Final Report

Project 06

Synthesis of Melbourne Institute Research, 2000 to 2005[*]

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EXECUTIVE SUMMARY

This report provides a review of key research conducted within the labour economics and social policy program at the Melbourne Institute of Applied Economic and Social Research over the period 2000 to 2005. The review is deliberately selective, focusing on three key themes nominated as being of most interest and relevance to the Department of Employment and Workplace Relations. These are as follows:

    (i)   labour supply and work incentives;

    (ii)   welfare reliance and income support recipients; and

    (iii)   the changing nature of work.

Note, however, that the Institute's labour economics and social policy program has been much broader than this extending into other areas such as income and wealth distribution, poverty and disadvantage, population ageing, and subjective well-being. Furthermore, while the focus is on research conducted at the Melbourne Institute, limited coverage of other recent Australian research is also provided to help place the Melbourne Institute research in its broader context.

A feel for the type of research that has been undertaken and, more importantly, the findings being obtained is provided in the three tables on the following pages. These tables list the key Melbourne Institute studies covered in this report, grouped by subject matter, and provide brief summaries of the findings reported.

Finally, each of the authors of the respective chapters includes a final section where gaps in the literature and potential fruitful avenues for new research are identified and briefly discussed.

Chapter 1: Work Incentives and Labour Supply - Summary of Studies

Author(s) / Year of publication	Topic / Issue	Key findings	Funding source
Hypothetical policy changes			
Dawkins, Duncan and Freebairn (2003); Buddelmeyer et al. (2004b); Buddelmeyer, Dawkins and Kalb (2004)	The effect of an Earned Income Tax Credit	EITC provides work incentives for low-wage individuals, but negative work incentives are expected for married women. The first paper combines the credit with a Conditional Minimum Income (CMI) and found that the work incentives come at the price of some individuals experiencing a decrease in net income and for sole parents the effect is negative due to the higher withdrawal rates associated with the CMI. According to the authors, this could be improved by some adaptations to the reform.	Department of Employment and Workplace Relations, The Australian, University of Melbourne
Duncan and Harris (2002); Creedy, Kalb and Kew (2003)	The effect of reducing the benefit withdrawal rate	An overall positive effect on labour supply is found, although some individuals increase hours of work whereas others decrease their hours of work. The first paper focuses on sole parents, but the second paper looks at all demographic groups. The largest effect is found for sole parents.	Department of Family and Community Services (FaCS) and University of Melbourne; Australian Research Council (ARC)
Creedy, Kalb and Scutella (2005)	The effect of abolishing all sole parent payments.	As expected, this has a large effect on labour supply, but this response is far from sufficient to counteract the large effect on poverty resulting from this change.	University of Melbourne
Creedy and Scutella (2004)	The effect of introducing a basic income – flat tax system on inequality	Inequality is reduced and allowing for (mostly negative) labour supply responses shows a further reduction in inequality. The effect on social welfare is less clear and depends on the unit of analysis and the aversion to inequality. The social welfare measure, which does not account for the value of non-work time, is lower after accounting for	University of Melbourne

Author(s) / Year of publication	Topic / Issue	Key findings	Funding source
		the labour supply responses	
Buddelmeyer et al. (2004b)	The extent of tax bracket creep between July 2000 and January 2004.	The value of bracket creep was around 3.8 billion per year (assuming tax thresholds should have been indexed by the CPI). Using this amount to finance alternative policy changes, it was found that indexing all tax thresholds by the CPI had a much lower positive effect on labour supply than only indexing the top two thresholds and using the remaining funds to finance an earned income tax credit for low-income earners.	The Australian

Proposed and actual policy changes

Author(s) / Year of publication	Topic / Issue	Key findings	Funding source
Scutella and Dawkins (2003)	Analysis of the financial changes in the Working Nation reform	A very small positive effect was found for married men and women, and sole parents. A small negative effect was found for singles. Analysing separate components the following was found. Abolishing the earnings disregard and the individualisation of partner income tests had very little effect. The reduction of the taper rate from 100 to 70 per cent had a slight negative effect on all groups.	FaCS
Kalb, Kew and Scutella (2005)	Effects of July 2000 tax and transfer reforms (ANTS) on labour supply and government expenditure	The overall effect of the financial changes in the ANTS package is a small increase in average hours of work for all demographic groups. The income tax changes were found to have relatively high positive effects on labour supply, followed by the effects resulting from the family payment changes (negative for sole parents, positive for couples). The labour supply responses reduced the expected increase in government expenditure due to the changes.	FaCS, University of Melbourne
Cai, Tseng, Vu and Kalb (2004)	Effects of July 2000 tax and transfer reforms (ANTS) on labour supply of sole parents and married mothers	The policy changes were found to induce small increases in the probability of employment and in average hours of work of both groups. Effects were larger for sole parents.	FaCS, University of Melbourne
Buddelmeyer, Dawkins and Kalb (2004)	Analysis of the 2004 Federal Budget	Increasing the payment level of Family Tax Benefit part A decreases labour supply, while decreasing its withdrawal rate increases labour supply. Increasing the top two income tax thresholds increases labour supply by about the same amount as the Family	University of Melbourne

Author(s) / Year of publication	Topic / Issue	Key findings	Funding source
		Tax Benefit changes decrease it, but different groups are affected.	
Buddelmeyer, Freebairn and Kalb (2004)	Analysis of the 2005 Federal Budget	The increased income tax thresholds and reduced tax rates had a positive effect on expected labour supply for all groups, which was larger than the changes to the family payments. The later start of withdrawal of family payments and lower withdrawal rate of allowances has a positive effect on sole parents' labour supply and a negative effect on married mothers' labour supply.	University of Melbourne
Childcare use and labour supply			
Doiron and Kalb (2002, 2005)	The effect of childcare costs on labour supply.	Largest effect for sole parents and little effect for married fathers. As expected, mothers on lower wages and with preschool children are more affected. Predicted effects are relatively small and are in the range observed in European countries rather than the US.	University of Melbourne; FaCS
Buddelmeyer and Vu (2004);	Childcare use	Observations related to labour market issues are: ■ childcare use is higher when participating in the labour force. ■ with age of child: non-participation decreases, FT employment increases, and PT employment increases then decreases (peak for children aged 5-9) ■ there is no strong direct evidence that childcare is a barrier to work for those women looking for employment. ■ however there is indirect evidence: 1) for those out of the labour force a large proportion indicated they would like a job if suitable childcare could be arranged; 2) a large proportion of women who would like a job but are not actively seeking indicated the main reason is that they prefer to look after the children or give other childcare reasons; 3) some mothers who work part time due to child care responsibilities report they would like to work more hours	FaCS
Population ageing and labour supply			
Borland (2005)	Transitions to retirement	Increase in female participation Decrease in older male participation for a long time, but recently a turnaround is appearing.	FaCS

Author(s) / Year of publication	Topic / Issue	Key findings	Funding source
		Regarding policy making, Borland points out that several factors affect labour supply and labour demand of older Australians. These factors may interact with proposed policies. These are for example education, employer attitudes, wealth, service sector jobs/demand for carers.	
Black, Tseng and Wilkins (2005)	The decline in male employment rates	More recent birth cohorts have higher participation rates, indicating future decrease in participation rates may be less than anticipated.	University of Melbourne
Wilkins (2005); Cai and Kalb (2005a, 2005b)	The effect of health on labour force participation	Wilkins (2004) uses disability as a measure of health and finds stronger negative effects of disability on labour force participation for men than for women. Cai and Kalb (2005a,b) allow for endogeneity (including rationalisation endogeneity) of health and labour force participation, by allowing feedback effects from labour force participation to health and allow for a non-zero correlation between the health and labour force equation. Measure used is self-assessed health. Positive effect of good health remains.	FaCS; ARC
Kalb and Scutella (2003, 2004)	Analysis of labour supply in New Zealand between 1991 and 2001	increase in age of eligibility of the age pension in New Zealand has large effect on labour force participation	New Zealand Treasury
Headey, Warren and Wooden (2005)	The wealth of older Australians	Wealth is largely in housing and less in liquid assets. Most households within 20 years of retirement are likely to depend at least partly on the age pension. Most working-age people underestimate savings required to maintain current lifestyle	FaCS
Dawkins, Lim and Summers (2004)	The impact of changing population composition on aggregate participation in 2042 in Victoria.	Using alternative projection scenarios and an estimated participation equation, they find a drop from 63% to about 52-56%. However, comparing potential policies, they find the following impacts on participation	Victorian Department of Treasury and Finance

Author(s) / Year of publication	Topic / Issue	Key findings	Funding source
		rates: raising education attainment (+5%-points), delaying retirement through welfare	
		policies (+3%-points), increasing availability and affordability of childcare (+1%-point), improving the general health of the population (+1%-point).	
		Taking all together, the gap would be closed	
Cai, Creedy and Kalb (2005)		Extrapolating current behaviour to the future combined with ABS population projections, indicates an increase in government expenditure and a decrease in government revenue through lower participation. This is under the assumption of unchanged participation rates	FaCS

Chapter 2: Income Support Reliance and Income Support Recipients - Summary of Studies

Author/Year of publication	Topic/Issue	Key findings	Funding source
All income support (IS) recipients			
Tseng and Wilkins (2002)	Extent of reliance on IS	30-34% of families received IS at some stage in 1996-97, up from 22% in 1981-82.	FaCS, University of Melbourne
		High degree of persistence in heavy reliance over time.	
Dawkins, Harris and Loundes (2000)	Patterns of IS receipt	Within a five-year period, 55% of IS recipients have more than one IS spell (i.e., churn) and one-fifth transfer between payment types.	FaCS, University of Melbourne
		Transferring is associated with long-term receipt, while churning is not associated with any particular level of reliance.	
Harris and Kalb (2002)			
Tseng, Vu and Wilkins (2004)		Age, family circumstances, payment type, earnings while on IS and recent IS history are all associated with significant effects on patterns of IS receipt.	
Disability Support Pension (DSP) recipients			
Cai (2003)	Length of DSP spells	Average duration of completed DSP spells estimated at between 9 and 10 years.	Derived from PhD research
Cai (2004)		Duration is decreasing in age, is lower for males than females, and is longest for entrants from unemployment benefits.	
Cai and Gregory (2003)	Contribution of inflows and outflows to growth in DSP receipt, 1971-1999	Increased inflows was the main source of growth in recipient numbers, but a decreased outflow rate also contributed to the growth.	Derived from PhD research

Author/Year of publication	Topic/Issue	Key findings	Funding source
Cai and Gregory (2004) Cai and Gregory (2005) Cai, Vu and Wilkins (2005b)	DSP inflows	The unemployment rate affects inflows but not outflows. 40% of the growth in DSP receipt between 1967 and 1999 can be explained by changes in the unemployment rate, while the Disability Reform Package of 1991 can explain 31% of growth between 1991 and 1999. 55% of DSP inflows comprise individuals transferring from other income support payments; over 80% of these individuals transfer from unemployment benefits. The probability of transferring from a non-DSP income support payment to DSP is increasing in spell duration.	DEWR, FaCS, University of Melbourne
Cai, Vu and Wilkins (2005a)	DSP outflows	Those who exit to return to work are the largest group of individuals who exit DSP, but they are also the most likely to return to DSP. Males over 55 years of age, females with a partner on income support, Indigenous persons, those with no earnings while on DSP, those with an intellectual or learning disability and females with a child under 12 have the lowest probabilities of exiting DSP and are also the least likely to sustain exit in the event that they do exit.	FaCS, University of Melbourne
Wilkins (2002)	Labour market outcomes and welfare receipt of persons with disabilities	Holding all else constant, the presence of any disability increases the probability of IS receipt by 29 percentage points for males and 23 percentage points for females. Rates of IS receipt are, all else constant, higher the more severe the disability, higher for those with intellectual and psychiatric impairments, and higher for those who experience mature-age onset of disability.	FaCS, University of Melbourne

Unemployment benefit (UB) recipients

Black, Tseng and Wilkins (2005)	Determinants of duration of IS receipt associated with unemployment	Likelihood of exit is decreasing in duration beyond 3 months. The probability of exiting the current spell is decreasing in the length of a preceding income support spell if that spell ended within the preceding 12 months or was itself longer than 12 months.	FaCS, University of Melbourne

Author/Year of publication	Topic/Issue	Key findings	Funding source
Borland and Tseng (2003a)	Effects of Job Seeker Diary on exit from payments	The programme is found to increase the rate of exit from payments and reduce total time on IS.	FaCS, University of Melbourne
Borland and Tseng (2003c)	Effects of Work for the Dole on exit from payments	The programme is found to increase total time on IS, possibly because of its effects on job search activity.	FaCS, University of Melbourne
Borland and Wilkins (2003)	Effects of the 9-month review process on exit from payments	No conclusive evidence on the effects of the programme.	FaCS, University of Melbourne
Borland and Tseng (2005)	Effects of the Mutual Obligation Initiative on exit from payments	Significant 'threat' effects of the programme are found in the early stages of its operation, acting to increase exits from payments prior to participation. Similar to the WfD programme, 'participation' effects are found to act to increase total time on payments.	FaCS, University of Melbourne
Borland and Venn (2004)	Patterns of job search and non-market activities	17-18% of unemployed individuals engage in job search on any given day. Job search is more likely to be undertaken by the highly educated, males, young persons, and persons living in capital cities. The unemployed in Australia on average spend considerably more time engaged in job search than the unemployed in other developed countries.	FaCS, University of Melbourne
Frijters and Kalb (2003)	Effect of unemployment duration on prospects of finding employment	Increased duration does not impact on wage levels of job 'offers', but does decrease the frequency with which offers are received. All else equal, the probability of finding a job is higher if a person already holds a job.	FaCS, University of Melbourne

Parenting Payment recipients

Cai, Tseng, Vu and Kalb (2004)	Effects of July 2000 tax and transfer reforms (ANTS) on employment and working hours of sole parents and married mothers	The policy changes were found to induce small increases in the probability of employment and in average hours of work of both groups. Effects were larger for sole parents.	FaCS, University of Melbourne

Chapter 3: Changing Nature of Work - Summary of Selected Key Studies

Author / Year of publication	Topic / Issue	Key findings	Funding source
Non-standard employment			
Wooden (2001a)	Are non-standard jobs sub-standard jobs?	Employee assessments of six different outcomes – fairness of pay, on insecurity, job stress, influence over decisions and receipt of job-related training – revealed that non-standard employment arrangements are not uniformly inferior to standard employment (i.e., permanent jobs involving 35 to 44 hours per week).	Melbourne Institute
Wooden and Warren (2004)		Workers on fixed-term contracts are the most satisfied group of employees, while the lower levels of satisfaction among casual employees (relative to permanent employees) are restricted to men working full-time hours.	Australian Research Council
Borland (2001)	Job insecurity	No permanent change to job stability in the 1980s / 1990s. Worker perceptions of job insecurity deteriorated during the period 1990 to 1993, but no significant variation over other periods. Worker perceptions of a more broadly defined measure of job insecurity from the IsssA survey suggest a decline since the late 1980s.	Australian Research Council
Borland (2002)		Workers tend to overstate the risk of both job loss and job mobility. Perceptions of job insecurity display substantial heterogeneity across individuals. Perceptions of job security vary pro-cyclically. Perceptions of job security influence other household behaviours, such as consumption.	Australian Research Council
Chalmers and Kalb (2001)	Does casual employment accelerate the transition to non-casual employment?	Unemployed persons who enter the labour market via casual jobs find permanent employment significantly faster than unemployed persons who enter the labour market via permanent jobs.	Australian Research Council

Author / Year of publication	Topic / Issue	Key findings	Funding source
Working time			
Wilkins (2004)	Underemployment	While underemployment is more widespread than unemployment, volume-based measures still indicate that unemployment is of greater significance than underemployment. The underemployed are typically less satisfied with their jobs than the fully employed. They also tend to be concentrated in low-income families and are more likely to report low levels of life satisfaction. Nevertheless, the underemployed arte still much better off than the unemployed on these measures.	Department of Family and Community Services / University of Melbourne
Wooden and Loundes (2002)	Long working hours	In cross-section data, after controlling for other job and personal attributes, long hours working found to be positively associated with job satisfaction (though the magnitude of the effect was small).	Melbourne Institute
Wooden (2003a)		All of the increase in the incidence of long working hours (49 hours or more per week) over time occurred in the period 1983 to 1993. Since the mid-1990s there has been no further growth.	Melbourne Institute
Drago, Black and Wooden (2005)		The incidence of long hours working (50 or hours per week) is significantly associated with the household debt to income ratio, occupation and education. There is also a significant association with a measure of the cost of job loss, with long hours workers those with the best alternative employment prospects. Long hours working is often not temporary, with over half of those persons working long hours in 2001 working similarly long hours in both 2002 and 2003.	Australian Research Council / University of Melbourne
Tseng and Wooden (2005)	The gap between preferred hours and actual hours	About 30 per cent of employed Australians are overemployed and about 15 per cent are underemployed. While there is clear evidence of a time divide – part-time workers work too little, while full-time workers work too much – for most Australians the size of the hours gap is relatively modest. This is especially so for the underemployed. Indeed, around	Department of Family and Community Services

Author / Year of publication	Topic / Issue	Key findings	Funding source
		62 to 63 per cent of workers have jobs where the weekly hours are within five hours of their preference.	
Drago, Black and Wooden (2004)		Considerable proportions of underemployed and overemployed workers are able to achieve their working time preferences within a year – around half of the part-time underemployed and just over one-third of the full-time overemployed.	Australian Research Council / University of Melbourne
		Achieving working time preferences among the part-time underemployed much more difficult for women than for men, and more likely if self-employed and if employed in a larger workplace. Among the full-time overemployed, the ability to achieve preferences was found to be related to occupation, age and self-employment. In both cases, changing employers significantly enhances the likelihood of achieving working time preferences.	
Drago, Tseng and Wooden (2005)		Women typically express preferences for fewer hours than men, and this is true of both couples with children and those without. As expected, the gap between the man's preferences and the woman's preferences is much greater in the presence of children.	Australian Research Council / University of Melbourne
		The joint working hours of neo-traditional couples was considerably less than that of 'egalitarian couples', defined as couples working similar hours, and thus suggestive of a complementary relationship between the working hours of partners in couple relationships. Egalitarian outcomes are thus typically not achieved by one person reducing their hours and the other increasing theirs.	

CHAPTER 1: WORK INCENTIVES AND LABOUR SUPPLY

Guyonne Kalb

1.1   Introduction

Policy makers in countries around the world are concerned about the impact that an ageing population will have on the ratio between labour force participants and people out of the labour force. This could make, for example, a "pay as you go" pension system unaffordable. One way of preventing the above ratio from falling is to increase the proportion of people of working age participating in the labour market. If a larger proportion of the population could be encouraged to move into or remain in the labour market then the impact of ageing could be softened.

This worldwide concern about a drop in future participation rates is present in Australia as well, although the Australian Age Pension system with its low flat-rate payments, which are income and assets tested, appears relatively affordable compared to other systems. Nevertheless, given a potentially narrowing tax base and additional pressures on outlays, which might cause long-term financing problems for the government, increasing participation rates in the labour market appears to be a general concern of policy makers. The latest changes in taxation rates and in the social security system in Australia appear to be aimed at increasing participation rates. For example, secondary earners and sole parents with children between 6 and 15 years of age will now be required to look for part-time employment, whereas before there was no job-search requirement for eligibility.

This chapter provides an overview of the research into the effects of hypothetical and actual tax and social security policy changes on individual and aggregate labour supply resulting in changes in income distribution. The main focus is on research by the Melbourne Institute of Applied Economic and Social Research. However, to place these studies into some context, references to other studies are made as well, but this chapter should not be seen as a literature review on the topic of work incentives.[1] The third and fourth sections of this chapter draw on an earlier publication for the Productivity Commission (Creedy and Kalb 2005b).

The tax and social policy changes discussed in this chapter will all be of a financial nature, such as changes in benefit levels or in tax rates. In addition, we examine the effect of the cost of childcare on labour supply (given the importance of childcare for female labour supply).

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[1] Kalb (2003) provides a literature review on this topic, focussing on issues relevant to Australia.

This type of analysis can benefit greatly from using microsimulation modelling to replicate the actual social security and tax system, and analyse changes to this system.

Much of the research to be discussed here will have used the Melbourne Institute Tax and Transfer Simulator (MITTS), so this tool will be briefly described in Section 1.2.[2] MITTS has been used to analyse a range of policy ideas and newly introduced policy changes. The effect of hypothetical changes on expenditure and labour supply was the topic of a number of reports, which are discussed in Section 1.3. This is followed in Section 1.4 by the discussion of reports analysing actual or proposed policy changes. In addition to the studies in these two sections, which are mostly based on the use of MITTS, the Melbourne Institute has also examined other important issues in relation to labour supply. Firstly, the research on the relationship between childcare and labour supply, which is an important determinant in female labour supply, is presented in Section 1.5. Secondly, the Institute has studied labour supply and participation of individuals who are close to the retirement age. Given the importance of this issue in the context of labour force participation in an ageing population, this is briefly discussed in Section 1.6. The results are then summarised in Section 1.7 and interesting directions for future research are identified.

1.2   Microsimulation Modelling

1.2.1   General Background

The assessment of policy before implementation is paramount for policy makers. The development of tools to make these assessments is therefore important. In many policy-oriented analyses, use is made of simulation methods to assess/predict the effect changes may have if they were to be implemented. The alternative to using simulation methods is an experimental approach, where a new policy is either partially (for a subgroup of the population) or fully implemented, before analysis can take place. In this approach, data need to be collected just before and after the change and there is a need to control for other changes occurring within the same period to assess the policy change of interest properly.[3] This can be complicated to achieve and it is not always desirable to test a new policy in practice.

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[2] Detailed descriptions of MITTS can be found in Creedy et al. (2002), Creedy et al. (2005), Creedy and Kalb (2005a) or more generally on microsimulation modelling in Creedy and Duncan (2002), or in Creedy and Kalb (2005c).

[3] See for example, Heckman, LaLonde and Smith (1999) for an overview of the methodology and empirical examples.

In contrast, simulation methods make use of patterns of behaviour or relationships between variables that can be observed and estimated from the past and are generalised to predict what effect a new policy change would have. Some simulations are very simple and involve the prediction of a dependent variable from an estimated equation under changed circumstances whereas other simulations involve extensive modelling of several relationships or need detailed information regarding the situation before and after the change.

The model discussed in this section is the more extensive type of simulation study and it is a micro-level based model. Micro-level models can provide a wealth of individual information and changes can be disaggregated to the individual firm or person, but the models are usually limited to one sector of the economy, which means interaction between the sectors is not taken into account. As a result, effects on or limitations resulting from other sectors are ignored.

In contrast, macro-level models provide little detail on the individual firms and household in an economy, but they usually model a large number of sectors of the economy and the relationships between the sectors. A disadvantage is that it is often more difficult to understand the effects or examine the effects on subgroups. It is clear that micro and macro models are designed to answer different types of questions. For example, if we were to increase social security benefit levels we would need a micro model to inform us about the consequent change in income distribution; however, a micro model could not predict any inflationary effects. For this, a macro model would be needed.

A considerable amount of insight can be obtained through the use of static microsimulation modelling. Early examples of static microsimulation models for Australia are described in Bradbury (1990) and cover academic and government models. The National Centre for Social and Economic Modelling (NATSEM) developed a comprehensive static microsimulation model in the early 1990s, followed by the Melbourne Institute of Applied Economic and Social Research (MIAESR) in the late 1990s.[4] Several countries in Europe have developed their own microsimulation model and recently an overarching model, EUROMOD, has been developed for Europe (Sutherland 2001).

Microsimulation models are used to replicate events in the real world based on a sample from the relevant population on which detailed information at the micro level is available. The model discussed in this report is used to examine the effects of hypothetical or actual tax and

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[4] See for example, Harding (1996) or Creedy et al. (2002, 2005).

benefit reforms, using a large cross-sectional data set that reflects the degree of heterogeneity found in the population.[5] Policy changes for which this type of simulation can be done are mostly of a financial type, such as a change in the amount of benefits, the withdrawal rate, eligibility for benefits, or the range of income where a withdrawal rate applies.[6] Such changes result in a change in net income at the observed labour supply in a static microsimulation model (see for example Harding and Polette 1995, Beer 2003, Toohey and Beer 2004, Creedy and Tuckwell 2004); or changes in net incomes at each of the defined discrete hours points in a behavioural microsimulation model (see for example, Creedy, Kalb and Kew 2003, Kalb, Kew and Scutella 2005). In a behavioural model, the changed net incomes may cause a shift in the optimal labour supply choice for an individual, and thus in the individual's behaviour.

Policy changes may have large (unforeseen) effects on specific subgroups, which can often only be discovered before implementation through the use of extensive microsimulation modelling which mimics the real situation. In this way, the often-complicated interaction between the social security system and taxation is taken into account.[7] The relevance of microsimulation modelling in understanding and studying social policy issues has further been shown by the recent series on Tax and Social Security "Too much tax" by *The Australian*, in which newspaper articles relied on numbers obtained from the microsimulation models of MIAESR and NATSEM.[8]

Notwithstanding the usefulness of static microsimulation, Blundell et al. (2000) show that behavioural modelling can be important when examining the effects of policy changes. For example, inclusion of behavioural effects (changes in labour supply) in a microsimulation model resulted in a predicted cost to government of extending Family Credit to the more generous Working Families Tax Credit in the UK that is 14 per cent lower than would have been predicted without allowing for behavioural changes.[9] The fact is that a cost to

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[5] Although the microsimulation models discussed in this report all focus on labour supply, taxation and social security issues, this type of model can also be used to study other issues such as the housing market by incorporating the relevant information at the individual level, as is shown for example by the research of Wood, Watson and Flatau (2003).

[6] These contrast with, for example, changes in rules regarding the duration of benefits, residence requirement, willingness to accept training, the ability to refuse job offers, and reasons for job loss. These are important design features of a transfer system, but are difficult to accommodate in a microsimulation.

[7] For example, a change in a benefit may have consequences for other payments, which may not be obvious but are revealed when benefits and taxes are systematically calculated for each individual in the sample as they would be in reality.

[8] This series ran from Saturday 21 February 2004 to Saturday 28 February 2004. Every day, a range of articles on different tax and social security issues was published.

[9] Creedy et al. (2002) discuss behavioural microsimulation modelling in detail and Creedy and Kalb (2005c) provide a briefer discussion. Examples of microsimulation studies are Bingley et al. (1995), Scholz (1996),

government may even turn in additional revenue when behavioural responses are taken into account, for example, due to additional revenue from income tax when labour force participation increases.

The Melbourne Institute created the first Australian behavioural microsimulation model in 2000: the Melbourne Institute Tax and Transfer Simulator (MITTS), which is fully integrated with the static microsimulation model. Before this detailed microsimulation model was created Creedy and Dawkins (2002) make use of a simple microsimulation model consisting of homogenous households. They compare two types of simplified tax systems, one with a universal benefit and one tax rate (a basic income – flat tax system) with a system which provides a benefit to those in need that is withdrawn at a particular rate and a separate tax rate, which is lower or equal to the withdrawal rate of the benefit. They find that moving from the second system to the first system, increases overall labour supply and aggregate income, although those who were previously not on benefits tend to decrease their labour supply which is compensated by those on benefits who increase their labour force participation. As noted by the authors in the conclusion, the modelling on which this finding is based is simplified with regard to the actual tax and social security system and with regard to the actual heterogeneity of a population. A more detailed microsimulation model would be required to provide realistic results. However, these results provide an indication of the possible relationship between tax systems and labour supply and the potential importance of a behavioural microsimulation model.

1.2.2 The MITTS Model

The Melbourne Institute Tax and Transfer Simulator (MITTS) is a behavioural microsimulation model of direct tax and transfers in Australia. Since the first version was completed in 2000, it has undergone a range of substantial developments. Indeed, any large-scale model requires constant maintenance (involving, for example, re-estimation of econometric relationships as new data and methods are available, or the introduction of new ways to make simulations more efficient), as well as enhancements such as the extension of 'front end' and 'back end' facilities.

In the present version of MITTS, SIHC data from 1994/1995, 1995/1996, 1996/1997, 1997/1998, 1999/2000 and 2000/2001 can be used. The econometric estimates of preferences

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Blundell et al. (2000), Bingley and Walker (2001), Duncan and Harris (2002), Creedy, Kalb and Kew (2003), Gerfin and Leu (2003), Kalb, Kew and Scutella (2005).

underlying the behavioural responses are based on data observed between 1994 and 1998.[10] All results are aggregated to population levels using the household weights provided with SIHC. Recently, data from the Household, Income and Labour Dynamics Australia (HILDA) Survey have been transformed so they could be used as the base data for MITTS (Kalb, Cai and Vu, 2004). However, the disadvantage of using the HILDA is that it is not straightforward to aggregate results up to the population level.

The Arithmetic Component: MITTS-A

In MITTS, the arithmetic tax and benefit modelling component is called MITTS-A. This component also provides, using the wage rate of each individual, the information needed for the construction of the budget constraints that are crucial for the analysis of behavioural responses to tax changes.

The Tax System component of MITTS contains the procedures for applying each type of tax and benefit. Each tax structure has a data file containing the required tax and benefit rates, benefit levels, and income thresholds used in means testing. As mentioned before, in view of the data limitations of the SIHC, it is not possible to include within MITTS all the complexity of the tax and transfer system. However, all major social security payments and income taxes are included in MITTS. Pre-reform net incomes at the alternative hours levels are based on the MITTS calculation of entitlements, not the actual receipt. Hence, in the calculation of net income it is assumed that take-up rates are 100 per cent.

Changes to the tax and benefit structure, including the introduction of additional taxes, can be modelled by editing the programmes in this component. MITTS stores several previous Australian tax and transfer systems, which can be used as base systems for the analysis of policy changes. Alternatively, it is often possible to generate a new tax system by introducing various types of policy change interactively within MITTS by making use of the 'front end' menus. This enables a wide range of new tax structures to be generated without the need for additional programming.

MITTS assembles the various components of the tax and benefit structure in the required way in order to work out the transformation between hours worked and net income for each individual under each tax system. For example, some benefits are taxable while others are not, so the order in which taxes and transfers are evaluated is important.

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[10] Details of the current wage and labour supply parameters used in MITTS can be found in Kalb and Scutella (2002) and Kalb (2002).

MITTS-A contains the facility to examine each household, income unit and individual in the selected base data set in turn and generate net incomes, at the given hourly wage rates, for variations in the number of hours worked. Thus, the changes in effective marginal tax rates (EMTRs) and labour supply incentives faced by households at various levels of the wage distribution can be compared, in addition to calculating the aggregate costs of different reform packages. This allows comparisons to be made with results obtained from other Australian non-behavioural tax-benefit models. In addition, distributions of effective marginal tax rates, for a variety of demographic groups, can be produced for pre-reform and post-reform tax systems, as well as distributions of gainers and losers, for various demographic characteristics. Hypothetical households can also be constructed and examined.

The Behavioural Component: MITTS-B

The behavioural component of MITTS is called MITTS-B. It examines the effects of a specified tax reform, allowing individuals to adjust their labour supply behaviour where appropriate. Behavioural modelling makes use of the estimated parameters of a model, which describes the relationship between labour supply, wage rate, other income and individual characteristics. The main underlying assumption is that individuals choose a level of labour supply and net income, conditional on the attainable options, that optimise their utility. Gross income at the different levels of labour supply is calculated using the relevant labour supply, wage rate and other income. A behavioural model depends on an accurate representation of benefit and taxation rules to calculate what the net income is at all levels of gross income. The model can then be used to predict what the change in a person's labour supply behaviour will be as a result of a policy change. The effect of any policy change affecting the gross to net income transformation can be calculated.

The behavioural responses generated by MITTS-B are based on the use of quadratic preference functions whereby the parameters are allowed to vary with individuals' characteristics. These parameters have been estimated for five demographic groups, which include married or partnered men and women, single men and women, and sole parents (Kalb 2002a). Labour supply models with alternative functional forms for the utility functions have been estimated and simulation results were found to be robust to these alternative specifications (Kalb 2002b). The joint labour supply of couples is estimated simultaneously, unlike a common approach in which female labour supply is estimated with the spouse's labour supply taken as exogenous. The framework is one in which individuals are considered as being constrained to select from a discrete set of hours levels, rather than being able to vary

labour supply continuously. Discrete hours models are popular in tax policy microsimulation, because it is relatively easy (compared to the continuous models) to incorporate taxation and social security details. In addition, Van Soest, Woittiez and Kapteyn (1990), and Tummers and Woittiez (1991) show that a discrete specification of labour supply can improve the representation of actual labour supply compared to a continuous specification. Different sets of discrete hours points are used for each demographic group.

For those individuals in the data set who are not working, and who therefore do not report a wage rate, an imputed wage is obtained. This imputed wage is based on estimated wage functions, which allow for possible selectivity bias, by first estimating probit equations for labour market participation (as described in Kalb and Scutella 2002, 2004). However, some individuals are fixed at their observed labour supply if their imputed wage or their observed wage (obtained by dividing total earnings by the number of hours worked) is unrealistic. Furthermore, some individuals such as the self employed, the disabled, students and those over 65 have their labour supply fixed at their observed hours.[11]

Simulation is essentially probabilistic, as utility at each discrete hours level is specified as the sum of a deterministic component (depending on the hours worked and net income given the estimated parameters) and a random component. Hence, MITTS does not identify a particular level of hours worked as the optimal choice for each individual after the policy change, but generates a probability distribution over the discrete hours levels used. Net incomes are calculated at all possible labour supply points. Given a random set of draws from the error term distribution, once the deterministic component of utility at each of the labour supply points is calculated, the optimal choice for each draw can be determined conditional on the relevant set of error terms.

A common approach is to use a base data set and start from the labour supply observed in this data set to obtain a starting point for simulation based on the observed labour supply under a particular tax and benefit system. The set of error terms that in combination with the estimated parameters of the labour supply model resulted in the observed labour supply is used to compute a distribution of labour supply after a specified reform.[12] Given an

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[11] Estimating labour supply responses for these groups would require separately estimated labour supply models for each of the groups, taking into account the specific issues that each of them face. The issues of importance differ considerably between the groups, for example, access to superannuation for those over 65 versus the accumulation of human capital for students. In addition, financial incentives are probably less important for these groups.

[12] The more error terms that are drawn, the more accurate is the computed distribution, especially for those points with low probability.

individual's characteristics and draws for the error term, utility at each hours level after the change can be determined. In this way, a probability of being at each of the discrete hours points, conditional on the pre-reform labour supply, can be derived for each individual.

A behavioural simulation for each individual begins by setting reported hours equal to the nearest discrete hours level. Then, given the parameter estimates of the quadratic preference function (which vary according to a range of characteristics) the deterministic component can be calculated, and to determine the random component, a set of random draws is taken from the distribution of the 'error' term for each hours level. The utility-maximising hours level is found by adding the random to the deterministic component of utility for each discrete hours level. This set of draws is rejected if it results in an optimal hours level that differs from the discretised value observed. A user-specified total number of 'successful draws' are produced, that is, drawings which generate the observed hours as the optimal value under the base system for the individual. This process is described as 'calibration'.

For the post-reform analysis, the new net incomes cause the deterministic component of utility at each hours level to change, so using the set of successful draws from the calibration stage, a new set of optimal hours of work is produced. This gives rise to a probability distribution over the set of discrete hours for each individual under the new tax and transfer structure. For example, in computing the transition matrices showing probabilities of movement between hours levels, the labour supply of each individual before the policy change is fixed at the discretised value, and a number of transitions are produced for each individual, equal to the number of successful draws specified.

Due to this probabilistic nature of simulation, MITTS-B does not generate a single net income for each individual after a policy reform. For this reason, a new approach to the production of distributional analyses of the effects of tax reforms on net incomes is required. Inequality and poverty measures, for example, cannot be computed from the complete set of possibilities available. The present version of MITTS-B uses the method devised by Creedy, Kalb and Scutella (2004).

Similarly, when reporting average hours in MITTS-B, the labour supply after the change for each individual is based on the average value over the successful draws, for which the error term leads to the correct predicted hours before the change. This is equivalent to calculating the expected hours of labour supply after the change, conditional on starting from the observed hours before the change. In computing the tax and revenue levels, an expected value is also obtained after the policy change. That is, the tax and revenue for each of the accepted

draws are computed for each individual, and the average of these is taken, using the computed probability distribution of hours worked.

In some cases, the required number of successful random draws producing observed hours as the optimal hours cannot be generated from the model within a reasonable number of total drawings. The number of sets of random variables tried per draw, like the number of successful draws required, is specified by the user. If after the total number of tries from the error term distribution, the model fails to predict the observed labour supply for a draw, the individual is fixed at the observed labour supply for that draw. In a few extreme cases labour supply is fixed for all draws of an individual. The use of such a probabilistic approach means that the run-time of MITTS-B is substantially longer than that of MITTS-A.

Strengths and Limitations of Behavioural Microsimulation Modelling

Behavioural microsimulation can be a useful tool in policy analysis, but like any other tool, it has its strengths and weaknesses. Before going into the limitations, we start with its major strengths.

First, its strength is to allow disaggregation of policy effects to the individual and household level. This is important when assessing distributional aspects of a policy change. When calculating the effect of a policy, the full heterogeneity of a population is taken into account. Nevertheless, macro-level results can be easily obtained as well. When population-level information is needed, these can be produced by aggregating the individual information using weights to transform the sample-level results to population-level results.

Second, microsimulation can in principle incorporate all possible details of the social security and tax system, and is only limited by the information available in the data on individuals. This means the model is an accurate representation of the actual tax and transfer system and can predict the effect of policy changes in any component of this system.

A third important feature of behavioural microsimulation modelling is that it provides the policy analyst with predictions of individual labour supply responses to any financial policy change. These individual labour supply responses can be aggregated up to any level to provide an overview at the population level of the work incentive effects of a particular policy change.

Turning to the limitations, microsimulation models are partial equilibrium models, and so wage rates are assumed to be held fixed when labour supplies change. As a result, effects of

policy changes on other sectors and limitations resulting from effects on other sectors are ignored. The advantage of computable general equilibrium (CGE) models is that although they usually provide little detail on the individual firms and household in an economy, they often model a large number of sectors of the economy and the relationships between the sectors.

As mentioned in Section 1.2.1, different questions require different models so different types of models should be seen as complements rather than substitutes for each other. Nevertheless, broadening the scope of any model could improve its general usefulness. For example, predicting an increase in an individual's labour supply, MITTS cannot determine whether there is sufficient demand for this new labour force participant's skills. On the other hand, predicting an increase in the demand for a particular type of labour, a CGE model cannot determine whether the individuals able to supply this labour have sufficient incentive to do so. Ideally, new developments in modelling would combine aspects from micro and macro models to enable more complete policy analysis, which implies taking into account labour demand constraints using information from macro-oriented models in MITTS.

A second limitation is the instantaneous nature of MITTS. No account is taken for example of the time it would take for individuals to fully understand a change, find employment at the right number of hours and childcare if necessary. Evidence from past policy changes may be used to make an estimate of this path, as used in Buddelmeyer et al. (2004a).

A third limitation is the difficulty of including non-financial policy changes in a simulation. However, microsimulation can be used to identify all financial changes of a policy at different levels of labour supply and estimate a model over an extended period of time allowing for all financial changes over the period. By including indicator variables at points in time when non-financial incentives have been changed, the effect of these changes on the preference for work can be assessed whilst controlling for all financial changes occurring at the same time and for changes in macro-economic circumstances, as well as time trends. This would give an indication of the effect of the different changes in non-financial incentives that have occurred over time. Although this cannot directly be used to predict the effect of future non-financial incentives, it would assist in forming an idea about the likely effect of these non-financial incentives.

Finally, at the moment indirect taxation can be included at an aggregate level only, through the resulting change of this taxation on the consumer price index, which is the same for all households. To include more refined effects on prices, allowing for differences in

consumption between households, household expenditure patterns would be needed. Using this approach, different levels of consumption of different types of goods, each of which may be affected differently by indirect taxation changes, could be taken into account when assessing households' incomes in real terms. This effect on real incomes can then flow on to labour supply responses resulting from these changes. A more complex, and more elaborate, modification would also allow consumption patterns to change with the policy change. To achieve this, the estimation of a separate model regarding the household's consumption would be required.

Some of the above limitations are addressed further in Section 1.7, when directions for further research are discussed.

1.2.3 *Use of the MITTS Model*

Since its development in 1998 and the launch of the first complete operational version of the model in 2000, several analyses have been carried out based on the model. In addition, the microsimulation model has been developed further, introducing a range of improvements.[13]

The studies, which are reviewed in the next two sections, are all based on analysis of policy reforms using MITTS. Some of these studies were commissioned by the Department of Family and Community Services (FaCS), The Australian newspaper and the Australian Labor Party, whereas others were initiated by the Melbourne Institute. In addition to the studies presented here, the Melbourne Institute has also written confidential reports using MITTS to analyse policy proposals by FaCS and the Department of Employment and Workplace Relations (DEWR).

To a lesser extent, some of the childcare and labour supply studies in Section 1.5 and some of the ageing-population studies in Section 1.6 are also making use of MITTS in generating data for estimation and some simulations.

1.3   Work-Incentive Effects from Hypothetical Policy Changes

For many years, the Melbourne Institute has been active in thinking about important policy issues. In a recent example, five economists, Peter Dawkins, John Freebairn, Ross Garnaut, Michael Keating and Chris Richardson wrote a letter to the Prime Minister in October 1998, suggesting a variety of policy changes that could improve Australia's employment levels. Peter Dawkins was, until recently, the Director of the Melbourne Institute and John Freebairn

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[13] See for example Creedy and Kalb (2005b).

was associated as a Professorial Fellow with the Institute and is the current Director. The ideas presented in this letter have been the basis for a series of analyses estimating the cost of and labour response to an Earned Income Tax Credit (EITC) as described in this letter, and as further developed in later papers. See for example, Dawkins, Duncan and Freebairn (2003), Buddelmeyer et al. (2004b), or Buddelmeyer, Dawkins and Kalb (2004).[14]

However, the Earned Income Tax Credit has of course not been the only policy change evaluated by the Melbourne Institute. A wide range of studies has been carried out over recent years. This section, for hypothetical changes, and Section 1.4, for actual and proposed changes, give an overview of these studies.

1.3.1 Introduction of an Earned Income Tax Credit

The general form of the EITC is the same in the different publications discussed here and follows the approach proposed by Lambert (2000). It consists of a maximum $30 per week credit, which is tapered in with individual earnings at a rate such that the total amount of credit is received at the income threshold for receiving the full amount of Family Tax Benefit part A. The EITC is added to the Family Tax Benefit and withdrawn at the same rate, once all family payments have been withdrawn. For households without children, the EITC withdrawal starts straightaway. Lambert finds that introducing this credit redistributes income away from the higher household income deciles towards the lower income deciles. Dawkins (2002) describes the proposal for reform by the five economists. He discusses a number of criticisms of the proposal in detail, indicate they seem to have positive labour supply responses but has to defer discussion of results from a detailed microsimulation to future papers.

Several recent papers have included an analysis of the effect of introducing the above described EITC (examples are Dawkins, Duncan and Freebairn 2003, Buddelmeyer et al. 2004b, Buddelmeyer, Dawkins and Kalb 2004).[15] All these studies find that EITC is an effective way of providing work incentives to low-wage individuals. However, similar to what is found in the US and the UK (that both have a type of tax credit available to low-income earners), a negative effect is expected for the secondary earner. First, this may be due to the income effect dominating the substitution effect, but in addition, secondary earners

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[14] These papers are likely to have overestimated the participation effect to some extent, due to a coding error in the drawing of error terms in the simulation programme. This problem only affects the behavioural simulations. The relative size of the effect of alternative policies is not affected. In addition, positive participation effects remain positive and negative effects remain negative, the estimated effects are just smaller than reported. Simulations done between 2003 and November 2005 were affected.

[15] See footnote 14.

often also face an increased effective marginal tax rate due to the fact that their decision on labour force participation often falls in the withdrawal phase of the credit.

Dawkins, Duncan and Freebairn (2003) combined a Conditional Minimum Income structure with a tax credit. They conclude this would provide many groups of individuals with additional work incentives although it would be impossible to do this without some people having a decrease in net income. The number of losers can be reduced when additional money can be spent on the system. They also found that for sole parents the new system generated negative work incentives due to the higher withdrawal rates. They argue that with some adaptations to the structure of the system it should be possible to improve this. More details on the studies by Buddelmeyer et al. and by Buddelmeyer, Dawkins and Kalb can be found in sections 1.3.5 and 1.4.3 respectively.

1.3.2 Reduction in Benefit Withdrawal Rates

The Australian tax and transfer system has a large number of means-tested benefits. Toohey and Beer (2004), by using simulations for hypothetical households of a couple with 1 to 3 children at different income levels, show the problem areas in the current social security system, where an accumulation of income tax, benefit withdrawal rates and childcare costs can make the effective marginal tax rate (EMTR) very high for groups of married women. They use the measure of Effective Average Tax Rate (EATR), which looks at the proportion of income paid in tax or withdrawn from benefits per additional hour of work. Toohey and Beer show that the financial incentive to participate in the labour force or work additional hours is low for married women in low-income families. The situation is better for high-income families. For families with more children there is a wider income range for which these incentives are low, due to the higher level of family payments.

The hypothetical policy change analysed in Creedy, Kalb and Kew (2003) reduces the benefit taper or abatement rates in the 1998 tax structure to 30 per cent. All taper rates of 50 per cent and 70 per cent are reduced to 30 per cent, while leaving all basic benefit levels unchanged.[16] A 30 per cent taper rate means that for every dollar of additional income in the household, the benefit payment is reduced by 30 cents.

The effect on labour supply of this reduction in the taper rates is equivocal because it does not automatically mean a reduction in effective marginal tax rates for all individuals. This is an

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[16]The exception is the withdrawal rate on parental income for people receiving Youth Allowance or AUSTUDY, which remains at 25 per cent.

inevitable consequence of flattening the marginal rate structure while keeping basic benefit levels unchanged. In summary, after the reform, more sole parents are expected to participate in the labour market since few women move from work to non-participation, whereas a substantial proportion moves into work from non-participation. The net effect is more than 8 per cent. However, there is a relatively small negative effect for a subgroup caused by the 1.8 per cent of sole parents who decrease their labour supply, which is partly counteracted by the 1.3 per cent of sole parents who increase their working hours after the reform. Nevertheless, the resulting average weekly hours are increased by nearly 3 hours, showing that the overall effect is positive. Sole parents are predicted to have a larger increase in the probability of working as a result of reduced taper rates than other groups. This sensitivity to work incentives is found in several other studies (Blundell et al.2000, Blundell and Hoynes 2004). Families with more children seem also more likely to participate in the labour market after the reform.

Creedy, Kalb and Kew (2003) also show that the net expenditure by the government on couple families and single women are higher if labour supply responses are taken into account, whereas the net expenditure is lower for single men and sole parents. The cost for sole parents resulting from this policy change is expected to be reduced substantially when potential labour supply responses are taken into account.

Similar to the previous example, Duncan and Harris (2002) examined the effect of a hypothetical change of a reduction in taper rates. In addition, they simulated the effect of three other hypothetical changes: a reduction in the taper rate of family payments, an abolition of the Single Parent tax rebate and an increase in the standard rate of income tax from 20 to 30 per cent. They limited themselves to the subgroup of sole parents and similar to findings from other studies, they found this group to be quite responsive to financial incentives.

1.3.3   *Reduction in Payment Level*

Creedy, Kalb and Scutella (2005) studied the extreme example of completely abolishing payments for sole parents. [17] Naturally, this would have large effects on sole parents' poverty levels. Even after allowing for labour supply responses, the expected effect on poverty levels and the decrease in net income available to sole parent families remain severe although there is a major improvement compared to the results from the static simulation. The results from simulating such an extreme policy change are not thought to be as reliable as the results for

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[17] See footnote 14.

more subtle changes. Nevertheless, this result indicates that the belief held by some commentators that social security payments stand in the way of families gaining independence from benefit payments is likely to be false.

1.3.4 Flattening the Tax Rate Structure

The use of alternative units of analysis and adult equivalence scales, when examining poverty and inequality changes resulting from policy reforms, can be considered using MITTS.[18] Creedy and Scutella (2004) examined the sensitivity of inequality and social welfare measures to the choice of the unit of analysis and equivalence scales. [19] As part of this exercise, they simulated the effect of flattening the marginal tax rate structure for the whole population. They introduce a basic income (at around the current allowance and pension rates) and a flat tax rate of 54 per cent (which results in a roughly revenue-neutral change if no labour supply changes were to occur). Whether the basic income was to be paid at the allowance or pension rate was determined by the eligibility of each individual in the current system. Implementing this change, they found that inequality is reduced unequivocally for all choices, but the predicted effect for social welfare depends on the unit of analysis and the aversion to inequality. After accounting for labour supply changes that were mostly negative, inequality is reduced by a larger value but social welfare increases by a smaller amount, and actually decreases for a wider range of parameter values. The lower increase in social welfare is due to the use of a welfare measure that takes only income into account and not the value of leisure or home-production time.

1.3.5 The Extent of Bracket Creep

MITTS has also been used to examine the effect of a lack of change; that is, the absence of a correction mechanism for inflation to update the income tax thresholds between July 2000 and March 2004. Buddelmeyer et al. (2004b) focussed on the extent of bracket creep since the Australian New Tax System (ANTS) package and the distribution of effective marginal tax rates, respectively. [20] It was estimated how much extra tax is paid per year due to bracket creep, that is, the relative increase in tax burden when nominal incomes increase and income tax thresholds remain the same. Thus at the same level of real income the average tax paid increases.

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[18] The units include individuals, households and 'equivalent adults'.
[19] See footnote 14.
[20] See footnote 14.

A range of possible tax-cut proposals was then examined, where the costs (before taking into account behavioural changes) are roughly equal to the dollar amount of bracket creep resulting from increases in prices not having been matched by the raising of thresholds. The effects of these different policies were simulated using MITTS. Components of these reforms include indexing the current tax thresholds for inflation; increasing the threshold at which the top marginal tax rate applies; lowering the second-highest marginal tax rate from 42 to 40 per cent; introducing an Earned Income Tax Credit; reducing taper rates on benefits; and combinations of these measures.

The labour supply responses are clearly different for the different packages. Two out of eight reform proposals are compared in detail: one that only involves indexation of all tax thresholds with CPI increases and one that introduces an earned income tax credit for low-income households (as proposed by the five economists) and indexes only the top two thresholds. The expected labour supply effects of the tax credit proposal are nearly twice as large as for the other proposal. The resulting subsequent increase in tax revenues and reduction in benefit payments means that the long-run cost of the tax credit proposal drops considerably compared to the indexation proposal.

1.4 Work-Incentives from Actual and Proposed Policy Changes

This section contains analyses of policy changes that have actually been introduced or that have been formally proposed.

1.4.1 Working Nation

To bring the social security system into line with emerging labour market trends in female and part-time employment, the Keating Government, in July 1995, implemented various reforms to the income support system, under the "Working Nation" banner, that introduced individual social security payments, replacing the partner top-ups of benefits paid to the breadwinner of the household. Changes were made to the structure of payments available to the unemployed, and partners of the unemployed that were designed to encourage individuals to enter part-time work. Scutella and Dawkins (2003) analysed these Working Nation reforms.

The main changes they analysed were the following: 1. Abolition of the earnings disregard. 2. Introduction of personal and partner income tests for couples on allowances, previously income was tested on a combined basis. 3. Decrease of the taper rate on allowances for income greater than $140 pf from 100 per cent to 70 per cent. 4. Introduction of Parenting

Allowance and Widow Allowance, which had no associated activity test. 5. Restriction of Partner Allowance to those born before July 1955 without recent workforce experience. 6. Closing of new grants of Wife Pension (most partners became eligible for Carer Pension, Parenting Allowance or Partner Allowance instead).

The effective marginal tax rate (EMTR) measures the percentage of additional income that would be paid in taxes or withdrawn from benefit payments. Although most income units experienced no change on EMTRs for a fixed level of labour supply, there were sub-groups that experienced significant changes. Due to the reduction of the withdrawal rate on allowances, a large proportion of the individuals with EMTRs of over 90 per cent before the policy experienced a reduction to around 70 to 80 per cent. Some couple households experienced reduced EMTRs due to the changed treatment of their income. However, the combination of the abolition of the earnings disregard and the changed treatment of income in couple households did increase EMTRs for many income units.

Increased benefits to part-time work were found to lead to a small net increase in workforce participation across all groups apart from single men. The largest increase in net labour force participation was simulated for married males with children at 0.34 per cent, or 6,860 persons. In terms of aggregate hours, the net labour supply effects were small, with the overall effect on aggregate hours of work only slightly positive. This is partly because there were negative effects on hours for some people. Average weekly hours of work are predicted to increase by 0.1 hours for married men with children, 0.04 hours for married women with children and 0.07 hours for sole parents. A slight reduction in average hours was found for singles without children.

Abolishing the earnings disregard (which only affected a small group), in isolation, was found to have no apparent effect on the average hours worked across the population. Neither did the individualisation of partner income tests (together with abolition of earnings disregard) have much effect. A very small reduction in labour supply was found, of about 0.01 hours per person. Only the reduction of the 100 per cent taper rate was found to have some, although still small, effect. Some men and women moved into work, others moved out of work. Some are simulated to choose to work more hours, but more are simulated to choose to work fewer hours. Overall, the effect on hours worked was found to be slightly negative, suggesting the income effect of the change (people taking advantage of the increase in benefit available at lower hours of work) was higher than the substitution effect of a slightly higher return to extra work over the withdrawal range.

1.4.2   The Australian New Tax System

One advantage of microsimulation is that it is straightforward to look at components of policy changes in isolation. Kalb, Kew and Scutella (2005) used MITTS to decompose the effect of the direct tax and social policy changes in July 2000. Similar to Gregory, Klug and Thapa (2003), they conclude that METRs are still high; however, they believe they have improved considerably for large ranges of income. Even if these are not incomes at which the majority of individuals are located before the change, they could improve incentives by making alternatives to non-participation more attractive. They also agree that the income tax changes are unlikely to have had a very large effect on incentives, but by examining a general sample from the Australian population, their conclusion is that these changes are more relevant than they appear to be from Gregory, Klug and Thapa (2003), who focus on sole parents on income support.

Indirect taxes and consumption are not modelled in MITTS, so a behavioural response to introducing the Goods and Services Tax at the same time as the direct tax and social security changes cannot be simulated. However, although MITTS does not take into account the individual effects on household consumption due to the indirect tax changes, the average effect of the price changes on real net income as measured by the larger than usual change in the Consumer Price Index is taken into account when simulating labour supply responses.

 First the whole set of changes was studied and then some of its components were analysed separately. The change in income tax rates and thresholds were found to have the largest effect, because it affected a large proportion of the population, whereas the changes to the benefit system were only relevant to smaller groups. This tax change also increased labour supply for all groups, in particular for sole parents, making up part of the loss in tax revenue. Compared with the change in revenue resulting from the complete reform, the increase in expenditure on social security payments is quite small.

For families with children, the changed structure and rates of family payments were also shown to be important. They find that the change in Family Tax Benefit part A had a relatively large positive impact on sole parents' labour supply, confirming the observation by Gregory, Klug and Thapa (2003) that almost all income and work incentive changes flowed from the changed taper rates and base rate of Family Tax Benefit part A. Other components of the reform provided several positive incentives for sole parents but the family payment reforms seemed to counteract this at least partly, resulting in a small positive overall effect. The simulation results also show that the introduction of the gradual withdrawal of the

minimum rate of family payment rather than the previous 'sudden death' cut-out had a negligible effect as the reform only involved a small amount of income at a relatively high level of family income.

The analysis further showed that the reduction in pension taper rates had little effect on expenditure, given that a large proportion of pensioners do not work because of disability or retirement, and are not affected by a change in the taper rate. The reduction in the taper rate had a small positive labour supply effect for sole parents. The effect of an increase in the threshold of the Parenting Payment Partnered is even smaller both in expenditure and in labour supply effects. This is not surprising given that the reform only had a minor effect on net incomes of a small proportion of the population.

Looking at the combined effect of all changes, families with children experienced the largest increase in net government expenditure, mainly caused by increased family payments. However, from a comparison of the proportion of households experiencing a loss, this proportion is also higher for households with children. This indicates a wider variety in both positive and negative effects for these families than for others resulting from the reform. Single person households had the lowest average increase in average income. Given the large effect of the income tax reform, it was also found that families in higher income deciles had larger average income gains.

Although expenditure on benefit payments increased following the reform of July 2000, this increase is lower after taking into account labour supply behaviour. For single men and women, the expectation is that the increase in expenditure may even turn into a saving on expenditure after the behavioural changes are taken into account. Similarly, the decrease in revenue is lower after taking into account the increased labour supply amongst all groups. Thus, the expected changes in labour supply should help to reduce the cost of the reform. Net expenditure (tax revenue and expenditure on benefit payments and rebates taken together) is also increased by less after accounting for behavioural changes.

The above results are confirmed by a more recent study by Cai et al. (2004 and 2005). [21,22] They focus on the labour supply responses of sole parents and mothers, replicating the above study using more recent SIHC data and applying two different approaches for the group of

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[21] See footnote 14. For single mothers, the revised outcomes show a predicted increase in average hours of 0.81 hour per week and an increase in the predicted participation by 0.75 percentage points. The original numbers were 1.01 hour and 1.27 percentage points respectively.

[22] Cai et al. (2004) analyse single and married mothers, whereas Cai et al. (2005) describe the effects for single parents only, but provide some additional, more detailed, analyses.

sole parents. In addition to the microsimulation analysis, they also use the Census 1996 and Census 2001 data to evaluate the policy change using quasi-experimental evaluation. Similar to the previous study, their conclusions are somewhat more positive about the incentive effects of the ANTS package for sole parents than Gregory, Klug and Thapa (2003) are. They suspect that this is partly due to the inclusion of mothers who are not on income support in their analysis, whereas the analysis by Gregory, Klug and Thapa is restricted to income support recipients. The groups, who are not on income support, are likely to benefit more from the income tax changes and some of the family payment changes.

Cai et al. find both from behavioural microsimulation and from a difference-in-difference matching evaluation, that there is a considerable increase in employment and in full-time employment in particular, indicating that some of the part-time workers seemed to be motivated to prefer to change to full-time employment. The effects found are not enormous, but the policy changes seemed to have had some modest positive effects on labour supply. The estimated effects are similar using the microsimulation and difference-in-difference approach. If anything, the difference-in-difference approach seems to point to a larger effect than the microsimulation approach.

The latter observation is consistent with findings by Doiron (2004) who analysed the major policy changes affecting sole parents at the end of the 1980s.[23] Comparing her own difference-in-difference results with the predicted effect of changes of a similar magnitude, obtained through microsimulation analysis, she concludes that it appears that the effects estimated through a difference-in-difference method are slightly larger than the effect of similar changes predicted through microsimulation.

1.4.3 The 2004 Federal Budget

The effects of the policy changes announced by the Coalition in the 2004 Federal Budget were reported by Buddelmeyer, Dawkins and Kalb (2004).[24] The Melbourne Institute's 2004 Budget Report focused on the effects of the Family Tax Benefit package and the income tax

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[23] A range of policies was introduced. First, the definition of dependent child for the purposes of the lone parent pension was changed from children under 16 years of age or under 25 and full-time students to only children under 16. Second, the free area on the income test was increased from $30 plus $6 per child per week to $40 plus $12 per child per week. Third the introduction of an earnings credit so that lone parents could accrue credits up to $1 000 if their income was below the free area. Fourth, the separate income test for rent assistance was abolished so that the free area on the income test became applicable to rent assistance. Fifth, the Child Support Agency was established and a separate income test for maintenance income was introduced. Following this, the withdrawal of pension benefits for those receiving maintenance income was lessened. Sixth, the Jobs, Education and Training (JET) Scheme, which aimed to aid the entry or re-entry of lone parents into employment, was introduced.

[24] See footnote 14.

cuts, the two central features of the budget. Labour supply and distributional effects were explored using MITTS. While all families with children benefited from the changes, the benefits tended to go mostly to individuals and families with high incomes.

Examining the labour supply effects of separate components, the effect of the increase in Family Tax Benefit Part A by $600 per child was estimated to reduce labour supply by about 19000 persons, with the largest reduction being for sole parents, which was a high proportion of sole parents in work. This effect is almost exactly offset by a positive labour supply effect for sole parents from reducing the withdrawal rate of Family Tax Benefit Part A.

The most surprising finding from the modelling is that changes to Family Tax Benefit Part B (involving an increase in the free income range and a decrease in the withdrawal rate) are expected to cause around 20000 people to withdraw from the labour market. Those affected are partnered men and women. This is a result of the additional eligibility of non-working families with full Parenting Payments for Family Tax Benefit Part B. This raises net incomes at zero/low hours of work of the primary earner relative to net incomes at higher levels of labour supply. This seems to be an unintended consequence of this policy change, and its discovery through the analysis provides a further illustration of the advantages of behavioural microsimulation.

Modelling the effect of raising the top two income tax thresholds reveals that it raises overall labour supply by about the same amount as the Family Tax Benefit changes reduce overall labour supply. However, different workers are involved in these two effects. Finally, in this report alternative reforms were suggested and simulated, showing that better results with regard to work incentives could have been obtained at the same price as the policy changes in the Budget.

1.4.4   The 2005 Federal Budget

In the next year, the 2005 Federal Budget contained a range of financial incentives making the rewards to work greater for nearly everyone, such as the reduction of the lowest marginal income tax rate from 17% to 15% and the increase of the highest income threshold to $95,000 per year in 2005/2006, and $125,000 in 2006/2007. The 2004 Federal Budget already proposed to increase the top tax threshold to $80,000 for 2005/2006. In addition to increasing the top tax threshold, the tax threshold for the 42% tax rate is increased from the current $58,000 to $63,000 for 2005/2006, as was announced in last year's budget, but will be increased again to $70,000 for 2006/2007. Further measures in 2006/2007 benefiting lower

income groups, who are dependent on income support, include the reduction of the benefit withdrawal rate of 70% to 60% for income over $250 per fortnight and to 50% for income between $142 and $250 per fortnight. For families, the minimum rate of Family Tax Benefit Part A starts to be reduced at an annual household income of $37,500 instead of current $32,485. [25]

Buddelmeyer, Freebairn and Kalb (2005) calculated the labour supply effects and costs relative to the budget that would have been in place for 2006/2007 in the absence of any further changes beyond those that were announced in the 2004 Federal Budget.[26] The expected effect on labour force participation of the changes to the benefit taper rates and the income level at which Family Tax Benefit Part A starts to be withdrawn is positive for single parents and negative for partnered women; the combined aggregate effect is just positive. This negative effect for partnered women is a common result when reducing benefit withdrawal rates as their income effect tends to dominate their substitution effect. The effect of the income tax changes only –that is, the remaining component of the proposed Budget reforms– has a much larger (and for all groups positive) effect on labour force participation. The total effect is almost equally distributed in absolute numbers across the different family types. The total expected effect of the government's full proposal is an increase in labour supply with 45000 workers.

A different aspect of the labour supply response is the effect on average hours worked. The changes to the taper rates and Family Payment income thresholds lead to a reduction in total average hours worked for everyone except sole parents. This is in contrast with the positive effect on employment levels, although the changes in hours and employment are clearly very small for partnered men and single men and women. Sole parents display the strongest positive response to the financial incentives in terms of increased average hours of work, but not in terms of additional persons in employment, although given the relatively small number of sole parents, the increase is of course large in relative terms.

In this analysis, the effects of transferring single parents with children over 6 and disabled persons with a work capacity of 15 hours or more from a pension payment to the Enhanced New Start Allowance with a part-time work obligation and imposing a part-time work obligation are not formally calculated. The effect on labour supply of these measures is

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[25] Note that these changes have the effect of reducing effective marginal tax rates (EMTRs) for some, but increase EMTRs for others who now become eligible for some payments due to the lower taper rates.
[26] See footnote 14.

ambiguous.[27] However, given the relatively small number in the latter two groups, for the working-age population overall a moderate positive effect on employment is to be expected from the 2005 Budget.

1.4.5 The Labor Party's Tax and Family Package

In a report on the Australian Labor Party's Tax and Family Package, Buddelmeyer *et al.* (2004a) predicted the labour supply effects associated with some of the policy changes announced in the package, and calculated the effect of these labour supply changes on the budgetary cost of the proposed policy.[28] The package analysed has four components. These are the Consolidation of Family Tax Benefit Part A and Part B into one payment (and some changes to rates and tapers); a Single Income Tax Offset (which provides a tax rebate for single-earner families); the Low and Middle Income Tax Offset, which provides a tax cut of up to $8 per week to tax payers with an income between $7382 and $56,160 per annum (with those below $8453 not paying any tax) and incorporates the existing Low Income Tax Offset; and an increase in the top income tax threshold to $85,000. Although some of these changes restructured the current system considerably, these changes could be simulated in MITTS after some programming.

A feature of this report was the inclusion of a time path for the predicted employment changes using evidence from previous policy changes. Due to labour market frictions and displacement effects, not all the labour supply effects estimated in MITTS may be converted into an actual increase in employment and thus into the predicted budget savings resulting from these responses. On the other hand when the increase in labour supply is converted into employment, those entering or re-entering employment may experience increases in their wages over time, further increasing income taxes paid by these employees and lowering government benefits received by them, thus increasing the budget savings above that estimated by the MITTS model, which does not account for such wage progression. The report presented evidence that the employment effect can be expected to take about four years to be realised with the biggest incremental effect in the second year. The results are calculated

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[27] As a result of this transfer, relatively less can be gained from employment due to the higher benefit withdrawal rates when earning additional income. This is of course (partly) counteracted by the requirement to look for work to remain eligible. The short-term effects are further complicated by keeping the old level of payment in place for current recipients. The disability pension recipients will have periodical reviews assessing work capacity and eligibility, and will be transferred to Enhanced NewStart Allowance with a part-time job search requirement once their work capacity is between 15 and 29 hours per week. Although sole parents on old payment levels will be subject to new participation requirements once their youngest child turns 7, there is a clear incentive for single parents to remain on the old system. This may have adverse short-term effects on the probability of these two groups to re-enter the labour force.

[28] See footnote 14.

using different scenarios. The central estimate of the time path of the employment effect, taking into account labour market frictions and displacement effects, and the time lags involved, assumes that 85 per cent of the projected increase in labour supply is converted into increased employment. This would amount to around 61000 additional persons in employment.

1.5 Childcare and Labour Supply

The Melbourne Institute has been involved in a few different studies on childcare use. The earlier studies (Doiron and Kalb 2002, 2005) have made use of a combination of the Survey of Income and Housing Cost (SIHC) and the Childcare survey. Two data sets were needed because neither of the two data sets provided information on all required variables. The SIHC contains no childcare information and the Childcare Survey only contains broadly categorised information on income and labour supply. Therefore information on childcare use was imputed for the households in SIHC. This was before the Household Income and Labour Dynamics in Australia (HILDA) survey had become available. The later study by Buddelmeyer and Vu (2004) uses this more recent survey, which combines information on childcare use and labour supply behaviour on the same households.

Doiron and Kalb examine the effect of childcare costs and prices on the parents' labour supply. In their first article, they look at the likely labour supply responses if childcare costs were to increase with 100 per cent. They find the largest effects for sole parents and hardly any effect for partnered fathers. Those with lower wages and with younger (preschool) children are affected most. Account is taken of the difference between formal and informal childcare.

This first article did not incorporate the childcare costs into the labour supply model when estimating the preference parameters, and childcare costs were not decomposed into the demand for care in hours and the hourly fee of childcare. These issues were addressed in the second paper, which uses an additional data set to determine the hourly fee of childcare by age of the child and the State of residence. The estimated effect of increasing the childcare costs followed similar patterns as in the first paper; it is highest for sole parents and lowest for partnered fathers. Allowing for a decomposition of childcare costs into an hourly fee and the demand for childcare in hours, means a reaction to a change in the price can be incorporated in the demand for childcare (for example, including a shift from formal to informal childcare use) and the labour supply response.

An increase in the hourly price of childcare does not affect labour supply as much as a similar increase in the cost of childcare. This is due to the fact that they can now allow for childcare subsidies (whereas this is not possible when looking at the weekly cost). As a result, an increase in price translates into a lower increase in the total cost. In addition, they allow a substitution of informal for formal care to take place. Informal care is in general much cheaper (often, it is even provided at no cost). Comparing the effects estimated for Australia with overseas results, the predicted effects are on the lower side of the range, being closer to European countries like the UK, Germany or France than the US.

Buddelmeyer and Vu (2004) use data from waves 1 and 2 of the HILDA survey, which are weighted using the population weights to represent population averages. Their study explores childcare use in general. In this review, we focus on their results regarding the interaction with labour supply only.

They report that about 60 per cent of unemployed and employed mothers with at least one child less than 15 years old either used or had thought about using childcare in the last 12 months, so she (and her partner) could (both) undertake paid employment. Of those mothers currently not in the labour force, that is mothers not employed or unemployed, about 15 to 35 per cent reported they used or had thought about using childcare, depending on the survey data year and level of labour market attachment. In the 1996 Childcare Survey, Doiron and Kalb (2002, 2005) found that 57 per cent of all couples (69 per cent of all two-earner couples) and 62 per cent of all sole parents (82 per cent of sole parents who were in paid work) used formal or informal childcare. The percentages from this earlier survey are somewhat higher because only households with children under twelve years of age were included.

Buddelmeyer and Vu distinguish three types of mothers with at least one child less than 15 years old: mothers who are not in the labour force (about 40 per cent), part-time working mothers (about 35 per cent), and full-time working mothers (about 20 per cent). There is a clear relationship between the age of the child and the intensity of labour force participation. The fraction of mothers working full-time is lowest when the age of the youngest child is less than 3 years. When the age of the youngest child increases, so does the fraction of mothers working full-time. The fraction of women working part-time is also lowest when the youngest child is less than 3 years. The fraction increases when the age of the youngest child increases and peaks when the age of the youngest child is between 5 and 9 years old, after which it drops off. The fraction of women not in the labour force is highest when the age of the

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youngest child is less than 3 years and consistently declines with the age of the youngest child.

In addition, there is a clear relationship between the age of the child and using childcare, when both parents are working. Just over 40 per cent of households, where both parents work and with at least one school-aged child, use no childcare, whereas this is 20 to 30 per cent, for HILDA data waves 1 and 2 respectively, for households with at least one pre-school-aged child. Similarly Doiron and Kalb (2002, 2005) found that when both parents work 81 and 89 per cent use childcare for children aged 0 to 2 and 3 to 4 respectively, versus 45 and 59 percent for 10 to 11 year olds and 5 to 9 year olds respectively. These percentages are around 98 per cent for sole parents with 0 to 4 year old children and 77 and 64 percent for 5 to 9 year olds and 10 to 11 year olds respectively. It is clear that once children go to school, parents can more easily enter the labour market without necessarily needing to use childcare.

Given that care is used, care for pre-school-aged children when (both) parents work, is used on average for about 10 to 30 hours per week. This is roughly double the number of hours used for school-aged children.

From wave 2 onwards, HILDA also measures childcare use for any reason when the mother (or her partner) is not at work. The majority of mothers do not use childcare for non-employment related purposes (over 60 per cent in the case of care for pre-school-aged children and over 70 per cent in the case of school-aged children). Again, a similar pattern is observed in the 1996 Childcare Survey. Only 50 per cent of sole parents who are not in paid work, 46 per cent of one-earner couples and 35 per cent of couples without an earner make use of childcare. If mothers use childcare for non-employment related purposes, they mostly use one type of care that involves siblings, relatives or friends. Childcare use for non-employment related purposes, if used, is less time intensive with usage ranging between 2 to 12 hours per week. Since the overwhelming majority of non-employment related childcare involves siblings or other relatives, most of this care does not lead to any weekly expenditure net of any regular childcare benefit that the household may receive. However, if other forms of care are used they lead to similar expenditures as when they are used for employment purposes. When looking at the broad categories of formal and informal care (this includes the care given by relatives) in Doiron and Kalb (2002, 2005), an increase in the number of paid workers in the family increases the hourly childcare cost. This indicates that parents do make choices based on the relative prices.

When grouping the level of difficulty experienced for a variety of aspects related to childcare, Buddelmeyer and Vu find that for all aspects a majority of respondents report no to low levels of difficulty. The aspects, 12 in total, range from finding care for the hours you need, to finding a place the child is happy with. The different aspects can broadly be grouped in difficulties related to quality of care, affordability of care, and accessibility of care. When split by labour force status, they found that unemployed mothers consistently report the highest levels of difficulty encountered. In contrast, part-time working mothers consistently reported the lowest levels of difficulty. When split by family status, they found that partnered women consistently reported lower levels of difficulty than single mothers. Doiron and Kalb (2002) only examine whether parents are constrained in their hours of childcare use. Excluding those who are constrained due to high childcare prices, only 9 per cent states they are constrained.

Mothers who report higher levels of difficulty agree more with various statements that imply that combining work, family, and parenting responsibilities poses strains, that is, it makes them feel they miss out on activities or opportunities both at work and at home, and in general makes their time spent at work or at home less enjoyable. When it comes to agreement with various statements that imply that combining work, family, and parenting responsibilities have gains, Buddelmeyer and Vu find that there is no such relationship. Regardless of the level of difficulty reported, agreement with these statements is very similar across the different levels of difficulty.

Of all full-time working mothers with at least one child less than 15 years old about 50 per cent would like to work fewer hours, and only 3 per cent would like to work more hours. Of those mothers who work part-time because of childcare responsibilities or other family reasons, about 25 per cent would like to work more hours and only 10 per cent report they would like to work fewer hours. The 25 per cent of mothers, who work part-time due to childcare responsibilities and would like to work more hours, could be seen as having a problem with childcare, which prevents these mothers from increasing their work hours.

For mothers looking for part-time employment, the unsuitability of hours is the main obstacle. For mothers looking for full-time work the main obstacles are skills mismatches and age discrimination. Difficulties in finding childcare are only reported to be a problem in wave 1 and not wave 2, indicating direct evidence of childcare being a barrier to entry in the labour market, as obtained from unemployed mothers currently looking for work, is not very strong. However, when asked, 40 to 50 per cent of mothers currently not working nor looking for a

job report that they would like a job if suitable childcare could be arranged. This implies that if suitable childcare were readily available, the pool of job seeking mothers would be larger. In addition, when asked for the reason why the mothers who would like a job are not actively looking for a job, more than 50 per cent respond that they prefer to look after the children. About 10 per cent lists other childcare reasons. Together, these two reasons dominate other reasons for not looking for a job actively such as having an illness or injury, studying or training, or (perceived) poor job prospects.

Multivariate analysis of the level of difficulties by Buddelmeyer and Vu shows that in general, the highest levels of difficulty are reported for New South Wales and the ACT, although for specific aspects of childcare some individual States report higher levels. These State differences can be due to actual differences in childcare provisions, but can also be driven by differences in expectations or in the demand for the amount and quality of childcare provisions. No statistically significant differences in reported difficulties between single and partnered mothers are found with the exception of finding care for a sick child, which is harder to organise being a single parent with only one, rather than two, informal family network. From both the statistical description and economic modelling it becomes clear that costs are a problem for mothers in major cities. For other aspects of childcare, the level of urbanisation does not play a statistically significant role.

Mothers who have irregular working hours report higher levels of difficulties for all aspects of childcare except in finding care for a sick child, the costs of childcare, and finding care in the centre of choice. Particularly getting care for the hours needed and juggling multiple childcare arrangements are problematic. Overall, Buddelmeyer and Vu find that mothers who are more likely to use or think about using childcare are more likely to report lower levels of difficulty.

1.6   Population Ageing and Labour Supply

The Melbourne Institute has produced a limited number of studies into population ageing issues. There are several important issues in relation to population ageing. These are health, wealth, education and policy regarding the availability of age pensions. A general review was given by Borland (2005).

Borland (2005) reviews transitions to retirement, discussing the international literature after presenting Australian participation trends for different age-gender groups over time. He finds that amongst older workers there is a higher incidence of part-time employment, lower rates of employment and that he proportion of the older population in the labour force and

employed declined from the mid-1970s to the mid-1980s before increasing from the mid-1980s onwards. The decrease in employment rates for older workers in the 1970s and 1980s was primarily due to declining employment for males aged 55 to 64 years and the growth in employment of older workers from the mid-1980s onwards has been mainly due to increases in employment of females aged 45-54 years. However, in the past 5 to 10 years, there have also been increases in labour supply and employment of older males.

Black, Tseng and Wilkins (2005) analysed the decline in the employment rate of men in general and produce evidence that a number of factors have contributed to this decline. These include growth in educational enrolment and attainment, the decline in couple households with dependent children, growth in income taxes and welfare replacement rates, growth in labour productivity and changes in the structure of labour demand away from traditionally male-dominated industries. They find that, keeping all else constant (including economy-wide year effects); more recent birth cohorts have higher employment rates than earlier birth cohorts. This would mean that the issue of decreasing labour force participation due to population ageing in the future could be less serious than is anticipated now, given that it is the more recent birth cohorts that are going to be part of this older segment of the population in the future.

Returning to Borland (2005), he concludes that there is some evidence that older workers may be constrained in their labour supply and employment choices. For example, a very large (and apparently growing) proportion of older workers report 'job loss' as their reason for ceasing last job. In addition, older workers perceive that they would have relatively low chances of obtaining a similar job to their current job if they were to become unemployed. This is confirmed in Chalmers and Kalb (2001), who found that unemployment durations of older individuals are considerably longer than those of younger individuals. This indicates that it is labour demand for rather than labour supply of older Australians, which appears to be a problem, at least for this moment.

Borland draws three general lessons based on the review. Firstly, in the absence of an increase in aggregate labour demand, a policy that increases the employment/population rate of the older population may simply represent substitution of older for younger workers. Increasing the employment versus population ratio of the older population in this way will therefore not contribute to an objective of increasing the aggregate employment versus population ratio.

Secondly, Borland points out that, policies for promoting employment of older workers are likely to be operating in an environment where other factors are also having large effects on

incentives to supply labour and on demand for older workers. In his review a wide range of characteristics affecting retirement decisions are discussed. Some notable examples of these are the education attainment of successive cohorts of older workers, employer attitudes towards employing older workers, wealth of the older population due to for example the recent housing price boom, the proportion of service sector jobs, and the demand for carers due to the rise in the proportion of elderly population. These are all likely to have significant effects on demand for older workers, and the willingness of the older population to remain in the labour force.

Thirdly, Borland points out that any policy option needs to be considered in the context of the general objectives that policy is seeking to achieve. That is the success of a policy depends on the objective. As an example he mentions the policy of facilitating 'phased retirement' for older workers, for which labour supply theory predicts a mixed effect on lifecycle employment. It is expected that it may cause a worker to work less hours when working, but to remain in the workforce for a longer period of time. Taking the objective of increasing aggregate employment, the policy of facilitating phased retirement may well be considered a failure. However, taking workers' well-being, the policy may well be a success by increasing the labour supply choice set available to workers, which is likely to result in a better match with preferences of some workers.

1.6.1 Health

The trend of declining labour force participation by older working-age men, combined with an ageing population, has led many industrialised nations to develop policies encouraging older male workers to remain in the labour force. A better understanding of how an individual's health influences the labour force participation decision among this group of workers would facilitate the development of effective policies. Labour force participation of older working-age men is analysed in Cai and Kalb (2005b) and labour force participation of older working-age men and women is analysed in Cai and Kalb (2005a). The latter study uses information from the first wave of the Household, Income and Labour Dynamics in Australia (HILDA) survey and the first study uses three waves of this data set. Both studies include health as an important determinant and allow for endogeneity of health in the labour force participation equation. Wilkins (2004) analyses the effect of disability on labour force status for the Australian population in general using the Survey of Disability Ageing and Caring (SDAC98). Disability is more objectively measured than health in the above studies, but some individuals in very poor health are not disabled according to the definition used. Wilkins finds

larger negative effects on labour force participation for men than for women. He also tentatively concludes that the effects on employment appear to be larger for persons for whom the disability started at a later stage in their life.

Cai and Kalb (2005a) address the potential endogeneity of health, especially self-assessed health, in the labour force participation equation by estimating the health equation and the labour force participation equation simultaneously. Taking into account the correlation between the error terms in the two equations, the estimation is conducted separately for males aged 15 to 49, males aged 50 to 64, females aged 15 to 49 and females aged 50 to 60. According to expectations, the results indicate that better health increases the probability of labour force participation for all four groups. Allowing for the endogeneity of health to labour force participation does not change the positive effect of health on labour force participation found in other studies (for example, Wilkins 2004). The strong correlation between health and labour force participation is already clearly visible in the raw data. The results show that the effect is larger for the older groups and for women. The larger effects for the older groups appear to be consistent with Wilkins' finding that the effect on employment is larger for persons for whom the disability started later in life. As for the feedback effect of labour force participation on health, it is found that labour force participation has a significant positive impact on older females' health (which could be a selection effect), and a significant negative effect on younger males' health. For younger females and older males, the impact of labour force participation on health is not significant. This indicates there is no strong support for the rationalisation endogeneity often associated with self-assessed health status.[29]

The second study by Cai and Kalb (2005b) focuses on men between 50 and 64 only. The longitudinal nature of the three-wave HILDA data allows for a better control for unobserved heterogeneity than was possible with earlier data, distinguishing between time-variant and time-invariant heterogeneity. Therefore, more efficient estimates of the direct health effects on labour force participation can be obtained than in a cross-sectional analysis. Unobserved factors are likely to affect both health and labour force status, therefore they estimate a model that takes the correlation between the two error terms in the health and labour force status equations into account. The results show that controlling for unobserved heterogeneity and the correlation between the two equations is important. That is, the estimated variances of the unobserved heterogeneity terms are significantly different from zero in both equations and the

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[29] Rationalisation endogeneity may occur when people who are out of the labour force want to justify this by stating they are in poor health.

two error terms are correlated. The result of this study remains that health is an important factor determining labour force participation. Any restriction on the correlation between the two equations appears to lead to underestimation of the direct health effects on labour force participation.

1.6.2 Wealth

For a subgroup in the population, the affordability of retirement is at least partly determined by the availability of a state-provided age pension. For example, there is evidence from New Zealand that the age of eligibility for state-provided age pensions matters. That is delaying eligibility will increase labour force participation of older individuals. During the 1990s, the age of eligibility for the New Zealand superannuation (a universal state-provided age pension) was increased gradually from 60 to 65 years of age. The age of eligibility is found to have a clear negative effect on the probability of retirement and a positive effect on the preference to work for individuals in the relevant age group as discussed in Maloney (2000, 2002) and in Kalb and Scutella (2003, 2004).

Although Headey, Warren and Wooden (2005) do not consider labour force participation explicitly, their study examines the wealth level of older Australians, which is particularly important in the retirement decision. Their report offers a review of the composition of the assets and debts of Australian households in the last quarter of 2002. It has particularly highlighted issues relating to the distribution of wealth, and to the prospects of mature-age Australians being able to fund or partly self-fund their retirement.

The report shows that asset holdings are heavily concentrated in the hands of older households. This distribution is largely due to the fact that asset levels depend on the length of time spent saving and benefiting from the effects of compound interest. However, the wealth of Australians is still largely in housing. Liquid assets in general, and superannuation holdings in particular, are not yet at an adequate level to enable those who are currently retired, and most of those approaching retirement to be entirely self-funding when they finish work. Although many homeowner couples are already partly self-funding and more will be in the future, the evidence in Headey, Warren and Wooden shows that most households who are now within twenty years of retirement are likely to be partly reliant on the pension for their retirement income. These households would have to make very significant sacrifices to current living standards in order to generate enough extra savings to be entirely self-funding. An additional problem mentioned in the report is that most working-age people continue to under-estimate the savings they will need to maintain their current lifestyle after they retire.

Headey, Warren and Wooden's report has been cross-sectional and they argue that in future research, it will be important to gain an understanding of wealth dynamics. There is some evidence that the stock of household wealth is less stable than is often assumed. This means that it will be important to measure it, and assess the causes and consequences of change, more frequently than has been done in the past. They claim that as the population ages, a better understanding is needed of the dynamics of wealth, particularly for those in the retirement and pre-retirement cohorts, as it is likely to affect individuals' labour force participation decisions. At the same time, current Government policy aims at changing incentives affecting both the age at which people choose to retire, and their likelihood of doing some paid work during retirement. They pose the question of how effective these changes are in counteracting the evident desire of most Australians to retire before the age of 65. The earlier discussed results observed in New Zealand indicate that there is scope to influence the retirement decision.

1.6.3 Projections

After an international review of the issue of population ageing, Dawkins, Lim and Summers (2004) provide an analysis of the issue for Victoria. They use projections of the population of Australia for 2042 to project the Victorian population for 2042. Using a participation equation (estimated using HILDA data) they predict participation rates for this future Victorian population. Combining the population projection and the predicted participation rates, they construct an aggregate participation rate. They find that the predicted aggregate participation rate is expected to drop from about 63 per cent to about 52 to 56 per cent, depending on the specific scenario of the population projection. Finally, they then look at how different policies would affect participation rates of the different groups. The effects on the group participation rates would then flow on to the aggregate participation rate. They present scenarios to illustrate the effect of alternative projections of labour force participation rates, by gender and age groups, on the aggregate participation rate using the population projections.

Dawkins, Lim and Summers conclude that the most promising long-term policy is to raise the educational attainment of Victorians. Their assumptions suggest that increased educational attainment could raise labour force participation by as much as about five percentage points in 2042. The next most promising strategy is to tackle welfare. Policies aimed at delaying retirement, if it results in the increased participation rates suggested, could potentially change the aggregate participation rate by about three percentage points. Finally, increasing the availability and affordability of quality childcare and improving the general health of the

population could also have important lasting effects on labour force participation. The estimates suggest that each factor has the potential to increase aggregate labour force participation rate by about 1.0 percentage point. Finally, when all five policy factors are in place the simulation shows that the participation gap noted in the Intergenerational Report and in the Victorian Government's Shaping Victoria's Future may be closed.

Overall, if the effects associated with the five policy factors – education, retirement, childcare, health and welfare, stimulate participation to increase to the levels suggested in the profiles outlined in the research by Dawkins, Lim and Summers then the participation rate in 2042 could well be at about the same level as that in 2003, despite the ageing population. In fact, their estimates suggest that it is even possible that it will be higher.

Another study using population projections is Cai, Creedy and Kalb (2004). They combine the projected future population with microsimulation modelling. The main aim of this study was to illustrate the use of a reweighting procedure in MITTS. However, it also shows clearly the potential microsimulation studies can have in this area of research, particularly if existing microsimulation models are adapted to capture some of the dynamics that are important in population ageing. Cai, Creedy and Kalb examined the implications of changes in the age distribution of the population by combining MITTS with alternative population projections for 2050 by the Australian Bureau of Statistics (ABS). A 'pure' change in the age distribution was examined by keeping the aggregate population size fixed and only changing the relative frequencies in different age-gender groups. Not surprisingly, this example of an ageing population shows that the cost of social security is expected to increase and the revenue from income tax is expected to decrease. That is, extrapolating current behaviour to a future population with an older demographic composition shows that the increase in government payments would be substantial.

The effects of a policy change to benefit taper rates in Australia were compared using 2001 and 2050 population weights respectively. Assuming that labour force participation rates have not changed between 2001 and 2050, this shows that the cost of such a policy is expected to be slightly less in absolute terms and considerably less in relative terms (as a proportion of the expenditure before the policy change) for the 2050 population. The larger proportion of the population out of the labour force means that fewer people benefit from the taper rate reduction. As a result, a taper rate reduction is expected to be less costly in the older population. Cai, Creedy and Kalb (2004) suggest that this kind of reweighting approach

provides scope for providing insights into the implications of changes to the population composition, indicating likely pressures for policy changes.

1.7   Summary and Directions for Further Research

The review in the previous sections of this chapter has shown that there appear to be a range of policies, which may be effective in increasing individuals' labour supply. For example, the section on actual policy changes shows that work incentives in the form of more generous withdrawal rates and higher income thresholds before benefit payments are withdrawn may be effective for sole parents, and to some extent also for other groups. Ex-post evaluation studies and ex-ante microsimulation studies have resulted in comparable outcomes, but so far, only few ex-post evaluation studies have been carried out. More evidence in this regard would be required to strengthen any conclusion that could be drawn. Different approaches to analyse policy can be seen as complementary and reduce the probability of results being driven by assumptions underlying a particular approach or by one data source.

One of the criticisms that microsimulation modelling often faces is that it does not allow for effects of a policy change economy wide and in particular on the demand side of the labour market. External information from, for example, a General Equilibrium model to feed into a microsimulation model could be used to adjust expected labour supply responses to allow for these external effects.

Although microsimulation analysis typically focuses on the effect of financial incentives, a sense of the effect of non-financial aspects could be gained by allowing for time-specific costs of welfare participation. Linking the time-specific costs to changes in the administration of social security payments, the effect of the change in time-specific costs due to changes in non-financial aspects could be simulated, providing estimates of the impact on labour supply. This approach would allow non-financial incentives to be evaluated while allowing for changes in financial incentives introduced at the same time. This would combine a microsimulation approach with an ex-post evaluation approach.

Extrapolating current behaviour to future population with an older demographic composition shows that the increase in government payments could be substantial. However, currently the low participation rate of older Australians seems to a substantial extent driven by labour demand. This means that encouraging older Australians to remain in the labour force is unlikely to be effective if the demand side does not change. The question is whether there are differences between individuals. For example, high-skilled, well-educated older workers may

experience less difficulty keeping or obtaining employment, or there might be regional differences.

However, in addition to demand side issues, labour supply issues are likely to play a role as well. An interesting and policy relevant research project would be to determine whether the importance of labour supply and labour demand differs by group, such as could be defined for example by education level or occupation.

If there is a need to encourage labour supply of senior Australians, research so far has indicated that a variety of factors influence the retirement decision. Health and wealth are clearly important in labour force participation decisions of older Australians, so better understanding their effect on labour force participation is important to design effective policies for the future encouraging people to remain in the workforce longer. In addition, education levels play an important role, which should be further explored.

The older generation in future populations may be quite different from the current older generation. That is, they are expected to be better educated, healthier, have access to better superannuation schemes and will be less dependent on government-provided age pensions. Therefore, it is unlikely that simply extrapolating current labour force participation, making use of predicted changes in the proportion of the different age groups, will result in accurate predictions. One of the challenges is to take all anticipated changes into account when making predictions of future ratios of labour force participants versus those out of the labour force. In order to achieve this, life cycle models that could extrapolate the current population to a future population, while allowing for changes in education and wealth levels due to differences in these variables for different birth cohorts, would be required. Information to feed into these life-cycle models could be derived from additional labour supply modelling focussing on particular groups, which are currently left out. For example, what determines the probability of participation for a person with disabilities or a person around retirement age? Do we observe any changes over time for these groups, or can all changes in behaviour be explained by changes in characteristics, such as health, education and wealth?

Finally, the demand for childcare is clearly an important research area given the desirability of keeping the fertility rates from dropping further, while at the same time encouraging young women to remain in the labour force once they become mothers. Although overall, childcare costs have a moderate effect on labour supply, there are subgroups of women on low wages, in particular sole parents and women with preschool children, who are affected to a larger extent by the costs of childcare. One of the results from recent Australian research in this area

is that some mothers, who are not looking for work for family reasons, indicate that if suitable childcare were available they would like to be in employment. It appears that the key to getting these women into work may be the provision of childcare, which is deemed suitable by them.

Although the international literature in this area is quite extended, relatively few studies are available for Australia. Particularly studies that look at the relation with labour supply are scarce. The Household Income and Labour Dynamics Australia survey, which has recently become available, provides researchers with improved opportunities to explore labour supply and childcare jointly. Better data, in which both labour supply and childcare are collected for households, will allow researchers to account for the simultaneity of the decision on labour supply and childcare.

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CHAPTER 2: INCOME SUPPORT RELIANCE AND INCOME SUPPORT RECIPIENTS

Roger Wilkins

2.1   Introduction

The issue of welfare dependency has taken a prominent position in public policy discussion in Australia in recent years. Many commentators consider the rate of reliance on welfare in the Australian community to be unacceptably high, and policy discussion has correspondingly focused on ways to reduce numbers on welfare rolls. Grounded in this policy concern, and largely funded by federal government departments with the major share of responsibility for the administration of the welfare payments system, Melbourne Institute researchers have in recent years undertaken a considerable programme of research into welfare reliance and the recipients of welfare (or income support) payments. This chapter provides a review of studies undertaken within this programme of research over the period 2000 to 2005.

The Melbourne Institute research programme on income support reliance and recipients comprises three broad groups of studies, two of which are reviewed in this chapter. The first group consists of four studies that have as their focus all income support recipients. These projects have investigated issues such as the extent and nature of reliance on income support, dynamic patterns of receipt (including spell lengths, churning and movements between payment types) and determinants of different patterns of payment receipt. The essential question for these studies is "just what is the magnitude and nature of the 'problem' of welfare reliance in Australia?"

The second group comprises studies that are more narrowly focused on specific groups of recipients, examining issues such as the factors associated with exiting income support receipt and the determinants of spell duration. A common premise underpinning these research projects is a policy goal of understanding the reasons for income support receipt with a view to reducing the extent of receipt, most usually through employment participation. These studies are more numerous than those in the first group, numbering fifteen in all. Six studies focus on Disability Support Pension (DSP) recipients and five studies focus on recipients of unemployment benefits. The remaining studies do not focus exclusively on income support recipients, but a significant proportion of the individuals examined are in fact income support recipients, and therefore these studies are included in this review. Three of these studies

examine the unemployed, many of whom are unemployment benefit recipients, while the fourth study primarily focuses on sole parents, many of whom are Parenting Payment Single (PPS) recipients.

The third group of Melbourne Institute studies that examine income support recipients involve examination of the effects of changes to the income tax and transfer system on participation in employment and take-up of income support payments. These studies all use behavioural microsimulation modelling techniques, involving estimation of labour supply and wage models, to obtain predicted effects. Kalb discusses these studies in her review of Melbourne Institute research on work incentives and labour supply in Chapter 1, and they are therefore not discussed in this chapter.

The Melbourne Institute research on income support recipients should of course be viewed in the broader context of a larger body of Australian research and a very large body of international research on the subject. While it is not possible to adequately summarise this literature in this forum, directly-relevant recent Australian research is noted in the discussion. The remainder of the report is structured as follows. Section 2.2 discusses the studies of all income support recipients, while Sections 2.3, 2.4 and 2.5 review studies of recipients of disability pensions, unemployment benefits and parenting payments, respectively. Section 2.6 then outlines some potential future directions for policy-relevant research on reliance on income support and income support recipients.

2.2   Studies of all Income Support Recipients

Studies that consider the extent and nature of welfare receipt by all income support recipients collectively have been conducted by Dawkins, Harris and Loundes (2000), Harris and Kalb (2002), Tseng and Wilkins (2002a), and Tseng, Vu and Wilkins (2004).[30] All of these studies examine various features of income support receipt of persons aged 15-64 years using data from the Department of Family and Community Services' (FaCS) Longitudinal Data Set (LDS), which comprises fortnightly income support payment records. This is an exceptionally rich source of information on individuals' income support receipt, enabling important insights

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[30] A revised version of Tseng and Wilkins (2002a) appeared as a Melbourne Institute working paper in 2002 (Tseng and Wilkins 2002b) and another version was published in *The Economic Record* in 2003 (Tseng and Wilkins 2003). Harris and Kalb (2002) was published as a Melbourne Institute Report in 2005 (Harris and Kalb 2005). Melbourne Institute researchers have also worked extensively on the issue of jobless households. While this research is not discussed here, it bears some relevance to research on income support recipients because of the strong connection between household joblessness and income support receipt. See Dawkins, Gregg and Scutella (2002a, 2002b, 2005) and Scutella and Wooden (2004a, 2004b) for details on this research.

into the extent and nature of reliance on income support. There are, however, two important limitations of the LDS that place significant restrictions on the analysis undertaken by the studies and therefore ought be acknowledged. First, the payment records of which the LDS is comprised provide relatively limited information on individual characteristics. For example, educational attainment and work history are for the most part not available. Second, by its nature, the LDS also contains no information on individuals in periods in which they are not receiving payments. Thus, for example, the question of where recipients go and what happens to them when they leave income support is not known when using the LDS.

One per cent samples of the LDS – that is, a one per cent random sample of persons on the payments system in the period examined – are used by all of the Melbourne Institute studies of all income support recipients. The period covered varies across the studies, reflecting the dates at which they were produced. Dawkins, Harris and Loundes use data spanning the period July 1995 to June 1999, Harris and Kalb and Tseng and Wilkins use data spanning the period January 1995 to June 2000, while Tseng, Vu and Wilkins use data spanning the period January 1995 to June 2002.

As might be expected given the common data source, there is considerable overlap between the studies in features examined and results obtained, but differences in focus, approach and periods examined mean that each study makes a distinct contribution. Tseng and Wilkins make the most fundamental contribution by attempting to ascertain both the extent and nature of reliance on income support in Australia over the period 1982 to 2000. The remaining three studies are somewhat more narrowly focused, describing patterns of receipt in terms of intertemporal features. Dawkins, Harris and Loundes examine cycling on and off income support payments ("churning"), Harris and Kalb focus on movements between payment types ("transferring"), while Tseng, Vu and Wilkins examine both churning and transferring. Dawkins, Harris and Loundes and Harris and Kalb also consider spell lengths in their analyses.

2.2.1 *The Extent of Reliance on Income Support*

Tseng and Wilkins (2002a) begin by considering the meaning of the concept of welfare reliance and examining measures of reliance employed in previous research. They then produce measures of welfare reliance based on two measures of individual reliance, the Total Proportion of Income (TPI) from welfare payments over a given period and the Total proportion of Time On (TTO) welfare payments over a given period. They apply these measures to Australian data to produce information on the extent and nature of welfare

reliance in Australia among the population aged 15 to 64 years. In addition to utilising administrative data, they also draw on ABS income surveys conducted between 1982 and 1997-98 to facilitate examination of the extent of reliance on income support over a longer period than permitted by the administrative data set used. While their analysis is of individuals, it is receipt of income support by the income (family) unit of the individual that is examined.

Two specific TPI measures on which Tseng and Wilkins focus are the "recipiency rate" – the proportion of individuals who received welfare payments in the financial year previous to the survey year – and the "dependency rate" – the mean proportion of income unit income that individuals derive from welfare over the same period (the mean TPI). The recipiency rate for income support payments for the 1996-97 financial year (the most recent year on which annual income information was available in the income surveys) was 33.5 percent, which means that over one third of individuals in Australia aged 15 to 64 years were in an income unit which at some stage received income support payments in that period.[31] Among those in receipt of income support payments, the dependency rate on all welfare payments over the same period was 52.5 percent, meaning that on average over half of income unit income derived from welfare for those individuals whose income unit at some stage received income support payments during the course of the year. These figures correspond to a significant increase in the extent of welfare reliance after 1989-90, when the recipiency rate was 22.3 percent and the dependency rate among income support recipients was approximately the same.

Tseng and Wilkins also disaggregate reliance estimates by population subgroups defined by sex, age, birth cohort, family type, number of dependent children, birthplace, educational attainment, labour force status, income from non-welfare sources and payment type. The extent of reliance on income support is found to be higher for females than males, but the gender gap in reliance narrowed after 1981-82. Reliance by age level follows a "U-shaped" pattern, with persons aged 25-49 years having the lowest levels of reliance, although the strength of the U-shaped relationship between age and reliance declined after 1990. Analysis of reliance by birth cohort showed that the cohort born in the 1950s consistently had among the lowest propensity to be reliant on income support payments, which resulted in a shift in

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[31] This estimate includes some parenting payments that are not income support payments and therefore slightly overstates the extent of receipt. An estimate of the recipiency rate from the LDS gives 29.5 per cent for persons aged 25-64 years, compared with 30.9 per cent for the IDS, providing an indication of the potential magnitude of overestimation from the IDS.

the trough in the age-reliance relationship between 1989-90 and 1996-97 from those aged 30-39 years to those aged 40-49 years.

Four family types are examined by Tseng and Wilkins (single or couple, with or without dependent children). The highest level of reliance is found among single persons with dependent children, while couples, whether with or without dependent children, have the lowest levels of reliance. However, couples with dependent children appear to have experienced the greatest increase in welfare reliance over the sample period. For example, between 1989-90 and 1996-97, the mean TPI more than doubles for this family type, which is a significantly greater proportionate increase than for any other family type. This is found to be driven by increases in both the rate of receipt of income support and the extent of reliance on income support among those who received income support. Reliance estimates are also examined disaggregated by the number of dependent children, and it is found that reliance is increasing in the number of dependent children.

It is found that the extent of reliance among immigrants was higher than for the native-born in 1996-97, with mean TPI's over 1.25 times those of the native-born. This represented a significant change since 1981-82, when welfare reliance did not significantly differ between the two groups. It is also found that there is a very strong negative relationship between reliance and educational attainment, and the gap, particularly between holders of bachelor's degrees and others, widened substantially over the sample period. For example, mean TPI's in 1996-97 were approximately 5 times higher among persons without post-school qualifications than among holders of a bachelor's degree.

In terms of labour force status, as would be expected, reliance is found to be highest for the unemployed, and lowest for the employed. However, recipiency and dependency rates have actually decreased over the sample period for unemployed males, in contrast to the increases evident for other males (employed and not in the labour force) and for all females. Reliance is, of course, strongly (inversely) ordered by non-welfare income across the entire sample period. However, it is notable that, among individuals with low private income, the growth in the extent of reliance was greatest for those with higher levels of non-welfare income (in excess of $10,000 in "equivalent" income per member of the income unit).

Following on from the analysis of the income surveys, Tseng and Wilkins use the LDS one per cent sample to construct TTO statistics for individuals who were at some stage in an income unit on income support payments between January 1995 and June 2000. The distribution of TTO is observed to be "U-shaped", with most individuals spending either less

than 20 percent or more than 90 percent of the sample period on income support payments. Approximately 17 percent of individuals were reliant on income support payments for the entire sample period. As expected, the proportion of time on income support tends to be higher for pensions. For example, in excess of 50 percent of DSP recipients had a TTO equal to one, whereas most unemployment benefit recipients were on payments for less than 30 percent of the sample period.

Mean TTO's among those who received income support in the sample period are found to increase significantly as age increases. More than half the individuals in their sample who were aged 15-19 years in January 1995 were on payments for less than 20 percent of the sample period. By contrast, only 8.4 percent of those in the oldest age group were on payments for less than 20 percent of the sample period, and 51 per cent had a TTO equal to one.

Individuals who were not born in Australia are found to have a longer duration of welfare reliance than those who were born in Australia. Comparing Indigenous persons with non-Indigenous persons, the proportion of non-Indigenous individuals who were on payments for less than 20 percent of the sample period is 13.3 percentage points higher than for Indigenous individuals. Indigenous individuals had a much larger proportion of the sample with between 60 and 99 percent of the sample period on payments, but a smaller proportion on payments for the entire sample period.

Focusing on heavily reliant individuals (those spending more than half a given year on income support payments), Tseng and Wilkins furthermore find a high probability of remaining heavily reliant in subsequent years. In particular, for those heavily reliant in a given year, the probability of being heavily reliant in any later year in the LDS sample period is always in excess of 0.7. This implies a high degree of persistence of reliance over time, a feature that is fairly stable over the sample period. Thus, once a person becomes heavily reliant, exit from income support payments becomes unlikely.

2.2.2 *Patterns of Income Support Receipt*

Patterns of income support receipt over time are the focus for Dawkins, Harris and Loundes (2000), Harris and Kalb (2002) and Tseng, Vu and Wilkins (2004).[32] Dawkins, Harris and Loundes (2000) describe the extent of churning (cycling on and off income support), the

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[32] In contrast to Tseng and Wilkins (2002a), these three studies focus on individual receipt rather than income unit receipt of income support.

association between various socio-demographic characteristics and churning behaviour, and the implications of churning for total time on benefits. As part of their analysis, for unemployment benefit recipients they estimate models of churning behaviour, of total time on benefits and of rates of exit from payments. Harris and Kalb (2002) examine various features of transitions between payment types ("transferring"), including the relative frequency of different transition paths and how these differ by socio-demographic characteristics. They also examine payment spell durations, plotting hazard and survival functions for each major payment type category. Tseng, Vu and Wilkins (2004) adopt a unified approach to examination of patterns of both churning and transferring between payment types. In addition to describing these patterns and how they depend on socio-demographic characteristics and payment type, they examine the association between churning and transferring behaviour and the extent of reliance on income support, and furthermore estimate models of the determinants of churning and transferring behaviour.

A number of messages derive from these studies. Dawkins, Harris and Loundes (2000) and Tseng, Vu and Wilkins (2004) both find that churning is an important feature of income support receipt in Australia. For example, Tseng, Vu and Wilkins (2004) find that over one in six income support recipients churned within one year of commencing a spell on income support, and 55 per cent churned within five years of commencing a spell. Repeated churning within short to intermediate time frames is not a common occurrence, however. Fewer than 2 per cent of income support recipients churn more than once within a year of commencing a spell on income support, and even within five years of spell commencement, less than one-third churn more than once. Consistent with the findings of Tseng and Wilkins (2002a), allowances, most notably unemployment benefits, are characterised by shorter average spell durations and total time on payments, but also higher rates of churning, than pensions. For unemployment benefits, this is consistent with expectations, since this is the only payment type subject to the work activity-test, and recipients are likely to be more closely engaged with the labour market. Interestingly, however, parenting payment recipients also have high rates of churning.

Transferring is less widespread than churning, at least within five years of commencing a spell on income support. Nonetheless, a significant proportion of recipients do transfer between payment types. For example, over one-fifth of recipients transfer from one payment type to another within five years of commencing a spell. Both Tseng, Vu and Wilkins (2004) and Harris and Kalb (2002) show that the majority of transfers involve unemployment

benefits. However, transfers *to* unemployment benefits, which might be regarded as movements towards (re)integration into the labour market, make up less than one fifth of all transfers, with transfers more commonly being *from* unemployment benefits. Using information on payment type eligibility criteria, Tseng, Vu and Wilkins (2004) also infer that 16 per cent of transfers among 15-64 year olds are due to ageing, 18 per cent are (directly) attributable to changes in disability-related work capacity and 38 per cent are due to changes in family status (in terms of the presence of a partner and/or dependent children). The majority of the remainder of transfers are between unemployment benefits and other short-term allowances.

Both Dawkins, Harris and Loundes (2000) and Tseng, Vu and Wilkins (2004) investigate the association between dynamic properties of income support receipt and the extent of reliance on income support, as measured by total time on benefits. Churning is not associated with any particular level of reliance on income support, with churners very evenly distributed across almost the entire spectrum of total time on benefits. Tseng, Vu and Wilkins (2004) find that transferring, by contrast, is associated with high levels of reliance; while those who neither churn nor transfer split into two camps: those with a single, very short spell on income support, and those with a single, very long spell (most commonly still in progress at the end of the observation period).

Tseng, Vu and Wilkins (2004) estimate multinomial logit models of the determinants of churning and transferring behaviour in the three years following commencement of a spell on income support, distinguishing five modes of behaviour: neither churn nor transfer, and TTO is less than 50 per cent; neither churn nor transfer, and TTO is greater than or equal to 50 per cent; transfer only; churn only; and both churn and transfer. They investigate the effects of a range of factors, finding important roles for age, family circumstances, payment type, earnings while on income support, and recent history of income support receipt.

With respect to age, the main finding is that the likelihood of churning is decreasing in age. For family circumstances, partner status is found to be the important factor. For males, it is found that coupled men are much less likely to churn than single men, irrespective of whether or not the partner is on income support. However, having a partner who is on income support is associated with a higher probability of transferring, whereas having a partner who is not on income support is associated with a substantially higher probability of a single short spell and a lower probability of a long spell on a single payment type. Thus, partnering with a woman who is not on income support appears to decrease the likelihood of long-term welfare receipt,

compared with remaining single or partnering with a woman on income support. For females, commencing a spell with a partner who is not on income support is also associated with better outcomes, in the form of an increased probability of a single short spell. Commencing a spell on income support with a partner also on income support is, like males, associated with a relatively high probability of transferring.

Variables included for initial payment type show individuals who commence a spell on unemployment benefits have a comparatively high probability of single short spells, a low probability of single long spells and a high probability of churning. Male recipients initially on parenting payments have higher probabilities of transferring (including combining transferring with churning) than those initially on unemployment benefits. Somewhat surprisingly, females do not have the same pattern of a higher probability of transferring associated with parenting payments.[33]

Increasing the proportion of the fortnights on income support in which an individual has positive earnings raises the probability of a single short spell and lowers the probability of being in other outcome categories. This is consistent with intuition, since a higher proportion of fortnights with earnings is indicative of greater engagement with the labour market. Interesting, however, is that increasing the average amount of earnings per fortnight in which earnings are positive *lowers* the probability of a single short spell.

Past churning and transferring behaviour is associated with large effects on individuals' current churning and transferring behaviour. However, it is not simply a matter of current behaviour replicating past behaviour. *Any* recent history of income support receipt is associated with a reduced probability of a single short spell (the most desirable outcome, given a person does receive income support), and an increased probability of churning and/or transferring.

Dawkins, Harris and Loundes (2000) and Harris and Kalb (2002) both examine spell durations. Harris and Kalb present empirical hazard and survival functions for each major payment type.[34] They show that, for all payment types examined, spell durations tend to be

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[33] This finding is for Parenting Payment Single (PPS) and Parenting Payment Partnered (PPP) collectively. PPS and PPP were not distinguished in the econometric analysis by Tseng, Vu and Wilkins (2004) because of their near-perfect correlation with the included variables for partner status (i.e., most single women on a parenting payment are on PPS, and most partnered women on a parenting payment are on PPP).

[34] In the context of analysing duration on income support payments, the empirical hazard function plots, as a function of spell duration, the proportion of those reaching each spell duration who exit payments at that duration. For example, if 10 individuals reach a spell duration of 2 fortnights and 1 person exits in the third fortnight, the hazard rate for the 2-3 fortnights spell duration is 10% (i.e., 1 of 10 exited). The survival

longer for older recipients, while for parenting payment recipients spell durations tend to be longer the greater the number of children and the younger the youngest child (at commencement of the spell). Dawkins, Harris and Loundes (2000) present empirical hazard and survival functions of all income support recipients, showing that spell durations tend to be shorter for persons with another recent spell on income support. Hazard function models estimated show that – consistent with the empirical hazard – the hazard rate is higher for repeat spells. They also find that the presence of labour market earnings is associated with a reduced likelihood of exit, although this effect is decreasing in the *level* of earnings. This finding appears at odds with that of Tseng, Vu and Wilkins (2004) with respect to earnings, but may derive from the use of a different variable for the level of earnings – Dawkins, Harris and Loundes define it to be the mean value over all fortnights of the spell, whereas Tseng, Vu and Wilkins define it to be the mean value in those fortnights in which earnings are reported.

2.2.3   *Other Recent Australian Research on Income Support Recipients*

Significant among other recent Australian studies of all income support recipients are reports by Whiteford (2000), Bond and Whiteford (2001), Bond and Wang (2001), Whiteford and Angenent (2002) and FaCS (2003). All of these publications provide an overview of the income support system and trends in recipient numbers and composition in recent decades. Although in general they do not contain the same degree of analysis as Tseng and Wilkins (2002a), in broad terms they provide a story consistent with that of Tseng and Wilkins. Also notable for providing similar information to Tseng and Wilkins on the income support system is the work of the Reference Group on Welfare Reform (2000), commissioned in October 1999 to provide advice to the federal government on possible approaches to welfare reform. In addition to putting forward policy recommendations, the report (and the technical appendices produced by FaCS 2000) provided an overview of the extent and nature of income support receipt in Australia, the operation of the income support system, and also the broader role and functions of the income support system in the Australian economy and society.[35]

Other recent studies to consider all income support recipients include Landt and Pech (2000) and Saunders et al (2003). Landt and Pech (2000) examine trends in the number and composition of income support recipients between 1980 and 2000, distinguishing four groups of recipients: the unemployed, lone parents, the disabled and 'partners, carers and parents'.

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function plots the proportion of those who commenced a spell on income support payments who are still on payments at each spell duration.

[35] The Melbourne Institute was also involved in the production of this report, with Peter Dawkins, Director of the Melbourne Institute from 1996 to April 2005, a member of the Reference Group.

They present evidence that, while there has been substantial growth in recipient numbers, there has also been substantial growth within all four groups in the proportion combining welfare receipt with employment. Saunders et al (2003) analyse the 1998 'Customer Participation Survey', a FaCS' survey of economic and social participation by income support recipients. They conclude that economic and social participation is quite high for income support recipients, with only 14 per cent reporting no participation. They find caring responsibilities (for young children and adults with a disability) and a permanent medical condition are the biggest barriers to participation.

2.3   Disability Support Pension Recipients

There are seven recent studies by Melbourne Institute researchers that consider Disability Support Pension (DSP) recipients directly, all but one of which use unit record administrative data on recipients, while an eighth study examines welfare receipt more generally of persons with disabilities. The underlying theme for the research into DSP recipients is understanding the nature and causes of the growth in the programme in recent years and identifying potential policy remedies. There were approximately 134,000 recipients in 1971, 229,000 recipients in 1980, 317,000 recipients in 1990, 602,000 recipients in 2000 and 674,000 in 2003. In this context, the research has involved estimating durations on DSP and the factors impacting on duration (Cai 2003, Cai 2004), investigating changes in flows into and out of the programme and the nature and the determinants of these flows (Cai and Gregory 2003, 2004, 2005 and Cai, Vu and Wilkins 2005a, 2005b), and examining the broader issue of the implications of disability for labour market outcomes and welfare receipt (Wilkins 2002).

Turning first to studies of duration on payments, both studies by Cai (2003, 2004) use the LDS one per cent sample to examine the length of DSP spells of persons commencing a spell on DSP in the period January 1995 to June 2000. Models are estimated of the hazard rate (the probability of exiting DSP at each spell duration, given exit has not already occurred) to examine the impacts of various socio-demographic characteristics. Cai (2003) also uses the estimation results to predict completed spell durations, estimating that the average duration of completed spells for an entire entry cohort is between 9 and 10 years. There are substantial differences in expected durations across different groups of entrants. Estimated duration is decreasing in age at entry and is also lower for male entrants than female entrants. Also significant is that estimated completed DSP spell durations of entrants transferring from unemployment payments are greater than for entrants transferring from other income support

payments, who in turn have substantially longer estimated spell durations than those entering from outside the income support system.

Cai and Gregory (2003) use aggregate-level administrative data on DSP grants and payment cessations to examine the relative contributions of inflows and outflows to the growth in the DSP programme over the period 1971 to 1999. They find increased inflows far and away dominate reduced outflows as the main source of growth, although they nonetheless find a role for a reduced outflow rate, deriving from increased average spell durations.

Two studies by Cai and Gregory (2004, 2005) then investigate the sources of the inflows, with an emphasis on attempting to identify reasons for their growth. The first study uses national-level and state-level yearly time series data over the period 1967 to 1999 on applications and grants of DSP, unemployment rates, replacement rates (the value of the DSP benefit relative to the average wage), the proportion of the population aged over 50 years, and indicator variables for years in which significant policy changes occurred to estimate models of the application rate and the grant rate. Simulations based on their estimation results indicate that changes in the unemployment rate can explain 40 per cent of the growth in DSP recipient numbers over the entire period, while the Disability Reform Package introduced in 1991 can explain 31 per cent of the growth in recipient numbers from 1991 to 1999. Interestingly, they find that a 1980 policy reform – which placed increased emphasis on medical factors and reduced emphasis on socio-economic factors in determining eligibility – acted to decrease recipient numbers between 1980 and 1990 by 127,000, a period over which total recipient numbers actually grew by 97,000. None of the other factors examined were found to have had a significant impact – namely, the replacement rate, the proportion of the population over the aged of 50 years, and a policy change that occurred in 1987.

The second study of DSP inflows by Cai and Gregory (2004) uses an LDS one per cent sample for the period January 1995 to June 2002 to focus on flows onto DSP from unemployment benefits. Approximately 45 per cent of DSP inflows are from unemployment benefits, and it is found that the average pre-transition duration on unemployment benefits is in excess of one year. Furthermore, a large proportion of individuals transferring from unemployment benefits had multiple spells on income support prior to the transition to DSP. Cai and Gregory also estimate competing-risk hazard models of the probability of exiting unemployment benefits to DSP, other income support payments or off all payments altogether. They find that the probability of transition to DSP increases with duration on unemployment benefits, which they suggest could be due to deteriorating health while on

unemployment benefits and/or long-term receipt being used by administrators as a signal of inability to work. More recently, preliminary work by Cai, Vu and Wilkins (2005b) has examined inflows from *all* non-DSP income support payments, finding a similar pattern of increased risk of transition to DSP as non-DSP income support spell duration increases.

Cai, Vu and Wilkins (2005a) focus on outflows rather than inflows, examining the extent and nature of transitions off DSP and attempting to identify the factors associated with 'successful' transitions off all income support payments. While Cai and Gregory (2003) show that outflows are dominated by inflows as the source of growth in DSP receipt, the motivation for the study is that, in the presence of a very large stock of recipients generated by past inflows, there are potentially large benefits from improved understanding of the factors associated with exiting DSP – in particular, in informing policies that could increase movements from DSP to self-reliance. Given the relative infrequency of transitions off DSP, administrative data on a 50 per cent random sample of DSP recipients is used to ensure sufficient observations, with the data spanning the period January 1995 to November 2002. The study takes two distinct approaches, the first involving examination of a cohort of new entrants to DSP, the second involving examination of a cohort of recipients who exit DSP.

The study finds that those who exit DSP to return to work, while the largest group of DSP-leavers who do not go on to other income support payments, are also the most prone to returning to DSP within two years of exiting. Models are estimated of both the probability of exit from DSP (for an entry cohort) and the extent to which remaining off all payments is sustained following exit (for an exit cohort). Results from these estimated models show that males aged over 55 years, females with a partner on income support, Indigenous persons, those with no earnings while on DSP, those whose main medical condition is an intellectual or learning disability and females with a dependent child under 12 have both the lowest probabilities of making a successful exit, and the least success in sustaining such exits when they do make them. Individuals with one or more of these characteristics are therefore comparatively unlikely to make the transition to sustained non-reliance on income support. For males, having a partner who is on income support is associated with a reduced probability of making a return to work exit, but it is also associated with a positive effect on exit success in the event that such an exit is made. Interestingly, those with a recent history of some income support receipt prior to commencement of the DSP spell are more likely to exit than those with no history, provided they did not transfer directly to DSP from another income support payment; but those with more time on payments in the period leading up to exit from

DSP do not sustain exit as well. Furthermore, a recent history of churning prior to exit has a negative effect on the extent to which extent is sustained. Taken together, the results for the effects of recent history of income support receipt would seem to be explained by the churning behaviour of those who exit to return to work – they are more likely to exit, but are also more likely to return to payments.

Wilkins (2002) uses the 1993 and 1998 ABS Surveys of Disability, Ageing and Carers to examine the implications of disability for labour market outcomes and welfare receipt.[36] The study confirms that disability is associated with both significant disadvantage in the labour market and higher rates of welfare receipt. For example, models estimated of the determinants of income support receipt show that the presence of any disability increases the probability of welfare receipt by 29 percentage points for males and 23 percentage points for females. As might be expected, adverse effects are greater the more severe the disability, while, for a given level of severity, intellectual and psychological impairments are the most detrimental types of impairments. The study also finds that older-age onset of disability is, all else equal, associated with worse labour market outcomes and higher rates of income support receipt. Examination of administrative data over the period 1995 to 2000 also showed the male DSP recipient population to be getting younger over the period, with the proportion of all males aged 55-64 years in receipt of DSP actually declining, in contrast to the increases in recipiency rates for all other age groups.[37]

There has been little recent Australian research specifically focusing on DSP recipients beyond that carried out by the Melbourne Institute, the only publicly available work since 2000 being that conducted by researchers at FaCS. Since 2001, FaCS has produced an annual publication (latest issue: FaCS, 2004) based on administrative data that describes the characteristics of DSP recipients in terms of sex, age, location, country of birth, marital status, home ownership, medical conditions and earnings. Statistics on inflows and outflows are also presented in the report. Also produced by a researcher at FaCS is Morrow (2000), which uses a census of all DSP recipients in September 1996 and a further extract from the administrative database on these recipients in September 1997 to examine internal migration patterns of DSP recipients. Morrow finds migration patterns do not bear any clear relation to regional labour

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[36] A revised version of Wilkins (2002) appeared as a Melbourne Institute working paper (Wilkins 2003) and a further revised version, focusing on labour force status, was published in the *Australian Economic Review* in 2004 (Wilkins 2004).

[37] Wilkins (2002) also attempts to examine changes over the period 1993 and 1998, but finds it impossible to make valid comparisons due to a substantial increase in measured disability deriving from changes in survey methods.

market conditions, although he does find substantial net migration to the coastal regions of New South Wales and Southern Queensland.

2.4 Unemployment Benefit Recipients

Studies of recipients of unemployment benefits (which currently comprise NewStart Allowance and Youth Allowance (other)) have examined the determinants of patterns of receipt, with most of the studies focusing on the effects of specific labour market programmes. Several other studies, while not specifically focused on benefit recipients, also warrant mention because they examine unemployed persons, many of whom will be unemployment benefit recipients.[38]

Black, Tseng and Wilkins (2005) use a 10 per cent sample of unemployment payment recipients over the period January 1995 to March 2003 to investigate the determinants of income support spell duration of males aged 25-44 years who commence the income support spell on unemployment payments. A particular focus of the study is the extent, nature and persistence of 'duration dependence' of income support receipt, where duration dependence refers to the effects of both current spell duration and previous income support spells on the likelihood of exit from the current payment spell. They find that the likelihood of exit is decreasing in current spell duration beyond a spell duration of three months. They also find effects of previous income support spells, with the probability of exiting the current spell decreasing in the length of the previous spell. However, consistent with adverse duration effects of previous spells dissipating over time, they find that the probability of exit is increasing in the length of the break between that spell and the current spell, although some negative effects persist irrespective of break length if the previous spell was longer than twelve months (that is, there is evidence of some permanent scarring from *long* previous spells).

Four studies have been undertaken which examine the effects of active labour market policies on exit from unemployment payments, all of which employ quasi-experimental evaluation

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[38] It should be noted, however, that labour force status is not as closely correlated with administrative categories of payment as one might expect. In particular, many unemployment benefit recipients are not unemployed (for example, because of part-time employment or temporary work incapacity), and many unemployed persons are not on unemployment benefits, being on other income support payments or off income support altogether. This in part motivates the decision by Black, Tseng and Wilkins (2005) to examine duration on *all* income support payments of those who commenced on unemployment benefits, despite primary interest being in the issue of unemployment duration.

methods.[39] Borland and Tseng (2003a)[40] consider the effects of the Job Seeker Diary (JSD) using a 10 per cent sample of persons commencing a spell on NSA between 1 July 1997 and 30 June 1998. They examine the effects of the programme on exit from payments by 3 months and 6 months after JSD commencement, on whether recipients are on payments at 6 months and 9 months after JSD commencement and on the number of fortnights on payments in the 6 months and 12 months after JSD commencement. Positive effects of the programme are found for all six outcome measures, suggesting the programme has been successful in its primary goal of promoting effective job search.

Borland and Tseng (2003c)[41] examine similar outcome measures for the Work for the Dole (WfD) scheme, using a 20 per cent sample of NSA recipients and focusing on the pilot phase of the scheme between November 1997 and June 1998. As the authors acknowledge, the outcome measures on which they focus are only a subset of the targeted outcomes of the scheme, and findings from the initial stages of implementation may have limited applicability to the scheme as it has operated since the trial phase. Nonetheless, the authors argue that their findings do have some relevance to the programme as it currently operates. They find negative effects of the programme on the outcome measures they consider, which they attribute to its detrimental effects on job search activity. The key message the authors take from their findings is that potential "lock-in" effects need to be taken into account in both the design and implementation of programmes. The authors do not make an assessment of the overall effectiveness of the program, since it is not clear whether the relatively short-term adverse effects they identify are outweighed by other benefits they do not consider, many of which may not be realised in the short-term.

Borland and Wilkins (2003a)[42] use a 10 per cent sample of unemployment payment recipients over the period June 1995 to June 2000 to examine the effect of the review process introduced in March 1996 that occurred at 9 months spell duration. This was a relatively 'mild' intervention that is no longer in operation. Recipients were required to complete a review form (in place of the standard SU19 claim form) in the 38th week of continuous payment receipt, and approximately 40 per cent of these individuals were required to attend an interview at a Centrelink office. Borland and Wilkins do not find any conclusive evidence on the effects of the review process on exit from payments, with the universality of the program

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[39] See Borland, Tseng and Wilkins (2005) for an overview of quasi-experimental methods and their application in Australia.

[40] Also released as a Melbourne Institute working paper in 2003 (Borland and Tseng, 2003b).

[41] Also released as a Melbourne Institute working paper in 2004 (Borland and Tseng 2004).

[42] Also released as a Melbourne Institute working paper in 2003 (Borland and Wilkins 2003b).

making it impossible to find an appropriate comparison group of persons not subject to review.

Borland and Tseng (2005) investigate the effects of the Mutual Obligation Initiative (MOI), a programme which incorporated WfD from July 1998. They examine persons potentially subject to participation in the first twelve months of operation of the programme, and consider both 'threat' effects and 'participation' effects on exit from payments. A threat effect is present if the programme causes exits from payments in the period prior to participation, while a participation effect is present if it causes exits from payments after participation has commenced. They find significant threat effects in the early period of operation of the programme, but that these effects are weaker in the later stages of the period they examine, possibly because of recipient "adaptation" to the programme. The participation effect is found to be negative, a finding consistent with the findings for the WfD programme, and likely to have the same sources.

Two further recent Melbourne Institute studies have considered the unemployed more generally. Borland and Venn (2004) use the 1992 and 1997 ABS Time Use Surveys to describe patterns of job search and participation in non-market production and social activities by unemployed persons. They find that, on any given day, 17 to 18 per cent of unemployed people participate in job search activities, spending on average 90 minutes on those activities when they do participate. Job search is more likely for those with higher levels of education, males, young persons and those living in capital cities. Interestingly, they find no relationship between unemployment duration and likelihood or length of job search. Comparisons with Canada, the US, the UK, Italy and Germany indicate that, controlling for differences across countries in the characteristics of the unemployed, unemployed persons in other countries are 2 to 9 per cent less likely to engage in job search than unemployed persons in Australia; and participants in job search in Australia spend between 5 and 25 minutes more time on job search than participants in job search in other countries. The authors attribute this to more stringent job search requirements in Australia than in other countries. With regard to participation in other activities, it is found that the unemployed spend more time in non-market production activities and social participation than the employed, but that participation in these activities declines with increased unemployment spell duration.

The second study of unemployed persons, Frijters and Kalb (2003), uses the 1994-97 ABS Survey of Employment and Unemployment Patterns to investigate whether, and to what extent, increased unemployment duration diminishes labour market prospects due to factors

such as skill atrophy, stigma effects and decreased motivation.[43] They find that increased duration does not negatively impact on the wage levels of job "offers", but does decrease the frequency with which job offers are received. The authors also conclude that the probability of a person finding a job is higher if they already hold a job – that is, an unemployed person would have more difficulty finding a job than if that same person was employed – implying the best way to find a new job is to search while employed.

Numerous other Australian studies have examined issues connected with the unemployed and/or unemployment benefit recipients. Restricting attention to recent studies specifically examining unemployment benefit recipients, the list includes Stromback and Dockery (2001), Richardson (2002), Breunig et al (2003) and Saunders and Brown (2004).

Stromback and Dockery (2001) examine duration of unemployment benefit spells using the LDS one per cent sample over the period June 1995 to June 1999. They compare Indigenous and non-Indigenous persons, and find that while the rate of exit from benefits is lower for Indigenous persons, the difference is not great. They conclude that higher rates of receipt of unemployment benefits for Indigenous persons are primarily driven by higher inflow rates. Richardson (2002) examines the effects of the Mutual Obligation Initiative on exit from unemployment payments for recipients who commenced benefit spells in the first six months of 1998. Consistent with Borland and Tseng (2005), she finds positive "threat" effects of the program, although no evidence of these effects diminishing over time is found, possibly reflecting the earlier time period examined by Richardson.

Breunig et al (2003) evaluate the impact of a 2000-01 randomised trial of a programme involving a sequence of interviews of long-term unemployment benefit recipients. They find the programme decreased average hours worked, but increased hours spent in study or training. Saunders and Brown (2004) use three waves of the FaCS General Customer Survey over the period March 2000 to June 2001 to examine patterns of movement off the benefit system among unemployment benefit and parenting payment recipients. For each wave, income support recipients were interviewed and then subsequently interviewed 3 months and 6 months later, irrespective of whether on income support. They find a number of personal attributes impact on the likelihood of exiting and of sustaining exit off payments, with particularly important roles for the presence of young children (negative effect), benefit

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[43] A revised version of this paper (with an additional co-author) appeared as a Melbourne Institute working paper in 2004 (Cobb-Clark, Frijters and Kalb 2004).

duration (negative), earnings while on benefit (positive) and use of the internet to find work (positive).

2.5   Parenting Payment Recipients

Only one Melbourne Institute study has focused specifically on parents. Cai, Kalb, Tseng and Vu (2004) analyse the effects of the introduction of the Australian New Tax System (ANTS) in July 2000 on the probability of employment and average working hours of sole parents and married mothers.[44] ANTS introduced a number of changes to the tax and transfer system relevant to sole parents and married mothers: a decrease in marginal income tax rates; an increase in the tax-free threshold; a decrease in the taper rate for Parenting Payment Single (PPS); the replacement of a range of family assistance schemes with Family Tax Benefit Parts A and B, which involved the replacement of the "sudden death" income test for minimum-level family payment with a 30 per cent taper rate and the reduction of the taper rate on maximum-level payment from 50 to 30 per cent; and an increase in the income threshold after which Parenting Payment Partnered (PPP) is reduced.

Cai, Kalb, Tseng and Vu (2004) analyse the effects of these changes by applying behavioural microsimulation modelling techniques to the 1999-2000 ABS Survey of Income and Housing Costs (SIHC). Quasi-experimental evaluation methods are also applied to the 1999-2000 and 2000-01 SIHC and to 1996 and 2001 census data to estimate effects of the changes on sole parents. It is found that the policy changes had positive – although relatively small – effects on both the probability of employment and average working hours. Effects were larger for sole parents than for married mothers.

There have been several other recent Australian studies of parenting payment recipients, including Barrett and Cobb-Clark (2001), Barrett (2002), Gregory and Klug (2003), Gregory et al (2003) and Doiron (2004). Barrett and Cobb-Clark (2001) assess the impact of a randomised trial involving 5,000 PPS recipients which was conducted by FaCS in 1999. The trial involved three groups, one *compelled* to attend an interview with a 'Jobs, Education and Training' (JET) adviser, one group offered the *opportunity* of an interview with a JET adviser, and a third control group. They find significant increases in participation in employment, education or training for those who attended the interview, irrespective of whether attendance was voluntary or compulsory.

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[44] A version restricting attention to sole parents appeared as a Melbourne Institute working paper in 2005 (Cai, Kalb, Tseng and Vu 2005).

Barrett (2002) uses the LDS one per cent sample over the period June 1995 to June 1999 to examine the determinants of duration on the sole parent pension (renamed PPS in March 1998). He finds relatively lower exit rates for younger and older sole parents, those with younger children and those with lower job attachment. In a similar vein, Gregory and Klug (2003) examine duration of income support receipt of PPS recipients, but do not restrict attention to a single spell, and furthermore include in their analysis time spent on *all* income support payments. They find that, while duration on a single PPS spell is typically less than three years, 84 per cent of recipients experience more than one income support spell in a five and a half year period. They furthermore estimate that total time on income support over a 16.5 year period averages almost ten years, and therefore conclude that most PPS recipients are in fact "long-term" income support recipients.

Gregory et al (2003) analyse the July 2000 policy changes (ANTS) using the LDS one per cent sample, suggesting that the increased 'free area' and reduced taper rate for PPS recipients actually acted to increase the number of recipients. Doiron (2004) uses the 1986 and 1990 ABS income surveys to investigate the effects of changes in policy with respect to sole parents in 1987. These policies narrowed the definition of a dependent child (for the purposes of payment eligibility), increased the free area on the income test, introduced an earnings credit and abolished the separate income test for rent assistance. Employing quasi-experimental evaluation techniques, Doiron finds these changes had substantial positive effects on participation in employment by sole parents, but reduced hours worked by those already working.

2.6   Future Research Needs on Income Support Recipients

A key policy goal with respect to working age welfare recipients is to increase participation in employment and reduce reliance on welfare, while at the same time preserve the fundamental safety net function of the income support system.[45] Correspondingly, it is important for there to be research focused on adding to the information base for the refinement of existing policies and development of new policies with this target.

In this context, there are two broad categories of future research needs. First, work on "getting the basic facts right" will be an ever-present future need for policy-makers. Flawed premises on the extent and nature of the "problem" of welfare reliance are a recipe for inappropriate

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[45] Of course, there are many other policy goals in relation to the income support system, including meeting the myriad needs of income support recipients, ensuring a fair and equitable system, and operating the system in a cost effective manner.

policy responses. Understanding who recipients are, what their experiences of the income support system are, how they got there and why they find themselves in that situation is thus clearly critical to policy development. To a significant extent, this is a "moving target" that will continue to require research attention.

In raising this broad research need, it would be remiss to not draw attention to the constraints imposed by the data currently available for this type of inquiry. Administrative data are a valuable resource and should continue to be utilised, but would benefit greatly from supplementation with more detailed information on recipients, particularly when they are not on income support. For example, information on recipients when not on income support can inform us on how they get there and how welfare receipt impacts upon them. Broad-based surveys such as ABS household surveys and especially the HILDA survey are valuable in this regard, but sample sizes for specific groups in the community most at risk of income support receipt are in general very small in these surveys.

The second broad category of research need, particularly important in the Australian context, is for rigorous and objective evaluation of the effects of policy interventions. To date, such evaluation work has been worryingly thin on the ground. For example, there have been many programmes aimed at increasing participation in paid employment by income support recipients in Australia over the years, yet there has been little credible (i.e., verifiable) evaluation of their efficacy.[46] Indeed, it could be argued that the sheer number of these programmes is in part testimony to the uncertainty that exists regarding the effectiveness of alternative interventions and the conditions under which particular interventions work best.

To undertake evaluations of programmes, randomised trials are generally viewed as the "gold standard", and while costly and difficult to implement, they have the potential to contribute highly valuable information to the policy formulation process. In the US and increasingly in European countries, many government agencies have implemented (and continue to implement) randomised trials of welfare and jobseeker assistance programmes which have been subjected to rigorous evaluation. Even in the absence of randomised trials, there is substantial potential for evaluation of programmes in Australia. Recent decades have seen substantial advancements in 'quasi-experimental' evaluation methods, which allow valid assessments of many policy interventions not implemented as randomised trials, including

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[46] A number of evaluations of programmes have been conducted by DEWR and other organisations (for example, DEWRSB, 2000, 2001 and DEWR, 2002, 2003, 2005), but to the author's knowledge they have generally not been subject to external scrutiny (for example, as would be provided by a review process of an academic journal).

those that are universally applied.[47] Similar to the case for experimental evaluation of welfare and labour market policies, the application of quasi-experimental methods to policy evaluation is also at a very early stage in Australia compared to countries such as the US, Canada, the UK and other European countries. For example, numerous active labour market programmes internationally have been subject to quasi-experimental (and experimental) evaluation in recent decades – see Heckman et al (1999) for a review of a number of these evaluations.

Within the above two broad categories of research need, there are of course many specific research questions in relation to income support recipients that could potentially be investigated. While it would be overly ambitious to attempt an exhaustive itemisation, in what follows I provide a limited number of potential lines of inquiry requiring further research.[48]

Understanding Growth and Compositional Changes in Income Support Receipt

Understanding the sources of the growth and continued high levels of income support receipt in Australia and changes in the 'composition' of recipients is extremely valuable to formulation of welfare policy. Many issues might be investigated for this area of inquiry, including the effects of changes to the age composition of the population (and their interaction with other factors such as business cycle conditions), the effects of changes in the social security system, and the effects of labour market changes. One particular question of some interest, considered by Landt and Pech (2000), concerns the extent to which the growth in part-time work since the 1970s has been a contributory factor to growth in welfare receipt – or indeed whether the growth in part-time work is, at least in part, a product of the demand by suppliers of labour for part-time work to facilitate combining welfare and work.[49] Another question of interest is whether changes to the structure of labour demand – in particular, declines in demand for low-skill workers – have affected the number and composition of welfare recipients.

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[47] Borland, Tseng and Wilkins (2005) provide an overview of experimental and quasi-experimental evaluation methods and examples of their application in Australia.

[48] Note that previous research has investigated many of the following issues, but these are areas where, in the author's view, *additional* research is required.

[49] Landt and Pech (2000) find that there has indeed been growth in the incidence of combining income support with part-time employment. They note that the combining of income support with employment is less common among long-term income support recipients than short-term recipients, which would not be expected if individuals were *seeking* part-time employment in order to retain eligibility for income support – thus suggesting the direction of causality runs from part-time work to income support, rather than the reverse. Nonetheless, it remains largely an open question the extent to which growth in part-time work has caused or been caused by growth in income support receipt.

Effects of Different Income Tax and Transfer Policies on Labour Supply and Welfare Receipt

While eligibility criteria for income support payments (incorporating activity test requirements) are important influences on take-up of welfare, financial incentives created by the income tax and transfer system are also important determinants of both welfare receipt and participation in employment. Microsimulation modelling of the effects of alternative policy regimes is one approach to investigating this issue (for example, using the Melbourne Institute Tax and Transfer Simulator – see Kalb, 2005), but "observational" approaches are also very useful where different regimes are observed in operation, either at different points in time or across different individuals at the same point in time. For example, the reforms to parenting payments and the Disability Support Pension in July 2006 will potentially create the opportunity to improve understanding of the effects of payment rates and taper rates on employment participation of recipients of those payments.

A further, somewhat different, example of issues of this nature concerns the value of concession cards to holders and how big a "lock-in" effect they create for different groups of income support recipients. Concession cards entitle holders to a range of discounts on prices of goods and services provided by both the public sector and private sector. The value of the cards is likely to differ across recipients, and hence their effects on discouraging exit from income support will correspondingly also differ across recipients. For example, those with long-term health conditions or with variable and uncertain health are likely to value the cards more highly because of the substantial discounts on health care costs they deliver. Identifying how the value of the card differs for different groups in the community is a first step to identifying adverse lock-in effects on welfare receipt and potential policy responses.

The Effects of Activity-test Requirements and Other Measures Aimed at Increasing Participation in Employment

What are the effects of activity-testing, and how do effects depend on the nature of the activity requirement and the penalties for non-compliance? One general theme of welfare reform in recent years has been a move towards increasing requirements on recipients – a move initially focused on unemployment benefit recipients, but now extending to other payment types. There is a variety of different requirements currently in operation, each of which is likely to have different types and magnitudes of effects and also differ in effects across different types of recipient. Correspondingly, different types of requirements are likely to be appropriate depending on the circumstances of the individual recipient and the particular policy objectives with respect to that recipient.

This line of inquiry can assist with refining existing activity-test requirements and potentially extending certain types of activity test to other payment types or individual circumstances. Indeed, the July 2006 reforms to DSP, PPS and PPP provide an opportunity in this regard, making possible investigation of the effects on participation in employment of differing requirements for recipients of these payment types. A further important line of inquiry with respect to the effects of these requirements is how well different requirements work at different stages of the business cycle. For example, for unemployment benefit recipients, should the emphasis on skills acquisition versus job search be varied over the course of the business cycle?

Also important is evaluation of the effects of other policy innovations with respect to income support recipients, such as Working Credits and various Job Network services. As with the evaluation of activity test requirements, an important focus for evaluation of all of these policies is heterogeneity in policy effects. Identifying which interventions work best for which individuals is clearly important. For example, many programmes are triggered by particular income support spell durations, or otherwise depend on income support spell duration in some manner, but it is not clear that the timings of these "triggers" are currently optimally set.

Interactions Between Family Circumstances, Employment Participation and the Income Support System

The many complex interactions between family arrangements, the labour market and the income support system (and other policy domains) imply a correspondingly large number of research questions. To give but a few examples likely to be directly relevant to formulation of labour market and income support policy:

- Does the income support system affect re-partnering decisions by sole parents? While employment participation is one route to reduced welfare reliance, for sole parents another potential route is re-partnering (associated with which is likely to be other benefits for both the parent and children). [50] However, little is known about how the structure of the income support payments system itself impacts on re-partnering decisions, and how this differs across different groups of PPS recipients.

- To what extent is access to child care a constraint on movements from welfare to work? What is the extent and nature of this constraint and who does it apply to?

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[50] Gregory and Klug (2003) show that a significant number of PPS recipients partner with individuals who are also on income support, but their study does not identify how many recipients partner with individuals who are not on income support, making it difficult to assess the relative importance of these two partnering groups.

- How do interactions between child support and income support impact on employment and income support receipt of both single parents and their estranged partners? In particular, to what extent is payers' labour supply and take-up of income support affected by child support obligations?

Barriers to DSP Recipients Participating in Employment

Participation in employment by DSP recipients is very low compared with other payment types, despite relatively generous income tests which allow for substantial combining of DSP with paid employment. There is limited understanding of the reasons for this low level of participation in employment and therefore little guidance for formulation of appropriate policies for increasing employment participation. Unfortunately, currently available data limit research prospects in this area, suggesting that the immediate priority is for additional data to be gathered. Randomised trials of programmes targeting DSP recipients would also be very helpful to our understanding of this issue.

Mature-age Welfare Receipt and Employment Participation

While many issues in relation to income support receipt and employment participation apply to persons of all ages, a specific research focus on older working-age persons is valuable because a number of issues are particular to – or more pronounced in – this age group. For example, reintegration into the labour market following job loss may be more difficult for reasons such as lower capacity or willingness to invest in acquisition of new skills, poor health (which is more prevalent amongst older persons), and because of adverse effects on labour supply of "wealth effects" (for example, in the form of home ownership). Understanding the relative importance of these and other factors is important to developing policies promoting greater self-reliance amongst both current and potential mature-age recipients of income support.

Optimal Design of the Income Support System

Despite various reforms in recent years, the income support system remains a complex array of payment types, payment rules and supplementary payments. The question is whether, and if so how, the system could be re-designed in a more streamlined and coherent fashion. One suggestion that has been put forward is for a "modular" system (Dawkins, Duncan and Freebairn 2003), in which a base welfare payment is augmented with additional payments and requirements depending on a pre-specified set of individual circumstances. However, the

details of how such a system would operate and the benefits it might offer have not been fully examined.

To conclude this chapter, two points should be made about limitations of its scope. First, most of the Melbourne Institute research discussed in this report, and the potential future research directions identified, are based on understanding welfare reliance, or the effects of government policies on welfare reliance, with a view to reducing reliance on income support and increasing participation in paid work. This is only one – albeit very important – avenue of inquiry relevant to the effective conduct of working age income support payments policy. For example, how the system can better serve the needs of income support recipients, and whether there is unmet need in the community for income support, are clearly important issues that have not been explicitly addressed in Melbourne Institute research on income support recipients. Second, research relevant to welfare policy extends well beyond that focused on *recipients* of income support payments. Labour market factors, demographic factors (for example, changes in family structures) and various other societal changes all have important implications for entry and exit from welfare receipt. It follows that understanding of these phenomena is extremely important to development of policy with respect to the welfare system.

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CHAPTER 3: THE CHANGING NATURE OF WORK

Mark Wooden

3.1　Introduction

As in all other developed economies, the nature of paid work in Australia has undergone significant change during recent decades. In very broad terms, this change can be described as being of two main types: first, changes in the type of work undertaken and the way that work is performed; and second, changes in the way work is organised and employment is structured.

It is generally accepted that major changes have occurred in the content of work; that is, in the techniques, technologies and skills employed at work. This is perhaps most obviously reflected in the changing occupational structure of employment. In August 1970 just over 10 per cent of all employed persons were classified by the Australian Bureau of Statistics (ABS) as working in professional or technical occupations. By August 2005, the proportion in the most comparable occupation groupings – professionals and para-professionals – was, at almost 32 per cent, three times as large. Most of this growth has occurred at the expense of employment in what traditionally were described as 'blue-collar' occupations. More fundamentally, new technologies, especially in the area of information and communication, have been identified by many commentators as the catalyst for a new industrial revolution associated with both a shift towards more skilled employment and a change in the relative importance of different types of skills.

Major changes have also occurred in the ways work is organised and employment is structured. A widely held view, and one that I have been guilty of helping disseminate (see Wooden 2002), is that during the 25-year period immediately following World War II, most Australians in employment (and especially men) had jobs that provided a steady wage or salary and involved regular weekly hours, typically averaging somewhere close to 40. Moreover, there was every expectation that, subject to meeting some minimal performance standard, such workers would remain with a single employer for the bulk of their working life if they so desired. The extent to which this characterization is a fair representation of the 1950s and 1960s is debatable and clouded by the lack of objective data covering this period. There are certainly a number of pieces of evidence to suggest that jobs were not as stable in the past as is often depicted. First, women in many occupations, especially after marriage,

were systematically excluded from employment opportunities offering long-term career prospects. Second, prior to the mechanization of harvests there was a very large seasonal agricultural labour force. Third, even in the non-farm sector there must be question-marks around the idea that jobs last longer then than they do today. ABS data from the Labour Mobility Survey, for example, suggest that average job duration for men today is little changed from 1972 (and for women it is considerably longer).[51]

Nevertheless, it is still difficult to argue that employment arrangements have not changed markedly in recent decades. Many more jobs involve either part-time hours or irregular hours that vary from week to week (or both). Further, employment contracts are much more likely to specify arrangements that explicitly impinge on continuity of job tenure. This includes casual employment arrangements wherein employment can be terminated without notice, or arrangements specifying employment of some pre-determined fixed duration. Finally, it is widely believed that many firms are reducing their reliance on direct employment and, instead, are increasingly choosing to outsource some of their labour requirements.

Interestingly, research in Australia, as elsewhere, has tended to focus more on changes in employment arrangements than on changes in work content. Indeed, and as observed in a report by the National Research Council (1999, p. 5) in the US, empirical research examining what workers actually do and how they do it appears to be very rare. In Australia, a small number of studies have examined the changing skills distribution of employment by looking at how the occupational distribution is changing. The usual presumption is that changes in the demand for labour have been skilled-biased. At least two Australian studies have challenged this assumption (see Dunlop and Sheehan 1998, Cully 1999). My own research conducted at the Melbourne Institute (Wooden 2000b), however, suggests that such conclusions are sensitive to the choice of end and start dates. When comparable points in the business cycle are chosen, the upskilling thesis receives more support. Further, the evidence for general upskilling is very clearly supported once employment data are adjusted for hours worked.

Somewhat differently, others have attempted to more directly measure the types of skills inherent in different occupations and then examine how occupational change has affected the distribution of these skills. Pappas (1998), for example, used occupation dictionaries to

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[51] Furthermore, we know from regular survey data collected by the Commonwealth Statistician between 1949 and 1974 that monthly job separation rates over this period were consistently high (see Moffatt and Hill 1970). Monthly separation rates averaged between 5 and 8 per cent for male manual workers and between 6 and 9 per cent for female manual workers. Compared with today, however, a large proportion of these separations appear to be voluntary (perhaps 75 to 80 per cent of all separations compared with 64 per cent in 2004 data).

distinguish between cognitive, interactive (i.e., interpersonal) and motor skills, and then documented evidence of a trend increase in the importance of both cognitive and interactive skills, and a decline in the importance of motor skills, in Australia between 1976 and 1995. Similar results for Western Australia have been reported in Kelly and Lewis (2003). All of these studies, however, are essentially studies of changes in the occupational mix of employment and reveal nothing about how the content of work within occupations is changing.

In contrast, far more has been written about the changing nature of employment arrangements. The research program at the Melbourne Institute reflects this difference. Apart from the one small study mentioned above and research on the impact of organizational downsizing (see Dawkins and Littler 2001), little serious attention has been paid to the issue of changing work content. Instead, our research program in this area has tended to focus on the issues of working time and, to a lesser extent, job security and non-standard employment. Readers, however, would be mistaken to assume from this that the Melbourne Institute has been vigorously pursuing an active agenda in this area. The nature of work and employment has only assumed prominence in the Institute's research agenda quite recently, mainly as a result of the emergence of the Household, Income and Labour Dynamics in Australia (or HILDA) Survey data set, which contains extensive information about jobs and working arrangements (and is managed by the Melbourne Institute, but funded by the Australian Government).[52] Instead, the Institute's research agenda in the area of labour markets (at least over the last five years) has been dominated by concerns with labour supply and work incentives and with the experiences of the jobless. As a result, this chapter ranges over less ground than the two previous chapters, which covered research into work incentives and labour supply issues and on income support reliance and income support recipients.

3.2   Changing Patterns of Employment: Background

3.2.1   Employment Arrangements

As briefly discussed in the introduction, a significant feature of the changing Australian labour market has been the changing nature of contractual employment arrangements. New jobs are increasingly part-time – defined by the ABS as work involving fewer than 35 hours each week – and casualised – defined in these data by the absence of entitlements to either

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[52] For more information about the HILDA Survey, see Watson and Wooden (2004) or the HILDA Survey website: http://www.melbourneinstitute.com/hilda/

paid annual leave or paid sick leave. Such trends are documented in Table 3.1, which suggests that the proportion of total employment represented by persons in so-called 'permanent' full-time jobs fell from an estimated 77 per cent in 1971 to somewhere between 52 and 55 per cent by August 2004.[53]

Table 3.1

The Changing Composition of Employment, Selected Years 1971 to 2004

(% of employed persons)

Year (Aug.)	Permanent employees		Casual employees		Self-employed		Employers	
	FT	PT	FT	PT	FT	PT	FT	PT
1971	77	4	1	4	6.8	1.2	5.3	0.5
1984	65.6	5.0	3.9	9.3	8.0	2.5	4.4	0.8
1993	57.6 (58.7)	6.6 (7.4)	5.3 (4.7)	13.5 (12.3)	8.2	3.1	4.0	0.8
1999	53.6 (56.4)	8.6 (8.7)	6.7 (6.4)	15.7 (13.4)	7.5	3.0	3.5	0.6
2004	52.2 (55.2)	10.0 (10.3)	8.5 (6.4)	15.4 (14.1)	6.8	3.3	2.8	0.6

Notes: 1 The figures in parentheses are the re-calculated proportions after treating all owner-managers of incorporated enterprises as permanent employees.
2 Employment characteristics are based on the 'main' job held.
3 Full-time and part-time workers are distinguished according to hours worked. A full-time worker is anyone who usually works 35 hours or more each week or anyone who actually worked 35 hours or more during the reference week.
4 The percentages in each row do not sum to 100 due to the exclusion from this table of contributing family workers.

Sources: 1971: ABS, *The Labour Force, 1971* (ABS cat. no. 6204.0) and 'guesstimates' by the authors.
1984: Unpublished data provided by ABS and ABS, *Labour Force, Australia, August 1984* (ABS cat. no. 6203.0).
1993: ABS, *Weekly Earnings of Employees (Distribution), Australia, August 1993* (ABS cat. no. 6310.0) and ABS, *Labour Force, Australia, August 1993* (ABS cat. no. 6203.0).
1999: ABS, *Weekly Earnings of Employees (Distribution), Australia, August 1999* (ABS cat. no. 6310.0) and ABS, *Labour Force, Australia, August 1999* (ABS cat. no. 6203.0).
2004: ABS, *Employee Earnings, Benefits and Trade Union Membership, Australia, August 2004* (ABS cat. no. 6310.0) and ABS, *Australian Labour Market Statistics, Australia, October 2004* (ABS cat. no. 6105.0).
Figures in parentheses: ABS data available on spreadsheet (6105_table2_jul 2005.xls).

In addition to the growth in part-time and casual employment, it is suspected that in recent decades there will have been some growth in the incidence of persons employed on a fixed-term contract basis, at least some of whom will have leave entitlements, and hence be classified as 'permanent' workers. Persons employed on fixed-term contracts, however, are

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[53] Alternative estimates are the result of uncertainty over how to treat owner managers of incorporated enterprises. Many of these workers would indicate not having paid leave entitlements and thus would have been included by the ABS in the casual employee group. If we, however, make the highly reasonable assumption that all owner-managers are not casual employees, then the measured share of casual employees in total employment declines and the proportion classified as permanent employees rises commensurately.

quite distinct from 'permanent' employees in that, in many cases, there is unlikely to be an expectation of ongoing employment beyond the contract. Unfortunately, different data sources give rise to quite different estimates of the extent of fixed-term contract employment in Australia. The ABS 2001 Forms of Employment Survey, for example, found that, after excluding owner-managers, only 3.9 per cent of employees were on fixed-term contracts, whereas in the first wave of the HILDA Survey, also conducted in 2001, the comparable estimate was, at 9.1 per cent, more than double this.[54] It is also difficult quantifying the extent to which the incidence of this type of employment might have increased given the absence of comparable data sources (see Waite and Will 2002).[55]

It is also often claimed that employers are increasingly choosing to outsource their labour requirements, which potentially has major ramifications for the way employment arrangements are structured. It is generally assumed that this will be reflected in a shift in the composition of employment towards self-employment, with contractors often seen as synonymous with self-employment. In fact, Table 3.1 suggests that the growth in the self-employment share over the period covered has been extremely modest, and indeed has fallen slightly since 1984. The figures in Table 3.1, however, almost certainly understate growth in 'true' self-employment given owner managers of incorporated enterprises are treated as employees by the ABS and the incentive to incorporate has increased since the mid-1980s due to the much wider gap between the corporate tax rate and the top marginal personal income tax rate.[56] In addition, not all self-employed contractors will be classified by the ABS as self-employed. As VandenHeuvel and Wooden (1995) have noted, a sizeable proportion of self-employed contractors may fall into the employee category — 21 per cent in their survey data. Furthermore, outsourcing does not necessarily mean a growth in self-employment, with many

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[54] The two surveys employed quite different approaches. In the HILDA Survey employees were simply asked to classify themselves into one of three different states: fixed-term contract, casual or permanent / ongoing. In contrast, the ABS approach involved first ascertaining whether the respondent's current employment had a set finishing date and if so was it within the next five years. Only respondents who answered in the affirmative to both of these questions were then asked whether they were on a fixed-term contract.

[55] Arguably the most comparable data sources are the employee component of the 1995 Australian Workplace Industrial Relations Survey (AWIRS) and the HILDA Survey. The former, which was restricted to workplaces with 20 or more employees and excluded workplaces in the agriculture sector, provides an estimate of fixed-term contract employment of 8.8 per cent (see Wooden 1998). After similar exclusions are made, the comparable estimate from the 2001 HILDA Survey is 9.5 per cent. The difference between these two estimates, however, almost certainly understates the rate of growth over this period given the HILDA Survey employed a three-way categorisation of employment types whereas the AWIRS employed a simple dichotomy. Thus in the latter, a respondent could be employed on both a fixed-term and on a casual basis. If we remove all casual employees from the fixed-term employment group, then the share of fixed-term contract workers in employment in the 1995 AWIRS declines to 8.0 per cent.

[56] ABS data for August 2004 indicate that owner managers of incorporated enterprises represent 7.3 per cent of all employees.

contractors employing their own workers. Data from the 1995 Australian Workplace Industrial Relations Survey (AWIRS), for example, indicated that, in workplaces with 20 or more employees, contractors and their employees together with agency workers accounted for 4.4 per cent of total employment. Furthermore, while accounting for a relatively small share of total employment, the growth in this share since 1989 has been particularly rapid, especially among agency workers. More recent evidence for 2001 and 2002 suggests the growth in labour hire employment has accelerated further (Laplagne, Glover and Fry 2005).[57]

3.2.2 *Working Time*

The growth in diversity in employment types has also been accompanied by an increase in the diversity of working time arrangements. As previously noted, a key feature of Table 3.1 is the growth in part-time employment. Almost three in every 10 Australian workers were classified by the ABS as part-time workers in 2005. By comparison, the comparable proportion was only about one in ten in 1971. What the figures in Table 3.1 do not reveal, however, is the growth in the proportion of workers recorded as working long hours. For example, and as reported in Table 3.2, just over 28 per cent of the employed workforce were recorded as actually working 45 hours or more during the survey week in the August 2000 Labour Force Survey (LFS). This compares with a little over 20 per cent in 1975. That said, in recent years this upward trend in the incidence of long hours working appears to have reversed, with the comparable proportion in 2004 being only 26 per cent.

Thus not only have we witnessed a shift away from the full-time permanent wage earner model, we have also seen a shift away from the standard working time model, which revolved around the notion of an eight-hour day worked over a five-day week. Table 3.2 suggests that at the start of the 1970s at least half the Australian workforce appeared to be working this standard arrangement. By the end of the 1990s, however, persons working standard working time arrangements were very much in the minority, with less than 30 per cent of employed persons working between 35 and 40 hours during the survey reference week in the August 1999 LFS.[58]

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[57] At the time this research commenced, Tim Fry was a member of the Melbourne Institute staff.
[58] In fact, the figures in Table 3.2 understate the incidence of persons who work 35 to 40 hours. This is because these hours data are based on hours *actually* worked rather than hours *usually* worked. Data on hours usually worked (only available since 2001) for August 2005 indicate that persons usually working 35 to 40 hours per week account for 40.6 per cent of all employed. By comparison, persons who usually work part-time hours (less than 35) account for 30 per cent. The incidence of long hours workers (45 hours or more) remains little affected (just under 26%).

Table 3.2

Composition of Employed Workforce by Hours per Week Actually Worked (%), 1970 to 2005

Year (August)	Zero hours[a]	1-29 hours	30-34 hours	35-40 hours	41-44 hours	45 or more hours
1970	5.2	10.2	5.3	51.2	5.2	23.0
1975	6.4	12.6	4.6	51.5	4.3	20.5
1980	5.2	17.1	7.1	43.3	5.4	21.9
1985	5.1	19.4	8.6	39.2	5.3	22.4
1990	4.5	21.5	7.1	36.6	5.3	24.9
1995	4.3	23.9	6.7	32.1	5.1	27.9
2000	4.3	25.1	6.9	30.5	4.9	28.4
2005	4.9	26.0	7.8	30.2	4.9	26.2

Note: a Includes, for example, persons on recreation leave, on sick leave, on strike, and those who did not work any hours during the reference week because of shift arrangements.

Sources: ABS, *The Labour Force, Australia* (cat. no. 6203.0), various issues; ABS, *Australian Labour Market Statistics, October 2005* (cat. no. 6105.0).

3.3   Non-standard Employment

3.3.1   Are Non-standard Jobs Sub-standard Jobs?

A widely held view is that non-standard employment is associated with lower average job quality. Many, for example, have pointed to the heightened job insecurity arising from the precarious nature of many of the new non-standard employment arrangements (e.g., Burgess and Campbell 1998a, ACIRRT 1999, Campbell and Brosnan 1999). Still others have emphasised the limited control that casual and part-time workers have over their work situation and their relative exclusion from workplace decision-making processes (e.g., Hall, Harley and Whitehouse 1998). It is also well recognised that growth in part-time employment has been accompanied by a rise in underemployment, with sizeable numbers of individuals being forced to accept part-time jobs simply because of the lack of availability of full-time opportunities (this issue is discussed at greater length elsewhere in this review).

Research conducted at the Melbourne Institute, however, suggests that claims that non-standard jobs are necessarily sub-standard jobs may be misleading. A study by Wooden (2001a), for example, compared a range of job outcomes across different categories of employees using the 1995 AWIRS data and found that part-time, casual and fixed-term contract jobs possess many desirable characteristics. A selection of key findings from that study is reported in Table 3.3. For example, casual employees, while on the lowest rates of hourly pay, typically do not describe their pay as unfair. Indeed, 60 per cent of casual

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employees reported that in their view they were paid fairly for the things they did in their job, which compares with only 44 per cent of full-time permanent employees. Furthermore, despite the more tenuous nature of their employment relationship, casual employees are not any more likely than other types of workers to report feeling insecure in their jobs. Further, the large majority (70 per cent) of casual employees reported being happy with the hours they worked. By comparison, the proportion of permanent full-time employees who were happy with their hours was not much greater (74 per cent).

Table 3.3

Employment Status and Work-related Outcomes, 1995 AWIRS

Outcome	Permanent full-time	Permanent part-time	Casual	Fixed-term[a]
Overall job satisfaction[b] (%)	60.4	69.1**	69.1**	67.7**
Job insecurity[c] (%)	29.9	29.2	28.8	40.1**
Job stress[d] (%)	44.9	35.2**	21.7**	41.4*
Job variety[e] (%)	86.0	82.0**	70.3**	86.5
Satisfaction with hours[f] (%)	74.4	79.1**	70.4**	75.8
Received training[g] (%)	63.0	59.5*	52.5**	65.5
Perceived influence over workplace decisions[h]	35.2	29.0**	21.6**	37.4
Fairness of pay[i] (%)	43.6	51.4**	60.1**	50.3**
Hourly pay ($)	15.75	22.34**	13.34**	16.20*

Notes: Data are weighted to the population of employees at non-farm workplaces with 20 or more employees.
 ** and * denotes statistically significant difference from permanent full-time workers at .01 and .05 levels (2-tailed test), respectively.
 a   Excludes those on fixed-term contracts who were also casual employees.
 b   Percentage who said they were 'satisfied' (those who were coded as 'not relevant to me' were classified into the 'not satisfied' group).
 c   Percentage who agreed with statement: 'I feel insecure about my future here'.
 d   Percentage who agreed with statement: 'My job is very stressful'.
 e   Percentage who agreed with statement: 'I do a lot of different tasks in my job'.
 f   Percentage what indicated they were happy with the hours they worked.
 g   Percentage who indicated their employer had provided work-related training during previous 12 months.
 h   Percentage who said they had 'some' or 'a lot' of influence.
 i   Percentage who agreed with statement: 'I get paid fairly for the things I do in my job'.
Source: 1995 AWIRS employee survey, as originally reported in Wooden (2001a).

Casual work, however, does possess some obvious unattractive features. Casual employees, for example, are less likely to receive structured training provided by the employer, typically do not have much influence over organisational decision-making processes, and are less likely to report dealing with a variety of tasks at work. Nevertheless, these negative job attributes

appear to be compensated for by having jobs that are not very stressful. Indeed, casual employees typically report higher levels of job satisfaction than do permanent employees.

Like casual employees, permanent part-time employees are also much more likely than their full-time counterparts to be satisfied with their jobs. Again lower levels of stress at work and higher satisfaction with pay help explain this. Indeed, unlike casual employees, the higher levels of satisfaction with pay among permanent part-time workers are a direct reflection of very high average hourly rates of pay.

The data reported in Table 3.3 also suggest that it would be incorrect to classify workers on fixed-term contracts as necessarily belonging to the periphery of internal labour markets. Indeed, fixed-term contract employees fared as well as, or better than, permanent employees on most of the indicators considered. Compared with full-time permanent employees, workers on fixed-term contracts were more likely to report having influence over decision-making, were less likely to indicate that their job was stressful, were no more or less likely to report receiving employer-provided training, reported slightly higher hourly earnings, and were far more likely to believe that they were paid fairly. Only with respect to job insecurity did fixed-term employees fare poorly. It thus is not at all surprising that a relatively high proportion of fixed-term contract workers (almost 68 per cent) reported being satisfied with their job.

Finally, with the exception of perceived job security among casual employees, these findings are generally found to hold even once other individual and job characteristics are controlled for.

More recently, the question of whether or not casual and fixed-term jobs are associated with low levels of job satisfaction has been investigated by Wooden and Warren (2004). They used data from the first wave of the HILDA Survey to estimate ordered probit models of job satisfaction that controlled for employment status, as well as a host of other individual and job characteristics. There results suggest three main conclusions. First, workers on fixed-term contracts are actually more satisfied with their jobs than other workers, both casual and permanent, and this finding is not affected by the inclusion of controls for personal and other job characteristics. Second, the lower levels of job satisfaction among casual employees are restricted to those working full-time employees and even then the size of the effect is only marked among men. Third, among men, agency (i.e., labour hire) workers reports consistently lower levels of job satisfaction. To sum up, Wooden and Warren (2004) did not find evidence of a consistent pattern of non-traditional types of employment being associated with low levels of job satisfaction.

There is, however, at least one serious critique of this type of evidence – self-reported job satisfaction may not be a very good indicator of job quality because it is influenced by expectations, or norms, which in turn are influenced by the type of job held. Levy-Garboa and Montmarquette (1999), for example, argue that job satisfaction is not a measure of worker well-being. Rather it measures how present well-being compares with expected well-being at some previous date. Thus, casual employees may report job satisfaction levels that are no lower than for non-casual employees precisely because they do not expect much from a casual job. Wooden and Warren (2004) attempted to control for expectations with a variable measuring the importance of employment to individual respondents (casuals are expected to score lower on this variable), but it is doubtful whether this variable removed all of the expectations effect.

Ultimately, responding to this critique is very difficult. Green and Tsitsianis (2004) argue that while cross-person comparisons of the levels of job satisfaction are problematic, this is not so for comparisons in changes in job satisfaction over time. If this line of argument is correct, then it should be possible to infer differences in worker well-being across job types by using panel data (such as is being collected in the HILDA Survey) to examine whether job satisfaction is rising faster for certain types of jobs. Unfortunately, reliance on panel data is unlikely to resolve the problem. First, people change jobs and job changing can be expected to be associated with changes in job norms. Second, there is the measurement problem associated with the fact that the qualitative scales used to measure well-being are bounded. This is especially problematic at the upper end given so many respondents choose scores at the upper end of the scale. As a consequence, population-wide job satisfaction scores are likely to be highly stable over time, despite changes in objective job conditions.

It is perhaps for these reasons that it is frequently argued that job quality can only be measured by 'objective' measures of job quality. Economists, for example, have long focused on the wage as the key indicator of job quality. The problems with relying on so-called objective job characteristics were discussed in Wooden and Warren (2004), and are at last twofold. First, there are so many job dimensions that contribute to overall worker well-being that measuring them all is extremely difficult. Second, and more importantly, there is likely to be great variation across individual workers in the weight assigned to different job attributes.

3.3.2 *Job Insecurity*

As previously noted, an often assumed consequence of the changing nature of employment arrangements is a rise in job insecurity. The problem for the advocates of this view, however,

is that much of the evidence presented in support of this position is far from convincing. Most obviously, ABS data indicate there is no evidence of either a decline in average job tenure over time or a trend rise in the rate of job separations, either voluntary or involuntary (see Wooden 2000a, pp. 129-130). The finding of no shortening of job tenure is of particular interest given it is just as clear that the average tenure of a casual employee is much less than that of a non-casual employee. It thus follows that for average job tenure to have remained little changed, the average tenure of permanent employees or casual employees (or both) must be increasing over time.

Nevertheless, the first foray by the Institute into this subject did unearth evidence that was consistent with the hypothesis that job insecurity has declined. Drawing on survey data evidence collected in the International Social Science Survey of Australia (ISSSA) over the period 1989-90 to 1996-97, Kelley, Evans and Dawkins (1998) found that the proportion of respondents reporting that their "job was secure" declined over time – from 73 per cent in 1989/90 to 56 per cent by 1996-97. A decline in job security over this period, of course, is to be expected given the labour market was much stronger in 1989/90 than in 1996/97. Nevertheless, the magnitude of the decline appears too large to be explained entirely by the economic cycle.

Such findings stand in marked contrast to that suggested by opinion poll data collected annually since 1975 by the Roy Morgan Research Centre. Based on a simple question asking employed sample members to indicate whether their job was 'safe' or whether there was a chance of becoming unemployed, the simple response frequencies appear to move broadly in line with the economic cycle (Wooden 2000a, p. 128). This was confirmed in work by Borland (2001), who regressed the Roy Morgan variable against a time trend and variables measuring the rate of unemployment and change in the rate of unemployment.[59] Apart from a downward shift concentrated in the four-year period 1900-1993, he found no evidence of a downward trend in perceptions of job security since the mid-1970s.

He also analysed variations over time in the attitudinal data from the ISSSA covering the period 1984 to 1996 about respondent satisfaction with security and predictability of their future at work. Consistent with Kelley et al. (1998), he too found evidence of a marked change between the 1980s and 1990s. Borland hypothesised that this apparent inconsistency

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[59] While Jeff Borland is a member of the economics department at the University of Melbourne, he is also an adjunct Professor of the Institute and has been an integral member of the Institute's labour economic research team.

between different data sources might reflect differences in the meanings of job security. While fears about job loss may not be any more heightened, more general worries about working futures may have increased. Borland thus hypothesised that workers may be more prepared to adapt to employer demands than in the past.[60]

Borland followed this initial work with the analysis of responses to probabalistic survey questions included in the Melbourne Institute monthly omnibus telephone survey over the period August 1999 to May 2002 (Borland 2002). While obviously too short a period to say anything meaningful about long-term trends, a number of other interesting findings were uncovered. First, workers tend to overstate the risk of both job loss and job mobility. Second, perceptions of job insecurity display substantial heterogeneity across individuals. Third, in line with Borland's earlier findings, perceptions of job security vary pro-cyclically. Fourth, perceptions of job security influence other household behaviours, such as consumption.

3.3.3   *Bridges or Traps?*

Even if we accept the claim that non-standard jobs are inferior in some way to standard jobs, they still may be useful entry points into the labour market for the unemployed and for labour force entrants and re-entrants. The most often heard argument, however, is quite the reverse. For example, the NSW Labor Council in its Contentions to the Secure Employment Test Case (heard in the NSW Industrial Relations Commission in 2004) claimed that casual employees "have little or no opportunity to follow a career path" (paragraph 11.6).

Such arguments arguably receive some support from the study of Burgess and Campbell (1998b). They used simple cross-tabulated data from the ABS Survey of Employment and Unemployment Patterns (SEUP) to report labour market destinations in September 1996 for job seekers who found part-time jobs commencing after May 1995. They reported that just 13 per cent had progressed to a full-time job which they argued represented evidence of a high degree of immobility between part-time and full-time jobs. Simple data like these, however, tell us very little. First, there is the question of the counterfactual ─ that is, what would have happened to these job seekers (bearing in mind that the sample was comprised entirely of persons who were unemployed when the study commenced) if part-time (casual) jobs were not available? Second, the length of the observation period is so short that the degree of stability in labour market destinations is overstated. Burgess and Campbell emphasised that

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[60] Another explanation may lie in the ISSSA data. The four waves of the survey conducted in the 1980s employed simple random samples. The samples in the 1990s increasingly departed from this, employing a mixed panel / cross-section approach. Thus without knowledge about the sampling probabilities it is difficult to know to what extent the findings from these surveys can be generalised to the wider population.

just over half the sample were in the same part-time job in September 1995. This proportion seems high but is hardly unexpected given that the observation period is at most 18 months, and in most instances will be far shorter given the sample apparently comprised persons who found a part-time job that started *after* May 1995.[61] Third, they did not subject the data to any type of controlled analysis. The low rates of transitions out of part-time casual jobs may be exactly what would be expected if the people involved have few skills and low levels of education.

Other Australian research on the issue of whether casual work can act as a stepping stone to a more secure 'permanent' job in the future leads to rather different conclusions, and deserves to be taken far more seriously. There are two papers of particular relevance here, by Gaston and Timcke (1999) and by Chalmers and Kalb (2001).[62]

Gaston and Timcke (1999) analysed longitudinal data from the Australian Youth Survey. Unlike Burgess and Campbell they interrogated the original data. Further, they were able to follow labour market transitions over a four-year period. They found that, after excluding students, of those persons in part-time casual jobs in 1990, 45 per cent were in full-time 'permanent' jobs in 1994 and 27 per cent were in part-time 'permanent' jobs. Of the full-time casuals, the comparable proportions were 48 and 2 per cent. Such data suggest a good deal of progression from casual to non-casual jobs. They also modelled the process of transition from casual to full-time 'permanent' employment and drew the conclusion that "adult labour market outcomes may, for the most part, be unrelated to early labour market experiences" and that "longer term labour market outcomes are … driven by personal preferences, unobserved heterogeneity, as well as the steady accumulation of labour market experience and acquisition of educational qualifications" (p. 345). It needs to be borne in mind, however, that the sample Gaston and Timcke used was comprised entirely of young people and hence their findings may be specific to this group.

The second paper of interest, by Chalmers and Kalb (2001), used the same longitudinal data analysed by Burgess and Campbell (1998b), but their data covered a three-year period and, like Gaston and Timcke, they interrogated the original unit-record data. Very differently from Gaston and Timcke, however, their population covered persons of all ages. Further, their data were restricted to persons who became unemployed in the first year of the survey, and hence

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[61] Thus some of the sample members may have had their part-time job for only a week, which seems a bit soon to expect progression to a full-time 'permanent' job.

[62] Of these authors, only Guyonne Kalb is an employee of the Melbourne Institute.

they were dealing with the least employable groups in the labour market. Most importantly of all, unlike previous research, they compared the transition from unemployment to 'permanent' employment via casual jobs with the direct transition from unemployment to 'permanent' employment.

They estimated hazard functions of the probability of these different labour market transitions and then simulated the effect of casual employment on duration of time taken to find 'permanent' employment. They found that, for this sub-population (job seekers), it is quicker, on average, to get to 'permanent' employment via casual employment.

The clear conclusion to be drawn from Chalmers and Kalb's work is that it may be very misleading to focus on simple transition rates. Unemployed persons who find casual jobs may indeed spend long periods without 'permanent' jobs, but the alternative — continued periods without employment — is worse. The bottom-line is that casual work enhances 'permanent' job prospects while at the same time providing an earned income.

The final piece of evidence on this issue comes from the HILDA Survey, which employs a sample intended to be representative of the broad population and so does not have a focus on a particular sub-group (such as youth or the unemployed), and was reported on in the most recent Melbourne Institute (2004) annual report on the HILDA Survey. There the simple transition matrix between different types of employment was reported over a two-year period (covering three annual observations). This table is reproduced here as Table 4 and reveals that the large majority (around 84%) of casual employees remain in employment. Further, there is considerable movement out of casual jobs into non-casual jobs, with 42 per cent of all casual employees from Wave 1 holding non-casual jobs two years later (i.e., by Wave 3).

Of course such findings are at best suggestive. More detailed research is required to net out the effects of other factors influencing job transitions. Further, ideally we would also like to know the extent to which job transitions are consistent with employee preferences.

Table 3.4

Future Labour Market Outcome for Employees in Casual Jobs in 2001, % (HILDA Survey)

| | Wave 3 status | | | |
	Employed: Casual	Employed: Non-casual	Jobless	TOTAL
Wave 2 status				
Employed: Casual job	31.6	16.8	6.5	54.9
Employed: Non-casual job	5.0	22.1	2.3	29.5
Jobless	4.7	3.2	7.7	15.6
TOTAL	41.4	42.2	16.4	100.0

Source: Melbourne Institute of Applied Economic and Social Research (2004, p. 26).

3.4 Working Time

The widening distribution in hours of work has been the subject of a number of papers by Institute staff and associates in recent years. At one end of the hours spectrum, Wilkins (2004) has focused on the issue of workers who would prefer to work more hours – the underemployed – while at the other end of the spectrum, Wooden (2001b), Wooden and Loundes (2002) and Drago, Black and Wooden (2005) have analysed the phenomenon of long hours of work. There here have also been two studies which have explicitly focused on the gap between preferred and actual hours of work (Drago, Tseng and Wooden 2005, Tseng and Wooden 2005) and one study that has examined the extent to which working hours preferences are satisfied with time (Drago, Black and Wooden 2004).

3.4.1 Underemployment

As noted earlier, the share of part-time employment in total employment in Australia has been growing almost continuously since at least the early 1970s (though the rate of growth in this share appears to have slowed in recent years). For many, and especially mothers and students, the greater supply of part-time jobs has undoubtedly facilitated greater participation in the labour market. Nevertheless, survey data collected by the ABS have long revealed that a sizeable proportion of these part-time job holders (typically around one in four; 24 per cent in August 2005) would prefer to work more hours. These underemployed workers are akin to the

unemployed in the sense that not all of the available labour is being utilized, but obviously differ in one important respect – they have a job.[63]

The significance of underemployment in Australia was recently assessed by Wilkins (2004). He showed, using time-series data from the ABS, that while the most frequently used measure of labour underutilization – the unemployment rate – has been falling since the recession of the early 1990s – a measure of the rate of underemployment has remained essentially unchanged (see Wilkins 2004, Figure 2, p. 7).[64]

The focus of the Wilkins research, however, was not on trends. Instead, most of his paper was devoted to analyzing cross-section data from the first wave of the HILDA Survey in order to better quantify the extent and dimensions of the underemployment problem, and then to identify some of the consequences of underemployment.[65]

The major conclusions suggested by his research are threefold. First, underemployment is more widespread than unemployment, with around one in six employed persons (or 11 to 12 per cent of the working-age population) expressing a preference for more hours of work. This figure, however, does include a surprisingly large number of persons working what we generally think of as full-time hours (i.e., 35 or more in a usual week). Excluding these would see the underemployment proportion fall to around one in ten. Second, volume-based measures of labour underutilization which take into account the difference between the preferred number of working hours and the number of hours actually worked reveal that unemployment is still of greater significance, especially if it is assumed that the full-time employed cannot also be underemployed. Third, the underemployed, and more particularly, the part-time underemployed, are found to be less satisfied with their jobs than fully employed workers. They also tend to be concentrated in low-income families and more likely to report relatively low levels of life satisfaction. Nevertheless, it is just as clear that the

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[63] The ABS in defining underemployment does not actually define all part-time workers who want more hours as underemployed. They must also be available (within 4 weeks) to work those additional hours. Data from *Underemployed Workers, Australia, September 2004* (ABS cat. No. 6265.0), for example, reveals that of all part-time workers wanting more hours, 85 per cent satisfy the ABS definition of underemployment. In other words, the proportion of part-time workers who want more hours and who are available to work more hours is closer to 20 per cent. It could be argued that part-time must also be actively looking for work with more hours. If this criterion were applied then less than half (48%) of all part-time workers wanting more hours would be classified as underemployed.

[64] The measure used by Wilkins is that recommended by the ABS. It is based on a count of heads; that is, the number of underemployed as a proportion of the labour force. An hours adjusted measure would almost certainly have exhibited a downward trend over this period.

[65] The HILDA Survey does not contain the sort of detail about labour force activity that can be found in the ABS Labour Force Surveys and hence the definition of underemployment used is based simply on preferred hours exceeding usual hours.

underemployed are much better off on these measures than the unemployed. Indeed, with the possible exception of life satisfaction, the underemployed are much more like the fully employed than they are the unemployed.

3.4.2 Long Working Hours

While many part-time workers are in jobs providing insufficient hours, there are also many others working quite long hours, many of whom would prefer to work far less. The presence of these 'overworked' Australians has attracted considerable attention in recent years, and was at the centre of a major industrial relations case heard by the Australian Industrial Relations Commission in 2002. It has also been at the forefront of recent debates about how to achieve better work-life balance.

A key feature of this debate is how much of the blame for long hours of work has been sheeted home to industrial relations reform, and especially the elevation of negotiated settlements (that is, enterprise and workplace agreements) to a position of prominence over arbitrated settlements (that is, industry- and occupation-based awards). Yet a simple inspection of time-series data from the ABS on the incidence of persons working 50 hours or more per week reveals that the upward trend in long hours working came to a halt around 1994, exactly the same year when the *Industrial Reform Act 1993*, which removed many of the impediments to enterprise bargaining, came into force (see Wooden 2001b). This point is made much more forcefully in Wooden (2003a), who estimated a simple time-series model for the period 1983 to 2002 and found strong statistical evidence to support the hypothesis that all of the increase in the incidence of long hours working occurred in the period between 1983 to 1993, and hence prior to the introduction of enterprise agreements at most workplaces. This does not mean that enterprise bargaining has not facilitated increased demands by employers for long hours of work. Indeed, Wooden reported inter-industry data that reveal that coverage by enterprise agreements is positively associated with the incidence of long hours workers. Nevertheless, such demand effects are outweighed by supply-side effects, which Wooden hypothesized arise through the positive wage effects associated with enterprise bargaining.

More recently, Drago, Black and Wooden (2005) have used the HILDA Survey data to examine in more detail the types of personal characteristics associated with long hours working. A cross-sectional analysis of the factors associated with working 50 or more hours in a usual work week revealed strong statistical relationships with: (i) the household debt to income ratio, suggesting that some individuals get caught in a 'work and spend' cycle; and (ii)

occupation and education – highly educated workers in managerial and professional occupations are much more likely to work long hours. Interestingly, a variable measuring the cost of job loss was also significant, but the sign of the coefficient revealed that long hours workers were those with the best alternative employment prospects. This somewhat counter-intuitive result is consistent with the notion that employers are often successful in creating a working culture wherein many workers (so-called 'ideal workers') internalize the objectives of the firm. The analysis also identified strong and expected associations with sex, age, casual employment, public sector employment, and self-employment. The other key feature of the Drago et al. research was the finding that long hours working is often not a temporary phenomenon. Over half of those persons working long hours in 2001 were working similarly long hours in both 2002 and 2003.

The findings reported in Drago et al (2005) generally suggest that long hours working is for many a matter of 'choice', and concentrated among persons in jobs that we would generally think of as being 'good' jobs. This question of whether or not long hours jobs are good or bad jobs has been previously considered by Wooden (2001b), Wooden and Loundes (2002), Wooden (2003b) and Wooden and Warren (2004). Both Wooden (2001b) and Wooden and Loundes (2002) analysed data from the employee survey component of the 1995 Australian Workplace Industrial Relations Survey and concluded that long hours workers tend to have relatively desirable jobs, and if long hours per se are a source of dissatisfaction and stress, it is offset by other more positive attributes. Indeed, Wooden and Loundes (2002) report the results from the multivariate analysis of a general job satisfaction measure in which long hours working, even after controlling for other job and personal attributes (like occupation and education), was found to be positively associated with job satisfaction (though the magnitude of the effect was quite small). Slightly different conclusions can be derived from the analysis of job satisfaction using the HILDA Survey data reported in Wooden and Warren (2004). While, as noted earlier, their focus was on non-standard employment, they did interact employment status with hours of work and found among permanent workers, significantly lower levels of job satisfaction among women working 49 hours or more week. The size of this effect, however, was still quite small. Among men, there was no significant variation in job satisfaction with hours worked among the sub-sample of permanent job holders. For those in casual jobs, however, there was an effect, but it was not neatly tied to the length of the work week. More specifically, any male casual employee working more than 40 hours per week was less satisfied than comparable men working 40 hours or less.

Somewhat differently, Wooden (2003b) used the data from wave 1 of the HILDA Survey in an effort to identify evidence of any statistical associations between long hours of work and a range of measures of different aspects of both family functioning and subjective well-being (such as general health, mental health, vitality and overall life satisfaction). It was concluded that "for the most part, there are no sizeable negative relationships between working long hours (that is, more than 48 hours per week) and family life or between working hours and general well-being".[66]

3.4.3 The Gap Between Preferred Hours and Actual Hours

The co-existence of both underemployed and overemployed workers implies a mismatch between workers and jobs. This is the subject of the paper by Tseng and Wooden (2005). While their focus is primarily on couple households, they also report detailed information, from wave 1 of the HILDA Survey, about the extent to which working hours preferences diverge from actual hours for all employed Australians. According to this data source, about 30 per cent of employed Australians are overemployed and about 15 per cent are underemployed. Interestingly, the incidence of hours mismatch does not vary much with household type. They also showed that while there is clear evidence of a time divide – part-time workers work too little, while full-time workers work too much (see also Drago, Tseng and Wooden 2005) – for most Australians the size of the hours gap is relatively modest. This is especially so for the underemployed. Indeed, they find that around 62 to 63 per cent of workers had jobs where the weekly hours were within five hours of their preference.

They also estimated, though only for persons living in couple relationships, multivariate models explaining both the likelihood of workers being either underemployed or overemployed, and the extent of that underemployment or overemployment conditional on being in that state. The extent of overemployment, for example, was found to rise with age and predictably was more pronounced among the self-employed and less pronounced among those with a recent history of unemployment. Underemployment, on the other hand, was also positively associated with self-employment, as well as with casual employment.[67] Perhaps of most interest, evidence was also uncovered indicating that working hours preferences within couples are influenced by the extent to which partners achieve their working time preferences.

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[66] A similar conclusion was drawn by Gray et al. (2004) in a parallel study on this same issue and using the same data source.

[67] Wilkins, in his longer report for the Department of Family of Community Services that preceded his 2004 paper, also estimated multivariate models explaining both the probability and extent of underemployment (but not overemployment).

The direction of the relationship, however, suggests that working time within couples are complements – if one person is overemployed, their partner is also more likely to be overemployed.

The issue of within-couple differences in working time preferences is examined in greater detail by Drago, Tseng and Wooden (2005). Again drawing on the HILDA Survey data, they focused on the extent to which couples have egalitarian preferences, by which they mean similar working hours (with 5 of each of other). They found that women typically express preferences for fewer hours than men, and this is true of both couples with children and those without. As expected, the gap between the man's preferences and the woman's preferences is much greater in the presence of children. They also found that the joint working hours of neo-traditional couples was considerably less than that of what they labeled 'egalitarian couples', defined as couples working similar hours (within five of each other). Again, these findings are suggestive of a complementary relationship between the working hours of partners in couple relationships. Egalitarian outcomes are thus typically not achieved by one person reducing their hours and the other increasing theirs.

A divergence between preferred hours and actual hours may not be of large significance if that mismatch is only temporary, and descriptive data from the first three waves of the HILDA Survey suggests that for many workers this is the case. Specifically, Headey, Harding and Warren (forthcoming), report the number of mismatches between hours actually worked and preferred hours of work in 2001 and how the hours of these people had changed by 2003.[68] Among part-timers preferring more hours, 63.5 per cent were, two years later, either working their preferred hours or actually now had a desire to work fewer hours. For full-timers preferring fewer hours, achieving hours preferences was more difficult, with well over half (56%) still with a preference for fewer hours.

Many questions of course remain; most obviously, who is best able to achieve their working preferences and how are these preferences achieved. This requires modeling changes in working time over time, something that Drago, Black and Wooden (2004) have attempted, though admittedly with data from only two points in time. Yet another analysis of HILDA Survey, they estimated simple probit regression models predicting: (i) who would obtain more hours in year 2 from among those part-timers who wanted more hours in year 1; and (ii) who would be working among full-time workers who wanted to work fewer hours in year 1 would

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[68] This report presents short statistical summaries using data from the first three waves of the HIDA Survey that describe a large range of contemporary social and economic issues confronting Australians.

be working fewer hours in year 2. To be selected into the sub-samples, workers had to be either underemployed or overemployed by at least 5 hours per week. Unfortunately, their models were not particularly successful at predicting transitions. Nevertheless, achieving working time preferences among the part-time underemployed was found to be much more difficult for women than for men, and more likely if self-employed (not surprisingly) and if employed in a larger workplace. Among the full-time overemployed, significant negative effects were found for professionals and managers, a curvilinear effect was found with age (achieving reduced hours was easier for both the youngest and oldest workers), and a positive effect again among the self-employed. The results of both models also revealed that changing employers significantly enhances the likelihood of achieving working time preferences.

3.5   Concluding Remarks

The previous chapters by Roger Wilkins and Guyonne Kalb both concluded by highlighting what they saw as likely directions for future research. This seems less appropriate here, mainly because the subject area is one where the Institute and its staff have really only begun to scratch the surface. As was made very clear, almost none of the Institute's research effort to date has focused on the changing content of work. This reflects a general weakness within the labour economics profession in this country. With the notable exception of the Centre for Strategic Economic Studies at the Victoria University (see Sheehan and Tegart 1998), research in this country aimed at identifying the factors influencing the composition of demand for labour and understanding how changes in that demand is influencing the workplace, is poorly developed. This has been reflected in the Institute's research program. There is thus clearly considerable scope for a major new research program in this country on changing work content, the factors driving change, and the consequences of that change.

Another area which has been ignored in this review and where there has been relatively little serious research, especially in recent years, is on the mismatch between supply and demand for skills. This is perhaps somewhat surprising given the recent talk of Australia's impending skills crisis. Further, what research has been done in recent years has tended to emanate from the Melbourne Institute. Webster and Song (2003), for example, estimated Beveridge Curves, relating unemployment to vacancies, to measure the degree of mismatch in skilled and unskilled segments of the labour market. They found that the skilled segment operated more efficiently than the unskilled segment; that is, the incentive to remain in skilled employment is higher than for unskilled employment. Further evidence on the sorts of job characteristics

that employers value most is reported on in Webster (2001). The more interesting question, however, is not whether mismatch exists, but whether the degree of mismatch has been changing over time. Here, the study on the skilled trades by Webster et al (2001) is relevant, but that aside, we are not aware of any Australian study on this issue. Again, considerable scope clearly exists for launching new research initiatives in this area. That said, the major obstacle to progress on this front is data. In particular, Australia lacks a significant data source which links data collected from employees to data collected by firms. Such data sets are commonplace in other countries, but in Australia the only significant employer-employee linked data set to this point is the 1995 AWIRS, which is both dated and has a deliberate focus on industrial relations issues.

Data considerations are clearly important when designing research programs, and for this reason the future research agenda in the area of work at the Melbourne Institute is likely to be dominated by the HILDA Survey. A panel study, the HILDA Survey is designed to test hypotheses concerned with changes in the way Australians are employed and work and the broader affect of those changes on workers and their families. Indeed, the household structure of the HILDA Survey data should make it ideal for facilitating research on the topical issue of work-life balance.[69] The HILDA Survey can thus be used to test a great many hypotheses. As an indication of the types of research questions that could be examined, we list just a few examples.

(i)   Under what circumstances does so-called non-standard employment (e.g., casual employment, fixed-term contracts and labour hire) inhibit or assist long-run employment prospects?

(ii)   Is perceived job security changing over time? Is job insecurity persistent? How do perceptions line up with, and are affected by, actual employment experiences? How do such perceptions, and especially their persistence, influence behaviour (e.g., with respect to working time, job seeking, household formation, etc.)?

(iii)   How does working time evolve over time? Is there convergence between actual hours and preferred hours or does mismatch persist? What consequences does the persistence of mismatched working hours have (e.g., in terms of health, stress, and family functioning)? To what extent, and under what conditions, do workers respond to mismatched preferences by changing jobs or exiting the workforce?

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[69] Drago, Scutella and Varner (2002) set out one possible research agenda in this area.

(iv) How do preferred and actual work hours vary over the life course (e.g., surrounding childbirth, as children age, prolonged illness of oneself or family member, and around retirement), and how responsive is the labour market to changes in preferred hours (regarding both increases and decreases in preferred hours).

3.6 References

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