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From Golden Age to Golden Age: Australia's “Great Leap Forward”?

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Abstract*

The twenty-five years after WW 2 witnessed strong labour market institutions and beneficial labour market outcomes - high wage growth and integration of low-skilled immigrants. Then came the macro shocks of the mid 1970s. Labour market outcomes deteriorated as full-time employment population ratios fell, particularly among males;

unemployment and welfare use increased; and real wages grew slowly. The golden age passed. In response, successive governments have increasingly begun to dismantle the institutional framework. We address this transition within a simple long run graphical framework to help us marshal facts and arguments and to discuss the likely impact of institutional reform.

JEL classification: J0, D6, E6, L5, O3

Introduction

During the twenty-five years following World War 2, the Australian labour market produced extraordinary outcomes, probably surpassed only by Japan during this period. The labour market absorbed 3 million immigrants, many with poor English language skills; maintained full employment with unemployment levels often below one percent; and increased average real wages at around 2-3% a year, a rate similar to the US and those countries of Western Europe with similar levels of economic development. This exceptional performance took place within an institutional framework of strong unions, centralized wage fixing, a compressed wage structure and an extensive welfare system.ⁱ Any analysis of this period would conclude that from a labour market perspective this was a golden age; all parts of the labour market were growing along a steady growth path with advantages for all. Of course there were economic cycles, but even these seemed, in labour market terms, to be extremely benign. The most serious recession, that of 1961/62, saw a brief unemployment increase to just over 2 per cent. Then, labour market outcomes gradually began to deteriorate. The first noticeable signs began with an increase in nominal wage inflation during the later years of the 1960s, peaking at 18% in the mid 1970s. There were structural problems emerging in the manufacturing sector where increased competition from Japan, and the unwillingness in Australia to increase tariffs further, was eating into employment but the structural problem did not seem that serious at the time. The early analysis of increased unemployment in the mid 1970s focused on macro outcomes, i.e. the unemployment inflation trade-off and the increase in real wages in the middle of the decade. Consistent with the macro focus – led primarily by the Reserve Bank, Treasury and

international organizations such as the OECD – the policy responses were directed towards monetary policy and macro wage setting rules to be followed by the centralized wage fixing authority. In terms of achieving the intermediate macro targets there was considerable success. Real wages increases ceased almost immediately after 1975 and real wages were more or less maintained at a constant level for twenty years. Correcting the rate of inflation took longer, but by the early 1990s this intermediate target had also been achieved.

Despite the success in achieving intermediate targets, the labour market outcomes such as real wage increases and full-time employment growth have been among the worst in Australia's long run history. For a long time many analysts were prepared to believe that the poor labour market outcomes were the cost of the macro policies of constraint and that once the intermediate inflation and real wage targets were achieved the labour market would return to the past growth trajectory and the previous golden age would be restored. This is now clearly not the case and there has been a rethink of the initial diagnosis of the source of the difficulties that emerged in the 1970-1990 period. In response to the failure of traditional macro policies to achieve good labour market outcomes, policy makers have begun to look more closely at the institutional framework within which the labour market operates and following from this the process of dismantling the previously successful institutions has begun. This leads naturally to a number of important questions.

Were the institutions associated with the golden age in any way to blame for the arrival of the end of the golden age? And, irrespective of the answer to this question, has the world changed in some way such that the successful institutions of one environment were unsuccessful in another? What are the main issues in a new institutional framework? What would be the new pattern of labour market outcomes? And finally, after twenty or so years has the labour market

adjustment period come to an end so that we can begin again along a new golden age growth path or is there still a need for considerable adjustment in labour market institutions?

Over the following pages we explore some of these questions and erect a framework for thinking about all of them. Our paper is structured as follows. Part 1 provides a selection of basic labour market facts that cover the post 1970 period. These facts are reasonably well known but they provide the platform on which we build and they provide some evidence to support judgments as to the likely outcomes from previous reforms.

Part 2 and 3 presents a simple graphical framework to help focus on some of the issues that surround the likely outcomes from institutional reform. This graphical analysis, which is used to discuss various reforms, presents a stylised picture of the long run operation of the labour market. A long run focus is needed to take the analysis away from many of the short run issues upon which many analysts naturally focus.ⁱⁱ We end with a discussion of research issues to take up in the future and return to some of the questions raised above.

Part 1: the problem

We think there are three sets of key facts that matter for the long run analysis of the Australian labour market: what is happening to the average real wage and wage structure, what is happening to full-time employment, and what is happening to welfare reliance?

Wages

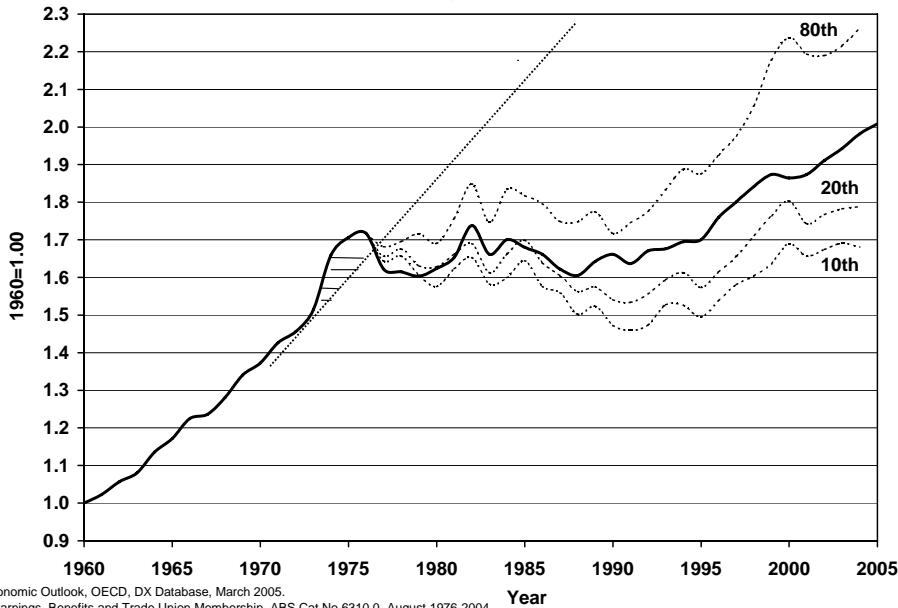
The solid line in Figure 1 presents average real compensation per worker. The data are taken from the OECD and reveal a remarkable story.ⁱⁱⁱ The golden age is clear. Real wages were growing at about 2-3% per annum during the 1960s and early 1970s. Then, after an above average real wage increase during the mid 1970s, real wages stayed more or less constant for

the next fifteen to twenty years. The deviation from a linear projection of the golden age trend (the dotted line starting in 1970) is remarkable. By 1995 real wages are about 30% to 50% less than they might have been if the golden age had continued.

This long period of real wage stagnation was completely unanticipated by those of us involved in the macro and labour market debates of the mid 1970s. No one foresaw fifteen years of real wage constancy. Some of the large changes over the period are associated with shifts in factor shares between profits and wages. The major underlying shifts, however, were the 1975-1990 slow down in productivity growth and a widening dispersion of productivity growth across different segments of the labour market, both of which had their counterparts in other countries such as the US,. Over the last decade productivity growth, as in the US, has returned to growth rates similar to the golden age and the wage dispersion has begun to narrow slightly.

There are important wage issues that we have had to put aside. These include wage outcomes for women. There is a similar pattern of full time wage changes as for men, except for the large additional 30 per cent real wage increase during the equal pay period 1969 to 1975. A discussion of some of the issues can be found in Gregory and Duncan (1981), Gregory and Daly (1991), Gregory (2002) and Gregory (2004).

**Figure 1 Australia, Real Total Compensation Per Employee Index
Adult Male FT Weekly Earnings, 10th, 20th and 80th Decile, 1960-2005**



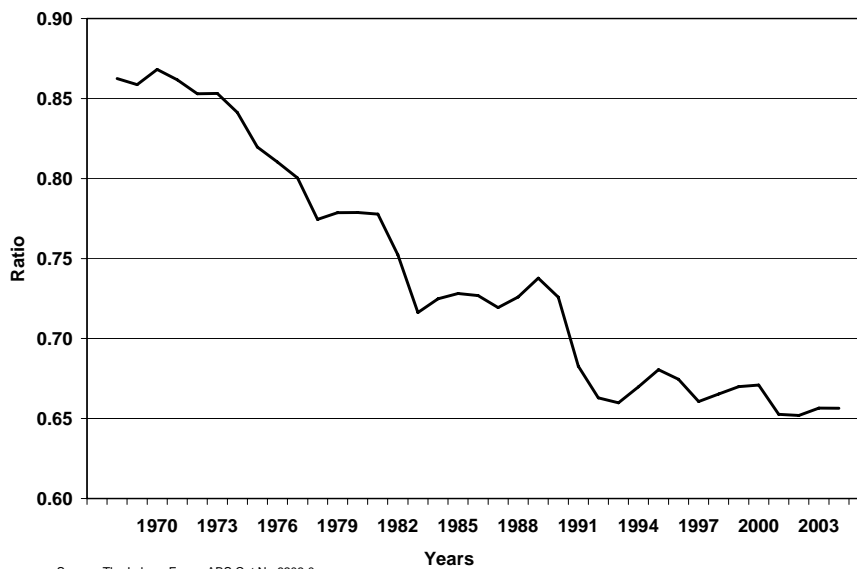
Source: Economic Outlook, OECD, DX Database, March 2005.
Employee Earnings, Benefits and Trade Union Membership, ABS Cat No 6310.0, August 1976-2004.
Note - All Adult Male FT Weekly Earnings indexed at 1.7 in 1976.

It is also apparent from Figure 1 that, from about the mid 1990s real wages have returned to a growth path similar to that of the golden age. Note however, that there is no catch-up for the fifteen years of stagnation. The loss of real wage growth during the transition period appears to be lost forever. Was there any policy that could have avoided this loss? And, if so, could a policy advisor or government, against the background of the history of the golden age, and the long run success of the prevailing labour market institutions, have carried the day? We are certain that the answer to the second question is no but we do not know the answer to the first.

We now turn to the wages of different groups in the labour market. During the golden age real wage growth was fairly even across various groups^{iv}, although, in response to data difficulties we do not present the evidence here. There is, however, readily available data on the weekly earnings distribution for full-time workers from 1976. We include in Figure 1 the wages for the bottom 10th, 20th and top 80th percentile of men employed full-time.^v The series are indexed to the 1976 average real compensation per person.

There are four points to be made from this wage dispersion data. First, all parts of the full-time earnings distribution experienced the break in the real wage trend beginning in the mid 1970s and all experienced near constancy for about fifteen years. Second, within the earnings distribution, all groups have experienced earnings increases since the early 1990s but no groups have been able to recoup the real wage losses of the fifteen year stagnation period. Third, the wage dispersion has widened and for a considerable part of the period the full-time earnings of those in the lowest part of the earnings distribution fell. Fourth, full-time male workers in the bottom ten per cent of the earnings distribution receive much the same level of earnings that prevailed in 1975. For one fifth of the full-time male work force therefore there has been no real wage growth over the past thirty years. How does this pattern of earnings relate to employment outcomes?

**Figure 2 Male Full-time Employment to Population Ratio, 15-64
1968-2004**



Employment

There are two sets of employment facts that are particularly important and can be used to illustrate the large changes that have occurred. First, Figure 2 presents the male full-time employment-population ratio for those aged between 15 and 64 years. The end of the golden age is clear. Since 1970 there has been a twenty-three per cent fall of male full-time employment (from 87 per cent to 67 per cent), although since the early 1990s the rate of decline has slowed markedly. There has been no claw back of lost employment.^{vi}

If we put Figure 1 and Figure 2 together a clear picture emerges. The transition period for the male full-time employment ratio seems to have come to an end during the mid 1990s. At the same time as the decline in the male full-time employment population ratio stops real wage growth begins again. A number of largely unanswered questions are obvious. Since the male full-time employment population ratio is near its lowest level ever, why have real wages begun to increase? Why have we all the appearance of a new growth path in terms of wage increases and employment stability, but with very much lower employment levels? In many ways the responses to these questions are driving the program for institutional reform.

Table 1
Males, 25-59 by Age Group and Skill Level
1981 and 2001 Australia Census

	Percent 1981 Census		Percent 2001 Census	
	Skilled	Unskilled	Skilled	Unskilled
<i>Proportion Employed Full-Time</i>				
25-34	80	76	77	60
35-49	87	79	80	62
50-59	85	69	73	52
Total 25-59	83	75	77	59
<i>Single -</i>				
<i>Proportion Employed Full-Time</i>				
25-34	73	64	73	53
35-49	83	64	73	51
50-59	76	53	68	42
Total 25-59	75	62	72	50

Definitions -

Skilled is defined where education level is bachelor degree or higher, Unskilled defined as having no qualifications.

Full-time is working more than 35 hours per week.

Source: Census of Population and Housing, Household 1% Sample File, Australia, 1981 and 2001.

Second, who are these men who are no longer employed full-time? Table 1 lists the employment-population ratio for men by education category. The data are taken from the 1981 and 2001 Census which are years for which we have readily accessible unit record data. Full-time employment has fallen for all men but it has been primarily concentrated on the unskilled. At the time of the 2001 census the proportion of skilled men employed full-time is 77 per cent, a fall of 8 per cent over the period. By 2001 the employment-population ratio for unskilled men is a low 59 per cent, a fall of 21 per cent. Over the longer period since 1970 the falls are almost twice as large.

Has the loss of unskilled full-time jobs continued since 2001 now that the aggregate male full-time employment population ratio appears to have stabilized? The basic data are listed in Table 2 where we use occupational data to classify full-time male workers into skilled and less

skilled.

**Table 2 Males, Change in Employment Status by Skill Level
1996-2005**

	Levels 000's		Change Relative to 1996 000's			Change 000's	
	1996	2005	1999	2002	2005	1996-2002	2002-2005
Full-time:							
Skilled	1658	2022	145	211	364	211	154
Less Skilled	2510	2652	-22	-33	142	-33	175
Part-time:							
Skilled	113	194	30	78	81	78	3
Less Skilled	439	583	35	147	144	147	-3

Definition -

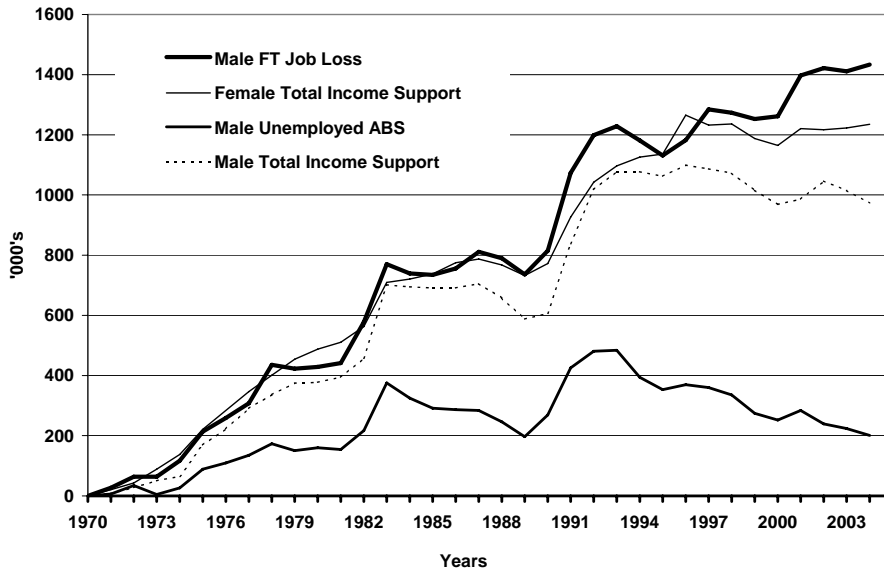
Skilled - Managers and Administrators, professionals, associate professionals, advanced clerical and service workers.

Less Skilled - Tradespersons and related workers, Intermediate and elementary clerical, transport and service workers, Labourers.

Source - Austats, ABS Website, Data Cube e13, August, 1996-2004, Feb 2005.

The latest data reveal a number of messages. They show that between 1996 and 2002 economic growth did produce more male full-time jobs, but all were at the high-skill end. It is only during the last few years, 2002 – 2005, that full-time employment among the less skilled has begun to increase, perhaps largely in response to the construction boom. It is also noticeable during these last few years that there has been a large switch away from growing part-time employment for the less skilled towards full-time work, an important phenomenon which we do not have time to pursue.

Figure 3 Labour and Welfare, Males and Females
1970-2004



The Welfare system

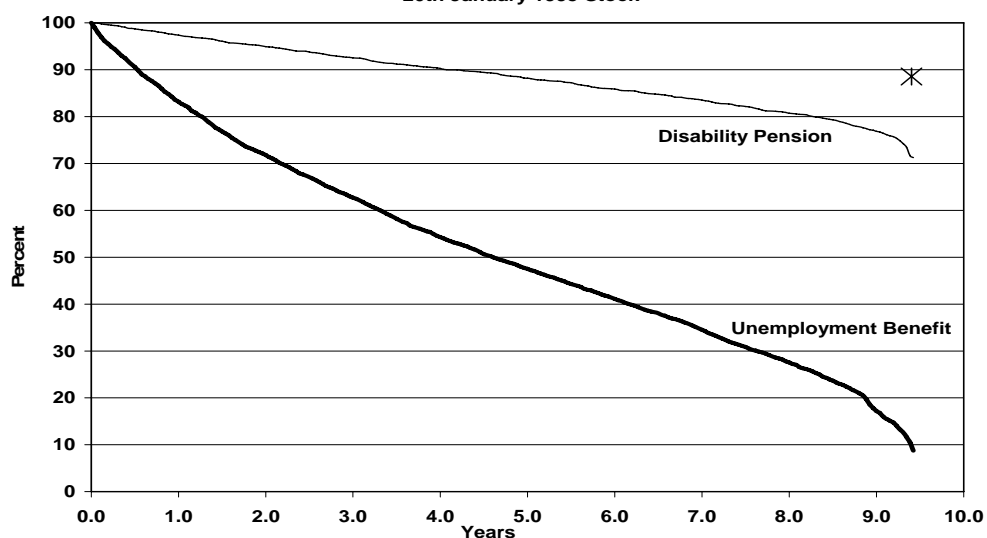
A remarkable fact from the golden age period before 1970 is that there was very little use of the Australian welfare system for men of work force age. What has happened since the end of the golden age? To address this question we present Figure 3. First, the heavy dark line shows how many full-time male jobs Australia has less than what one would expect from the 1.4 million full-time jobs and no return to 1970s levels, even in the boom years. How are these men supporting themselves? The light dotted line shows the increase in the total number of men on some form of government income support. The matching of full-time job losses with the income support increases is extraordinary. About a million men have been added to the welfare rolls. The bottom line in Figure 3 shows the change in the official ABS male full-time unemployment. It is noticeable that, almost all of the increase in income support between 1970 and 2004 – Unemployment Allowances and Disability Support Pensions – is not measured by ABS unemployment data.

Figure 3 also includes the increase in the total number of females on some form of income support, which almost perfectly tracks the male full-time job loss. Another 1.2 million individuals become dependent on the state in this period. The parallel changes in male full-time job loss and increased income support for women is even more extraordinary.

Of course, from a labour market perspective, it matters a great deal whether those who access the welfare system do so for a short period before finding a job or remain there for long periods of time. Workers who move from full-time employment to welfare support for short periods and then return to full-time work would not pose a serious problem.

To address this issue Figure 4 takes male welfare recipients in June 1995 and classifies them into two programs, NewStart (UB) and Disability Support Pensions (DSP). We follow these individuals through time and aggregate the time spent on all welfare spells. There are two subsidiary points that should be made. The first is that all these men have spent considerable time on welfare before 1995 so perhaps the average stay on welfare over the lifetime may be much longer than the 9 year maximum in this graph. Second, we have focused on the stock of men on income support in 1995 rather than the inflow where the inflow is likely to spend less residual duration on DSP than the stock.

Figure 4 Males 15-64 - Aggregate Time on Income Support after 1995
20th January 1995 Stock



Note - * 88.5 percent of clients have either died or have been on continuous income support 9.5 years later.

We find that men have spent a long time on income support. Nine years after 1995, 78 per cent of men on Disability Pensions are still receiving welfare payments. If we adjust for those who died over the period then after nine years 90 per cent of the initial stock of DSP recipients either spent 9 years in welfare support or died before the 9 years were over. For those in NewStart in 1995 we also see that many stay for a long time, where some 50% have experienced five years or more relying on income support.

What have we learned from this data parade?

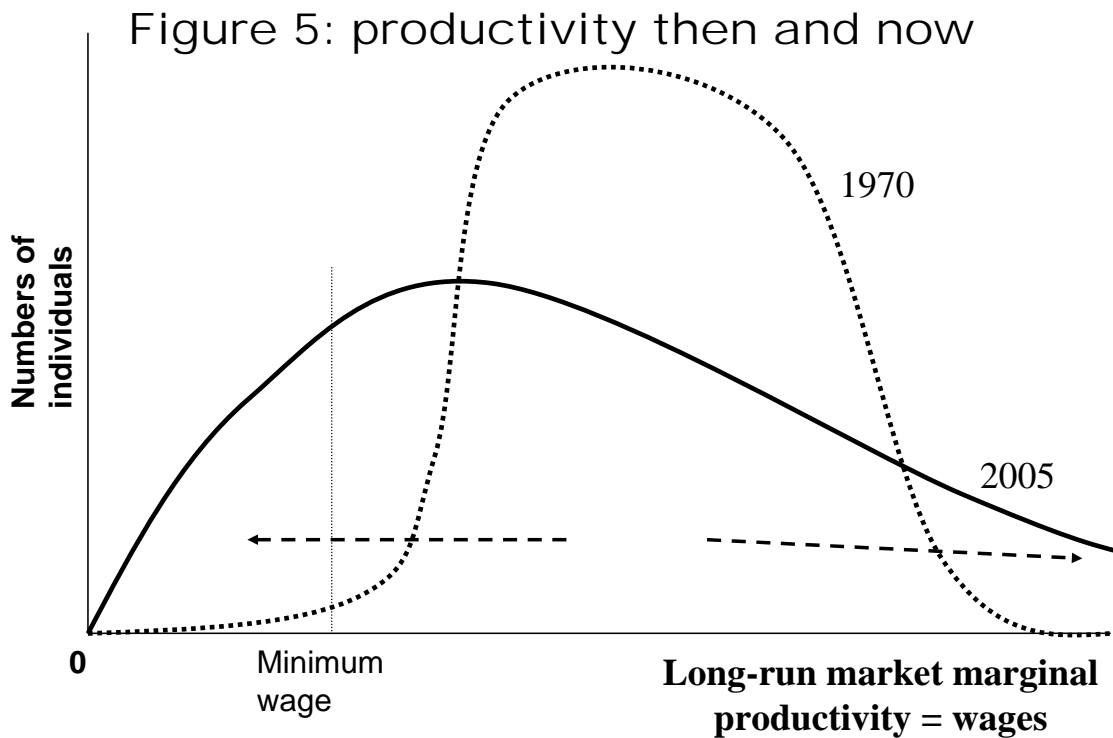
One lesson is that there is a bifurcation of the labour market. Male high income earners are back on track and experiencing good wage growth rates. They did not suffer much employment loss during the transition period but they did not gain wage increases. There is no evidence that the transition wage losses, relative to past trends, will be claimed back. Male low income earners are not back on track. They suffered large employment losses and real wage levels are only marginally above 1975 real wage levels. Large numbers are on welfare where they remain for a long time.

Another lesson is the evident failure of the prevailing policy settings during the transition period to prevent unemployment and maintain wage increases across the board. Despite near real wage constancy for twenty years unskilled men have continued to lose employment. Indeed, minimum wages have been flat in this period. Employment has begun to increase during the last two years of the current boom, but we would need decades of such a boom, without any significant downturn, to return to 1970 employment levels. To all intents and purposes, therefore, the increased welfare dependency is a long-term phenomenon from which there is no easy return. Australia seems to have found a new labour market equilibrium in which 1 million, mainly low-skilled, men are without full-time employment and on long-term state support. The loss of male jobs also seems to be spilling over into female employment, witness the 1.2 million increase in welfare support among women.

Part 2: What has changed since the 70's?

One main thesis of neo-classical economics is that in the long run everybody can have access to a job paying the marginal value of ones' skills. If a person gets paid less by their employer, some competitor will offer them a higher paying job which they will eventually find. If they get paid more by their employer, the employer would eventually go bankrupt. Though they may have trouble finding a job in the short run, in the long run one can either set up a job oneself or some entrepreneur looking to make a profit will create a suitable job. Of course this is a stylized and highly restrictive description of the main neo-classical thesis but this is nevertheless what many economists and policy makers believe must be true in the long-run. A key observation that supports this view is that labour force participation levels do not vary

significantly with the level of population in a country, implying that in the long run it's the supply of labour that creates demand rather than anything else. In this conception, what has happened since the 70s is a massive shock to the distribution of marginal productivity over the population that has made many individuals unemployable at the current wage floor. Acemoglu (2002) and others have labeled this shock 'skill-biased technological change'. The main idea in this literature is that globalization, standardization, and computerization lead to reduced marginal productivity for the low-skilled and higher marginal productivity for the high-skilled. The mechanisms behind this follow standard economic reasoning: globalization was pushed by big reductions in transportation costs and lowering of official trade barriers (tariffs, incompatible legislation and the like), which reduced the effective protection of low-skill-intensive industries in richer countries. From a rich country perspective this amounts to an adverse productivity shock to the lower skilled. When we think of standardization, we think of the worldwide adoption of standard accounting procedures; computer based applications such as word processors; global protocols for trade; standardisation of management procedures and education qualifications; all these forms of standardization reduce the importance of firm-specific investments (simply because there is less that is firm specific) which in turn both reduce the total effective firm-specific capital of those with non-specialised skills and reduces the bargaining position of insider, which again implies an effective reduction of the marginal productivity for low-skilled workers. Finally, computerization directly meant a decrease in the returns to any form of labour that could be automated, which lead to a demand reduction for professions like bank tellers or typists. The figure below captures the essence of these changes on the population level.



On the horizontal axis here is the long-run marginal productivity of individuals, and we are here thinking initially about men. Marginal productivity is made up of a large number of factors of which different individuals have different amounts. IQ, EQ, energy, formal education, access to capital, networks, and all sorts of other 'skills' go into it. The value of each of those skills is heavily dependent on current technologies. Only in the long-run is it reasonable to think that the actual wage an individual would get is a reflection of the productivity of the skills an individual has. The graph is thus intended to capture what the distribution of this 'long-run marginal productivity' was in 1970 and in 2005. The dotted line shows in a stylized sense what we think was the distribution of the market value of those characteristics in 1970, which had the property that virtually no-one had a marginal productivity below the minimum wage (participation for prime-age men was about 90%); and that the marginal productivity distribution was rather compressed which was reflected in compressed wages. What skill-biased technological change did was to stretch this distribution

in both directions, implying that whilst many individuals (especially with higher education) became more productive, many others experienced such a change in the value of their attributes that many became less productive than the minimum wage. Think of office workers replaced by computers. Think of manual labourers, like miners, textile workers, and farmers, who were replaced by overseas imports or new agricultural machinery. These workers saw a very strong adverse demand shift against them making many of their skills less valuable. The international evidence to back up this stylized claim about the developments since 1970 is quite strong and is reviewed in Autor, Katz, and Kearney (2004). Both in the US and in the EU in this time, we saw a divergence of the wage distribution; an increase in the premium for being high-skilled; an increase in the numbers of individuals working in the low-end of the labour market (i.e. more personal service jobs, such as butlers and waiters and gardeners, etc.); and demand reductions for the low skilled which translated into lower wages in the US and higher unemployment in the EU. As we saw in Part 1, there is supporting evidence for Australia also in the sense that being jobless is mainly an issue for low-skilled households. Scutella and Wooden (2004) estimate from Australian household panel data that 80% of all jobless households have an adult who did not complete secondary school. Whilst the sources of the change in skill values are still a topic of heated discussion, there is little doubt that the marginal productivity of the high-skilled has gone up whilst that of the low-skilled has gone down.

Figure 5 includes a minimum wage line. This minimum wage should be thought of as a wage floor. In reality there are many different minimum wages (and other wage floors) in Australia, but one can abstract from these differences by thinking of the minimum wage as THE wage floor to which all the other wage floors are tied. What is striking about the 2005 distribution is

that many individuals' marginal productivity falls below the minimum wage.

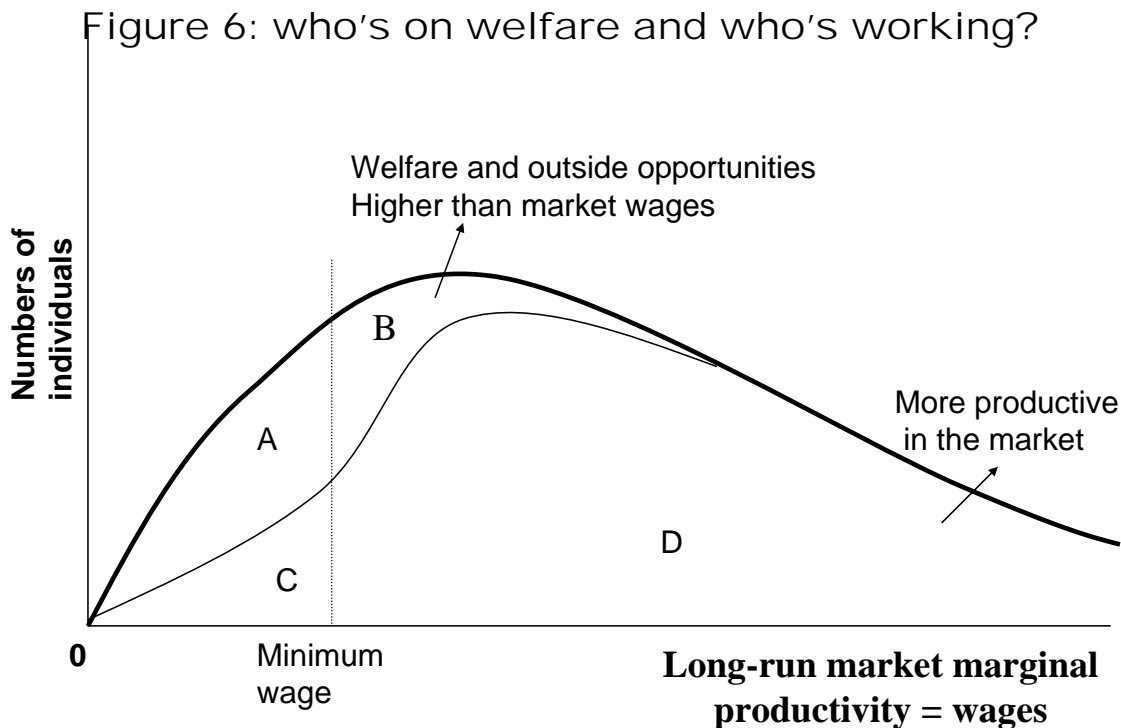


Figure 6 takes the 2005 distribution and divides the population of men into those for whom welfare and opportunities outside market work are worth more than the wages they could obtain in the market (i.e. their marginal productivity) and into those for whom the converse holds. Think of outside opportunities as an amalgam of many things, including production in the grey economy, leisure, and home production.

This graph is our main vehicle for discussing the current policies regarding welfare dependency. The individuals in area D make up the full-time male workers, which consists of all those people whose marginal productivity is higher than the minimum wage and for whom the market wage is better than the sum of outside opportunities. In Australia, area D relates to about 70% of working age men (i.e. some 5 million men). Area A and C consist of those individuals whose marginal productivity is below the minimum wage and for whom there is hence at the present no demand. Area B consists of those individuals whose marginal

productivity is above the minimum wage yet for whom welfare and outside opportunities are more than market wages. Area B includes all those who could in present market circumstances increase their market labour supply, but who don't. This includes part-time employed individuals, househusbands, some of the pool of early retirees, and others with valuable skills whose outside options are good. All the men in area B 'choose' not to be in market production, at least not full-time, but choose to be on welfare. Areas A, B, and C combined in Australia refer to about 1.5 million men. One of the key questions of course is the relative size of these areas because each is affected by policy in entirely different ways.

We want to make various aspects of the graph clearer by looking at a subtle difference in policies. Think about the relative employment merits of wage subsidies to the employee or the employer. Say the policy proposals are to either give every unemployed person a 100\$ a week when they find a job, versus giving an employer a 100\$ a week subsidy when they hire an unemployed person. At first glance, one would think those two policies are the same, for neither changes anyone's skills. Think now in terms of Figure 6 of the effect of giving an unemployed person a 100\$ a week extra via the tax system when that person works. Clearly, that would make a person more eager to get a job and would thus shift the division of the persons with marginal productivities below the minimum wage into areas A and C. Yet it makes no-one with marginal productivities below the minimum suddenly capable of doing a job above that minimum. Hence no-one with minimum wages higher than their marginal productivity would become employed if one targets the 100\$ a week to the employee: potential employers would still not be willing to hire them for wages at or above the minimum wage. The only employment effect would be to encourage some voluntarily unemployed in area B to find a job. With the same graph in mind, now consider the effect of giving the 100\$ a week to

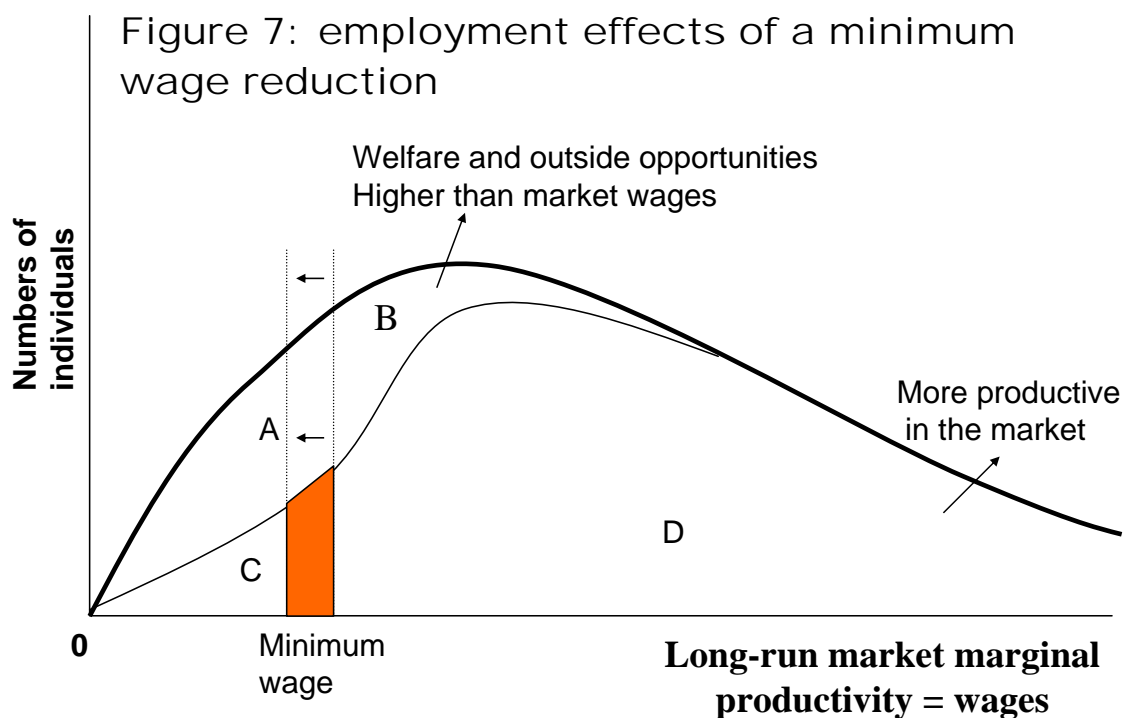
employers. These employers will now be willing to hire individuals with marginal productivities just below the minimum wage. Indeed, the person with a productivity just 100\$ a week below the minimum would suddenly become employable, because there has now arisen a wedge between what an employer pays to the employee and the total cost of employing that person. The difference is the wage subsidy. Hence, in employment terms, a 100\$ per week targeted to the employer will lead to some increased employment of those formerly unemployable, whilst the 100\$ a week targeted to the formerly unemployed will not.

This example shows that one should think of marginal productivity as the total net material benefits accruing to an employer after all the non-wage costs of employment are taken into account, whilst the minimum wage line shows the point where that net benefit to the employer is exactly equal to the minimum wage. The net benefit to the employer of employing someone shifts when there are subsidies to employing someone, but does not shift when employees get that benefit. One should think of the dividing line between the areas {A,B} on the one hand and {C,D} on the other hand as arising from the current labour supply choices of all individuals. When the dividing curve shifts up, this reflects an increase in labour supply meaning that more individuals are now in areas C and D and thus willing to go into full-time employment at the wage they can command. When the dividing curve shifts down, this reflects a decrease in labour supply meaning that less individuals are willing to work at the wage they can command. Shifters in labour supply will thus appear in this analysis as shifts in the dividing curve between the areas {A,B} on the one hand and {C,D} on the other hand. Shifters in labour demand will appear as shifts in the thick line, i.e. the distribution of marginal productivity itself: shifts to the left are negative labour demand shocks, with shifts to the right being positive labour demand shocks.

Part 3: selected policy reforms

Minimum wages

Much of the current labour market debate can be translated into questions about Figure 6. Take first of all the question how much a reduction of the minimum wage would actually increase work participation. The long-run effect of a minimum wage reduction is to allow all those whose outside options are worth less than employment but whose marginal productivity is less than the current minimum wage to become employed. This is illustrated in the graph by the employment effect of a shift of the minimum wage line to the left which leads to an increase in area D (employment):



The shaded area in this graph relates to the number of additional employed individuals a minimum wage cut would in the long run lead to. Note that this is a lot less than the number of

individuals whose marginal productivity falls in between the old and the new minimum wage because part of the effect of minimum wages is to increase area B: those individuals choosing to be on welfare (area A and B) are unaffected by a reduction in the minimum wage. The number of individuals in the shaded area relates to the elasticity of demand: if a 1% cut in the minimum wage increases the number employed near minimum wages by 1% then the elasticity of demand is -1.0. The crucial questions are how many individuals we count as working near the minimum wage and how responsive that number is to minimum wage changes. Empirically, the mainstream estimate of the elasticity of aggregate labour demand to aggregate wages ranges between -0.3 (from Borjas 2002) to -0.63 for Australia (from the MONASH model by Dixon, Madden, and Rimmer 2005) to as high as -1.0 (Andrew Leigh (2004) using Australian data and the upper limit of the 2000 survey by Dawkins et al., as well as the paper by Borland and Woodbridge 1999). The number of individuals in Australia working close to the minimum wage is quite low. Andrew Leigh (2005), using ABS earnings data, reports that about 12% of those on wages earn less or equal than the hourly minimum wage plus 2 dollars. About double that percentage earns less than the minimum wage plus 4 dollars. If we take this latter, larger, group then there are about a million men working near the minimum wage. With an elasticity of -0.5, which is a high estimate relative to the literature, a 20% reduction of the minimum wage would raise employment by 100,000 workers. If minimum wages were cut by 80%, these assumptions would lead to about 400,000 additional jobs.^{vii} That is the most optimistic scenario we can think of, unless we are of course prepared to believe that reducing the minimum wage is going to open opportunities for those currently with productivities below the minimum wage to gain employment at very high wages, which appears highly unlikely. If we on the other hand take the conservative estimates of only 500,000 individuals near the

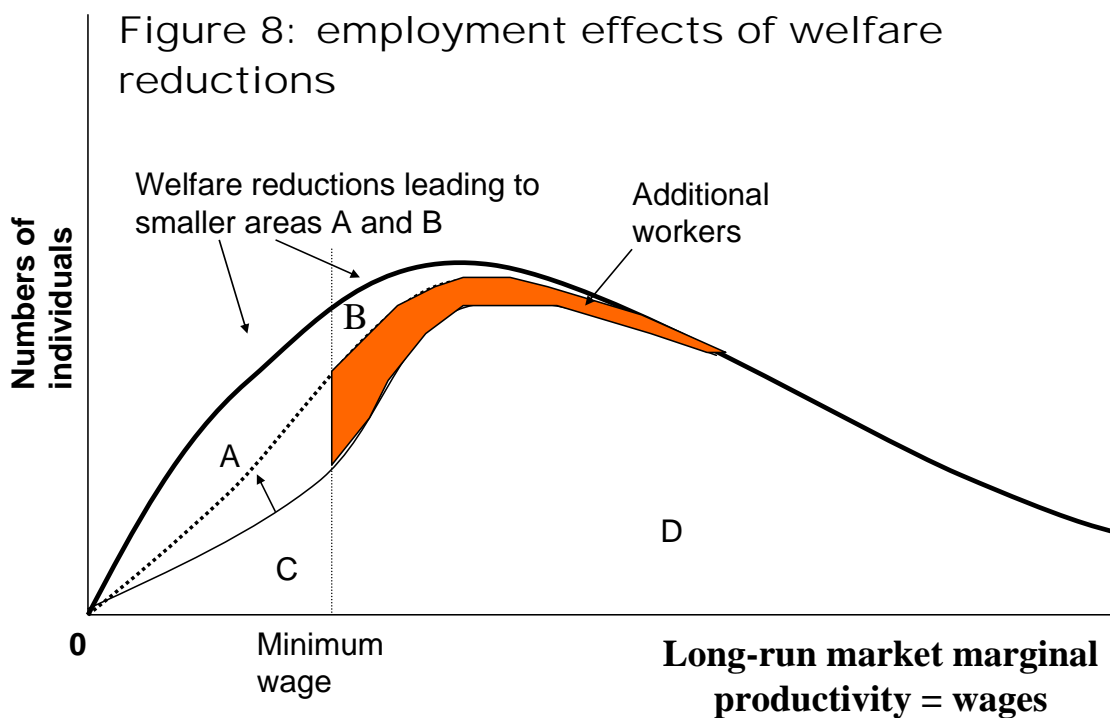
current minimum wage and -0.3 as our estimate of demand elasticity, then an 80% cut in the minimum wage is going to lead to no more than 120,000 additional jobs or 10% of the current stock of men on some form of state-provided income support. We may in this context report on the finding by Haveman and Wolfe (2005) concerning the wages of those US welfare recipients that returned to work after the massive reforms there in the late 90s. Haveman and Wolfe reviewed the US' federal welfare reforms in the late 90s that amounted to the implementation of a whole package of changes, which then triggered state-specific additional changes. Haveman and Wolfe conclude that this complicated wave of reforms since 1996 have allowed only 5-10% of previously welfare-dependent single mothers (at whom most reforms were targeted) to escape poverty through earnings alone. They also report that the mean wage of those lone mothers that did enter work was about US \$6.50 per hour. Note that the Australian minimum wage is about US \$9.00 an hour. These findings mean we should not expect masses of Australian men currently on welfare support to find high-paying jobs when minimum wages are drastically cut. The inability of most US welfare mothers flowing into work to eventually earn enough above a minimum levels also means we should not expect much of the 'stepping-stone' idea of a low-paid job leading onto much better paid jobs.

Our graph illustrates two possible reasons to be cautious about the employment benefits of minimum wage reductions: either there are simply not many individuals with productivities just below the minimum wage (area A and C small), or many whose marginal productivity is just below the minimum wage wouldn't choose to take up such jobs if they became available (area C small compared to A). Furthermore, the graph relates to long-run effects of minimum wage cuts. In the short-run, the spill-over effect of minimum wage reductions on wage reductions for those already employed may lead to large short-term losses.^{viii} One can also take

the view, like that of Peter Saunders (2004) of the Social Policy Research Centre, that Australia should not stimulate the existence of jobs with wages that are too low to be able to support a family.

Welfare reforms

This brings us to the second policy option, which is welfare reform. One would expect from our graph that the effect of welfare reform would mainly impact on the relative size of the areas. A blanket reduction in welfare benefit levels would have the effect of reducing the numbers of individuals for who welfare and outside opportunities is worth more than market work, which in the graph is a reduction in area A and B. This argument is depicted in the next graph.



The dotted line shows the new division of individuals into those choosing to be on welfare (area A and B) and those that choose to work full-time if such jobs are available to them. The

shaded area represents the increase in employment due to the welfare reduction, which consists of the individuals whose marginal productivity is high enough to be able to find a job and for whom the welfare reductions would make market production more attractive than welfare and outside opportunities. All the other individuals previously on welfare (areas A, C, and the part of B that does not go to work because of the welfare reductions) lose out in the long run.^{ix} We know relatively little about how many individuals are in area B, let alone how many of them would move into area D if benefits were cut.

Within the Australian political landscape, various players seem to have various opinions about the relative size of the areas A, B, and C. Those who presume that everyone in welfare can work if they wanted to and thus only need to be put through work tests and benefit reductions, presume that area B is far greater than area A and C. This appears the implicit position of the current government who has just decided in the 2005 budget to let unemployment benefits reduce by indexing unemployment benefits to inflation rather than the faster growing average earnings on which pensions are indexed and to impose activity tests on more individuals on welfare than before. This policy of ‘job activation’ makes most sense if area B is large relative to areas A and C. This policy makes no sense if there are very few individuals current on state income support who don’t have a marginal productivity higher than the current wage floor, i.e. if area B is small.

Welfare groups who argue there are no jobs for individuals essentially argue area B is very small, i.e. no-one is waiting to employ all those currently on income support.

The business community that argues for cuts in the minimum wage on the grounds that this would create jobs implicitly supposes area C is very large, and area A is small.

Economists like those of the Melbourne Institute or Peter Saunders (2005a, 2005b) of the CIS who argue for earned income tax credits or changes in tax thresholds essentially argue area C is small and areas A and B might be relatively large. The truth is that we simply don't know, mainly because it is exceedingly hard to get a good empirical estimate of the productivity of individuals who don't have a job. Looking at the higher participation rates in the US and the large prevalence of very low-paid jobs there one could venture the guess that area A is relatively large in this country (i.e. there are many for whom welfare and outside opportunities are worth more than their market marginal productivity, but there are no jobs for them at present). The Australian economy is not the same as the US economy however so we don't really know whether this is the case. Part of our uncertainty is due to the fact that empirical estimates of the responsiveness of behaviour to wages, welfare, and labour laws are invariably based on the behaviour of individuals at the margin, namely the individuals who change their behaviour with slight changes in these factors. What the responsiveness is to very large changes in wages, welfare, and labour laws is largely unknown.

The picture only shows in a stylized sense what happens with blanket welfare cuts. One can alternatively change access to welfare with the intent of closing access to welfare for certain individuals such as those in area B, i.e. those with a marginal productivity above minimum wages. To a certain extent, Australia indeed tries this in the sense that access to welfare is denied to individuals with high-earning partners which makes sense if we'd think that having a high-earning partner is indicative of the marginal productivity of the other partner. There is also currently a different access regime between those on allowances and pensions, and those with or without children. This de facto two-tier system would make sense if we would think

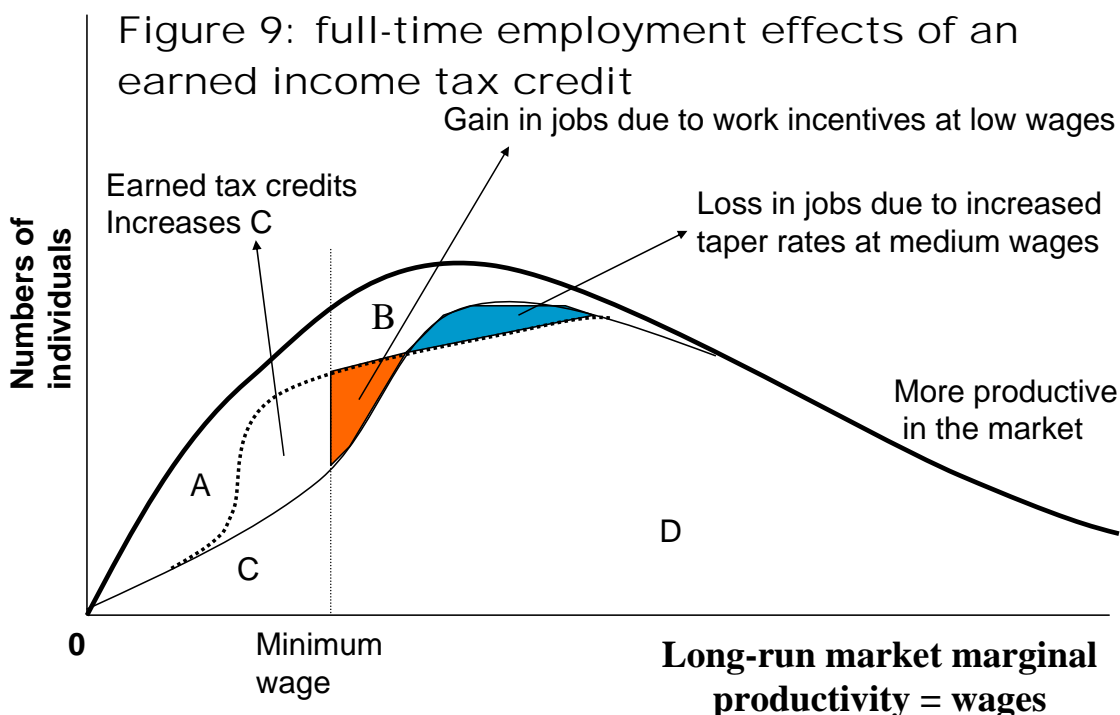
those with pensions (mainly on disability support pension) or children are less likely to become workers (area D) than others. Another possibility for welfare reform is to change characteristics of the welfare system other than the initial level of welfare: what matters from a theory perspective is not so much the level of welfare payment, but the effective marginal tax through income tax and welfare benefit reductions that are levied on earnings. It is the effective marginal tax rates on private earnings that make up the financial work disincentive. Those effective marginal tax rates are currently in the order of 80% for many individuals on welfare, and even higher for those with children and partners (see OECD 2004 for a review of the EMTRs in many countries). Welfare reform can take the form of reducing those rates by means of earned income tax credits, reduced taper rates, increased tax-free thresholds, etc.

Earned Income Tax Credit

Let's look more closely at the pros and cons of earned income tax credits, which was advocated by 'the five Economists' and was also a cornerstone of the McClure report of 2000 and is still often put forward by economists, such as of the Melbourne Institute. For example, Buddlemeyer et al (2004) of the Melbourne Institute estimate the effectiveness of earned-income tax credits to be about 50% higher than that of increasing tax-free thresholds which mainly redistributes money towards those that already work. The basic idea is to reduce marginal taxation (below zero in some cases) for low earnings, which is the tax credit, and then increase marginal taxation at higher earnings, which is when the tax credit is tapered out. The problem normally associated with earned income tax credits for the whole population is that they lead to large income re-distribution in the sense that reduced taper rates and earned income tax credits draw in whole sections of the population into the welfare system and

actually may lead to work disincentives further up the wage distribution. In a sense, they might lead to an increase in the number of individuals for whom benefits and outside opportunities are better than market wage (area B) rather than less. This is exactly what Saunders and Barry (2004) warn against. The Australian tax and welfare system indeed has particularly high Effective Marginal tax rates for part-time workers with an earning partner. Part-time workers fall into area B.

Consider the effect of a hypothetical population-covering earned income tax credit scheme which would reduce taxes for workers near the minimum wage to give them work incentives. These earned income tax credits would have to be taxed away at some point, and suppose that happens at medium wages. The next graph shows the stylized effect of such a scheme.



This graph shows the effect of an income tax credit scheme targeted to those near minimum wages: it would increase the number of individuals willing to work full-time at that level of

marginal productivity. The dotted line shows the new division between those choosing to be on welfare and those choosing to work full-time if jobs are available, where we have drawn the line such that the greatest supply responses take place at lower wage levels. Below the minimum wage, this change means a reduction in Area A and an increase in area C. That particular change has no implications for employment however because of the restraint of the minimum wage. Above the minimum wage, there is also a group that has greater full-time work incentives and hence there is a decrease for some levels of marginal productivity of the number of individuals for whom being out of work is better than being in work. In the graph this is the shaded area labeled as the job gain. At the same time, the increased tax taper rates at higher levels of productivity will mean reduced work incentives at some medium productivity level and hence an expansion of the number of people for who full-time work is dominated by being out of work (at least part-time). This is the area in the graph labeled as the loss in jobs. Depending on how many people are in each bit of the areas, earned income tax credits can lead to substantial job losses or job gains.

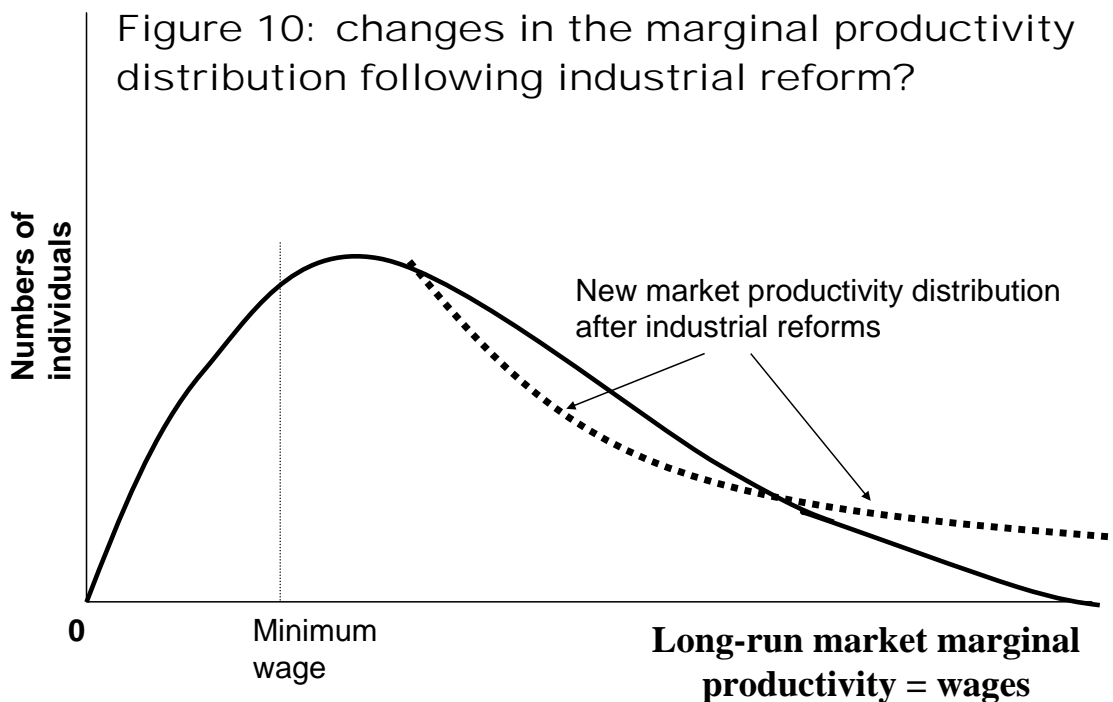
This stylized example shows the importance of thinking about who are actually going to get additional work incentives: people presently constrained or not. An earned income tax credit scheme that mainly provides incentives to those with productivities below the minimum wage may not just be ineffective, it may actually cost jobs! The example also shows that several policy changes at once may have far more effect than any individual change. In the example above the employment effect of earned income tax credits would be far higher if they were combined with minimum wage reductions.

A final welfare change policy option is to target reductions in effective tax rates to certain groups. This too, Australia already does in the form of wage and tax concessions for those who've been on benefits for a long time. One may want to think harder about the issue of targeting though because one would ideally want to target on marginal productivity rather than a long period of prior welfare dependency from which few individuals escape: one would want to prevent individuals from becoming long-term welfare dependent by proper targeting on productivity rather than have to react to long periods of dependency after which it is almost impossible to reintegrate someone in the labour market. Theoretically, the greatest employment gain with the least hardship inflicted on others and the least cost to the taxpayer can be reached if one could target reductions in effective marginal tax rates to individuals in area B only.^x

Industrial relations reforms

The third policy instrument that is being considered is the reform of industrial relations legislation, and then especially the introduction of measures to reduce the influence of union wage bargaining and to generally increase flexibility in the workplace. As the OECD 2004 puts it in its Australia-specific report, this agenda has the purpose 'to increase the match between skills and jobs by more individual contracts'. There are many possible effects of reducing the influence of enterprise bargaining. One effect is of course to simply decrease the effective minimum wage level at workplaces, in which case the analysis of a reduction in minimum wages again applies. The main intended effect the OECD mentions would seem to be to reduce the internal barriers for managers within organizations to re-allocate individuals over tasks. In a situation where technological advances require such re-allocation, the rigidity inherent in enterprise bargaining would prevent many profitable re-allocations from happening. Think

only of the seniority system that operates in many firms; or the fact that demotions are only now becoming a legal possibility in many civil service jobs in Australia (the Australian National University has only in 2005 introduced the possibility of demotion). Seniority systems and barriers to demotion imply some individuals are not assigned to their best possible job within an organization. This will especially be a problem amongst the higher-skilled workers within organizations, i.e. those with full-time tenured positions: it is amongst the high-skilled that individuals have many skills and that the situation arises that they can initially be mismatched. Amongst the low-skilled, such issues are much less likely to be important: how could you seriously 'mismatch' someone who can only do a cleaning job or who is a labourer? More likely than not, such a low-skilled person would be on part-time employment contracts or would be employed via a subsidiary and would hence already be more easy to re-allocate in some way or another. It is indeed the case, which we already saw in the introduction, that the major change in the labour market for those that work in the last 15 years has been to lead to increased wages for those at the highest end (where the average hours worked has gone up!), with only modest wage increases at the lower end. In terms of our main graph, the effect of increased flexibility can be understood as increasing the market value of the higher skilled workers (of whom more skills can now be utilized). The next graph illustrates this:



The dotted line shows the new distribution of long-run marginal productivity. The stylized shift-to-the-right in the distribution of long-run market productivities suggests that the main ‘winners’ of industrial relations reform are those at the higher end of the marginal productivity distribution, which indeed fits the wage changes after industrial reforms in the early 90s. One can note that industrial reform is in a sense an ‘easy’ policy change because there are no clear losers from that reform contrary to the change in minimum wage and welfare reform.

There are of course many other aspects of industrial relations reform, most of which we have no empirical data on. For one, industrial relation reform diminishes the possibility for cross-subsidies between employees within organizations. That may be a good thing or a bad thing. On the downside, reducing cross-subsidies means that within-organisation welfare becomes impossible which can be expected to lead to the ‘weaker workers’ to be forced out of work when they are no longer protected by the higher productivity workers. It indeed seems likely

that many of the 700,000 now on disability support pensions in Australia would in previous decades have been kept as employees within their firms, enjoying some implicit cross-subsidy from other workers. In that sense, it may well be the case that Australia has 'paid' for its increased labour productivity by having many of the least healthy and productive workers flow onto state support. In the case that there are large negative intergenerational effects of having many less healthy and productive workers outside of the world of work, then this change may on balance have been for the worse. This is something we know little about, though anecdotal evidence does suggest that in bygone eras there was more 'tolerance' of lower productive employees in Australian organizations than at present.^{xi}

Industrial reform also diminishes the possibility of workers bargaining collectively for a part of the rent of the organization. In a perfectly competitive market, that is not an issue because there are then no rents to bargain over and unions would actually have no effect. In Australia there are rents in many industries (think of the large mineral sector enjoying resource rents or medical industry protected by patents). The change in industrial relations can be expected to lead to a reduced share of labour in these rents, which may have long-term effects depending on whether there is any systematic difference in the manner in which labour or capital spends its returns. Again, this is something we know little about.

Industrial relations reform also holds the promise of reducing general transactions cost associated with hiring, firing, and administrative costs of employment. Each of these cost reductions in theory would seem to lead to higher marginal value of any additional worker^{xii}, but there is little hard empirical evidence on actual shifts in such costs. Indeed, individual wage bargaining may well turn out to be more costly than centralized bargaining for many professions.

The issue of shifts in the distribution of marginal productivity raises the obvious issue of whether there isn't some way in which we could simply train everybody in areas A and C in order to get them into D? The answer is that various Australian governments have tried that for decades. In terms of more education per member of the population, this policy has been a resounding success: since 1970 the proportion going to university has more than doubled to about 40% of current cohorts; the proportion failing to finish secondary school has dropped to only about 25% (down from over 80% in the 50s); and there's been a great expansion of other education programs, such as TAFE. It so far hasn't reversed the effects of skill-biased technological change. The poor effectiveness of training programs and Active Labour Market programs targeting the skills and incentives of the long-term unemployed have been well-documented for Australia and other countries.^{xiii} Similar policy reactions and lack of success in reducing welfare dependency can be reported for the EU and the US.

In countries like the Netherlands or the UK, additional education funds are attached to children from identified 'problem households' in the belief that additional school resources would counterbalance adverse household circumstances. This raises the question whether the Australian school system is properly equipped to educate the bottom of the skill distribution, i.e. whether Australia's schools are equipped to ensure a high minimum standard of education. If it for instance turns out that children from welfare dependent families have much less chance of making it in the school system because of the characteristics of their area, parental stimulation, or whatever, then we'd worry about long-term lock-in effects associated with the increase in welfare dependency. It is perhaps this worry, for whose elements Peter Saunders (2005c) in particular has been arguing the empirical case for, which is foremost in our minds

when we think of the reasons to reform now rather than acquiesce in the current situation. Ensuring we get the most out of the children from disadvantaged backgrounds through high minimum education standards seems the obvious starting place for a policy reaction.

A research agenda and conclusions

In hindsight, the institutions that worked so well before the 1970s supported and fitted into a world with a rather condensed marginal productivity distribution. The school system worked well to integrate the millions of new migrants and gave nearly everyone an education sufficient to hold down a job. The industrial relations system was good at preventing major disputes and was efficient in providing communication between workers, trade unions, and employers. There were minimum wages and a welfare system meant as a safety net, but few were on the lowest wage and marginal productivity was high enough so that few needed welfare. This institutional framework was not suited for the large shifts in the marginal productivity distribution of the 70s, 80s, and 90s which were essentially caused independently from the institutional framework. At the bottom end of the labour market, marginal productivities dropped fast so that now over a million Australian men are effectively receiving some form of long-term government income support. At the same time, over a million additional females are also dependent on the state. At the top end of the labour market, and especially from the 80s onwards, the high-skilled have become more productive and diversified so that they do not fit into the system of standardized labour relations anymore with resulting falls in trade union membership. The change in institutions following these shifts in marginal productivities has been slow in coming, but now seems inevitable. In the coming years it appears Australia is on a

trajectory of reduced minimum wages, harsher access regimes for income support, more decentralised labour negotiations, and changes in marginal taxation and benefit withdrawal rates.

There are many questions outstanding that affect the desired direction of our institutions and the likely outcomes of the current reforms. The first outstanding question is whether the big shifts in the marginal productivity distribution are over and as a result the growing pressure for reform might ease. Another question, directly relevant to the current set of reforms, is about the division of the population into the stylized areas A, B, C, and D: what is the distribution of the value of skills of the whole welfare population; and how sensitive is the labour supply of those groups to changes in short-term and long-term financial incentives? From an inter-generational point of view we would want to know how strong the transmission of marginal productivity is relative to school investments by the government. We need to know about short-term spill-over effects of minimum wage reductions and benefit changes on other people's wages and the well-being of families on welfare.

Because the increase in welfare dependency seems to be a long-run phenomenon, we would also want to know about long-run effects on the kind of society one needs to accommodate this increase. Suppose for instance that 20% of the Australian population will not be able to have their skills increased above a current minimum wage standard, whatever educational intervention we apply. Will it then be possible to maintain a substantial and generous welfare system? Would it actually be detrimental for the overall happiness of Australia if 20% of its population is on life-long welfare combined with low-paid work?

On the optimistic side, it may well prove eminently possible to educate the next generation of Australians out of the current situation. How to ensure we get high quality education for the children of the least wealthy and least employed households is probably the main issue that a new set of institutions must address in the coming years.

Bob would like to take this opportunity to thank everyone who has contributed to this conference volume.

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ⁱ An interesting research question, never properly answered, was why the Australian performance was so exceptional relative to the US, for example, where unemployment and inequality were much higher but labour market and welfare institutions more closely approximated those suggested by basic text books for efficient labour market outcomes. Of course, the base level of average real wages was lower than in the US but this gap primarily originated in the pre War period and it was relatively easy to attribute it to factors outside the labour market; such as economies of scale and the greater natural resources of the US. See Pagan (1987) for a discussion of the reasons for what he terms 'the long boom' and its end.

ⁱⁱ In an Appendix available from the authors, we present a micro-founded macro model that formalizes our argument about the long-run and the short-run.

ⁱⁱⁱ Although the data begin at 1960 it is generally accepted that the 1960's trend also applied throughout the fifties.

^{iv} One important exception to this general proposition is the large increase in female wages during the equal pay period of 1969-1975.

^v The female full-time earnings series are similar but we decided, for reasons which will become clearer later to primarily narrow our analysis to male full-time workers. We comment later on some of the implications of this decision.

^{vi} There have also been large changes in the female labour market which are equally important but which we do not have space to pursue here. One important fact is that the female full-time employment-population ratio has remained more or less constant over the last forty years, an amazing outcome relative to other countries such as the US where female full-time employment has increased markedly. In Australia, all the growth in the female employment population ratio has occurred among women who work part-time.

^{vii} This estimate is close to that of Dixon, Madden, and Rimmer (2005) who estimate from a general equilibrium simulation model that an increase in all wage awards by 4.2% would lead to about 74000 less jobs. This is at most 10,000 male jobs for each percentage increase in all wage awards, and some 5000 male jobs per percent of increases in wages near the minimum wage. Now, one can argue that elasticities apply to the whole of labour supply, but that

requires the extremely unlikely scenario that everyone's wage will decrease when the minimum wage decreases. Though some of the simulation models indeed assume this and thus come up with much higher long-run elasticities, we consider overly improbable.

^{viii} Consider international evidence on the short-run relation between wages at the bottom of the income distribution and minimum wages. The introduction of a minimum wage in the UK was associated with large wage rises for those working at the bottom without much noticeable employment effects (Dickens and Mannings 2004 find strong wage effects of the minimum wage suggesting wages are flexible; Machin and Wilson, 2004 show that minimum wages had little effect on labour demand in nursing homes). The large changes in the French minimum wage were similarly associated with a large shift in the wage distribution but not much short-term employment loss (see the discussion and references in Fougere et al. 2000). The US debate that followed the Card and Krueger controversy (who used state variation to claim minimum wages had no short-term effect at all) seems to have come up with relatively small employment elasticities of minimum wages (see the 2004 Economic Journal special issue on minimum wages for reviews of the US evidence).

^{ix} Though our main graph depicts a world in which there are no long-term losses from decreases in minimum wages, there would very likely be short-term losses for all those with current jobs at or just above the minimum wage because the minimum wage acts as an outside option to their wage negotiations implying their wages would also drop when minimum wage decrease. In the long-run such a link is broken by competition and free entry but in the short run it leads to losses for those near the minimum wage.

^x There is an old theory literature on optimal taxation that has argued one should ideally tax talent rather than income (see Plug et al 1999 for a good overview of this notion of Tinbergen taxes). In the context of welfare reform a 'Tinbergen welfare reform' could be implemented in the form of a targeted increase in the tax free threshold, i.e. the level of private incomes that is not taxed and at which benefits are not taken away. Ideally, one would want to give individuals with low talent (in the figure those with marginal productivities less than minimum wages) a higher tax free threshold in order to provide incentives to accept a market job. The lower the talent and the higher the outside opportunities, the higher the optimal tax free threshold. The practical implementation of such a scheme runs into the trouble of finding a good proxy for talent though. Using school outcomes runs into a moral hazard problem (giving additional tax concession to those who don't finish school would encourage school drop outs. Addressing that moral hazard issue by monitoring effort at school on which later benefits are then conditioned, which is what

Frijters and Farrell (2005) advocate, would be costly). Frijters and Gregory (2005) show in a simplified simulated model there are potential efficiency gains from the idea of talent-targeted tax free thresholds where the gain is higher the better the proxy for talent is.

^{xi} In terms of the graph showing the changing distributions from 1970 to 2005, the possibility of in-work welfare raises the possibility that perhaps the marginal productivity distribution in 1970 was not as different from the current distribution as supposed. It raises the possibility that the real distribution has simply become more visible due to the reduction in implicit cross-subsidies between employees.

^{xii} A theoretical paper arguing the importance of on-costs for unemployment is in Frijters (1996).

^{xiii} For an extensive early survey of many different types of programs and evaluations, see Heckman et al. (1999). Dockery and Webster (2002) describe the work subsidy programs in Australia in the late 90s that were targeted to individuals unemployed longer than 2 years. Whilst lamenting the lack of random variation in these programs, they note that the effects of those programs appear very small. Cully and Curtain (2001) argue one should see the subsidised Australian apprenticeship schemes as observationally equivalent to subsidised employment and argue their success. Fougere et al. (2000) analyse various labour market programs aimed at youth employment in France. They find no effect of training, but some effect of pay-roll subsidies for those youth on minimum wage jobs. Gerfin et al. (2004) find strong effects for subsidised temporary employment for the unemployed in Switzerland as long as the subsidy lasts (usually a year). Boyd Hunter (2003) indirectly evaluates the employment programs aimed at male indigenous Australians (CDEP programs). He speculates that indigenous people choose CDEP work as a career and notes that the net effect is a lower level of education in areas where there is a high instance of CDEP. Bamba et al. (2005) review the many UK programs to get the disabled back into work via additional subsidies. As Autor et al. (2004) note, such evaluations usually do not deal with spill-over effects and thus are ill-equipped to ascertain the overall labour supply effect with any certainty. Leeves (2003) for instance shows that low-skilled Australian female employment was negatively related to the labour market programs for low-skilled males. On the general poor effectiveness of Active programs in Australia: Webster and Johnson (2002) discuss targeted labour market programs in Australia and conclude that 'only 5, or at best 12, percent of people achieve continuing employment as a result of program participation'. Frolich and Lechner (2004) find for wage subsidies in Germany given to those longer unemployed than 6 months using regional variation that the effect on re-employment probabilities is about 10% for the duration of the subsidy.
