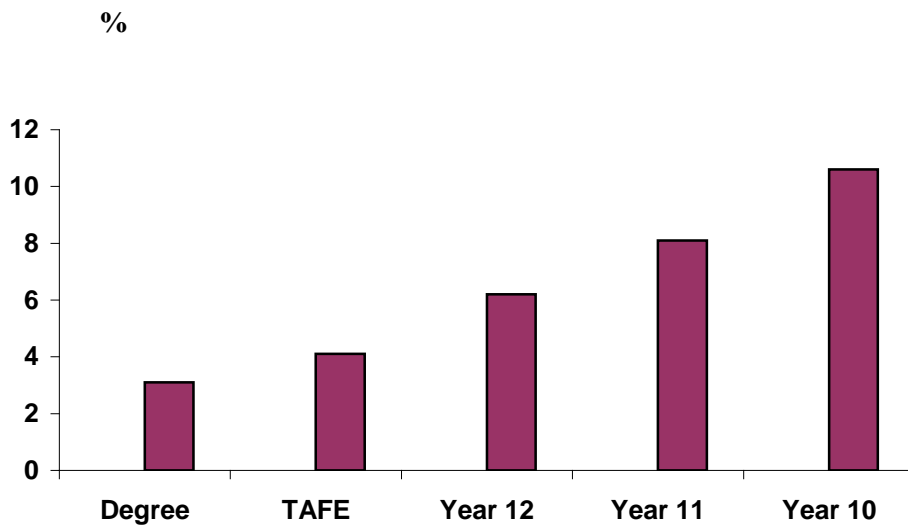
In summary, the impact of the minimum wage on total employment may be proportionately small but the impact on low skilled, low paid workers is disproportionately high.

### **The Characteristics of the Unemployed**

Because Australia has long had a minimum wage we cannot tell what the market wage would be if there were no minimum. However, it can be deduced from the characteristics of the unemployed, particularly the long-term unemployed, namely that they are low skilled, that their market wage would be low.

There is not space here for a detailed analysis of the unemployed (see Argy 2005) but there is general agreement that the level of education is the single most important factor in determining who is at risk in the labour market. For instance, Figure 6 shows that for those whose highest level of education is Year 10 or less the unemployment rate is over 10%. Clearly the unemployment rate is negatively related to level of education.

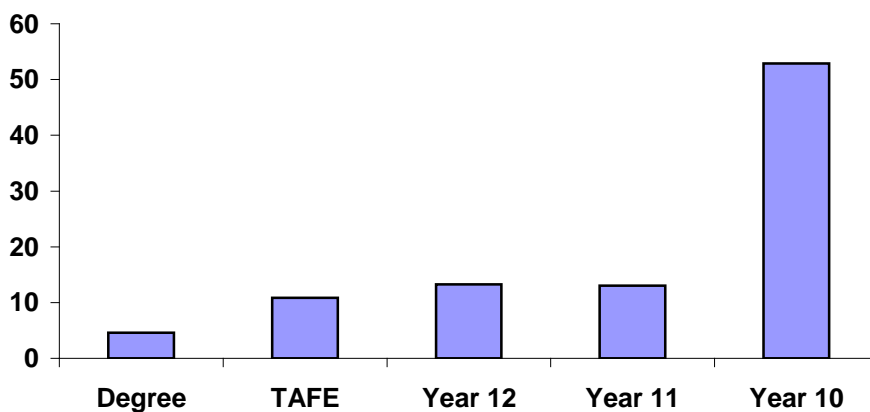
**Figure 6: Unemployment Rates by Highest Level of Educational Attainment,**



Source: *Education and Work*, Australia, ABS, Cat No 6227.0

Another way of looking at this issue is to take the pool of unemployed. Of all the unemployed over 40% have only attended school to year 10 or less.

**Figure 7: Percentage of Long Term Unemployed by Highest Level of Educational Attainment**



Source: *Job Search Experience of Unemployed People*, ABS, Cat. No. 6222.0

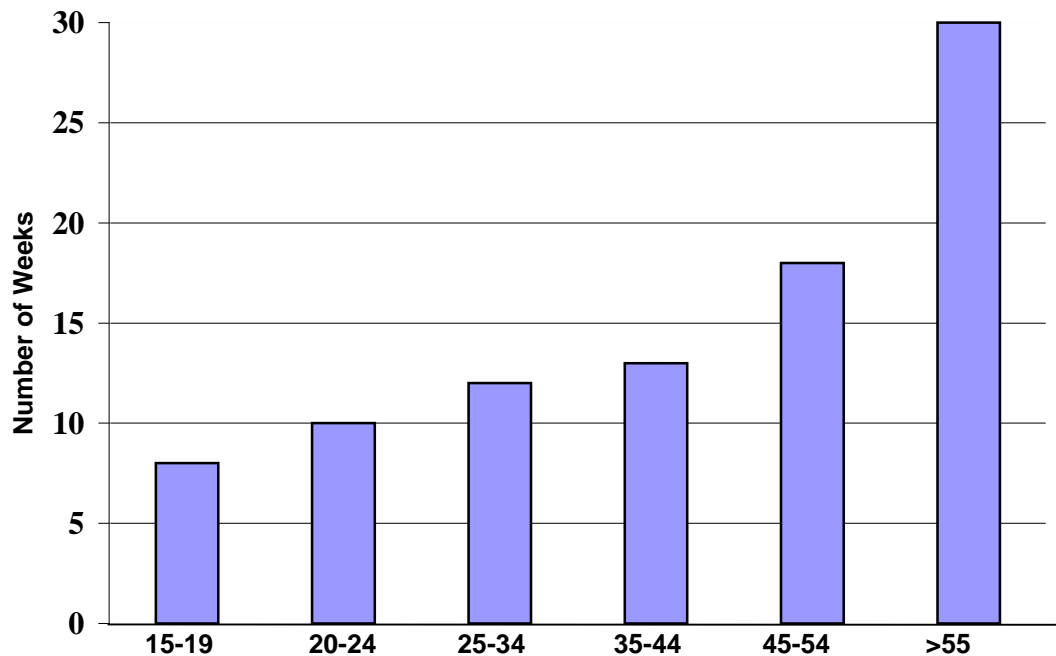
Far more important than the number unemployed is the proportion who are long-term unemployed, that is for more than one year. People in this group are clearly not part of the

effective labour supply. Figure 7 shows the percentage of all long-term unemployed by highest educational achievement.

The effect of education on unemployment is even more marked for the most disadvantaged. About 55% of the long-term unemployed have the lowest level of education.

Another important factor in determining those who are at risk in the labour market is age. Figure 8 below shows median duration of unemployment by age.

**Figure 8: Average Duration of Unemployment by Age, weeks**



Source: *Australian Labour Market Statistics*, ABS Cat. No. 6105.0

Those in the 20 to 34 years old age group have been, on average, in unemployment for 10 weeks. Those 55 years old and older have been, on average, unemployed for 30 weeks. It is important to note that it is not just age which is important. The older unemployed tend to be less well educated and more likely to be in jobs where skills demand is in decline.

In summary, the characteristics and number of the unemployed plus the magnitude of the number unemployed suggests that the minimum wage is well above the wage which would equate demand and supply.

## Effects of minimum wage changes on labour demand

Estimating the effect of minimum wage changes on labour demand is difficult because of factors operating in the whole economy. In particular the economy has been growing very strongly for 14 years. This would lift demand for minimum wage jobs even with increasing minimum wages. I have attempted to measure the impact of minimum wage changes by controlling for the changes in labour demand and wages in the economy as a whole. Table 2 below shows the percentage changes in wages and employment in the minimum wage sector and the economy as a whole over the ten years 1994 to 2004. The minimum wage sector is that used in the ACTU submission to the safety net wage case, namely accommodation, cafes and restaurants, health and community services.

**Table 2: Changes in Minimum Wages, Average Weekly Earnings and Employment, 1994-2004, %**

	<b>Wages</b>	<b>Real Wages</b>	<b>Employment</b>
<b>Min wage sector</b>	<b>40.2</b>	<b>7.7</b>	<b>29.9</b>
<b>Total all sectors</b>	<b>53.9</b>	<b>18.2</b>	<b>22.4</b>
<b>Difference</b>	<b>-13.7</b>	<b>-10.5</b>	<b>7.5</b>
<b>Implied elasticity</b>	<b>-0.55</b>	<b>-0.72</b>	

Over the period wages rose by 40.2% in the minimum wage sector or 7.7% in real terms while employment rose by 29.9%. In the economy as a whole wages rose by 53.9% (18.2% in real terms) and employment by 22.4%. Looking at the differences between the growth rates in the two sectors, wages grew by 13.7% less in the minimum wage sector while real wages grew by 10.5% less. That is, minimum wage labour became *cheaper relative to labour generally*. Standard economic theory would predict an increase in demand for minimum wage labour relative to labour generally and this is precisely what we observe. Demand for minimum wage labour rose by 7.5% more than for the economy as a whole. This evidence suggests elasticities of employment for the minimum wage sector of -0.55 and -0.72 with respect to wages and real wages, respectively.

On the basis of these elasticities if the minimum wage had been kept constant in real terms between 1994 and 2004 about 290,000 extra jobs would have been created and if the minimum wage had been kept constant in nominal terms about 650,000 extra jobs would have been created. While as a share of total employment this is relatively small, as a proportion of the unemployed, by whatever definition, this is quite significant.

One of the major problems with the current system of setting awards is that there is no lobby group for the unemployed with most welfare groups arguing for higher wages. The focus of policy should be to raise the incomes of *low income households* rather than of *low wage workers*. There is substantial evidence that many low wage workers are in relatively high income households and that poor households are usually poor because members of the households are out of work. Thus, facilitating jobs growth should take preference over raising wages of those in work.

### **Effects of the social security system**

Unfortunately, the inflexibility resulting from awards is compounded by the social security system. Table 3 compares the maximum social security benefits entitlements and the minimum wage in March this year.

**Table 3: Social Security Payments and the Minimum Wage, March 2005, \$ per week**

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Single Adult	242.30
with 1 child	394.92
pensioner	279.80
Couple	396.20
with 2 children	560.94
pensioner	432.70
Minimum Wage	467.40

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Source: *Poverty Lines: Australia*, Melbourne Institute of Applied Economics and Social Research

While these social security entitlements are only just above the poverty line they certainly compare favourably with the minimum wage. When income tax on wages and the other benefits and discounts available are included, the incentives to work are low or negative. Even with work tests and other disciplinary measures (mutual obligation) it is difficult to see the government depriving families with children by removing benefits from those unwilling to work. Clearly, changes to the demand side of the labour market, such as greater wage flexibility, must be accompanied by supply side policies such as major reform of the social security and tax systems.

Unfortunately, there does not seem to be any political will by any of the political parties to make the radical changes necessary to eliminate the strong disincentives implicit in the current social security system. Debate centres on work tests and pension eligibility, which could not possibly impact significantly on the huge number of people virtually excluded from the labour market. Even the \$3.6 billion program announced by the Commonwealth in June 2005, which targeted single parents with school aged children, people with disabilities, older people and long term unemployed, is unlikely to make a significant increase in employment.

Most unemployment is due to lack of 'effective supply'.<sup>9</sup> That is, given the current wage and institutional structures there are no jobs for which the unemployed are willing to work or profitable activities which employers can find for them to do. What is required is a raft of policies which increase effective supply. There is not space to adequately discuss these policies here but they would involve long run commitment to raising education participation and achievement among the most disadvantaged Australians. This is no small task involving considerable expenditure on education and social policy (Lewis 2002) plus widespread reform

of social security, taxation and income support for low income households. However, supply side policies can only work if there are flexible wages.

## **Conclusion**

Reducing unemployment is not easy. It requires a whole range of labour market, welfare, social and education policies. However, part of any package of measures would be incompatible with the current minimum wage.

The Government has announced the formation of a Fair Pay Commission to replace the current means of setting the minimum wage plus other award conditions. Importantly, the new Commission will be required to take account of the impacts of wage rises on employment and unemployment. While this will not satisfy those who wish to get rid of minimum wages altogether, the inclusion of the interests of the most disadvantaged (the unemployed), rather than simply the interests of the unions and employer groups, has the potential to be a major step forward.

The new Commission's ability to make an effective impact on unemployment has been somewhat stymied by the Government's decision to set the base line minimum wage at that set by the AIRC in its very last wage case decision in June 2005, namely \$484 per week—a rise of \$17 or 3.6% of the previous minimum.

In its final minimum wage decision the bench said:

‘It is a matter of significance that while the commonwealth has criticised the commission's past decisions because of their employment effects the most basic of information about safety net adjustments and the minimum wage.... is apparently not available to the commonwealth’. (AIRC 2005)

This statement says a great deal about the level of debate and paucity of knowledge that has been a feature of such a major policy issue—the minimum wage, employment and unemployment—in Australia.

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Professor Philip Lewis is Director of Centre for Labour Market Research, University of Canberra. An earlier version of this paper was presented to the Annual Conference of the HR Nicholls Society, Melbourne, 18<sup>th</sup>-19<sup>th</sup> March, 2005. Endnotes are available at [www.policymagazine.com](http://www.policymagazine.com)

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<sup>1</sup> Hon. K. Andrews, Statement, May 2005, 2.

<sup>2</sup> See, for instance, P.E.T. Lewis 'The Australian Labour Market and Unemployment in 2004', paper presented to the H.R. Nicholls Society, Melbourne.

<sup>3</sup> See, for instance P.E.T. Lewis and A. Seltzer, 'Labour Demand' in W.K. Norris and M. Wooden, *The Changing Australian Labour Market*, (Canberra: AGPS, 1996). Also, P.E.T. Lewis and G. MacDonald, 'The Elasticity of Demand for Labour in Australia', *Economic Record*, Vol. 78, No. 240, (2002), 18-30.

<sup>4</sup> C. Brown, C. Gilroy and H. Kohen, 'The Effect of the Minimum Wage on Employment and Unemployment', *Journal of Economic Literature*, Vol. 20, (1982), 487-528.

<sup>5</sup> Andrew Leigh, 'Employment Effects of Minimum Wages: Evidence from a Quasi-Experiment', *Australian Economic Review*, Vol 36, No 4, (2003), 361-373.

It is worth digressing somewhat here. In recent years there has been a concerted campaign to challenge the economic orthodoxy and suggest that labour markets are somehow different to other markets. Essentially, proposals of this view try to argue that demand curves for labour do not slope downwards and even that some slope upwards- it is possible for wages and labour demand to both rise! In Australia the attack has taken the form of a dismissal of Marginal Productivity Theory (MPT), the standard economics and various empirical observations showing simultaneous increases in minimum wages and employment (see Hristodouli, Belchamber and Watson 2004). The foundation for these ideas is the work of Card and Krueger (1995). Robson (2004) has provided a lively and convincing criticism of Card and Krueger which I will not attempt to repeat in here.

In answer to the critics of MPT it is worth spelling out what exactly MPT is. First, MPT assumes that a firm's decisions about how much output to produce and how much labour to hire are made *simultaneously*. Firms hire extra labour when the value of the extra output produced is greater than the wage. Firms will only increase output if activities which were not previously profitable are made profitable. Second, MPT relies on one of the corner-stones of *all* economics, namely the Law of Diminishing Returns. This states that each extra worker employed produces less output than the worker previously employed. Therefore, extra output and extra employment requires a fall in wages.

The empirical 'evidence' used to discredit MPT is along the following lines- between 1994 and 2004 the minimum wage rose by 40% while employment also rose, by 30%. I show in this article that, far from refuting MPT this observation, when put in proper context, supports a traditional economic analysis of the minimum wage.

<sup>6</sup> P.E.T. Lewis, 'The Economics of the Minimum Wage', *Australian Economic Review*, Vol. 30, No. 2, (1997) 204-7.

<sup>7</sup> D.S. Hamermesh, *Labour Demand* (Princeton: Princeton University Press, 1993). Also, P.E.T. Lewis, 'Substitution Between Young and Adult Workers', *Australian Economic Papers*, Vol 24, No 44 (1985), 115-126. And A. Daly, D. Nguyen-Hong, D. Eldridge, O. Gabbitas, P. McCalman, 'Youth Wages and Unemployment', Productivity Commission Staff Research Paper, (Canberra; Ausinfo, 1998).

<sup>8</sup> P. Kenyon and M. Wooden, 'Labour Supply' in W.K. Norris and M. Wooden, *The Changing Australian Labour Market*, (Canberra: AGPS, 1996).

<sup>9</sup> P.E.T. Lewis, 'What Do We Know About Job Creation?' *Australian Journal of Labour Economics*, Vol. 5, No. 2 (2002), 279-288.