Minimum Wages, Equity and Unemployment

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Abstract

Increasing income inequalities in Australia increase the need to protect the incomes of low income families. It is difficult for the taxation and social security system alone to do this. Minimum wage rates have a role to play. Thus, the question of their effects on employment can not be sidestepped. Traditional analysis of this question is flawed by the assumption of perfect competition and the use of particular equilibrium analysis. Labour markets have many features which distinguish them from perfectly competitive markets and feedbacks from other markets can not be ignored. Theory alone can not settle this question. A large number of empirical studies are surveyed. A widespread consensus exists that effects of minimum wage rises on adult employment are virtually non-existent. A number of studies find effects on teenage employment. A number of others do not. However, even those who find statistically significant effects agree that they are small.

1. Introduction

Pursuit of equity or fairness is a policy goal in most industrial democracies. Without government intervention, the distribution of opportunities and incomes across the community would be decidedly more unequal (EPAC 1996, p. 95).

The above quotation makes an uncontroversial statement of fact. Equally uncontroversial is the statement that policy to promote equity or fairness is mainly concerned with maintaining or increasing the incomes of those at

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the bottom end of the distribution. It is true that in Australia, as in many other countries, we attempt to tax those with high incomes more heavily than the bulk of the population, though not nearly so much as was the case a decade or two ago. Nevertheless, the main thrust of policy to change income distribution is to ensure that those at the bottom end have as adequate an income as possible, given political and economic constraints, and that the income of those at the bottom of the distribution rises at least as fast as incomes in the rest of the community.

Wages play a key role in the pattern of income distribution because they are the dominant form of income in our society, and especially the dominant form of market income or income before personal income tax is paid and social security benefits are received. From the point of view of equity what is happening to the wage rates paid to low income workers is one of the major features of our economy. Moreover, it has immediate and important implications for the social security system.

Hence, if one is concerned about the income of those towards the bottom end of the income distribution, the possibility of increasing minimum wage rates must be seriously considered. However, there is a possible downside. Some argue that raising minimum wage rates will increase unemployment. This too raises equity questions. The effects on employment of raising minimum wage rates is discussed in sections 3 and 4 below, with section 3 considering theoretical issues and section 4 reviewing empirical studies. But first the following section sets out in detail why the issue of raising minimum wage rates is so important.

2. Why Minimum Wage Rates are Important

Two policy instruments are widely used to reduce income inequality. One is regulation, particularly the setting of minimum wage rates. The other is the tax-transfer system, whereby the government provides both cash benefits and benefits in kind (eg. subsidised education or health services) and finances them by taxation. Australia has a long history of using both these policy instruments. Today, market pressures towards increasing inequality are growing and are likely to continue to do so in the future. This suggests that the continued use of both instruments will be necessary if Australia is to keep any claim to be a 'fair' society.

Over the last 20 years income distribution in Australia has become noticeably more unequal. This is overwhelmingly due to a dramatic increase in inequality in market income. It is convenient to focus on the period from 1981-82 to 1989-90 since there is a wealth of detail about income distribution in these two years. Also, by happy coincidence, they are at roughly the

same stage of the cycle of boom and slump. However, we know that the trends in income distribution that occurred in the 1980s started in the second half of the 1970s (Nevile, 1991) and continued into the 1990s (Australian Bureau of Statistics, 1996).

If one looks at the distribution of market income over all income units, adjusted for size, the Gini coefficient increased by 12 per cent between 1981-82 and 1989-90 (Nevile, 1996, p. 313). Moreover, the share of total income going to the bottom 20 per cent of income units fell by a startling 35 per cent. One possible explanation of this sharp rise in inequality is demographic change. Perhaps there was a sharp increase in the number of people at that stage of the life cycle in which low incomes are common. In fact this was not the case. The Gini coefficients for most particular categories of income units increased by more than the increase in the coefficient for all income units. To give just one example, we will examine the case of single aged 25 to 64 inclusive.

This is a good category to examine since the particular weighting scheme used to adjust for the number of people in the income unit can have no effect. Also, since the lower age limit is set of 25 years, any effect from a change in the proportion of full time students is minimised. For singles aged 25 to 64 inclusive, the Gini coefficient increased by 15 per cent and the share of the bottom 20 per cent of income units fell by 21 per cent. It was not only the share of income that fell. After adjusting for inflation, the average income of the bottom 20 per cent also fell by 21 per cent. This is not the biggest increase in inequality. For example, inequality among couples with children increased slightly more (Nevile, 1996).

An important cause of the increase in inequality of market incomes is the increased dispersion of wage and salary earnings which has occurred since 1975. The real value (after inflation) of earnings of the bottom 40 per cent of full-time male employees in their main job actually declined over the last 20 years with the decline increasing as one moves towards the bottom of the income distribution (Borland, 1996). There was no noticeable decline at the bottom end of female earnings, which showed a strong upward trend over the period. Nevertheless, earnings of full-time female employees also showed an increase in inequality.

The changes in our economy that caused the rise in inequality in market income are likely to continue for at least another decade. Two factors are singled out in the literature: deregulation and technical change. There is no evidence to suggest that the changes in either of these two areas are likely to slow down, if anything the opposite. Moreover, the changes in the past two decades occurred in an economy in which wage regulation was important.[1] In economies where it was much less important, notably the United

States, the increase in inequality was much greater (Blackburn and Bloom 1994). This suggests that if the increase in inequality in Australia is to continue to be contained within acceptable limits, wage regulations will be necessary in the future.

Some economists argue that regulation in the labour market to achieve income distribution ends is inappropriate and that it is better to use the taxation and social security systems for this purpose. For example, Freebairn (1996) argues that

> the challenge should be to let wages do their labour market equilibrating role. Society's equity goals then would be met more directly and more effectively via the taxation and social security systems (p. 110).[2]

As it happens, much of the increase in inequality in market income over the last twenty years was offset by social security payments and by the social wage or benefits in kind, like free or subsidised health services (Raskall and Urquhart, 1994). Consequently the increase in inequality in the final incomes received by Australians was relatively small. However, this occurred in a period in which the labour market was heavily regulated. It was not the social security system and the social wage alone that achieved income distribution goals. Moreover, the argument that labour market regulation should play no part in achieving income distribution goals completely disregards the political difficulties of raising taxation rates enough to achieve even modest income distribution goals in the absence of any minimum wage regulations. In the 1980s and the early 1990s, when the social security system and the social wage did much to offset increased inequality in market incomes, a significant part of the financing came from the sale of government assets and from budget deficits. Neither of these two sources of finance is a viable long term option.

Although they are less important, two other arguments can be made against relying solely on the tax-transfer system to achieve income distribution goals. First, given a social security system anything like the present one, if minimum wages are reduced so too must be many social security payments. This is true even if nominal minimum wages are left unchanged and the minimum real wage is steadily, even if slowly, reduced by inflation. In this case many social security payments must also be slowly reduced. This is partly because of the political difficulties that arise when social security entitlements are greater than the minimum wage, but more because of the need to avoid poverty traps. These exist when people face extraordinary high rates of effective taxation, sometimes over 100 per cent, on any extra earnings as both social security benefits are withdrawn, or partly withdrawn, and the extra earnings are taxed. The previous government did

a little to remedy this but much more needs to be done. Polette (1995) has estimated that a family of two adults and two children with one adult in the labour force face effective marginal tax rates ranging from 65 per cent to 110 per cent as they move from sole reliance on unemployment benefits and social security to an earned wage of $550 a week. The smaller the gap between minimum wage and unemployment benefits the more important poverty traps are likely to be.

A second difficulty, in allowing wages to fall and using social security payments to offset the effect on the living standards of those receiving low wages, is that it ignores questions about the effects on society of having a class of working poor. At the very least there may be a need to 'ensure that employers do not cost shift to taxpayers' (Perry 1995, p. 81).

Regulation of the labour market and in particular using minimum wage rates to achieve income distribution goals may or may not increase unemployment. That remains to be discussed. But one cannot forego the discussion on the grounds that there is a better way to achieve income distribution goals: the tax-transfer system. That instrument must play a major role in achieving income distribution goals, but political realities, and perhaps economic ones, ensure that it can not be relied on alone to do this.

3. Minimum Wages and Unemployment: The Theoretical Debate

The claim that raising minimum wages reduces employment is based on the neoclassical theory of the demand for labour. However, that theory has been attacked on a wide variety of grounds. In neoclassical theory demand for labour is one aspect of production theory. Decisions made by employers on how many workers to employ, and how many hours of employment per worker to offer are seen as depending on the technology available to be used in production, the price of other inputs and the demand for output. While considerable mathematical analysis and complexity is possible, this does not alter the basic policy implication that the labour market is like most other markets, in that it has a downward sloping demand curve and, therefore, if there is an excess supply of labour (or unemployment) the remedy is to reduce the price (or wage rate). This policy conclusion, and the model that underlies it, rest on a number of assumptions. Four of these assumptions are both important and controversial. Three stem from an underlying assumption of perfect competition. The first is that the wage rate is unaffected by decisions of employers and that they can hire as many workers as they wish at the going wage rate. If firms have to offer higher wages to attract

additional employees, either in general or employees with particular skills, they may hesitate to do so because of the cost of paying the higher wages to their existing employees. In this case raising the legal minimum wage that could be paid, in general or to the particular classes of workers in question, may well increase employment since the firms would have to pay higher wages to their existing employees in any case. All this follows from standard neoclassical theory which says that firms in this situation will restrict the number of workers they hire to keep down wage rates, just as firms with monopoly power will restrict the amount that they sell in order to keep prices high.

In the case of the overall minimum wage – the lowest wage that can be paid to anyone – the assumption that employers can hire as many as they want at the legally fixed minimum wage is probably appropriate. It may not be in the case of award wage rates for those with some classes of skills. In these cases raising award wage rates could well increase employment, even according to neoclassical theory.

The second assumption implied by perfect competition is that workers are homogenous. Again this may be more appropriate when discussing changes in the overall minimum wage rates than is generally the case. The range of skills required by those receiving minimal wage rates is not great and perhaps not too much violence is done to reality by assuming that such employees and those on the verge of employment have the same skills even if many of the unemployed, e.g. the long term unemployed, do not.

However, closely related to the homogenous labour assumption is a third assumption which states that relationships between buyers and sellers of labour are exactly the same as those between the buyers and sellers of any perishable commodity, say fresh fish. This is the most controversial assumption of the neoclassical theory of the demand of labour, and is often summed up in the words that the labour market is like any other market.

However, services of humans are rarely bought and sold in the same way as commodities are, and this is particularly true of labour services bought as an input in the production of goods or other services. Workers have to be supervised to a greater or lesser extent. Motivation, which depends on morale and loyalty, is important. Many firms require firm-specific experience and firm-specific skills that are learnt on the job. There is far from perfect information about the work performance of potential employees. Coupled with firm-specific skills this leads to an effective division of workers into insiders and outsiders. Costs of hiring are themselves significant, and, increasingly, so are costs of firing.

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> There are some critical differences between the labour market and other markets. Exchange in the labour market is highly idiosyncratic, long-term employment relationships are common and jobs and workers can be differentiated along a number of dimensions. ... To return to the view that the labour market is like any other market would, in my opinion be a retrograde step. (1984, p. 104).

In addition to these theoretical challenges to the various implications of the neoclassical assumption that the labour market is characterised by perfect competition, empirical work shows that predictions based on the perfect competition model are commonly at variance with the facts. The most obvious example is that apparently identical workers often receive non-trivial different rates of pay. Many of the studies of the determinants of wage rates include the industry in which the employee works in addition to the various explanatory variables suggested by theory. This is done because it improves the fit of estimated equations, with the industry variable, a more important part of the explanation of earnings, than many of the variables suggested by human capital theory. (See e.g. Chapman and Mulvey, 1996). Similarly, the extensive 'wage-curve' literature showing a negative relationship between the level of wages and unemployment is incompatible with the competitive model of the labour market (Blanch-flower and Oswald, 1995)

The fourth key assumption stems not from the fact that the neoclassical model of labour demand is a competitive model but that it is a particular equilibrium model. It only considers one particular market and assumes that it can be treated as a selfcontained entity with feedbacks between that market and other markets ignored. The neoclassical theory of labour demand is an elaboration of that developed by Alfred Marshall. Strictly speaking it applies to the employment decisions of a particular firm or to firms in a particular industry. Aggregating it to cover the operations of the labour market as a whole is controversial, although it is very widely done. However, even applied to the labour market as a whole the analysis is still particular equilibrium theory.[3] Feedbacks with other aggregate markets are ignored. For example, the effect of changes in wage rates on consumption demand is not discussed, even though the level of aggregate consumption demand has a big effect on employment.

Keynesian economists argue that serious errors are made if interactions between the labour market and other markets are not considered. While, in effect, neoclassical economists argue that problems in the labour market

there is a common theme that the absence of regulation will not ensure that there will be no involuntary unemployment, and that the effect of wage rate changes on aggregate demand must be considered.

To summarise, while neoclassical theory predicts raising minimum wage rates will reduce employment, this prediction rests on assumptions that have been widely challenged. Many observed aspects of the labour market are inconsistent with the assumption of perfect competition underlying neoclassical theory. Apparently identical workers are paid at markedly different wage rates. Implicit or explicit long term contracts are widespread. There are significant transaction costs in hiring and firing. Morale is important and workers may perform better just because wage rates are increased, and so on. In addition feedbacks from other markets are important and are not always easy to predict. The theory is such that it does not produce a convincing case for any stand on the issue except agnosticism. Hence empirical studies are all important.

One final point about the neoclassical theory of labour demand, which also highlights the need for empirical results. Even if one takes neoclassical theory at face value, it only indicates that raising wage rates will reduce employment; it does not predict how important this will be. The practical importance of the theory depends on the slope of the demand curve for labour. If a rise in the minimum wage causes a large fall in employment this is far more serious than if it only causes a very small fall in employment. Moreover, it is possible that a rise in the minimum wage may cause a fall in the total number of hours worked yet leave all of the workers affected better off in that, although they are working less hours a year, their annual earnings are greater not smaller. If the proportional fall in hours worked is less than the proportional rise in the wage rate[4] the total earnings will go up not down.

If following a rise in the minimum wage the change in hours worked is relatively small, the numbers employed may not change, though some or all employees may work less over a year. If all employees have their working hours reduced proportionately, they will all have higher incomes and more leisure. When any rise in unemployment is relatively small the equity question from the point of view of the workers is how any reduction in hours worked is distributed. Thus, the important empirical questions are

- if there is change in total hours in what direction is the change?
- how big is any change?
- if the change is different for different groups of workers, are those classes of workers for which any reduction in employment is significant the sorts of workers where the reduction in hours worked is likely

to be distributed widely or concentrated on a small proportion of workers who become unemployed for long periods of time?

4. Empirical Studies

It is convenient to divide empirical studies between those for a particular country or region and those based on international comparisons. In the thirty years to 1980 a large number of studies were made of the effect of changes in wage rates, especially minimum wage rates, on the level of employment. An authoritative survey by Brown, Gilroy and Kohen (1982) concluded that:

> Time series studies typically find that a 10 per cent increase in the minimum wage reduces teenage employment by one to three per cent .... We believe that the lower half of that range is to be preferred; to the extent that differences in results can be attributed to differences in the specifications chosen, the better choices seem to produce estimates at the lower end of the range. ... Cross-section studies of the effect on teenage employment produce a wider range of estimated impacts ... but estimates of 0 to .76 percentage points are most plausible.
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> The effect of the minimum wage on young adult (20-24 years) employment is negative and smaller than that for teenage employment. This conclusion rests on much less evidence than is available for those 16-19 years. The direction of the effect on adult employment is uncertain in the empirical work, as it is in the theory. (p. 524).

In the 1980s there were fewer studies, but the pattern was for estimated effects of a rise in the minimum wage to be the same or smaller than those summarised by Brown, Gilroy and Kohen in the above quotation. Some of the more interesting studies included one by Solon (1988) who used more sophisticated economic techniques and found rather smaller effects for United States teenagers than had been typical in earlier studies. Another study, by Swidinsky (1980) looked at Canadian teenagers but considered males and females separately. The size of the effects of a minimum wage rise on male employment was the same as the bottom end of the range in the Brown, Gilroy and Kohen summary and that for females a little below the top end of that range. In a study of various industries in the United Kingdom, Kaufman (1989) found effects on employment for a 10 per cent rise in the minimum wage ranging from 0.2 per cent to 1.4 per cent.

The 1990s saw an increase in the number of studies published, most of which suggested that, if anything, the Brown, Gilroy and Kohen summary

overestimated the effects on employment of a rise in the minimum wage. A study of United States teenagers by Wellington (1991) found almost no effects at all. One by Bazen and Martin (1991) for France found small effects for young people and virtually no effects for adults. Neumark and Wascher (1992) used panel data on US state minimum wage laws and found that the effects of these laws on employment depend heavily on the exact specification of the estimating equation. In their preferred specification a 10 per cent increase in the minimum wage caused a decline of one to two per cent in employment of teenagers and young adults. However, this specification includes school enrolment rates and the high correlation between this variable and employment rates causes a bias which is in the opposite direction to the bias Neumark and Wascher consider is introduced by omitting school enrolment rates. Hence, they argue that 'specifications alternatively including and excluding the enrolment rate will bracket the true minimum wage effect' (p. 62). When the school enrolment rate is excluded they find that an increase in minimum wage rates has a small effect in the direction of increasing employment. This suggests that the true effect is close to zero.

Rather more striking were a series of United States studies by Card and Kreuger[5] which found that raising the minimum wage increased employment rather than reducing it, although in only two studies out of 7 was the increase in employment statistically significant at the 5 per cent level. However, to quote Card and Kreuger themselves,

> the results are uniformly positive and relatively precisely estimated. We find zero or positive employment effects for different groups of low-wage workers in different time periods, and in a variety of regions of the country. The weight of this evidence suggests that it is very unlikely that the minimum wage has a large negative employment effect (1995, p. 390).

The most influential of the studies by Card and Kreuger was that of the fast food industry in New Jersey and Pennsylvania, published in the *American Economic Review* of May 1994. An increase in minimum wages in New Jersey in 1992 provided material for a case study of the effect on employment of increases in minimum wages. The fast food industry is a major low-wage employer in the United States. Card and Kreuger compared employment changes in New Jersey and the neighbouring state of Pennsylvania where the minimum wage was constant. They found 'no indication that the rise in the minimum wage reduced employment: (1994, p. 772).

This provoked a counter study by Neumark and Wascher using data supplied by a quasi lobby group – the Employment Policies Institute. They

found employment had fallen in New Jersey fast food restaurants, although the fall was only weakly significant by the usual statistical criteria. However, Neumark and Wascher (1995) acknowledged that the Employment Policies Institute had 'a stake in the outcome of the debate' (p. 5). They undertook another study in which they checked the accuracy of the Employment Policies Institute data and also collected additional data of their own. They could not of course change the sampling design employed by the Employment Policies Institute, who did not claim that it was a random sample. Neumark and Wascher's preferred procedure was to combine the two sets of data. When this was done statistical analysis showed that the rise in the minimum wage was followed by a fall in employment which was significant at the 5 per cent level. Their own data gave results which were not statistically significantly different from those of Card and Kreuger.[6]

By far the most empirical studies have been done in the United States. The overwhelming impression from surveying these studies is that the effects of the minimum wage on employment are either zero or very small. The biggest effects are for teenagers, but modern studies, using careful econometric techniques find that, at the most, a 10 per cent increase in the minimum wage may reduce teenage employment by two per cent. Teenage employment is often part-time and frequently casual with spells of work punctuated with periods without work. It could be that the two per cent fall in employment does not reduce the number of teenagers employed over a year, but only the total hours worked, and that even those teenagers whose hours of work are reduced have higher yearly earnings.

The general results of studies in the United States are confirmed by work done in Canada and in some European countries. In Australia little empirical work has been done, but Gregory (1996) has pointed out that the extremely large change in the relative wages of women which occurred in Australia in the 1970s gives a good test of the effect of relative wage changes on employment. He notes that, despite this large change, the employment of women did not fall relative to that of men.

Despite the consensus in the empirical literature that rises in minimum wage rates had at most a very small effect in reducing employment, casual international comparisons have been used to support the argument that minimum wage rates can result in massive unemployment. In particular, contrasts are often made between the situation in Europe, especially continental Western Europe, and the United States. In Europe there are high minimum wage levels and unemployment is over 10 per cent in many countries. In the United States both the minimum wage rate and the level of unemployment are much lower. This contrast is striking: so much so that a few years ago it was almost conventional wisdom that OECD economies

had a choice between wage rates so low at the bottom end that many full-time workers lived in poverty or massive unemployment.

However, the argument is not really about total employment, or non-employment, but about whether low relative wage rates at the bottom end of the distribution cause more unskilled workers to be employed. Although it focuses on relative wage rates and relative employment rates, it is important since the less skilled are the workers most vulnerable to unemployment.[7]

Nickell and Bell (1996) point out that although there was not a large fall in the relative wages of the unskilled in continental Europe, there was in the United Kingdom, but the 'unemployment record of the unskilled [there] has been worse than in countries like Germany and the Netherlands' (p. 303). Moreover, in continental Europe high wages and rising relative wages at the bottom end of the distribution do not appear to have affected the employment of low skilled workers. In the Netherlands relative wages at the bottom end have risen substantially, but unemployment of unskilled workers has fallen. In Germany real wages (for males) in the bottom decile are rising rapidly whereas in the United States they are falling both absolutely and relatively. Yet the unemployment rate for unskilled male workers is higher in the United States than it is for Germany. This is true although 'the real wage of an individual in the bottom decile of the male earnings distribution in Germany is over twice that of his equivalent in the United States on a purchasing-power-parity basis' (Nickell and Bell 1996, p. 305).

In a more elaborate study, Card, Kramuz and Lemieux (1996) compared changes in wage and employment rates over the 1980s for different age and education groups in France, Canada and the United States. They found that, in response to changes in relative demand, relative wages of less-skilled workers fell substantially in the United States, somewhat less in Canada and not at all in France. However, in the last two mentioned countries 'the patterns of relative employment growth over the 1980's are virtually identical to those in the United States (p. 29)'. The big fall in wages at the bottom end of the distribution appeared to have no effect in increasing employment among the unskilled in the United States.

These studies make more convincing an alternative explanation of low recorded unemployment rates in the United States compared to Europe. Mishra (1995) focuses attention on non-employment, which includes hidden unemployment, rather than on recorded unemployment, which does not. The non-employment percentage is just 100 minus the percentage employed i.e. it is a percentage of the population in the age group, not a percentage of the labour force. When the focus is on non-employment rather than unemployment, it becomes clear that the big difference between the United States and Europe is not that low minimum wages lead American firms to hire

more unskilled workers, so much as poor and short-lived social security benefits lead more of the unemployed in America to drop out of the labour force altogether. If we look at males only (to avoid any possible cultural differences in the desire for paid work by married women) and look at males between the ages of 25 and 54 (to avoid any possible difference in things like school and university retention rates, retirement patterns and so on), then in continental European Community Europe 15 per cent of prime age males are not employed, compared to 14 per cent in the United States. Incidentally in the United Kingdom, whose labour market is more like that in the United States than are those in continental Europe, the figure is 18 per cent. In Australia the figure is 14 per cent, the same as in the United States despite very different labour markets.

5. Conclusion

Allowing the real value of minimum wage rates to fall will increase inequality in Australia. Modest rises are unlikely to have any significant effect on employment. The theoretical debate on this issue is inconclusive. There have been a large number of empirical studies carried out overseas. The weight of evidence from these studies is that, at least within the range of differences studied, high minimum wage rates have little or no effect on the employment of unskilled workers. It is notable that in countries like West Germany and Holland high minimum wage rates are accompanied by high productivity among workers at the bottom end of the wage distribution. Microeconomic reform, including labour market reform, often seems to put the emphasis on cutting costs rather than raising productivity. Some countries, e.g. Singapore, have, in the past, raised minimum wage rates as part of a plan to increase productivity. The equity arguments for slowly rising minimum wage rates are probably stronger than the productivity ones, but a combination of rising minimum wage rates and programs to increase productivity may be a first best solution.

Notes

1 It has been argued that the Accord held down wages at the bottom end and increased inequality, but even if correct that argument compares the Accord system with the previous regulatory regime in Australia. The comparison here is with a largely non-regulated system.

2 Those who argue this way often maintain in other places that taxation rates must be reduced, or at least not increased, if the economy is to function efficiently. In any case changing social security payments will affect the supply of labour and the equilibrium wage.

3 Neoclassical economists do have general equilibrium models (both theoretical models and econometric models) but these models simply assume that, the labour market clears automatically like any other market, i.e. in the absence of regulation there will be no involuntary unemployment by assumption.

4 That is, the absolute value of the elasticity of demand is less than one.

5 Some of these studies were done separately and some together. Laurence Katz was co-author of two of the articles describing them. They are all set out in detail in Card and Kreuger (1995).

6 See Blinder 1996 for a description and evaluation of the controversy between Card and Kreuger and Neumark and Wascher.

7 Empirical studies show that unskilled workers are substitutes for physical capital whereas skilled workers are complements (Hamermesh 1993, p.135).

References

ABS (1996), 'The Effects of Government Benefits and Taxes on Household Income in 1993-94' in _Australian Economic Indicators_, August, Australian Bureau of Statistics Cat. No. 1350.

Bazen S. and Martin J. (1991), 'The Impact of the Minimum Wage on Earnings and Employment in France', _OECD Economic Studies_, pp. 199-121.

Blanchflower D. and Oswald A. (1995), 'An Introduction to the Wage Curve', _The Journal of Economic Perspectives_, Summer, pp. 153-167.

Blackburn M. and Bloom D. (1994), 'Changes in the Structure of Family Income Inequality in the United States and Other Industrial Nations During the 1980s', National Bureau of Economic Research, Working Paper No. 4754.

Blinder A. (1996), 'The $5.15 Question', _New York Times_, 23 May.

Borland J. (1996), 'Earnings Inequality in Australia: Changes and Causers', Paper given at the Conference of Economists, Canberra.

Brown C., Gilroy C. and Kohen, A. (1992), 'The Effect of the Minimum Wage on Employment and Unemployment', _Journal of Economic Literature_, pp. 487-528.

Card, D., Kramuz F. and Lemieux T. (1996), 'Changes in the Relative Structure of Wages and Employment: A Comparison of the United States, Canada and France', National Bureau of Economic Research, Working Paper No. 5487.

Card S. and Kreuger A. (1994), 'Minimum Wages and Employment a Case Study of the Fast-Food Industry in New Jersey and Pennsylvania', _American Economic Review_, September, pp. 772-793.

Card S. and Kreuger A. (1995), _Myth and Measurement: The New Economics of the Minimum Wage_, Princeton University Press.

Chapman B. and Mulvey C. (1986), 'An Analysis of the Origins of Sex Differences in Australian Wages', _The Journal of Industrial Relations_, pp. 504-520.

Gregory Bob (1996), 'Wage Deregulation, Low Paid Workers and Full Employment', in P. Sheehan, B., Grewal and M. Kummick (eds), _Dialogues on Australia's Future_, Victoria University of Technology, pp. 81-101.

Hamermesh D.S. (1993), _Labour Demand_, Princeton University Press.

Kaufman R. (1988), 'The Effects of Statutory Minimum Rates of Pay on Employment in Great Britain', quoted in Hamermesh (1993).

Mishra R. (1995), 'Social Policy and the Challenge of Globalisation', in P. Saunders and S. Shaver (eds), _Social Policy and the Challenges of Social Change_, Vol. 1, Social Policy Research Centre, University of New South Wales, pp. 15-34.

Nevile J.W. (1991), 'Economic Rationalism: the Human Dimension', in G. Withers (ed), _Community and Difference: Australia and the United States_, pp. 93-107, North Sydney, Allen and Unwin.

Nevile J.W. (1996), 'Deregulation and the Welfare of the Less Well Off', _International Journal of Social Economics_, pp. 310-325.

Neumark D. and Wascher W. (1992), 'Employment Effects of Minimum and Sub-Minimum Wages: Panel Data on State Minimum Wage Laws', _Industrial Labour Relations Review_, Vol. 46, pp. 55-81.

Nickell S. and Bell B. (1996), 'Changes in the Distribution of Wages and Unemployment in OECD Countries', _American Economic Review_, May, pp. 302-308.

Perry J. (1995), 'Managing the Distribution of Living Standards over the Life Course Better', in Commission for the Future of Work, _Proceedings of the Future of Work and Access to incomes Seminars_, pp. 77-81, Sydney, ACOSS.

Polette J. (1995), 'Distribution of Effective Marginal Tax Rates Across the Australian Labour Forcer', Natsen Discussion Paper No. 6, Canberra, National Centre for Social and Economic Modelling, University of Canberra.

Solon G. (1985), 'The Minimum Wage and Teenage Employment: A Reanalysis with Attention to Serial Correlation and Seasonality', _Journal of Human Resources_, 292-97.

Sloane Judith (1984), 'Stone on Teenage Unemployment, Some Comments', _Australian Journal of Management_, pp. 99-106.

Swidinsky R. (1980), 'Minimum Wages and Teenage Unemployment', _Canadian Journal of Economics_, pp. 158-71.

Wellington A. (1991), 'Effects of the Minimum Wage on the Employment Statics of Youths: An Update', pp. 27-46.